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VOL. 3 & 4

1873

MICROPHOTO INC
CLEVELAND OHIO

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME III.

JANUARY 7 TO JUNE 24, INCLUSIVE,

1873.

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1873.

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ERRATA.

On page 120, second column, line 30, for "Board of Examiners-in-Chief" read *Examiner of Trade-Marks.*

On page 150, first column, line 9, for "infringements on a prior patent" read *anticipated by a prior application.*

On page 206, first column, place the brief of invention No. 5,287 under No. 5,286, to which it of right belongs.

On page 288, second column, line 17 from bottom, read **136,715.**

On page 289, second column, line 15 from bottom, read **136,715.**

On page 289, second column, line 17 from bottom, read **136,648.**

On page 468, first column, under "Decisions of the Courts," for "U. S. Circuit Court," read *California State Court.*

On page 486, second column, Patent No. 138,436, for "H. W. Range," read *H. W. Regan.*

On page 559, Designs Nos. 6,663, 6,664 omitted. See next number, page 585.

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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

JANUARY—JUNE—1873.

ILLUSTRATIONS

TO

OFFICIAL GAZETTE OF THE UNITED STATES PATENT OFFICE.

JANUARY—JUNE—1873.

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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND

DECISIONS OF UNITED STATES COURTS

IN THE MATTER OF

PATENTS AND TRADE-MARKS.

OFFICIAL GAZETTE—January—June—1873.

DIGEST OF DECISIONS.

[The names of Court cases are designated by an asterisk, (*).]

ABANDONED EXPERIMENTS.

Where a model showing a feature not described in the specification was filed with an application, but was afterward declared by the applicant to be a mistake, and another was substituted for it, the first was held to be an abandoned experiment, and no answer to a subsequent application claiming that feature.

[*Decker *vs.* Grote, 65.

(See Novelty, A; Reduction to Practice, 1.)

ABANDONMENT.

(A) In general.
(B) Under the statute.

(A) *In general.*

1. The question whether an invention has been forfeited should be kept entirely distinct from the question whether it has been abandoned.

[Jenkins *vs.* Barney & Berry, 119.

2. If an invention is embodied in a complete working article, and used so far as to demonstrate its practicability, and establish the inventor's right to a patent, he will not lose his right by delaying for nearly two years to file an application.

[Rice *vs.* Winchester, 348.

3. A rejected application is a bar to a new one by the same party for the same invention, unless the second was filed as a renewal or continuance of the first.

[S. B. Sexton, 409.

4. Unavoidable delay while an application for a patent is pending is no ground for imputing abandonment.

[*Jones *et al. vs.* Sewall, administrator, 630.

Mere forbearance to apply for a patent while the inventor is experimenting upon his invention, and perfecting it, and testing its value, affords no ground for presuming that he has abandoned it.

[*Jones *et al. vs.* Sewall, administrator, 630.

(See Appeals, 1; Pleadings and Practice, 12; Practice, B, 1; Prior Inventor, 2; Prior Use, 4.)

(B) *Under the Statute.*

1. An application must be held to be abandoned if it was rejected January 12, 1871, and no further step was taken with it until a request was made for a re-examination, which was not received in the Office till January 13, 1873, although it bore an earlier date.

[Henry H. Blake, 2.

2. If there has been no prosecution of an application for two years it must be pronounced abandoned; nor will this be prevented by any intermediate action of the Office which is merely ministerial, and not interlocutory, or on the merits.

[Freeman Graham, 211.

3. To enter a formal abandonment and request a return of the model will not be regarded as a prosecution of the application, or save it.

[Freeman Graham, 211.

4. Neither will the operation of the statute be prevented because the Office files the formal abandonment and permits the model to be withdrawn.

[Freeman Graham, 211.

5. If an applicant neglects to prosecute his application for two years after it has been rejected, it will be held to have been abandoned unless he shows that the delay was unavoidable.

[W. D. Leavitt, 212.

6. Although the Office afterward concludes that the invention was patentable, this will not alone prevent the operation of the statute.

[W. D. Leavitt, 212.

7. An interference may be declared, however, between it and a subsequent application covering the same invention, in which it may be shown that the delay was unavoidable; but unless the applicant shows this he cannot have a patent, although he prevails on the question of priority.

[W. D. Leavitt, 212.

8. Every invention which was claimed in an application rejected previous to the Act of 1870 must now be considered as abandoned, and, if claimed in a patent issued upon an application filed after the one rejected, must be disclaimed before the patent can be extended.

[S. B. Sexton, 409.

(See Pleadings and Practice, 12; Prior Use 1, 2, 3; Reissues, 6, 7.)

ADVERTISING NOTICES.

(See Extensions, A, 3; Practice, C, 4.)

AMENDMENTS.

1. All necessary amendments of an application should be completed before the claims are passed upon; but if not then made, as, for instance, when new claims are recommended by the Examiners-in-Chief, they should be required as soon as the occasion for them appears.

[Wm. C. Dodge, 179.

2. No amendments should be allowed in original applications which change the character of the invention essentially.

[Wm. C. Dodge, 179.

3. Amendments may be made in the application, although more than two years have elapsed since it was filed; there is no limit as to the time.

[Wm. C. Dodge, 179.

4. An amendment should not be received which introduces into the application a feature not described in the specification as originally filed, and which has not been sworn to by the applicant.

[J. W. Wattles, 291.

(See Abandonment, A, 4; Practice, C, 4.)

APPEALS.

1. An appeal may be taken from the decision of the Commissioner on the question of abandonment to the Supreme Court of the District of Columbia in all cases.

[Jenkins *vs.* Barney and Berry, 119.

2. No appeal can be taken from the decision of the Commissioner upon the question of priority of invention, or upon the question whether the first to conceive of an invention has forfeited it in favor of another.

[Jenkins *vs.* Barney and Berry, 119.

(See Practice, B.)

APPELLATE COURT.

(See Extensions, B, 1, 2.)

ARTICLES OF MANUFACTURE.

1. None of the usual requisites for a patent will be dispensed with because the subject is presented as an article of manufacture.

[S. B. Jerome, 64.

2. A claim for an article of manufacture may be embraced in the same application with other claims.

[Augustus Adams, 150.

3. Although a production is called an "article of manufacture," it must possess the same requisites in order to be patented as other productions, and give the same evidence of invention and novelty.
[Augustus Adams, 150; J. W. Wattles, 291; Horace Beach, 607.

4. A process having been described in a printed publication for producing a fine dry powder containing phosphoric acid, and capable of being used instead of tartaric acid for decomposing an alkaline carbonate in making bread, a claim to such an acid as a new manufacture was held to be void for want of novelty, although the article was produced by a process different from that described.
[*The Rumford Chemical Works *vs.* Lauer, 349.

5. A patent for an article of manufacture cannot be sustained on the ground that it was fabricated by new and improved machinery; it must be a new and improved thing in itself, possessing novelty of its own independent of the devices, processes, or arts by which it was produced.
[*Draper *vs.* Hudson, 354.

ASSIGNEES.

(See Patented Articles, 7, 8, 9, 10.)

ASSIGNMENTS.

1. A conveyance previously executed of an interest in the extension of a patent becomes operative upon the extension being granted, and the title passes thereupon to the purchaser.
[*Gear *et al. vs.* Grosvenor *et al.*, 380.

2. A conveyance of all the grantor's "right, title, and interest in letters patent for the full term for which they are or may be granted," without any reference to the extended term, conveys no interest in it.
[*Gear *et al. vs.* Grosvenor *et al.*, 380.

3. Although the habendum clause contains the words "to the full end of the term for which said letters patent are or may be granted," the extended term will not pass.
[*Gear *et al. vs.* Grosvenor *et al.*, 380.

4. A conveyance of letters patent distinguished from a conveyance of both the letters patent and the invention.
[*Gear *et al. vs.* Grosvenor *et al.*, 380, see note.

CASES COMMENTED UPON.

1. R. W. English, Commissioner's Decisions, 1870, 142.
2. Dutcher Temple Company, Ibid., 248.
[*Smith *vs.* Reynolds and Jacobs, 242.

3. *Ex parte*, Parkinson, Commissioner's Decisions, 1871, 251.
[L. W. Fairchild, 322.

4. Godfrey *vs.* Eames, 1 Wall, 317.
5. *Ex parte*, Shunk, Commissioner's Decisions, 1870, 10.
[S. B. Sexton, 409.

6. The Nicholson Pavement Company *vs.* Jenkins, 1 Official Gazette, 465.
[*Gear *et al. vs.* Grosvenor *et al.*, 380, and note.

7. Roberts *vs.* Heradon, 2 Cliff, 503.
8. Roberts *vs.* Dodge, U. S. Circuit Court, Southern Dist. N. Y.
[*Roberts *vs.* Blake, 268.

9. Rees *vs.* Gould, 2 Official Gazette, 624.
[*The Rumford Chemical Works *vs.* Hecker *et al.*, 349.

CAVEATOR.

(See Diligence in Prosecuting Inventions; Practice D, 14.)

CAVEATS.

A paper annexed to a caveat is of no authority if the Commissioner of Patents has certified that it forms no part of the caveat.
[*Robertson *vs.* Secombe Manufacturing Company, 412.

CLAIMS.

1. Although a claim in a participial form, for "arranging certain devices," has been held valid in the United States courts, it should be corrected on a reissue, so as to claim the devices themselves.
[Callista E. Cox, 2.

2. Where the essential difference between a patented horse-rake and one previously known consisted in the discharge being at the control of the operator, and this was not specified in the claim, the claim should be amended on a reissue and specify that as the prominent feature, although it had been held valid in the United States courts.
[Callista E. Cox, 2.

3. A claim for the several parts of a tool, in combination with each other and with mechanism, whereby they can be adjusted in relation to each other and made to effect certain purposes, should not be allowed without defining the mechanism, and the words "substantially in the manner herein set forth" are not sufficient for that purpose.
[Fairbanks and Robinson, 65.

4. A claim for all the means by which a cutter-bar may be so attached to a machine that it may at pleasure be suspended at any desired height for reaping, or allowed to follow the undulations of the ground for mowing, is too broad, and is, therefore, invalid.
[*Kirby *vs.* The Dodge and Stephenson Manufacturing Company, 181.

5. A claim for the specific construction and arrangement of the devices by which the registration is effected in a grain-register should not be rejected on reference to a register for stills constructed on the same general principle and accomplishing essentially the same result, but by devices materially different in the construction and arrangement of the parts.
[G. W. Nesmith, 268.

(See Combinations, 7; Patents, 10.)

COLLUSIVE JUDGMENTS.

(See Pleadings and Practice.)

COMBINATIONS.

1. The addition to a combination, which is inoperative and worthless in itself, of an element which renders it practicable and valuable, constitutes a new combination, and is something more than a mere improvement on the old one.
[*Bliss *vs.* Brooklyn, 269.

2. To render a combination patentable two things are requisite—a novel assemblage of parts exhibiting invention, and the co-operation of all the parts in producing a useful result.
[Lynch *et al. vs.* Dryden *et al.*, 407.

3. A split tongue or frame in a walking-cultivator neither modifies the operation of a curved or raised axle therein nor that of two beams hinged to said axle, so as to be moved laterally or vertically independently of each other; neither is its own action modified by them, and there is no legitimate combination between them.
[Lynch *et al. vs.* Dryden *et al.*, 407.

4. There is no legitimate combination between a fire-place stove with divine flues and a suspended magazine, and a claim for such a combination cannot be sustained.
[S. B. Sexton, 409.

5. There is no legitimate combination between a cold-air chamber and a stove having a suspended magazine.
[S. B. Sexton, 409.

6. To place a horse-rake upon a wheeled vehicle in the usual way, and a seeding-box with its customary apparatus, does not present a patentable combination when neither implement modifies the operation of the other.
[Benjamin Morse, 467.

7. A cam-wheel, which is applied on one of the wheels of such a machine to operate the teeth when it is used as a raker, and, when it is used as a seeder, upon the other wheel to vibrate the slide of the plaster-box, may be claimed as a new thing, in combination with either instrument.
[Benjamin Morse, 467.

(See Infringments, 10, 14; Joinder of Inventions.)

COMMISSIONER.

(See Extensions, A, 3; Literary Works, 2.)

CONSTRUCTION OF CLAIMS.

1. Although it was alleged in the specification that the articles to be preserved by the process described were surrounded by a dry atmosphere, and were not allowed to come in contact with the metal partition between them and the freezing-mixture, yet the words "substantially as set forth" do not import those conditions into the claim, nor remove the objection that a process for preserving ice-cream similar in other respects, anticipates the supposed invention, although it does not fulfil those conditions.
[*Piper *vs.* Moore *et al.*, 4.

2. Neither is the claim rendered valid, because the freezing-mixture is contained in tubes running through the articles to be preserved, but surrounds the vessel containing the ice-cream.
[*Piper *vs.* Moore *et al.*, 4.

3. Although the plaintiff may have invented and even described something patentable, and may have supplied a great desideratum, and established a successful commercial business, his claim must be condemned as being too broad.
[*Piper *vs.* Moore *et al.* 4.

4. In a patent for a hat-blocking machine, in which the tip and side crown of the body are stretched as required by placing it upon a former, the upper part of which is composed of ribs between which the tip and side crown are forced and corrugated by rollers on a frame above when the former is raised, and in which the brim is at the same time stretched in like manner by other rollers on the frame, forcing and corrugating it between radiating ribs on the former, the several mechanisms being made adjustable, a claim for "the combination and arrangement of the crown and tip supporting-ribs with the upper series of stretching devices, substantially as described, operating to stretch the tip and side crown of the hat-body between them," &c., is not to be understood as covering broadly the use of the former in connection with the rollers specified, detached from their mechanical combination and arrangement in the machine.
[*Eickemeyer Hat-Blocking Machine Co. *vs.* Pearce *et al.*, 150.

5. Neither is a claim for "the combination and arrangement of the brim-supporting ribs with the lower series of stretching devices, substantially as described, operating to stretch the brim of the hat-body between them," &c., to be so construed.
[*Eickemeyer Hat-Blocking Machine Co. *vs.* Pearce *et al.*, 150.

6. A claim for "the constructing of show tablets in the manner described" is really for the method, and not for the act of constructing, as the language indicates, and should be amended so as to present the true object in direct terms, without any such ambiguity.
[Wm. Brownlee, 212.

7. It is doubtful whether a claim to "the manufacture of the above-described pulverulent phosphoric acid, so that it may be applied in the manner and for the purposes described," is a claim for the article, or for the process of producing it.
[*The Rumford Chemical Works *vs.* Lauer, 349.

8. A claim for "the mixing, in the preparation of farinaceous food, with flour, of a powder or powders, such as described, consisting of ingredients of which phosphoric acid or acid phosphates and alkaline carbonates are the active agents, for the purpose of liberating carbonic acid, as described, when subjected to moisture, or heat, or both," is a claim for preparing self-raising flour by mixing the acid and alkali with flour, and does not include the application of moisture or heat.
[*The Rumford Chemical Works *vs.* Hecker *et al.*, 349.

9. A claim for "increasing the combustion and also for insuring a more brilliant illumination," by the manner of constructing a stove as specified, is a functional claim.
[S. B. Sexton, 409.

10. A claim for the "adaptation of a fire-place stove" for use with certain other specified elements in it, is a functional claim.
[S. B. Sexton, 409.

11. A claim for making rivets by coiling a flat strip of iron is something more than a claim for a "coil of strip iron."
[J. E. Wooten, 521.

CONSTRUCTION OF SPECIFICATIONS.

1. The expression "names of the months of the year" interpreted to mean the names of the months only, and not as including the name of the year.
[*Robertson *vs.* Secombe Manufacturing Company, 412.

2. A collar specified as having a paper surface imitative of the textile face and fiber of a dressed-linen collar would seem to be the same thing as an embossed collar, when the embossing is explained in the specification to mean a process by which the inequalities upon the surface of a linen collar are reproduced on the surface of a paper collar, and it is made to look like a linen collar.
[Wm. E. Lockwood, 439.

(See Construction of Claims.)

CONSTRUCTION OF STATUTES.

1. The construction of a statute which has been adopted for many years by the officers intrusted with its execution is entitled to great consideration.
[*Gear *et al. vs.* Grosvenor *et al.*, 380.

COPYRIGHTS.

1. Where the title is original and the product of the author's mind, the courts would probably protect it like the other portions of the work.
[*Osgood *et al. vs.* Allen, 124.

2. The title of a book is not necessarily the product of the author's genius, but is usually a mere appendage identifying the work, and in that case is not protected by copyrighting the book.
[*Osgood *et al. vs.* Allen, 124.

3. A person who publishes by way of advertisement an engraving of an article he has on sale cannot by copyrighting it prevent others who have an equal right to sell the article from using a similar engraving in advertising it.
[*Hugh W. Collender *vs.* William H. Griffith, 680.

(See Literary Works, 1.)

CORPORATIONS.

(See Jurisdiction, 1.)

DAMAGES.

1. Where a large quantity of fish is preserved by a patented process, the enhanced price obtained for the fish that are left, in consequence of withdrawing the others from the market, is an incident of trade too remote and indirect to be charged as profits made by infringing the patent.
[*Piper *vs.* Brown *et al.*, 97.

2. The loss incurred during one season in carrying on the infringing business is not to be deducted from the profits made during another season, if there is no connection between the business of one season and that of the other, and the accounts of each have been kept distinct.
[*Piper *vs.* Brown *et al.*, 97.

3. No deduction from the profits the respondents have made by infringing a patent are to be allowed on account of their time and services, nor any commission on their sales when they have paid none.
[*Piper *vs.* Brown *et al.*, 97.

4. If the defendants purchased and used the patented machine without knowledge of the patent, and ceased to use it on being notified of the complainants' rights, they are not liable for exemplary damages.
[*Emerson *et al. vs.* Simms *et al.*, 293.

5. If the owner of a patent has an established fee for a license to work under it, that constitutes the proper measure of damages to be recovered by him for infringing it.
[*Emerson *et al. vs.* Simms *et al.*, 293.

6. The amount of damages to be recovered in an action for an infringement are not to be reduced because the defendants might have used other machines to as good advantage.
[*Emerson *et al. vs.* Simms *et al.*, 293.

(See Pleadings and Practice, 6, 9; Licenses, 2.)

DESIGNS.

1. A name-sign with an imitation gold pen attached to it constitutes a proper subject for a design patent.
[L. W. Fairchild, 323.

2. All description of the mechanical construction of the article represented in a design for which a patent is asked should be eliminated from the specification, as well as all reference to the utility of its purpose.
[L. W. Fairchild, 323.

(See Infringements, 17; Novelty, D; Patents, 3.)

DILIGENCE IN PROSECUTING INVENTIONS.

1. A caveator has a reasonable time in which to mature his invention, and if he has used due diligence he has the right to have his matured invention incorporated into his patent, and to supersede those who have intervened between the date of his first discovery and his taking out his patent.
[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

2. The question of diligence is not an absolute but a relative one, and must be considered in reference to the subject-matter of the experiments.
[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

3. Where the inventor, before applying for a patent, allowed six

years to elapse in a bona fide experiment to test the strength and durability of a wood pavement which was laid upon a frequented road, but without exposing to the public view the mode of its construction: *Held*, that there was no such public use of the invention, or any such dedication or abandonment of it as would avoid a patent for it.

[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

4. Where the inventor of a warlike machine, which he could reduce to practice only by the aid of a national power, and which was of no service except to one engaged in actual hostilities, after endeavoring to induce our Government to take it up, procured a foreign potentate to do so, and reduced it to practice under contract with him, and with the means thus obtained reduced it to practice in this country, using diligence throughout, he was held entitled to date his invention back to the time when he made the drawings for the foreign machine, and he was awarded priority over one who invented afterward.

[Lay *vs.* Ballard, 667.

DUPLICATE INVENTIONS.

(See Patents, 4, 5, 6.)

EMPLOYER AND WORKMAN.

1. An improvement which becomes necessary in the manufacture of a patented implement in order to overcome a difficulty growing out of a departure from the form of the model, and which is introduced into it by the workmen without the knowledge of the patentee, cannot be appropriated by him as his invention.

[*Berdan Fire-Arms Manufacturing Company *vs.* E. Remington & Sons, 689.

2. If such an improvement is embodied by the assignees of the patentee in a reissue, they cannot recover upon it against others who use it.

[*Berdan Fire-Arms Manufacturing Company *vs.* E. Remington & Sons, 688.

EQUIVALENTS.

(See Infringements, 9; Novelty, D, 12.)

ESTOPPEL.

(See Infringements, 12, 13.)

EVIDENCE.

1. Testimony tending to sustain a case in chief will be excluded if taken on the rebuttal, although under an order enlarging the time, but reserving the question of admissibility, if no reason is shown for not taking it before.

[W. W. Lewis, 92.

2. Upon an interference between an application for the registry of a trade-mark and a trade-mark already registered, evidence was adduced to show that the applicant had admitted in conversation that he had not before made use of the trade-mark: *Held*, that it was competent for him to prove, although upon the rebuttal, that he had been in the use of it previous to the conversation.

[Sternberger *vs.* Thalheimer *et al.*, 120.

3. The presumption in favor of a patent is strongly fortified if it has been reissued, and there has been a long acquiescence in the enjoyment of it, and its validity has been sustained when questioned before legal tribunals.

[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

(See General Issue and Notice, 1; Infringements, 4, 5; Joint Inventions, 1; Pleadings and Practice, 1, 3; Practice, C, 1; Priority of Invention, 4.)

EXAMINERS-IN-CHIEF.

1. It is incumbent on the Examiners-in-Chief to call attention to whatever alterations seem to be required, although their suggestions are not authoritative.

[Wm. C. Dodge, 179.

(See Practice, B, 5.)

EXPERIMENTS.

(See Abandonment, A, 4; Prior Use, 2.)

EXTENSIONS.

(A) In general.

(B) As to novelty and utility.

(C) As to value and importance.

(D) As to remuneration.

(E) As to diligence.

(F) As to policy.

(A) *In general.*

1. If an inventor has accepted an assignment of one-half of his patent after it has been reissued by an assignee, he cannot have an extension of the original.

[C. G. Dickenson, 91.

2. The extension of a patent cannot be impeached for fraud in procuring its issue in any collateral proceeding, such as a suit on the patent, but only in one instituted directly for setting it aside.

[*Gear *et al. vs.* Grosvenor *et al.*, 380.

3. It is the filing of a petition for an extension which gives the Commissioner jurisdiction over the proceeding, and not the advertisements required by law; whether they have been duly published it is his province to determine.

[*Gear *et al. vs.* Grosvenor *et al.*, 380.

(See Assignments, 1, 2, 3; Licenses, 1; Patented Articles, 1, 4, 5.)

(B) *As to novelty and utility.*

1. Although a claim was originally allowed by the Appellate Court, yet the patent containing it will not be extended until it is disclaimed, if it is found to be old on references which were not before the court.

[W. W. Lewis, 92.

2. The extension of a patent embracing a combination claim will not be denied on the ground that the elements specified do not co-operate, if the claim was originally allowed by the Appellate Court.

[W. W. Lewis, 92.

3. If the invention covered by a patent is described in an application finally rejected before it was issued, it will not be extended, although both the patent and a reissue of it have been sustained on trials by the court, where the rejected application was not brought to notice.

[Lawton and Bliss, 150.

4. If there is a reasonable doubt whether an old explained drawing anticipates one of the claims in a patent, it should not prevent the extending of the patent.

[H. R. Robbins, 292.

5. A patent for an invention which is described and shown in a previous patent to the same grantee will not be extended.

[A. B. Latta, Administrator, 349.

(See Extensions, C, 6.)

(C) *As to value and importance.*

1. The patentee having done nothing to bring his invention before the public, except to advertise it at the expense of $100, and it consisting merely in constructing the flanch of a railroad-chair with buttresses instead of solid, an extension of the patent was refused, both for want of diligence and for the triviality of the invention.

[W. M. C. Cushman, 29.

2. The extension of a patent refused because the application was sustained only by the affidavits of the petitioners, and also because the invention was never in extensive use, and all demand for it had ceased.

[Behr and Mongel, Administrators, 292.

3. The employment of a known mechanism upon a machine to which it has never been applied before does not possess sufficient merit to entitle a patent for it to an extension, if it did not operate successfully, and never went into use, although others afterward made the mechanism successful by adding devices which gave it a movement radically different.

[A. C. Gallahue, 319.

4. In all successful shoe-pegging machines the point where the awl meets the last is made the center of the arc in which the pivot vibrates that the shoe swings on, and a machine in which that pivot is the center of an arc in which the last swings must be inoperative, and a patent for it is entitled to no favor upon an application for an extension.

[A. C. Gallahue, 319.

5. Where the invention which the patentee is entitled to claim under his patent exceeds in value the amount he has received from it, it will be extended, although all the claims are required to be withdrawn but one, and the limited invention covered by that has been sufficiently remunerated.

[S. B. Sexton, 409.

6. Although there may be doubts as to the patentability of a supposed invention—and there has been a decision of the circuit court against it—yet if an appeal has been taken from the decision and is pending, and if the invention has created and supplied an extensive demand in market, and has been recognized by the public as one of great utility, a patent for it will be extended.

[Wm. E. Lockwood, 439.

(See Extensions, F, 1.)

(D) *As to remuneration.*

1. Less than $5,000 held to be an inadequate remuneration for a meritorious invention.

[W. W. Lewis, 92.

2. Where a much larger sum has been saved to the public by an invention, $21,000 will not be considered an adequate remuneration, and a patent for it will be extended, although that sum has been realized from it.

[H. W. Putnam, 240.

3. A patentee who has licensed others to work his invention is to be charged the same royalty on what the firm to which he belongs has manufactured that his licensees have paid him, and need not account for any further profits made by it.

[S. B. Sexton, 409.

(E) *As to diligence.*

(See Extensions, C, 1.)

(F) *As to policy.*

1. The extension of a patent refused where the inventor had parted with it, retaining only one-fourth of the profits, and where the main reliance for profits was upon suits for infringing the first claim, which specified mechanism new only in the arrangement of the parts without any decided advantage, and the whole had met with little demand, and the evidence of its value was unsatisfactory.

[W. W. Draper, 3.

2. A patent will be extended, although it is doubtful whether the extended term is in the patentee or his wife.

[H. W. Putnam, 240.

3. Although one of the claims in the patent seems to be invalid, yet if a similar claim has been embraced in a subsequent patent granted to other parties, and there are other claims for a valuable invention, the patent will be extended.

[H. R. Robbins, 292.

4. It is a grave objection to the extension of a patent if an interest in it has been assigned upon the purchasers agreeing to employ counsel and to take measures to have it modified so as to cover subsequent improvements.

[Behr and Mongel, administrators, 292.

5. A device which has been superseded in practice by a better one of a different construction must be disclaimed, as well as one which is shown to be old, before a patent which specifies them as the patentee's invention can be extended.

[C. Chambers, 390.

6. A patentee who has allowed his employers to work his invention without compensation, and has agreed that they may do so during the extended term, which will therefore inure mainly for their benefit, if not entirely, should not have his patent extended.

[L. F. Munger, 323.

7. The policy of the law seems to require that a patentee applying for an extension should have an interest in it; but an equitable interest is sufficient, although another holds the legal estate.

[*Gear *et al. vs.* Grosvenor *et al.*, 380.

FOREIGN INVENTIONS.

(See Prior Use.)

FORFEITURE.

(See Abandonment, A and B; Prior Inventor, 2.)

GENERAL ISSUE AND NOTICE.

1. The defendant referred in his answer to a withdrawn application as containing the invention, but did not name the applicant as a witness, nor give his residence; his testimony was objected to on that account when taken, and was struck out, on motion.

[*Decker *vs.* Grote, 65.

2. Where evidence that the invention was not new was taken under objection because no notice was given of it in the answer, it will not be received, although the answer is afterward amended so as to include such a notice.

[*Roberts *vs.* Blake, 268.

3. The defendant will not be permitted, on the hearing, to read depositions showing prior knowledge and use of the thing patented by persons whose names are not given in his answer.

[*Hugh W. Collender *vs.* William H. Griffith, 689.

(See Pleadings and Practice, 11.)

IMPROVEMENTS.

(See Infringements, 15.)

INFRINGEMENT.

1. The plaintiff's patent claimed giving a mill-saw a rocking action by making the upper cross-head move in curved guides without specifying the position in which they were to be placed, but the drawings represented them as perpendicular: *Held*, that the use of curved guides, although they were inclined, was an infringement.

[*Hamilton *vs.* Ives & Green, 30.

2. A cotton-bale tie, consisting of a plate with a square central opening, around one end of which one end of the band is looped, and having a slit in one of the adjacent sides through which a loop in the other end of the band is slipped onto the opposite end, is an infringement of a patent for a tie having two bars across such a central opening, around which the two ends of the band are looped, and pass by each other and under the bars at the ends, the claim being for an oblique slit in one of the end bars, through which the last end of the band is slipped under the bar sidewise.

[*McComb *vs.* Beard, 33.

3. The plaintiff's patent being for a cord covered with cloth, and attached thereby sidewise to a horizontal corner in the face of a billiard-cushion, where it received the impact of the ball at about its center, and repelled it horizontally with the additional elasticity of the cushion, (which it thus preserved from wear,) and with reduced friction, as well as with greater accuracy of direction: *Held*, that a cord embedded in the edge of the rubber forming the face of the cushion, and covered by a thin layer of it, was an infringement.

[*Decker *vs.* Grote, 65.

4. Evidence of using a patented article will sustain a charge of infringing by "making and using" it.

[*The Locomotive-Engine Safety-Truck Co. *vs.* The Erie Railway Co., 93.

5. The master having reported that the defendants could not preserve fish in their apparatus as constructed without using the complainant's process, they thereupon altered the apparatus in that particular; but on their refusing to permit the master to inspect the chamber where they preserved fish afterward, he found them guilty of still infringing the patent, and his report to that effect was confirmed.

[*Piper *vs.* Brown *et al.*, 97.

6. A patent for an apparatus for making extracts from tan-bark by means of exhaust steam, which claims, in combination, an exhaust-steam pipe, a leach, and intermediate boxes in which the steam is condensed, and is also free to expand so as to avoid back pressure on the piston, is not infringed by a similar apparatus in which there is no exhaust-pipe nor provision for avoiding back pressure, but the steam is taken directly from the boiler.

[*Bridge *vs.* Brown *et al.*, 121.

7. In a patent for a hat-blocking machine, in which the body is stretched by being placed on a former composed of ribs, between which the body is forced and corrugated by rollers on a frame above as the former is raised, and in which patent it is suggested that fixed round-edged surfaces may be substituted for the rollers, a claim for the ribs and rollers by which the crown and tip are formed is infringed by a machine in which ribs are substituted for the rollers, although the rollers act on one part only at a time, while the ribs continue to operate during the whole process upon every part upon which they have begun to act, and other advantages result.

[*Eickemeyer Hat-Blocking Machine Co. *vs.* Pearce *et al.*, 150.

8. And a claim in the same patent for the ribs and rollers by which the brim is stretched and shaped in like manner, is infringed by a machine in which ribs are substituted for rollers, although the ribs of the former under the brim are expanded, as it is raised like those of an umbrella.

[*Eickemeyer Hat-Blocking Machine Co. *vs.* Pearce *et al.*, 150.

9. A machine having no supplemental frame, but instead thereof a drag-bar, by which the cutter-bar is sustained against the pressure of the crop, while its height is adjusted and secured by chains by which it is suspended, is no infringement of a harvester in which the cutter-bar is attached to a frame which is hinged to the wheel-frame, but bolted to it at any desired height.

[*Kirby *vs.* The Dodge & Stephenson Manufacturing Co., 181.

10. The use of a patented combination, which is inoperative and worthless in itself, in connection with a new element which renders it practical and useful, cannot be punished as an infringement.

[*Bliss *vs.* Brooklyn, 269.

11. A patent for a chemical process is not infringed by a different process, although the same article is produced by it.
[*The Rumford Chemical Works *vs.* Lauer, 349.

12. The owners of a patent are estopped from prosecuting those who have worked the invention under a license from a third party, relying upon their admissions that he had an interest in it.
[*Gear *et al. vs.* Grosvenor *et al.*, 360.

13. But not from prosecuting those who have used the invention after learning that the owners claimed an exclusive right to it.
[*Gear *et al. vs.* Grosvenor *et al.*, 360.

14. Unless every element embraced in a combination is used, or some equivalent for it, a patent for it is not infringed.
[*Brown *vs.* Hinkley & Cole, 384.

15. Patented improvements upon an earlier patented invention cannot be used in connection with it without the consent of its owners.
[*The American Nicholson Pavement Co. *vs.* The City of Elizabeth, 522.

16. A patent for a refrigerator divided by a vertical partition through which there are apertures at the top and bottom, and having in the top of one division an ice-box with a perforated bottom through which the air descends and is cooled, and rises through the other division, is infringed by a refrigerator of a similar construction, except that there was no partition but the side of the ice-box, which did not extend through the side of the refrigerator.
[*Roberts *vs.* Ryer, 551.

17. If a patent for a design covers the ornamentation shown in it, it is no infringement to use the principal figure without the ornamentation.
[*Hugh W. Collender *vs.* William H. Griffith, 689.

(See Combinations, 1; Damages; Jurisdiction, 1, 2; Trade-Mark, 17.)

INJUNCTIONS.

1. An injunction against infringing a patent will be granted only when the patentee shows either that he has recovered a judgment on it in a suit, or that he has used and enjoyed his right under it so long as to warrant the presumption that the public have acquiesced in it.
[*Brown vs. Hinkley and Cole, 384.

2. An injunction against infringing refused when the patent had been reissued within two months, with a claim to a combination not set up in the original, and of which there had been no use or enjoyment.
[*Brown *vs.* Hinkley and Cole, 384.

(See Jurisdiction, 1, 2; Pleadings and Practice.)

INTERFERENCES.

1. If an application is filed for a mechanical patent, and if a design for which a patent has been granted can be produced only by the construction described in the application, an interference should be declared between the application and the patent.
[Collender *vs.* Griffith, 91.

(See Practice, D.)

INVENTION AND SKILL.

1. It is questionable whether merely advancing the fire-pot of a stove further into a room in order to heat it more effectually should be regarded as an invention.
[H. R. Robbins, 292.

2. When, in the manufacture of Berdan's fire-arm, the hinge of the breech-piece was raised so high as to bring its upper surface above the line of the bore and thus interfere with the insertion of the cartridge, it is questionable whether it is a patentable invention to cut away the obstructing portion of the hinge and thus give that part of it a curved surface.
[*Berdan Fire-Arms Manufacturing Company *vs.* E. Remington & Son, 668.

(See Reissues, 1.)

JOINDER OF INVENTIONS.

1. A patent for a mechanism, so constructed that it may be used for several different purposes by having different devices connected with it, each adapted to one of those purposes, may include also a claim for the principal mechanism in combination with any one of the adjunct devices.
[J. F. Shepard, 522.

2. If a peculiar construction of the adjunct device is necessary to effect the combination it may also be claimed in the same patent.
[J. F. Shepard, 522.

3. But a patent will not be granted for a combination of the principal mechanism with all the adjunct devices with which it may be thus connected, the combination with each device constituting a distinct machine and requiring a separate patent.
[J. F. Shepard, 522.

JOINT INVENTIONS.

1. Where, in answer to an application by A, reference is made to a rejected joint application by A and B, the affidavits of both that B had no part in making the invention are not sufficient to remove the objection.
[J. B. Welton, 440.

2. An interference should be declared in such a case, and the question settled on testimony or on formal concessions in accordance with the rules.
[J. B. Welton, 440.

(See Patents, 4, 5, 6.

JURISDICTION.

1. If an infringement by use is established the complainant is entitled to an account for all infringements by making, using, or vending, and to an injunction against making, using, or vending throughout the district over which the court has jurisdiction.
[*The Locomotive-Engine Safety-Truck Company *vs.* The Erie Railway Company, 93.

2. Although a corporation has a legal existence throughout the entire State, it can be prosecuted for an infringement only in the court of the district in which it was perpetrated, and can be enjoined by that court from infringing only in that district; relief against infringements in another district of the State can be obtained only in the court of that district.
[*The Locomotive-Engine Safety-Truck Company *vs.* The Erie Railway Company, 93.

3. A circuit court of the United States cannot, through service of process in its district on an officer of a corporation created under the laws of another State, acquire jurisdiction over the corporation.
[*Decker *vs.* The New York Belting and Packing Company, 441.

4. A corporation does not waive the objection in consequence of appearing by attorney and pleading to the jurisdiction of the court.
[*Decker *vs.* The New York Belting and Packing Company, 441.

(See Extensions, A, 3; Literary Works, 2.

LICENSES.

1. An exclusive privilege of making and selling the patented article expires with the original term of the patent, unless it is otherwise stipulated.
[*Mitchell *et al. vs.* Hawley, 241.

2. The recovery in an action for an infringement of the amount of a license fee as damages gives the defendants the right to work the invention during the life of the patent.
[*Emerson *et al. vs.* Simms *et al.*, 293.

LITERARY WORKS.

1. If the public have been deceived, or are liable to be deceived into buying the works of one author as those of another, in consequence of giving them a title which the latter has been accustomed to use, the courts will interpose as in the case of trade-marks.
[*Osgood *et al. vs.* Allen, 124.

2. The United States courts will not exercise jurisdiction in such a case, however, unless the parties belong to different States.
[*Osgood *et al. vs.* Allen, 124.

NEW TRIALS.

(See Rehearings; Practice, D, 2.)

NOVELTY.

(A) In general.

(B) In the application.

(C) In the form.

(D) In the structure or process.

(A) *In general.*

1. The existence twenty years before of a single machine similar to that described in a patent, which was abandoned directly, and which appears to have been impracticable, will not invalidate the patent.
[*Blake *vs.* Rawson, 122.

2. It seems that the merit of novelty should not be denied to a device upon reference to a mere drawing, not accompanied by any explanation.
[H. R. Robbins, 292.

3. The right of an inventor to a patent will not be prejudiced by the existence of the invention abroad, unless it was patented or described in some printed publication before he originated it.
[Carr *vs.* Davids, 440.

4. A saw-blade with a socket of a spiral form for a tooth, in combination with a tooth of a corresponding form, cannot be considered novel if the drawings of a previous patent show a saw-blade and tooth so nearly resembling them that they cannot be distinguished except by a mathematical test.
[J. H. Sperry, 467.

(See Abandoned Experiments; Articles of Manufacture; Extensions, B, 3; Prior Use, 1.)

(B) *In the application.*

1. A claim for preserving fish or other articles in a close chamber by means of a freezing-mixture having no contact with the atmosphere of the preserving-chamber, "substantially as set forth," is answered by a process in previous use for preserving ice-cream by the means and under the conditions specified.
[*Piper *vs.* Moore *et al.*, 4.

2. Pasting engravings upon glass having been commonly practiced, it is a mere double use to prepare clock-faces by such means.
[S. B. Jerome, 64.

3. To cast the handle of a screw-driver upon the tang of the blade does not possess the merit of novelty, since it is common to attach the handle of knives and other implements in the same way.
[L. C. Clark, 239.

4. It is also common to cast the handle in such cases hollow, and a screw-driver so constructed is not new as an "article of manufacture."
[L. C. Clark, 239.

5. Bourdon's steam-gages have usually been tested by applying weights to them while under steam-pressure, and there is no novelty in testing them by weights while they are not under pressure.
[B. B. Keyes, 268.

6. If any one has the right to use a certain fabric he is not to be restricted in his right by a patent for employing it in a way that does not require invention.
[J. W. Wattles, 291.

7. If a device which has been used before in a stove can be applied to one of another kind without difficulty, a claim for the new application should receive no countenance.
[H. R. Robbins, 292.

8. A heating-stove containing a suspended magazine and a grate of larger dimensions under it, with a free space above for burning the gases, is patentable, although a furnace of the same structure employed for heating boilers, and surrounded with water, has been known before.
[S. B. Sexton, 409.

(See Novelty, D, 4.)

(C) *In the form.*

1. It being shown that tables with the sides beveled inward from the top have been known before, a patent is void which claims the design of a billiard-table thus constructed, in order that the player may advance his foot further under it.
[*Hugh W. Collender *vs.* William H. Griffith, 689.

2. It is a mere question of judgment, not invention, how far the bevel shall be carried, and a patent for the design of a billiard-table is not rendered valid because a much deeper bevel is shown in it than has been used in other tables.
[*Hugh W. Collender *vs.* William H. Griffith, 689.

(D) *In the structure or process.*

1. To transfer the friction-rollers from the driving-wheel in a harvester to the pitman-bar which it actuates does not warrant a patent.
[T. Plumleigh, 29.

2. A patent for a cord covered with cloth, and attached thereby sidewise to a horizontal corner in the face of a billiard-cushion, where it receives the impact of the ball at its center, and repels it horizontally, is valid, although a claim was previously made in a withdrawn application for a cord placed in a groove in the upper surface of the cushion, where it would be raised by the ball and would hold it down.
[*Decker *vs.* Grote, 65.

3. The patent was also held valid in the face of a prior patent for a billiard-cushion in which thin strips of horn were inserted in a slit cut in the rubber pad, and used as a facing for it, the cushion not yielding horizontally, nor repelling the ball in a horizontal direction.
[*Decker *vs.* Grote, 65.

4. The operation of a railway truck, (of which there is one at each end of a railway car,) and in which the bolster is suspended by swinging links from brackets on the frame, so that the car and truck may move laterally upon each other, is unlike that of a leading-truck of the same construction in a locomotive-engine in which the driving-wheels are incapable of any such lateral movement; and the previous use of such a truck in a railway car will not invalidate a patent for one in a locomotive-engine.
[*The Locomotive-Engine Safety-Truck Company *vs.* The Erie Railway Company, 93.

5. Such a truck, in which the lateral movement is limited by springs, is no answer to a patent for one in which the movement is limited by making the links diverge from each other downward.
[*The Locomotive-Engine Safety-Truck Company *vs.* The Erie Railway Company, 93.

6. Neither is the leading truck of a locomotive-engine in which a lateral movement of the truck and engine upon each other is effected by other devices than links, and the engine does not swivel upon the king-bolt in the bolster as does the patented engine.
[*The Locomotive-Engine Safety-Truck Company *vs.* The Erie Railway Company, 93.

7. Blake's stone-crusher, consisting of two jaws nearly vertical, but inclining from each other upward, and by a reciprocating movement of one to and from the other crushing the stone as it falls till the fragments pass out at the bottom, is novel, although a previous machine crushed and ground stone between a horizontal cylinder oscillating on its axis, and the sides of an eccentric basin approximating to the periphery of the cylinder at the bottom.
[*Blake *vs.* Rawson, 122.

8. A patent for an automatic hat-blocking machine in which the tip and side crown of the body are stretched as required by placing the body upon a former the upper part of which is formed of ribs, between which the tip and side crown are forced and corrugated by rollers on a frame above as the former is raised, and in which the brim is stretched at the same time in like manner by other rollers on the frame forcing and corrugating it between radiating ribs on the former, the several mechanisms being made concentric and adjustable, is not void for want of novelty because such devices had been made and used before in separate parts, except that, instead of the rollers, ribs were used, and those for the brim closed downward like those of an umbrella, the whole being manipulated by hand, and there being no provision for adjusting the parts or making them operate concentrically.
[*Eickemeyer Hat-Blocking Machine Company *vs.* Pearce *et al.*, 150.

9. Stops for receiving the paper in a paper-folding machine preparatory to a second operation after it has been folded once, and which require a lateral adjustment in order to receive signatures of varying sizes, constitute no objection to the novelty of a curved or angular stop which will receive signatures of any size without being specially adapted to them.
[C. Chambers, 396.

10. To place upon a photometer a plate having two scales beside each other engraved upon it, one indicating the pressure of the gas, the other the degree of light, so that they can be readily compared, involves so much novelty that the originator should have his right to it sanctioned.
[W. W. Goodwin, 347.

11. A patent for varying the proportions in which the ingredients have been used in a chemical mixture cannot be sustained if the process remains substantially the same.
[*The Rumford Chemical Works *vs.* Lauer, 349.

12. A claim for preparing self-raising flour by mixing with flour phosphoric acid, or acid phosphates and alkaline carbonates, without including the application of moisture or heat, is invalid if a patent has been granted before for preparing self-raising flour by the same means, except that tartaric acid was used in lieu of phosphoric acid or acid phosphates.
[*The Rumford Chemical Works *vs.* Hecker *et al.*, 349.

13. To use phosphoric acid in lieu of tartaric acid in such a process, is a mere substitution of one chemical equivalent for another.
[*The Rumford Chemical Works *vs.* Hecker *et al.*, 349.

14. A claim for "the use of phosphoric acid or acid phosphates, when employed with alkaline carbonates, as a substitute for ferment or leaven in the preparation of farinaceous food," is valid, notwithstanding tartaric acid has been used before with alkaline carbonates for the same purpose, since it could not be known beforehand whether phosphoric acid could be used for such a purpose with safety to health.
[*The Rumford Chemical Works *vs.* Hecker *et al.*, 349.

15. There being no difficulty in the way of substituting a split tongue for a straight one in a walking cultivator, and no invention required to make it, such substitution was held not patentable.
[Lynch *et al. vs.* Dryden *et al.* 407.

16. Where a patent for a stamp for printing dates describes three type-wheels bearing the names of months and figures, there is no invention in adding another bearing the year, or in placing the year upon one of the other wheels.

[*Robertson *vs.* Secombe Manufacturing Company, 412.

17. A stamp with a handle, by which it is held when used, and fixed type, as well as wheels bearing type which may be changed at will, is novel and patentable, notwithstanding the previous existence of apparatus having no handle but with fixed type and type-bearing wheels upon which the article to be stamped was pressed; as well as of type-wheels for numbering and lettering, and type-forms for printing the name of a post-office or other matter; also type-forms for dating and printing, combined with type-wheels for numbering, which were automatically changed at every operation.

[*Robertson *vs.* Secombe Manufacturing Company, 412.

17. A patent for preserving green corn by severing the kernels from the cob, so that the juices will be liberated, and then boiling the kernels and juices together in sealed cans, is valid, although a patent has been previously granted abroad for preserving corn by boiling it in vessels, without specifying whether the kernels are to be separated from the cob, or whether they are to be broken or whole.

[*Jones *et al. vs.* Sewell, Administrator, 630.

(See Claims, 5; Combinations, 3; Construction of Claims, 1, 2; Infringements; Novelty, 3, 4, 8; Patentability, 2.)

OFFICIAL CERTIFICATE.

1. Where a public officer is authorized to grant a patent upon proof of compliance with certain prerequisites which is satisfactory to him, his issuing of the patent is *prima facie* evidence that they have been complied with, and no recitals to that effect are necessary in the grant.

[*Gear *et al. vs.* Grosvenor *et al.*, 348.

(See Caveats; Trade-Marks, 7, 8, 9, 10.)

PATENTABILITY.

1. A patent may be granted for a mechanism so constructed that it may be used for several purposes by having different devices connected with it, each adapted to one of those purposes.

[J. F. Shepard, 522.

2. A patent for a combination which proves inoperative and worthless is void.

[*Bliss *vs.* Brooklyn, 269.

(See Articles of Manufacture, 3; Construction of Claims, 3.)

PATENTED ARTICLES.

1. A patentee may stipulate in licensing another to sell the patented article that his licensee shall not sell it to be used beyond the original term of the patent; and a purchaser from such licensee will be guilty of infringing if he use it during the extended term.

[*Mitchell *vs.* Hawley, 241.

2. A purchaser from such a licensee is entitled to no notice of the limited extent of his authority; he should inquire into it, and if he neglects to do so he purchases at his own risk.

[*Mitchell *et al. vs.* Hawley, 241.

3. Where such a licensee gave the purchaser a license to use the patented article in terms sufficient to put him upon inquiry, it was held that he was entitled to no further notice of the limited authority of the licensee.

[*Mitchell *et al. vs.* Hawley, 241.

4. When a patentee sells the patented article he parts with all his control over it, and the purchaser may treat it like any other property, and use it as long as it lasts without liability to the patentee, although the original term of the patent has expired and it has been extended.

[*Mitchell *et al. vs.* Hawley, 241.

5. The purchaser has the same right in the article if the person from whom he obtained it was authorized by the patentee, without any conditions, to make and sell or make and use it.

[*Mitchell *et al. vs.* Hawley, 241.

6. A patented article purchased from one who has unqualified authority to sell it becomes like other property, and the purchaser may use it as he pleases without any liability under the patent.

[*McKay *vs.* Wooster *et al.*, 441.

7. Where the owner of a patent sells the entire interest in it for a specified territory, and the assignee sells the patented article therein, the purchaser is not restricted in his use of it to that territory, neither is he liable to the patentee for using it in the territory reserved.

[*McKay *vs.* Wooster *et al.*, 441.

8. Neither is he liable to one to whom the right for the territory reserved is sold by an assignment subsequent to the other.

[*McKay *vs.* Wooster *et al.*, 441.

9. Doubted whether an assignee of a territorial right under a patent could sell the patented article so as to authorise the use of it in a territory, the whole right in which had been sold to another before he purchased.

[*McKay *vs.* Wooster *et al.*, 441.

10. Doubted what the effect would be of a clause in a deed of a territorial right, expressly restricting the right to sell for use so that only sales for use in the territory shall be made under it.

[*McKay *vs.* Wooster *et al.*, 441.

PATENTS.

1. A patent for a truck when employed in a locomotive-engine which had been used before in cars is not void because it purports by its title to be for "an improvement in trucks for locomotive-engines."

[*The Locomotive-Engine Safety-Truck Company *vs.* The Erie Railway Company, 93.

2. When an alteration in an article is intended to change its functions, or improve its operation, or effect a new result, it may be the subject of a mechanical patent.

[T. B. Ogleaby, 211.

3. If the alteration is calculated to give it a better appearance merely, it can be protected only by a design patent.

[T. B. Ogleaby, 211.

4. Claims for different structures having no connection or co-operation with each other, and formed by different processes, cannot be allowed in the same application, although they belong to the same class and are of the same kind.

[H. M. Stow, 322.

5. A wooden pavement in which the blocks are kept separate by cords, and one in which the spaces are formed by cords, and, after they are removed, are filled in with sand, &c., and one formed of thin blocks with spaces between the blocks in each row, and not between the rows, cannot be considered in the same application, nor the processes by which the first two are made.

[H. M. Stow, 322.

6. Each kind of wooden pavement may be embraced in the same application with the process for making it.

[H. M. Stow, 322.

7. Although an inventor has obtained a patent for a process, he may have another for the product.

[*Jones *et al. vs.* Sewall, administrator, 630.

8. There cannot be more than one valid patent for an invention, nor can the grantee of a patent sustain an action upon another patent for the same invention issued afterward.

[*Jones *et al. vs.* Sewall, administrator, 630.

9. Separate patents for separate and distinct parts of the same invention are nevertheless valid.

[*Jones *et al. vs.* Sewall, administrator, 630.

10. A claim for a machine and a claim for the product of a machine will not be allowed in the same application. Each must be presented in a separate application for a distinct patent.

[Murray and Wuterich, 659.

(See Evidence, 3.)

PLEADINGS AND PRACTICE.

1. The finding of a master as to the construction of infringing apparatus will not be set aside for error in fact, if it is founded on personal inspection made with the consent of the parties, as well as upon the evidence of others, which is not all of it reported.

[*Piper *vs.* Brown *et al.*, 97.

2. The master's refusal to receive further evidence after having submitted to the counsel the draft of his report upon a hearing, approved.

[*Piper *vs.* Brown *et al.*, 97.

3. Upon a motion for an injunction the merits of the patent will be considered anew, although it has been sustained on similar hearings before other judges, if it is alleged that new facts are in proof, and that the objections to the patent were not properly presented on those hearings.

[*Blake *vs.* Rawson, 122.

4. It was referred to a master to ascertain whether the public had been, or were liable to be, deceived into the purchase of a literary work in consequence of its bearing a title which had been used by another author.

[*Osgood *et al. vs.* Brown, 124.

5. The parties having agreed that if the amendment were allowed the testimony might be received as if taken under the amended answer, it was admitted upon terms that the defendant should tax no cost up to the hearing.

[*Roberts *vs.* Blake, 868.

6. Under the prayer for general relief the complainants in a suit in equity for the infringement of a patent may recover damages without a special prayer for them.

[*Emerson *et al. vs.* Simms *et al.*, 293.

7. A compromise was made between the parties to a suit for infringing a patent, in pursuance of which a decree for the complainants was entered in the Circuit Court, and affirmed on appeal in the Supreme Court, and they paid the defendant's counsel as well as their own. Upon these facts being shown to the Supreme Court the degree of affirmance was vacated, the appeal dismissed, and the mandate which had been issued to the Circuit Court was recalled.

[*Gardner *vs.* The Goodyear Dental Vulcanite Co., *et al.*, 295.

8. The act of 1837, section 9, which allows a recovery upon such claims of a patent as are valid, though other claims are not, does not apply to inventions which are not specified in distinct claims.

[*The Rumford Chemical Works *vs.* Lauer, 349.

9. Whether a patent for the use of an article has been infringed by the sale of it in connection with the use of it by the purchasers, is a question to be determined upon the evidence in taking the account of damages.

[*The Rumford Chemical Works *vs.* Hecker *et al.*, 349.

10. Where the defendant in a bill for infringement had deceased, and there was no prayer for discovery against his executor, nor proof of infringement by him, the title to relief by discovery and injunction was held to have failed, and, as incident to that, the right to an account also, and the bill was dismissed without costs.

[*Draper *vs.* Hudson, 354.

11. Objections being made to evidence on the ground that notice of it was not given in the answer, leave to amend the answer was moved for at the hearing, and the amendments were allowed as of the time when the answer was filed.

[*Roberts *vs.* Ryer, 551.

12. The defense that the patentee had allowed his invention to be in public use or on sale for two years before he applied for a patent is distinct from the defense that he had abandoned it to the public, and should not be blended with it in the same pleading.

[*Jones *et al. vs.* Sewall, administrator, 630.

(See General Issue and Notice; Injunctions; Jurisdiction, 4.)

PRACTICE.

(A) In general.
(B) On appeals.
(C) In extensions.
(D) In interferences.

(A) *In general.*

1. Although it may be proper sometimes to reject a claim upon the strength of a mere dictum, it is advisable only where there is no other ground for such action.

[Fairbanks and Robinson, 65.

2. Claims filed after an appeal to the Examiners-in-Chief can be considered only when sanctioned by the Commissioner.

[Wm. C. Dodge, 179.

3. Strictures upon the practice of giving numerous references bearing more or less directly on the case, instead of citing those only which are pertinent to the claim.

[Wm. Brownlee, 212.

4. Embracing in an argument reflections upon the Examiner, and insinuations against his motives, emphatically condemned.

[C. Chambers, 320.

(See Abandonment, B, 1; Amendments, 1, 2, 3; Articles of Manufacture, 2; Joint Inventions, 1.)

(B) *On appeals.*

1. If the party who is found by the Examiner of Interferences to be the prior inventor is refused a patent on the ground that he has abandoned the invention in consequence of its having been in public use or on sale for two years before he filed his application, an appeal by him brings up the question of abandonment only, and not that of priority of invention.

[Jenkins *vs.* Barney and Berry, 119.

2. If the adverse party desires to have the decision on the question of priority revised, he must appeal from it.

[Jenkins *vs.* Barney and Berry, 119.

3. If the Examiner of Interferences decides that the party who first conceived of the invention has, by his negligence in prosecuting it, forfeited his right to it in favor of his opponent who had reduced it to practice before him, an appeal by him brings up both questions.

[Jenkins *vs.* Barney and Berry, 119.

4. Where the decision of the Examiner of Interferences left it doubtful whether he held that the party who was the prior inventor as he found, had abandoned the invention, or had forfeited it in favor of his competitor, the case was remanded in order that he should make his decision explicit on that point.

[Jenkins *vs.* Barney and Berry, 119.

5. The decision of the Examiners-in-Chief sustaining the action of the Examiner affirmed, although founded upon a reference not given by him, but described in an application which he had cited.

[Wm. Brownlee, 212.

(See Practice, A, 2.)

(C) *In extensions.*

1. There is no more reason in extension cases than in others for relaxing the rules for taking testimony, which are founded on principles of law and practice.

[W. W. Lewis, 92.

2. Although the evidence does not give all the information as to the value of the invention and the diligence of the patentee which the rules call for, yet if it gives enough to satisfy the Commissioner, and there is no serious opposition on those points, the patent will be extended.

[H. R. Robbins, 292.

3. An application for an extension refused because the sworn statement and testimony, consisting mostly of copies of what was filed upon an application for the extension of another patent, were highly defective, and failed to furnish the information required.

[A. B. Latta, Administrator, 349.

4. Publishing notice of the day appointed for the hearing of an application for an extension three times, the first of which is sixty days previous, seems to be a compliance with the law which requires it to be published for sixty days previous.

[*Gear *et al. vs.* Grosvenor *et al.*, 380.

5. Claims in a reissued patent which embody, though only by way of reference, a feature not shown in the application for the original, must be disclaimed before the patent will be extended.

[S. B. Sexton, 409.

6. Claims which are clearly functional, and claims to illegitimate combinations, must be withdrawn, as well as claims to old devices, before a patent will be extended.

[S. B. Sexton, 409.

7. Where a claim which is allowed to remain on extending a patent defines the invention by reference to another which is required to be withdrawn, the latter will be understood to remain valid so far as it is connected with and embodied in the other.

[S. B. Sexton, 409.

(See Abandonment, B, 8; Extensions, C, 2, 5; Extensions, F, 5.)

(D) *In interferences.*

1. It is doubtful whether a party can be adjudged to have abandoned his invention to the public and at the same time to have forfeited it for want of diligence, in which case the adverse party might be held entitled to a patent as the prior inventor.

[Jenkins *vs.* Barney and Berry, 119.

2. After the determination of an interference a new one should not be declared without the order of the Commissioner between the successful application and applications filed by the other parties which were not included in the first interference, but which claim a feature shown but not claimed in the successful application.

[Hovey *vs.* Muller *et al.*, 149.

3. The successful party should have his patent issued to him on disclaiming the feature in question as being embraced in another application filed by him, if such is the case.

[Hovey *vs.* Muller *et al.*, 149.

4. An interference will be dissolved if it appears that some of the claims set up by the parties are void, and there is no conflict between the remainder.

[Evans *vs.* Bussell and Vose, 180.

5. If the party to an interference who was the last to make application neither files a preliminary statement nor takes any testimony he may be considered as out of the case.

[Evans *vs.* Bussell and Vose, 180.

6. The question whether an alleged invention is new should be settled before an interference is declared, but if it is subsequently made a distinct issue the Office is bound to consider it.

[Wood *vs.* Morris, 239.

7. An interference should be declared between an application for a mechanical patent and a design patent which shows the alleged invention, although the applicant has a prior design patent showing the same.

[Collender *vs.* Griffith, 267.

8. If the designs embraced in the two patents are so dissimilar as not to be in conflict, it is unnecessary to include the earlier patent in the interference.

[Collender *vs.* Griffith, 267.

9. The burden of proof is on the applicant for the mechanical

patent, notwithstanding his design patent first shows the invention; but he may have the benefit of it by introducing it in evidence.

[Collender *vs.* Griffith, 247.

10. The proceedings upon an interference should be suspended whenever it is ascertained that the supposed invention is not patentable.

[Lynch *et al. vs.* Dryden *et al.*, 407.

11. Where there is reason to presume that the question of patentability has not been definitely settled, the Examiner of Interferences may dissolve the interference and remand the case to the Examiner in charge for further consideration.

[Lynch *et al. vs.* Dryden *et al.*, 407.

12. Rule 59 explained.

[Lynch *et al. vs.* Dryden *et al.*, 407.

13. The Examiner of Interferences has authority to dissolve an interference whenever he finds that the supposed invention in controversy is not patentable.

[Lynch *et al. vs.* Dryden *et al.*, 407.

14. Where it is shown that a caveator failed to receive the notice sent him by the Office of a conflicting application, and he consequently filed no counter application, and a patent was granted to his competitor without an interference, he is not to be prejudiced thereby, but will be treated as if both parties were applicants.

[Frevert *vs.* Gahr, 660.

(See Abandonment, A, 1; Abandonment, B, 7; Interferences; Joint Inventions, 2; Practice, B, 1, 2, 3, 4; Rehearings.

PRIOR INVENTOR.

1. He is the prior inventor, and is entitled to the patent for an invention, who first embodies it in a complete, practical, working utensil, and exhibits it to the public, though another afterward reduces it to practice and applies for a patent before him.

[Rice *vs.* Winchester, 348.

2. After such an embodiment of his invention, his delay in applying for a patent can operate only as an abandonment to the public; it is not forfeited thereby in favor of a subsequent inventor.

[Rice *vs.* Winchester, 348.

PRIOR USE.

1. Previous knowledge of an invention abroad is no defence against a patent, unless it was described in some printed publication so clearly as to enable others to put it in practice.

[*Jones *et al. vs.* Sewall, Administrator, 630.

2. The use of an invention by the author for the purposes of experiment, though continued for more than two years, will not prejudice his right to a patent.

[*Jones *et al. vs.* Sewall, Administrator, 630.

3. Neither will the sale or use of it by others without his consent.

[*Jones *et al. vs.* Sewall, Administrator, 630.

4. Where an invention has, through the acts of the inventor, come into public use beyond his control, his right to it is forfeited beyond recall.

[*Jones *et al. vs.* Sewall, 630.

PRIORITY OF INVENTION.

1. An inventor who has fully shown his improvement in a model, but takes no further steps toward reducing it to practice for five years, and does not apply for a patent for more than a year after he learns that another has put it in practice before him, forfeits his right to a patent, and the latter will be held the prior inventor.

[Pattee *vs.* Russell, 181.

2. The title of the latter is not prejudiced because the other filed his application before him.

[Pattee *vs.* Russell, 181.

3. Priority will be awarded to the party who originated the invention before his competitor suggested it to him, and who reduced it to actual practice and took out a patent for it, of all which his competitor had full knowledge but interposed no claim to it, and did not apply for a patent for nearly two years after the other patent was granted, although he originated the invention before the patentee, but did nothing toward perfecting it.

[Vinton *vs.* Pierce, 629.

4. A patent is *prima facie* evidence of the patentees having made the invention when the application was filed.

[*Jones *et al. vs.* Sewall, Administrator, 630.

If a patentee wishes to show that he made the invention previous to filing his application, he must prove, as against another patent for it, that he had reduced it to practice in an operative machine.

[*Jones *et al. vs.* Sewall, Administrator, 630.

6. The party who first reduced an invention to practice and forthwith obtained a patent for it will be held the prior inventor, although his opponent had conceived it before and had described it, but took no measures toward reducing it to practice, (except that he had assisted the other in doing so,) nor toward obtaining a patent till long afterward, and especially if he had made no claim to the invention meanwhile, but when challenged with claiming it had denied the charge.

[Frevert *vs.* Gahr, 660.

(See Diligence in Reduction to Practice; Reduction to Practice.)

PROCESS.

(See Patents, 7.)

PROPERTY IN PATENTED ARTICLES.

(See Patented Articles.)

REDUCTION TO PRACTICE.

1. Where one made several devices and proposed constructing a machine embodying them, but had no definite idea of the method of doing it, and, after repeated experiments with the devices, laid them aside until they were brought forward to defeat a patent for such a machine, the whole was considered as an abandoned experiment, which did not affect the validity of the patent.

[*Eickemeyer Hat-Blocking Machine Co. *vs.* Pearce *et al.*, 150.

2. Making a model is not such a reduction of an invention to practice as will give a title to it against other inventors of it if it is neglected afterward.

Pattee *vs.* Russell, 181.

3. Where one of two competitors for a patent was the first to conceive the invention, and to embody, reveal, and test it by experiment, and to apply for a patent, he was held to have completed the invention, and priority was awarded to him as against one who first conceived of it after it had been so tested, although he was the first to put it in actual use.

Little *vs.* Stephenson, 379.

4. Too much weight must not be attached to the employment of an invention in actual use. It is important only when it is necessary to establish the date of its being actually completed.

Little *vs.* Stephenson, 379.

(See Diligence in Reduction to Practice; Prior Inventor; Priority of Inventions, 5.)

REHEARINGS.

1. After the time designated for taking testimony in an interference has expired, the case will be opened for taking further testimony upon the affidavit of one of the parties that he has newly discovered such evidence as shows that the supposed invention had been in previous use.

Wood *vs.* Morris, 239.

2. Although the new testimony is cumulative merely, evidence to the same effect having been given before, yet upon the question of novelty the case will be opened, but not on the question of priority.

Wood *vs.* Morris, 239.

(See Practice, D, 2.)

REISSUES.

1. The plaintiff's original patent described a cord attached sidewise to a corner in the face of a billiard-cushion in order to protect it, but made no mention of a groove in which to place the cord; the use of such a groove to receive the cord and save the cloth from wear was held to be a mere mechanical adaptation, having no relation to the invention; and a reissue of the patent describing the cord as wholly or partially embedded in the groove was held valid.

[*Decker *vs.* Grote, 65.

2. The validity of a reissued patent is not affected because it contains a claim not made in the original; neither is that circumstance any evidence that the patentee did not make the invention claimed.

[*Eickemeyer Hat-Blocking Machine Co. *vs.* Pearce *et al.*, 150.

3. Where the original patent was for a solid India-rubber car-spring, but the specification suggested that it might be hollow, yet neither the drawings nor model showed such a feature, a claim for a hollow spring in a reissue is void.

[Evans *vs.* Bussell & Vose, 180.

4. A claim in a reissued patent for a plain rubber spring without grooves is void if the original application contained no mention of such a form, but described only a grooved spring.

Evans *vs.* Bussell & Vose, 180.

5. Byron Dinsmore's patent of February 10, 1852, described a harvester having but one wheel hinged to the frame which carried the cutter-bar, but rigidly bolted to it, though capable of adjustment at different heights: *Held* that a reissue of it with the following claim was void: "Hanging the driving-wheel in a supplemental frame which is hinged at one end to the main frame, while its opposite end may be adjusted and secured at various heights, or be left free, as desired, whereby the cutting apparatus may be held at any desired height for reaping, or be left free to accommodate itself to the ground for mowing;" both because the original application contained no indication of the change which adapted the machine to mowing, although it consists merely in removing the bolts by which the height of the wheel-frame was adjusted and secured, and because the alteration was not devised till after the original patent was issued.

[*Kirby *vs.* The Dodge & Stephenson Manufacturing Co. *et al.*, 181.

6. Applications for a reissue do not come within the purview of section 32 of the act of 1870.

[N. H. Galusha, 321.

7. Neglecting to take any steps in prosecuting an application for a reissue for two years after the last action of the Office upon it, does not work an abandonment of it.

[N. H. Galusha, 321.

8. After a patent has been reissued the patentee has no rights or remedies under the original patent; he has only such as arise under and after the reissue.

[*Brown *vs.* Hinkley and Cole, 384.

9. The abuse of the privilege of reissuing patents by expanding their scope condemned.

[S. B. Sexton, 409.

10. The law providing for a division of a patent upon a reissue applies only where there are distinct inventions to be embodied in them, not to the mere application of the same invention in different machines of the same generic class.

[S. B. Sexton, 409.

11. It may be doubted whether a patent should be divided on a reissue so as embrace in one division the employment of an invention in a fire-place stove and in another the use of it in an outstanding stove.

[S. B. Sexton, 409.

12. In an original patent for a stamp containing several type-wheels for dates, the suggestion that they might bear any suitable letters or figures warrants describing in a reissue a wheel bearing the date of the year, though it was not otherwise alluded to in the original.

[*Robertson *vs.* Secombe Manufacturing Company, 412.

13. It is within the scope of a reissue that it contain a fuller description of the state of the art than the original, as well as of the nature of the improvements made by the patentee, and the advantages attained through them.

[*Robertson *vs.* Secombe Manufacturing Company, 412.

14. Where the original specification in a patent for a stamp averred one object to be to stamp the day and month, a reissue may describe one object to be "dating" and "printing dates."

[*Robertson *vs.* Secombe Manufacturing Company, 412.

15. A patent for a process may be reissued with a claim for a part only of the process, if the same result may be obtained without employing the steps omitted from the claim.

[J. E. Wooten, 521.

16. A patent for making tubular rivets by coiling a flat strip of iron and welding it may be reissued with a claim for coiling it alone, if the welding is found unnecessary.

[J. E. Wooten, 521.

17. A mere suggestion in the specification that the article monopolized may be used in a certain way does not warrant the insertion in a reissue of a claim for a combination of the article with the mechanisms in connection with which it is to be so used.

[J. E. Wooten, 521.

18. When a reissue has been granted it is to be presumed that the Commissioner has found all the conditions fulfilled on which he is authorized to issue it, and that it is for the same invention that is described in the original patent.

[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

19. No such presumption can prevail if it appears on the face of the patent that the Commissioner has exceeded his authority, or if there has been fraud or collusion between him and the parties.

[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

20. A reissue is valid although it claims only one of two modes of construction specified in the original patent.

[*The American Nicholson Pavement Company *vs.* The City of Elizabeth, 522.

21. If the original patent for a refrigerator with a vertical partition, through which there are apertures at the top and bottom which admit of a current of the inclosed air through them down one division and up the other, shows such partition placed in the center only, and gives no intimation of any other position for it, there is no warrant for inserting in a reissue the suggestion that one of the divisions need be no wider than is necessary for the passage of the upward current.

[*Roberts *vs.* Rider, 551.

(See Claims, 1, 2.)

SPECIFICATIONS.

1. A patent is not invalid because the theory upon which the applicant's machine operates, as set forth in his specification, is erroneous, provided the machine will accomplish that of which it is represented to be capable.

[*Hamilton *vs.* Ives and Green, 30.

2. If the scales which indicate the pressure of the gas and the degree of light in a photometer are denominated "indexes" in the specification and claim of an application, the error is such as justifies its being rejected.

W. W. Goodwin, 347.

(See Articles of Manufacture, 2; Designs, 2; Construction of Specifications.)

SUBJECTS OF PATENTS.

(See Patents.)

TRADE-MARKS.

1. The name under which a patented article has been sold during the lifetime of the patent becomes public property when it expires, as well as the article, and cannot be appropriated as a trade-mark.

[C. E. Richardson *et al.*, 190.

2. Persons who employ a word in a tentative way on five or six occasions, and take no further steps with it for three months, do not gain a title to it as a trade-mark against one who has meanwhile adopted it and put in general use.

[Sternberger *vs.* Thalheimer *et al.*, 190.

3. Neither will the latter lose his right to it because the others procure it to be registered.

[Sternberger *vs.* Thalheimer *et al.*, 190.

4. After a patent has expired to include the word "Patent" in a trade-mark for the article is calculated to mislead the public, and the registration of it will not be allowed.

[C. E. Richardson *et al.*, 190.

5. The words "A. Richardson's Patent Union Leather-Splitting Machine," under which the article protected has been sold during the lifetime of the patent, cannot be appropriated as a trade-mark for it after the patent has expired; neither can they be though the word "Patent" is omitted.

[C. E. Richardson *et al.*, 190.

6. The word "Union" having been attached to a patented article during the lifetime of the patent, has acquired a distinctive meaning, has lost its character as an arbitrary symbol, and cannot be registered as a trade-mark.

[C. E. Richardson *et al.*, 190.

7. The patent act of 1870 does not authorize the Commissioner to issue any Letters Patent for a trade-mark, nor certificate containing a grant of one.

[*Smith *vs.* Reynolds *et al.*, 213.

8. Copies certified by him of any trade-mark filed in the Patent Office, and of the date when it was received as recorded, and of the statement filed therewith in pursuance of section 77, are made evidence under section 80, and he has no authority under the act to issue any other certificate in relation to trade-marks.

[*Smith *vs.* Reynolds *et al.*, 213.

9. If the copies certified by him do not include such a declaration as is required under the seventh clause in section 77 of the act, the defect is fatal.

[*Smith *vs.* Reynolds *et al.*, 213.

10. An averment in the Commissioner's certificate that the parties have complied with the act and that their trade-mark will remain in force thirty years, does not warrant the presumption that the required declaration was filed or remedy the defect.

[*Smith *vs.* Reynolds *et al.*, 213.

11. It is for the court alone to determine from the copies of the Patent Office records whether the declaration required by the 77th section has been duly filed, and is in conformity with the law.

[*Smith *vs.* Reynolds *et al.*, 213.

12. Causing the name of the firm which claims a trade-mark and its place of business to be recorded in the Patent Office is a sufficient compliance with the first requirement of section 77 of the act of 1870, without specifying the names of those who compose the firm.

[*Smith *vs.* Reynolds & Jacobs, 214.

13. To designate "paints" as the goods for which a trade-mark is to be appropriated is sufficient without a more particular description.

[*Smith *vs.* Reynolds & Jacobs, 214.

14. The figure of a crown used as a trade-mark for paints may indicate to buyers and dealers by association the origin and ownership of the same, and is of itself a lawful trade-mark.

[*Smith *vs.* Reynolds & Jacobs, 214.

15. Registering a figure as a trade-mark for paints in general, without any restriction as to the kind, gives no title to it if it has been previously used in connection with words or other figures as a trade-mark for any particular kind of paint.

[*Smith *vs.* Reynolds & Jacobs, 214.

16. A trade-mark must stand or fall as a whole, and the registry of one cannot be sustained for a part of it, as in case of a patent, if it is void as to the rest.

[*Smith *vs.* Reynolds & Jacobs, 214.

17. To use a man's own name is not actionable, though it forms part of another man's trade-mark, provided he does not do it in such a manner as to deceive the public, and uses no other material part of the trade-mark.

[*Hardy *et al. vs.* Cutter *et al.*, 468.

18. The plaintiffs were entitled to the exclusive use of certain trade-marks which included the expressions "J. H. Cutter" and "Bourbon Whisky," and under which they sold an article of high reputation known as "Cutter Whisky;" yet the defendants were held not liable for selling whisky with labels unlike the plaintiffs in all other respects, but inscribed with the words "J. F. Cutter," (which was the name of one of the defendants,) "son of the late J. H. Cutter," and "Bourbon Whisky."

[*Hardy *et al. vs.* Cutter *et al.*, 468.

19. Descriptive phrases which are in common use, like "Bourbon whisky," cannot be appropriated as a trade-mark.

[*Hardy *et al. vs.* Cutter *et al.*, 468.

20. Registration refused to the phrase "American Sardines," intended to be placed as a trade-mark on cases resembling sardine-boxes, but containing another kind of fish, it being calculated to deceive the public.

[The American Sardine Co., 495.

21. The phrase "American Sardines" is not one coined for the intended use, but would be the proper name of such fish if they should be found in this country, and ought not, therefore, to be appropriated as a trade-mark.

[The American Sardine Co., 495.

UNITED STATES COURTS.

1. The decision of the United States Supreme Court upon a question of law, and sustaining a patent, is entitled to deference, but is not to be followed where the facts appear to be different.

[*Kirby *vs.* The Dodge & Stephenson Manufacturing Co., 181.

2. A claim which has been sustained by a United States court on full consideration of the same references as are before the Commissioner will not be questioned by him, though he may have doubts as to its validity.

[H. W. Putnam, 240.

3. Points which did not engage the particular attention of the court, though they were before it, and were embraced in the decision, may be considered anew by the Commissioner, if good reasons are shown.

[H. W. Putnam, 240.

(See Claims, 1, 2; Extensions, B, 3; Extensions, C, 6; Jurisdiction, 1, 2, 3; Literary Works, 2.)

OFFICIAL GAZETTE

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TO THE PUBLIC.

With this number commences the second year, the third volume, of the OFFICIAL GAZETTE. The experience of the past year has been useful and satisfactory; *useful* as being suggestive of possible improvements which have been from time to time adopted or are yet in contemplation; *satisfactory*, as the publication and its method have met such general approval.

As has been said in another part of this number, the GAZETTE at first consisted of text without illustrations: the addition pleased everybody. The exigencies of the case, however, compelled the condensation of the drawings of each week into eight pages, be the number of patents many or few. The average number of patents per week, original and reissued, was about 218; the numbers per week varied from 170 to 273. This variation permitted more latitude of illustration when the numbers ran low, and required a corresponding condensation and close packing when the high numbers occurred. The reasons were sufficient for establishing a definite and unvarying number of pages in the illustrated portion of each week, but need not be explained here.

In regard to the general question of *sufficiency of illustration* in the GAZETTE, two remarks may be made:

In the majority of cases the amount illustrated is admittedly ample, the invention turning upon a single point requiring but a very moderate area for full development.

In other cases the invention is of such a character as to render it out of the question to give such an illustration as will make it plain in all its parts. Some inventions—such, for instance, as type-setting and printing-machines—have from 10 to 25 sheets of drawings. In such cases the brief of invention in the text and the selected figure in the illustrated portion are but indications, not sufficient to put the reader in full possession of the whole invention, but sufficient to show him the line of direction of the invention, and to determine whether it be worth while to order a full copy of the patent specification and drawings, which will cost 25 cents, or if 20 copies be taken at one time but 10 cents per copy.

The Office has now three distinct publications, each of which has its characteristics:

1. The copies of patents, specifications, and drawings of full size. Single copies 25 cents, or 10 cents per patent when not less than 20 are ordered at one time, or to subscribers for a class.

2. A volume published monthly containing the whole of the specifications of the month's patents unabbreviated, and with the whole of the drawings, reduced so as to go four on a quarto page.

3. The GAZETTE, published weekly, in which the full text of the claims of the patents of the week are given, together with a brief statement in each case to help out the descriptions; also, a selected portion of the drawing, sufficient in most instances to answer the purpose of an inquirer, but failing in a few cases, for reasons sufficiently explained above.

The experience of the past year has been to confirm the general wisdom of the method adopted, and no change is likely to be made. The publication is believed to fulfill with reasonable precision the requirements of cleanness, clearness, correctness, promptness, and punctuality.

The cleanness is both artistic and mechanical. The Commissioner acknowledges with pleasure his indebtedness, in both respects, to the *American Photo-Lithographic Company*, of New York, who have, by means of Mr OSBORNE'S process, so deftly, rapidly, and punctually reproduced from the original drawings and printed the illustrations, and to the Hon. A. M. CLAPP, *Superintendent of Public Printing*, under whose care the text portion has been so tastefully and carefully executed.

The *clearness* and *correctness*—considering the large number of subjects, the multitude of operations, and the short time admissible in the preparation of each number—are believed to be satisfactory.

The *promptness* has been such that the GAZETTE has been sent to subscribers the same week that the patents have been mailed.

The *punctuality* is evinced by the fact that, although at the mercy of cloudy days and poor drying-days, and workmen at great distances apart, yet the GAZETTE varies but a day or two at the most in the day of mailing.

OFFICIAL GAZETTE.

NOTICE.

The law which established the "OFFICIAL GAZETTE OF THE PATENT OFFICE" authorized its sale to subscribers for "not less than $5.00 per annum." The first volume—from January to June (inclusive) 1872—as originally published—consisted of text alone, and did not contain any illustrations. The second volume has been issued throughout with eight pages weekly of illustrations, and shortly after its commencement the illustrations were made for volume 1 and forwarded to the subscribers, already furnished with the text. Succeeding volumes will be illustrated in a similar manner.

The price of $5.00 was put upon the publication when it consisted of text alone, and no addition (unexpectedly to subscribers) was made to the price when the illustrations were added. It is not designed to issue the GAZETTE at a price which will cover the actual cost, and therefore an extension of the list of subscribers will not make the journal a paying institution as between the subscribers and the Office, but the indirect benefits are great and immediate: To inventors in promptly circulating accounts of their inventions; to the public in stimulating invention; to the Office in increasing the number of applications presented.

All these things are fully manifest in the correspondence that has occurred in relation to the paper during the year of its publication, and it is believed that, although the subscription price does not cover the cost, no better mode of using a small part of the accumulated fund derived from the fees paid by inventors can be found.

As the Commissioner is limited by the act of Congress to the price of $5.00 as the minimum for subscription, and no fund or authority is given for advertising the OFFICIAL GAZETTE, it has been deemed advisable to offer a premium for subscription in clubs, which can only be done by selling to clubs at the subscription price, and charging single subscribers somewhat more, thus inducing intending or renewing subscribers to persuade others to join them in subscription.

The price of the OFFICIAL GAZETTE for the year 1873 will therefore be $6.00 to single subscribers and $5.00 to newsdealers, the book trade, and others who subscribe in clubs of not less than five, the names to be sent on at one time, though the paper will be mailed weekly, free of postage, to the separate addresses if desired.

As some subscriptions have already been received for the year 1873, the change of subscription price will only be made as to subscriptions received on and after the first of February, 1873.

M. D. LEGGETT,
Commissioner.

COMMISSIONER'S DECISIONS.

HENRY H. BLAKE.—*Reference.*

[*In the matter of the application of Henry H. Blake for Letters Patent for an alleged* IMPROVEMENT IN INDEX-LAMPS.—*Decided January* 16, 1873.]

FORFEITED APPLICATIONS.

In estimating the "two years after action," (section 32, law of 1870,) within which a case may be prosecuted, the "notice" is held to be the date of mailing of the last letter of rejection, and the request for further action *must be filed in the Patent Office* before the expiration of two years from the said notice.

The apparent date of execution of an instrument of writing can not be accepted as bringing the instrument within the provision of the law.

THACHER, *Acting Commissioner:*

The Principal Examiner submits the following statement in this case and asks for instruction:

"This case was rejected a second time, and on reference first given, January 12, 1871. Applicant now presents a request for further action by the Examiner. This request is dated at Pittsburg, Pa., on the 9th instant, but it did not reach this Office until the 13th instant, and was laid before the Examiner on the 14th instant.

"Under section 32 of law of 1870, and rule 39, Ed., August, 1870, the Examiner has apparently no jurisdiction over the case, and consequently refers the whole matter to the Commissioner for direction and instruction.

"L. DRANE,
"*Examiner.*"

To this request the following answer is made:

The *apparent* date of an instrument of writing may or may not be correct. It may be wholly deceptive and *intended* to mislead.

The only date that can be regarded by the Office as entirely reliable is that of filing, as indicated by the official stamp upon the paper. As this was more than two years subsequent to the last official action on the application, and no explanation of the delay is offered, the Commissioner is left by the law without discretion in the matter. The application must be treated as abandoned under the provisions of section 32, act of 1870.

CALISTA E. COX.—*Reissue.*

[*Appeal from the Principal Examiner in the matter of the application of Calista E. Cox, executrix, &c., for the reissue in four divisions of Letters Patent No.* 7,813, *for* "IMPROVEMENT IN HORSE-RAKES," *granted to Harvey W. Sabin, December* 3, 1850.—*Decided January* 10, 1873.]

PRACTICE UNDER RULE 44—REISSUES.

That a claim has been sustained in the United States Courts does not remove it from the operation of the law, which requires that "every such case shall be subject to revision and restriction in the same manner as original applications are."

A participial claim to "arranging" devices, instead of to the devices themselves, having been granted under a former more lax practice, should—although in the mean time it has been sustained by the courts—be made to conform to the present practice in revising the application for reissue.

THACHER, *Acting Commissioner:*

The Examiner objects to certain portions of the description in several divisions and to some of the claims, the objections, as a whole, including all the divisions of the reissue application.

The first objection is to portions of the description which imply that the rake-teeth may rise independently of each other. The Examiner holds that the model and drawings preclude such an operation. In this opinion I do not concur. The model is so frail that very little reliance can be placed upon it in showing what was the construction originally intended. But the drawing attached to the original patent shows clearly that there is a certain amount of independent motion allowed to each tooth. There is a considerable space between the cleaning-bar and the pressure-bar which permits this movement, and if the pressure-bar is brought down so as to rest upon the tooth-bar, the lifting-bar is removed so far from the front extension of the rake-teeth that the same freedom of motion will be permitted before the lifting-bar is brought again in contact with the front ends of the teeth, so as to lift them all simultaneously. This independent motion, although limited, would probably be sufficient in a full-sized machine for all practical purposes, and in my opinion the description is fully warranted by the original record.

Objection is also made to the description representing the shipping-lever as articulated about the axles as a center of motion. This description is undoubtedly somewhat ambiguous. The fulcrum of the lever, it is true, is attached to the thills, but the thills articulate about the axle, and the construction of the lever is such that it moves with the thills. With this explanation, therefore, the description is correct, and to avoid all misunderstanding an explanatory clause to this effect should be inserted.

The objection to the claim in Division A appears to be well founded. The essential difference between Sabin's rake and that of Smith, described in English patent No. 10,241, is that in the former the discharge is under the control of the operator, but in the latter this desirable feature is entirely wanting. This point of difference and its importance are fully set forth in the recent decision of the Commissioner granting a second extension of the Sabin patent. The Examiner rightly requires the claim to be amended so as to set forth this difference. It is true the claim has been sustained by a United States Court, but undoubtedly it was saved by construing it in connection with the statement of invention, in which the difference in construction mentioned is distinctly stated. The claim should be amended as required by the Examiner.

In Division B the fifth claim is objected to as covering a construction not existing in the original machine. In one view of the case this is true. The clearer does not have an independent articulation about the axle, but it is attached to the rear extension of the thills, which do have a certain amount of motion about the axle, even while the rake is in operation, which oscillating motion is necessarily communicated to the clearer. Perhaps the claim should be amended so as to conform more nearly to this construction and operation.

The remaining objection is to the form of all the claims in Division B and the claim in Division D. This objection does not go to the subject-matter of these claims, but simply to the form, which is participial, and makes the claims stand for the act of arranging devices instead of the devices themselves. Under the present practice of the Office this objection is well taken; and the practice has been so well established by numerous decisions published heretofore, that there is no necessity for further discussion here. It has been urged, however, that the practice should be relaxed in this instance, as the claims, or at least some of them, have been sustained by United States Courts. I do not think this position is tenable. The law makes no exception whatever in reissue applications. Section 51 of 1870, relating to reissues, provides that "the specification and claim in every such case shall be subject to revision and restriction in the same manner as original applications are." Now the claims have been sustained by construing them as claims for devices, and although under a former more lax practice they were granted without objection, now that they are before the Office again, in an application for reissue, they are undoubtedly subject to revision, and should be amended to conform to the decisions of the courts and the present practice of the Office. This objection of the Examiner is therefore sustained.

The application is remanded to the Principal Examiner for further action in accordance with this decision.

WM. W. DRAPER.—*Extension.*

[*In the matter of the application of Wm. W. Draper, for extension of patent No.* 22,635, *granted January* 18, 1859, *and reissued April* 11, 1871, *No.* 4,333, *for* TOOL HANDLE OR HOLDER.—*Decided January* 17, 1873.]

Case of an application for extension of a patent of limited value, considering the state of the art at the date of the patent.

The case being complicated by a late reissue of doubtful validity; and farther, by the limited interest retained by inventor in the expected extension.

THACHER, *Acting Commissioner:*

This case, although very well presented before the Office, does not appear to be a strong one in the essential facts requisite to warrant the grant of an extension. The invention consists of a tool-holder intended to center, clamp, and secure the tang of a file or other tool, and is adapted to apply to tools of varying sizes.

On the end of an ordinary handle or stock is secured a metallic ferrule, provided with a hollow screw upon its internal surface. A hollow nut, carrying a pair of hinged wedge-shaped clamps or jaws, engages with this screw, and being turned to the right or left, by means of the file or other tool placed between the clamps, causes them to open or close upon the tool as desired. Behind the open space in the hollow nut is a centering-block with a conical centering-groove, which receives the end of the file when inserted between the jaws. This block rests against one end of a coiled spring inclosed within the handle, which causes it to advance and recede with the nut.

The claims are as follows:

1. The combination with the holder, embracing the parts A D of the loose, wedge-shaped jaws F F and the revolving nut E for operating the jaws, substantially as described, and for the purposes set forth and specified.

2. The combination with the holder, embraced in the parts A D, jaws F F, and revolving nut E of the centering-block C and spring B, substantially as described and specified.

The Examiner calls attention to the patent of D. H. Chamberlain, of February 7, 1854, which confirms his remark that "At the time of granting the original patent, sought to be extended in this application, it was not new to construct a handle or tool holder with tapering jaws, which were made to close upon the tang of the tool by means of a screw-nut or sleeve."

The precise construction of the device under consideration is not found in this patent, but the principle of operation is the same, and the difference of construction, so far as the clamping is concerned, is only that of the relative arrangement of like parts, which in one case is the reverse of that in the other. It is impossible for me to conclude from inspection, or from the evidence produced, that this invention is practically inferior to Draper's. Indeed, if their order of date had been reversed it would, I think, have exhibited quite as much ground for being regarded as an improvement over Draper's device as his does for being regarded as an improvement over it. The truth is, the arrangement of the parts in the respective devices being different each has its peculiar advantages, and each with properly-limited claims was undoubtedly patentable.

But upon inspection the value and importance of Draper's invention, considered with reference to the state of the art at the date of the patent, is not very apparent, and it is not made apparent by the testimony upon this point. The evidence manifestly does not proceed from an informed stand-point as to the state of the art. It does not make allowance for Chamberlain's invention, and it is not corroborated by the extent of the actual manufacture and sale of the veritable device in question. It does not appear that the Draper tool-holder proper has ever been made and placed upon the market to any considerable extent. The ascertained value of the invention is not made out, or if it is it appears to be only nominal.

Besides, the first claim, which has only recently been obtained by reissue at the hands of assignees, is, to say the least, of doubtful validity. In view of Chamberlain's patent, I think it should have been more definitely limited to the precise construction shown. As it stands I believe it is calculated to mislead the public as to its just scope.

There is no objection to the second claim in this connection, except upon the point of the value and importance of the subject-matter it embraces. Upon that point I regard it as questionable, and it has not been strongly contended for.

I am not favorably impressed with the contract by which it is proposed that the inventor is to obtain the adequate remuneration which it is alleged he has thus far failed to receive. The assignees or licensees engage to supply the market, but there is no evidence that there is any demand in the market for this particular tool-holder. On the other hand, there is evidence that the main reliance for profit is upon suits for infringement of the "principle" of construction embraced in the first claim, which would avail the inventor nothing. Twenty-five per cent. of the net profits of manufacture, after deducting the expenses of extension, do not, under the circumstances of this case, promise the inventor adequate compensation.

Altogether the case does not commend itself to my mind, upon the evidence adduced, as a proper one, having due regard to the intent of the law and the interests of the public, to warrant the grant of the extension sought, and it is therefore refused.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

ENOCH PIPER *vs.* GEORGE T. MOON *et al.*

[*In Equity.—Before Blatchford, Judge.—December Term*, 1872.]

PATENT OF ENOCH PIPER—METHOD OF PRESERVING FISH.

The claim of the Piper patent for "Preserving fish or other articles in a close chamber, by means of a freezing mixture having no contact with the atmosphere of the preserving-chamber, substantially as set forth," may cover the process when the chamber is used both to so freeze and so preserve the article, and also when it is used only to so freeze the article, or when it is used only to so preserve the article.

By the words "substantially as set forth," it is not required that there shall be no contact between the article undergoing preservation and the metal interposed between such article and the freezing-mixture.

The subject of the claim is anticipated by the prior process of preserving frozen ice-cream in a close chamber, by means of a freezing-mixture which had no contact with the atmosphere of the chamber.

That the freezing-mixture surrounded the vessel containing the frozen cream, instead of being in tubes running through such vessel, did not alter the nature of the process.

The claim pronounced invalid, notwithstanding the patentee, by the use of a process practiced before, may have supplied a great desideratum and have established a business that is commercially profitable.

A suit in equity brought in the Southern District of New York, under the patent of Enoch Piper, of March 19, 1861, for "An Improvement in Method of Preserving Fish." The cause came on for final hearing before Judge Blatchford, and was decided upon the consideration of the single question of the invalidity of the patent as raised by the answer to the bill.

[*M. B. Andrus* and *Browne & Holmes*, for complainant.
W. C. Witter and *George Gifford*, for defendants.]

BLATCHFORD, *J.*

The patent to the plaintiff, granted March 19, 1861, is for an "Improvement in Method of Preserving Fish." The specification says:

The nature of my invention consists in a method of preserving fish and other articles, by placing them within a chamber, and cooling the latter by means of a freezing-mixture, so applied that no communication shall exist between the interior of the preserving-chamber and that of the vessels in which the freezing-mixture is placed. The most important application which I propose to make of my invention is for preserving salmon, which are only taken in large quantities in high northern latitudes, in summer, so remote from our large cities that they can be made available in a fresh state only by artificial congelation. Hitherto the only method in use for preserving this kind of fish in a fresh state has been to pack them with crushed ice in barrels or boxes. This method, however, owing to the melting of the ice, and the consequent moistening of the fish, fails to preserve them fresh and good for more than a month at most; whereas, by my new method and treatment, they can be kept as fresh and sweet as when first caught, and for any desirable length of time, even for years. I do not profess to have invented the means of producing artificial congelation, nor to have discovered the fact that no decay takes place in animal substances so long as they are kept a few degrees below the freezing-point of water; but the practical application of these to the art of preserving fish and meats, as above described, is a new and very valuable improvement.

The apparatus for freezing the fish and keeping them in a frozen state may be constructed in various ways and of different shapes. The apparatus shown in the drawing, however, will suffice to illustrate the principle and mode of operation.

The specification then describes, with reference to the drawings, a method of freezing the fish by laying them in small quantities on a rack, in a box of wood or other suitable material, which is surrounded by a packing of charcoal or other suitable non-conducting material. Metallic pans filled with a freezing-mixture, such as salt and ice, are then set over the fish and the cover is shut upon them. The specification proceeds:

The temperature in the box soon falls to ten or fifteen degrees below the freezing-point of water, and, in about twenty-four hours, the mixture being changed once in twelve hours, the fish will be frozen completely through. After being thus frozen the fish or meats may, if desired, be covered with a coating of ice by immersing them a few times in ice-cold water, or by applying the water with a brush or swab several times, forming a coat of about one-eighth of an inch in thickness. To prevent the ice from cracking off, I then apply to the fish, when they are to be kept an unusual length of time, a cover of cloth, and, in the same manner, cover the cloth with another coating of ice, or they may be coated with gum arabic, India rubber, gutta-percha, tin foil, or any suitable substance, either in combination or separately, that will effectually exclude the air and prevent the juices from escaping by evaporation, thereby preserving the same plump and fresh appearance as when first frozen.

The specification then goes on to say that the fish are then packed closely together in a large preserving-box, which is inclosed in a still larger box, the space between the two boxes being filled with charcoal or other non-conducting material to exclude the heat; that metallic tubes pass through the inner box, which are open at the upper ends for the introduction of a freezing-mixture, the lower extremities being formed with flanges screwed to the bottom of the box; that a small tube leads from the bottom of each tube to the outside of the outer box to draw off the brine from the tubes; that the tubes project at the top through the cover of the outer box when it is shut down, so that they may be charged with the freezing-mixture without opening the box; and that, by keeping the tubes filled with the mixture of salt and ice, the temperature of the preserving-chamber can be maintained for any length of time below the freezing-point, and fish surrounded by the dry and freezing atmosphere will be preserved as fresh and good as when first caught, and for a much longer period than by any other method. The patentee adds:

I do not desire to be understood as confining myself to the use of the specific apparatus above described, nor to the use of either or both the preliminary processes of freezing and coating, but I have described the mode of operation which, by experience, I have found best for preserving the most delicate varieties of fish. In the case of meats it is not necessary to resort to the coating process, especially beef and pork preserved for salt packing in warm weather, which can be done by this treatment with no more loss than in the best winter weather, while the cold pickle or brine of the dissolving salt and ice is ready made, and may be drawn off as required to pickle the barrels after packing the meats, &c.

The claim is in these words:

Preserving fish or other articles in a close chamber, by means of a freezing-mixture having no contact with the atmosphere of the preserving-chamber, substantially as set forth.

In this specification, as is usually the case, the patentee first sets forth the nature of his invention by stating in what it consists; and we expect to find that the claim corresponds with such statement of the nature of the invention, whatever may be set forth in the intervening descriptive part of the specification. The claim in the present case is not so worded as not to cover a process or sub-process less than the entire process or series of processes described in the specification.

The statement of the nature of the invention says, that it consists in a method of "preserving" fish and other articles by placing them within a chamber, and cooling the latter by means of a freezing-mixture, so applied that no communication shall exist between the interior of the "preserving" chamber and that of the vessels in which the freezing-mixture is placed. The claim is for "preserving" fish or other articles in a close chamber by means of a freezing mixture, having no contact with the atmosphere of the "preserving" chamber, substantially as set forth. What is the meaning of the word "preserving," as so used? and what is the chamber that is so referred to as the "preserving" chamber? Manifestly, the word refers to the process to which the article is subjected in the chamber, between the interior of which and the interior of the vessels containing the freezing-mixture there is no communication. That chamber is the preserving-chamber. That chamber may be used to freeze the article by means of a freezing-mixture, applied as stated, as well as to preserve it afterward by means of a freezing-mixture, applied as stated; and the claim may cover the process when the chamber is used both to so freeze and so preserve the article, and also when it is used only to so freeze the article, and also when it is used only to so preserve the article. The article is preserved when it is only frozen in the chamber. It is preserved when it is only kept in the chamber, after being first frozen elsewhere. It is preserved when it is frozen in the chamber, and then continues to remain in the chamber. That this is the scope of the claim is shown by the fact that the specification speaks of "the preliminary processes of freezing and coating," and states that the patentee does not confine himself to the use of either or both of those preliminary processes. The preliminary process of freezing referred to is described as one of freezing the article in a box where the open pans of salt and ice are shut up in the box with the article. It is not the process referred to in the claim, which expressly requires that the article shall be in a close chamber, and that the freezing-mixture shall have no contact with the atmosphere of that chamber. Therefore, whenever an article already frozen is preserved in a frozen state in a close chamber by means of a freezing-mixture, which has the effect to keep the frozen article in such frozen state, while, at the same time, such mixture has no contact with the atmosphere of the preserving-chamber, the claim of the patent is infringed, provided that it is done "substantially as set forth" in the specification. Full effect must be given to the words "substantially as set forth." How is it set forth that the process must be practiced? It is not required that there shall be no contact between the article that is undergoing preservation and the metal which is interposed between such article and the freezing-mixture. On the contrary, the specification says that the fish are "packed closely together" in a box, directly through which run the metallic tubes which contain the freezing-mixture. If the fish are thus packed closely together, some of them must be thus packed around the tubes. There is no direction that none of them are to be in contact with the tubes. It is true that the specification speaks of the fish as being preserved because surrounded by a dry and freezing atmosphere. They will be surrounded by so much of a dry and freezing atmosphere as can surround fish packed closely together in contact with the tubes. All the atmosphere there is will be dry and freezing.

With this view of the claim, the invention covered by it, so far as preserving the frozen article is concerned, (and the claim covers that by itself), is anticipated by what is proved in regard to the use of the process of

preserving frozen ice-cream. Anterior to the patentee's invention, ice-cream, frozen, was preserved in a frozen state in a close chamber by means of a freezing-mixture which had no contact with the atmosphere of the chamber. The frozen ice-cream was thus preserved in a frozen state for a length of time in one instance, as is shown, twenty-four days, and it might have been preserved an indefinite length of time by renewing the freezing-mixture. The freezing-mixture surrounded the metallic vessel containing the frozen ice-cream, instead of being in pipes which ran through such vessel; but that made no difference in the process. Some of the frozen ice-cream was in contact with the metal interposed between it and the freezing-mixture, as some of the fish, in the practice of the plaintiff's process, are in contact with the metal interposed between them and the freezing-mixture. All the atmosphere there was in the vessel containing the frozen ice-cream was dry and freezing. The frozen ice-cream was, in its frozen state, not a liquid but a solid. It was no more a liquid than a frozen fish is a liquid. A fish, before being frozen, consists largely of watery particles. If it did not it could not be frozen, for it is the watery particles in it that are frozen. What is frozen in the ice-cream and what is frozen in the fish is the same thing, the liquid parts. Those are proportionably greater in the unfrozen ice-cream than in the unfrozen fish. That is the only difference.

The specification of the patent, in describing the process claimed describes the process previously used for preserving frozen ice-cream. All that the patentee has done, according to his claim, is to take the frozen ice-cream out of the vessel and put into it a fish or other article, frozen or unfrozen. That is no patentable invention. If the process of preserving the frozen ice-cream had not existed previously the use of such process, in the manner stated, would be within the claim of the patent, and would be an infringement of it. The prior use of such process must, therefore, be an anticipation of the claim of the patent at least in a case like this.

The patentee may be the first person who has practically succeeded in introducing into the market, at all seasons, salmon as fresh as when first caught, and may thus have supplied a great desideratum and have established a business that is commercially profitable. He may have invented something, in that connection, which is capable of being protected by a patent, and he may have described in this specification, or shown in the model or drawings accompanying it, something which may be claimed, and well claimed as an invention, and which may be secured to him by a reissue. But the difficulty with the present claim is that it is too broad, and that it covers nothing but a process, and that a process practiced before, substantially in the same manner set forth in the specification.

For these reasons the bill must be dismissed with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

20,783.—*Breech-Loading Repeating Fire-Arms.*—Granted to CHRISTIAN SHARPS, January 23, 1859. Hearing January 8, 1873.

22,775.—*Cotton-Presses.*—Granted to ZACHARIAH ATKINSON, February 1, 1859. Hearing January 15, 1873.

22,786.—*Harvesters.*—Granted to CHARLES G. DICKINSON, February 1, 1859. Hearing January 15, 1873.

22,787.—*Stoves.*—Granted to PORTER DODGE, February 1, 1859. Hearing January 15, 1873.

22,792.—*Machines for Manufacturing Wooden Troughs.*—Granted to SAMUEL T. FIELD, February 1, 1859. Hearing January 15, 1873.

22,802.—*Mills for Grinding Cane, &c.*—Granted to ISAAC A. HEDGES, February 1, 1859. Hearing January 15, 1873.

22,809.—*Bakers' Ovens.*—Granted to GEORGE C. JENNISON, February 1, 1859; reissued March 5, 1872. Hearing January 15, 1873.

22,812.—*Machine for Rolling Horseshoe-Iron.*—Granted to WILLIAM W. LEWIS, February 1, 1859; reissued March 30, 1869. Hearing January 15, 1873.

22,833.—*Sewing-Machines.*—Granted to WILLIAM W. WADE, February 1, 1859. Hearing January 15, 1873.

22,841.—*Harness Saddle-Trees.*—Granted to SAMUEL E. TOMPKINS and JOHN MACLURE, February 1, 1859; reissued January 2, 1872. Hearing January 15, 1873.

22,865.—*Harvesters.*—Granted to WILLIAM K. MILLER, February 8, 1859; reissued in five divisions, and numbered, respectively, 2,966, 2,967, 2,968, 2,969, and 2,970, June 5, 1866. Hearing January 22, 1873.

22,899.—*Carpet-Sweepers.*—Granted to N. B. PRATT, February 8, 1859. Hearing January 22, 1873.

22,902.—*Water-Wheels.*—Granted to JOHN TEMPLE, February 8, 1859; reissued February 10, 1863. Hearing January 22, 1873.

22,941.—*Railroad-Car Springs.*—Granted to AUGUSTUS B. DAVIS, February 15, 1859; reissued January 6 and March 17, 1863. Hearing January 29, 1873.

22,947.—*Wrenches.*—Granted to DANIEL P. FOSTER, February 15, 1859. Hearing January 29, 1873.

22,990.—*Mop-Heads.*—Granted to LUKE TAYLOR, February 15, 1859; reissued November 10 and 24, 1868, and October 19, 1869. Hearing January 29, 1873.

23,001.—*Elastic Toys.*—Granted to LUCIUS P. PORTER, February 15, 1859. Hearing January 29, 1873.

23,011.—*Water-Wheels.*—Granted to N. F. BUENHAM, February 22, 1859; reissued September 1, 1863. Hearing February 5, 1873.

23,022.—*Molding Covers for Cook-Stoves.*—Granted to GEORGE W. GARDNER, February 22, 1859. Hearing February 5, 1873.

23,032.—*Steam-Pressure Gages.*—Granted to T. W. LANE, February 22, 1859. Hearing February 5, 1873.

23,033.—*Hose-Couplings.*—Granted to ROBERT B. LAWTON and WILLIAM H. BLISS, February 22, 1859; reissued December 21, 1869. Hearing February 5, 1873.

23,034.—*Fire-Plugs.*—Granted to JOSEPH L. LOWRY, February 22, 1859; reissued August 14, 1860, and July 30, 1872. Hearing February 5, 1873.

23,040.—*Locks.*—Granted to LYMAN F. MUNGER, February 22, 1859; reissued December 12, 1871. Hearing February 5, 1873.

23,060.—*Electro-Magnetic Fire-Alarm Apparatus.*—Granted to MOSES G. FARMER, February 22, 1859. Hearing February 5, 1873.

23,085.—*Lamps.*—Granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859. Hearing February 12, 1873.

23,087.—*Machines for Crozing and Chamfering Barrels.*—Granted to HIRAM LITTLEJOHN, March 1, 1859. Hearing February 12, 1873.

23,105.—*Construction of Steam-Vessels.*—Granted to JAMES MONTGOMERY, March 1, 1859. Hearing February 12, 1873.

23,159.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 8, 1859. Hearing February 19, 1873.

23,172.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,263.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON E. PETTES, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEBE, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859. Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste-Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

24,008.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

EXTENSIONS GRANTED.

22,539.—*Improved Wringing-Machine*, granted to JOHN ALLENDER, January 11, 1859; reissued June 24, 1864, numbered 1,709; again reissued November 8, 1864, numbered 1,807; and again reissued April 18, 1865, numbered 1,934. (WILLIAM BELCHER, administrator.)

Claim.—1. A roller made of a spirally-coiled spring arranged on a shaft or roller made smaller at the center than at the ends, as and for the purposes specified.

2. A roller so constructed as to yield more at its center than at or near its ends, covered with vulcanized rubber or any other elastic compound impervious to water, substantially as and for the purpose set forth.

3. Cog-wheels, in combination with rollers of vulcanized rubber, or any other elastic substance or compound impervious to water, for the purpose set forth.

4. Rollers made of or covered with vulcanized rubber, or any other elastic substance or compound impervious to water, when used in combination with cog-wheels and a spring or springs around the shaft of the roller, for the purpose set forth.

5. Rollers for washing or wringing machines, made of or covered with vulcanized rubber or any other elastic substance or compound impervious to water, when used in combination with adjusting spring or springs.

6. Rollers for washing or wringing machines, made of or covered with vulcanized rubber or any other elastic substance or compound impervious to water, when used in combination with adjusting spring or springs and screw or screws to adjust the pressure to the spring S and rollers.

22,666.—*Manufacture of Emery Wheels and Sticks*, granted to THOMAS J. MAYALL, January 11, 1859.

Claim.—The employment of hard vulcanized rubber, tempered with olive oil, as set forth, in combination with powdered emery, or its equivalent, for the manufacture of polishing wheels and sticks, as specified.

22,572.—*Improvement in Spectacle-Frames*, granted to THEODORE NOEL, January 11, 1859; reissued November 9, 1859, numbered 3,725.

Claim.—1. The combination, with an eye-piece of a pair of spectacles or eye-glasses, of a spring, so arranged upon the eye-piece, over the point where its continuity is broken, that it will permit of the expansion of the said eye-piece, sufficiently to allow of the insertion and withdrawal of the glass, and thereafter cause the said eye-piece to resume its normal position, substantially as and for the purpose herein specified.

2. The combination of the spring *b* with the opening *a* and temple *c*, substantially as herein specified.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 7, 1873.]

6,336.—*Carpet.*—WILLIAM GILMOUR, Kidderminster, England, assignor to HENRY JECKS DIXON & SONS, same place.

6,337.—*Carpet.*—JOHN POWELL, Kidderminster, England, assignor to HENRY JECKS DIXON & SONS, same place.

6,338.—*Sword Hilt and Scabbard.*—VIRGIL PRICE, New York, N. Y.

6,339.—*Carpets.*—ANDREW WEBSTER, Jr., New York, N. Y., assignor to CHARLES M. BAILEY, same place.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date January 7, 1873.]

1,099.—*Champagne-Wine.*—F. DE BARY & CO., New York, N. Y.

1,100.—*Shirts.*—CHARLES W. JENKS, Somerville, Mass.

1,101.—*Files.*—THOS. JOWITT & SON, Sheffield, England.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date January 7, 1873.]

ORIGINAL PATENTS.

134,504.—*Propelling Canal-Boats.*—ADELBERT AMES, Natchez, Miss.

The power of the engine is applied through mechanism acting against a solid fulcrum.

Claim.—The combination, substantially as described, of an engine, a push-pole, and spiked shoe, the shoe being connected by a universal joint, as specified.

134,505.—*Sectional Steam-Boiler.*—GEORGE H. BABBOCK, Plainfield, N. J., and STEPHEN WILCOX, Brooklyn, N. Y.

Claim.—1. The within-described series of pipes D C^1 C^2 with the front connections F and back connections E arranged relatively to each other and to the furnace, and to suitable provisions for allowing the steam and water to separate, substantially as herein specified.

2. In combination, the central and side vessels of the upper series B, the connections F at each side, the side inclined pipes C^1 C^2, and the opposite inclined sets D, all as and for the purposes herein specified.

134,506.—*Guide for Rotary Rock-Drills.*—ALBERT BALL, Claremont, N. H., assignor to SULLIVAN MACHINE COMPANY, same place.

The flanges, united by a web, are fed downward through a suitable slot in the arm of a collar into the hole last formed to guide and brace the drill in forming the next, and the cutter at the same time breaks the narrow web of rock left between the two holes.

Claim.—1. The combination of the cutter S with a rotary drill bit or head and a drill-guide, substantially as described, and for the purpose set forth.

2. The combination of the flanges *f f*, the web A', and a drill head or bit, substantially as described, and for the purposes set forth.

3. The guide sleeve or collar A, in combination with the drill-guide and drill-head, substantially as described.

134,507.—*Stump-Extractor.*—EDWIN BAYLISS, Massillon, Ohio.

Claim.—1. In a stump-extractor, the combination, with the tripod or supporting-legs, of the circular pedestals adapted, substantially as described, to support the machine when in operation, and also to serve as transporting-wheels, as set forth.

2. In combination with the circular supporting-pedestals, operating as described, the locking-straps *g g*, to assist in maintaining the wheels in proper position when used for transporting the machine, substantially as described.

3. In combination with the differential screw C C', the slotted nut F F' and pin c^3 for locking said nut to the screw, substantially as described.

4. In combination with the cap A^1 and nut E, the pin c^1, or an equivalent locking device for holding the nut E from turning with the screw C C', substantially as described.

5. In a stump-machine, the combination of the differential screw C C', the nuts E F F', and the sweep D, substantially as described.

6. In a stump-machine, the combination of the sweep D and the adjustable braces D', substantially as described.

7. In combination with the differential screw C C' and nut E, the removable sweep D, adapted to be applied to either the screw or the nut E at will, substantially as described.

8. In combination with the differential screw C C' and nut E, the sweep D and brace D', adapted to engage with both the screw and the nut, and to move them both in the same direction at the same time in the lower nut F F', substantially as described.

9. The nut E provided with the movable section and the cam-shaft, substantially as and for the purpose set forth.

134,508.—*Wax-Thread Sewing-Machine.*—EDWIN E. BEAN, Boston, Mass.

The arm *k* and its enumerated connecting devices directly operate the awl-bar, the presser, and thread-guide. The arm *k* is connected to the awl-bar, and carries the lever *o*, which strikes the projection from the presser-bar and raises it more or less, according to the position of the screw. A link from the projection *v* connects with the slotted knee which operates the thread-guide.

Claim.—1. In combination, the arm *k*, projection *n*, lever *o*, regulating-screw *r*, and presser-foot bar *m*, constructed and arranged as and for the purpose herein shown and described.

2. In combination, the arm *k*, projection *v*, link *w*, slotted knee-lever *x*, crank-pin *z*, and the thread-guide bar *u*, constructed and arranged as herein fully set forth and described.

134,509.—*Wax-Thread Sewing-Machine.*—EDWIN E. BEAN, Boston, and FRANK BEAN, Medford, assignors to "THE CONSOLIDATED WAX-THREAD SEWING-MACHINE COMPANY," Boston, Mass.

The crank mentioned in the first clause has a pin which engages the upper end of the hooked link and causes a cam to press the plate against the presser-foot holder in the shoe, and by these devices the presser is always raised the necessary distance above the material, whatever may be its thickness. The needle and cast-off bars are mounted in guides or disks, which have a reciprocating rotary motion in order to move the needle to move the material, and the needle and cast-off reciprocate in these guides in the usual manner.

Claim.—1. The mechanism for operating the presser-foot holder *e*, consisting in the shaft *a*, crank *c*, pin *i*, hooked link *k*, cam *t*, spiral spring *p*, plate *g*, and shoe *f*, as herein set forth and described.

2. The revolving disks *s s'*, in combination with the link *t*, guides *u u'*, and needle-holder *w*, and cast-off holder *x*, as and for the purpose set forth.

3. The mechanism for operating the disks *s s'* and needle-holder *w* and cast-off holder *x*, consisting of the rocking-shaft 1, crank 2, link *y*, lever 3, link 2, crank 5, and connections 6 and 7, as and for the purpose set forth.

4. The arrangement of the slotted levers 11 and 13 and stud 15, in combination with the eccentric 9 and rod 10, for operating and adjusting the throw of the needle and cast-off, as fully set forth and described.

5. The mechanism for operating the needle to feed or move the material, consisting of the curved slotted rocking-lever 23, link 25, crank 26, and rocking-shaft *r*, in combination with the revolving disks *s s'*, as and for the purpose herein set forth and described.

134,510.—*Horse-Power.*—LEVI H. BRATT, South Bend, Ind.

An endless chain passes around four pulleys arranged above and below each lever, so that the slack of one horse is taken up by the others.

Claim.—The arrangement of the various pulleys B C D, with the endless chain E passing around them, in the manner and for the purpose specified.

134,511.—*Horse-Power.*—LEVI BRONSON, Buffalo, N. Y., assignor to JAMES BRATLEY, same place.

Claim.—1. I claim, in a horse-power, the master-wheel center cap or hub B, when constructed with or having arranged on it the upper and lower sweep-holes *a a'*, combined for the purpose of changing to "down" or mounted power, as hereinbefore fully specified.

2. I claim, in a horse-power, the supplementary bottom pieces G G, suitably attached to the bottom of the main frame A, and setting between the forward and hind wheels and axles of the truck, for the purpose of bringing the line-shaft E lower down and allowing the hub to be elongated, as hereinbefore fully set forth.

134,512.—*Photographic-Plate Holder.*—JOSEPH BUCHTEL, Portland, Oregon.

The springs being movable, the points of pressure on the glass are nearer the bearing-points than formerly.

Claim.—1. The slotted pieces G, supporting-points E, retaining-cups F, with the bearings L, same being movable vertically and laterally, so made as to be adjustable to varying sizes of plates.

2. The movable springs C working in a slot, M, as shown, the whole substantially as described, and for the purpose set forth.

134,513.—*Machine for Preparing Flour.*—LEWIS S. CHICHESTER, Brooklyn, N. Y., assignor to CHARLES F. CHICHESTER, same place.

Claim.—1. A case with supply-chute near one end and a delivery-chute near the other end, in combination with a revolving horizontal shaft armed with ranges of flexible beaters and divisions placed within such case having openings to allow the material to pass from one range of beaters to the next, substantially as set forth.

2. The divisions *d d* having depressions *e* and openings or mouths *i*, as set forth, in combination with the ranges of beaters, as and for the purposes specified.

134,514.—*Coffee-Pot.*—HENRY J. CHILDS, New York, N. Y.

The funnel *n* and its small openings serve to retain the deleterious matter of the coffee-grounds, and the same can be removed before pouring out the coffee.

Claim.—1. The removable cylinder *g*, detachable funnel *n*, band *l*, and strainers *i r*, in combination with the support *c* and pot *a b*, as and for the purposes set forth.

2. The receptacle for condensation around the cylinder *c*, formed by the partition *f* and division *w*, in combination with the flanged cover, and plug or cock *x*, as and for the purposes specified.

134,515.—*Coffee-Pot.*—HENRY J. CHILDS, New York, N. Y.

The particles of coffee are retained and only the extract allowed to pass into the pot. The upper portion of the pot is closed to retain the aroma.

Claim.—The vessel *a b*, containing the partition *h*, hot-water space *l*, and cylinder *f*, in combination with the cylinders *p q*, strainers *r*, and cover *i u*, as and for the purposes set forth.

134,516.—*Steering Apparatus.*—DAVID N. B. COFFIN, Jr., Boston, Mass.

The shaft has secured upon it a bevel-wheel, which meshes into the teeth on the inner surface of the covering cap or plate *l*, and the revolution of this plate gives motion to the upright shaft *h*, which is furnished with cogs on its lower extremity. These cogs take into the teeth of three gears, *f*, which gears have elastic interior rings or bearings and mesh into the teeth of a plate securely fastened to their rudder-post, and by their revolution give rotary motion to said post. A stem, fitting into the rudder-post, revolves with it, and rising through the center of shaft *h* has a cap on its top, a cap and a rudder-indicator.

Claim.—1. The arrangement and combination of the shaft *n*, gear *m*, gear *l*, gear *h*, gear or gears *f*, gear *e*, and frame *i*, substantially as described.

2. The elastic gears *f*, constructed and applied substantially as and for the purpose set forth.

3. The frame *i* furnished with the tongues *j*, in combination with the frame *b* and its grooves *k*, the same being constructed and arranged substantially as described, and for the purpose set forth.

4. The inverted toothed wheel *l*, constructed and applied, in combination with the frame *i* and gear *m*, so as to perform the double function of gear and cover, substantially as and for the purpose set forth.

5. The screw *s* and jaws *x x*, in combination with the frame *i*, wheel *l* and its flange *y*, when arranged to operate substantially as and for the purpose set forth.

6. The cover *p* provided with the attached pointer and connecting-rod *q*, in combination with the hollow gear *h* and rudder-stock *c*, substantially as and for the purpose set forth.

134,517.—*Windlass.*—DAVID N. B. COFFIN, Jr., Boston, Mass.

Claim.—The short lever *b* when constructed with the lever-socket and the series of pivotal holes, and arranged in combination with the beam *a*, fulcrum-link *c*, and a step provided with one or more pivotal holes, substantially as and for the purpose set forth.

134,518.—*Thread-Cutter for Sewing-Machines.*—FREDERICK COLLINS, Portland, Me.

The cutting-blades are arranged in a removable box, which is intended to be placed in an opening in the plate.

Claim.—The combination of the removable box or case A, the stationary blade C, the movable cutter-lever B, the knob *b*, the spring *d*, and the stop *e*, all arranged and constructed substantially in manner and for adaptation to and use with a sewing-machine, D, as explained.

134,519.—*Mode of Attaching Pitmen to Sickle-Bars.*—VINCENT COX, New Vienna, Ohio.

The pitman is attached to the sickle-bar of reaping and mowing machines, so as to be out of the way of other parts of the machinery when it is properly adjusted.

Claim.—1. Attaching and adjusting the pitman A to the sickle-bar B by aid of the set-screw *b* and groove *a* in the pin D, substantially as and for the purpose set forth.

2. The pitman A, attached and adjusted to the sickle-bar B, substantially as and for the purpose set forth.

134,520.—*Water-Wheel.*—GARDNER COX, Pierrepont, N. Y.

To simplify the construction a horizontal wheel is placed outside a curb, which extends downward from the bottom of the flume. To the curb guides, having a disk attached to form chutes, are riveted. The gates, which are hung on rods secured to a plate through which the shaft passes and to the curb, have straight inner edges abutting against the edges of the plate, and curved outer edges abutting against the curb. By means of a sleeve and levers the gates are opened and closed.

Claim.—1. The combination of a wheel, I, curb J, disk A, and guides *c*, arranged substantially as described.

2. The swinging gates L, connecting-rods D', sleeve M', shaft B, and lever M, all combined as specified.

3. The curb J, guides *c*, disk A, cone K, plate C, and rods H, all arranged, as described, for holding the disk firmly in the center of the wheel.

134,521.—*Corn-Planter.*—WILLIAM J. C. CRANDALL, Steel's, Ind.

Wheel-spindles attached to the ends of the rear edge of a narrow platform, to the front edge of which, in recesses next to the wheels, are attached the front ends of the drill-beams. These can be raised by levers to admit under them a spring-stop, which can be retracted by another lever and rods behind the platform. A bar pivoted on the top of each beam has at its rear end the seed-slide, and at right angles on its front end a short bar with a series of holes, through one of which a pin can be dropped into one of three zigzag slots to regulate the intervals of seed-dropping.

Claim.—1. The driving-wheel hub a provided with circumferential zigzag grooves 1, 2, and 3, in combination with the L-shaped lever D and screw *c*, or their equivalents, for operating the dropping mechanism, substantially as herein set forth.

2. The casting *m*, constructed with the two seats for the lever K, when used in connection with the mechanism of the seed-dropping device, substantially as set forth.

134,522.—*Fire-Proof Paint.*—CHARLES P. CROSSMAN, West Warren, Mass., assignor of one-half his right to FRANKLIN BEMIS, same place.

Claim.—1. A composition whereof the ingredients are common lime, hydraulic lime, siliceous or argillaceous matter, and cow's milk, substantially in the proportions specified.

2. A composition whereof the ingredients are common lime, hydraulic lime, Brandon brown, siliceous or argillaceous matter, and cow's milk, all substantially in the proportions above specified.

134,523.—*Match-Safe.*—LEVI DAROZIR, Worcester, Mass., assignor to himself and JULES MORISETTE, same place.

Claim.—An improved match-safe, consisting of a main box or receptacle, A, for packages and a separate and smaller one, C, for separated matches, the latter being affixed to or formed on the outside of the former, and both being provided with covering-lids, substantially as herein shown and set forth.

134,524.—*Apparatus for the Production of Spirits and the Prevention of Fraud upon the Revenue.*—JOSEPH DAWSON, Staunton, Va.

Claim.—1. The six-way cock, in connection with which is a pawl-and-ratchet wheel to prevent the plug or key from being reversed, the cock constructed as described in drawing, and for the purposes set forth.

2. The combination, with said cock, of a glass tube containing a hydrometer and thermometer for indicating the gravity and temperature of the spirits.

3. The combination, with said cock, of a glass tube in connection with a scale for the purpose of indicating the number of wine-gallons produced at each charge of the still.

4. The combination, with a six-way cock, of a sample vessel for the purpose of retaining an accurate proportional quantity of each charge, which sample is designed to be tested periodically by an authorized official so as to be a check upon the distiller's reports and insure the correctness of the same.

5. The combination, with a six-way cock, of a measuring-cistern for the purpose of receiving all the spirits produced at each charge of the still and retaining the same until the indications showing the quantity in wine-gallons and the temperature and gravity can be taken.

134,525.—*Shoe and Leather Polisher.*—JOHN DAY, New York, N. Y.

A receptacle with a plunger, a perforated bottom, and brushes.

Claim.—1. The lubricator herein described, consisting of the combination of a receptacle for lubricant, &c., perforated bottom, and plunger, substantially as set forth.

2. The combination of the bandle A, plunger B C, constructed as described, receptacle D, perforated bottom E, and sockets 3 4, and brushes, substantially as and for the purposes specified.

134,526.—*Motor for Sewing-Machines.*—WARREN R. DUNTON, United States Army.

A frame attached to a sewing-machine by means of clamps, and set-screws inclosed within said frame, is the spring motor connected by gearing with the crank and fly wheel.

Claim.—An improved motive-power attachment for sewing-machines, having a frame-work or attachment carrying geared wheels, and a spring which can be attached to the machine or machines upon which it is to be used by means of metallic clamps and screws; the controlling or regulating power by means of the ratchet-wheel, double curved pawl, and balance-wheel, or equivalent means for that purpose; and the starting and stopping device by means of the spring, stud, lock, and lever, bent to work in connection with the ratchet-wheel, double curved pawl, and balance-wheel, or equivalent means, for the purpose herein set forth and specified.

134,527.—*Exercising Apparatus.*—HARRY E. EASTMAN, Green Bay, Wis.

Claim.—The handles A provided with the hooks C, in combination with the elastics B, arranged substantially as set forth.

134,528.—*Fruit-Drier.*—ALFRED EDWARDS, New Haven, Conn., assignor to ALFRED R. EDWARDS, Chicago, Ill.

Heat as great as the fruit will bear without being cooked is passed through the drying-chamber, and the fruit dried in a few minutes.

Claim.—The chamber E within a vertical steam or water heating apparatus, provided with the shafts I I' and endless bands P, or their equivalents, arranged to receive and carry the plates R, and constructed for the flow of heated air into and through the said chamber, in the manner and for the purpose described.

134,529.—*Lumber-Drier.*—ALFRED EDWARDS, New Haven, Conn., assignor to ALFRED R. EDWARDS, Chicago, Ill.

The heat is supplied from the heating-chamber, and steam is generated from the moisture in the lumber until the timber is dried.

Claim.—1. The heating-chamber, formed by the hollow walls and bottom *e*, combined with the partition *s* around the said chamber so as to form a flue, *n*, to reconduct the air beneath the said chamber and return it through the said chamber, substantially as described.

2. In combination with the subject-matter of the first clause of claim, the condensing-tubes *f* arranged above the chamber, substantially as described.

3. In combination with the subject-matter of the first clause of claim, the inclined drip-plates P, more or less in number, and with or without the ledges *k*, substantially as specified.

134,530.—*Music-Rack.*—CALVIN L. ELY, Branford, Conn.

To prevent music-sheets breaking and falling over the top of piano music-racks.

Claim.—An extension for the music-rack of musical instruments, substantially such as described, provided with loops or clasps B, by which the extension is attached to the rack proper, as herein set forth.

134,531.—*Harvester.*—JOEL FARRINGTON, Corry, Pa.

Claim.—1. The crank-arm *g'* for raising the vibrating end of the cutter-frame, in combination with the lifting-lever G G', for raising and lowering the hinged finger-bar, substantially as described.

2. The combination of lever G G', crank-arm *g'*, and gag-lever I with the vibrating frame and hinged finger-bar, all arranged and operating substantially as described.

3. The gag-lever I provided with the overhanging spur or stop *i'*, and arranged in the described relation to the hinged finger-bar and lifting-lever G, as and for the purpose specified.

134,532.—*Machine for Molding Marble.*—JAMES FINN, Boston, Mass.

A person at one and the same time may elevate the slab and force it forward, thus causing the grinder to cut a larger groove than it would were the slab to be moved in one direction only against such grinder.

Claim.—1. The combination of the elevating platform or platforms H and their operative mechanism with the rotary grinder D and its supporting-table C, all being arranged substantially as and to operate as described.

2. The combination of the rotary grinder D, its supporting-table C, one or two elevators, H, and the operative mechanism thereof, and one or two pressers or means of automatically pressing the slab or slabs up to the grinder, all being substantially as described.

3. In each automatic presser, the combination of the adjustable bearers *k k* and their clamp-screws *l l* with the upright arms *d' d'*, connected and arranged as described.

134,533.—*Spring Motive Power.*—THOMAS BURKE FOGARTY, New York, N. Y.

Claim.—The combination of two springs, by which the inequality of a regulating-spring or springs operates as a check upon the inequality of a motor-spring or springs, substantially as described.

134,534.—*Mandrel for Making Spools.*—JOHN W. FOSTER, Pawtucket, R. I.

A spindle, provided with projecting wings, is inserted in a lathe-chuck. The spools, after being bored, are forced upon the spindle, and are retained in that position by the wings.

Claim.—The device, constructed in the manner and used for the purposes substantially as shown and described in the foregoing specification.

134,535.—*Spindle and Bobbin for Spinning-Frames.*—RICHARD GARSED, Philadelphia, Pa.

For the purpose of better securing the part *a* and for giving a positive hold between the spindle and bobbin.

Claim.—A spindle, A, flattened, as at *c*, at the upper end of the bolster portion *a'*, in combination with the bobbin B having pins or cheek-pieces *c* inserted into its lower end, substantially as set forth.

134,536.—*Reed-Organ.*—WILLIAM H. GERRISH, Boston, Mass.

The flexible cover slides back and forward in grooves. It is made of slats fastened to a cloth or other backing. Noise or rattle is prevented by clamping devices.

Claim.—1. The flexible sliding cover B, arranged to move in the curved grooves *a a*, as herein set forth, in combination with the case and action of a reed-organ, substantially as described.

2. The flexible sliding cover B, in combination with the case of a musical instrument, and any suitable means for clamping the same to prevent vibration thereof, substantially as described.

3. The combination of the flexible sliding cover B, the case A, the pressure-bar *c*, and spring *d*, all constructed and operating substantially as described, for the purpose specified.

4. The combination of the flexible sliding cover B, the case A, the pressure-bar *f*, and the stop-bar *g*, arranged and operating substantially as described, for the purposes specified.

134,537.—*Hand-Truck.*—LEONARD GILSON, Boston, Mass.

The truck has its front and rear guide-wheels pivoted adjustably at a different altitude from the central wheels.

Claim.—1. In hand-trucks containing central primary wheels and end wheels, as and for purposes stated, mounting the end wheels in an adjustable manner, whereby their altitudes with respect to one another and to the platform and floor may be varied, substantially as and for purposes stated.

2. In hand-trucks containing central wheels and end wheels which are adjustable to different altitudes from said central wheels, as stated, swiveling said end wheels with respect to the platform, substantially as and for purposes stated.

3. The employment of the rollers G, or their equivalents, essentially in manner and for purposes stated.

134,538.—*Manufacture of Boot and Shoe Heels.*—CHARLES W. GLIDDEN, Lynn, Mass.

The heel-lifts with irregular edges are firmly secured between clamp-plates, over which is a hammer, the face of which is of the shape to be imparted to the edge of the heel-blank. By this process the outer surface is solidified and the edge of each lift turned upward, securing the concavity without the use of a band.

Claim.—1. The method of edge-shaping boot and shoe heels by clamping each heel in a machine and subjecting the edge to the action of an automatic hammer, substantially as described.

2. A boot or shoe heel which is edge-shaped by clamping the heel-lifts together and subjecting the edge of the blank to the automatic treatment, substantially as described.

3. A boot or shoe heel in which the edges of the lifts are driven upward (by the automatic hammering process while the heel is clamped) to form the concave seat, substantially as shown and described.

4. The combination of the rotative heel-clamp with the hammer, formed and operated substantially as described.

5. The heel-clamp, having the clamp-plate *b* formed with the chamfer *x*, substantially as and for the purpose set forth.

6. In combination with the heel-clamp, the tilting-frame *a* for holding the heel to the action of the hammer, substantially as described.

134,539.—*Animal-Trap.*—JACOB W. GREENE, Chillicothe, Mo.

Separating the decoy-chamber from bait-chamber by lengthened tubes, &c.

Claim.—The combination of the harbor or bait-chamber B with the entrance-tubes A A, and tube *A'* connected to the cage C, supplied, respectively, with the doors *a a' a'*, substantially as and for the purpose set forth.

134,540.—*Gang-Plow.*—GEORGE A. GROVER, East Clarkson, N. Y.

Claim.—1. The branch-arm *i* of the plow G guided in the standard H, as and for the purpose set forth.

2. The plows G provided with the shanks *g* and branch *i* and pivoted to the bars *a a a* of the frame A, in combination with the rock-shaft K, arm *m*, guide-standards H, pulley K, and cord or chain I, all constructed and arranged as and for the purpose described.

134,541.—*Die for Forming Sewing-Machine Shuttles.*—DANIEL W. HALE, Middletown, Conn.

A series of three dies partially finish the blank at the first heat. A fourth die completes the operation by pressing the surplus metal out, in the form of a fin, around the edges.

Claim.—A series of dies, substantially as shown and herein described, for forging shuttles.

134,542.—*Hanging Doors.*—GODFREY HEEGLER, San Francisco, Cal.

The knob operates the double bolts C C through the pinion and racks, and the bolts also serve as hinges, a set being applied at each edge of the door.

Claim.—In combination with the pins C, the racks D, pinion E, and the operating knobs F, when constructed substantially as and for the purpose described.

134,543.—*Automatic Fan.*—ALLEN P. HEIDT, New York, N. Y., assignor to himself and JOHN H. HUBBELL, same place.

The standard is adjustable. An alarm can also be prearranged to wake the fanned party at a given time.

Claim.—1. The standard *h o*, adjustable in its length and provided with the foot *p* and clamp *r*, in combination with the fan *l* and its actuating-gearing, substantially as set forth.

2. An alarm mechanism, combined with a fan and its actuating mechanism through the intervening shaft *t*, wheel *v*, and toe *i*, substantially as and for the purposes set forth.

134,544.—*Chair-Frame.*—LEVI HEYWOOD and ELIAS E. HORTON, Gardner, Mass., assignors to HEYWOOD BROTHERS & CO., same place.

The frame is made from one piece of bent wood, and the ends are secured together by a spline driven tightly into a groove.

Claim.—A chair-seat frame made from one piece of bent wood, when the ends thereof are secured together by a groove and spline, in the manner and for the purpose described.

134,545.—*Chair.*—LEVI HEYWOOD, Gardner, Mass., assignor to HEYWOOD BROTHERS & CO., same place.

A bent band is secured under the seat-frame, to which the front legs are mortised, the rear legs being mortised both to the band and the seat-frame, and extending above the latter to form the back of the chair.

Claim.—A chair constructed with a bent band made as herein described and having the front legs mortised thereto, the rear legs being mortised both to the band and the seat-frame, and extending above the latter to constitute the back of the chair, substantially as set forth.

134,546.—*Memorandum-Book.*—HENRY M. HINSDILL, Grand Rapids, Mich.

Claim.—The office memorandum-book having its leaves secured for use by the plate B, as described, and provided with a handle or holding-piece to make a new article for the trade, as set forth.

134,547.—*Lamp.*—ROBERT HITCHCOCK, Watertown, N. Y.

This lamp is designed for burning heavy oils. An air-jacket surrounds the oil-reservoir, and two series of heat-conducting rods are connected to the lower portions of the burner and extend into the oil-reservoir for the purpose of quickly heating the main body of the oil. One series of rods is attached to the outer air-jacket, in close proximity to the burner-cap, and prevents the heat from extending down the jacket, and the other series is connected to the wick-tube and oil-tank proper. The wick-raising mechanism is also arranged in such manner that it forms a heat-conducting medium. An annular ash-box, G, is arranged in the pedestal to receive any sediment that may pass down the outer air-passage.

Claim.—1. In combination with the inner oil-tank and surrounding jacket, the two series of heat-conductors extending down into the oil-tank, the one from the jacket and the other from the top of the tank, under the arrangement, substantially as shown and described.

2. In combination with the wick-raising screw rod or shaft, the thumb-rod geared to said shaft and supported in a sleeve or open tube passing through the oil-tank, substantially as shown and set forth.

3. The arrangement of the thumb-rod and its supporting-sleeve to extend diagonally or in a slanting direction downwardly through the oil-tank, as herein shown and described, so that the milled head of the rod, by which the same is operated, may project from the lamp at or near the base of the external jacket C.

4. The combination, with the central ash shield or box under the central wick or draft tube, of an annular ash-box located in the stem or base of the lamp, beneath the central ash-box and between it and the blower, substantially as shown and set forth.

5. The wick-raising screw-shaft carrying the coupling-sleeve and jointed wick-thimble, and arranged to extend from the top of the lamp down alongside the wick-tube and within the reservoir, substantially as shown and described.

134,548.—*Check-Valve.*—JOHN C. HOADLEY, Lawrence, Mass.

A secondary check-valve is placed within the vessel holding the main check-valve, manipulated by the operator and arranged between it and the boiler, whereby the eduction of steam and water is prevented when the pump is detached.

Claim.—The arrangement within the body *b*, in the manner substantially as described, and for the purpose specified, of the two check-valves interposed between a boiler, in which pressure is maintained, and a force-pump for feeding the boiler.

134,549.—*Apparatus for Testing Girders.*—PETER H. JACKSON, New York, N. Y.

A heavy abutment-beam, composed of wood and iron, has projecting from it horizontally two pairs of arms for holding the girder, which is to be tested in such position that a ram supported against the beam may exert its power against the girder. The arms are adjustable for holding girders of different lengths. The amount of deflection of the girder being tested is shown at each moment of its treatment by a spring-index.

Claim.—1. In a machine for testing girders, the abutment-beam herein described, consisting of the wooden timbers A^1 A^2 A^3, wrought-iron beams B^1 B^2 B^3, and iron bars a^1 a^2, in combination with the clamps C, blocks H^1 H^2, and ram D, when constructed, arranged, and operating as herein shown and described.

2. The movable piece K, adapted to press against the back of the girder M under the influence of the spring L, abutting against an adjustable piece, N, and operating to indicate to the eye the exact amount of the deflection at each instant as the strain increases, all substantially as and for the purposes herein set forth.

3. The adjustable index-piece O, in combination with the movable piece K and spring L, to allow the zero to be rapidly brought to and held in any desired position to accommodate different sizes and forms of girders to be tested.

134,550.—*Drawing-Board.*—THOMAS H. KANE, New York, N. Y.

The board is inclosed by a narrow frame, between which is a rubber packing. At the back metallic bars connect opposite sides of the frame and are fastened securely by screws.

Claim.—The frame C, bars B B, India-rubber frame or strips *d d*, and fastenings *e e*, in combination with the drawing-board A, substantially as and for the purpose hereinbefore set forth.

134,551.—*Machine for Skiving Counters.*—CHARLES KENISTON, Somerville, Mass., assignor to "THE SHOE-MACHINERY-MANUFACTURING COMPANY."

The upper feed-wheel is made narrower than the lower wheel, and acts in conjunction with spring presser-feet, one upon each side of it, which bear upon the stock, and may be regulated or adjusted in accordance with the varying thicknesses of the stock. The shank of the skiving-knife or cutter is held between two jaws. Both shank and jaws are screw-threaded.

Claim.—1. In combination with the feed-wheel *c* and the feed and presser wheel *e*, the spring presser-feet *z*, arranged and operating substantially as shown and described.

2. The cutter A, adjustable in position by means of the screw-threaded shank *m* and the nut-threaded box *n*, substantially as shown and described.

3. In combination with the stationary arm *r* and shaft *f*, the adjustable or yielding bearings *g* extending down from said arm and supporting one end of the shaft *f*, the opposite end being provided with its driving-gear, substantially as shown and described.

134,552.—*Fire-Alarm Signal-Box.*—FINLEY LATTA, Cincinnati, Ohio.

Circuit, giving signals, completed through a sliding bar and spring, the bar having insulated spaces corresponding with signal to be given. This bar is elevated by a crank and descends by action of a weighted piston (to which it is connected) sliding in a cylinder closed at lower end. The air underneath the piston (which has a small perforation) acts as an automatic regulator of the speed of its descent.

Claim.—1. In telegraph-fire-alarm signal-boxes, the character bar or rod G brought into registering action by the descent of a gravitating piston, D D' *d*, within a suitable tube or cylinder, C, the descent of said piston being regulated substantially as herein described and set forth.

2. The combination of the tube C, perforated piston D E, character-bar G *g'*, pitman H, wheel I (J K K' *h h'*, spring L, shaft M *m' m''*, thimble N *n*, arm O, operating-spring P, hub R *r*, and crank T, as and for the purpose specified.

134,553.—*Rolled-Iron Molding.*—MARCUS M. MANLY and SAMUEL SELLERS, Philadelphia, Pa.

The molding is made by heavy rolls, direct from the pile, the outer and inner surfaces conforming to each other, making a strong and durable feature of iron structures.

Claim.—As a new article of manufacture, a rolled wrought-iron or steel-shell molding.

134,554.—*Bill and Letter File.*—ADONIRAM J. MARSHALL, North Buffalo, N. Y.

Clamping-boards connected by two wires crossing each other are adjustable by one of said wires engaging in a corrugated plate on the top of one of the boards.

Claim.—The arrangement of the clamping-wires *a b* and the corrugated or recessed catch C, in combination with the clamping leaves or boards A B, for the purpose hereinbefore specified.

134,555.—*Construction of Canal-Boats.*—GEORGE B. MARTIN, New York, N. Y.

Combination, in a freight-barge, of inclined longitudinal ceilings and transverse bulk-heads extending down to the bottom, whereby the freight falls down to the center of each compartment beneath the hatchways, and increased strength is given to the structure; also, the combination of the keelsons, stay-rods passing through the hatch-combings, and the inclined longitudinal ceiling.

Claim.—1. A boat for coal or other material in bulk provided with the longitudinal inclined partitions *i* and transverse inclined partitions *o p* to direct such material to a central position below the hatchway for removal, as set forth.

2. A boat made with keelsons *f* connected to the hatch-combing and with inclined partitions *i o p* for separating the cargo and facilitating its removal, as set forth.

3. The inclined partitions *i* applied to and combined with the boat and extending from the keelsons to the sides of the boat, for the purposes and as set forth.

134,556.—*Shade and Draft-Blower for Grates.*—FLORENCE MCCARTHY, Chicago, Ill.

Claim.—The adjustable draft-blower and shade C E, consisting of the parts C E, curved bar J, and suitable bearings K L, substantially as and for the purpose set forth.

134,557.—*Music-Leaf Turner.*—LEOPOLD F. MORAWETZ, Baltimore, Md.

Double-acting dogs operate upon a cogged disk, and by means of gearing connect with the toothed base of the turning-arms, the whole moved by a treadle.

Claim.—1. A boat for coal or other material in bulk provided with the longitudinal inclined partitions *i* and transverse inclined partitions *o p* to direct such material to a central position below the hatch-plane for removal, as set forth. [illegible] described, and combined [illegible] substantially as described. [illegible] separating the cargo and facilitating its removal, as set forth. [illegible] K K applied to a vibrating lever [illegible] boat and extending from the keelsons to the sides of the boat, for the purposes and as set forth.

134,558.—*Shade and Draft-Blower for Grates.*—FLORENCE MCCARTHY, Chicago, Ill.

Claim.—The adjustable draft-blower and shade C E, consisting of the parts C E, curved bar J, and suitable bearings K L, [illegible]

nation with the plate J and arms *i*, substantially as and for the purpose described.

4. The vertically-adjustable head A, carrying-arms *i*, and mechanism for actuating these arms, in combination with a treadle, D, an extensible connecting-rod, and dogs or pawls K, substantially as described.

5. The fixed pin *s*, serving the double purpose of a turning center for the leaves and also, by its upward extension *i*, a shaft for the pinion *p'*, as described and shown.

134,558.—*Button-Holing Attachment for Sewing-Machines.*—EUGENE MOREAU, San Francisco, Cal.

This mechanism is adapted to a Florence machine, and takes the place of the cloth-plate. A lever connected with the vibrating arm operates the double pawl K, one toe of which engages the teeth of wheel *h*, and when a deep tooth is engaged the other toe of the pawl engages and moves the cam-plate, which is provided with two eccentric grooves, plain and waved at suitable points. Pins from parts connected with the cloth-holder enter these grooves and give the necessary lateral and forward movements to the holder.

Claim.—1. The ratchet-wheel *h*, with its deep and shallow teeth *i* and *j*, substantially as and for the purpose described.

2. In combination with the double-grooved cam-plate C and the peculiar ratchet-wheel *h*, the double pawls *s* and *g* with the operating-lever J K, substantially as herein described.

3. The operating mechanism, consisting of the arm E with its toe G and the double cam H H', together with the levers J and K and the retracting-spring M, or equivalent devices, substantially as herein described.

4. The slide P and disk Q, with the lever R and the pitman S, in combination with the grooved cam-plate C, when connected with the cloth-plate and operating to produce a transverse vibrating motion, substantially as herein described.

5. The slide T, with its disk *r* and the lever U and link V, in combination with the grooved cam-plate C, when connected with the cloth-plate to produce a longitudinal motion and the necessary throw for the stitch, substantially as herein described.

6. The arms *w w*, with their spring *u*, when formed to rest on the cloth and throw the cord formed to the inside edge of the button-hole, substantially as described.

7. The combination of the upper clamp, having a cam-shaped slot, 5, with the arms *w w*, as described, for the purpose set forth.

8. The pitman S and latch *n*, in combination with the lever R and slotted disk Q, as and for the purpose described.

134,559.—*Solution for Preserving Canvas and Cordage.*—CHRESTEN NELSON, Gloucester, Mass.

Sulphate of zinc dissolved in water, to which is added sal-soda, soda-ash, and tartaric acid.

Claim.—The improved solution for preserving canvas and cordage prepared and used as herein set forth.

134,560.—*Slating-Nail.*—THOMAS O'GARA, Worcester, Mass.

A thin disk of metal, with a circular hole in the center, is slipped on a nail, and the corners of the nail under the head are cut or scraped up against the disk, to hold it on, by driving it into a circular die.

Claim.—A nail for fastening slate, having a thin tin or other metal cap or head, A, secured to the body B" of the nail by means of metal *a*, cut or scraped from the corners of the nail and forced against the cap, substantially as shown and described.

134,561.—*Centrifugal Apparatus for Extracting Honey from the Comb.*—WILLIAM PROBASCO, Lawrenceburg, Ind.

Claim.—1. The combination of the funnel-spout E with the hollow step C and annular groove-bearing B of a honey-extractor, all substantially as herein set forth.

2. I claim the hollow step D of the cone C, with an annular groove-bearing, B, arranged with a suitable delivery-spout, constructed substantially as herein set forth.

3. The revolving vessel H having concave bottom F and hollow journal-spout E, substantially as described.

134,562.—*Process of Preparing Moss for Mattress-Stuffing, &c.*—ADOLPHE ROCK, New Orleans, La.

The moss, after the bark has been rotted therefrom, is steeped in a bath of proto-acetate of iron. It is then removed from the bath and steamed to give it elasticity.

Claim.—1. The process of steaming moss for the purpose of imparting gloss and elasticity, after the same has been colored by the described or other process.

2. The method of treating moss by the use of the cleaning and coloring compound herein described, followed by steaming, substantially as specified.

134,563.—*Metallic Stove-Board and Floor-Protector.*—PHILIP H. ROSE, Canandaigua, N. Y.

From the outer side to the center the board is made raised of a conical or angular form.

Claim.—As a new article of manufacture, a metallic stove-board and floor-protector, raised from the outside to the center in a conical form, as shown, and provided near its edge with a series of perforations, *a a a*, and a central opening, *b*, as herein [illegible] described, for the purpose specified. [illegible]

134,564.—*Process of Preparing Moss for Mattress-Stuffing, &c.*—SARAH RUTH, Philadelphia, Pa. [illegible] moss, after the bark has been rotted therefrom, is [illegible] August 25, 1868. [illegible] coloring compound herein described, followed by steaming, substantially as specified.

134,565.—*Metallic Stove-Board and Floor-Protector.*—PHILIP H. ROSE, Canandaigua, N. Y.

From the outer side to the center the board is made raised of

upon the animal by means of the supporting-wires B B C C, hollow cylinders b'' b'' and c' c', and the straps c'' c'' and D D, arranged and secured substantially as and for the purposes set forth.

134,565.—*Machine for Cutting Matches.*—MATTHEW A. SCANLON, Akron, executor of THOMAS G. MURPHY, deceased; said SCANLON assignor of one-half his right to HARRISON S. DANFORTH, Middlebury, Ohio.

This machine is designed for cutting long match-sticks into two lengths after they have been dipped at each end.

Claim.—1. The combination of the cutting device E and the several elastic rings U U' and V V' on the shafts C and D, to hold the match-sticks while they are passing under the cutting device E, substantially as described.

2. The combination of the conveying-belt L, the oblique bands O O', and guides X X', to bring the middle of the match-sticks opposite the cutting device E.

3. The combination of the elastic belts M N and M' N', the oblique belts O O', and guides X X', and elastic rings U U' and V V', when constructed as and for the purpose described.

134,566.—*Coating for Writing-Tablets.*—AUGUST SCHINDLER, Lancaster, Pa.

Claim.—The specified composition, applied substantially in the manner and for the purpose specified.

134,567.—*Self-Acting Spinning-Jack.*—JAMES SHAW, Ballardvale, Mass.

The subject of the first clause of the claim is for moving the followers to guide the yarn upon the spindles and that of the second clause for regulating the winding according to the tension of the yarn, when the carriage is running in, by causing one or other of the racks suspended from the followers to engage and turn the gear on the top of the radial arm and move the nut to which the winding-chain is attached, the radial arm vibrating horizontally under the carriage.

Claim.—1. The combination of the stud *t*, the standard *r*, and its shaft *s*, with the guide-rail *l'*, the two levers *f g*, and the inclined plane *k*, and its adjusting mechanism, as described, all being arranged and applied together and to the shouldered rod *c* of the follower D, as and to operate substantially as set forth.

2. The combination of the two curved racks *v x*, the gear *w'*, the screw *k'*, the nut *n'*, radial arm *b'*, gear *c'*, pinion *e'*, pulley *f'*, and band *g'*, all being applied together and to the carriage A, the chain *n''*, and the follower C, substantially in manner and to operate as described.

134,568.—*Steam Vacuum-Pump.*—JOHN K. SIMPSON and SIMEON N. DRAKE, New York, N. Y., assignors of four-sixths of their right to HENRY KLENEN and MARTIN KLENEN, same place, FREDERICK KLENEN, Hoboken, N. J., and JOHN N. THOMAS, Maysville, Ky.

Claim.—1. The arrangement of the rods P P' connected to the discharge-valve C C', in combination with a disk, K, operating the steam-valve E, substantially as and for the purpose specified.

2. The combination of two cylinders or chambers, A A', with pipes L L', passages M N, and perforated chambers H H', substantially in the manner and for the purpose hereinbefore described.

134,569.—*Cabinet-Organ Case.*—ANDREAS J. SORENSEN, Erie, Pa., assignor to BURDETT ORGAN COMPANY, same place.

The case is enlarged in front below the manual, and the lower drop of the cover is fretted and made to serve also for a music-rack.

Claim.—1. An organ-case constructed with ends A A of less width below the key-board than the body, leaving recesses C C at the forward corners of the same, and the projection E, substantially as shown.

2. The fret-worked front fall G, in combination with the folding portions F F' of the lid or cover, substantially as described.

134,570.—*Burial-Casket.*—SAMUEL STEIN, Rochester, N. Y.

A skeleton frame is first constructed from molding, and within this is inserted the body-receptacle, which is made up of an outer wooden case, an intermediate sheet-metal lining, and an interior case also of wood. Two rubber gaskets, one under the turned-down edge of the metallic lining and the other above it, serve to render the casket air-tight.

Claim.—1. In a burial-casket, the combination of the metallic lining or box E with the exterior and interior covering-boxes D B, when arranged as shown, so that said metallic lining constitutes an air-tight receptacle, and said covering-boxes inclose and support the same, as herein shown and described.

2. In combination with the several boxes D E B and with the lid C, the two packing-rings *i m* with the flange *k* of the metal box inclosed between them, as and for the purpose specified.

134,571.—*Fastening Mail Bags.*—WILLIAM J. STOWELL, Baltimore, Md.

The strap C serves as a handle by which to lift the bag, and when so used increases the force of the clamping pressure by which the end of the thong is held.

Claim.—1. The lacing and buckling device B D E, applied, as at *c*, permanently to the upper edge of a mail-bag, A, which is made with lacing-holes *a a*, all constructed and operating in the manner and for the purpose herein described.

2. The attachment of the strap C of the label-holder to the bag by securing it to the part E of the lacing-thong buckle in the manner shown and described.

134,572.—*Loom.*—SAMUEL T. THOMAS, Gilford, N. H.

Each jack-bar of the heddle-actuating mechanism passes between a pin and a spring extending from the vertical arm of the lever, which places it in position to be operated by the knives, and the outer arm of the said lever is pressed down upon the pattern-chain by a spring. The pattern-cylinder is operated by a pawl pivoted to a bent lever connected by a slot and pin with the depresser bar or knife. The frictional contact between the fast and clutch pulleys is graduated by a spring and adjusting-screw.

Claim.—1. In combination with the jack-setting levers *s* positioned by the chain, and the jack-bars operated by the levers *s*, the springs r^3 s^3, the spring s^3 throwing down the lever-arm and causing the pin q^3 to throw back the jack-bar, and the spring r^3 throwing the bar forward and keeping it against the pin q^3, all substantially as shown and described.

2. In combination with the gear-sectors *l* and their slots *n* for positively moving the jack-bars and harness-levers, and locking them in open-shed position, the mechanism for locking the jack-bars in position laterally, so that each is held in position relatively to the lifter or depressor-bar, except when moved by the pattern-chain.

3. In combination with the gear-sectors *l* and their slots *n* for positively moving the jack-bars and harness-levers and locking them in open-shed position, the pawl-actuating lever k^2 operated by the pin c^3, extending from the slide-rod *h* of the depressor-bar *f*, substantially as shown and described

4. In combination with the driving-shaft *b* and its pulleys b^3 x^3, and fork g^3, and brake m^3, the adjusting-screw f^3, and spring e^3, for regulating the friction of the wheels, substantially as shown and described.

134,573.—*Heating-Stove.*—WILLIAM B. TREADWELL, Albany, N. Y.

The peculiar construction of the grate and its arrangement in a stove having an interior hollow partition over the fire-pot and air induction and circulating passages, as set out in the claims.

Claim.—1. The combination of two (or more) rings forming the fire-pot of a stove or furnace, placed one above the other, with openings for the passage of air between them, the lower edge of the upper ring being made smaller in circumference than the circumference of the inner surface of the upper portion of the lower ring, and extending below the openings referred to, for the purposes set forth, substantially as described.

2. Said rings when provided with notched ribs or flanges c^1 c^2, respectively.

3. The stove herein described, constructed with partition G, rings E and F, air-passages *a b J K x*, chamber L, exit-pipe M with perforated damper *f*, chamber B, and pipe R, combined and arranged substantially as herein shown and set forth.

134,574.—*Fire-Proof Safe.*—JUDSON W. WARNER, Oneida, N. Y.

A hollow chamber is constructed in the walls of the safe, and is kept filled with water from an ordinary service-pipe. Where the pipe enters the safe a plug of fusible metal is arranged within the pipe, so as to hold open one valve which permits the water to enter and another which permits it to leave the safe. Whenever the heat becomes intense enough to melt the pipes and cut off the supply of water, this fusible metal releases the two valves, which automatically close and keep the safe full of water.

Claim.—In combination with a safe provided with hollow chambers and an induction and eduction water-pipe, the fusible plug *d*, valve-stem, valve, and spring *h f* I, rocking lever *w*, and rod, valve, and spring *o k i*, all constructed substantially as and for the purposes set forth.

134,575.—*Fire-Proof Vault.*—JUDSON W. WARNER, Oneida, N. Y.

The body of the safe and its door is provided with hollow walls to contain water supplied from an ordinary service-pipe. In order that the flow of water may be uninterrupted through the entire structure, the pintles of the hinges are hollow and contain an opening, which, when the door is closed, registers with one in the hinge.

Claim.—In combination with a vault composed of hollow chambers and connecting water-pipes, substantially as described, the detachable door J provided with hollow slip-joint hinges K L, all constructed substantially as set forth.

134,576.—*Child's Carriage.*—JOHN B. WIGHTMAN, Brooklyn, N. Y.

Claim.—The combination of a reversible top and seat with connections which permit them to be shifted on the body of the carriage, substantially as described, for the purpose specified.

134,577.—*Manufacture of Keys for Locks.*—WILLIAM WILCOX, Middletown, Conn.

The bit, punched out of sheet metal, is placed in a mold and metal is cast upon it to form the shank. The hole *h* and the angular notches at the corners of the bit being thus filled with metal, the bit becomes securely locked.

Claim.—The method herein described of manufacturing keys, consisting in perforating the bit B at *h* and then casting the stem S in one piece around the inner end of the bit, and forming, by said casting, the neck or rivet R, substantially as and for the purpose set forth.

134,578.—*Apparatus for Physical Culture.*—GEORGE B. WINDSHIP, Boston, Mass.

By adjusting weights on a lever to be lifted in different ways to imitate rowing, pushing, &c.

Claim.—1. The combination of the straps 8 9 9' 9' with the lever O, and with or without the back-board 13, as a device for hand-shoving exercise, substantially as described.

2. The combination of the straps 8 9 9' 9' with the lever O and seat 10 placed near studs D, and with cross-bar H as a foot-rest, as a device for rowing or pulling exercise, substantially as described.

3. The handles 18 and 19 and link 20, in combination with the lever O as a device for hand-lifting exercise, substantially as described.

4. The seat 10, placed near the studs E, back-board 13, and foot-rest 14, in combination with lever O, as a device for leg exercise, substantially as described.

5. The horizontal bar G', in combination with studs D, and raised about eight feet from the platform, substantially as described.

6. The pulleys 1 2 3 4 on bars G G', in combination with straps in continuation of 8 9 and with lever O, as a device for the arm exercise of rope-climbing with moderated exertion, substantially as described.

7. The horns 15, in combination with one or more of the weights *a a a a*, substantially as and for the purpose described.

134,579.—*Chromatic-Printing Press.*—GEORGE W. WOODSIDE, Philadelphia, Pa., assignor of one-half of his right to SAMUEL L. KING, same place.

The paper is fed by rollers having adjustable segments and intermittently rotated by pawl-and-ratchet movement between stationary form and platen adjustable on reciprocating bed, on which it is held by tapes and after receiving impression passes to a paste-roller running in paste-vat, where the unprinted side is gummed. The form is inked by roller in bearings of horizontal lever pivoted on vibrating lever and held against the form by springs, the ends of said roller being cam-shaped to impart lateral movement to the distributing-rollers.

Claim.—1. The combination of the rods M N, levers O O, and connecting rock-shaft P, lever Q, and springs S with the vertically-moving bed-plate E and inking-roller M, substantially in the manner and for the purpose set forth.

2. The cams *i* on the ends of the cylinder L, in combination with the annular guides *j* of the distributing-rollers K K K, for giving a vibratory motion to the rollers in the line of their axes, substantially as described.

3. The combination of the feed-rollers V with the shafts T and T' adjustable thereon, and with the ratchet-feed, for the purpose of feeding a plurality of strips at the same time, substantially as described.

4. The combination of the paste-trough Z and cylinder Z' with the bed-plate E, as and for the purpose set forth.

134,580.—*Machine for Making Paper-Bags.*—CHARLES F. ANNAN, Boston, Mass., assignor to himself and HERBERT S. MERRILL, same place.

The sheet, one edge pasted, is spread by the diagonally-grooved guides, folded by grooved arms into a tube, and delivered to the pressing-rolls, the upper of which are grooved helically to smooth the paper inwardly, and the lower grooved longitudinally at their ends to compensate for irregularities. Between the rolls the tube is cut by sickle-edged knives reciprocated diagonally in different vertical planes with great velocity, each cutting through one ply of the tube so as to leave one end projecting. The second tube is carried forward between endless bands until its end is projected in front of folding-rollers, when a blade, reciprocating in a horizontal serpentine way, is moved back from contact with a paste-roll and tilted down in front of the folding-blade, which, reciprocating horizontally, wipes off the paste, strikes and doubles the tube-lap into the bight of the folding-rolls.

Claim.—1. The combination of the curved guide D, the closing guides E F, the feeding-rollers C, and roller G, or their equivalents, arranged as described to fold the web of paper into a flat tube as it is drawn by them, without the use of a former, substantially as described.

2. The inclined ribs or grooves in the faces of the curved guide, and the closing guides E and F, substantially as described.

3. The upper feeding-rollers provided with the helical grooves terminating at the middle thereof, substantially as and for the purpose described.

4. The lower feeding-rollers having smooth middle portions and longitudinally-fluted ends, substantially as described.

5. The serrated cutter working in an inclined direction substantially as described, as a device for separating paper and other tissues.

6. The combination of two of said cutters working in opposite directions, in different planes, as described, for the purpose of separating the two thicknesses of the paper on different lines, substantially as described.

7. The combination of the two serrated cutters with the two rocking shafts geared together, and their accessories for operating said cutters from a single reciprocating movement, substantially as described.

8. The edge-cutters P, in combination with the cutters I and J, substantially as described.

9. The pasting-bar T^3 having the movements described, in combination with the delivering-rollers E R^1 and the folding blade S, and the paste-roller Q', so arranged that the paste is applied to the lap of the bag, substantially as described.

10. The combination of the shaft T and its cranks and guide-pieces with the stationary cam-guides T^1, by which the paste-bar is carried and applied to the paste-roller and the flap of the bag by the reciprocating motion of the shaft T, substantially as described.

134,581.—*Device for Producing Pearl-Finish on Metallic Surfaces.*—BERNHARD D. BEIDERHASE and CHARLES WITTECK, New York, N. Y.—Case A.

The device is attached to the spindle of a lathe and revolved rapidly. The surface to be finished is brought in contact with the wire points, which produces the finish desired. The wire clusters are looped around the pins shown in the head of device, and have an elastic motion.

Claim.—1. A device for producing what is known as satin or pearl finish to metallic surfaces, constructed substantially as shown and described.

2. The recessed head A, with the apertures C', pins E, and clusters of wire D, substantially as and for the purposes described.

3. The combination of the head A and wire clusters D, arranged, as described, with the spindle B, or with the mandrel of a lathe, substantially as set forth.

134,582.—*Device for Producing Satin-Finish on Metallic Surfaces.*—BERNHARD D. BEIDERHASE and CHARLES WITTECK, New York, N. Y.—Case B.

The head carrying the wire clusters loosely attached is revolved rapidly in a lathe or other device, and the metallic surface to be finished brought into contact with the ends of the wires as they revolve, and the desired effect produced.

Claim.—1. An apparatus or device for producing a "satin-finish" on metallic surfaces, constructed substantially as shown and described.

2. The head A, with one or more wire clusters, D, attached thereto, substantially as shown and described.

3. The eyes or loops B, plates C, clusters D, and head A, in combination with a lathe-mandrel, as and for the purposes described.

134,583.—*Vapor-Stove for Heating Soldering-Irons.*—DAVID BERRY, Huntington, Ind.

Claim.—An improved vapor-stove, consisting of the stove A, cover B, oil-reservoir D, pipes F G H, burner I, slotted and flanged disk J, tubes K, and cap L, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

134,584.—*Machine for Making Shank-Pieces for Boots and Shoes.*—CHARLES H. BLAKE, DAVID D. BLAKE, and FRANCIS M. BLAKE, Worcester, Mass.

Claim.—1. The die or form A constructed to impart the proper shape to a shank-piece, when said shank-piece is bent over said form and trimmed by a single cut of an angular or curved knife, substantially as set forth.

2. The combination, with the form A, of the grooved faced pressure-roll D and trimming-knife C, substantially as and for the purpose set forth.

3. The combination, with the wheel B and dies or forms A, of the pressure-roll D, springs I, cutter C, and adjusting-slide J, substantially as and for the purposes set forth.

134,585.—*Chandelier.*—NATHANIEL L. BRADLEY, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place.

The arms can be separately removed without disturbing the remaining portion.

Claim.—The flange A provided with notches *a* and the cap B provided with notches *d*, the arm C constructed with its hooked end *f* to pass through the notch *d*, and lock onto the flange A, in combination with the extension D of the bracket when connected to the spindle above, substantially as set forth.

134,586.—*Cover for Pitchers.*—WALTER BRADLEY, Providence R. I.

A pitcher-cover hung at or near its center on journals, with a preponderating weight attached to it in rear of the journals, by which, when in use, it automatically opens and closes itself.

Claim.—In combination with a pitcher or cup, the self-acting or automatic cover D, substantially as shown and described.

134,587.—*Inkstand.*—WILLIAM M. BROOKE, Eaton, Ohio.

The glass inkstand is semicircular in horizontal cross-section, and is provided with a metallic casing, G, furnished with ears or lugs *b*, by which it is attached to the vertical side of a desk or other object.

Claim.—The combination of the stand D, casing G, ears *b*, and top *f*, said top fastened to the casing by screws *e e*, all constructed and arranged substantially as herein set forth.

134,588.—*Machine for Cutting Sugar into Blocks.*—PETER O. BRUNJES and ALBERT BENNECKENDORF, Hoboken, N. J.

Improvement on Letters Patent No. 132,696. One set of grooving-saws is dispensed with, and the loaf, supported upon a carriage, is fed in a horizontal instead of a vertical plane, the cone-holder revolving on the backward movement of the carriage so as to make the second grooves at right angles to the first, after which the cone is fed to a circular saw, which removes the grooved portion. The feeding of the cone is accomplished by a pawl carried upon a slide, which is forced forward by a cam upon the stationary frame, the pawl engaging with ratchet-teeth upon the stem of the cone-holder.

Claim.—1. The reciprocating carriage G carrying the swivel-plate I, and in the same the laterally-movable sugar-holder *i*, substantially as described.

2. The rod L, connected with the plate I and hung in the carriage G, for the purpose of turning the plate I, as described.

3. The sugar-holder *i* provided with the shank J and combined with the pawl *r*, slide *s*, pin *t*, and cam *v*, to operate substantially as herein shown and described.

4. The plate I provided with the projecting arms *g g*, that serve as a guide and support for the cone-holder *i*, as specified.

5. The combination of the laterally-movable sugar-cone holder with one set of grooving-saws, C, and with one detaching-saw, F, substantially as described.

6. The process, herein described, of cutting sugar into blocks by one set of grooving-saws, C, and one detaching-saw, F, and by turning the said cone previous to each movement of the same toward the grooving-saws, as specified.

7. The cams a^3 connected with the spirally-grooved rollers b^3 and combined with the sugar-cone holder *i*, to be operated by the same, substantially as described.

8. The slide *z* carrying double wedges and a pin, *t*, and applied to the shank J of the sugar-cone holder, as described.

9. The cone-support d^2 arranged on the arm e^3 of the sugar-cone holder, when said arm is provided with an inclined slot, as specified.

134,589.—*Magazine Fire-Arm.*—ANDREW BURGESS, Hartford Conn.

The magazine is loaded by inserting the cartridges into an opening in the side of the bed-piece. This opening is provided with a spring-slide, which is closed by the reaction of a spring contained in a groove in the bed-piece, protected by its cover.

Claim.—1. The forward part *a* of the jointed breech-block, combined with and guided by the sliding cover *b*, to which it is attached, substantially as described.

2. The combination of the elliptical curve *f* with the rear termination of the opening in the bed-piece, and the shoulder *g*, as a means of operating the breech-block, as set forth.

3. The bent lever *l*, when operated by the projection *m* and combined with the carrier-block B, in the manner and for the purpose described.

4. The sliding cover S, when combined with the spring *t* and loading-aperture of a magazine-gun, in the manner and for the purpose set forth.

134,590.—*Corn-Husker.*—JOHN M. CARLISLE, Sumter, S. C.

The sliding sash has a knife and a claw for stripping the ear of corn in proper position; a spring lever-holder to keep the ear in position while separating the stem from the same by means of the knife; and a sliding block having spring-fingers with cutting-points to slit the husks on the ear as the block is drawn backward by means of levers operated by the sliding sash.

Claim.—1. The combination of the stop-claw E with the sash B that carries the knife D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the sliding block M, spring-fingers N, and points or cutters O with the claw E, and knife-sash B, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the hinged bars J K L with the knife-sash B and sliding head-block M, that carries the spring-cutter fingers N O, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the spring-lever holder G H I with the knife-sash B, stop-claw E, and spring points or cutters N O attached to the sliding block M, substantially as herein shown and described, and for the purpose set forth.

134,591.—*Pruning-Shears.*—OSCAR CHASE, Rutland, Ohio.

One arm of the shears has on its upper end a hook for securing the bough to be cut. A curved guide extending around the pivotal point, and united to the main arm of the shears, carries a cam-faced cutter, which is pivoted within the curved guide at a point near its center. The lower end of the cutter is united to a link, which link is joined to the main arm below the pivot, and furnished with a curved finger which works against a stop-pin arranged to aid in producing a draw-cut.

Claim.—The combination of the lever A provided with a hook, a^1, guide-arm a^2, and stop or projection a^3, the handle B, the cutter C, and the bar, arm, or link D, having a slot, d^1, formed in its inner end and provided with a finger or cam, d^2, said parts being constructed and operating substantially as herein shown and described, and for the purposes set forth.

134,592.—*Cotton-Press.*—PETER K. DEDERICK, Albany, N. Y.

Claim.—1. A baling-press in which the sack for each bale is combined with the pressing devices during the process of forming the bale in such manner that the compressing and sacking are accomplished simultaneously and by the same operations, substantially as specified.

2. The combination, with the press-case C and the sack, of a press-arm-holder for the sack, substantially as specified.

3. The combination of a movable press-head and a friction-brake with the press-case and follower, substantially as specified.

134,593.—*Chair Seat and Back.*—WILLIAM T. DOREMUS, New York, N. Y.

Rigid and elastic blocks are combined together with flexible connections, so as to form a spring-seat or back.

Claim.—The combination of the rigid blocks, elastic blocks, and flexible connections, substantially as shown and described, for the purpose specified.

134,594.—*Car-Axle Box.*—HERMAN G. DOWNS, Seneca Falls, N. Y.

The weight of the car rests upon rollers, which are placed in the journal-boxes so as to bear vertically upon the journals. Cheek-plates are dovetailed into the sides of the journal-box to sustain all lateral strain upon the axles. An oil-box is attached to the journal-box, from which the roller and journal are lubricated by means of the oil passing from the oil box through a groove in the axle of the roller.

Claim.—1. The roller *b* supported upon an axle-bolt, *c*, having a hole, 4, leading from the oil-box to the groove that is upon the under side of said bolt *c*, in combination with the journal and the box, [illegible] as set forth.

2. The cheek-plates *a* secured within the journal-box at the sides of the journal, substantially as and for the purpose [illegible] and described, and for the purpose set forth.

134,595.—[illegible], substantially as shown and described, for the purpose [illegible] with a furnace which heats the hollow [illegible]. The [illegible] which [illegible] and [illegible], N. Y.

The weight of the car rests upon rollers, which are placed in the journal boxes so as to bear vertically upon the journals. Cheek-plates are dovetailed into the sides of the journal-box to sustain all lateral strain upon the axles. An oil-box is attached to the journal-box, from which the roller and journal are lubricated by

wardly near the track, and are so arranged as to be connected at their ends, to form an unbroken side the length of the train.

Claim.—1. A ram for tunneling snow on railroads, consisting of the heated hollow tapering head A and vertical-sided and top-rounded body B C, provided with suitable heating apparatus, the former extending to the top of the latter, and laterally a little beyond the body, as and for the purpose described.

2. The furnaces G G and the surrounding chamber J with its air inlet and outlet pipes K L arranged in connection with the hollow head A, as and for the purpose described.

3. The smoke-stacks M, hinged and folding under cap N, as and for the purpose described.

4. The overlapping plates S and springs T arranged between the platforms of two adjacent cars, as and for the purpose described.

134,596.—*Machine for Jointing Staves.*—SOLOMON S. GRAY, Boston, Mass.

An endless traveling platform is provided with forms, upon which the staves are placed while passing between revolving cutters, the forms acting as guides to the cutters.

Claim.—1. In an organized machine for jointing staves, an endless-chain feed-bed, having secured thereon one or more pattern-forms by which the position of the cutters is controlled to give the proper curvature to the edge of the stave, substantially as described.

2. In combination with an endless chain feed-bed having one or more pattern-forms secured thereon, the cutter heads J J, arranged and operating as herein described, for the purpose specified.

3. In combination with an endless-chain feed-bed having one or more pattern-forms secured thereon, the pivoted adjustable shoe *b*, attached to the cutter-frame, substantially as described, for the purpose specified.

4. In combination with an endless-chain feed-bed having one or more pattern-forms secured thereon, the yielding pressure-bar L, arranged and operating substantially as described, for the purpose specified.

5. The combination of the chain feed-bed C having one or more pattern-forms, E E, secured thereon, the revolving cutter-heads J J placed opposite each other, on either side of said bed and mounted upon sliding frames F F, the adjustable pivoted shoes *b* attached to said frames and working in conjunction with the curved edge of the former E to control the position of the cutter-heads, and the levers *d* and the weight G for holding said cutters to their work, substantially as herein set forth and described.

6. In combination with an endless-chain feed-bed having one or more pattern forms secured thereon, the guide-plates D D, provided with a tongue on their inner edges to fit a corresponding groove formed in either edge of said feed-bed, for the purposes and in the manner herein set forth and described.

7. The combination of the frame F, the bar *e* made in two parts, and the wedge *f* interposed between said parts for the purpose of expanding said bar to vary the position of the shoe *b* with relation to the cutter-head, substantially as described.

134,597.—*Machine for Crozing and Chamfering Staves.*—SOLOMON S. GRAY, Boston, Mass.

The stave-carriers are provided with yielding beds, and the knives upon the cutter-heads are constructed so as to produce a drawing-cut.

Claim.—1. In a machine for finishing the ends of barrel-staves, a rotary feed-cylinder mounted in fixed or rigid bearings, and provided with the yielding followers *j j* arranged on its periphery to support the stave, in combination with the guide and gage bars L, arranged and operating as described, for the purpose specified.

2. The cutters *c*, *d*, and *g* formed and arranged on inclined surfaces on the cutter-heads *a* and *b*, that that portion of the cutting-edges of said cutters which describes the smallest circle shall strike the wood first and give a drawing cut, substantially as described.

134,598.—*Pole-Clamp.*—HENRY HARRING, New York, N. Y., assignor to himself and HERMANN ALLIS, same place.

To clamp the pole-splice together, the yoke is put around the pole and the eccentric lever is put in its bearings as near to the poles as it can be with the handle raised, so that the lowest part of the eccentric head will be next to the pole. The handle is then forced downward, and is secured by the chain or a cord passed around the poles and engaged to a hook.

Claim.—A pole-clamp, consisting of the yoke A with notches G, the eccentric lever B D with journals H, and a binding chain or cord, E, all combined and arranged substantially as specified.

134,599.—*Apparatus for Filling, Polishing, and Varnishing Moldings.*—MAX HAMBURGER, ISAAC J. SISKIND, and ACHILLE KLEIN, New York, N. Y.

The molding rests upon a table which is raised by racks and pinions. A brush, having a hollow handle for the transmission of the varnish and a spiral spring for adjustment, is secured by a bracket to a traveling trough placed over the table. The trough is moved by cords passing over pulleys, and at either end of its travel strikes a lever which operates a clutch and other reversing mechanism.

Claim.—1. The combination of the [illegible] arm G, gear-wheels [illegible] shaft [illegible] clutch-sleeve [illegible] lever [illegible] pulleys [illegible] cords [illegible] and [illegible] substantially as and for the purpose set forth.

2. The combination of the [illegible] with the [illegible] and [illegible] substantially as described, and for the purpose set forth.

134,599.—*Apparatus for Filling, Polishing, and Varnishing Moldings.*—MAX HAMBURGER, ISAAC J. SISKIND, and ACHILLE KLEIN, New York, N. Y.

The molding rests upon a table which is raised by racks and pinions. A brush, having a hollow handle for the transmission of

receiving and carrying the brushes or rubbers S T, in combination with the adjustable table B, substantially as herein shown and described, and for the purpose set forth.

4. The hollow stem S and spring W for conveying the liquid to the brush or rubber, and for holding the said brush or rubber down to its work with an elastic pressure, in combination with the bracket or holder U, substantially as herein shown and described.

5. The combination of the trough P, provided with stop-cocks Q, with the moving bar V, hollow stems S, and brushes or rubbers T, substantially as herein shown and described, and for the purpose set forth.

6. The arrangement of the cords Z, guide-pulleys A', wheels or drums B', shaft E', loose pulleys F', clutch K', straight and crossed belts G', pulleys H', and driving-shaft I', with respect to each other, to the moving bar V and frame A, substantially as herein shown and described, and for the purpose set forth.

7. The combination of the connecting-rod M', armed shaft O' N' P', sliding rod Q', levers R', and arm S' with the moving bar V, frame A, clutch-lever L', clutch K', and loose pulleys F', substantially as herein shown and described, and for the purpose set forth.

8. The combination of the hand-lever T' with the sliding rod Q', armed shaft O' N' P', connecting-rod M', clutch-lever L', clutch K', and loose pulleys F', substantially as herein shown and described, and for the purpose set forth.

134,600.—*Stopper for Volatile-Salts Bottles.*—ALONZO HEBBARD, New York, N. Y.

A hollow screw-cap, having fitted therein a perforated diaphragm and a plug of rubber or leather to close the mouth of the bottle when screwed down upon it.

Claim.—The combination of the bottle A with the screw-cap E, having a diaphragm, G, therein, made as described, and all arranged and operating as set forth.

134,601.—*Manger for Horses.*—JOSEPH C. HIGGINS, Millstone, N. J.

A manger is pivoted at each end; is provided with a weight underneath to keep it upright. In front and near this freely-moving manger a transverse rod is arranged, the whole being intended to prevent horses from "cribbing."

Claim.—1. A horse-manger, supported on pivots and weighted at the bottom so that it will be self-adjusting, substantially as shown and described.

2. In combination with a manger constructed as above described, the rod B, as and for the purposes set forth.

134,602.—*Chromatic-Printing-Press Attachment.*—EDWARD A. HOWITT, Whitewater, Wis.

Straps are secured to the ordinary distributing-disk, which latter is given a vibrating motion to evenly distribute the color.

Claim.—The series of detachable straps B arranged in a printing-press parallel to each other and upon a vibratory plate, as described, and for the purpose specified.

134,603.—*Coffee-Pot.*—EDWARD HEINSON HUCH, Brunswick, Germany.

A steam-chamber is formed by the long flange of the cover. When the cover is raised by the steam the connecting-rods and levers operate to extinguish the lamp.

Claim.—1. The lid D, made up-and-down adjustable, and dipping into an annular water-space to close tight the vessel it covers, as set forth.

2. The up-and-down adjustable lid D, connected with the lamp-closing or wick-adjusting devices to regulate the flame automatically, as specified.

3. Such construction of pots for making coffee and other infusions that when the pressure of the steam raises the water from a lower to an upper vessel the water acts upon a float, and in so doing gives motion to instrument which extinguishes the flame, substantially as described.

134,604.—*Tongs for Lifting Fruit-Cans.*—ALBERT H. JOHNSON, Bridgeport, Conn.

A pair of handles pivoted together, each handle extending into two legs, and their ends turned inwardly at nearly right angles in the form of feet.

Claim.—The tongs herein described, consisting of the handles A B, pivoted together, each handle terminating in a pair of legs, *a d*, and the legs provided with internally-projecting feet, substantially in the manner and for the purpose herein described.

134,605.—*Automatic Fan.*—WILLIAM LAWRENCE and JOSEPH SANDERS, New Albany, Ind.

The fan-frame can be set at any point within about three hundred degrees by circular plate-rings, notched on the inner edge to engage a double-spring latch.

Claim.—1. The jointed fan-frame C and circles L L, in combination with the stands B B and bed A, as and for the purposes set forth.

2. The stop-levers N N and spring Q, in combination with the fan-frame C and circles L L, as and for the purposes described.

134,606.—*Thread-Waxing Attachment for Sewing-Machines.*—CLAY E. LEWIS, York, Pa.

The wax in the cup is kept warm by the water in its outer casing, heated by the heater or lamp, and the lamp also keeps the horn warm.

Claim.—The arrangement of heater C with waxing attachment and horn so that the former heats both, substantially as specified.

134,607.—*Wash-Board.*—JOHN T. MCNALLY, Brooklyn, and FRANK T. MCNALLY, East New York, N. Y.

On the large corrugations smaller corrugations or ribs are made, running longitudinally thereon.

Claim.—A wash-board with a surface of sheet metal in which there are small ribs running longitudinally of the corrugations or undulations, for the purposes set forth.

134,608.—*Bayonet Attachment.*—JAMES W. NEIL, Brooklyn, assignor to himself and EDWARD SIMPSON, Glencove, and JOHN W. WILSON, New York, N. Y.

Claim.—The spring-lever *c*, with a latch, *r*, at one end and a thumb-piece, *s*, at the other end, in combination with the cylinder *b* of the bayonet and the raised portion *t* surrounding such thumb-piece *s*, as and for the purposes set forth.

134,609.—*Washing-Machine.*—AMANDRIN M. OLDS, Greeley, Col. Ter.

A tub with vertical revolving shaft, to which is attached a circular disk with screw-formed rollers and radial arms, and operating arms.

Claim.—An attachment for wash-tubs, consisting of the circular disk A, screw-rollers C, and radial arms I and handles D, when combined to operate substantially as set forth.

134,610.—*Adjustable Grain-Wheel for Harvester-Platforms.*—GEORGE M. PATTEN, Auburn, N. Y.

Claim.—The flanged plate C provided with two sets of ratchet-teeth, E, pawls F, springs G, pivoted stems H, and flanged block D, in combination with each other, substantially as herein shown and described, to adapt them for attachment to a harvester-platform, as and for the purposes set forth.

134,611.—*Lubricator.*—JOHN MCLURE POWER, Port Discovery, Washington Territory.

Claim.—A lubricator having a neck, A; reservoir B, oil-chamber C; condenser F and spindle H, cock G, branch E, pipe D, valve-spindle J, and plug I, when the same are arranged substantially as and for the purposes described.

134,612.—*Door-Check.*—GEORGE ROHRBAKER, Penn Station, Pa.

A circular metallic plate, bearing a circular cavity or opening, forms part of a frame which is attached to the casing and arranged concentric with the door-hinges. There is also on the door another suitable plate holding a block of rubber a little wider than the cavity or groove, and working in it, whereby the swinging door is held by friction in the desired position.

Claim.—A metal piece, D, having a circular cavity, H, and attached to casing B, in combination with the rubber block I attached to plate J, and made a little wider than the breadth of said cavity H, as and for the purpose described.

134,613.—*Music-Portfolio.*—FRANK C. SCHUMANN, New York, N. Y.

The spring-back C clamps the sheet of music securely within the book while used as a portfolio, and serves, also, as a ledge to support the lower edge of the sheet, while one back of the portfolio is supported upon the hinged bracket D, to serve as a music-rack.

Claim.—The combination of a bracket, D, with the spring back C and side plates A B of a music-portfolio, in such a way that it may support one of said side plates in an inclined position to adapt it to serve as a music-rack, and may be turned down out of the way when not required for use to allow the portfolio to be closed, substantially as herein shown and described.

134,614.—*Spring Bed-Bottom.*—JOHN L. SECOMB, Chicago, Ill.

The bed-bottom is formed of two longitudinal slats and four transverse slats, secured together by screws. Conical springs at the corners. On these rest two transverse bars. To these are attached, by hooked screws, several spring-slats having stiffeners on the under side. There are also slats running diagonally.

Claim.—A spring bed-bottom, wherein the slats A, screws B, slats or bars C C', springs D, bars E, spring-slats F, stiffeners G, and diagonal spring-braces H, are arranged substantially as set forth.

134,615.—*Cultivator.*—JAMES SHERRILL, Harrisburg, Oregon.

A series of plow-beams in a frame pendent to a main frame on wheels. The beams have independent vertical motion only. Clevis attached to front point of lower frame, where it is suspended, rods from which lead back to the axle-tree. At the back of the seed-box, which lies along the axle-tree, there is a rod attached to a bell-crank lever, which latter has another rod with a forked end for throwing the agitator-shaft out of gear with the running-wheels. The same movement, by an attachment to a slide intended to cover the openings in the bottom of the box, accomplishes the object.

Claim.—1. The forked or clutch rod Y, cross-head lever B', spring-rod C', arm H', and catch I', in combination with the seed-box T, gear-wheel W, sliding plate G', and roller M, substantially as herein shown and described, and for the purposes set forth.

2. The draft-frame E, pendent from stationary frame and axle, and having the plow-beams pivoted thereto, as and for the purpose described.

134,616.—*Street-Car Coupling.*—JOHN STEPHENSON, New York, N. Y.—Case E.

Claim.—In a street-car having a draw-bar, A, with jaws B C and pin D, I claim the rod F, the same being a rigid extension of the pin, and being provided with shoulders *g i*, spring G, and handle for the driver, all constructed and arranged to operate as set forth.

134,617.—*Butt-Hinge.*—ISAAC L. THOMPSON, Sardis, Ohio.

A butt-hinge is provided with extra arms or straps working loosely on the pintle, which arms are attached to the wood of the door or casing about at right angles with the leaf of the hinge. These arms have formed on the inside a drive-lug or pin, which, driven into the wood, saves one screw, the whole strengthening the construction and diminishing liability of the hinge to get loosened under heavy weight or rough usage.

Claim.—The combination, with the leaves A A and pintle C of the hinge, of the arms E provided with the lugs G, as and for the purpose specified.

134,618.—*Mode of Utilizing the Currents of Rivers.*—ELIE VALADE, Memphis, Tenn.

Claim.—1. The abutments A C, converging toward a screw, *w*, which is applied in a wheel-house, D, substantially as and for the purposes described.

2. The guard B, combined with the abutments A C, the latter one being below or on a level with low-water mark, substantially as and for the purposes described.

134,619.—*Metallic Fabric for Scouring and Percolating Purposes.*—ANDREW J. VANDEGRIFT, Covington, Ky.

Fabric built up of plates of sheet metal laid in rows, and secured together by transverse rods.

Claim.—A metallic fabric for scouring and percolating purposes, composed of suitably-united tiers or rows of slips or plates of sheet metal, arranged in parallel planes with intervening spaces, substantially as specified.

134,620.—*Paddle-Wheel.*—THOMAS G. WALKER and HENRY H. HOLBROOK, New York, N. Y.

Buckets or floats, swung upon their vertical edges to vertical shafts, rotate freely upon their axes, and are controlled in their revolution and caused to rotate by stationary stops securely attached to the framing of the vessel.

Claim.—The propeller-wheels upon vertical shafts, and made with buckets that swing upon a line, or nearly so, of one of the vertical edges, in combination with the arms *f* and stationary stops *g*, substantially as and for the purposes set forth.

134,621.—*Crimping and Fluting Machine.*—ROBERT WERNER, Hoboken, N. J.

Portions of the rollers are toothed for fluting; the remainder has smooth surfaces. A platform is placed in front of the rollers, and has a small pressing-finger or detent which bears upon and draws the fabric back into crinkles or folds as it passes along the platform to be introduced between the rollers. As it emerges from the rollers in the rear two pressers bear the fluted portion down upon the lower roller, while a projecting tongue underneath the crimpled part pushes that portion up into a puff.

Claim.—1. The detent D arranged, in combination with the fluting-rollers B B, to produce the crinkles or puffing on the fabric which is partially fluted, as set forth.

2. The platform C or C' arranged, in combination with the detent D and rollers B, as specified.

3. The check-pieces *f* in the plate E, applied in conjunction with the projecting rib *g*, to the fluting-rollers B B, as specified.

134,622.—*Pavement.*—MILTON E. WORRELL, Monmouth, Ill.

A cellular iron frame with longitudinal and transverse flanges and straining-rod below, pyramidal wooden blocks above, and elastic packing between contiguous frames.

Claim.—An improved combined iron and wood pavement formed by the combination of the perforated cellular iron plates A, edge flanges C, cross-flanges D, stay-rods E, wooden blocks B, and rubber or other elastic packing F with each other, substantially in the manner herein shown and described, and for the purpose set forth.

134,623.—*Baby Carriage.*—CHARLES H. AMIDON, Miller's Falls, Mass.

The handle is adjusted by its having a ribbed plate secured to one end, which engages with a plate on the side of the body. This plate has corresponding grooves, both being fixed by means of a thumb-screw. The seat is so arranged that it may form a bed.

Claim.—1. In combination with the carriage-body A, the blocks D E having concentric grooves *e* and corresponding ribs *d*, and the ball-handles B, adjusted by the thumb screws F, substantially as herein set forth.

2. In combination with the carriage-body A, the blocks D E having concentric grooves *e*, with a stop or stops, *g*, and corresponding ribs *d* having transverse serrations *f*, and the ball-handle adjusted by the thumb-screws F, substantially as herein set forth.

3. In combination with the carriage-body A, the springs S, bolster T, and the rear axle U, joined to said bolster at its center, as and for the purpose set forth.

4. The seat V, constructed with the front flap hinged thereto and combined with cleats *r*, as set forth, so that said seat may be converted into a bed, in the manner described.

134,624.—*Adjustable Picket Fence.*—JOHN S. ANDERSON, Flintville, Wis.

The horizontal bars bearing the pivoted palings are supported by double hooks attached to the post. The loops which secure the bars to the hooks are pivoted to the bars to give complete adjustability.

Claim.—The pivoted loops E attached to the horizontal bars D, as described, in combination with the post A having the double hooks B and pivoted palings C, substantially as specified.

134,625.—*Lifting-Jack.*—WILBUR F. ARNOLD, New Britain, Conn.

Claim.—1. The combination of the standard A and sleeve D, with the toggle-joint formed by the levers F G, all substantially as and for the purpose described.

2. The combination of the two movable and adjustable sleeves D D', rack *b*, pawl *c*, levers F G, and standard A, all operating together substantially as and for the purpose described.

134,626.—*Pump.*—JOHN S. BARDEN, Providence, R. I.

A piston works in a cylinder which is inclosed in an exterior cylinder, divided into interior subdivisions by vertical partitions, forming induction and eduction chambers having perforated valve-seats, upon which an elastic band is arranged to bear.

Claim.—1. The combination, with a piston-pump, of the requisite valve-ports, having a suitable seat or seats, and the elastic band-valve embracing the seat, substantially as and for the purposes specified.

2. The combination of the piston, its cylinder, the including-case divided into induction and eduction chambers, the several induction and eduction valve-ports, and the elastic band-valves E F, substantially as and for the purposes specified.

134,627.—*Railroad-Car Seat.*—ALEXANDER BARNEY, Wilmington, Del.

The seat can be reversed, and the back inclined at any angle.

Claim.—1. A car-seat, consisting of the lower stationary frame and the upper portion or seat B, supported by the frame, and adjustable longitudinally and rotating as specified.

2. The combination, with the sliding frame G, of the inclined guides *b b* of the fixed frame, for the purpose specified.

3. The combination, substantially as described, of the adjustable hinged back F, with the pivoted reversible seat.

4. The combination of the back F, connected to the seat by a double hinged joint, and the curved and notched rods *e*, secured rigidly to the said back, and adapted to pins *h* projecting from the arms of the seat into the paths of the said rods, all substantially as specified.

5. The adjustable cushion B' and its notch *k*, in combination with the projection *l* on the front edge of the seat-frame.

134,628.—*Composition for Forming Stone, &c.*—JOSEPH J. BARTLETT, New York, N. Y.

Treating asbestus, "either ground or in fibers," with silicate of soda or potash, and pressing into molds and saturating with chloride of calcium, and then washing in water.

Claim.—1. A compound obtained by treating asbestus, substantially in the manner herein described.

2. The within-described process of treating asbestus, substantially as and for the purposes set forth.

134,629.—*Car-Coupling.*—JOSEPH W. BATES, Minneapolis, Minn.

The coupling-bar G has shoulders *d* on its rear end which extend half way around it, said shoulders serving to resist impact and draft and as a weight to keep the spear-shaped end *f* in the proper position. The smaller shoulder *d*, extending only half way round the bar G, allows of its being inserted through the bulge in slot *a*. C holds G in a horizontal position.

Claim.—The bumper A provided with the forward notched plate C, inclined walls B B, and slotted plate D, in combination with the coupling G having beveled spear-head *f*, bearing *b* shoulders *d d*, and weight A, all constructed to operate substantially as set forth.

134,630.—*Child's Carriage.*—JOHN A. BECHLER, Philadelphia, Pa.

Claim.—1. A vehicle, as described, convertible into a two or four wheeled child's carriage, or a perambulator, or a sleigh, substantially as herein set forth.

2. The oscillating or pivoted bars B C arranged between the parallel frames, and capable of being turned from a vertical to a horizontal position for supporting the bottom of a wheeled vehicle, or the platform of a sleigh, substantially as herein shown and described.

3. The detachable bottom-board E, provided with one or more jointed sections for forming a dash-board for the child's carriage, or platform for the child's sleigh, as shown and described.

4. In a four-wheeled perambulator or carriage, substantially as described, mounting the rear axle of the wheels in the legs at *o*, or in spring-bearings, as at L, and combining therewith the removable brace rods M M and reach H, as set forth.

5. In a child's carriage or perambulator, as described, the detachable canopy T provided with curtains V and rods U, in combination with the side frames A, the seat P, and bottom-board E, as and for the purpose set forth.

134,631.—*Lantern.*—HENRY BEEBE, Jersey City Heights, N. J.

A deflecting-plate is arranged over the perforated top plate of the burner, for the purpose of directing a portion of the continuous current of air to the burner.

Claim.—1. The deflecting-plate K, arranged about the burner-cap J, in combination with the perforated plate C, substantially as described.

2. The perforated plate C provided with the rising and inwardly-bent flange G to receive the globe I and with the perforated curtain D for supporting the whole upon the lamp, as shown, in combination with the solid deflecting-plate K surrounding the perforated burner J, the whole arranged and operating substantially as described.

134,632.—*Cotton-Cultivator.*—NOAH BELL and HENRY WINFIELD, Pantego township, Beaufort county, N. C.

Two shovel-plows adjustably connected together so that the distance between them may be increased or diminished. To the land-sides are attached outwardly-projecting flanges to clear weeds.

Claim.—1. The construction and arrangement of the bars C *d*' E', land-sides D D', and clip *d*', substantially as specified.

2. The diverging flanged clearers H secured to the land-sides D D' at their forward ends, in combination with the oblique shovels F F', substantially as specified.

3. The slotted, pivoted, and obliquely-arranged shovels F F', saddles E E' and bent standards *d*' E', combined and arranged substantially as specified.

134,633.—*Clothes-Wringer.*—THOMAS O. BOGERT, Cincinnati, Ohio, assignor to THE QUEEN CITY WRINGER COMPANY, same place.

A clothes-wringer with its frame and dripping device or pan cast in one piece, with its sides or uprights covered with a cap, through which passes the regulating-screw, and is held in position by studs projecting upward from its sides. Attached to the sides of the frame covering the journals are upright pieces with projecting flanges, to conduct the clothes to the rolls.

Claim.—1. The journal-box cap A', constructed as shown, and provided with the stud *a*', in combination with the post A provided with the opening *a* and with the screw *a*'', substantially as and for the purpose specified.

2. The side pieces or posts A, legs C, and dripping-pan B, when constructed of or from one piece of metal in the form shown, substantially as and for the purpose set forth.

3. The cross-bar L provided with the tenons *l*, and combined with the posts A by means of the divided sockets M, substantially as and for the purpose shown.

4. The device as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose shown and described.

134,634.—*Feed-Water Heater.*—HENRY F. BOODY and EDMUND P. MERRILL, Portland, Me.

Two reservoirs, conforming to the shape of the smoke-arch, are connected by pipes and placed in the said smoke-arch, so that the feed-water is heated by the fire instead of the exhaust steam, as heretofore.

Claim.—The combination, with the smoke-arch of a locomotive, of the reservoirs *a a'*, pipes *d c e*, and coupling *f* to form a feed-water heater, when constructed and arranged substantially as set forth.

134,635.—*Steam-Generator.*—JOHN W. BOOKWALTER, Springfield, Ohio.

Claim.—The combination, in a steam-generator, of a series of cast-metal tubes and tube-sheets, the latter being also of cast metal and cast in one piece with the tubes, and a wrought-metal shell, the parts being constructed and arranged substantially as and for the purpose set forth.

134,636.—*Apparatus for Electric Measurement.*—LEVERETT BRADLEY, Jersey City, N. J.

Needle made of thin disk of steel and provided with aluminium pointers. Under needle are four distinct coils, of width greater than diameter of needle and of different resistances. Series of rheostats of different resistances arranged to be connected to either galvanometer coil. Switch arranged to bring either rheostats or the unknown resistance into circuit. Unknown resistance being in circuit, deflection of needle is noted. By switch it is cut out and rheostats introduced, enough being unplugged to cause same deflection.

Claim.—1. The galvanometer-needle, composed of a single circular plate, substantially as specified.

2. The combination, with the circular plate or disk-needle C, of one or more galvanometer coils of greater width than said needle, when such coils are arranged substantially as specified, and whereby the current passing through them is made to run parallel with the meridian of the needle.

3. The combination, with the rheostat, of the switch K, arranged so that the battery-current may be directed at pleasure through the rheostat or the conductor, the resistance of which requires to be measured, essentially as described.

4. The combination of any number of resistance-coils, H' H² H³ H⁴ of the rheostat, the switch K, points L L', the screw-cups I II III IV, the galvanometer A, and battery J, with their connections, essentially as described.

134,637.—*Bag-Holder.*—JAMES B. BROWN, Washington, D. C.

Ring made in two parts and supported upon a tripod, so that it can be adjusted to suit bags of different width.

Claim.—The within-described bag-holder, consisting of the platform A, tripod B B B, the rim C D, made in two parts, with headed rivets *a a*, slots *b b* and *a a*, and thumb-nuts *d*, all constructed substantially as and for the purposes set forth.

134,638.—*Collar.*—JOHN T. BRUEN, Brooklyn, N. Y.

The collar has two gores cut from the band, one on each side of the central button-hole, and these gores are turned over and pasted down to form the end lapels.

Claim.—1. A collar formed with gores in the neck-band on either side of the central button-hole of the collar, substantially as specified.

2. A collar having its lapels cut from the edge of the neck-band in such manner as to leave gores in the latter, substantially as specified.

134,639.—*Medical Compound for Cure of Fever and Ague.*—WALTER CAMPBELL, Camden, N. J.

Quinine, spirits niter, turpentine, vitriol, red pepper, sulphur, rye whisky, oil of stone.

Claim.—The compound composed substantially of the ingredients herein named, for the purpose set forth.

134,640.—*Brake for Elevators.*—FELIX P. CANFIELD, Boston, Mass.

Hanging the brake-shoe upon a swinging arm, which is pivoted upon an eccentric and operated by a lever, so that if the lever is depressed the shoe will be pushed away from the wheel.

Claim.—The combination of the brake-arm E with the stop S, eccentric H, and lever L, operating substantially as described, and for the purpose set forth.

134,641.—*Clothes-Wringer.*—RODNEY S. CATHCART, Cincinnati, Ohio, assignor to himself and THE QUEEN CITY WRINGER COMPANY, same place.

A clothes-wringer cast with hollow cylindrical sides or uprights, and in which the journal-boxes, being previously prepared and inclosed in the core, are cast within the upright cylinder. On top of the sides, secured in slots, is a cross-bar with its tenon and wedges, and thumb-screw to give tension to the rolls through the agency of the elliptical spring with forked ends resting upon the journal-boxes. A metal dripping-pan acts also as a brace to strengthen the frame.

Claim.—1. The top cross-bar C having the form shown, and provided with the dovetailed tenons *c*, in combination with the posts A provided with the mortises *a* and with the wedges *c'*, substantially as and for the purpose specified.

2. The dripping-pan G, constructed as shown, and combined with the posts A provided with the grooves *g*, substantially as and for the purpose shown.

3. The combined posts A and legs B, when constructed substantially as and for the purpose set forth.

4. In a wringer having a metal frame, a movable journal-box cast within and not detachable from the frame-post, substantially as and for the purpose shown and described.

5. In combination with the upper or movable journal-box I, and with the slotted frame-post A, the stud *i* secured upon and extending upward from said box, substantially as and for the purpose specified.

6. The hereinbefore-described device as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose shown.

134,642.—*Gearing.*—ERNEST G. CHORMANN, Philadelphia, Pa.

A disk or head plate having curved flanges thereon, the pitch of which increase irregularly from the outer end to the inner, and are not uniform in width, but engage regularly with a series of rollers upon the periphery of the wheel operating the main shaft.

Claim.—The device composed of the head-plate E and the flanges C, one or more in number, having the peculiar curvature described, substantially as and for the purpose set forth.

2. The rollers *e* mounted upon pins *f*, in combination with the device E C, constructed substantially as and for the purpose described.

134,643.—*Fanning-Mill.*—GREVILLE E. CLARKE, Kenosha, Wis.

Hopper constructed of removable pieces let into grooves in sides of frame. Wind-board and apron connected at ends by triangular pieces. Sieves so arranged that part of grain from second falls past third. Fan-case attached to frame by slotted metallic hooks, which also serve as handles. By various cranks and pins the two shoes may be reciprocated in same or opposite directions.

Claim.—1. In combination with the grooved sections A of fanning-mill sides, the pieces G and S S, constructed as shown and described, and the slide H to form the hopper, as herein set forth.

2. The wind-board L and apron M, connected at the ends by triangular pieces *a a*, and forming a recess between their front edges, the apron also projecting beyond the wind-board and triangular pieces, all substantially as and for the purposes herein set forth.

3. The sieves N¹ N² N³ in the shoe K arranged, substantially in the manner shown, so that a part of the grain will fall through the second sieve N² past the third sieve N³, as and for the purposes herein set forth.

4. The metallic handles *p* provided with slots at their inner ends for the purpose of hooking the head of a fanning-mill onto the post or its equivalent, substantially as herein set forth.

5. The arrangement of the pinions *b' f'*, rods *a' k' d'*, and cranks A' B', substantially as and for the purposes herein set forth.

6. The pivoted plate *h'*, for the purposes herein set forth.

134,644.—*Refrigerator.*—SAMUEL E. CONDON, Brooklyn, E. D., N. Y.

A sink is combined with a refrigerator having a double wall with an intervening water-space, which space is provided with partitions that are alternated in position for directing the water as it flows around the refrigerating-chamber to the induction-pipe—then to the sink.

Claim.—1. The water-vessel around the refrigerator, in combination with the sink or basin upon such refrigerator, and the faucet connected with the water-vessel, substantially as set forth.

2. The sink or basin permanently connected with and supported by the refrigerator, as a new article of manufacture.

134,645.—*Railroad-Car Spring.*—JOHN W. CULMER, Pittsburg, Pa., assignor of three-fourths his right to C. J. CLARKE, G. R. EDWARDS, and ANDREW HOWARD, same place.

A spiral spring surrounds telescoping-cylinders, which have tongues and grooves slanting differentially to the pitch of the spring to secure both direct and torsional resistance. Within the lower cylinder is incased an air-tight sack filled with air compressed of two or more atmospheres. The springs are prevented from spreading at top and bottom by projections on the flanges of the cylinders.

Claim.—1. The combination of the flanged telescoping-cylin-

ders *a* and *b* having grooves and tongues oblique to their axes, substantially as described.

2. The combination of a spiral circumscribing spring with male and female telescoping-cylinders, tongued and grooved differentially to the pitch of the spring, substantially as and for the purpose set forth.

3. The combination of stops P P' upon oblique tongued and grooved male and female cylinders with a coiled spring, as and for the purpose set forth.

4. The inclosed fixed air spring or case K fitted with a superposed cylinder, substantially as and for the purpose described.

5. The combination of compressed-air spring with telescoping-cylinders, an intervening metallic plate or head, and external spiral spring, whether the cylinders are grooved and tongued or not, as and for the purpose specified.

6. The central pivot-boss L for the upper telescoping-cylinder, as and for the purpose described.

7. The railway-car spring having all its parts constructed and arranged for joint operation, substantially as described.

134,646.—*Car-Spring.*—JOHN W. CULMER, Pittsburg, Pa., assignor of three-fourths his right to C. J. CLARKE, G. B. EDWARDS, and ANDREW HOWARD, same place.

Claim.—A compound spring composed of two or more separate spiral springs of the same pitch intercoiled upon a common diameter or the same plane, substantially as and for the purpose set forth.

134,647.—*Ash-Lifting Shovel.*—GEORGE W. DEAN, New York, N. Y.

Claim.—1. A sifting-shovel having flexible wires D with their ends hooked into holes *c c'* of body C, as and for the purpose described.

2. The series of holes *c c'* in body C of shovel to admit of wires being placed therein at different distances apart, according to the grade of coal used.

134,648.—*Car-Coupling.*—JOSEPH L. DE GOOD, Jefferson, Pa.

The coupling-pin in an adjoining draw-head is held or released at will.

Claim.—The buffer A provided with the recess B, in combination with the bifurcated lever I, the forks of which are provided with the slots J J and shoulders K K, and the spring D provided with the curved point and cross-piece G, arranged relatively one to the other, substantially as and for the purpose hereinbefore set forth.

134,649.—*Nut.*—FRANK L. DELFER, Burlington, Iowa.

The nut is made of less lateral dimension toward its center than at either end, to allow the jaws of a properly-formed wrench to fit over and be securely held while the nut is being turned.

Claim.—A screw-nut constructed with its front greater in lateral dimensions than its central or rear portions, substantially as and for the purpose set forth.

134,650.—*Scroll-Saw.*—WILLIAM H. DOANE, Cincinnati, Ohio, assignor to J. A. FAY & CO., same place.

The saw is strained by the action of a rubber spring confined between disks, and operating upon the shaft of a segmental pulley, to which the saw is attached.

Claim.—1. The segment-pulley recessed rock-shaft G, in combination with the spring M and its attachments, when constructed and operated in the manner and for the purpose shown and described.

2. The herein-described housing E, combined with the recessed and slotted stanchion A, and containing the entire saw-straining devices G H L M N, in the manner and for the purpose set forth.

134,651.—*Hydraulic Engine.*—ROBERT F. DOBSON, Belmont, Wis., assignor of one-third his right to GEORGE FROST, same place.

The pipes being full of water and the valves closed to prevent the water from passing down through the tubes to the cylinder, the rod is uncoupled from one of the valve-cranks and the valve opened. The rod is then replaced. The water now passes the open valve, enters the cylinder through the tubes, expelling the air and closing one of the main valves, besides one of the valves which open into the cylinder from the side. The water then comes in contact with the piston with a force and momentum in proportion to the height of the water in the pipes.

Claim.—1. The horizontal connecting-pipe B, in combination with the vertical pipes A of a hydraulic engine, substantially as set forth.

2. The vertical water-pipes A, horizontal cylinder H, valves C, connecting-rod b, piston G', and slotted connecting-rod F, combined, substantially as specified.

3. The bent tubes A, in combination with the pivoted valves C, vertical tubes A, and piston-cylinder H, substantially as specified.

4. The valves I I and balanced or pivoted connecting-rod J, in combination with the cylinder H and piston G, substantially as described.

134,652.—*Stench-Trap.*—PATRICK W. DOHERTY, Boston, Mass.

This trap is provided with an inlet at its lower end and an outlet at its upper end and a bell-shaped opening at its top, formed so as to leave a packing-seat between the stopper and the shell of the trap. A recess is formed in the under side of the stopper to receive the packing.

Claim.—The stench-trap A formed with the bell-shaped opening D and packing-seat *g*, in combination with the screw-stopper B, joint *f*, and inlet and outlet orifices E C, the several parts being constructed and arranged as herein shown and set forth.

134,653.—*Saw-Mill Dog.*—HENRY D. DONN, Oshkosh, Wis.

The dogs enter the wood in opposite directions, thus drawing up and holding the timber securely against the knee of the head-block.

Claim.—1. The bars B B provided with interlocking knives *d d*, and operating substantially in the manner and for the purposes herein set forth.

2. The combination of the box or case A, bars B B with interlocking knives *d d*, inclined slots *b b*, pins *a a*, connecting-bars C C, cross-head D, and lever E, all constructed and arranged substantially as and for the purposes herein set forth.

134,654.—*Suction-Hose.*—WILLIAM C. DOWNS, Providence, R. I.

The stiffener is made of two spiral bands which engage each other by means of inward and outward flanges.

Claim.—1. The combination, within a suitable suction-hose, of two flexible spiral stiffeners, composed of sheet metal, having corresponding spiral lines, and located one within the other, substantially as described, whereby the section of hose will have the desired flexibility, a proper foundation, and present in the waterway a continuous metallic surface whether the hose be straight or bent, as and for the purposes specified.

2. Annular or spiral metallic suction-hose stiffeners, composed of an inner and an outer series, arranged to match joints, and provided respectively with outward and inward projecting flanges *c b*, as and for the purposes specified.

134,655.—*Apparatus for Treating Cane-Juice with Sulphurous-Acid Gas.*—JOHN DYMOND, New York, N. Y.

The gas from the generator passes through the cooling-worm and into and up through the descending liquid in the upright column. The upward flow of the gas is induced and accelerated by a steam jet or exhaust.

Claim.—The combination of the stove or generator A, the cooler B, the diaphragm treating-vessel C, an exhausting or forcing device, *g*, and the pipes *b'*, *d*, *e*, and *f*, constructed or provided with traps, substantially as and for the purpose herein set forth.

134,656.—*Hemp-Harvester.*—PHILONZO S. FITCH, Hanly, Ky.

Hinged rake-arms, pivoted to a vertical post, are operated in horizontal planes, by means of double cranks, to present the uncut grain to the cutter and deliver in gavels in the rear of the main frame. An arm, operated by a cam, retains the gavel on the outer edge of the platform until the proper moment for delivery.

Claim.—1. The combination of the jointed raking-levers D D', the post or standard C to which they are pivoted, and the cranked shaft E, substantially as and for the purpose herein set forth.

2. The combination, with the end portions of the raking-levers D D', of pivoted flaps or wing pieces K K, essentially as and for the purpose specified.

3. The combination of the oscillating lever H and cam G on the cranked shaft E, substantially as and for the purpose herein described.

134,657.—*Lamp-Burner.*—THOMAS W. GARDNER, Terre Haute, Ind., assignor of one-half his right to HIRAM J. KEELER, same place.

Claim.—In combination with the wick tube A, which is extended below the cap A' to near the bottom of the bowl of the lamp, the dome C, when constructed with the elongated neck C' to form an air-passage around and to the top of the wick-tube, substantially as herein described, and for the purposes set forth.

134,658.—*Clothes-Wringer.*—GEORGE E. GAULT and ALEXANDER W. WINALL, Cincinnati, Ohio, assignors to "THE QUEEN CITY WRINGER COMPANY," same place.

A clothes-wringer with cylindrical boxes resting in cylinders formed in the sides or uprights of the frame, through which is passed a metallic guide to give them an erect position when in use. The two journal-boxes are connected to limit their action and prevent a separation of the gears by metallic hooks. The driving-shaft is constructed with a flattened and inclined surface for the crank, which is firmly held to it by the nut upon the end of the shaft.

Claim.—1. The journal-boxes F having a circular form, in combination with the post A provided with the correspondingly-shaped vertical slots or openings, substantially as and for the purpose specified.

2. In combination with the boxes F and springs K and L, the studs or pins I secured upon and extending upward from said boxes, substantially as and for the purpose shown.

3. In combination with the journal-boxes of a wringer, suitable links for connecting together and limiting the relative motion of the same, substantially as and for the purpose set forth.

4. In combination with the roller-shaft E provided with the flattened inclined portion *e'*, the threaded end *e*, and the nut O, the crank N provided within its hub with the opening *n* and enlargement *n'*, substantially as and for the purpose shown and described.

5. The hereinbefore-described device as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose specified.

134,659.—*Drier.*—WILLIAM ALFRED GIBNS, Gillwell Park, Sewardstone, and ALFRED BORWICK, London, England.

The interior air-duct has longitudinal slits; it may be stationary or revolving. If the latter, it has a motion contrary to that of the cylinder. In the former instance it has counterbalanced scrapers to remove the sticky or viscous matter from the inner side of the cylinder; but when it revolves it has, instead, longitudinal bars, to which scrapers are attached at an angle so as to give propelling motion to the drying substance. Over an inclined double floor, which is heated, the matter to be dried may pass or flow into the case.

Claim.—1. In a drying apparatus, the combination of a revolving drying case or cylinder with an air-duct provided with one or more longitudinal slits, and mounted or arranged in said cylinder or case, the latter being heated both internally and externally, as described, and the combination operating substantially as set forth.

2. The combination, in a drying apparatus, of a revolving drying case or cylinder and a revolving air-duct mounted or arranged in the same, substantially as shown and described, whether said air-duct has one longitudinal slit or several such slits.

3. The combination, with a revolving drying case or cylinder and a longitudinally-slitted air-duct mounted therein, of scrapers located within said case or cylinder, and operating substantially as shown and described.

4. The combination, with a revolving drying case or cylinder and an air-duct provided with one or more longitudinal slits and mounted therein, substantially as specified, of a drying-floor, substantially as described and shown in Fig. 9 of the accompanying drawing.

5. The combination, with a revolving drying case or cylinder and a longitudinally-slitted air-duct mounted therein, of the means herein described, or the substantial equivalent of the same, for supplying the heating agent to said air-duct and for heating said cylinder externally, substantially as shown and set forth.

134,660.—*Track-Clearer.*—ANDREW J. GOVE, San Francisco, Cal.

The combination, with a snow-plow, of a "clam-shell" dredger.

Claim.—The sectional buckets D D attached to the mast *d*, and arranged to be opened and closed by cords or chains A, *f*, and K, in combination with the angular swiveling-crane B, when said crane is attached to and the buckets operated from the deck of a snow-plow, A, substantially as and for the purpose above described.

134,661.—*Cradle.*—MORTIMER GRIFFIN, Brooklyn, N. Y.

The crib or cradle end and rocker constructed with thin pieces sawed to form and glued firmly together, with its outside or face veneered with another material—mahogany or other fancy wood.

Claim.—An end piece for a cradle formed of the face-stripe A, filled-in stripe *a a*, cross-piece C, and rocker B, secured to the bottom parts of the connected stripes A *a a* by the dowels D D, after being pressed inward, all constructed substantially as set forth.

134,662.—*Cultivator.*—WILLIAM G. HALBURT, Columbus, Miss.

An adjustable clevis for attaching the forward end of the plow-beam to the frame, and devices for regulating the distance between the stocks.

Claim.—1. In combination with the frame A B C, the sliding clevis C' moving in the slots *e*, and the curved tongue F, all constructed and arranged substantially as and for the purpose set forth.

2. The wedges *f f*, in combination with the cultivator-stocks G G and screw-bolts *g g*, substantially as and for the purpose set forth.

134,663.—*Attaching Patterns to their Supporting-Plates.*—JOHN H. HARPER, Pittsburg, Pa.

Claim.—1. The detachable patterns B, connected to the plate by the anchor D or its equivalent, substantially as described, for the purposes set forth.

2. The extension rings or segments C, in combination with the patterns and the plate, substantially as described, for the purposes specified.

134,664.—*Hammer-Roll Device for Forming Horseshoe-Nails.*—THOMAS HARRIS and PATRICK DUNN, Coté St. Paul, Canada.

In a horseshoe-nail machine the ordinary roll for reducing the blank is adjusted, in this case, by means of its shank being screw-threaded and provided with a set-nut, and keys which are situated under the stock. By this means the roll can be set to reduce the nail to any thickness desired.

Claim.—1. In combination with the stock *a* and its roll *f*, shank *b*, and nut *c*, the wedge-shaped keys *c c'* for adjusting said roll to the thickness of the nails to be made, substantially as described.

2. The combination of the wedge or key *c*, the pins *n n*, and the shaft or roll pin *i*, as and for the purpose described and represented.

134,665.—*Cultivator.*—JOHN M. HEIGES, York, Pa.

A cultivator having a curved mold-board pivoted to the rear end of either outside beam, and capable of being adjusted to act in connection with either of the cultivator-teeth.

Claim.—The curved mold-boards D, having flanges *d* at the upper rear end, pivoted to the rear ends of beams B B, and so arranged that the points of said mold-boards may be brought against the sides of the central tooth or turned to any desired position, substantially as specified.

134,666.—*Saw-Swaging Device.*—CHARLES F. HENIS, Baltimore, Md.—Case A.

A divided conical swage, the two parts pivoted together, is fitted into a recess in the end of the holder. A bifurcated arm, the eye on which fits loosely the shank, where it is adjusted and kept in line by a pin entering holes in one side, straddles the saw, and a rider, sliding in slots and held by a screw-bolt and nut, rests on one of the saw-teeth while another is being swaged.

Claim.—1. A conical saw-swage, in combination with a swage-holder having a conical recess for its reception, when the said swage is made in two parts which are connected together by a pivot, as specified.

2. The saw-swage made in two parts, connected together, and inserted in the swage-holder, and having a recess flaring symmetrically at each side, substantially as described.

3. A conical saw-swage composed of two longitudinal parts pivoted together and having an end recess formed partly in each to receive the point of a saw-tooth, substantially as described, and for the purpose specified.

4. The combination of the swage-holder A, arm D', and a sliding pin to fasten the arm upon the holder, substantially as explained.

5. The combination of the arm D', rider F, nut *m*, nut-lock *o r*, and a spring, all arranged as described.

6. The combination of the swage-holder A and bifurcated arm D', as specified.

7. A saw-swage held upon the teeth in the plane of the saw by means of the recess in the swage-holder, the adjustable bifurcated arm, and the adjustable rider, substantially as described, and for the purpose specified.

134,667.—*Saw-Swaging Machine.*—CHARLES F. HENIS, Baltimore, Md.—Case B.

A frame and handle, slotted to admit the saw-blade, has a swage arranged within a frame, which has a slight movement allowed it by a pin passing through the swage into slots in the frame, to which a spring is attached. A spring-hammer, operated by a crank and cams, strikes on the swage and upsets the tooth.

Claim.—1. A frame constructed to bestride a saw, and combined with a sliding swage-holder, striking-hammer, and mechanism for operating the hammer, substantially as described.

2. The combination of the frame A, sliding swage-holder C', and spring I, all arranged as specified.

3. The combination of the frame A, sliding swage-holder C', vibrating hammer D, rotating cam-head E, and springs A *i*, all arranged as set forth.

4. The combination of the frame A, socket I, and adjustable rider H *k*, all arranged as explained.

5. A spring swage for saw-teeth arranged within a suitable frame to receive the blows of a hammer so that the spring shall resist the force of the blows, and at the same time take up the recoil of the swage, for the purpose of holding the latter upon the teeth, substantially as described, for the purpose specified.

6. A spring-swage for saw-teeth arranged within a frame which bestrides the saw, and operated by a vibrating hammer carried within the frame, substantially as described, for the purpose specified.

7. In combination with the vibrating hammer and the spring-swage, the device for operating the hammer, substantially as described, for the purpose specified.

134,668.—*Baby's Chair.*—PETER HENRICHS, Erie, Pa.

The seat-board and cushion are independent of each other and both detachable, sliding out. The legs of the chair rest on two cross-bars, and to these cross-bars are hinged rockers having casters secured to their inner face. An adjustable and detachable table slides on the arms of the chair and is automatically locked at any desired point by a spring-bolt. Posts are seated on this sliding table, to which is secured a spring-rod bearing small bells.

Claim.—1. In a child's combined rocking and walking chair, the detachable seat-board E and cushion F, so arranged that when it is to be used as a walking-chair the entire interior frame-work is left open or unobstructed, said chair being seated on horizontal cross-bars B' B' at front and rear, and to which are pivoted or hinged rockers D D having casters D' D' on their inner faces, the whole being so constructed, combined, and arranged as to operate substantially as described.

2. In a child's chair, the ribs or cleats *s s* on the outer face of the side arms A' A', and a spring bolt or latch, G', arranged in the front cross-bar C, which connects said arms, in combination with a sliding table, G, having a series of openings or apertures, *g g*, on its under face, the whole being so constructed and arranged as to provide an adjustable table which is automatically secured, substantially as described.

3. In combination with the detachable table G, the posts H H, spring-rod A, and bells H' H', the whole being so constructed and arranged as to operate substantially as described.

134,669.—*Thread-Cutter for Sewing-Machines.*—CHARLES J. HENRY, Tankhannock, Pa., and CORNELL J. WOOD, Brewerton, N. Y.

The forward end of the presser-foot, under the guard, is provided with a cutting-edge, and the thread is cut when drawn between such guard and presser.

Claim.—The presser-foot F having the cutting-edge H, constructed as described, and combined with the guard G, in the manner and for the purpose set forth.

134,670.—*Plow.*—RICHARD G. HOBSON, Houlka, Miss.

The beams of the cultivator are parallel to each other, and are adjusted by means of bolts and nuts. The shorter beam is secured against backward strain by means of a spring-brace, attached by a hinge-joint to its forward end, and by a bolt to the main beam.

Claim.—The beams A B, when connected by the hinged and slotted spring-brace C, in combination with the screw-bolts E E, all constructed, arranged, and operated as set forth.

134,671.—*Separator for Thrashing-Machines.*—GEORGE W. HOWE, Vineland, N. J.

Straw-carriers and platforms so arranged as to deliver the grain separated from the straw in the thrashing-cylinder and on the riddles to one common point.

Claim.—The combination of the carrier C with the carrier D placed beneath it, the platform G also placed beneath the carrier C and beyond the carrier D, and the platform E placed within the carrier E, all arranged as described.

134,672.—*Brick-Machine.*—EDWARD R. HUBBARD, New York, N. Y., assignor to himself and GEORGE FARR, same place.

A pug-mill on each side of a rotary cylinder, carrying a mold-rim, forces the clay through the vertical openings in the rim, while two plungers, worked from opposite sides by cams on the cylinder, compress the clay; and as one plunger recedes the other advances, thus expelling the brick through the horizontal openings of the rim onto a carrying-off belt.

Claim.—1. In combination with an annular mold-rim, E, provided with the vertical and horizontal apertures *f e*, the pug-mills G and double series of plungers working in the molds from opposite sides, substantially as described.

2. The combination and arrangement of the pug-mills G with the mold-rim E *e f* on the rotary cylinder A, and with the double series of plungers operated from opposite sides of the molds by means of the stationary cams D D′, substantially as described.

3. The combination, with the rotary cylinder A carrying the mold-rim E *e f*, of the rim *g* and the endless carrier, all arranged and operating substantially as described.

4. The connection of the plunger-stems with their slides by means of ball-and-socket joints, substantially as described.

134,673.—*Spring for Vehicles.*—FRITZ K. JOHN, Moscow, Russia.

Claim.—A spring for vehicles composed of two or more annular disk-shaped plates with radially-arranged corrugations *b b* between outside and inside flanges or margins *c d*, and bent to assume a conical shape, and alternately connected around their inner and outer peripheries, substantially as shown and described.

134,674.—*Honey-Box for Bee-Hives.*—HARLEY M. JOHNSON, Marshall, and CASSIUS M. BARKER, Albion, Mich.

The superincumbent honey-boxes are each made of transverse boards secured at bottom to side and end strips, said boards alternately of unequal width, so as to make spaces equal to the excess of a broad board alternating with a narrow one, the ends of the box being of glass, the top and two sides having thin paper pasted thereon, the interior containing perforated division-pieces fitting in the several crevices. The paper is cut when the boxes are divided.

Claim.—1. A honey-box made of alternate broad and narrow strips of wood or other material and glass or other ends in such manner that when two or more boxes are arranged together, the narrow strips of one box being adjacent to the broad strips of the next, a space will be formed between said boxes on all sides, constituting entrances thereto.

2. A honey-box constructed of two or more small boxes, as described, secured together by strips of suitable material attached thereto, the box thus formed having three sides covered with paper and the ends with glass and provided with perforated division-boards, all substantially in the manner, and for the purpose specified.

134,675.—*Apparatus for Making Tannin Extracts, &c.*—THOMAS W. JOHNSON and ANTHONY W. GOODELL, New York, N. Y.

The material is supported in layers upon perforated platforms, and steam is admitted below the platforms while liquids are showered upon the layer on the upper platform.

Claim.—1. An apparatus for extracting tannin and other substances, composed of a series of perforated platforms that divide the mass up into layers, and steam-pipes supplying steam below the respective platforms, and a filter for detaining foreign particles, substantially as set forth.

2. The arrangement of two or more concentrating-vessels with revolving disks and steam-heating pipes, as shown, in combination with the extracting apparatus, as specified.

3. The concentrating apparatus, composed of a vessel with steam-pipes at the bottom, in combination with the revolving disks and longitudinal connecting-bars that act as stirrers, as set forth.

134,676.—*Car-Coupling.*—CHARLES H. KENDALL, McConnellsburg, Pa.

A pin hanging in a groove in the platform of a car, with an inclined guard placed over such groove to prevent the pin from turning and thereby bringing its head lengthwise of the groove and falling through the same. The guard allows the pin to swing backward when struck by the link, and forward when the link has passed beyond its point.

Claim.—The platform A provided with a transverse slot, *a*, front plate C having a slot, *c*, and bottom plate D, in combination with the inclined guard F having a notch, *o*, and coupling-pin B, all constructed, arranged, and operated as set forth.

134,677.—*Derrick and Crane.*—JOSIAH W. KENNEDY, St. Louis, Mo.

Claim.—The improved portable hoisting-machine herein described, consisting of the movable carriage A, the rotary frame B working within the flange B′, the upright frame C, and the tackle, fall, and windlass, all combined substantially in the manner and for the purposes set forth.

134,678.—*Corn-Harvester.*—WILLIAM H. KENYON, North Providence, R. I.

An endless-apron rake or conveyer receives the cut corn from a cradle-like cutter, which shears against a stationary cutter located to one side and to the rear of the main frame, and delivers behind and between the tracks of the supporting-wheels out of the way for the next round.

Claim.—1. The combination of the movable knife I, wire frame J, and catch *p*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination of the stationary knife H, movable knife I, pitman *w*, weighted fly-wheel L, shaft *t*, and gears *v* and D *a*, all substantially as and for the purposes herein set forth.

3. The lever K, operated by the standing corn and connected with the shaft *t*, for throwing the pinion *v* in gear with the cog-wheel D *a*, as herein set forth.

4. The pin or arm *i* on the pinion *v*, operating, in connection with the shoulder *d* on the wheel D, for throwing said pinion out of gear with the cogs *a* on the wheel, as herein set forth.

5. The arrangement of the frame and platform A′ with pulleys *k k*, wheels *h h*, endless chains E E with arms *i i*, guards *m m* and *r r*, and shelf G, all substantially as and for the purposes herein set forth.

6. The combination, with the shaft *f* and pinion *e*, of the slide *y*, spring *z*, lever *a′*, and one or more pins, *b′*, on the pinion *d′*, said pinion being operated by the worm *c′* on the axle, for the purposes herein set forth.

134,679.—*Guitar.*—RUDOLPH KNAFFL, Nashville, Tenn.

A pedal attachment whereby a movable *capo d'astro* or bridge is adjusted at once to any point upon the fret-board.

Claim.—1. In the described combination with the yielding pressure-roller D, the treadle P and spring V, for advancing and retracting the said roller upon the fret-board.

2. In the described combination with the elements D P V, the spring H, as and for the object designated.

3. In combination with the elements D P V, the friction-roller W in groove or track X.

4. In combination with the elements D P V, the staff Q *q*, having the described flexible connection with the guitar-body, and being provided with a treadle-guide, R *r r′*.

5. In the described combination with the elements of the preceding clause, the cords L and M and the differential pulley N O.

6. The described arrangement of continuous sounding-board A′, blocks 1 2, props 3 4, plates 5, distending-screws 6, and nuts 7, for the purpose of stiffening or relaxing such sounding-board, in the manner explained.

134,680.—*Nail-Clincher.*—JOHN KUNZ, Napoleon, Ohio.

The jaw B is placed under the shoe and the jaw B′ brought to bear against the projecting nail, which it clinches by a firm and gradual pressure. The jaw B′ tapers toward its end, and is elastic so as not to bruise or injure the hoof.

Claim.—The clincher for horseshoe-nails, consisting of the pivoted levers A A′ having, respectively, the straight serrated jaw B and the oblique, elliptical, elastic jaw B′ with serrations *b′*, substantially as specified.

134,681.—*Bracelet-Fastening.*—FRANK KURSH, Philadelphia, Pa.

An oval button rotates over a longitudinal slot, which allows its depression on the spring-fastening in one position only.

Claim.—1. The button of the catch, constructed to rotate and rest on the surface of the bracelet to lock the catch, substantially as set forth.

2. The rotating button C with neck K, in connection with the fastening or catch B of a bracelet, and operating relatively to the ends of the two parts thereof, substantially as set forth.

3. The rotating button C with neck K, lug G, and slots H, in combination with the two parts of a bracelet and its catch B, substantially as and for the purpose set forth.

134,682.—*Manufacture of Loaf-Sugar.*—EUGEN LANGEN, Cologne, Prussia.

The sirup is evaporated to the proper consistency, placed in molds of centrifugal machine, and drained, after which it is transferred to the vacuum-tank and treated with the claying liquid. A thickness of India rubber forms a packing for the joint between the bottom and adjacent portions of the mold.

Claim.—1. The process herein described of purifying loaf-sugar by subjecting it alternately to the action of a centrifugal machine and to that of the claying liquor in a vacuum-tank, substantially as herein set forth.

2. The combination, with the molds and their bottoms *a*, of the layer or packing *c* of India rubber or its equivalent, whereby a tight joint is formed to the mold, and the latter fitted for use in the vacuum-tank, substantially as herein set forth.

134,683.—*Reservoir Cooking-Stove.*—HENRY LAPTIN, Troy, assignor of one-half of his right to PELETIAH Z. MARSH, Lansingburg, N. Y.

The rear vertical flue passes centrally between two water-reservoirs, or between a warming-closet and a reservoir having a supplementary closet under it.

Claim.—1. The flue *g*, in combination with the ascending rear flue of the stove *d*, substantially as and for the purpose described and set forth.

2. The combination of reservoir *i*, flue *g*, and closet or warming-oven *h*, when arranged substantially as described and set forth.

3. The combination of reservoir *i*, flue *g*, closet *h*, and extra or lower closet *l*, when arranged substantially as described and set forth.

4. The combination of flue *g* with a reservoir placed each side thereof, when arranged substantially as described and set forth.

5. The pit or flue *k*, in combination with closet *h*, reservoir *i*, and flue *g*, when arranged substantially as and for the purpose described and set forth.

134,684.—*Bridle-Bit.*—JOSIAH LETCHWORTH, Buffalo, N. Y.

The wire bit is covered at each side with soft rubber.

Claim.—As a new article of manufacture, a bridle-bit having a jointed mouth-piece of twisted wire provided with the two sleeves C C of soft rubber, as herein shown and described.

134,685.—*Manufacture of Steel.*—HILAIRE ANDRÉ LEVALLOIS, Paris, France.

Soft iron, tungsten, and nickel.

Claim.—A compound for steel, made of the ingredients herein specified, and mixed together substantially in the manner and about in the proportion set forth.

134,686.—*Apparatus and Process for Revivifying Bone-Black.*—AUGUST LONSKY, Hoboken, N. J.

The bone-black, after its removal from the filters, is placed in a tub upon a perforated false bottom, which is protected by wire-cloth, and after having been treated with chemicals is exposed to the action of steam.

Claim.—1. The within-described process of treating bone-black, after removal from the filter, by first exposing the same to the action of chemicals, such, for instance, as alkalies, and then to the action of steam, while the bone-black is inclosed in a suitable tub or reservoir, substantially as set forth.

2. The within-described apparatus for revivifying bone-black, consisting of a tub, A, provided with a closely-fitting cover, E, a perforated false bottom, B, covered with wire-cloth D, and furnished with a steam-coil, C, with a liquid-discharge pipe, *c*, and with a faucet, *a*, the whole constructed and operating substantially as set forth.

134,687.—*Bee-Hive.*—DAVID LOOYBOURROW, Hillsborough, Iowa.

Two frame-chambers surmounted by their honey-boxes, one frame and box fixed, the other detachable for substitution; windows and guards to each, and lower ports and slides, and passages through the top to the honey-box, the chambers having communicating ports with cut-offs.

Claim.—The hive, consisting of the fixed chamber C and the detachable chamber B, with a communicating aperture and its sliding valve, window, and guard, in combination with the honey-cap E and openings *i i*, all as shown and described.

The body of the chair is made to rock on a platform, and is secured thereto by spiral springs and flat springs.

134,688.—*Rocking-Chair.*—GEORGE E. LORD, Utica, N. Y.

Claim.—The rocker formed by and rocking directly on the seat-rail of the chair, in combination with the stool A with the platform B, the rocker-rail C, the spiral-coil spring E, the sheet-metal spring F, together forming a rocking-chair, substantially as and for the purpose set forth.

134,689.—*Steam Pumping-Engine.*—ARTHUR J. L. LORETZ, Brooklyn, N. Y.

A series of telescopic pipes, enlarged at the ends where they are united, form a valve-chamber containing a triple-beat valve, and are operated by a series of segments, connecting-rods, and a crank on the fly-wheel shaft of the engine. The tubular end of the pipes slides through a stuffing-box and gland; uses the water that is pumped as a means to condense the exhaust-steam by which the vacuum is created.

Claim.—1. The movable telescopic tubes T, united and enlarged at their centers C sufficiently to contain a valve, V, having a water-passage equal in area to that of the tubular piston, when all constructed substantially as shown, and for the purpose herein described.

2. The vacuum-chamber V with its internal pipe U and its annular space Q arranged substantially as and for the purpose herein described.

3. The combination of the segments S^1 S^2 S^3 S^4, and the connecting-rods C C, crank K, links M^1 M^3, and cylinders A B, substantially as and for the purpose herein described.

4. The telescopic tubes T provided with valves V, the vacuum-chamber V′, its annular space Q, and jet J, in combination with the segments S^1 S^2 S^3 S^4, connecting-rods C C, crank K, links M^1 M^3, and cylinders A B, all substantially as and for the purpose set forth.

134,690.—*Manufacture of Isinglass.*—JAMES MANNING, Rockport, assignor to C. J. NORWOOD, Ipswich, and J. J. MANNING and W. N. MANNING, Rockport, Mass.

The sheet may be returned to the hopper to be again compressed by the rolls, or it may be removed to a set of machines to be gradually reduced to the desired thinness.

Claim.—The herein-described method of converting isinglass into sheets of any desired thickness by running it between hollow rolls into which cold water is thrown to cool the compressing surfaces, such rolls being preferably made adjustable to graduate the degree of compression, and the adhering sheets being removed from the rolls by stationary scrapers or clearers and returned to the hopper, as required.

134,691.—*Combined Chair, Table, and Bureau.*—HAMILTON MARTINDALE, Newark, Ind., assignor of one-half his right to JAMES R. CROW, same place.

The seat-frame of the chair is open, and is provided with a movable bottom that slides under the table when the two articles are folded together. The bureau is also hinged to the table, and folds into the open seat-frame of the chair.

Claim.—The improved article of furniture, consisting of the open chair-frame A′ having the movable seat H, and the table A having the bureau C, both chair and table being hinged together, substantially as specified.

134,692.—*Carriage-Seat.*—CHRISTIAN K. MELLINGER, Lebanon, assignor to himself and JACOB REINOEHL, Jr., Harrisburg, Pa.

Claim.—1. In a "jump-seat" vehicle, the front board E and back board E′ having the slots F F′, and supported by the posts G G^1 and braces G^2, substantially as specified.

2. The blocks H in combination with the slotted back E′, substantially as specified.

134,693.—*Coloring Pictures.*—CHARLES JOSEPH METTAIS, New York, N. Y., assignor to GUERNSEY SACKETT, same place.

The use of mutton tallow or fatty matter with pastel or dry colors stumped over a photograph, &c.

Claim.—1. The process, substantially as described, of coloring and finishing portraits or pictures by combining and applying, with crayon, pastel, charcoal, or similar dry colors, a solid fatty matter of the character described, as and for the purposes specified.

2. As a new production in the art, and constituting a new article of manufacture, a picture or portrait executed in whole or in part with crayon, pastel, charcoal, or dry colors, applied thereto in combination with a solid fatty matter, of the character substantially as herein described.

134,694.—*Indigo-Blue Vat for Coloring Wool and Cotton.*—GUSTAV MOLT, Millbury, Mass.

Combines pulverized indigo with the third mixture, and heats to 160° Fahrenheit.

Claim.—The compound composed of lime and soda-ash, and called composition No. 1; and the compound composed of muriate-of-tin crystals and soda-ash, called composition No. 2; and the composition composed of compositions Nos. 1 and 2, and called composition No. 3, in the foregoing specification, substantially in the proportions and for the purpose herein set forth.

134,695.—*Car-Coupling.*—BAYARD MOORE, Seaford, Del.

The draw-bar is divided into three sections, the top portion consisting of a barbed spear, which is turned by a lever and projected by suitable devices, in combination with a sliding bar which projects forward from the lower portion of the draw-bar.

Claim.—1. The combination of a coupling-box, B B′, and rotatory spear-headed coupling-bar C C^1, arranged side by side and connected together, but operating independently, substantially as specified.

2. The combination, as set forth in the first claim, of the coupling-box B B′ and rotatory spear-headed coupling-bar C C^1, the latter being capable of being projected and retracted, substantially as and for the purpose specified.

3. The combination of a coupling-box, B B′ b^3 b^3, spear-headed rotatory coupling-bar C C^1, and feather *c*, and sectoral groove *c′* to limit the rotatory motion of the coupling-bar, substantially as specified.

4. The coupling-bar C, in combination with the swiveling-guide E and yielding bearing F, substantially as and for the purpose specified.

5. The combination of the coupling-bar C, slide-bar H, and intermediate devices for imparting the motion of one to the other, substantially as specified.

6. The combination of the collared coupling-bar C, tappet G, shaft G^1, arm G^2, weighted arm G^3, and slide-bar H, substantially as set forth.

7. A coupling-box and a coupling-bar connected together, but operating independently, as described, in combination with a draw-head upon which they are laterally adjustable, in the manner and for the purposes specified.

134,696.—*Lubricating Car-Axle.*—JOSEPH R. MORRIS, Houston, Tex.

A scoop is attached to the end of the journal, and at every revolution carries oil to the top of the box, where the oil falls upon a shelf, and from thence is conveyed upon top of the journal-bearing. The latter is provided with apertures, allowing the oil to drip through upon the journal.

Claim.—A scoop, E, rotating in oil box C, an axle-box having shelf *b* with holes *b′* and a journal-box, D, recessed on top, and provided with holes d^1 and channels d^2, all combined and relatively arranged as and for the purpose specified.

134,697.—*Hinge.*—FERDINAND MÜCKER, Cincinnati, Ohio.

To the lower arm of the hinge a weighted lever is attached by means of a depending lug. The outer arm of this lever carries a fork which embraces the hub of the lower leaf of the hinge, being guided by grooves. The ends of the fork project upward into recesses cut in the eye of the upper leaf, and thus serve to hold the hinge at any desired position.

Claim.—The arm A provided with the vertically-sliding latching-fork C and the lever D pivoted to the stud *d* which is projected from the edge of said arm A, combined with the arm B provided with recesses *a* to receive the ends of said fork, all constructed, arranged, and operating as set forth.

134,698.—*Guide for Elevators.*—CHARLES R. OTIS, Yonkers, N. Y.

Claim.—The combination, with the car and guides of an elevator, of guide-surfaces of leather or other soft or elastic material, and guide-rollers or slides operating in connection therewith, substantially as herein set forth, for the purpose specified.

134,699.—*Steam Hoisting Apparatus.*—CHARLES R. OTIS and NORTON P. OTIS, Yonkers, N. Y.

The hoisting-drum and friction-brake are combined with a brake-operating steam-cylinder, and a governor, set in motion by the drum, controls the admission of steam to said cylinder. Also combines therewith, and the engine that drives the hoisting-drum, a steam-pipe with a two-way cock controlled by the governor, so that it admits the steam to the valve-box of the engine and the brake-cylinder to throw the brake out of action, and allows free rotation of the drum.

Claim.—1. The combination of a hoisting-drum, a friction-brake, a brake-operating steam-cylinder, and a governor set in motion by the drum, whereby the admission of steam to the brake-operating cylinder is automatically controlled by such governor.

2. The combination of the brake-operating steam-cylinder, the engine, and the pipe *b*, substantially as herein described, whereby the admission of steam to the valve-box of the engine also admits steam to the brake-operating cylinder to throw the brake out of action.

3. The combination of the hoisting-drum B, the brake D with its weighted lever E, the engine A, the governor I, the valve H, the passages *c*, *d*, *e*, and *f*, the piston F, the cylinder G, the pipe *b*, and valve-chest C, essentially as and for the purpose herein set forth.

134,700.—*Chimney-Top.*—HENLEY PALMER, Barnesville, Ohio.

Claim.—1. The hinged conical cap D having the perforations *F* and guards *e*, in combination with the enlarged chimney-rim B and chimney A, substantially as specified.

2. The combination and arrangement of the chimney A, the enlarged chimney-rim B, and hinged conical cap D, substantially as described.

134,701.—*Car-Frame.*—RICHARD M. C. PARKER, Memphis, Tenn.

Rods, having their inner ends secured by connecting-links, pass from the draw-head over the bolster and under the center bolsters. The outer ends of the rods are secured to a plate extending across the end of the draw-bar, strengthening the same and also the center of the car-frame.

Claim.—The pulling and truss rods *c* and their end plates *b*, with or without the adjusting-links *f*, applied to a car-frame, substantially as herein described, to support the draw-head timbers and the center of the car, as set forth.

134,702.—*Covering for Roofs.*—RICHARD U. PIPER, Girard, Mich., assignor of one-half his right to MONROE HEATH, Chicago, Ill.

Claim.—The method of securing sheets of board, paper board, canvas, or other fibrous material upon roofs, by means of thin metallic or equivalent strips applied and arranged substantially as and for the purpose herein shown and set forth.

134,703.—*Carriage-Spring.*—JOHN W. POST, Lansing, Mich.

Stirrups having double bearings are placed over each end of the bolster and secured by staples. Two half-elliptic springs are attached to the stirrups, that the weight of the wagon will be borne more evenly.

Claim.—The stirrups G G in combination with the springs A A, the bolster B and the staples N N, substantially as and for the purpose set forth.

134,704.—*Saw-Guide.*—PAUL PETISH, New York, N. Y.

The bearing-plate has a horizontal adjustment, so that as it becomes worn in one place it may be moved so as to present a new surface to the rear edge of the saw.

Claim.—1. The combination of the reversible jaws B B, guide-piece A, retaining-screw *c*, set-screw *d*, and reacting spring or springs *e*, substantially as herein shown, for the purpose specified.

2. The abutment C made detached from the guide-piece A and secured in position by a spring-catch or other suitable fastening, in combination with said guide-piece and with the jaws B B, the whole constructed and operating substantially in the manner and for the purpose set forth.

3. The slide D, in combination with the guide-piece A and jaws B B, substantially as and for the purpose described.

134,705.—*Hand Printing-Press.*—NELSON ROSS, Washington, D. C.

The frame is provided with bearing-surfaces upon which the hand-impression device, provided with two rollers, is supported while giving the impression, and with a pivoted side-frame (operated by lever and connecting-bars) over which the inking-rollers are passed to ink the form.

Claim.—1. In a hand printing-press galley or type-bed, the combination, with the fixed bearers A thereof for the impression-rollers, of movable or hinged bearers D for the inking-roller, to render the type-frame complete for either inking the type or making the impression.

2. The combination of the hand-lever G and its connecting-rod E *b* with the movable bearers D, arranged as described, to effect the simultaneous movement of the latter, as described.

3. In a hand printing-press, the hand-impression device having two sets of elastic rollers, H, and a handle, J, to operate in printing and obtain the advantages herein described.

4. The hand printing-press and hand-impression roller device, constructed and arranged for joint operation as herein described.

134,706.—*Apparatus for Mixing Soap and other Materials.*—CARL J. SCHULTZE, Vienna, Austria.

Claim.—1. The combination of the outer cylinder or vessel B, the inner cylinder A open at its ends to the interior of the outer cylinder, both above and below, with the corrugated stationary disk F and the revolving disk G, substantially as shown and described.

2. The combination of the revolving shaft D, the screw C, the vanes E, and the corrugated disk G with the cylinders or vessels A B and stationary corrugated disk F, the whole being constructed and arranged in relation with each other, essentially as shown and described.

134,707.—*Device for Holding Hogs in Veterinary Operations.*—ALEXANDER M. SCOTT and THOMAS WILSON, Clearmont, Mo.

The pivoted portion of the stock, consisting of one side, a bottom, and a neck-securing end piece, may be turned down, carrying the animal with it. In this prostrate and secure position any veterinary operation may be performed easily and safely.

Claim.—The spaying attachment H I J to a hog-stock, substantially as set forth.

134,708.—*Attaching Knobs to Spindles.*—SAMUEL SELDEN, Erie, Pa.

The knob is constructed with a removable front, and is secured to the spindle by means of two screw-nuts, one of which is screwed to place before the knob is applied, and the other afterward, in such manner that they shall clasp the web in the shank of the knot between them.

Claim.—In combination with the threaded spindle A A', the knob C D having the removable front and being secured to the spindle by the nuts B B', one on each side of the web *c*, substantially as described.

134,709.—*Lifting-Jack.*—JAMES W. SHANKLAND, Summerfield, Ohio.

Claim.—The combination of the standards A A with inclined grooves *a a*, notches *c c*, and vertical grooves *b*, the lever D with journal *d*, and the pivoted pawl E, all substantially as set forth.

134,710.—*Draft-Pipe for Aerated Liquids.*—OBEAR F. STEDMAN, Westfield, N. Y.

On the exterior of the pipe, near its end, is arranged a sleeve, to which is secured, by means of arms, a convex disk designed to approach the orifice of the draft-pipe closely enough to cause the liquid to be injected with force into the receiving-vessel.

Claim.—In apparatus for dispensing aerated liquids, the long tapering draft-pipe provided with the adjustable convex disk D covering the discharge-orifice, and adapted to be inserted in the bottom of a receiving-vessel, substantially as specified.

134,711.—*Extension-Table Slides.*—GEORGE W. TOWNSEND, Hubbardston, Mich., assignor to himself, Oliver C. Townsend, and Henry W. Hitchcock, same place.

In a series of slide-bars each bar is provided on one face with two or more tongues, and on the opposite face with corresponding grooves. Between each pair of grooves is another shallow groove, which has through its central portion a slot which extends through the bar. The bars are connected together by bolts that pass through the slots, the heads of the bolts sliding in the central groove that extends on the sides of the slots.

Claim.—The slide-bars A provided with the grooves B' and C, the tongues B, and the slots D, and combined by means of the bolts E, substantially as and for the purpose specified.

134,712.—*Restoring Ring-Traveler Spinning-Rings.*—FRANK TULLY, Philadelphia, Pa., assignor to himself and CHARLES H. BANES, same place.

Forming a flange on the unflanged end of a worn ring for ring-traveler spinning-machine.

Claim.—The utilizing of the within-described waste-rings by flanging their bases, as herein set forth.

134,713.—*Compound for Use in Tobacco-Pipes.*—WILL. E. TURNER, Neosho Falls, Kans.

The smoke is drawn through a compound consisting of citric, tartaric, or tannic acid, Florida or clove water, and glycerine, contained in a chamber of the pipe made for holding the sponge.

Claim.—The above chemical ingredients or compound, as and for the purpose hereinbefore set forth.

134,714.—*Process of Bleaching, &c., Dried Natural Flowers.*—JOHN W. WARE and MARIA L. WARE, Philadelphia, Pa.

The leaves are immersed in a solution of chloride of lime, salsoda, and water, and bleached, after which they are washed in water and then dried.

Claim.—The process herein described for bleaching natural flowers for preservation.

134,715.—*Sash-Holder.*—EDWIN W. WARREN, Cambridge, N. Y. Case B.

A bed-plate, having a half-round, half-angular hub or projection, is secured to the window-sash. Pivoted on this hub, through a corresponding slot, is an ordinary eccentric cam having rubber cushions and provided with a hook or catch for locking purposes. Within a recess on the inner side of this cam a flat spring traverses the slot in such manner that when pressed upon by the convex side of the hub the rubber cushions of the cam are forced against the window-frame, while when acted upon from the opposite direction the spring causes the hook or catch to enter recesses in the frame and lock the window in position.

Claim.—The latch C having the hook *a*, cam a^1, and partially concave or arched slot a^2, in combination with the half-round and half-angular hub or projection B and spring *e*, substantially as specified.

134,716.—*Plow.*—WILLIAM M. WATSON, Tonica, Ill.

Claim.—1. A plow having the standard B and braces E, constructed, arranged, and adapted to receive, interchangeably, the the wheel F and land-side H, substantially as specified.

2. The shield G, in combination with the plow, as described, and for the purpose specified.

134,717.—*Machine for Cutting Up Fat Meats for Lard-Rendering.*—JOHN WEBER and WILLIAM C. SIEFERT, Lancaster, Pa.

A set of vertical knives and set of horizontal knives are operated by a double crank. The knives work through a slotted bed-plate and in vertical guides. An endless apron conveys the meat to the cutters. Rollers press it.

Claim.—1. The arrangement of a double crank, W, when applied for operating combined vertical cutters P *p p* and horizontal cutters *k k*, substantially in the manner and for the purpose specified.

2. The combined vertical cutters P *p p*, in combination with the vertical guides *t*, slotted bed-plate *v*, and edged cross-blade *w*, jointly operating in the manner and for the purpose mentioned.

3. The horizontal knives or cutters *k k*, in combination with the sliding foot-block *g* in guides *m*, and keeper A with the upright slotted post F, operated substantially in the manner and for the purpose described.

4. The pressing and holding device, consisting of the rollers *f f*, bearings *d*, lid or top L, posts M, and cross-piece N, in combination with the spiral springs *s* and guide-rods O on the top of the trough J with its endless apron *r*, all arranged substantially in the manner and for the purpose specified.

134,718.—*Lamp-Burner.*—MARION J. WELLMAN, New York, N. Y.

Claim.—1. The arrangement of finger-pieces E on the cone, overlapping the cup of the burner, substantially as described.

2. The vertical border D of the cone C, provided with the hooks I for passing under the stud H on the cup of the burner, as herein shown, for the purpose specified.

134,719.—*Steam Bell-Ringer.*—JOEL WEST and OSREN M. PARKER, Quincy, Ill.; said PARKER assignor to said WEST.

The peculiar and cylindrical construction of the valve having two arms or stems, one passing out each end of the valve-chest; also, the piston-rod passing through each end of cylinder; said rod, having tappets on each end, strikes the extended end of the valve-stem, thereby communicating a reciprocating movement to the valve; and the whole operated by the vibrating movement of the bell.

Claim.—1. The valve-stem M, when extended through both ends of the steam-chest B, and arranged to operate with the other parts of a steam bell-ringing device, substantially as described, and for the purpose set forth.

2. The tubular valve E, when constructed as described, and arranged to operate with the ports G G', substantially as described, and for the purpose specified.

3. The combination of the cylinder A, steam-chest B, and piston I, the latter being of less length than the distance between the ports H H', and arranged in relation to the same, substantially as and for the purpose specified.

134,720.—*Steam-Boiler.*—FREDERICK A. WOODSON, Selma, Ala.

Connected to the boiler by suitable pipes are two mud-drums placed transversely beneath said boiler, one at the rear and the other in front within the fire-box and over the fire, whereby a uniform temperature and free circulation of the water and the separation of all the mud and sediment contained therein from the same is secured.

Claim.—In combination with one, two, or more boilers, A, and with a fire-box or combustion-chamber, G, the mud-drums C E, arranged as shown, viz., the drum C at the rear of the boiler, and the drum E at the front thereof and in the combustion chamber, and connected to the boilers by the water-legs B F, and to each other by the circulating-pipes D D outside of the brick-work, as and for the purpose described and represented.

REISSUE PATENTS.

5,216.—*Corset-Spring.*—FRANCES LEE EGBERT, New York, N. Y., executrix of SAMUEL H. BARNES, deceased.—Patent No. 56,345, dated July 17, 1866; reissue No. 2,929, dated May 12, 1868; reissue No. 3,520, dated June 29, 1869; reissue No. 3,624, dated August 31, 1869; reissue No. 5,130, dated November 5, 1872.

Claim.—1. A pair of corset-springs, each spring consisting of two or more metallic plates placed one on another, and so connected as to prevent them from sliding off each other laterally, and to admit of their playing or sliding on each other in the direction of their length.

2. A pair of corset-springs, each member of the pair being composed of two or more metallic plates placed one on another and fastened together at their centers, and so connected at or near each end that they can move or play on each other in the direction of their length.

3. A pair of corset-springs, each spring consisting of two or more metallic plates placed one on another, and so connected as to prevent them from sliding off each other laterally, and to admit of their playing or sliding on each other in the direction of their length, the pair being provided with a clasp or clasps, by which the two members of the pair can be connected and disconnected.

5,217.—*Thrashing-Machine.*—DAVID C. BAUGHMAN, Tiffin, Ohio. Patent No. 115,680, dated June 6, 1871.

Straw-carrier of reciprocating toothed rake-bars, two bars attached to a common head, which works on a crank-shaft or which may be fastened to a straight shaft by an eccentric. Between bars are perforated slats allowing grain to fall onto a movable bottom, which directs it into the sieves. Moving parts receive motion from a common gear-wheel through a rock-shaft and connecting-pitman.

Claim.—1. The rock-shafts *n n*, in combination with the toothed bars E E, substantially in the manner and for the purposes herein set forth.

2. The movable bottom H, shafts *n n*, and vibrating arm S, constructed and arranged substantially as and for the purposes herein set forth.

3. The vibrating arm S, with its connections R, *x*, and *o'*, arranged to operate substantially as and for the purposes herein set forth.

4. The bailing-board M, provided with teeth on its upper side, and arranged in relation to the elevator N, substantially as herein set forth.

5. The arrangement of the belt *f'* connecting the fan-shaft with the conveyer, the pinion *h'* on the conveyer-shaft, cog-wheel *h'*, shaft *m*, and pulleys *n' n'*, said pulleys to be connected with the stacker, all substantially as described.

6. In combination with a shaft having a series of cranks or eccentrics set at opposite or varying angles, a series of dividing blocks, a^3, each of which is placed upon and operated by one of such cranks or eccentrics, and has two or more toothed bars, E, attached to it, substantially as and for the purposes herein set forth.

5,218.—*Clothes-Wringer.*—JACOB BRINKERHOFF, Auburn, N. Y.—Patent No. 122,220, dated December 26, 1871.

The rolls are driven by gearing through the medium of a countershaft which extends across the wringer.

Claim.—1. The combination of two rolls and suitable connecting mechanism with a countershaft having a fixed journal at one side of the frame and a sliding journal at the other.

2. The combination of the rolls C and D, arranged, with gearing and sliding boxes and journals, to allow one or both ends of the rolls to be separated without changing the relative position of the gearing.

3. The combination of the train of gears *d e f* with the box B, so that they shall always move together, and consequently be always in gear with each other while they move up and down with the upper or yielding one of the pair of rolls, substantially as described.

4. In combination with the train of gears and the under roll detached from the box B, the countershaft E and gears *h j* for driving said under roll, substantially as described.

5. The upper roll C, driven from the crank end by a pinion of smaller size than the pinion upon the shaft of roll C, and the lower roll D, driven from the opposite end by suitable connecting mechanism, to obtain the required purchase, substantially as and for the purpose set forth.

5,219.—*Manufacture of Spring-Heads.*—GEORGE HOPSON, Bridgeport, Conn.—Patent No. 116,311, dated June 27, 1871.

The clips of sheet-iron are cut to such shape that when folded around the leaf their edges on the one side shall not lie opposite their edges on the other side, and the welding-dies are so shaped as to throw up a stop-ridge on the iron across the inner surface, and two longitudinal ridges for supplying metal to fill out the corners when the ears of the clip are bent down by the finishing-dies, which latter also imparts the proper shape to the ears, carves the end of the leaf to correspond to the curl of the male leaf, and shears off any surplus metal from the portion so curved.

Claim.—1. The within-described method of forming the ridge or stop a^4 on the inner face of the female head by means of the die T with its recess *m* in connection with the die S, as shown and described.

2. The within-described method of welding the clips to the spring, forming the several projecting ribs thereon and imparting to the spring-head the proper finished shape by the dies M N and S T, as described.

3. The extension of the clips B across the inner face of the spring, as shown.

4. The clips B, of the shape described, jointly with the implacement and attachment of them to the leaf A, as described.

5,220.—*Valve for Water-Pipes.*—WILLIAM KEARNEY, Belleville, N. J.—Patent No. 57,930, dated September 11, 1866.

The valve is arranged to open by descending into a chamber below the water-ways, whereby sticks, stones, and other foreign substances are prevented from interposing and interfering with the perfect closing of the valve at all times.

Claim.—1. The combination of the box A, flanges B B, and valve C, when said parts are relatively arranged as described, and for the purpose set forth.

2. The combination of the valve C, box A, flanges B B, screw D, worm-wheel H, and screw I, all arranged to operate substantially in the manner as and for the purpose specified.

5,221.—*Portfolio.*—JOHN C. KOCH, Brooklyn, N. Y.—Patent No. 32,374, dated May 21, 1861.

The barbed needles are passed through the papers being filed, and attached to a suitable catch on the end of an elastic band secured to back of portfolio.

Claim.—The needles *e* having spear-heads, in combination with the loops or catches *i*, elastic bands *f*, cords *d*, and eyes *h* upon the cover of the portfolio or binder, substantially as and for the purposes specified.

5,222.—*Boring-Machine.*—ANDREW P. MERCHANT and MARIA MERCHANT, administrators of N. R. MERCHANT, deceased, and ANDREW P. MERCHANT, assignee of part interest to said N. R. MERCHANT, Guilford, N. Y.—Patent No. 32,449, dated May 28, 1861.

The boring-bits *m m* are made adjustable to and from each other by means of the arms E E, while their driving-pinions remain in gear with the wheel.

Claim.—1. The means described for operating two or more bits simultaneously, consisting of holders *g*, pinions *h*, and internally-cogged wheel D, applied as described.

2. The means of regulating the distance apart of the bit-holders *g*, consisting of the arms E, adjustable in the slot *d* of a plate, B, as set forth.

3. The means for supporting the bit-holders in different positions, consisting of the stands C, adjustable in slots *b* of plate B, as described.

5,223.—*Clothes-Wringer.*—ALBY H. PAGE, Manchester, N. H., assignor, by mesne assignments, to THE METROPOLITAN WASHING-MACHINE COMPANY.—Patent No. 61,660, dated January 29, 1867.—Division A.

A suitable frame with two rollers covered with elastic material; a pressure-bar adjusted by a central screw; two clamping devices, one swiveled at the feet of each standard for attachment at the edge of a tub.

Claim.—1. In a wringer having a pair of squeezing-rollers and an operating-crank and two uprights or standards, the employment of clamping means arranged to take hold of the tub at or near the base of each standard.

2. The construction of the clamping devices each with three fingers adapted to apply two on one face and one on the other face of the tub, as and for the purposes specified.

3. The application of a clamping device to a wringer with a swivel-joint to adapt itself to tubs of various forms.

5,224.—*Clothes-Wringer.*—ALBY H. PAGE, Manchester, N. H., assignor, by mesne assignments, to THE METROPOLITAN WASHING-MACHINE COMPANY.—Patent No. 61,680, dated January 29, 1867.—Division B.

The rollers are adjusted for different thicknesses of material pulled between them by a tilting bridge or bar, and a screw within the frame, and a means for clamping the wringer to a tub.

Claim.—The tilting bridge F and adjusting means E, in combination with the elastic rolls and also with a portable frame and clamping means for attaching to a tub, as specified.

5,225.—*Clothes-Wringer.*—ALBY H. PAGE, Manchester, N. H., assignor, by mesne assignments, to THE METROPOLITAN WASHING-MACHINE COMPANY.—Patent No. 61,680, dated January 29, 1867.—Division C.

Claim.—1. In combination with elastic rolls mounted in a portable framing, with means for connecting and disconnecting the framing on the edge of a tub, an incline arranged beneath the rolls, adapted to conduct the water therefrom inward toward the center of the tub, as specified.

2. The arrangement of the clamping-fingers L L and tightening means N relatively to the framing B and rollers D D, so that when clamped upon a tub the water expressed by the rollers shall tend to fall within the interior of the tub independently of the incline C', as herein specified.

5,226.—*Horse-Power.*—HEMPHILL SMITH, Shelby Station, Tenn.—Patent No. 120,678, dated November 7, 1871.

A draft-rope and windlass fixed upon a frame, and a draft-weight to counterbalance the whole, operated by horse-power working on a movable platform.

Claim.—1. The draft-rope F and windlass G applied to the frame C of a horse-power, substantially as and for the purpose specified.

2. The draft-weight H applied to the horse-power, in combination with the rope F, as specified.

3. The horse-power wheel A having the bent wood rim A', with the teeth bolted thereto, substantially as described.

5,227.—*Seed-Separator.*—WILLIAM J. WALKER, Dorset, Ill.—Patent No. 86,332, dated January 26, 1869.

Rack at tail of shoe and over spout, allowing the tailings to fall through into spout. Wind-board arranged at tail of sieve and front of spout to prevent blast passing up through rack.

Claim.—1. The wind-board L, located substantially as and for the purpose specified.

2. The rack E in combination with the wind-board L, substantially as and for the purpose specified.

5,228.—*Machine for Cutting Lead-Pencils.*—ALBIN WARTH, Stapleton, N. Y., assignor to EBERHARD FABER.—Patent No. 43,267, dated June 21, 1864.

The pencils are thrown into a hopper, from which they pass, one at a time, to a revolving carrier-wheel, which presents their ends to a rotating circular knife, thus trimming both ends of the pencil at one operation.

Claim.—1. A machine constructed, arranged, and operating substantially as herein described, for cutting off the ends of lead-pencils.

2. The arrangement of an agitator acting on the pencils contained in the hopper-box of the cutting-machine, substantially as described.

3. In combination with the pencil-containing hopper-box, a pencil-carrier, E, provided with sockets f^4 to receive the pencils from the hopper and to expose them in succession to the action of the cutter I, substantially as set forth.

4. The elastic fingers or wipers at the bottom of the hopper-box, in combination with the moving carriers, substantially as and for the purpose described.

5. In combination with the pencil-supporting hooks at the discharge of the hopper-box, the arrangement of scrapers projecting from the moving carriers and serving to throw the pencils out of said hooks into the sockets of the carriers, substantially as set forth.

6. The combination of adjustable heads E with the moving pencil-carriers, so that said carriers can be adjusted for pencils of different length.

7. The combination of a revolving cutter, I, with a moving pencil-carrier, E, the cutting-edge of the cutter being made to co-operate with the outer edge of the pencil-receiving sockets in the carrier, substantially in the manner described.

8. The combination of the bracket f^5 with the gages F F', the pencil-carrier E, and with a revolving cutter, I, substantially as specified.

9. The arrangement of a belt extending partially round the pencil-carriers and serving to hold the pencils down during the operation of cutting and to carry them away from the carriers after they have been cut, substantially as described.

10. The arrangement of clearers extending beneath the pencils contained in the moving carrier and serving to disengage said pencils from the carrier at the proper time, substantially as set forth.

11. The combination of an oscillating and yielding sharpening-wheel, J, with the revolving-cutter I, substantially as described.

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TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

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The following abbreviated form of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

Aërated liquor apparatus 1
Air and gas engines 2
Amalgamators, ore-mills 3
Architecture 4
Artificial limbs, &c 5
Baking 6
Baling-presses 7
Baths, closets, &c 8
Bee-hives 9
Bell and brass founding 10
Bleaching, dyeing, &c 11
Blowers 12
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Bolts, nuts, rivets 14
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Boots and shoes 16
Braid, thread, &c 17
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Hose and belting 81
Hydraulic engineering 82
Ice-making 83
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Iron and steel 85
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Journals, bearings, &c 87
Kitchen and table utensils 88
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BOUND VOLUMES OF PATENTS.

The following statement is furnished by way of answer to the frequent inquiries made at the Patent Office as to the conditions under which the bound volumes of the drawings and printed specifications of patents are being furnished to public libraries:

I. The joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. A part of these copies are to be bound in volumes and placed for free public inspection in the capitol of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

II. One hundred and fifty sets of the specifications and drawings of patents issued since July 1, 1871, have been bound into volumes for distribution under the provisions of this resolution. During the first year of the issuance of these volumes the patents of each week were bound into one volume. Fifty-two volumes per year (an issue takes place every Tuesday) was found to fill up the shelves of the libraries so fast as to make the custody of the volumes somewhat irksome and expensive. The Commissioner has, therefore, condensed the issues of each month into a single volume without making any deduction in the matter, the specifications and drawings being in full, but printed on both sides of the page, the drawings, four on a page. This change was made July 1, 1872. The contents are certified under the seal of the Patent Office; and each volume contains both a subject-matter index and an index of patentees. The usual annual index will also be prepared at the end of the year.

The volumes are bound in the best style, in law calf or in half-sheep, the former style costing $3.50 each, and the latter, $2.50. They can be sent through the mail, if so ordered, free of charge for transportation. Payments should be made in advance, and should cover a period of not less than three months.

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Evidence must also be furnished as to whether there are other public libraries in the same town or vicinity, and, if so, as to the character of such libraries, and as to the relative accommodation which the public would receive from the selection of the particular library making the application.

IV. Libraries will be permitted to receive the work only on the condition that it shall be carefully preserved; that the volumes shall not be loaned to individuals to be removed from the library rooms; and that the general public, whether subscribers to the remaining privileges of the library or not, shall, without charge, have unrestricted access to them during the established hours.

If it is found desirable to establish special rules for the use of the work, these rules should in all instances be reported to the Commissioner of Patents; and it is further understood that, if at any time the library is broken up, or declines longer to accede to the foregoing conditions, the volumes shall be held subject to the order of the Commissioner.

COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture	2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles	1,200
FELTING and HATS; including caps, bonnets, flock, &c	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)	

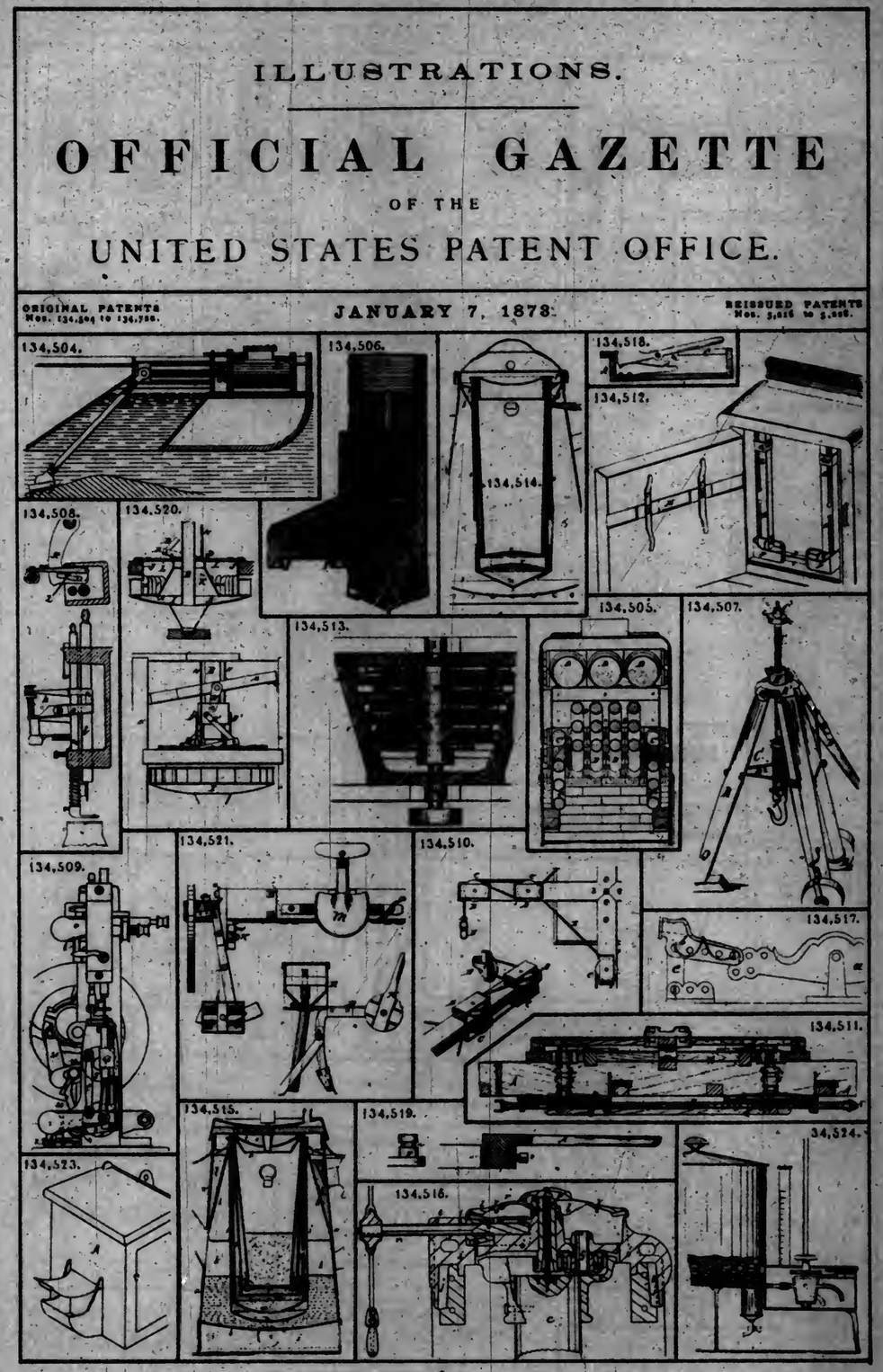
The specifications of patents have been reprinted back to November 20, 1866; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

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The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

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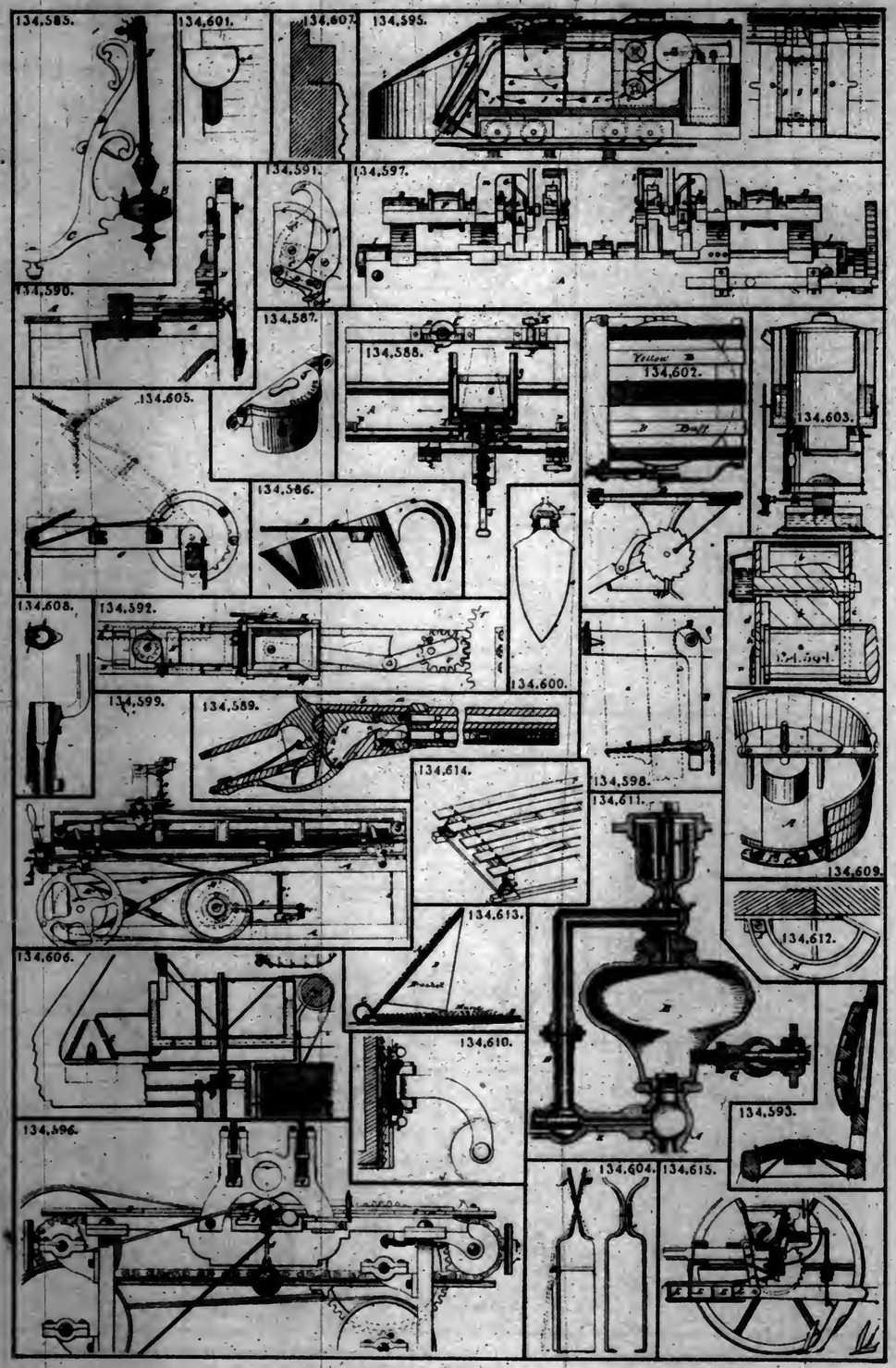


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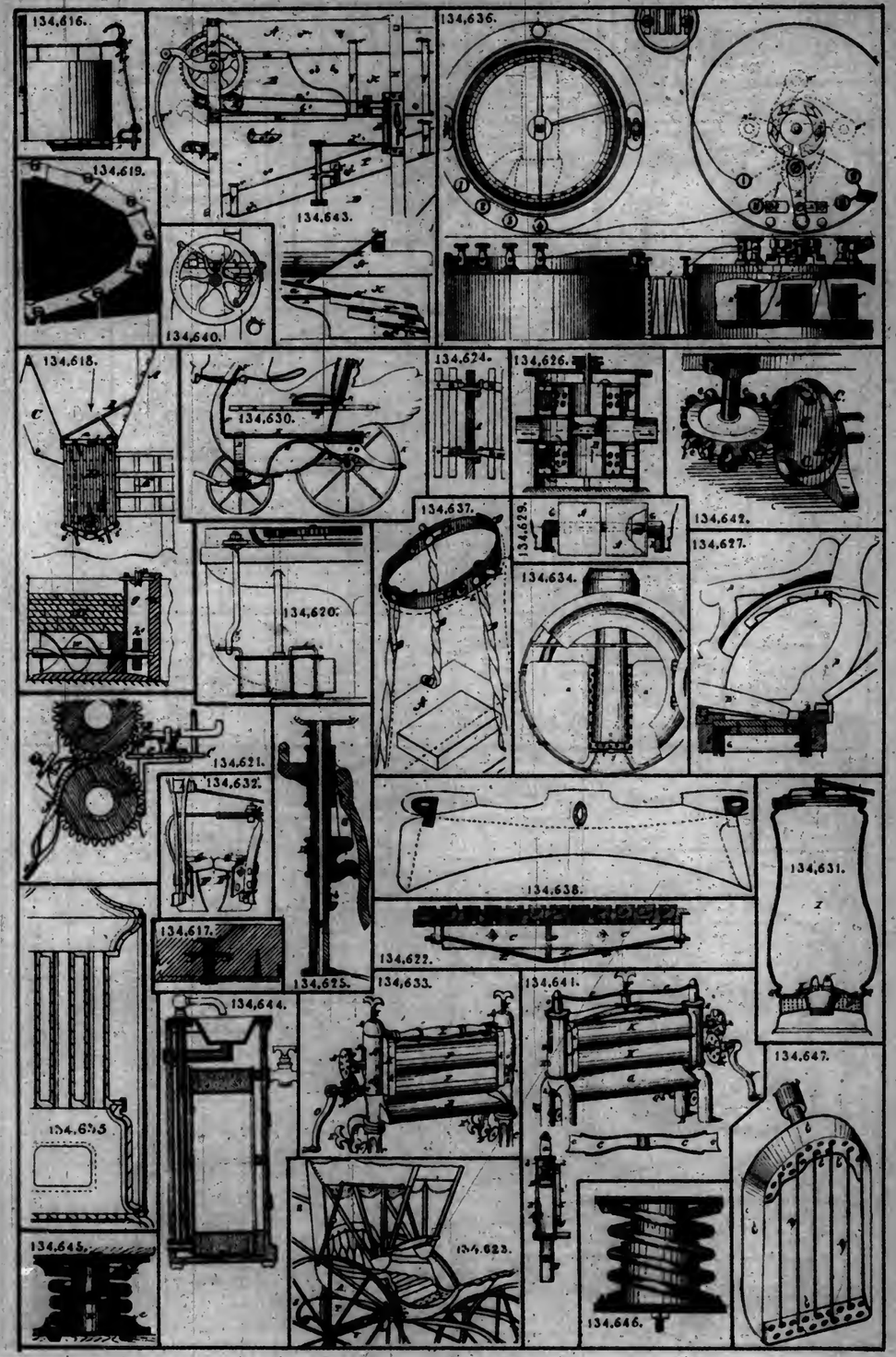
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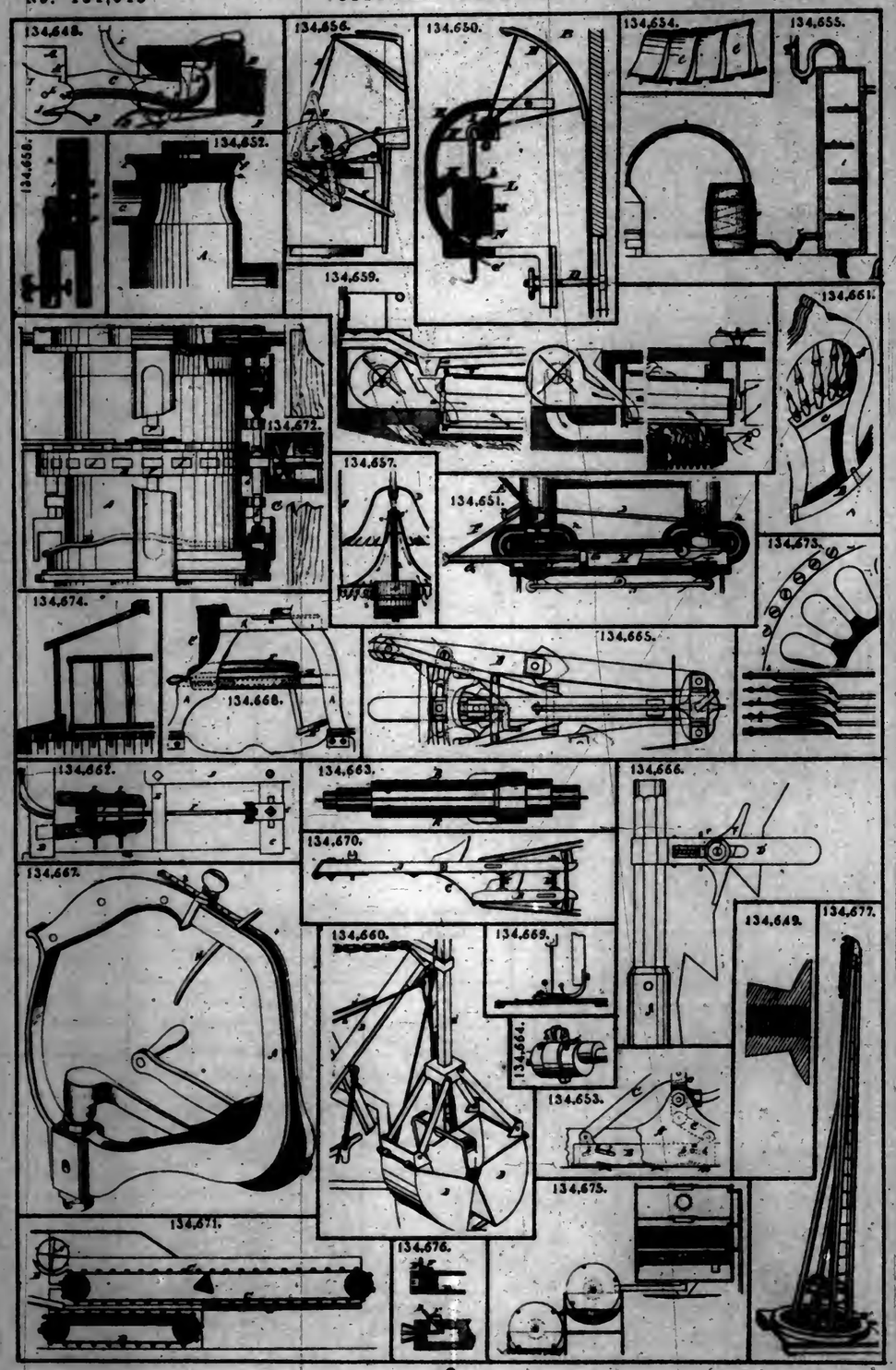
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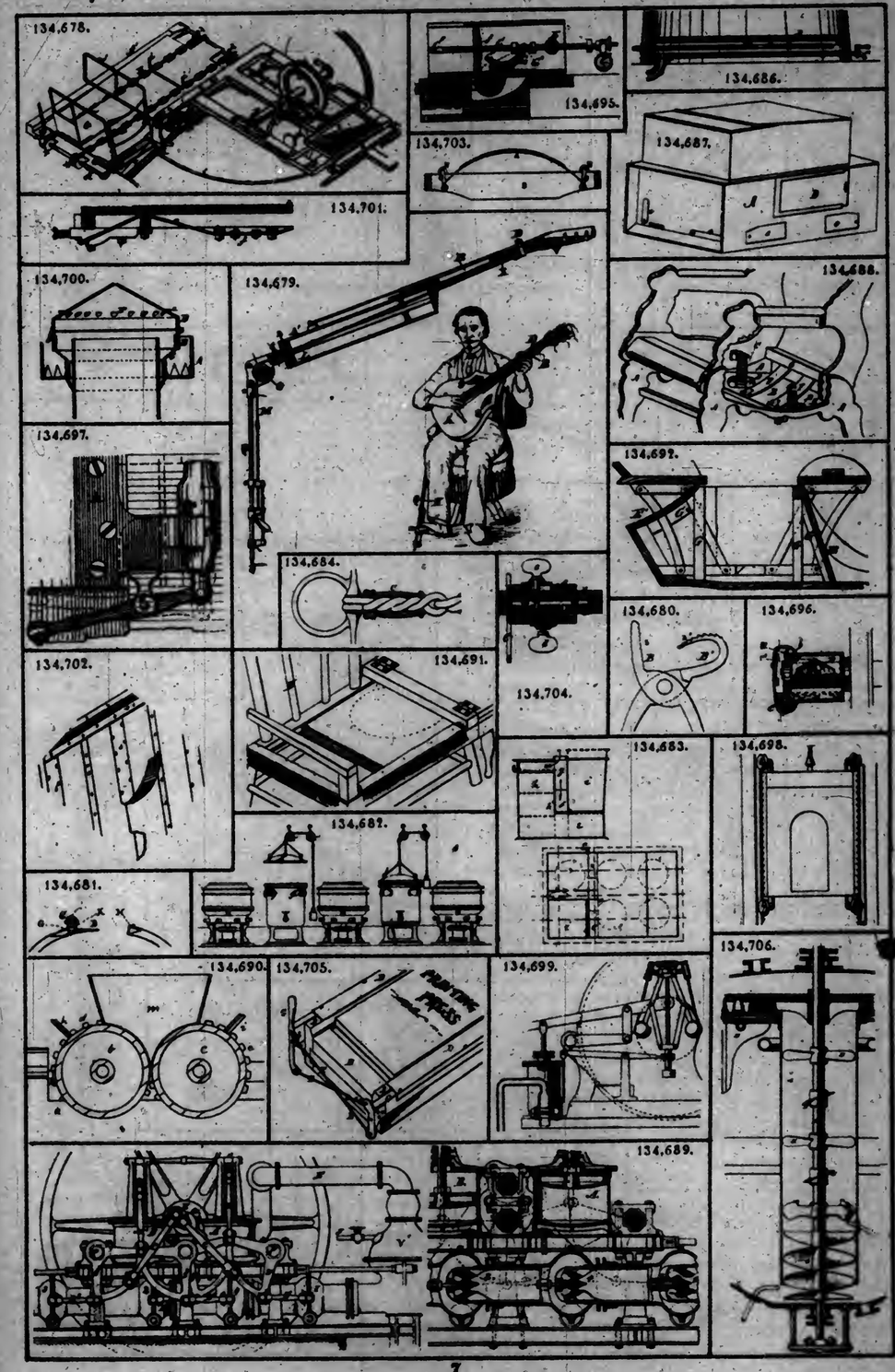
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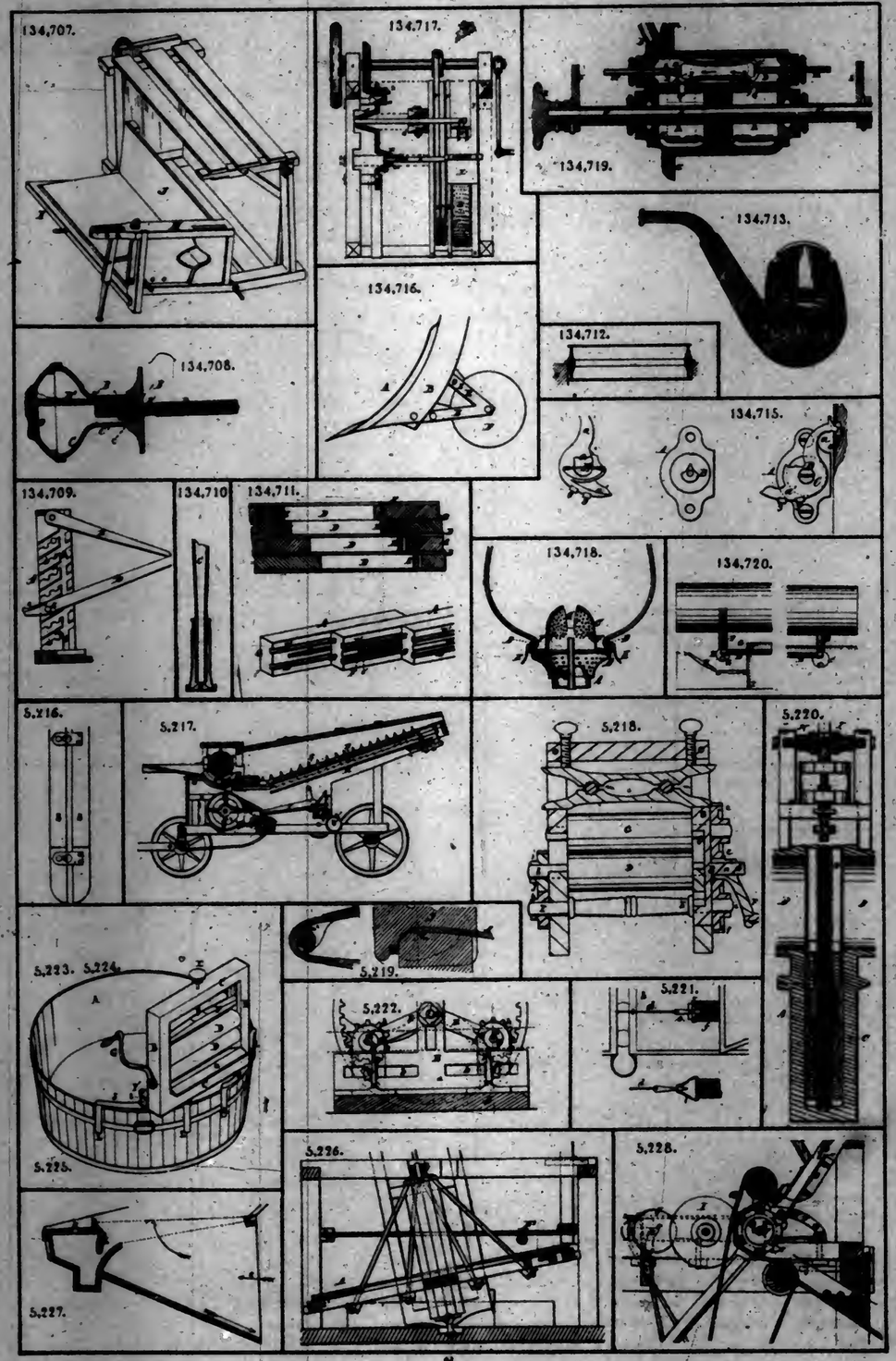
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OFFICIAL GAZETTE

OF THE

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COMMISSIONER'S DECISIONS.

T. PLUMLEIGH.—*Reissue.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Thomas Plumleigh for reissue of patent No. 123,231, granted January 30, 1872, for* IMPROVEMENT IN HARVESTERS.—*Decided January 18, 1873.*]

A case showing but a colorable variation, or inversion of a previous arrangement of similar parts.

LEGGETT, *Commissioner:*

Applicant's claim gives an intelligible idea of his invention, and is as follows:

"The driving-wheel herein described, having a series of removable anti-friction rollers and pendant flanches to serve as bearings for such rollers, as shown, in combination with the reciprocating bar F, the several parts being constructed and arranged substantially as specified."

I regard the references cited by the Examiner as fully anticipating this alleged invention. In the patent of G. W. Richardson of July 19, 1859, for instance, the friction-wheels are carried by the reciprocating bar instead of the driving-wheel. Applicant reverses the arrangement and places his friction-wheels on the flange of the driving-wheel. In Carmeau's case applicant's arrangement of parts is shown, except that a separate wheel is employed. In view of the state of the art as exhibited by these and the other references cited, applicant presents only a colorable variation or equivalent construction. The advantages, he alleges, are not exclusively found in his device, and I see nothing to warrant the grant of a patent in what he has done.

The decision of the Board is affirmed.

W. M. C. CUSHMAN.—*Extension.*

[*In the matter of the application of W. M. C. Cushman for the extension of Letters Patent No. 22,631, for* IMPROVEMENT IN RAILROAD-CHAIRS, *granted January 18, 1859.—Decided January 17, 1873.*]

A case in which the original patent had but slight novelty, and the rights thereunder have not been prosecuted with diligence.

THACHER, *Acting Commissioner:*

The Examiner reports in this case as follows:

"This patent is considered to be of trivial and nominal character. The invention as originally specified was placed in interference with a number of other applications, upon decision of which priority was awarded to Henry A. Landry, who accordingly took out his patent January 18, 1859, (No. 22,656.) The invention consisted in enlarging the outer portion of the railroad-chair and elevating it to the level of the rail, so as to take the tread of the wheel at the joint, and thus protect the same from wear. In addition to this there was a claim in the present application for making the "flanch" or rib with "buttresses," instead of solid—a matter of configuration, incidentally described and shown as a construction which might be adopted, but non-essential. Upon the adverse decision of the interference the original specification was cancelled by amendment, together with the leading claim, and a new specification filed describing and laying claim to this feature alone, the principal figures showing Landry's invention meanwhile being allowed to stand in the drawing, although Fig. 4 was the only one relating to this alternative or referred to originally as embodying it. Upon analyzing this matter of configuration, thus magnified into an original invention, its novelty is non-apparent, and it is difficult to see why this claim was not considered settled by the interference decision as well as the other. Landry's drawing certainly shows a construction in all respects equivalent, mechanically and functionally; and if this is not enough, other parties show it still more closely, particularly William Kearney, (application filed January 22, 1858,) one of the parties to the interference. This application antedates the present one in time of filing by more than four months. If the point was patentable, or so regarded, it is not seen why its proprietorship was not determined by an interference between these two parties

who show it equally well. But the railroad-chair patented to Adam Hays September 7, 1858, also shows that cutting away the middle outer portion of the iron of the chair to leave the so called buttresses was an old idea, even if such a privilege is not a part of every iron-molder's craft since the days of Tubal Cain.

"The applicant's record is equally lame. We find that his efforts and expenses to give the invention to the public, over and above the cost of obtaining the patent, were confined to ($100) one hundred dollars' worth of advertising. His receipts have been nothing.

* * * * * * * *

"With regard to the effect of the proposed extension upon the public interest, judging from the past history, no effect, favorable or unfavorable, would ensue. Not one cent has yet been collected, or apparently been attempted to be collected, during the whole period of the contract with the public. It is possible that a *second* indorsement by the Patent Office, such as an extension is, and with the weight it carries, might in the hands of a smart operator galvanize the so-styled invention into such semblance of life as to give some trouble to some unwary road which has chanced to mold its chair-castings into a form resembling this, as it is an extremely obvious one to a mechanic, and clearly public property.

"Summary—

"1. The invention had no substantial novelty at the date of patent.

"2. It therefore has no value or importance to the public as a monopoly.

"3. The applicant's failure to obtain any remuneration during the life of the patent has arisen either out of the intrinsic weakness of his case or lamentable neglect in prosecuting it.

"4. The public interests cannot be favorably affected by the extended life of such a patent."

There seems to be no occasion for adding anything to the statement made in this report, and it is therefore adopted as in substance the decision in this case. As the application possesses no merit in any of the particulars required for the granting of an extension, the prayer of the petitioner must be denied.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—EASTERN DISTRICT OF MICHIGAN.

PALMER HAMILTON *vs.* CALEB IVES & GEORGE B. GREEN.

[*Decided January* 16, 1873.]

Motion for new trial on the grounds, first, of newly-discovered evidence; and second, erroneous instructions to the jury. The first ground was disposed of at the hearing, adversely to the motion, the showing upon which it was based being clearly insufficient. The motion was held under advisement, and is now for decision on the second ground alone.

[*G. V. N. Lothrop* for the plaintiff.
Charles J. Hunt for the defendants.]

LONGYEAR, *J:*

The action in this case was for an alleged infringement of a patent, No. 51,310, granted to the plaintiff December 5, 1865, for an improvement in saw-mills. The device patented consists of a new combination of old elements as a means of producing a certain result, and is set up in the claim in the following words:

Having thus described the best mode with which I am acquainted of embodying my improvements, what I claim as my invention, and desire to secure by letters patent, is giving to the saw in its downward movement a rocking or rolling motion, by means of the combination of the cross-head working in curved guides at the upper end of the saw, the lower end of which is attached to a cross head working in straight guides and pivoted to the pitman below the saw, with the crank-pin, substantially as described.

In the drawings, the curved guides are represented as set with their concave facing in the same direction as the cutting-edge of the saw, and consequently toward the approach of the log, which is represented in the drawings by an arrow marked S; and they are referred to in the specifications as being so set. Nothing whatever is said in the specifications as to whether the curved guides are to be set with the lower end perpendicularly under the upper end, or in an inclined position, they being entirely silent upon the subject. In the drawings, however, they appear as if set in a perpendicular position, and on this account it was claimed at the trial that any other position of the guides was not covered by the patent, and that because in the combination, as used by the defendant, these guides were set with the lower end about two inches forward of a plumb line let fall from the upper end (as to which there was no dispute) there was no infringement. The defendants' counsel asked the Court to charge the jury as follows: "That if the face of the slides are not placed so that the top and bottom of the slides are in the same perpendicular line there is no infringenent." The Court refused to charge as requested, and charged the jury as follows:

"That the plaintiff is entitled to the protection of his patent, no matter whether the curved slides be set in one line or in another, provided the combination is otherwise complete. It is a mere matter of adjustment which any competent mechanic, skilled in building saw-mills and adjusting the saw for the most effective service, would readily understand and adopt."

This refusal to charge, and the charge as given, are claimed to be erroneous, and constitute the only grounds of the present motion, as I construe the three several subdivisions or grounds of motion, as spread upon the record. The grounds of motion as stated upon the record are as follows:

"1. In this, that the Judge charged the jury that the patent of Hamilton did not require the slides to be set perpendicular.

"2. In this, that the Judge charged the jury that, under Hamilton's patent, the slides could be set in any position, at the choice of the mechanic who set them up.

"3. In this, that the Judge charged the jury that, if the slides of Ives and Green fell back from a straight line drawn from one end of the slide to the other, it was an infringement on the Hamilton patent."

The first and second, although not in the language of any charge as given, clearly have reference to the charge above quoted. But on a careful examination of the whole charge, which was in writing, I am unable to find any portion of it which authorizes the statement contained in the third subdivision. No such charge was given. I do not intend to accuse counsel of intentional misstatement, but that there was a misapprehension on the part of the counsel there can be no doubt. The fault of the counsel is that he evidently made his statements as to what charges were given without resort to the written charge to ascertain their correctness.

The question of decision, then, is as to the correctness of the instruction above quoted.

It is claimed that because the curved guides at the upper end of the saw are represented in the drawings as set in a perpendicular position no other position of the guides, even if the combination be the same in all other respects, is covered by the patent; and that, therefore, the use by defendants of a like combination, but in which the upper guides are set with the lower ends two inches forward of a perpendicular line let fall from the top ends, is no infringement of the plaintiff's patent.

It is to be observed: 1. That the curved guides are not themselves claimed as new, and, of course, they are not covered by plaintiff's patent. 2. That it is only the position and office of the curved guides in the combination that are patented. 3. That the only respect in which the position of the curved guides in the combination is made specific, or is at all essential, is their location in reference to the saw—that is, at its upper end, and with their concave sides toward its cutting-edge, or, as it is expressed in the specifications, "to the advance of the log." 4. That the only office to be filled by the curved guides is to carry the top end of the saw backward of its general line of movement, or, as substantially expressed in the specifications, in the same direction as the advance of the log during the first half, and forward, or toward the log, during the last half of its downward motion, while at the same time, by another part of the combination, the lower end of the saw is being carried in the opposite direction, thus doing their part in imparting to the saw the "rocking or rolling motion," mentioned in the claim as above quoted.

We see, then, that so far as the specifications are concerned, nothing is specified as to whether the curved guides are to be set perpendicularly or inclined, and if inclined, at what angle or how much. So far as the the specifications are concerned, then, this matter was certainly left to be adjusted according to the judgment of the builder for the most effective service. This being the case, and it being the intention of the patentee so to leave the matter, the curved guides could not be represented in the drawings in any other than a perpendicular position, because that is the only initial or starting point or line from which any divergent or inclined position could be calculated. The drawings are intended to represent the positions of the individual parts *in the combination*, and not mere matters of detail. For instance, the saw is as much a part of the combination as the curved guides. In the drawings, the saw is represented as hung in a perpendicular position. The evidence of all the experts show, and it is undisputed, that no saw-mill, no matter what combinations or devices are used in other respects, will do effective work without what is called "overhang" of the saw, or its equivalent—that is, the saw must be so hung that when its downward stroke is completed the upper end shall overhang the lower end with reference to a perpendicular line. Now, it might as well be said that a saw-mill built after plaintiff's device is not an infringement of his patent because the saw has the necessary overhang, as to say it is not an infringement because the curved guides are not set perpendicularly. In fact, the testimony of the experts tended to show that setting the lower end of the curved guides forward was but one method of giving the saw the necessary overhang. The matter as to how the curved guides shall be set is left unlimited and undefined, like a score or more of other matters of detail, such as their length and degree of curvature, the length and thickness of saw-plate, the length and number of saw-teeth, length of stroke of the crank, length of pitman, length of leverage at the upper end of the pitman between where it is pivoted to the lower cross-tree and where the saw is pivoted to it, &c. All these are clearly mere matters of adjustment, and may be varied in different cases according to the intelligence, judgment, or even caprice of the builder, and still the combination be the same, and in each case equally covered by the plaintiff's patent. (*Am. Hide, &c., Co. vs. Am. Tool, &c., Co.*, 4 Fish Pat. Cases, 284, 304, 307.)

The drawings are no doubt a part of the description of the thing patented, but they must be considered in connection with the specifications. Where the invention patented consists, as in this case, of a combination of old elements to produce a new result, mere matters of adjustment of the individual elements are not limited or controlled by the drawings, unless, 1: They are expressly so limited by the specifications as well; or 2: Such limitation and control are necessary to maintain the integrity of the specifications, taken as a whole, or of some essential part or parts thereof; or 3: Such limitation and control are essential to produce the result claimed. As to the first, we have already seen that the perpendicular position of the curved guides, as represented in the drawings, are not expressly limited to that position by the specifications. As to the second, it is claimed on the part of the defendants that the perpendicular position of the curved guides as represented in the drawings, is necessary to maintain the integrity of the following clause in the specifications, viz: "As the upper guides are concave to the advance of the log, the effect upon the upper end of the saw is that while it is descending it also moves in the direction of the arrow S," (the arrow S indicates the advance of the log;) "and it continues this movement as it descends until about half of the stroke is accomplished; then, during the remainder of the stroke, it moves in a direction the reverse of that indicated by the arrow S. It is claimed that inasmuch as the advance of the log is in a horizontal line the curved guides cannot be concave to it, in a strictly mathematical sense, unless the curves be so set that a straight line drawn from one end of the curves to the other, representing the chord of an arc of a circle, be perpendicular to such horizontal line. In order to have this true, even in a strictly technical sense, it is necessary that the curve of the guides should be in the exact form of an arc of a circle. But it is not so described in the specifications, neither is it necessarily so in order to maintain the integrity of any portion of the specifications, nor is it essential in order to produce the result claimed. All that is specified, and all that is essential, is that the upper guides shall be curved. The degree of curvature, and the shape or form of the curve, whether an arc of a circle or otherwise, are non-essentials, but are mere matters of adjustment, like the length and proportions of the connecting or pitman rod, &c. The foundation

of the argument in that regard is, therefore, lacking, and the argument falls to the ground. But, however this may be, the clause quoted does not purport to be, and it is not any part of the description of the combination, or of any portion of it. These had been already described. It is simply a description of the office or operation of this particular element, viz: of the curved guides.

It is claimed, however, that in order to maintain the integrity of the description of the office or operation of the curved guides, as stated in the specification above quoted, it is essential that the guides be set perpendicularly. In order to maintain this claim it is assumed that in order to have the upper end of the saw move in the direction indicated (in the same direction as the advance of the log) during the first half of its downward stroke it must fall back of a plumb-line let fall from its starting point, and that it cannot be made to do this if the lower ends of the curved guides are set forward of such plumb line. The fallacy of this assumption appears from the following propositions—1: The description is not that the upper end of the saw is made to move the one way or the other with reference to a plumb-line. 2: While it is true that, taken by itself, and without making any allowance for the operation and effect of the movement of the lower end of the saw in the opposite direction, the movement of the upper end, in order to be in the same direction as the advance of the log, must be a falling back from a plumb line, as claimed; yet, when taken in connection with, and as affected by that other movement, it is not necessarily so, even with the curved guides set perpendicularly. In this connection it must be borne in mind that the movements of the saw here spoken of all have direct reference to its operative effect upon the log, and, of course, when the "saw" is spoken of it must have reference to its operative or toothed edge, and the "upper" and "lower" ends of the saw must be understood to mean those ends of that edge or side, which, in practice, as is well known, always terminates several inches below and above the fastenings or hangings at the respective ends of the saw-plate.

It will be remembered that while descending, the two ends of the saw are moved back and forward in opposite directions at the same time—the upper end back by operation of the curved guides during the first half, and forward during the last half, and the lower end by operation of the lever connecting rod or pitman, forward during the first half and back during the last half of its downward stroke. Each of these movements, of course, affects the saw throughout its entire length, but with a gradually diminishing effect.

The description in the specifications of the operation and effect of each separate element or part of a patented combination must be read and construed with reference to the entire combination and its results, and the effect which the operation that each element or part has upon that of each of the others. (*Cahoon* vs. *Ring*, 1 Fish, Pat. Cases, 403, 419, 420.) So construing the description of the operation and effect of the curved guides now under consideration, it is evident that, while of course the cross-tree operating in the guides and to which the upper end of the saw-plate is pivoted, must fall back of a plumb line in the first half of the descent of the saw, the upper end of the saw itself—that is, the upper tooth or teeth of the saw—may be carried so far forward by the forward motion of the lower end as not to fall back of such line, but may on the contrary actually move in the opposite direction, depending, of course, upon the degree of curvature of the guides and the extent to which the lower end is thrown forward. This was in fact shown to be the case by experiments at the trial with a model constructed after the plaintiff's patent, the correctness of which was not disputed. But, as paradoxical as it may seem at first view, this does not prove, as claimed, that the statement in the specifications, that the upper end of the saw in the first half of its downward stroke moves in the direction of the advance of the log, is untrue. It simply proves that while it must necessarily so move, yet on account of another simultaneous movement, it is not thereby caused necessarily to, and does not in fact, fall back of a plumb line, even with the curved guides set perpendicularly, as represented in the drawings. This theory of there being a backward motion as the result of an individual cause, and an absolute forward motion as the result of compound causes, is well illustrated by the familiar example of a man starting on the bow of a moving ship and walking back along the deck to its stern. Now, suppose the ship to be moving forward at the rate of five miles per hour, and the man to move toward the stern at the rate of three miles per hour, the man will have actually gone forward of a plumb-line let drop to the ground from where he started, and yet, with reference to the ship, he actually moved the other way.

The backward movement of the upper end of the saw is caused, as we have seen, by the cross tree to which the upper end of the saw plate is pivoted following the curve of the guides. A completed downward movement of the cross-tree is, I think, correctly represented by a straight line drawn from the starting-point of the pivot to the point of the termination of the movement. Now, I think it evident that, if the curved guides are so set (no matter what their position may be in other respects) that this pivot or operating cause falls back of such straight line during the first half of its downward movement, the call of the specification in that respect is answered. The fact is, however, that this statement in the specifications as to the operation and effect of the curved guides upon the upper end of the saw is not descriptive of any part of the combination itself. It is a statement merely of the patentee's theory in that regard; and even if he was mistaken in that particular it would not invalidate his patent, because it is immaterial; provided, of course, that the entire combination actually produces the result claimed for it, as to which there is no dispute. (*Foss* vs. *Herbert*, 2 Fish, Pat. Cases, 31, 35.) "It is well settled by the courts," says Judge Leavitt, "that in the effort to ascertain the intention and meaning of the specifications and claims, they are to be viewed in a liberal spirit, that, if possible, the object of the inventor or patentee may be carried out. Mere rigid technicalities are to be set aside, unless there is a clear legal necessity for sustaining them." (*Goodyear* vs. *Berry*, 3 Fish, Pat. Cases, 439, 448.) I entirely concur in the proposition. See also *Imlay* vs. *Railroad Company*, 1 Fish, Pat. Cases, 340; *Goodyear* vs. *Railroad*, ib. 626; *Page* vs. *Ferry*, ib. 298; *Judson* vs. *Cope*, ib. 615; *Burden* vs. *Corning*, 2 ib. 477; *Beard* vs. *Edgerton*, 8 Mann, Gr. & Scott, 165; *Ames* vs. *Howard*, 1 Sum. 482, 485; *Blanchard* vs. *Sprague*, 3 Sum. 535, 539; *Ryan* vs. *Goodwin*, ib. 514; *Seymour* vs. *McCormick*, 2 Blatchf. 240, affirmed except as to rule of damages, 16 How. 483.

It appears, therefore, that the claim on behalf of the defendants, that the curved guides at the upper end of the saw must be set perpendicularly in order to maintain the integrity of the specification above quoted, has no foundation.

It remains to consider the third and last condition, viz: Whether it is essential to limit the curved guides at the upper end of the saw to a perpendicular position as represented in the drawings, in order to produce the result claimed for the entire combination. The result, as stated in the claim, is "giving to the saw in its downward movement a rocking or rolling motion."

These curved guides at the upper end of the saw, it must be borne in mind, perform only a part of the work of imparting to the saw the motion claimed to be imparted by the entire combination. How it performs that work we have already seen. Now, it is evident that any practical inclination of the guides from a perpendicular position—that is, any inclination that will allow the saw to respond to the entire revolution of the crank, and do effective work, which was shown in practical use to be from one to two inches only—would not destroy the effect of the curve of the guides upon the motion of the saw. It would no doubt somewhat modify and slightly diminish that effect, but it must be borne in mind that the motion claimed as the result of the combination is in no manner limited to any particular *degree* or *extent*. It is in *kind* only, and so long as the kind of motion claimed is produced by the combination described the combination is protected by the patent.

It follows, therefore, that there was no error in the instruction complained of, and the motion for a new trial must be denied, with costs to the plaintiff, including an attorney fee of $10.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

MARY F. McCOMB *vs.* IRA BEARD.

[In Equity.—Before Judge Blatchford.—January 9, 1873.]

FREDERIC COOK'S PATENT—COTTON-TIES.

The third claim of letters patent for "improvement in metallic ties for cotton-bales," granted to Frederic Cook, March 2, 1858, is for the cutting of the slit or slot through the outer bar of the clasp, (which covers the cutting it through an equivalent bar or part of the clasp,) so as to enable the part of the hoop which is to rest under a bar of the clasp to be slipped sidewise through the slit or slot, and avoid putting the end of the hoop endwise through beneath such last-named bar.

There is no connection between this claim and what is previously done with any other part of the hoop or any other part of the clasp; the claim is distinctly to the use of the slit or slot, so cut to effect the result indicated for the object indicated.

Such a claim is not anticipated by George Hall's English patent of 1801, by a quadrangular buckle with an open slot, having spikes at the sides of the gateway.

Nor by a split-ring for connecting trace chains.

Such claim is infringed by the tie shown in letters patent for an "improvement in cotton-bale ties" granted to George N. Beard, December 27, 1870, consisting of a quadrangular buckle with an opening in one of the side bars for the passage of the iron in the form of a hook.

This was a final hearing upon pleadings and proofs of a suit in equity, brought by Mary Frances McComb against Ira Beard, for the alleged infringement of letters patent for "improvement in metallic ties for cotton-bales," granted to Frederic Cook, March 2, 1858, and assigned to plaintiff.

[*Keller & Blake and Fisher & Duncan*, for complainant.

S. J. Gordon and J. H. B. Latrobe, for defendant.]

BLATCHFORD, *J.*:

This suit is brought on letters patent, owned by the plaintiff, granted to Frederic Cook, March 2, 1858, for an "improvement in metallic ties for cotton-bales." The patent was, on the 17th of February, 1872, extended for seven years from the 2d of March, 1872, but this suit is not brought on the extended term.

Cook's invention is a friction buckle or clasp to be used with an iron hoop or tie. The drawing of the patent represents the buckle as a flat rectangular plate, in length a little more than double its width, with three closed slots in it, parallel to each other, running crosswise of the plate, thus making four cross-bars, which bars are set off from the plane of the body of the plate, in alternation, the first and third bulging from one face of the plate, and the second and fourth from the other. Approaching the plate from either end of it, the end of the hoop is passed over the first bar, then under the second bar, then over the third bar, then around the further side of the third bar, then back again under the third bar, then under the hoop that is beneath the second bar, and then over the first bar and between it and the hoop that is above it, such end of the hoop being left to project. The buckle, with the hoop thus arranged in it, being laid on the cotton-bale with the long body of the hoop uppermost, and such body being cut off at the desired length for the bale, the hoop is brought around the bale, and the unconfined end is then passed under the fourth bar, then over the hoop that is above the third bar, then under the second bar and between it and the hoop that is beneath it, then around the end of the second bar, then back again over the second bar, then over the two hoops that are above the third bar, and then under the fourth bar and between it and the hoop that is beneath it, such end of the hoop being left to project. There are, thus, two loops in the hoop, one around the second bar, and one around the third bar, the first and fourth bars serving as friction-bars to prevent the loops from slipping, by tightly confining, between such friction-bars and the main body of the hoop, the parts of the hoop which are in contact with such friction-bars. The parts of the hoop which form the loops pass by each other, so that when the loops, by the strain of pulling on the hoop, are brought to pull against the bars, the tendency is to turn the buckle over, end for end, and such turning over is prevented only by the action before mentioned of the first and fourth, or outer or end bars, as friction bars. The hoop is arranged in the buckle while the bale is under compression in a press, and when the strain comes on the hoop by the relaxation of the press, the greater the strain the greater is the action of the friction-bars in holding the loops from slipping.

In addition to showing a buckle with four solid bars, the patent shows the fourth bar with a slot or slit cut through it crosswise of its length, but at an angle and a

little to one side of the center of its length, and with the adjacent slot in the plate made longer than the other two slots, so as to enable the hoop to be put under the fourth bar, when put under it the second time, by slipping it through the slit and so under the fourth bar, and to be so arranged as to bear with its upper side against the under side of such bar, on each side of the slit. This dispenses with the necessity of putting the end of the hoop the second time under the fourth bar and drawing the hoop through to its proper position, and enables the operation of completing the fastening to be effected more quickly. By the use of the slit the slack in the hoop before the press is relaxed can be taken up and held better, as a short bend can be made at once, to make the loop around the second bar, without leaving such loop to be made by drawing the hoop through under the fourth bar.

The patent has three claims:

1. The friction clasp or buckle for attaching the ends of iron ties or hoops for fastening cotton-bales and other packages, so that the ties are prevented slipping by the friction against a certain portion of the buckle.
2. The looping of the ends of iron ties or hoops for bales into a buckle, by the form of which they are prevented slipping by friction when the strain of the expansion of the bale comes on the ties, the ends of the hoops or ties not being attached together in any way, the connection being formed by a distinct buckle or friction-clasp.
3. The herein-described slot, cut through one bar of clasp, which enables the end of the tie or hoop to be slipped sidewise underneath the bar in clasp, so as to effect the fastening with greater rapidity than by passing the end of the tie through endwise.

The application for Cook's patent was filed in October, 1857.

Advantages in compressing cotton and other articles tightly in bales are in greater facility of handling equal weights, occupation of less room in transportation, and diminution of liability to loss by burning or wetting. Advantages in using iron ties over rope ties are in cheapness, durability, strength, resistance to the expansive force of the bale, and less liability in the tie to be severed by cutting or burning. Iron ties for compressed bales have come to supersede all others, since efficient modes have been devised of securing the ends of the iron ties. At first such ends were fastened together by riveting. This was too slow a process. On the 17th of June, 1856, David McComb obtained a patent in the United States for an "improvement in non-elastic bands for bales of cotton and other fibrous materials." He cut the hoop of the proper length, and then formed each end of it into a hook and hooked the two hooks into each other, the end of each hook fitting closely into the bend of the other hook, the piece bent over to form each hook being about as long as the width of the hoop. Over these hooks, when put together, he placed a flat link or slide, which secured the hooks from opening when the pressure of the bale was applied on the removal of the compressing power.

In September, 1856, Charles Swett applied, in the United States, for a patent for an "improvement on cotton-bale ties." Swett's application was twice rejected, was then rejected again, on appeal, by the Commissioner of Patents, in April, 1857, and afterward, in October, 1866, on appeal to the Chief Justice of the Supreme Court of the District of Columbia, a patent was ordered to issue. It was issued October 23, 1866, to Charles G. Johnson as assignee of Swett, and antedated to April 23, 1866. The invention of Swett consisted in so securing the metallic bands on the bales that the elasticity of the cotton becomes an active means of fastening the band. Swett employs a metal plate, in which are two slots parallel with each other across the plate, the length of the slots being equal to the width of the band. From the lower and inner edges of the slots projections extend out obliquely beneath the slots, nearly covering their lower openings. One end of the band is passed through one slot and bent back against and under the band. The band is then passed around the bale while under pressure, and its other end is put through the other slot and drawn tight, lapping beyond the first slot, so as to lie up against the first end of the band out to its end. When the blade is relieved from pressure the cotton, by its elasticity, presses the ends of the band so firmly that they cannot be withdrawn from under the body of the band.

On the 24th of September, 1858, George Brodie applied, in the United States, for a patent for an "improvement in metallic bands for baling." The patent was granted to him March 22, 1859. The general idea of this patent is to bend the ends of the hoop and insert within the bend a metallic pin longer than the width of the hoop, and have a connecting-link to join the two ends of the hoop. Figure 6 of his drawings show a connecting-link made by bending metallic wire into such shape that the opening in the middle of the link is wider than at its ends, the ends of the wire which form the link meeting at or near one end of the link, where, as the specification says, its ends may be joined and fastened together, or it may be used without any such fastening. Figure 13 shows how the connecting-link in figure 6 may be used without any pin in the bend of the hoop, by slipping the ends of the link into the bent ends of the hoop. In the course of Brodie's application the Patent Office, in a letter to him, suggested that Cook's patent showed "the plate or link split, for more readily slipping in the end of the band."

On the 19th of September, 1859, Rollin M. Taylor applied, in the United States, for a patent for an "improvement in iron ties for cotton-bales." He had a link or buckle of metal with a rectangular hole cut in its center to receive the loops of the hoop, and an inclined slit or slot cut in one of its sides, the slit being adapted to the thickness of the iron used for the hoop. The ends of the hoop were bent over so as to form loops. The buckle could open laterally at the slit, to facilitate the hooking or locking of the loops. The bent ends of the hoop were to be hooked over the two sides of the frame that were next to the side in which the slit was, and the bent ends of the hoop were to be placed next to the bale. Taylor's claim, as applied for, was the use of the buckle, formed with a slit and opened laterally, in combination with loops, to form the tie. Taylor's application was rejected in September, 1859, on the strength of figures Nos. 6 and 13 in the drawings of Brodie's patent, and was withdrawn in December, 1860. Taylor's invention, as applied for, had been assigned to James J. McComb, the husband of the plaintiff. He had unsuccessfully attempted to introduce into use the tie of David McComb, as patented. Taylor's tie attracted his attention. After the application for a patent for that was rejected, James J. McComb modified the Taylor tie into the "arrow tie," hereafter mentioned.

On the 19th of November, 1859, John T. Butler obtained, in the United States, a patent for an "improvement in fastening metal hoops on cotton-bales." His

device is a plate of metal with a rectangular hole cut in it, and no slit in its frame, with hooks formed of the ends of the hoop and hooked around opposite sides of the plate, so that the ends will lie against the bale and be held in place by the pressure of the bale against them. His claim is to such combination, and is, in fact, like Taylor's, except as to the slit in the frame.

On the 29th of January, 1861, James J. McComb obtained, in the United States, a patent for an "improvement in iron ties for cotton-bales." He takes a plate of metal with a five-sided hole in it, whose two longest sides are opposite each other, and equal and parallel, and equal in length to the width of the hoop to be used. From one of such longest sides, through the frame to the outside, a slit or slot is cut, one side of which is turned outward a little to facilitate the insertion of the end of the hoop. The hole is lengthened in the shape of an arrow, or in the form of two sides of an equilateral triangle, from the ends of its two longest sides, so that the point of the arrow and the side opposite to it are about equidistant from the outside of the frame. The slit is nearer to the side opposite the point of the arrow than it is to the place where the arrow shape commences. One hook of the hoop covers the slot, and the other is hooked around the opposite side. The claim is to the arrow-shaped hole. The specification says that the design of the arrow-shaped end is, not only to force the hoop over the slot, which it does with certainty when the bale expands after being released from the press, but also to secure an equal bearing on the separate parts of the slit side. James J. McComb put this "arrow-tie" into the market, and being threatened by Cook with a suit for infringing the third claim of his patent, in respect of the slit, a purchase of Cook's patent was made and it was assigned to the plaintiff. Since the close of the war, in 1865, James J. McComb has kept the market at the South fully supplied with the "arrow-tie," constructed under his own and Cook's patents, and being what is called an "open-slot" tie. Open-slot ties made by other persons began to appear in 1869.

In March, 1872, a suit at law, brought by the plaintiff and her husband in the Circuit Court for the District of Louisiana, against George Brodie, for an infringement of the third claim of the Cook patent by making and selling an open-slot tie, was tried before a jury. There was a verdict and a judgment for the plaintiffs. In the same month provisional injunctions were granted by the same court in six suits, founded on the Cook patent, against six different forms of the open-slot tie—the Gooch tie, the Wallis tie, the Alligator tie, the Dunn tie, the tie proceeded against in the suit at law against Brodie, and the tie known as the Beard tie, which is the one involved in the present suit. The suit at law and these suits in equity were before Judge Woods, the Circuit Judge. The extension of the Cook patent was opposed by the proprietors of the Beard tie and of the Alligator tie, and others.

The control of the use of the open-slot tie is very valuable, pecuniarily, as that tie has practically superseded the closed-slot tie. Hence the zeal and ability with which this suit has been prosecuted and defended, and the importance of the questions involved to the parties and to the public.

The Beard tie, (known also as the "Eureka tie,") which is the one sold by the defendant, is described in a patent granted in the United States to George N. Beard, December 27, 1870, for an "improvement in cotton-bale ties." It is a plate with a rectangular, oblong, central hole in it, the two long sides of the hole being intended to receive and lie in the bends of the hooks formed by bending the ends of the hoop. The edges of such two long sides, instead of being straight lines, are slightly convex from end to end. The plate outside of the hole is made thicker and wider on one of the two sides which do not receive the hooks than on the other side, and through the latter a slit or slot is cut from the outside into the central hole, to admit of the slipping of the bend of the hook through the slit into the central hole. The lips of the slit are turned down so as to bite into the bale. The tie is sold with one hook set in place. The other is readily slipped into its place through the slit. The ends of the hoop lie next to the bale. The tie is an effective one. It differs but little from the Taylor tie. As in that tie, there is no hook in the Beard tie pulling against the side in which the slit is cut, which is a feature of the "arrow tie." The Swett tie and the Butler tie had closed slots and no slit.

It cannot be doubted that the form of tie with the slit so arranged that all there is to be done, of manipulation, to make the connection of the second end of the hoop with the tie-plate, after the hoop is brought around the bale, is to slip the hook, made by bending down the second end, through the slit and into its place of bearing, is a great improvement over the complicated form of tie devised by Cook, and which, as the evidence shows, has gone wholly out of use. Nevertheless, it is claimed that the Beard tie, in common with all the other slit or open-slot ties, by reason of the use of the slit to slip the bend of the hook in the hoop over the arm, embodies the invention claimed in the third claim of the Cook patent. A determination of this question involves the construction and meaning of such third claim.

It is urged for the defense that what Cook does is to cut a slit or slot in the loop of a buckle, so as to slip the hoop through the slit sidewise and flatwise, instead of pushing the end under an unslit loop endwise, and then pulling the hoop through till it becomes flat; that in the Beard tie the slot is in one of the walls of the quadrangle which forms the clasp itself, of which arrangement Cook gives no hint; that Beard uses such slot to dispense with passing the end of the hoop through a buckle, of which arrangement Cook gives no suggestion; and that Cook must pass both ends of the hoop through his buckle, and then uses the slit to get the projecting bit of hoop under the loop, which is not the buckle or clasp, but merely an appurtenance to it. It is true that the Beard tie has no such loop as Cook has, and no slit in any such loop, and uses a quadrangle with a slit through one of its walls as a clasp. But these points of difference are by no means decisive of the question. Cook, in his third claim, speaks of slipping the end of the hoop sidewise underneath the bar, in contradistinction to passing such end through endwise. When there is no slit the end of the hoop is passed through, under the bar, endwise; but when there is a slit such end is slipped sidewise underneath the bar. The use of the slit enables the part of the hoop which is required to lie against the bar to receive

the pressure of the bar above it from the pressure of the bale below, to reach its proper place by being slipped through the slit, instead of reaching such place by following the drawing or pushing of the part of the hoop intervening to the end through underneath such bar. It is necessary for Cook to put the hoop in such place. If he did not, the strain of the compressed cotton would be likely to pull the hoop so as to destroy the loop around the second bar, and ultimately pull the second end of the hoop entirely out of the buckle. Therefore, the bar through which Cook cuts the slit, to enable the otherwise free portion near the second end of the hoop to reach its proper place, is a part of the clasp or buckle, as much so as any other necessary part of it. Cook completes his tie of hoop and clasp more readily and quickly by the slipping operation through the slit. It is true, he has previously done something toward securing the hoop to the buckle after bringing the hoop around the bale, but what he has done is ineffective, unless the fourth bar is made to surmount the otherwise free part of the hoop. He therefore invented and has claimed cutting the slit or slot through such bar, (which covers the cutting it through an equivalent bar or part of the clasp,) so as to enable the part of the hoop which is to rest under a bar of the clasp to be slipped sidewise through the slit or slot, and avoid putting the end of the hoop endwise through beneath such last-named bar. There is no connection between this claim and what is previously done with any other part of the hoop or any other part of the clasp. The claim is distinctly to the use of the slit or slot so cut to effect the result indicated, for the object indicated. It would make no difference in Cook's arrangement if, instead of lengthening the open space adjacent to his fourth bar and cutting a slit in such fourth bar, he had left such open space as it was and not slit the fourth bar, but made a slit through to the outside from one end of such open space. Such arrangement would have embodied his invention, and its use now would infringe his third claim, because it would effect the result indicated, for the object indicated, by substantially the same means and mode of operation.

With this view of Cook's invention and third claim, it is very clear that it is infringed by the Beard tie. Beard, by using his slit, enables the part of the hoop which is required to lie against the bar, to receive the pressure of the bar above it from the pressure of the bale below, to reach its proper place by being slipped through the slit. But for that, it would have to reach such place by being brought over the top of the bar and through the open central space, all the while following the drawing or pushing of the part of the hoop intervening to the end, through underneath such bar. Beard must put the hoop in such place. If he did not, he would have no loop around such bar, and no tie. Such bar is a part of his clasp, and the bar through which his slit is cut is a part of his clasp; and it makes no difference, in the essential use of Cook's invention, that the bend of the hoop in the Beard tie does not embrace the side in which the slit is cut. Nor does it make any difference that, in the Beard tie, the part of the hoop which is slipped under the arm is nearer to the bend of the loop than is the part which is slipped under the bar in the Cook tie; nor any difference that, in the Beard tie, the bend of the loop is slipped through the slit. The part to be necessarily put in place is put in place by the same means.

In the drawings of the English patent granted to George Hall, November 28, 1801, for an invention of "elastic fastenings for the shoes, and also for bands, garters or ornaments for the knees, waist, arms, neck, and head," there is an open slit or slot in the body of a quadrangular buckle, with four walls, to enable the bend of a loop to be passed through the open slot into the space within, so as to make the loop embrace the walls adjacent to the open slot. But, rising from within and pointing in the same direction as the entrance through the slit, and close to the gateway, on each side, is a sharp spike. On these two spikes the elastic fabric is to be impaled, and only through them is it to reach and embrace the walls on each side of the gateway. The apparatus was not to be used with a metallic band or hoop, nor with a rigid band, but with elastic bandages or strings. The spikes are made, by the specification and drawings, an indispensable accompaniment of the open slot. It is impossible to say, with truth, that Hall's arrangement would suggest or contain either Cook's arrangement or Beard's. Notwithstanding the open slot of Hall, the application of the principle of looping over a hook or slipping under a bar, by means of an opening beyond the end of the hook or of the bar, or in the bar, to making a cotton tie to be used with rigid metallic hoops, required experiment and involved the exercise of invention.

As to the English provisional specification of Frederic James Pilliner, dated July 7, 1856, for "improvements in clasps or fastenings for waistbands, and other descriptions of bands or straps," the counsel for the defendant conceded, on the hearing, that Pilliner's clasp had no open slot.

The link testified to by M. W. Smith, as used in New Orleans, as early as 1848, to connect the hames on a harness-collar with the trace-chains, and enable the two to be rapidly united, the link being stationary on the hames, and the trace being slipped sidewise, in loop, into the link, is an elongated split ring, wholly unadapted to make a cotton-bale tie, and not suggestive of Cook's arrangement or of Beard's.

Being satisfied of the clear right of the plaintiff in the premises, I must decree to her an account of profits and damages in respect to the third claim of the Cook patent. As the present suit is not on the extended term, and the first term has expired, there can be no injunction in this suit.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,941.—*Railroad-Car Springs.*—Granted to AUGUSTUS B. DAVIS, February 15, 1859; reissued January 6 and March 17, 1863. Hearing January 20, 1873.

22,947.—*Wrenches.*—Granted to DANIEL P. FOSTER, February 15, 1859. Hearing January 20, 1873.

22,990.—*Mop-Heads.*—Granted to LUKE TAYLOR, February 15, 1859; reissued November 19 and 24, 1869, and October 19, 1869. Hearing January 20, 1873.

23,001.—*Elastic Toys.*—Granted to LUCIUS P. FOSTER, February 15, 1859. Hearing January 20, 1873.

23,011.—*Water-Wheels.*—Granted to H. F. BURNHAM, February 22, 1859; reissued September 1, 1863. Hearing February 5, 1873.

23,022.—*Molding Covers for Cook-Stoves.*—Granted to GEORGE W. GARDNER, February 22, 1859. Hearing February 5, 1873.

23,032.—*Steam-Pressure Gages.*—Granted to T. W. LANE, February 22, 1859. Hearing February 5, 1873.

23,033.—*Hose-Couplings.*—Granted to ROBERT B. LAWTON and WILLIAM H. BLISS, February 22, 1859; reissued December 21, 1869. Hearing February 5, 1873.

23,034.—*Fire-Plugs.*—Granted to JOSEPH L. LOWRY, February 22, 1859; reissued August 14, 1860, and July 30, 1872. Hearing February 5, 1873.

23,040.—*Locks.*—Granted to LYMAN F. MUNGER, February 22, 1859; reissued December 12, 1871. Hearing February 5, 1873.

23,060.—*Electro-Magnetic Fire-Alarm Apparatus.*—Granted to MOSES G. FARMER, February 22, 1859. Hearing February 5, 1873.

23,085.—*Lamps.*—Granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859. Hearing February 12, 1873.

23,097.—*Machines for Crozing and Chamfering Barrels.*—Granted to HIRAM LITTLEJOHN, March 1, 1859. Hearing February 19, 1873.

23,105.—*Construction of Steam-Vessels.*—Granted to JAMES MONTGOMERY, March 1, 1859. Hearing February 19, 1873.

23,152.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 6, 1859. Hearing February 19, 1873.

23,172.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,263.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON E. PETTER, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEHR, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 19, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMBE, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 26, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859. Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste-Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTER, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,824, 4,825, and 4,826, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,631 and 1,632, February 16, 1864; No. 1,691 being again reissued September 27, 1864, and February 13, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

22,792.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

24,009.—*Machines for Upsetting Tire.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,093.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

EXTENSIONS GRANTED.

22,664.—*Improvement in Holders for Lamps*, granted to CHARLES MORTON, January 18, 1859.

Claim.—1. The mode or means, substantially as hereinbefore specified, of counterbalancing the system of levers or lazy-tongs, or the same and one or more articles suspended from or supported by them, and this whether the counterbalance weight be applied so as to push or pull on the levers of the lazy-tongs, as explained.

2. The method, substantially as described, of steadying the tube or rod *c*, or its equivalent, suspended or extending from the lower termination of the system of crossed levers or lazy-tongs, viz., by the collar or slide *p*, the levers *o o*, and the connections *f g*, applied to the part *c* and the lazy-tongs, and made to operate essentially as hereinbefore specified.

22,668.—*Improvement in Coloring and Curing Tobacco-Stems*, granted to BENJAMIN PAYK, January 18, 1859.

Claim.—Coloring and curing tobacco-stems at one operation by subjecting them to the action of steam, as and for the purposes herein set forth.

22,674.—*Improvement in Trusses-Springs*, granted to JOHN W. RIGGS, January 18, 1859; reissued October 10, 1871, numbered 4,589.

Claim.—As a surgical appliance, a steel spring covered with vulcanized India rubber.

22,681.—*Improvement in Cooking-Stoves*, granted to ELIHA C. STEWART, (executrix of the estate of PHILO P. STEWART, deceased,) January 18, 1859; reissued May 31, 1864, numbered 1,694; reissued July 7, 1868, numbered 3,037; reissued May 18, 1869, numbered 3,452.

Claim.—1. The supplying of a continual current of atmospheric air, heated by the front plate of the fire-box or chamber of combustion, or by the front and end plates thereof, and in a flue, chamber, or space, immediately in front of the same, or in front and at the end of said fire-chamber, and in combination therewith, to the oven of a cooking-stove, in which the oven is in the rear of the fire-chamber, and at the same time extends under the same, so as to connect with the said flue, chamber, or space, and thus and thereby permit the said heated air to enter the said oven, in the manner and for the purposes substantially as herein described and set forth.

2. Also, the flue, space, or intervening chamber F, immediately in front of the fire-box or chamber of combustion, having a fire-grate and ash-pit or chamber combined therewith, or in front and at the end of said fire-chamber, and the whole arranged and suspended in the front and upper corner or part of the oven I, into which space or intermediate chamber atmospheric air is admitted, through apertures *s'*, or any equivalent therefor, and thereof, and which are and shall be in and through the plate or door or doors in the front part of the cooking-stove, and in combination with the oven of such stove, so that the air heated within such intermediate chamber, substantially as herein set forth, may or shall be conducted to and into the oven, for the purposes and by the means substantially as herein described and set forth.

3. Also, the admitting of air to said chamber F, and through it to said oven, constructed and arranged as described, by means of the apertures *x* in the front plate or doors, or by means of the apertures *x''* in the side plate of the stove, or by any equivalent for either or both of said apertures, substantially as and for the purposes herein described and set forth.

4. Also, in a stove constructed with an oven, and with a fire-box or chamber of combustion, having a fire-grate therein, and an ash-pit or chamber below and all combined therewith substantially like the one hereinabove described and set forth, the making of the front plate of the stove to open with a door or doors, K, and the attaching an apron in the front of the stove, so as to receive and contain a kitchen or other suitable roaster, substantially as specified herein, so that the heat radiated by the front plate of the fire-box or combustion-chamber shall be aided by the heat radiated by the oven-plates therein, in the manner and for the purposes substantially as herein described and set forth.

5. Also, the employment and arrangement of the front doors K, provided with apertures *s*, or any equivalent thereof and therefor, therein, in combination with the fire-box or chamber of combustion *c*, by means of which atmospheric air, in a highly-heated condition, is admitted to the oven of a cooking-stove, for the purposes substantially as herein described and set forth.

6. Also, the employment and arrangement, in the front of a cooking-stove, of a door or doors, K, or any equivalent thereof and therefor, so that the same, or a part thereof, shall open in front of the fire-box or chamber of combustion, in combination with the fire-chamber or chamber of combustion, having a fire-grate therein and ash-pit chamber combined therewith, and arranged and suspended in the front part of the oven of a cooking-stove, in the manner and for the purposes substantially as herein described and set forth.

7. Also, the employment and arrangement of a suitable door or doors in the front of a cooking-stove, which shall in part or in whole open into that part or portion of the oven which extends forward and under the fire-box or chamber of combustion, and other parts necessarily employed and used therewith, in the manner and for the purposes substantially as herein described and set forth.

8. Also, the arrangement of a fire-chamber or chamber of combustion with a fire-grate, and an ash-pit or ash-chamber combined therewith, and the whole suspended in the front part and upper corner of oven of a cooking stove, in the manner and for the purpose substantially as herein described and set forth.

9. Also, the employment and arrangement of the additional or extra bottom and encasement *r*, in combination with the flues of the bottom of a cooking-stove, and underneath the oven I, in the manner and for the purposes substantially as herein described and set forth.

10. Also, the employment and arrangement of the additional or extra back and encasement *u*, in combination with the ascending and descending flues in the rear end of a cooking-stove, and between the rear end of the oven and the rear vertical end plate of the stove, in the manner and for the purposes substantially as herein described and set forth.

11. Also, the employment of a corrugated plate, perforated along the front thereof, for the top of the oven I, as arranged in connection with the flue H and fire-chamber or chamber of combustion, and with the rear and vertical plate of the oven of a cooking-stove, substantially as and for the purposes herein described and set forth.

12. Also, the employment and arrangement of the front damper or valve Y, in the front and hearth of a cooking-stove, in combination with the flue or flues, as the case may be, immediately underneath the oven and bottom-plate of the oven of a cooking-stove, having the fuel-chamber and ash-pit arranged as hereinbefore specified, in the manner and for the purposes substantially as herein described and set forth.

13. Also, the employment and arrangement of the boiler or reservoir, having a removable or detached cover or top, and containing two inclined flues or tubes, which are separated at the bottom or lower ends thereof, and which unite at the top or upper ends thereof, and thus and then form but one pipe, in the manner and for the purposes substantially as herein described and set forth.

DISCLAIMER FILED.

33,883.—GEORGE ROSS, Newport, Ky.—*Molding and Casting Apparatus*, dated April 16, 1861.

Disclaims "that part of the claim in the specification which is in the following words, to wit:

'1. The vertical pipe-mold drying-oven herein described, arranged with separate and distinct communications with the molding and casting pits, as and for the purpose specified.'

The ordinals of the remaining claims being changed to first, second, and third, respectively."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 14, 1873.]

6,340.—*Heating-Stove.*—ISAAC J. BAXTER, Peekskill, N. Y.

6,341.—*Show-Card for Head-Nets.*—THOMAS HALL, Jersey City, N. J.

TRADE-MARK REGISTERED DURING THE WEEK.

[Bearing date January 14, 1873.]

1,102.—*Compound of Pyroxyline.*—CELLULOID MANUFACTURING COMPANY, Albany, N. Y.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date January 14, 1873.]

ORIGINAL PATENTS.

134,721.—*Medical Compound for Horses, &c.*—JAMES ANDREWS, Hardin county, Ohio.

Lubricating oil, spirits of turpentine, carbonate of ammonia, gum camphor, gum myrrh, gum guaiacum, cayenne pepper, oil anise, whisky.

Claim.—The combination of the articles enumerated, in the proportions and for the purposes set forth.

134,722.—*Harvester-Rake.*—THOMAS P. BARBOUR, Louisville, Ky., assignor of one-half his right to LEWIS B. BRUEN, (Woodside,) Newark, N. J.

The fingers or rake-teeth, which are secured rigidly to an oscillating axle, are automatically locked and released by a sliding plate, which passes under a projection thereon as said plate comes in contact with cam-projections in its reciprocating movement.

Claim.—The combination of the levers G G, J, and I, fingers F, axle *e*, support *d*, slide *f*, cams K L M, springs N, crank T, and levers *r*, all constructed substantially as described.

134,723.—*Metallic Bottom for Milk-Cans.*—THOMAS M. BELL, New York, N. Y.

The edge of the bottom is turned downward to fit closely within the inner end of the body.

Claim.—The hoop or band B *b*, made of wrought-iron, rolled, with the heavy base or shoulder *b* on the lower inner edge, in combination with the body C and with a bottom, A, formed so that the edge of the bottom fits closely against the interior of the body for a considerable height, as herein specified.

134,724.—*Paper-File.*—GEORGE W. BILLOW, Shelby, Ohio.

Two hooks, whose ends overlap, are hinged in openings at opposite ends of a base-plate, and are held open or closed by springs bearing upon their hinges.

Claim.—The letter or paper file composed of the support A, hooks C, and springs B, substantially as specified.

134,725.—*Axle Box and Spindle.*—JACOB BOWER, La Fayette, Ind.

The pin is withdrawn and the grease poured in at the orifice L, from which it runs into the orifice J, thence through the recess N, and fills the recess H. The collars B C D retain the grease within the box A when in use upon the journal E.

Claim.—1. The box A having the collar C, in combination with the journal E having the lubricating-chamber between the collar C and the shoulder on the spindle adjacent the mouth of the recess N, substantially as shown and described.

2. The combination of the box A provided with the internal collars B C D, in combination with the journal E provided with the recesses F G H and inclined orifice J and recess N, when the box is secured upon the journal by means of the cap K provided with the orifice L, substantially as shown and described.

134,726.—*Sheet for Forming the Bodies of Square or Rectangular Tin Cans.*—JOSIAH BOWERS, Baltimore county, Md., assignor to JOHN A. IVES & BROTHER, same place.

The sheet of tin to be operated upon is first accurately laid upon the under die, its edges at two sides and one end projecting over the bed-surface. The upper die or follower is then brought down, and the notches and flanges are made upon the sheet at one operation.

Claim.—Sheets for forming the bodies of square or rectangular tin cans which are flanged or "broke" and notched at one and the same operation, and by dies operating as and for the purpose described.

134,727.—*Rush-Holder.*—WILLIAM B. BRADFORD, Charlotte, N. C.

A metallic case contains a flanged roller, surrounded by a five or six sided rubber ring, making a polygonal rubber roller. This roller is pivoted in one end of a forked clip, while a set-screw projecting outwardly through the case bears against the opposite end of the clip and regulates the pressure. Near the rear end of the clip is a slot, through which a rivet passes, and in the sides of the frame are other slots in which the pivots play, one end terminating in a knob, so that the polygonal roller can be readily moved from contact with the frame.

Claim.—The slotted frame A for the outside of the sash-frame, having polygonal rubber roller B G pivoted in the slotted clip *c*, and set-screw D, when all are combined to operate substantially as shown and described.

134,728.—*Cultivator.*—SEAMON S. BUSHNELL, Horicon, Wis.

Claim.—Beam A, tooth B, and standard C, in combination with set-screw G, substantially as described.

134,729.—*Gage.*—JOHN W. BUTLER, New Britain, Conn.

The slide is secured at any desired point upon the bar by a wedge inclosed within a cavity of the slide, and which is caused to jam the slide by giving the latter a partial rotation in either direction.

Claim.—The combination of the bar, the slide, and the wedge, or its equivalent, lying in a circular enlargement larger than and eccentric to the bar, constructed, arranged, and designed to operate substantially as described, for the purpose set forth.

134,730.—*Means for Propelling Vessels.*—HENRY C. CAMP, St. Paul, Minn.

The inertia of the body of water contained in the reciprocating-tube is utilized as the fulcrum against which the vibrating gates operate to propel the vessel.

Claim.—1. The combination of the reciprocating tube B gates J, and ways D with a motive power, substantially as and for the purpose specified.

2. The combination of the gates J, frames K, and tube B, substantially as specified, whereby either gate may be raised to change direction, as required.

134,731.—*Water-Wheel.*—JOEL J. CASE, Terryville, assignor to NATIONAL WATER-WHEEL COMPANY, Bristol, Conn.

An annular series of gates, their bases in line, but their open spaces of different altitudes, so that when the gate descends the chutes are closed in succession, the water being thus cut off in a graduated manner, and let on in like manner.

Claim.—The series, two or more, of graduated openings 1 2 3 4, formed in the vertically-sliding hoop-gate B, in combination with the ordinary chute-case A, substantially as and for the purpose set forth.

134,732.—*Cultivator.*—ISAAC N. CAUTHORN, Carthage, Ill.

The two beams are attached at their forward ends to an arched bar (by which the device is drawn) so that the beams, with standards and shovels attached, are held in an upright position, at the same time having a free independent vertical and lateral movement.

Claim.—The plow or cultivator beams E E' attached directly to part A, which acts as the double-tree or evener, by hinge-joints arranged to give separate free lateral or lateral and vertical motion to each beam for its plows or cultivators and hold them upright in use, substantially as set forth.

134,733.—*Foot-Rest for Chairs.*—EDWARD COLLINS, New York, N. Y.

A foot-rest, to be attached to a chair, is made in two parts, sliding one within the other, and is adjusted as to length by means of a lever and a ball working in a tapering chamber and by means of an apron extending from the lower portion to the upper portion of the frame-work and passing round a roller; and the foot-rest is adjusted to different angles of inclination by a notched bar pivoted to the frame.

Claim.—1. A foot-rest for chairs, &c., made in two parts, sliding one within the other by means of tubes and rods, and held at different lengths by means of an apron secured to one of the parts and passing over a roller on the other part, substantially as shown and described.

2. The combination and arrangement of the chamber H, ball J, lever K, and strip L, as shown and described, for the purpose specified.

3. The combination and arrangement of the notched bar P, pivoted to the frame D by means of rod R and eyes *d*, the bar S, and cord *p*, as shown and described, for the purpose specified.

134,734.—*Earth-Auger.*—GEORGE G. COLLINS and JAMES A. MORRISON, Philo, Ill., assignors of one-third of their right to OLIVER WOOD, same place.

The air-passage is for the purpose of enabling the metallic boring-cylinder to be withdrawn without lifting the atmosphere. The loops C embrace ears formed upon the auger-bit, and thus afford a ready means for the attachment and detachment of differently-formed bits for the different purposes of excavating earth or quicksand.

Claim.—1. The bit-stock A, composed of the hollow cylinder B provided with the loops C upon its interior opposite sides so as to permit of the insertion of the auger-bits I and O, at pleasure, substantially as shown and described.

2. The bit-stock A, composed of the metallic cylinder B provided with loops C C, air-passage D, and bifurcated brace E, and socket and key-hole F, arranged relatively one to the other, as and for the purposes hereinbefore set forth.

134,735.—*Bracelet.*—THOMAS L. CORNELL, Derby, Conn.

A piece of elastic metal is inserted in the opening between the jaws, and, having enlarged or hooked ends, serves to protect the article from being lost when accidentally unlatched.

Claim.—A blade provided with hooks or stops, in combination with the segments of a bracelet, for the objects and purposes described.

134,736.—*Heel-Stiffener.*—LUTHER C. CROWELL, Boston, Mass., assignor of three-fourths of his right to EDWARD DILLINGHAM and NATHAN DILLINGHAM.

The stiffener is of such configuration that each successive one may be cut without waste of material.

Claim.—The described method of cutting blanks for heel-stiffeners from sheets of metal or other suitable material, without waste of material, of the form shown, having the two projections B B upon one edge and the three projections A A A upon the opposite edge, for the purposes herein shown and described.

134,737.—*Scaffold.*—JOHN F. DARLEY, Nebraska City, Neb.

The short removable legs G are attached by means of eyes *f*, their upper ends being inserted between lugs *g*. The notched brace *t* holds the legs extended. The stepped blocks D are cushioned. The device is convertible at will into either a window-bracket or a trestle.

Claim.—1. The removable legs G and cross-bar J, in combination with the platform-beam A and platform B, substantially as described.

2. The longitudinally and laterally extensible sectional legs S S', pivoted to eyes *f* and brace *t*, in combination with the lugs *g* and platform-beam A, substantially as described.

3. The cushions and stepped blocks D, for the purpose described.

134,738.—*Caster-Stand.*—GEORGE D. DUDLEY, Lowell, Mass., assignor to EDWARD P. WOODS, DAVID SHERWOOD, and CYRUS H. LATHAM, same place.

The stand is made from twisted wire, having upper and lower frames, each having rings and seats for bottles. Legs and handles complete the stand.

Claim.—As a new article of manufacture, a stand for holding bottles made of twisted wire, the said stand having a series of holders, *a*, and a supporting ring or rest, *b*, for the bottle, substantially in the manner described and specified.

134,739.—*Mop Head.*—WILLIAM DUNCAN, Lebanon, N. H.

A mop-handle, to whose foot is rigidly attached a head with slotted ends, through which passes the mop-holding stirrups, above which its ends are contracted to one, which passes through a lug confined to the handle, and is held in an adjustable position by the thumb-screw.

Claim.—The combination, with the handle A and head B, of the stirrup D, lug C, and screw-nut E, constructed and operating substantially in the manner described.

134,740.—*Rotary Fan.*—IRAD S. EASTMAN, Madison, Wis.

The principal and supplementary arms have pivoted connections, and hence a double and triple circular motion within the circle described by the main shaft and its attachments.

Claim.—1. The combination of shaft D', sleeve E, arms F F', constructed as described, with the supplemental arms G G' and horizontal arms H H', carrying the fans, all arranged to operate substantially as and for the purpose described.

2. In combination with the subject-matter of the above claim, the cord J for adjusting the shaft D', substantially as and for the purpose described.

134,741.—*Locomotive Fire-Box.*—CYRUS H. FARLEY, Portland, Me.

Arranges a guard around the bottom of the fire-box to prevent snow, &c., from entering and extinguishing the fires. Combines also with the guard, flues and dampers in the sides of the fire-box for the admission of air above the guard.

Claim.—1. A locomotive fire-box provided with inclined guards *m*, arranged substantially as and for the purpose specified.

2. The combination of the inclined guards *m*, and flues *d*, and dampers *f*, arranged in a locomotive fire-box, substantially as and for the purposes set forth.

134,742.—*Tool for Finishing Axle-Blanks.*—HAMLET E. FORREST, Cambridgeport, Mass., assignor to himself, HORATIO BOOTHBY, Boston, Mass., and JOHN H. LEAVITT, Portland, Me.

A diagonal cutting-edge sloping a little toward the base. The point, cutting first, forms the end of the axle, and is gradually passed under, all the time presenting a cutting-edge, but approaching the shoulder, which is formed by a groove or depression in the cutter.

Claim.—The improved lathe-tool, as described, the same consisting of the plate C, formed with the compound inclination or angular cutting-edge *o* and lateral taper *o'*, and with the collar forming recess *a*, the whole being as and for the purpose set forth.

134,743.—*Railroad Car Truck.*—PERRY G. GARDINER, New York, N. Y.

The truck is composed of two sections. The transoms connect their inner ends, between which is the swinging bolster and sand-board, which extend outside of the body of the truck. This construction admits of the weight being supported very low on the truck and outside of the body, which lessens the surging of the cars when in motion.

Claim.—1. A truck composed of two sections, A A, having extended transoms B B secured to the inner side of each section, and between the same the swinging bolster E, the bolster-springs *o o* connecting the sand-board and bolster being hung outside of the body of the truck, constructed and operating in the manner and for the purposes set forth.

2. In combination with the truck-frame in sections, as above described, the truss-rods *u v* connecting pedestal-straps *n*, the truck or jack-bar V, and bracing or adjusting screw *o''*, arranged and operating substantially in the manner and for the purposes described.

134,744.—*Ruffling Attachment for Sewing-Machines.*—HARRY C. GOODRICH, Chicago, Ill.

The ruffling attachment is adapted to the Wheeler and Wilson machine, and is operated from a pin projecting from the rocking arm. The reciprocating ruffling device is connected with the bell-crank lever by a link which is adjustable on the bell-crank to regulate the fullness of the gather.

Claim.—The combination of the plate B, lever *b b'*, bar C, sliding piece *c c' f*, and the piece *g*, pivoted to the piece *c'* and provided with the pin *f*, substantially as shown and described.

134,745.—*Paint-Brush.*—JAMES J. GORMAN, Cincinnati, Ohio.

The bristles are secured to a stock of leather and both secured to a handle by metallic plates and a screw.

Claim.—1. A brush constructed separate from its stock, as follows, to wit: The bristles C, properly arranged around a core-piece, *c'*, of leather or other suitable material, wrapped by a binding-strip, *c*, and the whole secured by threads sewed through from side to side, substantially as set forth.

2. The combination of a stock, A, provided with a stationary clamp-plate, *B'*, a clamp-screw, *b'*, and a transverse groove, *a*, with a detachable clamp-plate, B, fitted to seat in said groove, and be secured by said screw, for the purpose set forth.

134,746.—*Steam-Pump.*—JOHN W. HANDREN, Jersey City, N. J.

A proper quantity of suitable compressible packing being placed in the recess provided, a large perforated gland is applied over the end of the plunger farthest from the steam-port of the apparatus, and, the cover at that end of the pump being bolted in place, a screw is applied to act on the gland and thereby compress the packing to the proper degree.

Claim.—In pumps, the open-work gland or tube M, with its adjusting-means M' arranged as shown relatively to the packing *m*, in combination with the double-acting plunger *b* and suitable means for reciprocating it, and with the valves G H and suitable connections, as herein specified.

134,747.—*Corn-Planter.*—GEORGE D. HAWORTH, Decatur, Ill.

Claim.—1. The bar K pivoted on the horizontal bars A A and arms H H, in combination with the shoe J, furrow-shares G G, pole L and the seeding part of a corn-planter, substantially as described.

2. The oscillating seat-standard C, pivoted lever D with bent bar *d'* pivoted to the seat-standard and lever, in combination with the furrow-shares G G and the seeding part of a corn-planter, substantially as described.

3. The shaft M, constructed as described, with the sloping shoulders A A, loop P, and slot *p*, in combination with the seed-tube *m'*, seed-slide N, and connecting-bar O, substantially as described.

4. The semi-revolving pulley-holder, substantially as described, and for the purpose set forth.

134,748.—*Shawl-Strap.*—JOHN B. HIGGINS, Boston, Mass.

The stiff curved metallic handle is flanged, and between the flanges is placed a strap.

Claim.—In combination with a curved metallic handle, *a*, provided with side flanges *c c*, the welted strap *d* and covering *e*, attached to the handle in the manner and for the purpose set forth.

134,749.—*Railroad Rail.*—WILLIAM S. HUNTER, Stanstead, Canada.

Should the rail *a* break, the two parts into which it is divided will be securely held in place by the rails *b* and bolts *i*. The rail *b* is attached to the sleepers *a*.

Claim.—The combination of the wooden beams *b* having a recess, as described, the covering-rail *e* provided with a corresponding tongue, and the chair *k* with bolts *i*, the bolts being adapted to pass through the tongue of the covering-rail, as described.

134,750.—*Middlings-Purifier.*—CHARLES JANNEY, Minneapolis, Minn., assignor to CHARLES M. HARDENBERGH, same place.

Lever-arms having knockers and weights adjustable upon slides, all arranged upon a rock-shaft and operated in reverse directions by a cam, are arranged above a shaker for the purpose of clearing the meshes of the bolt.

Claim.—1. The combination of the revolving cam E' on shaft E, hammers *f'* of arm F' on rock-shaft F, with the jar-bars *f'* on reciprocating bolt-frame B, all constructed and arranged in the manner substantially as and for the purpose described.

2. The combination of the slide-bar G, adjustable weights G' with the rock-shaft F and hammers *f'*, when constructed and arranged to operate in the manner substantially as described.

134,751.—*Bracket for Flower-Pots.*—MELVILLE D. JONES, Boston, Mass.

To the bracket-arm a saddle is fitted and provided with sockets for holding branch or auxiliary arms, and the saddle-arms are combined with the bracket, swinging bracket-arm, and a shelf or plate attached to the end of the bracket-arm.

Claim.—1. The combination, with the bracket-base and arm hinged thereto, of a saddle fitted to said arm and provided with sockets or their equivalents for holding branch or auxiliary arms, substantially as shown and described.

2. A compound bracket, consisting of base A, hinged arm D, saddle E, and swinging arms *d*, the said arms D *d* being provided with or adapted to receive shelves or plates *e* F, and the whole being constructed and arranged substantially as described.

134,752.—*Lounge.*—FREDRIC KRATER, Pittsburg, Pa.

The detachable frame is provided with pendants on its front that serve as legs when used as a bed, and as steps when folded for use as a sofa; the back of said frame is provided with pins that enter corresponding holes in the front of the main frame when the device is used as a bed, and support the back of the detachable frame.

Claim.—The detachable frame *c* provided with pendants *e* and pins *h*, used in combination with the base of the sofa, as herein before described, and for the purposes set forth.

134,753.—*Machine for Bundling Shingles.*—ROBERT LAW, Toledo, Ohio.

The shingles are first placed in a box and then compressed by a peculiarly-constructed press mounted upon wheels, which is also used for removing the shingles after the bundling is completed.

Claim.—1. A packing-box for binding shingles, having a bottom slotted both laterally and longitudinally and a removable side for the passage of the clamping and transporting mechanism, substantially as set forth.

2. A clamping-carriage for clamping and transporting shingles, operating substantially as set forth.

3. The combination of the clamping-jaws and compressing mechanism, substantially as set forth.

134,754.—*Reed-Organ.*—RAPHAEL E. LETTON, Quincy, Ill.

The sounding board and chamber are in the rear portion of the wind chest, and in close contact with the channels leading from the reed.

Claim.—The combination of the conductor C and sounding-chamber X, arranged and constructed substantially as shown and described.

134,755.—*Tag-Fastening.*—JOHN S. LOUGHERY, New York, N. Y.

The fastening-wire is coiled into a spiral so as to be distended to envelop a large package.

Claim.—1. A tag-fastening wire having a liberal length of wire formed in a free coil, B, ready for extension when required, as herein specified.

2. The tag-fastening wire described, having the free coil B, eye B^1, and extended portion B^2, in combination with the attached tag A, and adapted to serve on articles of different sizes, as herein specified.

134,756.—*Tag-Fastener.*—THOMAS P. MARSTON, New York, N. Y., assignor to JOHN S. LOUGHERY, same place.

On substances difficult to penetrate the fastener holds the tag sufficiently tight.

Claim.—The within-described tag-fastener, formed without a hook, having the two equal arms A^2, with their joining-spring A^1, inward bends A^4, and mid-length bends A^3, operating in combination with the slip-ring B, as and for the purposes herein specified.

134,757.—*Tag.*—THOMAS P. MARSTON, New York, N. Y., assignor to JOHN S. LOUGHERY, same place.

The fastening-eye is composed of gutta-percha, molded in place.

Claim.—The within-described tag, having the double button $B B^1 B^2$ molded in place in and around the hole in the sheet A, and adhering to both faces of the latter, as herein specified.

134,758.—*Whiffletree.*—CHARLES B. MCCLYMOND, Elderton, Pa.

Claim.—Whiffletree-irons consisting of two straps, B, the outer ends of which clasp the hood D forward of the shoulder or collar *c* clamped and held together by the ferrule *c*, the whole constructed and arranged upon the whiffletree A, substantially as herein described, and for the purpose set forth.

134,759.—*Sewing-Machine Table.*—JOHN B. MCLURE, Wheeling, W. Va.

To the top of the table a box or cover is hinged. The several parts of the box are hinged together, and the top and bottom are joined by L-shaped hinges. When opened, it completely covers the machinery. When not used for a cover it folds compactly together into a recess and forms a part of the table-top.

Claim.—1. A sewing-machine table, A, with a box or cover, B, all the parts composing which box fold compactly together, as described, upon the top of the table or within a recess made within it, as described.

2. The box or cover B, folding together as described, in combination with the L-shaped hinge.

134,760.—*Jig-Saw.*—BENJAMIN MERRITT, Newton, Mass.

The saw-frame is balanced by weights attached to cranks and sliding upon guides.

Claim.—The arms *n n'*, provided with weights *p p'* operating up and down on standards *r r'* and weighted caps *o o'*, so as to counterbalance the weight of a gate, *l*, and double cranks *i i'*, connected with arms *k k'* of a jig-saw, substantially as specified.

134,761.—*Fastening for Shoes, &c.*—GEORGE MERRILL, East Orange, N. J.

A bar is attached to the flap to be buttoned over, which bar, extending back, engages in an eye. The flap is subsequently secured down. The object of the bar is to create a leverage in drawing the parts together.

Claim.—1. A fastening for shoes, garments, &c., consisting of a bar having one of its ends attached to one edge of the object and its opposite end left free to engage in the other edge of the same, in combination with a suitable device for fastening the free end down, when constructed and arranged substantially as shown and described.

2. The bar A, with the swiveled locking-arm E, in combination with the bar B, when constructed and arranged to operate substantially as set forth.

134,762.—*Medical Compound.*—THOMAS MORLEY, Cambridge, Mass.

Cream of tartar and rhubarb mixed in a dry powder or with water, for the cure of small-pox and fever.

Claim.—A compound, whether in the form of powder or liquid, composed of the ingredients aforesaid, and substantially in the proportions and for the purposes set forth.

134,763.—*Device for Fastening the Ends of Shoe-Binding Strips.*—CHARLES E. MORRILL, Dearing, Me.

The hammer, which is intended to press the pasted ends of the shoe-binding, is arranged on a table and operated by a treadle.

Claim.—The arrangement, upon the table A and base B, of the treadle *j*, spring *f*, arm *i*, spring *n*, guide *m*, lip *g*, shoulder A, and hammer *d*, as herein set forth, and for the purpose described.

134,764.—*Match-Box.*—OSCAR PADDOCK, Watertown, N. Y.

The receptacle for stamps, &c., is so made and placed that its contents cannot be taken by mistake for matches.

Claim.—A match-safe made substantially as herein shown and described—that is to say, comprising a live-match receptacle and a dead-match holder, the latter, whether removable or stationary, being constructed of a depth considerably greater than the length of the burned match-sticks which it receives, and of such contracted sectional area in proportion to its depth as to practically remove the burned sticks beyond reach of the fingers, as set forth.

134,765.—*Hot-Water Heating Apparatus for Ranges.*—HENRY L. PALMER, New York, N. Y.

Claim.—1. The water-back B, reservoir *d*, radiator *m*, and connecting-pipes *b b' c c'* combined and arranged substantially as herein set forth, so that the said water-back will act as a circulating as well as a heating medium.

2. The combination of the reservoir *d*, the radiator *m* placed within a chamber adjacent to the range, the water-back or heating-coil B interposed between the said reservoir and radiator, the connecting-pipes *b b' c c'* permitting a constant circulation of water through the water-back, between the reservoir and radiator, the pipe *p* for supplying cold air to the chamber *n*, and the pipe *o* for conducting heated air from the said chamber to apartments to be warmed, all substantially as herein set forth.

3. The combination of the water-boiler *d*, casing *e*, and air-conducting pipes *p o*, arranged substantially as described, to provide for employing the water-boiler *d* for heating purposes.

134,766.—*Mechanical Movement.*—WEBSTER PARK, Norwich, Conn.

A series of cylinders upon a shaft, each provided with pins on one side, figures on the periphery, and an eccentric, having arms on the other side or face, which engages pins on the adjacent cylinder and communicates the force applied to the first cylinder tenfold to the next, and so on.

Claim.—1. The combination of the eccentric D, arms I I, and pins or teeth C C, substantially as described.

2. The cylinder A having the pins or teeth upon one end and the eccentric upon the other, all cast in one piece of metal, substantially as set forth.

3. The combination and arrangement of a series of cylinders, A, each having an eccentric, D, pins or teeth C C, and non-revolving arms I I, all arranged upon one shaft, B, and operating substantially as herein described.

134,767.—*Base-Burning Fire-Place Heater.*—JOHN S. PERRY, Albany, N. Y.

Claim.—1. The annular chamber G and jacket A, in combination with the partition *p*, the flues *s s'*, the openings *n m*, and the damper *n*^{3}, all being applied in a fire-place stove substantially as described.

2. The hollow heat-radiating base chamber G and the jacket A combined in a fire-place stove, substantially as described.

134,768.—*Machine for Pressing Cigar-Bunches.*—GEORGE PIERCE, Boston, Mass.

The bunched cigar is pressed into form before receiving the wrapper, in a sectional die, both sections being movable in the same plane of motion, the lower following the upper at an interval in its rise, both within a frame out of which the bunch is thrown by the lower die, the upper die cushioned by a spring above.

Claim.—1. The pressing device, consisting of guard K and the two movable dies M and G, arranged and operating together substantially as and for the purpose described.

2. In a cigar-machine, the combination, substantially as and for the purpose described, of the following elements, viz: A pair of dies, M and G, a spring, H, adjustable in its pressure, interposed between the actuating mechanism and one of the dies, a reciprocating actuating mechanism, C, to move the dies to and from each other, adjusting-nut I to regulate the pressure of spring H, and a guiding device applied between the die G and reciprocating mechanism C to secure a reciprocation of said die in the same plane independent of the action of the spring H.

134,769.—*Washing-Machine.*—EDWARD POTTS, Philadelphia, Pa.

In a tub with vertical ribs a drum is arranged to rotate horizontally and eccentrically. Also, a bell-shaped roller and a curved device for turning the clothing.

Claim.—1. The combination of an inclosing-vessel with a pressure-roller or drum, arranged eccentrically to the axis of said vessel, for producing an intermittent progressively-continuous pressure on the clothing or other objects to be washed, as shown and described.

2. The bell-shaped roller *h* and follower *k*, for upsetting or turning the objects to be washed, constructed substantially as described.

3. The combination of vessel *a*, drum *b* arranged eccentrically, bell-shaped roller *h*, and follower *k*, all constructed substantially as set forth, for the purpose specified.

134,770.—*Reaction-Pump.*—ELIAS RHODES, Jr., Clyde, Ohio.

The piston-rod is operated by a lever, which is attached to the upper end of the rod and pivoted to the pump-stock, and to another lever which forms the handle, and which is also pivoted to the pump-stock. In the pump-stock is one valve, which opens and closes alternately with the movement of the lever.

Claim.—1. The single valve J, arranged to alternately close the opening in the upper end of the pump stock and the water-passage, in combination with the cylinder A, substantially as and for the purpose herein described.

2. The lever H, pivoted at *i* to the pump-stock, and at *k* to the lever I, which is also pivoted to the pump-stock, to form a simple or compound lever, substantially as and for the purpose specified.

134,771.—*Spindle for Spinning-Machines.*—DAVID HALL RICE, Lowell, Mass.

The live-spindle, when in rapid motion, is mainly supported and revolves upon the column of oil raised on the spiral surrounding the dead-spindle.

Claim.—The dead-spindle B, provided with the spiral *c*, in combination with the live-spindle A, having its chamber for the dead-spindle closed at the upper end over the latter, substantially as described.

134,772.—*Gun-Sight.*—HERRMAN A. SCHOTTKY and THEODORE SIMENDINGER, Hartford, Conn.

Claim.—1. In a gun-sight, the combination, with a ring, B, provided with a socket, C, of the sight H, adapted to be raised and lowered by a shank, F, substantially as described.

2. In combination with the foregoing, the index J and graduated scale D, substantially as and for the purpose set forth.

134,773.—*Slate-Dressing Machine.*—FRANCIS SHERTON, Slatington, Pa., assignor to "THE LOCKE SLATE COMPANY," Philadelphia, Pa.

Claim.—1. In combination with a knife balanced on a rock-shaft, as described, the spring-stop V to arrest and limit the motion of the knife and treadle.

2. In combination with the balanced knife, rock-shafts, and treadle, the platform fastened to the sills, and the seat upon it for the operator.

134,774.—*Steam and Air Brake.*—ALEXANDER Q. SMITH and HENRY M. OGDEN, Burlington, Iowa, assignors to themselves and DAN. BROWN, same place.

Valves of different sizes are arranged in a case which is connected to the brake-pipes. The valves are pivoted to a lever with arms of different lengths to compensate for the difference of pressure on the different-sized valves.

Claim.—The valves C D, attached, respectively, to the arms of a lever, *l*, the said valves and lever being constructed and applied to operate substantially as and for the purpose set forth.

134,775.—*Transplanter.*—JAMES P. STANTON and ROBERT C. PEDRICK, Pedricktown, N. J.

There are two openers and two pressers. The plant is dropped into a funnel with root downward, and by a movement of the hand the plant is set.

Claim.—1. The vertically-moving bar B, and its attached funnel, combined with the converging slotted swinging bars 2 3, substantially as and for the purpose described.

2. The slotted converging swinging bars 2 3, in combination with the funnel and with compressing flaps and the devices by which such flaps are operated.

3. The described construction and arrangement, as a whole, whereby the movement of the slide-bar B in one direction causes the shovels to approach while the compressers recede from each other, and the movement of the same bar in the opposite direction causes the shovels to recede while the compressers approach each other.

134,776.—*Repeater for Duplex Telegraphs.*—JOSEPH B. STEARNS, Boston, Mass.

Pulsations from line east cause armature of A to close local circuit through B', which closes main circuit to line west; A' in that circuit, being a "duplex magnet," is unaffected thereby. Pulsations from line west operate A', B, and line east similarly. A or A' is affected only by a current from its line side.

Claim.—The arrangement, in a duplex repeater, of the electro-magnets A A' B B', and their corresponding circuits, as and for the purpose set forth.

134,777.—*Screw-Cutting Die.*—WILLIAM E. WARD, Port Chester, N. Y.

Through the cutter-head is a central hole for the passage of the rod to and between the dies, which latter are situated upon the face of the cutter-head at an angle to the central hole. The dies are grooved throughout on one side, which at the inner ends form thread-cutters, and they can be adjusted and held by grooved wedges. Recesses in the rear of the cutting corners receive the chips as the device is rotated to cut the threads.

Claim.—The chuck, with its central hole and gullets and tangent-channels, in combination with the dies and adjusting-plates, grooved and secured substantially as and for the purpose described.

134,778.—*Band-Pulley.*—ELLIOTT PENDLETON WEST, Jersey City, N. J.

A pulley having one edge of the groove made perpendicular and the other slanting, so that as soon as the motion is reversed the cord twists upon itself so as to act as a brake.

Claim.—A pulley grooved substantially as described, on which a belt will operate in the manner explained.

134,779.—*Scythe.*—EDGAR L. WHEELER, Scytheville, N. H.

The blade has two points, and instead of the usual tang and wart for attachment being on the blade, they are a part of a detachable clamp, the jaws of which are attached to the desired point of the back of the blade.

Claim.—As a new and improved article of manufacture, a double-pointed scythe-blade made without a tang and capable of use substantially in the manner described and specified.

134,780.—*Mechanism for Operating Sewing-Machines.*—DANIEL WHITLOCK, Newark, N. J.

By depressing the sandal at the heel the brake-shoe is thrown in contact with the wheel. By the reverse depression of the sandal the wheel and live pulley are connected together, which sets the machine in motion, and by only a partial depression of the sandal in front the speed of the machine can be regulated.

Claim.—1. The combination for simultaneously throwing a frictional surface out of contact with a live and movable surface and forcing the pressure of a brake upon a wheel on a secondary shaft and thereby stop the motion of said wheel or vary it, in the manner and for the purpose substantially as described.

2. The combination of the treadle C, connecting-rod C', bar D having arms or projection *d*, sliding pin *f* in shaft F, key *f'*, wheel B', spring *g*, and friction surface *i* with the live pulley *b'*, substantially in the manner and for the purpose described.

3. The combination of the treadle C, connecting-rod C', arm D having projecting arm *d'*, connecting-rod *s* having gage-nuts *s'* and *s''*, and pivoted arm *e''* terminating in brake E with the wheel B; on shaft F, in the manner and for the purpose substantially as described.

134,781.—*Nut-Lock.*—AARON WILLIAMS, Burrell, Pa.

The nut, made with one side longer than the other, has a slot or groove through the threads in the short side. In consequence of its greater weight the long side drops to the lowest point, and the edges of the groove impinge against the threads of the bolt.

Claim.—The nut A, the contour of which is a parallelogram in form, with the opening B for the bolt eccentric to the nut, and provided with the recess C, substantially as herein described, and for the purpose set forth.

134,782.—*Furnaces for Roasting and Treating Ores.*—ZABDIEL A. WILLARD, Boston, Mass.

Claim.—1. The combination of the delivery-orifice, by which the gaseous fuel is introduced, with the primary chamber in which the gases are mixed and prepared for final combustion, substantially as described.

2. The combination of the delivery and inlet orifices of the burner with the partition *c*, substantially as described.

3. The combination of the delivery-orifice of the burner and the shield or its equivalent, substantially as described.

4. The combination of the annular casing, the annular orifice of discharge, and the shield constituting what I call the burner, substantially as described.

5. The combination of the primary chamber and the burner or its equivalent with the secondary chamber or crucible and the air-jet or jets for completing the combustion, substantially as described.

6. The combination of the air-heating chamber K^3 with the primary chamber, substantially as described.

7. The combination and arrangement of the central opening of the burner, the primary chamber, the secondary chamber or crucible, and the receiving-chamber, one above the other, so that the matters to be treated will be carried through them by gravity, substantially as described.

8. The combination of the conical hearth of the receiving-chamber and its discharging-orifice with the crucible, substantially as described and shown in Fig. 6.

9. The passages E', in combination with the flues R and the lower chamber U, substantially as described.

134,783.—*Wood Screw.*—JASON A. BIDWELL and WILLIAM CHISHOLM, Cleveland, Ohio.

Claim.—The improvements, herein described, in wood-screws, and in the manufacture of the same—that is to say, the manufacture of wood-screws of Bessemer or homogeneous steel wire jointly with the reduction in weight of metal in said screws as compared with the ordinary iron screws, due to the superior qualities, and for this purpose the superior adaptability, of Bessemer steel, substantially as set forth.

134,784.—*Steam-Boiler.*—HERMAN CAMP, Roseville, Pa.

Above the fire-box, which is surrounded by water-channels, is a heat-chamber in which are placed a series of water-tubes projecting upward from the water-arch over the grate, and having their top ends closed; between and around which tubes the flame and products of combustion pass on their way to the fire-tubes in the boiler.

Claim.—1. A steam-boiler provided with water-chambers C C D a heat-chamber *f*, tubes *g*, flues *i*, openings *l x*, and fire-chambers B B, all constructed, combined, and operating with relation to each other, substantially as herein before described, and for the purpose set forth.

2. In a steam-boiler, the combination of one or more fire-chambers with the heat-chamber *f*, tubes *g*, and water-chamber D, constructed and arranged substantially as herein described.

3. In combination with the subject-matter of the second clause of claim, the openings *l* and *x*, arranged substantially as herein described, and for the purpose set forth.

134,785.—*Pump.*—FRANCIS CATUDAL, Webster, Mass.

The wooden blocks in which the pistons work are fitted under shoulders formed on the main portion of the pump-frame, and are held in position by bolt-rods, which pass through the blocks and on each side of the main portion of the frame.

Claim.—A pump for domestic and other purposes, the parts A and B B of which are made of wood and combined together by means of the shoulders *a a* and clamping screw-bolts G G G G, substantially as and for the purposes set forth.

134,786.—*Steam-Drying Cylinder.*—WILLIAM CARR COLLIER, Salford, England.

The cylinder is sustained by the T-shaped rings or divisions. The buckets act to force the condensed steam from one chamber to the other, and finally through the hollow journal.

Claim.—1. The arrangement of the troughs or buckets *d d* on the inner surface of a steam-drying cylinder, they being fixed obliquely to the axis of the cylinder in such manner as to drain the condensed steam from one section to another until the water is all discharged from the cylinder, as herein shown and set forth.

2. The combination of the T-iron supporting divisions *b b* with the troughs *d d* and the ejection pipe or spout F, all constructed to operate substantially in the manner as and for the purposes herein set forth.

134,787.—*Watch-Maker's Lathe.*—ROYAL COWLES, Cleveland, Ohio.

A conical split chuck is placed in a hollow mandrel that extends through a loose cone-pulley, the small end of which is divided diagonally, and has pivoted upon it a dog that engages, through a slot in the mandrel, with a notch in the end of the chuck. The speed is regulated by a small friction-roller, made adjustable on a rod, between two cone-pulleys.

Claim.—1. The combination, with the divided and loose pulley E, of the dog *l* and hollow mandrel G, for securing the chuck M, substantially as and for the purpose set forth.

2. The combination of the divided and loose pulley E, hollow mandrel G, driving-pulley F, inclined rod I, and adjustable friction-pulley H, mounted between the standards A C on the lathe-bar B, all constructed, arranged, and operating substantially as herein described.

3. The lathe-bar B, fixed in the support A and carrying the adjustable head-stock and tail-stock, in combination with the loose pulley E, hollow mandrel G, driving-pulley F, and the adjustable friction-pulley H on the inclined rod I, all arranged and operating substantially as and for the purpose set forth.

134,788.—*Butter-Worker.*—DANIEL W. DAKE, Chicago, Ill.

The presser forces the butter through the sieve, whence it falls into the vat and is manipulated by means of the utensils H and I.

Claim.—1. In combination, the hopper B, sieve C, presser D, crank E, and vat A, substantially as specified.

2. The implement I, constructed in the manner described, and for the purposes set forth.

3. The implement H, constructed in the manner described, and for the purposes set forth.

134,789.—*Pot for Melting Glass.*—JOHN DOUGHERTY, Somerville, Mass.

By means of the fine *d* communicating with the openings the front of the pot is maintained at as great a heat as its other sides, thus preventing breakage and insuring an equal fusion of the glass.

Claim.—The within-described pot for melting glass, provided in front with one or more flues, *d*, substantially as and for the purpose set forth.

134,790.—*Cob-Carrier for Corn-Shellers.*—HENRY H. EBY, Mendota, Ill.

Carrier can be turned so as to discharge the corn-cobs in any direction required.

Claim.—1. The combination of the block *b*, adapted to revolve as described, and the hook-bolts *c c*, for supporting a carrier, as described.

2. The combination of the block *b* and the central vertical shaft and its connections, substantially as described.

3. The combination of the frame-work *a a a*, block *b*, the central vertical shaft b^1, pulley b^2, gear-wheel b^3, horizontal shaft with pinion *c* and gear-wheel *c'*, carrier-frame D having belts *d d*, supports d^3 d^4, gear-wheel d^2, arms *e e*, and bolts *m m*, arranged as and for the purpose described.

134,791.—*Treating Damaged Coffee.*—FREDERICK EVANS, New York, N. Y.

Claim.—The process of roasting coffee, herein before described.

134,792.—*Treating Damaged Coffee.*—FREDERICK EVANS, New York, N. Y.

The coffee is placed in a solution of sulphuric acid and water and agitated until the discolorations and impurities are removed. The coffee is then removed from the solution and washed in pure water, and dried by artificial heat.

Claim.—The process, herein before described, of restoring damaged and discolored coffee-beans.

134,793.—*Cloth-Cutting Machine.*—ISAAC FENNO, Boston, Mass.

The hinged knife-carrying arm is made adjustable, and sustained by a spring so as to bring the cutter in proper position with relation to the bed supporting the cloth.

Claim.—The hinged arm *b*, hinge part *c*, and the supporting-spring *f*, combined and operating as and for the purpose set forth.

134,794.—*Leather Punch and Cutter.*—HENRY S. FICKETT, Yarmouth, Me.

A rod with a screw-thread cut in opposite directions from its middle or center serves to keep the guides in position, so that the stock to be punched or cut will always be properly presented for the action of the tool.

Claim.—The combination of the bed A, levers *b* and *c*, segment-gears *i* and *j*, revolving cutter-head *k*, spring *n*, ratchet *m* with the guides *q q* and screw-rod *p*, substantially as and for the purposes set forth.

134,795.—*Saw-Mill.*—WILLIAM GOWEN, Wausau, Wis.

The pawls H H', operated by the lever G, rotate the shaft E, which, by means of bevel-gears, revolve the setting-screw *B*, thus giving a lateral movement to the log.

Claim.—1. The pinion C, gears D D', shaft E, ratchet-wheel F and F', lever G, pawls H and H', all in combination, substantially as described.

2. The lever G, wheel F, and pawl H, in combination with screw M, stop L, and their supporting-bar, substantially as specified.

3. The lever G, in combination with pawls H and H', provided with handle L', projection M', and the eccentric on pawl H, substantially as described.

4. The graduated scales K K and indicator I, in combination with the head-block and operating mechanism, as shown and described.

5. The lever G, indicator I, wheels F and F', and pawls H and H', in combination with screw M, substantially as described.

134,796.—*Flue-Blast for Steam Fire-Engines.*—JOHN GRAENER, Warsaw, Ind.

The blast is arranged laterally to the smoke-stack, in order that the altitude may not be increased.

Claim.—The interposing fan H D, or its equivalent, arranged by means of opening E to create a suction-blast above the flues I I, and by means of pipe F to give an upward blast, substantially as described.

134,797.—*Paper Sizing.*—PATRICK GRADY, New York, N. Y., assignor to JOHN COCHRANE, same place.

Claim.—The compound for sizing paper, of the ingredients substantially as herein described.

134,798.—*Griping-Tongs.*—WILLIAM J. HALLENAS, Brooklyn, N. Y.

The adjustable jaw is kept in place and guided in its movements by arms sliding in lateral slots in the frame.

Claim.—The frame or jaw B, in combination with the bracing-screw C, sliding jaw D with arms E E, and slots F F, constructed, arranged, and operating substantially as and for the purposes set forth.

134,799.—*Can for Preserving Fruits, &c.*—WILLIAM H. HAMMOND, Syracuse, Mo.

Claim.—The can A having a flaring mouth, in combination with the lid C having an inwardly-turned flanged edge, so constructed that when pressed into the mouth of the can it will be held in position by contact of the surface alone, substantially as and for the purpose specified.

134,800.—*Wash-Boiler Attachment.*—SAMUEL B. HARTMAN, Lancaster, Pa.

A wash-boiler attachment, constructed with side pipes which pass through, and in connection with a shelf and deflectors, which serve to conduct the water after passing through the clothing to the center of the boiler and separator, to be again raised by the force of steam through the side pipes, clothing, and perforated plates for further use.

Claim.—The central partition *c*, deflecting shields D, water-shelves B, when the spouts S open beneath them and extend through the perforated surface A of the combined bottom, all arranged in the manner shown, for the purpose specified.

134,801.—*Railway-Car Axle-Box.*—CHARLES W. HARVEY, Buffalo, N. Y.

The packing is confined within a metallic case, the same being held beneath the journal by means of a perforated follower. A lid extends from the top of the box to the oil-reservoir to prevent the oil from escaping.

Claim.—1. The combination and arrangement, in the axle-box and with the journal of a railroad truck, of the perforated follower and partition H and stay-piece M so as to compact the packing material under the journal and form an open oil compartment and reservoir in front of the same, substantially as herein before set forth.

2. The combination, with the perforated bottom H, of the movable concave plate I and stationary concave trough K L, substantially as and for the purpose herein before set forth.

3. The combination and arrangement in the axle-box, between the door thereof and the journal, of the guard-plate R, provided with the flexible strip *r*, substantially as and for the purpose herein before set forth.

134,802.—*Whip-Stock.*—LEVI HEIWOOD, Gardner, Mass., assignor to himself and ELIZA T. WATKINS, same place.

The pores of the wood or rattan are filled with liquid rubber and then vulcanized.

Claim.—1. As a new article of manufacture, a whip with a wooden stock, when the pores thereof are filled with an elastic solid in the manner described.

2. The process herein before described of rendering whip-stock tough and elastic.

134,803.—*Tubular Steam-Generator.*—JAMES M. HICKS, Summit, N. J.

Claim.—The combination of the tube-sheet of a steam-generator and the tubular deflectors described, placed in front of the fire flues or tubes, for the purpose of deflecting the gases against the tube-sheet and circulating the water of the boiler, substantially as before set forth.

134,804.—*Coal-Boring Machine.*—STEPHEN HIPKINS, Jr., Wheeling, W. Va., assignor of one-half his right to RALPH HEATHERINGTON, same place.

Frame G travels longitudinally on bar C, and the slides E, carrying screw feed-tube F and bit-stock *i*, slide between bars C D.

Claim.—1. The combination and arrangement of the movable frame G and the gearing which it carries, and by which the bit-stock *i* is operated, with the feeding-tube F, which carries the bit-stock, and serves to connect the latter with the said frame, the bit-stock tube F and frame G sliding in the same direction in different planes upon the main frame A B, when these several parts are constructed and arranged to operate essentially as described.

2. The arrangement of the frame G relatively to the slides E E, to which it is connected, and the bit-stock-carrying parts, whereby the latter may be moved from one end to the other of the frame A B to continue in the same line of cuts, essentially as described.

3. The screw-standards H^2 H^2 arranged upon the axles H, into which they are swiveled, and connected to the main frame A B by the screw-lugs A' B' as a means for raising and lowering the frame, as described.

4. The hinged or swinging connecting-rods Q' of the moving frame G, arranged as and for the purpose described.

5. The swinging L-shaped pieces L and O, the former on the frame G and the latter on one of the slides E, both carrying gear-wheels, and both adjustable in different positions, by means of which the relative position of the frame G toward the slides E may be changed without changing the gearing by removal, essentially as described.

6. The slides E provided with standards Q, and connected to each other by means of a tube, F, provided with a screw-thread on its outer surface, and with longitudinal openings F' at top and bottom, and serving to carry the hollow bit-stock *i*, essentially as described.

7. The device for feeding the bit-stock toward the coal, consisting of the sleeves W and *s*, inner sleeve A, ring *f* with its projections *g*, and pawl *k*, all operated and operating essentially as described.

8. The combination, with the hollow bit-stock *i* provided with slots *g*, of the sleeve A provided with a slot, *t*, shoulder *f*, and depressions *n*, and a pawl having projections *m* and *o*, essentially as described.

9. The pawl *k* provided with a notch, *r*, by which to raise the pawl and disconnect the bit-stock *i* with the tube F without removing the sleeves W *s* or any of the other parts, essentially as described.

10. The swinging L-shaped piece L having a pin, L^4, in combination with the segmental slotted piece L^5 secured to the frame G, and operating in connection with a nut, L^7, to clamp the piece L when the reversible shaft M is changed, as described.

11. The beveled gear-wheels L^2 and O^2, secured to the extensions L^1 and O^1 of swinging pieces L and O by means of sleeves M^1 and O^3 and collars M^2 and O^4, to allow the shaft M to be removed for the reversal of the gearing, essentially as described.

12. The combination, with the sleeve W and its gear-wheel V, of the gear-wheel U sliding on the bar R, essentially as described.

13. The combination, with the gear-wheel U and bar R, of the toothed wheel R', arm S, pawl S', arm T, L-shaped piece N^3 N^4, arm N^2, sleeve N^1, and eccentric disk N on shaft I for feeding the sleeves W *s* on the tube F, and thereby the bit-stock *i*, essentially as described.

134,805.—*Bit for Boring Coal, &c.*—STEPHEN HIPKINS, Jr., Wheeling, W. Va., assignor of one-half of his right to RALPH HEATHERINGTON, same place.

The bits do not bore as usual, simply with their ends, but their whole longitudinal edges are brought into use, acting as reamers.

Claim.—1. The separate bits *d* fitted in dovetail-grooves *c* on the body *a*, and made adjustable by means of screws *f*, essentially as described.

2. In combination with the bits *d*, fitted in dovetail-grooves *c* in the periphery of the body *a* of a boring-tool, a central bit, A, arranged to extend beyond the ends of the bits *d*, essentially as described.

134,806.—*Hydraulic Engine.*—JAMES C. HODGES, Morristown, Tenn.

From a fore-bay a funnel-shaped conduit leads perpendicularly to the water-box. From this box two throats lead down to the cylinder, and from the cylinder two throats lead down to the waste-pipe. The upper and lower throats are opened or closed by a valve for each pair, which is operated by arms attached to the ends of a double lever. This lever is pivoted at its center, and has motion imparted to it by blocks upon the piston-rod of the engine, which, by striking a cross-bar upon the lower end of the lever, move it toward or from the cylinder.

Claim.—1. In a hydraulic engine, the combination of the head or fore-bay E, cylinder A, water-box C, valves F F', double lever *f* having cross-bar *y*, the caps *c c'*, throats *a a'* and *b b'*, the piston B, and piston-rod H having the blocks *d d'*, constructed and operating as described.

2. The combination of the piston B with the cylinder A, water-box C, valves F F', throats *a a'* and *b b'*, as and for the purpose set forth.

3. The combination of the valves F F', arms *e e'*, levers *f* with cross-bar *y*, blocks *d d'*, and piston-rod H, as herein set forth.

134,807.—*Hanger for Walking-Beams for Oil-Wells.*—MARCUS HULIHOE, Emlenton, and WILLIAM J. LEWIS, Oil City, Pa.

The pump-rod may be adjusted up and down in the truncioned holder D by means of the screws, and the holder and rod together may be detached from the hanger by raising the cap-pieces.

Claim.—1. In combination with the walking-beam A, the hanger B having journal-bearings *a a'* at its lower end, slotted vertical adjustable cap-pieces C C', and oscillating pump-rod holder D, when said parts are constructed and operating in the manner and for the purpose herein set forth.

2. As a new article of manufacture, the hanger B, constructed as herein described.

134,808.—*Medical Compound for Liniment.*—HENRY J. KINTZ, Greece, N. Y.

Claim.—The compound consisting of castor-oil, glycerine, alcohol, bay-rum, port-wine, oil of winter-green, and bergamot, in the manner substantially as herein described and specified.

134,809.—*Mowing-Machine Knife Grinder.*—MELVIN W. KNOX, Sheridan, N. Y.

Claim.—1. The combination, with the standard or bearing B, of the pivoted and slotted frame-lever C and driving and grinding wheels E F, both mounted in the frame-lever C, substantially as herein before set forth.

2. The combination, with the frame-lever C and grinding-wheel F, of the pivoted bearing G, for adjusting the face of the grinding-wheel to the bevel of the knife, substantially as herein-before set forth.

3. The combination, with the slotted frame C, driving-wheel E, and grinding-wheel F, of the pivoted standard B and socketed base *a*, substantially as and for the purpose herein before set forth.

4. The combination, with the slotted frame C, and standard B provided with the slot *b* of the pivot-bolt *d* and nut *d'*, whereby said frame is rendered vertically adjustable and capable of longitudinal movement, substantially as herein before set forth.

134,810.—*Feed-Regulator for Calender-Rolls.*—MARTIN LAWLER, Holyoke, assignor of one-half his right to OSCAR S. GREENLEAF, Springfield, Mass.

A series of teeth are adjustable vertically in a supporting-bar adjustable in the cross-heads over the upper or feeding roller.

Claim.—In combination with the feed-roll B of a calender-frame, the device for regulating the feed thereto, consisting of the adjustable bar M containing the adjustable teeth *h h h*, &c., and supported from the bars *a b* by the adjustable cross-heads E E, substantially as shown and described.

134,811.—*Sediment-Collector and Blow-Off for Steam-Boilers.*—JOHN P. LEONARD and GEORGE HANCOCK, Oroville, Cal.

A perforated tube is arranged in the bottom of the boiler, and a sliding pipe, having a blow-off cock, is inserted from the front end of the boiler into the perforated tube. The sediment is collected into the tube and blown through the sliding pipe.

Claim.—The perforated tube B, in combination with the sliding pipe or tube C and blow-off cock *c*, constructed and arranged substantially as and for the purpose above described.

134,812.—*Curtain-Cord Rack.*—WILLIAM D. LUDLOW, New York, N. Y.

A notched or perforated plate slides freely in the outer case or frame, and is held in position by a spring placed in the upper part of the frame and by the foot of the cord-slide, which engages in the notches on the sliding plate.

Claim.—The flat plate B, having the stamped notches upon its upper surface, sliding freely in the case D D, and held in position by the single footed holder A A' and spring C, when all are combined to operate substantially as set forth.

134,813.—*Fastener for the Meeting-Rails of Sashes.*—THOMAS P. L. MAGOUN, Worcester, Mass.

A locking-case, secured on the meeting-rails of the sashes, is provided with a flanged locking-bolt, having a spring in its rear to cause it to engage automatically with the catch-plate, a knob or handle projecting upward through a slot in the case and serving to draw it back by hand. At the side of the bolt, above its flange, is arranged an angular-shaped catch-dog, so constructed that when the bolt is drawn back the dog will, by its own weight, drop down between the end of the flange and the side of the lock-case, its lower end extending through a slot in the same. There is also a tripping-leg, projecting horizontally from the lower part of the catch-plate, (in a groove of the meeting-rail,) which is brought into contact with and raises the dog by the operation of closing the sashes, thus relieving the bolt and allowing the spring to throw it forward and lock the two sashes in position.

Claim.—The combination, with the flanged locking-bolt g E and tripping-leg K, of the catch-dog I, arranged to drop by its weight in front of the flange *e* when the bolt is drawn back, retaining said bolt while the sash is raised, substantially as herein shown and described.

134,814.—*Parallel Ruler.*—WILLIAM B. MASON, Boston, Mass.

To one of the linked parallel bars is attached a transverse graduated gage-bar having a series of detent holes, and a spring-stud for holding the same in any desired position in connected with the other parallel bar.

Claim.—The clamps *e e'* and their set-screws *f f'*, in combination with the links *c d* of the bar *b*, the graduated arm *g*, and its catch-lever *h*, substantially as and for the purpose stated.

134,815.—*Mortising-Machine.*—CHRIST MUSCHAL, Pittsburg, Pa.

The augers are operated by a screw-shaft, having an internal gear-wheel, driving pinions on their shanks. The chisels of rectangular form are attached to the augers and forced down with them.

Claim.—1. The inverted cup-shaped gear-wheel *c* having an internal gear, *c'*, operating the auger-shafts *e' e'*, in combination with the sliding frame D, screw b^3, and frame B^3, substantially as and for the purpose set forth.

2. The shafts *e' e'* and augers *e e*, in combination with the plate D' provided with dovetail joint and chisel *f*, substantially as and for the purpose specified.

134,816.—*Washing-Machine.*—EDWIN NORTON, Boston, Mass.

The clothes are put between the disks K and E, the shaft C is screwed up until the required pressure is brought to bear upon them, after which the disk K is made to oscillate by swinging the handle H back and forth.

Claim.—The combination of the screw-rocking shaft C, nut D, and the reversible disks K and E, all constructed and operating substantially as described, and for the purpose set forth.

134,817.—*Dredger.*—RALPH G. PACKARD, Brooklyn, N. Y.

The scoops are hinged near the outside and open in the center. The opening and closing are effected by means of the rising-and-falling shaft carrying the large and small pulleys, operated by chains R8 R8. The teeth of the scoop are formed of two metallic plates each, between which, at the extremity, is bolted the cutting-point P. The upper and outer edge of the scoop is prolonged into a cutting-edge.

Claim.—1. The scoops hinged at or near the outside, opening from a center line with flaks or arms attached at or near the center for opening and closing them, as described and specified.

2. The teeth of skeleton scoops which open from a center line, constructed of two plates of metal secured together, in the manner and for the purpose specified.

3. The links or braces L and L', connected to the teeth T T of skeleton scoops, in the manner and for the purpose specified.

4. The cutting-points P P secured to the teeth of skeleton scoops, in the manner and for the purpose specified.

5. The combination of the chains R8 and D D, and R8, and U U with the shaft S and its connections, in the manner and for the purpose specified.

6. The small wheels V V, constructed and arranged to adjust the chains, in the manner and for the purpose specified.

7. The adaptation of the upper edge for cutting, of buckets whose scoops open from a center line, in the manner and for the purpose specified.

8. The guide-poles H H hinged to the bucket, and used in combination with the chain C or other suitable holding-down apparatus, in the manner and for the purpose specified.

9. The chain C, in combination with the hinged guide-poles H H, when used in the manner and for the purpose specified.

134,818.—*Machine for Slotting the Heads of Screws.*—ELIJAH S. PIERCE, Hartford, and JARED A. AYERS, Groton, assignors to NATIONAL SCREW COMPANY, Hartford, Conn.

A pair of griping-jaws; an adjustable stud for gaging the extent of projection of the screw-head beyond the jaws; a follower, operated by a wedge, to force the blank forward against the stud; a rotatable semi-spherical anvil, on which the blank rests, but which is partially rotated when the blank is finished and allows it to fall from the jaws; a reciprocating saw made in sections, each succeeding section being set to cut a little deeper than that which precedes it; a rasp at the heel of the saw to remove asperities produced by the saw, and means to elevate and depress the saw-carriage, and thus adjust the saw to the plane of the axis of blank, all combined and operating automatically.

Claim.—1. A reciprocating saw or series of slotting-tools, in combination with a pair of griping-jaws, when the same are so connected by machinery, substantially such as described, that the jaws close automatically and hold the blank at the time when the saw moves over the face thereof to cut the slot, the combination being substantially such as described.

2. In combination, a reciprocating saw or series of slotting-tools, a griping apparatus, and a rasp, all being and acting substantially as specified.

3. In combination, a wedge and a stop, acting substantially as described, to locate the blank, the wedge also serving to prevent end-wise displacement during the operation of slotting, the combination being substantially as specified.

4. The combination of a wedge and a stop with a pair of griping-jaws which gripe the blank after it is located, the combination being substantially such as specified, and acting to locate the blank and hold it against both lateral and end-wise displacement while being slotted.

5. In combination, a transferrer, a pair of griping-jaws, a discharger, and a reciprocating saw, all being and acting substantially as specified; and, in combination with these elements, we claim a rasp, acting as described.

6. In combination with a reciprocating slotting device or saw and a pair of griping-jaws, adjustable ways in which the saw-carriage slides, whereby the saw may be so adjusted as to move in proper relation to blanks held between the griping-jaws, all these parts being and acting in combination substantially as specified.

134,819.—*Indicating-Filler for Lamps, &c.*—JOHN A. RYAN, Cleveland, Ohio.

Within a tube is fitted loosely a float, the stem of which passes through a cap to which is secured an index-plate. The upper portion of the tube is inclosed in a chamber open at bottom; through this chamber the fluid is poured, and as it rises the float indicates the height. The air escapes through a vent-tube arranged in the chamber.

Claim.—The herein-described lamp-filler, consisting of the central tube B, shell or chamber E, ventilating-tube H, mouth-piece I, index-plate G, float C, and pointer L, all constructed and arranged to operate in the manner as described, and for the purpose set forth.

134,820.—*Treadle for Sewing Machines.*—AI B. SHAW, Medford, Mass.

The mechanism is actuated by a treadle and runs upon the same stud as the balance-wheel.

Claim.—A mechanism actuated by a treadle or treadles and running upon the same stud as the balance-wheel, when said mechanism is connected with the balance-wheel by a clutch or coupling, substantially as described.

134,821.—*Row-Lock.*—JAMES M. K. SOUTHWICK, Newport, R. I.

A falling latch is pivoted, at its lower end, in a slot formed in the lower side of the row-lock pintle. This latch closes into the slot while passing through the socket, and, having passed down below the edge of the socket, it falls out by its own weight and catches under said edge, thus forming a secure stop to prevent the row-lock pintle from rising out of place.

Claim.—The combination of the row-lock A, catch *c*, and socket C, substantially as described, and for the purpose set forth.

134,822.—*Composition for Coating Metal Pipes, Roofing, &c.*—JOSEPH SPECHT, Memphis, Tenn.

Claim.—1. The compound of coal-tar, gum-pitch, pine-pitch, and unslaked lime, or their equivalent, in about the proportions and for the purpose specified.

2. The compound of coal-tar, gum-pitch, pine-pitch, unslaked lime, or equivalents, combined with asphalt, in about the proportions and for the purpose set forth.

134,823.—*Rubber Jam-Nut.*—WESTLY TODD, Allegheny City, assignor to himself and EDWARD A. KIMMILER, Pittsburg, Pa.

A circular nut, made of vulcanized rubber, the hole a little smaller than the bolt, has its periphery covered by a thin metallic band, the edges of which are turned down a little to embrace the ends of the nut.

Claim.—A new article of manufacture, viz., a gum jam-nut, with the walls of its opening parallel and the diameter of the said opening less than the diameter of the bolt upon which it is to be placed, the periphery of the said nut being surrounded with a band of thin sheet metal, substantially as hereinbefore described, and for the purpose set forth.

134,824.—*Cultivator.*—AUGUSTUS C. TOWER, Mendota, Ill.

A straddle-row cultivator having a series of curved knives, a pair of smoothing-beams, and following-teeth for removing clods.

Claim.—1. The series of knives *a a* set at an angle, as described, and adapted to work upon each side of the hill, substantially as described.

2. The combination, in a cultivating-machine, of the following elements—*i. e.*: A pair of beams adapted to operate upon each side of a row of corn, having a series of curved inclined knives set at an angle, as described, a pair of following smoothing-beams and suitable means for connecting the two, substantially as described.

3 The combination, in a cultivating machine, of the following elements—*i. e.*: A pair of beams having knives *a a*, substantially as described, a pair of following smoothing-beams, means for connecting said beams, and teeth adapted to pass the hill on each side and remove the clods, substantially as described.

4 In a machine of substantially the described construction, an adjustable rod, D, carrying adjustable harrow-teeth arranged one in advance of the other, substantially as described.

134,825.—*Friction Driving-Gear.*—WILLIAM W. TUNIS, Easton, Md.

On a bed are arranged bearings, in which a shaft is supported, so that it may freely turn therein, but prevented by shoulders or collars from having any longitudinal play. Upon this shaft is arranged the crank or band wheel by which it is driven. Centrally upon shaft there is a disk, E, of such diameter as the special kind of machinery to be driven. In two other bearings, F, a shaft, G, is supported, which carries a second disk, H, that turns with said shaft.

Claim.—1. In combination with the driving and driven disks E H, and the pairs of friction-wheels *a a'* and *b b'* operating therewith, one pair on each side of said disks, the hinged bearers *g* and mechanism for operating them, as and for the purpose described.

2. In combination with the driving and driven disks E H and the friction-wheels *a a'* and *b b'*, working in pairs on opposite sides of said disks, the hinged bearers *g* and sliding plate I, and mechanism for operating them, as and for the purpose described and represented.

134,826.—*Attachment for Sewing Machines.*—FRANCIS N. VIOLET, Fond du Lac, Wis.

Device adapted to act as a guide for one or more pieces of cloth or to lap the edges or to allow one edge to project beyond the other. When one edge is to project beyond the other for felling, then the pivoted gage is employed.

Claim.—1. The gage A with its tongues B B and the adjustable guide E, when constructed, arranged, and operating as set forth.

2. In combination with the above, the pivoted gage C, as and for the purpose described.

134,827.—*Oil Painting.*—JOHN C. WALKER, Washington, D. C.

A water-colored engraving, &c., is covered by "crash" or other woven material, pasted on, and afterward colored in oil.

Claim.—1. The mode herein described of producing oil-color paintings from water-color pictures, engravings, or other prints.

2. An oil-painting, produced substantially as described, and by the method set forth.

134,828.—*Clothes-Drier.*—DAVID R. WATSON, Moawequa, Ill.

A clothes-drier with a standard resting on cross-timbers, which furnish its support and foundation, and to which is attached a hinged pin or stake, by which the frame is supported in its upright position when used out-door. Pivoted to the standard by a spider are four uprights, which are furnished with lines to receive the clothes, and above the pivot or spider are four braces, which connect and hold the uprights in position, attached to a point or pin in the standard, from which they can easily be detached and the arms folded into a close position.

Claim.—The combination of the standard A, feet *a a a a*, hinged pin B, collar C, arms *c c c c*, braces *f f f f*, and pivot *g*, as shown and described, and for the purpose set forth.

134,829.—*Needle-Case.*—GERHARD WEMPE, San Francisco, Cal.

The needle-case is divided into separate pockets, and the upper half folds back by a hinge. The whole is inclosed in a separate case.

Claim.—The needle-holder, consisting of the hinged back A, subdivided into pockets by the stripe *b b*, and with the cover C for the points arranged to slide within the case F, as described.

134,830.—*Reed-Organ.*—GEORGE WOODS, Cambridgeport, Mass.

Tuned forks with a sounding-board are attached to the reed-organ, and both operated by one set of keys.

Claim.—1. In combination with a reed organ, the vibratory sounding-hooks and a sounding-board, *p*, when arranged in a manner and for the purpose herein set forth and shown.

2. In combination with a reed-organ, the piano-stop consisting of the rod 22, lever 18 19 21, slotted piece 20, inclines 14 15, and operating-rod 16 as and for the purpose set forth and described.

134,831.—*Heel for Knives for Reapers and Mowers.*—ROBERT ALLSTATTER, Hamilton, Ohio, assignor to LONG and ALLSTATTER, same place.

Claim.—1. A heel or pitman attachment for reaper and mower knives, consisting of a rolled ribbed iron bar of the required form with a steel facing welded to it, for the purpose of providing a steel bushing for the pitman pin or journal without loss of strength in the heel, substantially as and for the purpose specified.

2. A heel or pitman attachment for reaper or mower knives, composed of the iron B B' and the bifurcated steel facing C, which is welded to the iron, having a neck, *c*, to enter a corresponding groove, *a*, in the lug B' of the iron, substantially as and for the purpose specified.

134,832.—*Casting Fire-Grates.*—HENRY ANSHUTZ, Allegheny, Pa.

Claim.—As a new article of manufacture, a fire-grate, A, provided with curved supporting or locking hooks C, substantially as and for the purpose specified.

134,833.—*Fly-Trap.*—SAMUEL B. HACHELLER, McDonough, N. Y.

The case is divided centrally by a slide. At the top it is covered with wire-gauze. At the base are doors or openings, and in the lower chamber are fans, operated by gear-wheels. When the flies have entered this the openings are closed, the central slide is withdrawn the fans are operated, and the flies ascend to the upper chamber, where they are secured.

Claim.—The herein before-described device consisting of the casing A divided into compartments F and G by means of the slide H provided with the doors K, and containing the pivoted fans K *k*, and *k'*, substantially as and for the purpose specified.

134,834.—*Chair.*—LEWIS H. BAKER, Washington, D. C.

The two grappling-plates are applied to the under side of the chair-bottom, which has a joint where the leg is inserted. A small projection is inserted into the side of the leg, and then the plate is fastened by means of screws. Instead of the projection for seizing the plate a wood-screw may be employed, the plate being provided with a flange.

Claim.—The above-described grappling plates H H' for fastening the legs and joints of the seats of chairs and for other similar purposes, combined substantially as set forth.

134,835.—*Water-Elevator.*—AMOS BADING, Wheeling, W. Va.

A weight, in descending, turns a shaft upon which is a escape-wheel that is also turned through the medium of a ratchet and pawl upon the shaft. The rotation of the escape-wheel vibrates a pallet, shaft, and crank, and effects the reciprocation of the pump. The water, passing into the trough, raises a float and causes a tooth to enter a notch in the pendulum, and thus stop the machine. The falling of the float sets the machine in motion again.

Claim.—1. The combination, with the shaft B bearing the escape-wheel D and driven by a weight or other motor, of the shaft C bearing the pallet G and crank *c*, and a pump connected with the crank, in the manner herein described, all substantially as set forth.

2. The combination, with the shafts B C, escape-wheel D, and pallet G, of the pendulum H and the stop apparatus I *w*, actuated by a float, spring, or other motor, substantially as specified.

134,836.—*Inkstand.*—STEPHEN W. BALDWIN, Yonkers, N. Y.

A spring passing through an eye at the front of the cover supports it in an open position, while the pen-holder, when interposed between the spring and an armed frame, retains it closed.

Claim.—1. The within-described covered inkstand, in combination with an elastic pen-rack, the parts being so arranged that

the introduction of the pen-handle into the rack closes the cover of the inkstand, and its removal liberates it, substantially as herein specified.

2. In combination with the body A, abutment E, and hinged cover B *b b'*, the spring D, constructed and arranged as shown, so that the spring shall perform the double function of holding open the cover in one condition, and of holding it tightly closed in another, as herein specified.

134,837.—*Shuttle-Guide for Looms.*—JOSEPH B. BANCROFT, Hopedale, Mass.

The bands are secured to the ends of the spring, and are held in the brackets by wedges.

Claim.—1. A guide composed of a metallic helical spring, A, and two in elastic bands, B B, as described, extended from such spring in manner as set forth.

2. The arrangement and combination of the wedges *a a* with the brackets C C, and the elastic shuttle guide composed of the metallic helical spring A and the two inelastic bands B B, all being as explained and represented.

134,838.—*Balanced Slide-Valve.*—THOMAS BEESLEY, Muscatine, Iowa.

Two valve-seats on opposite sides of a projection from the ordinary valve-seat, with a slide-valve upon each seat connected by pressure-bars at their ends, which project beyond the seats and are adjusted by temper-screws, so as to work steam-tight.

Claim.—The grooved projection A N with valve-seat B on its opposite sides, and the valves C with the pressure-bars D, one valve being permanently and the other adjustably connected at their projecting ends, as and for the purpose described.

134,839.—*Bed-Bottom.*—AZEL H. BELL, Cedar Falls, Iowa.

Alternate longitudinal slats are secured at their ends by alternate staples, and adjustable transverse bars, fitted to the slats, regulate their tension.

Claim.—The adjustable transverse slats D, in combination with the reversible spring-slats B, sectioned alternately at opposite ends of the frame of the bed-bottom, substantially as specified.

134,840.—*Car-Starter.*—LORENZO D. BENNER, Boston, Mass., assignor to himself and NORTHEND AND FOSTER, same place.

Beneath the car is secured an air-tank, which has an air-pump and an air-cylinder in combination. Air is compressed within the tank by means of the piston of the air-pump, being connected by a link to an eccentric on the axle. This link can be thrown out of or in working connection with the piston. To the end of the air-cylinder piston is pivoted a pawl, and by an arrangement of levers, when the pawl is applied to the ratchet on the axle, a valve is opened from the tank into the air-cylinder, forcing out the piston and partly turning the axle.

Claim.—In combination with the ratchet *q* and pawl *p*, the air-pump *f*, compressed air-tank *e*, and air-cylinder *s*, and their connections, by which, at the will of the driver, air is driven into the tank for storage, or is let into the cylinder *s* to work the pawl and piston-rod *r*, substantially as described.

134,841.—*Horseshoe-Nail Machine.*—ALBERT D. BINGHAM, Vergennes, Vt.

Three pairs of rolls; the first pair has grooves, two sets, corresponding to the width and thickness of the nail, with deep recesses to form a head at right angles to the width: the second is plain, and roll down the head to the proper size; and the third finish the blank, the nails being formed in a strip, the point of one attached to the head of the next, to be afterward cut off and pointed.

Claim.—The combination of a series of preparatory roller-dies, C D, flattening-rolls E, and a series of finishing roller-dies, H I, substantially as represented in the drawing, and so as to operate upon the rod in forming the head, as specified.

134,842.—*Oil-Can Stopper.*—LEWIS R. BOYD, New Brunswick, N. J.

The stopper is composed of two pieces. The cap piece, which is provided with a vent, being struck up, is fitted over and bent under a flange upon the lower piece. The lower piece is spun up and threaded in the same manner as the socket, and has a vent at its conical portion.

Claim.—1. The within-described screw-stopper, composed of the two pieces *a* and *b* of sheet metal, formed and attached to each other in the manner described.

2. The hollow screw-stopper having a conical termination, with a vent-hole, *m*, and a vent-hole, *d*, at the top, all as set forth.

134,843.—*Sofa-Bedstead.*—JOHN BRADA, New York, N. Y.

A removable head-piece for the extension part of the sofa, attached by tenons and sockets. Also, folding legs that are jointed and slide in a horizontal slot in the frame of the sofa, and bolts to hold the legs in an upright position.

Claim.—1. The within-described sofa-bedstead having an interior space capable of stowing the removable portion C c^1 c^2 of the head and deep sockets b^1 b^2, in combination with the removable piece C provided with deep tenons c^1 c^2, adapted to apply in the position and be supported and stowed in the manner herein specified.

2. The jointed folding legs P *p*, in combination with the folding part B, and sliding in and out therein, as and for the purposes specified.

3. The locking-bolts E, in combination with the folding legs P *p* and the parts A *a* B, as and for the purposes herein specified.

134,844.—*Apparatus for Treating Ofal.*—WILLIAM L. BRADLEY, Boston, Mass.

The plow-shaped arms mix the material. The wide mouths of the arms form large outlets for disseminating air-currents through the mass.

Claim.—1. In combination with the drum or cylinder and its hollow shaft or axle *g*, the air discharging and directing radial arms *l*, substantially as described.

2. The air-directing arms, formed with the flaring sides *o*, mouths *n*, and angles *p*, substantially as shown and described.

134,845.—*Die for Capping Screws.*—GEORGE W. BRIGGS, New Haven, Conn.

The usual metallic piece that enters the slot in the cap and head of the screw is in this instance the edge of a washer. The washer can be turned as its working-face becomes worn and battered, and another and fresh part of its periphery brought into operation. The washer rests upon a concave bed, beneath which there is a spring that permits the washer to yield when necessary.

Claim.—1. The circle piece or guide E, in combination with the rest B, stem C, spring D, and slotted and recessed die F, substantially as herein shown and described, and for the purpose set forth.

2. The concavity formed in the head of the stem or holder C to give a wide bearing to the edge of the circle piece or guide E, substantially as herein shown and described.

134,846.—*Machine for Sawing Laths.*—SAMUEL P. BROWER, Glen's Falls, N. Y., assignor of one-half his right to WILLIAM H. KNOX.

The upper feed-rolls are placed at the extremities of adjustable levers and operated by pitch chains running over sprocket-wheels, which arrangement allows their position to be changed vertically. Guide rolls are also placed in the bed of the machine in advance of the feed-rolls.

Claim.—1. The cross levers D D carrying the feed-rollers C C, and adjusted by the set-screws E F, substantially as and for the purposes set forth.

2. The combination of the feeding-rollers C, chain-pulleys A and B, face-plates H and J, friction-wheel I, and chain *d*, or its equivalent, all substantially as and for the purposes herein set forth.

3. The combination of the cam G and its shaft, friction-box M, bracket P, shaft A, friction-wheel I, and face-plate H, all substantially as and for the purposes set forth.

4. The hinged lever and oil-cup L, in combination with the shaft K and face-plate J, and operated by the cam-lever K, all substantially as set forth.

5. The combination of one or more guide-rollers, O, one stationary and one adjustable feed-roller, C, and the gage R, all substantially as set forth.

6. The frame T and fingers, as shown in Fig. P, substantially as and for the purposes set forth.

134,847.—*Crib Attachment for Bedsteads.*—EDWIN F. BRYAN, Savannah, Ga.

The crib is attached to the bedstead by adjustable hooks, and braced by the brackets underneath. A removable railing is placed upon the top of the back.

Claim.—1. The combination of the hooks C and brackets D with the crib B, to adapt said crib to be detachably attached to the side rail of a bedstead, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the detachable railing E with a crib, B, provided with hooks C and brackets D, substantially as herein shown and described, and for the purpose set forth.

134,848.—*Loom-Shuttle.*—HEZEKIAH H. BRYANT, Boston, Mass.

In combination with the "float-preventive" mechanism arranged within the shuttle, a spring-guard is placed over the upper end of the oscillating dog so that it shall not be operated by any other cause than that producing floats. The dog is provided at its lower end with a longitudinal-toothed arm, for the purpose of catching the thread and breaking it when the dog is thrown into an oblique position.

Claim.—1. In combination with a float-preventive mechanism, the guard F or its equivalent, substantially as and for the purpose specified.

2. The herein-described combination and arrangement of the spring E and the dog D, composed of the upright arm *d* and the longitudinal toothed weft-catcher *c*, the whole affixed to the support *a a a* and to the shuttle, substantially as or for the purposes set forth.

134,849.—*Sliding Support for Clothes-Lines.*—MICHAEL BURGER, Jersey City, N. J.

A sliding supporting-brace for clothes-lines constructed with a slot for the pulleys, and on one side of it, near its lower end, has an opening which forms a spring, by which the cord is introduced and held in place by the spring, or released at pleasure through the opening.

Claim.—The slotted support or brace A *a* for pulley-lines, having one of its sides cut through to form a spring, substantially as specified.

134,850.—*Tip-Chair.*—BERNARD A. CARLAN, New York, N. Y.

The chair is made with the front legs longer than the back ones, so that the chair is always tipped or inclined, and is provided with extra back legs or braces to support it in such inclined position.

Claim.—The chair having the inclined seat and back and back braces E, as set forth, for the purpose specified.

134,851.—*Process for Cutting and Shaping Pearl Shell.*—EDWIN CARRINGTON, West Meriden, Conn.

A thin disk of steel is employed which revolves rapidly. Against the smooth edge of said disk the shell to be cut is pressed, a supply of water being furnished to prevent heating.

Claim.—The process herein described for cutting, dressing, or shaping pearl-shell.

134,852.—*Nail-Distributing Machine.*—CHARLES M. CHASE, Boston, assignor to E. L. BAKER, New Bedford, Mass.

The nails are thrown in a mass into the hopper, and are arranged for and presented to a pair of transferring-jaws by means of bent wires attached to a rotating shaft. These jaws grasp the nails singly and carry them down through an opening of peculiar construction, which prevents the nails from moving endwise. The jaws then release them, and they fall crosswise of and upon an inclined tapering trough, when the greater weight of the heads of the nails causes them to slide down head foremost.

Claim.—1. The combination of the wires L' with the slide B, operating substantially as described, and for the purpose set forth.

2. The combination of the jaws D and E with the horns H, substantially as described, and for the purpose set forth.

3. The opening *d* of the shape described, for the purpose set forth.

4. In a nail-distributing machine, the trough H^2, when formed as described, and for the purpose set forth.

134,853.—*Spring for Vehicles.*—EDWARD CLIFF, South St. Louis, Mo.

Claim.—1. The spring consisting of plates A B whose ends are firmly secured to hinged bearing-blocks C, all substantially as set forth.

2. The combination of spring-plates A B, blocks C, and rocking bearing D E, substantially as set forth.

3. The combination of spring-plates A A' B B', clip-connections G H I, and hinged bearing-blocks C, substantially as set forth.

134,854.—*Potato-Bug Collector.*—JOSEPH CORBELL, Lind, Wis.

An insect-destroyer constructed with revolving beaters which revolve over a V-shaped receptacle, pivoted to hangers beneath the beaters to catch the insects when knocked off. The beaters are provided with adjustable plates so as to reach plants of different heights. It further consists in rotating the beaters each in opposite directions.

Claim.—1. The combination of the revolving beaters E, the V-shaped trough H, and the vertical plate G, when constructed and arranged to operate as set forth.

2. The rotary beaters E having their blades provided with the adjustable plates *i*, whereby they are adapted for operating upon vines of different heights.

3. In combination with the beaters E, the adjustable trough or receptacle, constructed substantially as described, so that its width may be varied, as required.

4. The combination of the rotary beaters E, provided with pulleys *a*, the roller *c*, and the driving-pulley *c* with the belt *f*, when arranged as described, so that it revolves the two beaters in opposite directions, as set forth.

134,855.—*Combined Corn-Planter and Seeder.*—ROBERT COWAN, Bloomfield, Ill.

A frame, supported on a pair of wheels behind and by spouts and drills in front, has across the top of the latter a seed-box with a shaft revolving in it by a belt from one of the wheels. This shaft has at its ends seed-cups for corn-planting, and between them a series of grooves in planes perpendicular to the axis. The bottom of the hopper communicates by flexible tubing with the two outside drills for corn-planting, and with the others for seed-sowing. Slides in the hopper regulate the communication, as one or the other operation is required.

Claim.—The seed-hopper D, constructed with end grooves Z and oblique guides, as described, to receive the slides F and *f* interchangeably, substantially as and for the purpose specified.

134,856.—*Child's Carriage.*—JESSE A. CRANDALL, Brooklyn, N. Y.

The handle is made reversible by being swiveled to the under side of the carriage.

Claim.—The handles D *a a* attached to a swiveled plate, *b*, combined with a body, A, and running-gear B, connected by a disk, *d*, as described, so that the handles can turn horizontally, as set forth.

134,857.—*Slotting and Key-Seat Machine.*—JOHN H. CRANSTON, Norwich, Conn.

The tool is held longitudinally in the upper end of the tool-post, which is operated vertically through a slot in the bed or table. The bed slides on ways and has the work bolted to it, which is fed up to the cutter by means of a feed-screw acting on the bed.

Claim.—The within-described slotting-machine having a tool-carrier traversing through a table and operated by suitable mechanism below, in combination with provisions for moving the table independently, the whole arranged so as to afford a clear space above the table adapted to serve as herein specified.

134,858.—*Inhaler.*—WILLIAM R. CRUMB, Buffalo, N. Y.

The body of the instrument is composed of three tubes placed side by side. To the upper ends of the two outer ones are secured nozzles to fit the nostrils. The central tube communicates at one end with the two outer inhaling-tubes, and with the external air at the other, and contains the proper materials for inhalation distributed upon a sponge or other suitable vehicle. One end of the central tube is closed by a plug when the instrument is used for the nostrils, but when the instrument is used for the mouth the plug is replaced by a nozzle.

Claim.—1. The combination, with the inhaling-tubes A A, provided with nozzles arranged to fit each nostril, of the central tube B lying between and communicating with the tubes A and external air, substantially as hereinbefore set forth.

2. The combination, with the tubes A A B, arranged as described, of the nozzle *c*, substantially as and for the purposes hereinbefore set forth.

134,859.—*Clip-Plate for Carriage-Springs.*—NORMAN C. DEAN, Union Springs, N. Y., assignor of one-half his right to SILAS S. BLISS, same place.

Provided with re-enforced grooves for the reception of the clips which hold the spring to the axle, and a hole for a central bolt.

Claim.—The metallic plate A, constructed as herein described, having the central vertical hole *a*, parallel transverse flanges *c*, and re-enforced channels *b* adapted to receive the spring-clips, substantially as and for the purpose set forth.

134,860.—*Music-Desk for Pianos.*—MICHAEL DOHERTY, Cambridgeport, Mass.

Pins on both sides of the desk slide in a three-way groove, (two horizontal and one downward and inclined to the front,) for the desk to stand in or lie flat either way, forward or back.

Claim.—1. The angular grooves *c*, having portions *d* and either *f* or f^2, and the pins *a* a^2 and *b* b^2, in combination with a desk, A, and blocks B B, substantially as described, for the purpose described.

2. In combination with the above desk and blocks, the combination in one and the same angular groove *c* of the portions *f* f^2 and *d*, substantially as and for the purpose described.

134,861.—*Medical Inhaler.*—NILES I. DONALDSON, Worcester, Mass.

A receiving-vessel is furnished with two inlet-tubes and one outlet, all three passing through perforations in the cork. The two inlet-tubes are furnished at their outer ends with two funnels. Midway of their length and within the receiver they are bent slightly upon themselves and furnished with pendent bulbs to contain the medicaments for inhalation. The funnels serve as valves to prevent the too rapid ingress of air.

Claim.—1. The combination, with the receptacle in an inhaling apparatus, of the peculiarly-constructed inlet-tube C provided with a bulb, D, upon the lower side of the bent or horizontal portion *a* of the tube, substantially as and for the purposes set forth.

2. The combination, with the inlet-tubes C C', of the tunnels or valves F, substantially as and for the purposes set forth.

3. An inhaling apparatus, consisting of a main receptacle, A, having a single opening provided with a stopper, B, inlet-tube or tubes C, liquid bulb or bulbs D upon the lower side of the bent or horizontal portion of the tube which is within the main receptacle, and draft-tube E, all combined and operating substantially as set forth.

134,862.—*Carriage-Curtain.*—HENRY DONNELL, Philadelphia, Pa.

A carriage-curtain permanently fastened at the top and weighted at the bottom, is provided at its sides with loops running in suitable guides, and arranged, when folded up, to be secured to the inside of the eaves-rail by ordinary loop-fastenings.

Claim.—1. A carriage-curtain, B, permanently secured at the top, provided at its opposite sides with rings *s* adapted to suitable guides D, and arranged, when gathered up or folded, to be secured to the inside of the eaves-rail or roof of the carriage, substantially as specified, and for the purpose set forth.

2. The carriage-curtain guiding-rail D, cast with grooves *i i* and a flange or flanges, *j*, as specified, and for the purpose set forth.

134,863.—*Spindle-Bolster and Step for Spinning-Frames.*—GEORGE DRAPER, Hopedale, Mass.

To enable oil to be introduced and raised to the upper bearing of the spindle while the same is in revolution; to catch any oil that may flow down when the spindle is at rest; and to form a guide for correctly raising and lowering the step-cover, as well as to prevent the band touching the spindle in case it should slip off the whirl.

Claim.—1. The bolster-standard B and the spindle A, provided with the oil-receiver *e*, educt *f*, helical oil elevator or groove *d*, oiling-induct *g*, and the rotary oil-reservoir *b*, the latter being fixed to the spindle, and also being arranged substantially in manner and to operate as specified.

2. The oil-reservoir *b*, fixed to the spindle so as to revolve therewith, and arranged within a chamber, *a*, in the foot of the bolster-standard, all being essentially as shown and described.

3. The step provided with the communicating oil-chambers *l m*, the tubular extension *k*, and the cap *n*, all arranged essentially as specified and represented.

134,864.—*Spinning-Frame.*—GEORGE DRAPER, Hopedale, Mass.

A train of gears, connecting the loose pulley of the frame with the "tin drum," imparts slow motion to the latter when the belt is shifted onto said pulley, so that breakage of yarn, which is liable to occur were the frame started at full speed, is avoided.

Claim.—In combination with the fast and loose pulleys C E and the spindle-driving drum B of a machine for spinning yarn, mechanism substantially such as described, viz., the gears *a b s f*, clutch *g*, shafts *c d*, spring A, lever *i*, and notched projection *l*, combined and arranged as set forth, or its equivalent for running

the driving-drum B at a rate of speed less than that obtained by the said belt when run upon the fast pulley.

134,865.—*Lifting-Jack.*—S. SPENCER ECCLESTON, South New Berlin, N. Y.

The pawl may be operated from the rear end of the lever, however long said lever may be, thus allowing the lever to be made of any required length to obtain any desired leverage.

Claim.—The lever J, hinged to the under side of the lifting-lever C, and provided with the arm I adapted to enter a slot in the latter, the cord F, pulleys H G, pawl D, and standard B *b'*, all constructed, arranged, and operating as shown and described, for the purpose specified.

134,866.—*Printing-Telegraph Instrument.*—THOMAS A. EDISON, Newark, N. J.

In an instrument, when the type-wheel is arrested by a pin on its shaft coming in contact with a depressed key, and the pulsations are sent by a revolving motor or pulsator, the pulsator is stopped when the type wheel is stopped by a lever attached to the escapement armature-lever coming in contact with a pin on pulsator-shaft.

Claim.—1. The stop-arm *s*, connected with the lever *l* and pallets *k*, in combination with the pulsator *g*, and stop *f* for arresting the movement of the pulsator, substantially as set forth.

2. The type-wheel magnet A, in the circuit that is opened and closed by the pulsator *g*, in combination with a stop that arrests the movement of the pulsator when the circuit is broken, and a spring, or its equivalent, that liberates the pulsator upon completing the backward movement of the armature and pallets, substantially as set forth.

134,867.—*Automatic Telegraph Instrument.*—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C.

Neutralizes any earth or extra currents in automatic instruments by a weak constant local circuit, preventing "tailings" and blurs in the writing and the stylus being destroyed while inactive.

Claim.—1. The circuit from the battery *l* connected with the earth and line in a chemical telegraph instrument and adjusted by the rheostat *m* to neutralize earth currents, substantially as set forth.

2. The conductors *i i* connected with the battery *p*, in combination with the stylus *a* of a chemical receiving instrument, for the purposes and substantially as set forth.

134,868.—*Electro-Magnetic Adjuster.*—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C.

Armature-spring constant; power of magnet on armature adjusted by increasing or decreasing metallic connection between cores.

Claim.—The adjustable connection applied at the rear end of an electro-magnet, between the cores thereof, to vary the power of such electro-magnet, substantially as set forth.

134,869.—*Folding Feed-Box.*—JAMES L. EDWARDS, Cochranville, Pa.

Two sides fold on the bottom of the box, and the two remaining sides fold upon the first two. Spring-catches are arranged at the corners outside, and connecting leaves and hinges inside.

Claim.—1. In a feed-box, the sides B folding on the bottom of the box, and the sides C folding on the folded sides B, substantially as and for the purpose set forth.

2. The spring-bars G and catches H arranged with the ends of the sides C and faces of the sides B, as set forth.

3. The single leaves K, in combination with leaves J J, the latter being at right angles to each other and secured to adjacent sides of the box, as and for the purpose set forth.

4. The bottom D, swinging sides B C, leaves J K, spring-bars G, and catches H, combined and operating in the manner and for the purpose set forth.

134,870.—*Machine for Mining Coal.*—GEORGE ELBERO, Brasil, Ind.

The weighted lever holds the roller against the roof of the mine. The slots allow sufficient play to clear ordinary inequalities, and the crank J affords a means to clear greater. The rack *f*, moving with the piston, acts through a pinion, *k*, duplex pawl, and bevel and worm gearing, to impart a slow intermittent rotation to the feed-wheels *r r'*, embracing the rail; and these feed-wheels may be moved apart and upward by means of a screw, *s*, and inclines I I', to avoid frogs and cross-tracks.

Claim.—1. The described combination of automatic and hand operated devices E F G H I J K L M N O P Q R S, or their equivalents, for obtaining a continued upward stress or pressure, against an irregular roof or ceiling of a mine, substantially as set forth.

2. The devices *j j' h l m n o p p' q q' r r' s*, or their equivalents, for automatically shifting the apparatus to the right or left at the intervals of the strokes, substantially as set forth.

3. In combination with the elements *q q' r r' s*, the heads *t t'* and inclined planes I I', as and for the object explained.

4. The described combination of devices *h h' i o w v' w'* in a double-headed pick-stock, as set forth.

134,871.—*Screw-Cutting Machine.*—GEORGE EMIG, Cincinnati, Ohio.

The bolt-chuck connects with a graduated sliding rod on each side by means of lugs. On each side of the lugs, on the rods, adjustable collars are fixed, which determine the length of bolt to be threaded. The rods are connected by a cross-piece that operates a cone on the die-shaft, which closes and opens the dies as the bolt-chuck advances or recedes. An adjustable gage, through which the bolt may pass, is used to gage the length of bolt which is to project from the bolt-chuck.

Claim.—1. The bolt-chuck K, having two tappet arms, L and L', and the sliding cone E, in combination with the bar or cross-head G and a pair of graduated slide-rods, H and H', which are provided, respectively, with adjustable collars J J' and J'' J''', all substantially as and for the purpose specified.

2. The adjustable gage M *m*, in combination with the bolt-chuck K, and die-chuck C, the dies of which are opened and closed automatically by the bolt-chuck through intermediate mechanism, substantially as and for the purpose specified.

134,872.—*Process of Hardening Steel.*—SAMUEL W. ETCHELL, Weatherly, assignor to himself, D. L. EATON, same place, and ANNIE E. ALLEN, Philadelphia, Pa.

The tool or other object of steel is heated to a bright red, rolled in pulverized borax, and plunged in a mercury bath.

Claim.—The process of hardening steel by treating the same with borax, or its equivalent, and mercury, as set forth.

134,873.—*Carpet-Stretcher.*—LOUIS FANKHAUSER, Columbus, Ohio.

A series of sections arranged to screw together, and provided with a pivoted arm at one end having a toothed plate to engage with the carpet, and provided at the other end with an elastic head or buffer.

Claim.—The herein-described carpet-stretcher, consisting of a series of joints or sections arranged to screw together, and provided with the joint C, head B, and toothed plate *d*, as shown and described.

134,874.—*Hydraulic Main of Gas-Works.*—WILLIAM FARMER, New York, N. Y.

The main is cast lighter and the dip and stand pipes shorter.

Claim.—The hydraulic main provided with lateral cups or chambers for the insertion of the dip-pipes, substantially as set forth.

134,875.—*Folding Chair, Bed, and Ottoman Combined.*—EUGENE FAUH, New York, N. Y.

The ottoman is composed of three sections hinged together and provided with folding-legs and jointed braces. The head section has a hinged support provided with an extension frame. The head section can be raised to the desired inclination, and the foot section can be dropped to the floor.

Claim.—1. The combined bed, chair, and ottoman, composed of three sections, A, B, and C, folding-legs D D, jointed braces E, and support F, as set forth.

2. The head-rest support F and extension piece G, combined with hinged part C, as and for the purpose described.

134,876.—*Extract of Yucca.*—LOUIS G. FELLNER, Las Vegas, Territory of New Mexico.

Yucca-root is ground, steeped in water, and pressed. The liquid thus obtained is evaporated to the proper consistence for molding, when it is molded in forms and dried, then coated with varnish and packed in boxes.

Claim.—An extract of yucca-root prepared and put up, substantially as herein shown and described, to enable it to become an article of commerce.

134,877.—*Latch for Gates.*—JAMES R. FISLEY, Delphi, Ind.

Upon the gate is secured a horizontal bar, which projects beyond. Upon the post is secured a vertical plate or bar, to which is attached a metallic frame. The upper part of this frame extends horizontally outward from the post, and has a longitudinal slot in which is pivoted a drop latch or lever. The frame lies vertically along the post for a short distance below, equal to the width of the bar extending from the gate. The lower part of the frame curves outwardly and forms an inclined plane, up which the bar from the gate rides previous to being locked by the drop lever upon the horizontal part. The gate is thus made to lock automatically in such a way that cattle cannot open it by lifting a latch.

Claim.—The combination of the gate A with horizontal projecting bar D, and the gate-post C with the frame G and lever J, said frame being composed of the slotted horizontal part *a*, vertical part *b*, and curved part *d*, and the lever having its upper end *e* weighted and the lower end *f* wedge-shaped, all substantially as and for the purposes herein set forth.

134,878.—*Wheel-Plow.*—HARLOW M. FREEMAN, JOHN LOWE, and JOHN F. STEVENS, Lathrop, Mo.

Devices for equalizing the draft, and means of attaching the plows to the draft-equaliser.

Claim.—1. The combination of the rigid frame K M N and pivoted draft bars J, L, O, and P, with each other and with the tongue D of the machine, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the armed plate F, rod G, bent bar H, and short bar I, with the tongue D and pivoted draft bars J, L, O, and P, substantially as herein shown and described, for connecting the plow-beams E with said draft bars, as set forth.

134,879.—*Hot-Air Furnace.*—WILLIAM B. GEDDES, Rochester, N. Y.

Claim.—1. In a heater or furnace, a water-tank, J, arranged within the same and communicating with a ring, L, having apertures surrounding the fire-box, and also having communication with the outside of the heater for the purpose of supplying steam and air above the fire, substantially as herein set forth.

2. The inclined or elevated radial flues I I forming a communication between the interior and exterior chambers of a heater or furnace, substantially as and for the purposes herein set forth.

3. The interior heating-chamber G having inlets at the bottom, closed at the top, and radiating elevated flues I I to conduct the heated air from the same, substantially as and for the purposes herein set forth.

4. The combination of the interior heating chamber G, inclined flues I I, and the top cone E', substantially as and for the purposes herein set forth.

5. The heater or furnace composed of the shell B, fire-pot C, cones E, E', and E², cylinders G H, inclined flues I I, tanks J J', ring L, dome M, and chamber N with pipes O P, all constructed and arranged substantially as and for the purposes herein set forth.

134,880.—*Syrup Device for Soda-Fountains.*—WILLIAM GEE, New York, N. Y.

Within the syrup-measuring chamber is a stem having concentric and lateral valves, and connected with it at the bottom of the chamber is a general discharge-valve and a downward-discharge pipe formed with side perforations to spray the soda and mix it with the syrup when the latter is discharged into the chamber.

Claim.—1. The combination of the stem E and valves or valvular portions F, G, and H of the cock, with the syrup-measuring chamber C, the syrup-supply pipe B, the soda-water orifice *b*, and the general outlet A, essentially as and for the purposes herein set forth.

2. The perforated soda-water discharge-pipe I of the valve G, in combination with the syrup-measuring chamber C, substantially as specified.

134,881.—*Knitting-Machine.*—HUGO GÜNTHER, New York, N. Y., assignor to himself and CHARLES LUTPHIAN, same place.

The elevating and depressing cams are so far apart that the former operates only upon the turned-up heels of wires or "setting-needles," applied in an extension of the bed to raise the latched needles, while the depressing-cam acts upon the turned-up heel of the latched needles only to lower them, the heels of the latched needles being thus subjected to only half the usual wear.

Claim.—The combination, with latch and setting needles of a knitting-machine lock, composed of the cams A A and *i*, which are placed so far apart that the upper cams A A will depress the latch-needles while the lower cam *i* will elevate the setting-needles, substantially as herein shown and described.

134,882.—*Scroll-Saw.*—FRANK H. HARDENBERGH, Hawley, Pa.

The teeth are cut so as to be opposite each other, making in effect a saw with a double row of teeth.

Claim.—A saw-blade having two rows of teeth, *b b*, formed on it by oblique incisions longitudinally in opposite directions, as described and shown.

134,883.—*Paper-Ruling Machine.*—ALFRED HATHAWAY, Freetown, Mass.

When the friction-roll reaches the continuously-running feed-apron on the roller the revolution of the disk ceases. The paper is then introduced between the two, which feed it forward until its end presses back the lever and trips the detent of the friction-roll, which is then carried into its recess in the disk, which then revolves, its serrated sectors carrying forward the paper and its adjustable cams lifting the pen-bar at proper times. The roll is thrown out and relocked by a segment of the disk connected to it by a rod.

Claim.—The combination of one or more serrated sectors, K, the disk or wheel A and its cam or cams, stop-wheel, and the mechanism for operating and latching such stop-wheel, in manner as set forth.

134,884.—*Hand Corn-Planter.*—FRANK A. HAWKINS, Noblesville, Ind.

An oblong box; lower end smaller than the upper. In it a plunger, worked by hand, reciprocates vertically, effecting the revolution of the seed-cup disk by a strap passed round the drum of its spindle, having both ends attached to the plunger. The latter, at each down stroke, opens a spring-valve at the bottom and forces out the seed.

Claim.—The plunger B, operating against the inner side and one corner of the case A, and provided with the recesses K O, stops *c d*, and strap I, in combination with the drum H and feed-wheel J having stop-wires *e e*, all constructed and operated in the manner and for the purpose set forth.

134,885.—*Apparatus for Making Tuyeres for Bessemer Converters.*—ANDREW I. HAWS, Johnstown, Pa., and JAMES A. VAUGHAN, Cuyahoga Falls, Ohio; said VAUGHAN assignor to said HAWS.

Forming funnel at bottom of cylinder, in which hang rods depending from an interior block, for making the air-holes.

Claim.—1. The perforating-rods *e* depending from an open frame above the forming-neck D, substantially as specified.

2. The tuyere-former, consisting of the basin or funnel, forming-neck, depending rods, and check-plate, substantially as specified.

134,886.—*Pedal Attachment for Pianos.*—CHARLES W. HELD, Jr., and ALPHONSO M. SAUGH, Brooklyn, N. Y.

To enable a child to operate the pedal the foot-rest is extensible.

Claim.—1. The combination of the bar C, foot-rest H, pedals L, and rods N with a piano-forte, the said bar C being detachably connected, substantially in the manner described.

2. The foot rest H having an extension piece, H', substantially as specified.

134,887.—*Sad-Iron and Crimping-Shoe.*—JOHN HEWITT, New York, N. Y.

The crimping-shoe is made with a corrugated face and a projecting toe-piece and a vertical heel-bearing plate, which, through any suitable means, may be attached to a sad-iron temporarily so that, with the two, clothes may be ironed or crimped.

Claim.—The corrugated shoe-plate C having bearings D D', in combination with a sad-iron or polishing-iron, so as to permit of the smoothing-iron being converted into a fluting device, as and for the purpose specified.

134,888.—*Guide for Winding-Machines.*—DE WITT CLINTON HILL, Windham, Conn.

The glass guides have a notch in each side in which fit the wire conductors, by which they are held in place, the ends of the conductors being secured to plates which are adjustable on the traverse-bar, so that the distance apart of the guides may be varied.

Claim.—The glass thread-guides B B, constructed as described, in combination with the flexible wire conductors D D, the longitudinally adjustable or slotted plates C C, and the traverse bar A, substantially as specified.

134,889.—*Mechanism for Effecting Rotary Motion of Oil-Well Drills.*—GUSTAVUS A. HINCKLEY, Pit Hole, Pa.

An arrangement of levers, pawls, crown-wheel and pinion, and ratchet-wheel upon the end of a walking-beam, to rotate the drill-rope with the rise and fall of the beam through the medium of a rod attached to the samson-post.

Claim.—The lever *c*, the slider E with its projections *m m*, the connecting-rod *s*, and lever L, arranged and combined together and with the crown and ratchet wheels D K and their actuating-pawls *d d' g*, and also with the levers *q u*, all substantially as described and represented, the said lever *c* being connected with the lever *k* by the rod *g* and its arm *i*, arranged as shown.

134,890.—*Lubricating Compound.*—HENRY R. HUTCHINSON, Empire Iron Works, Ky.

Composition of tallow or oil, plumbago, sulphur, hydrated lime, animal charcoal, the whole ground in a mill until thoroughly mixed.

Claim.—A lubricating compound composed of the above-mentioned ingredients, combined and prepared substantially in the manner described.

134,891.—*Threshing-Machine.*—ARTHUR JOHNSTON, Lockport, N. Y.

Concave in sections, rear section adjusted by cam, pawl, and ratchet, front one by rods and set-screws. Adjustable rake in rear of concave, over first raddle.

Claim.—1. In a thrashing-machine, the combination, with a concave constructed in sections V V', of the adjusting devices, substantially as described, whereby one section is adjustable up and down bodily, and the other adjustable upon the pivot *r* for gaging the discharge-mouth, as herein set forth.

2. In combination with the concave formed of the two sections V V', the cams *u*, shaft *v*, and ratchet and pawl *w x*, for adjusting one section, and the screw-rods and wrenches X for adjusting the other, as herein shown and described.

3. The section V of the concave, provided with discharge-apertures made angular or inclined backward to prevent the breaking of the grain, as herein described.

4. In combination with the raddle D and with the thrashing-cylinder, the shaft *y* with angular fingers *z z*, and its adjusting-rod Z, and engaging ratchet a^2, arranged and operating as herein described.

5. In a thrashing-machine, the two three-slatted flies M N, one located in the space between the raddles and the other in the discharge-mouth of the machine, said flies being combined with the raddles, in the manner and for the purpose specified.

6. In a thrashing machine, in combination with the curved wings *i i* of the fan, the curved fine-plate S, arranged and operating as herein described.

7. In combination with the shoe T, the shaft *k*, gears 19 20 21 22, crank-heads *m*, and lugs *n* on one side, and the lugs *o q* and pendulous rods *p p* on the other, for giving a horizontal rotary motion to said shoe, as herein shown and described.

8. The combination of the hollow box O with the hinge arms P, constructed and arranged to operate as herein shown and described.

9. In combination with the coupling-ring A^2, branching ends f^2, and cross-bolts g^2 g^3, the flat springs A^3, and seat C^2, as herein shown and described, for the purpose specified.

134,892.—*Machine for Chamfering and Crozing Barrel-Staves.*—JOEL W. JONES, Middleport, Ohio.

The feeding-table is operated by a cam, with which it is connected by a series of levers and a cam-yoke.

Claim.—1. The vertically-adjustable shafts B C, actuating the feed-dash G and the feed-disks *w w*, substantially as herein shown and described.

2. The tilting stave feeder G hinged to the stave-bed, as and for the purpose described.

3. The means for tilting the feeder G, consisting of the strap *j*, the lever E, connection *i*, yoke-lever D *f*, and cam on shaft *h*, arranged substantially as described.

134,893.—*Spring-Coupling for Mattresses, Seats, &c.*—WILLIAM B. JUDSON, New York, N. Y.

A metallic plate or loop clasps the spring, the plate being proportioned to the diameter of the springs, and when it is desirable to separate the springs the plate is looped at each end.

Claim.—The combination, herein described, of helical springs of mattresses with a metal plate, A, of a width proportioned to the

diameter of the spring, and bent at its ends around the wires of the springs, substantially as and for the purpose specified.

134,894.—*Wheel for Vehicles.*—HIRAM KELLOGG, Floyd, Iowa.

Claim.—The means described for changing the position of spokes to suit any contraction or expansion in the fellies, consisting of the adjustable caps D and rings B a applied on the hub A, as set forth.

134,895.—*Folding-Crib.*—CHENEY KILBURN, Philadelphia, Pa., assignor to himself and JOEL H. GATES, same place.

In a crib with folding ends and bottom, braces or brackets are attached to the folding end, which serve to force the ends into their position and furnish a support for the hinged bottom.

Claim.—The metal stop-piece A constructed and adapted to the head or foot board and bottom of a folding-crib, substantially as described.

134,896.—*Bow for Chair-Back.*—CHENEY KILBURN, Philadelphia, Pa., assignor to himself and JOEL H. GATES, same place.

The back of the chair is constructed of two bent pieces, and firmly held by a coupling-block on its top or center.

Claim.—A bow for chair-backs, &c., composed of two or more bent strips of wood united by coupling-blocks, substantially as described.

134,897.—*Spectacles.*—JULIUS KNG, Warren, Ohio.

A steel spectacle-frame has the bridge or nose-piece made of silver.

Claim.—As an improvement in spectacles, the steel bows B B combined with bridge A of solid silver, or equivalent metal, to enable the soldering to be done at a lower temperature than where both are made of steel, to enable the steel to thereby remain uninjured by intensity of heat, and to produce a better and more durable article.

134,898.—*Tray or Show-Board.*—DANIEL H. KLOTZ, Philadelphia, Pa.

Spring-catches are attached to the tray, the main portions of which are at the back, and the holding portions on the face. A bracket or prop is attached to the back of the tray so that it may be held in an inclined position.

Claim.—1. A tray having one or more spring-catches, C, whose main portions are at the rear of the display-board or cushion B, and the holding portions or hooks *c* on the face thereof, and adapted and operating substantially as and for the purpose set forth.

2. The combination of the hinged bracket D E with a show-board constructed and operating as described.

134,899.—*Machine for Making Boot and Shoe Heels.*—ALBION KNOWLTON, Boston, Mass., assignor to JAMES W. BROOKS, trustee, same place.

Punches, graduating in size, are provided for cutting the heel-lifts, and are automatically brought in their proper order underneath a plunger and retained until charged with a lift or lifts, when moved forward until brought underneath stationary impaling-pins, upon which the lifts are forced. In this manner the requisite number of lifts, properly graded in size, are assembled and ready for permanent fastening.

Claim.—1. In combination with a vertically-moving die or plunger, a series of punches automatically brought in succession under the plunger, substantially as described.

2. In combination with an automatic vertically-moving die or plunger, a series of punches graded to cut lifts of variable size to form heel-blanks, substantially as described.

3. In combination with a series of lift-cutting punches moved under a vertical plunger, and mechanism for detaining each punch under the plunger, as described, the mechanism, substantially as described, by which the punch is released by the pressure of the lifts punched by it.

4. In combination with the mechanism for punching heel-lifts, as described, the mechanism, substantially as described, for automatically discharging the punched lifts.

5. In combination with the series of punches, the mechanism, substantially as described, that automatically discharges the lifts from each punch in succession and assembles the lifts from all the punches.

6. In combination with the mechanism described for assembling the lifts, the mechanism, substantially as described, for discharging the assembled lifts.

7. The combination of the mechanism described for punching heel-lifts, the mechanism, substantially as described, for assembling such punched heel-lifts, and the mechanism for fastening them together to form a heel or heel-blank.

134,900.—*Steam-Condenser.*—ERNST KORTING, Vienna, Austria.

An annular stream of cold water under high pressure acts on the principal of the Pelletan jet.

Claim.—1. In combination with the condenser, constructed and operating as described, the cock G communicating with the open air, as and for the purpose set forth.

2. The central spindle or nozzle E, when mounted within the water-nozzle D, and extended through into the condensing-nozzle C, as and for the purposes described.

3. The concentric nozzles E and L mounted within the water-nozzle D, one for water, and the other for fresh steam, when arranged substantially as described.

134,901.—*Threshing-Machine.*—DENNIS O. B. LADD, Racine, Wis., assignor to himself and P. E. MERRIHEW, Fair Haven, Mass.

Straw and grain thrown by threshing-cylinder upon chain-apron, which carries them into contact with revolving pickers working between guard-fingers. Grain and chaff then fall through fingers upon an incline, over which they are drawn by scrapers and delivered into the sieves. Straw and chaff blown over sieve by air-blast falling on shaking prongs. Unthrashed heads delivered from sieve into a lateral chute, from which they are feed to thrashing-table by elevator. Elevator and straw-carrier journaled onto the same shaft.

Claim.—1. The revolving fingers *g*, in combination with the detainer *k*, for the purposes set forth.

2. The incline *h*, perforated at the upper end, in combination with the chain *i* and scrapers *i*, substantially as specified.

3. The separating-fork *o*, receiving the straw, and to which a tossing movement is communicated, as set forth.

4. The shaft *u*, giving motion to the elevators, and also to the stacking apron or chain, substantially as set forth.

134,902.—*Corset.*—JOHN WILLIAM LANE, Bristol, assignor to EDWARD BRIMBLE, London, England.

To avoid ripping-out and sewing-in the corset-steel at every removal of the same, it is laced in, the laps inclosing the steels having for that purpose each a double row of eyelets.

Claim.—In a corset provided with steels at the front edge for clasping the two parts together, the eyelets formed in the extreme edge of the fabric and also back of the steel, the said two rows of eyelets corresponding to each other when the said extreme edge is turned over the steels, and the said turned-over edge secured by means of a lacing through the said two rows of eyelets, substantially as and for the purpose specified.

134,903.—*Wash-Stand.*—ALFRED H. LORTON, New York, N. Y.

A waste-tank having an arm-hole closed by means of a clamp, and provided with a pivoted pipe, cock, and vent-pipe, the whole arranged underneath a stationary basin and connected by suitable pipes.

Claim.—1. The waste-tank D, provided with the pivoted pipe F, and cock E', substantially as specified.

2. The waste-tank D, having an arm-hole closed by means of the clamp J and plate I, and rendered air and water tight by means of the diaphragm *i*, substantially as specified.

3. The vent-pipe L, in combination with the waste-tank D and basin B, substantially as specified.

134,904.—*Sewing Machine Table.*—HENRY LOTH, Philadelphia, Pa.

A hinged extension flap or leaf is attached to a sliding frame adapted to guides underneath the fixed top. When the frame is drawn out the flap may be turned over on top, forming a continuous table. When the frame is pushed in the flap folds down against the leg.

Claim.—The combination, substantially as described, with the fixed top D of a sewing-machine table, of a sliding frame, B, and an extension flap, A, hinged to the same.

134,905.—*Sewing Machine Table.*—HENRY LOTH, Philadelphia, Pa.

Drawers arranged to sliding rods are attached to the permanent top of the table. A leaf or flap is hinged to the same that may be turned over on top of the drawers to complete the table-top.

Claim.—The combination, substantially as described, of a sliding drawer or other receptacle or case, B, and a flap, D, hinged to the same, with the fixed top of a sewing-machine table.

134,906.—*Street Railway.*—THOMAS R. LOVETT, Philadelphia, Pa.

A street-rail, flat and flush with the surface, but having raised ribs alternating with spaces about three feet and two feet in length, respectively, the spaces of one rail being opposite the ribs of the other, so that one of each pair of grooved car-wheels is always in engagement with a rib. Object: To obviate the difficulty experienced by ordinary vehicles in leaving the tracks now in use, while serving the purpose of retaining upon the track the wheels adapted to run upon it.

Claim.—The flat rails A laid flush with the pavement and having alternate ribs B and spaces C, in combination with grooved wheels on the cars, the ribs and spaces of one side of the track alternating with those of the other, substantially as specified.

134,907.—*Fifth-Wheel for Carriages.*—HENRY A. LUTGENS, Paterson, N. J.

Claim.—The improved fifth-wheel, composed of the plate A, provided with sockets *a* and *d*, the flanges *p s*, the socket-arms *u g g*, and the head-block C, all formed or cast in one piece, in combination with the lower plate B, provided with the king-bolt socket *b*, and with the recesses and flanges cast therewith, as specified, all constructed, arranged, and operating as shown and described.

134,908.—*Apparatus for Filing and Binding Papers.*—PETER MAC VICAR, Philadelphia, Pa.

The clamps which hold the papers together through springs of unequal thickness, placed a short distance from the end of the box, and provided with screws to firmly hold the papers while being bound, and with apertures to facilitate the latter operation, can be removed from the box through its bottom and used for paper-file.

Claim.—1. The binding-bar A, arranged within the box, as described, so that the letters upon which the bar bears will project beyond both edges of the bar, for the purpose specified.

2. The combination, with the box, of the bar A and screws E, together detachable from the box, substantially as described.

3. The combination, with the binding bar or bars, of springs *b*, constructed and applied so as to depress the front edges of the bars, as specified.

4. The bars A A' with their springs and screws adapted to the box B so as to be entirely detachable, substantially as and for the purpose described.

5. The bar A, having binding-holes *i* and triangular slots *k*, arranged in respect to said holes as and for the purpose set forth.

134,909.—*Shirt.*—AUGUSTUS D. MARR, Boston, Mass., assignor to himself and JOHN H. C. MURSEY, same place.

The shirt-bosom is made of two or more fronts folded at the middle and opening like the leaves of a book, thereby capable of presenting several different bosoms.

Claim.—1. A folding shirt or garment front or facing, A, made or provided with one or more reversible flies, C D, to fold at the middle, and over and button from one side to the other of the front, all as and for the purpose set forth.

2. Two or more pieces, A' B' C', of cloth, arranged as shown in Fig. 3, and connected as described, so as to form a shirt or garment front or facing with one or more reversible flies, C D, to operate as and for the purpose explained.

134,910.—*Press for Cheese, Fruit, &c.*—BENJAMIN G. MARTIN, New York, N. Y., assignor to himself and E. RICHARD EDMOND, same place.

Consists in actuating the follower by toggle-levers pivoted upon travelers, which are moved toward and from each other by one or more screws driven by a crank. When the toggle-levers have exhausted their stroke the screw is reversed and the slide moved up the central standard, its pawls engaging ratchet-teeth on the same, whereby a new leverage is imparted to the toggle-levers for a second additional pressure on the follower, the vertical standard always retaining the follower in its depressed position, during such operation, by the pawls *o* engaging the sleeve K and screw-shaft G.

Claim.—1. The combination of a sleeve, H, pawls *g*, and ratchet-teeth *h*, with the central standard of the follower F, and with toggle-levers I J, travelers *i i'*, and a screw or screws, *l l'*, substantially in the manner herein shown and described.

2. The combination of a slide, K or K', ratchet teeth *n* or *n'*, and pawls *o* or *o'*, with the central standard of the follower F, toggle-levers I J, travelers *i i'*, and a screw or screws, *l l'*, substantially in the manner set forth.

3. The combination of a fixed screw-rod, *l*, and a revolving tubular screw-rod, *l'*, with travelers *i i'*, toggle levers I J, and follower F, substantially as shown and described.

4. The concave perforated bottom plate *f* on the follower F in combination with a perforated cup, E, substantially as shown and described.

5. The press-box D, constructed of two semi-cylindrical sections, *a b*, the section *a* being connected to the bed-plate A by a hinge-joint, *e*, substantially in the manner herein shown and described.

6. The screw G', combined with the central standard of the follower F, and with the slide K' fitted in the head-block C, substantially in the manner and for the purpose set forth.

134,911.—*Water-Proof Wall.*—HERMANN MATTFELD, New York, N. Y., assignor of one-half his right to ISAAC COLEMAN, same place.

Claim.—The herein-described mode of constructing water-proof cellars, floors, and walls, viz: A double wall whose interior space contains the overlapping plates of glass or equivalent non-porous material with cemented edges, said space being afterward filled with grouting or Portland cement, substantially as described.

134,912.—*Grocer's Sample-Case.*—N. BARKER MCCREARY, Phelps City, Mo.

The box has a glass cover that slides in grooves, and is held in place by a catch at one end. Near one end of the box is an inclined plate for holding a card.

Claim.—The combination of the box A, glass top B, and inclined plate C with each other, substantially as herein shown and described.

134,913.—*Steam-Plow.*—ALBERT E. MCGAUGHEY, East Minneapolis, Minn.

The spider carrying the plows rotates in a horizontal plane, and as it rotates the pinions revolve on the fixed crown-wheel. The pinions engage with the shaft G, to which the plows are attached, by means of spring-clamps, in such manner that each plow is stationary and in position to cut a furrow for about one-third of the revolution of the spider, when it rises by the revolution of the shaft G and the next plow comes into work. The plowing is thus accomplished in a series of curved furrows cutting across the line of progress of the machine.

Claim.—1. The rotary spider F carrying the plow or plows H on the rotating axle or axles G, as specified.

2. The shaft G carrying the plow H and combined with the pinion *a* and spring *b*, as set forth.

3. The click *c* arranged in combination with the spider F, shaft G, and plow H, as set forth.

4. A plow rotating around a vertical and horizontal axis, substantially as set forth.

5. The shafts E and G arranged in combination with the plows H, as set forth.

134,914.—*Feather-Renovator.*—EDGAR N. MCKIMM and JOHN R. GEARHART, Lathrop, Mo.

The detachable stirrers are fastened to the inner revolving beating-drum by means of fixed and hinged loops.

Claim.—The stirrers of a feather-renovator, combined with loops *d* at one end, and hinged concave clamp *d'* at the other, as and for the purpose described.

134,915.—*Self-Acting Spinning-Mule.*—AARON METCALF and WILLIAM GIBBONS, Preston, Great Britain.

The pendulous rod and the rack on its lower end are moved so as to raise the nut in the radial arm during the going out of the carriage, by being impinged against by an arm suspended from the fellies, the position of this arm, and consequently the extent to which the pendulous rod is moved, being governed by the tension of the yarn.

Claim.—1. In combination with the vibratory arm, feed-screw, and nut and chain of a spinning-mule, a swinging or pendulous rod connected with said arm, screw-nut, and chain, as described, so as to turn the screw and elevate the nut with the "going out" of the mule carriage, provided too much tension exists upon the yarn, and to allow the screw and nut to remain motionless upon return or "going in" of said carriage, essentially as and for purposes stated.

2. The pendulous rod C suspended from the arm *b*, as stated, and provided at the bottom with a suitable sectoral rack or its equivalent, for operating, through the agency of intervening mechanism, the feed-screw G, essentially in the manner and for the purposes stated.

3. In combination with the rod C and nut H, an adjustable stop for determining the comparative drop of such rod with the inward dip of the vibratory arm *b*, substantially as stated.

134,916.—*Spring-Vehicle.*—JOHN M. MILLER, Cincinnati, Ohio.

Claim.—The combination of the transverse springs L L', spring-bars J J', lower spring-bars or reaches C C', axle A, and bolster B, all constructed and arranged to operate as and for the purposes specified.

134,917.—*Fishing-Reel.*—GEORGE MOONEY, Providence, R. I., assignor to himself and JAMES SHAW, Jr., same place.

Besides the improved reel gearing, two curved jaws hinged together at the base of the reel-frame clasp the rod, and are set or loosed by a screw-ring.

Claim.—1. The combination of a reel mounted in a suitable frame, and provided with a pinion secured to its axis, a crank-pin provided with a pinion rigidly attached thereto, and a rotating crank-plate revolving on an axial line common to the reel, and carrying the crank-pin and its pinion, substantially as described, whereby the reel may be operatively revolved at a speed greater than that at which the crank-plate is revolved, and also whereby the motion of the reel may be reversed without consequent movement of the crank-plate, as and for the purposes specified.

2. The combination of the reel, rotary crank-plate, crank-pin, connecting-pinions, and the stop *k*, whereby the reel and crank-pin may be united and rotated at the same rate of speed, and possess no capability of movement in either which shall be independent of the other, as and for the purposes specified.

3. The combination, with the reel, of the semicircular jaws and the rotating cam-plate, substantially as described, whereby the jaws are made to securely compress a rod when interposed between them, as and for the purposes specified.

134,918.—*Device for Aiding Cutting Goods on Bias.*—GYORG MOORE, Scotch Plains, N. J., assignor to MARGARET MOORE, same place.

A drafting-triangle is graduated for bias measurement, and has its long side provided with sharp points for holding in position the goods upon which the instrument is pressed, as a guide for the cutter.

Claim.—The device for bias-cutting described, having the frame A B C provided with the points *d d'*, and having the bar A adapted to serve as a guide for placing it in position, as herein specified.

134,919.—*Device for Marking Goods on Bias.*—GEORGE MOORE, Scotch Plains, N. J., assignor to MARGARET MOORE, same place.

An ordinary open triangle is graduated for bias measurement, and has the outer ends of its arms connected by a chalk-line.

Claim.—The within-described bias-marking device having a chalk line, C, connecting the right-angled arms A and B, one of which is graduated for bias measurements, and the whole adapted to serve on a piece of goods in the manner herein specified.

134,920.—*Machine for Making Baskets.*—JAMES MOORE and SAMUEL W. DAY, Oak Creek, Wis.

On a platform or floor is secured a center support on which rests the foundation for the device on which the material for the baskets is placed. Hinged to the sides of the foundation or platform are blocks, which, when turned up, serve to form the basket, and hold in position the sides for securing the upper edge of the splints, after which a splint or band of the same material is passed around its top and held firmly by clamps, to be secured by nails or rivets to its edge.

Claim.—1. The table B provided with flaps or equivalent slides *b'*, the form C, bar D, lever F, rope and weight H J, and pivoted locking-bar K, in combination with each other, substantially as herein shown and described, and for the purpose set forth.

2. The form L provided with the iron band N and screw-clamps O, in combination with the bar D, form C, and table B *b'*, substantially as herein shown and described, and for the purpose set forth.

134,921.—*Horse-Cover.*—ALONZO H. MORRIS, Boston, Mass.

The blanket is cut to fit the horse's body and limbs.

Claim.—The protector cut and shaped substantially as shown and described, the same being adapted for covering the body and limbs of the animal.

134,922.—*Pruning-Shears.*—AMOS R. MOULTON, Fall's Branch, Tenn.

The end of one of the levers or blades is hooked or turned inward. Upon a pin, just below the curved part, an obliquely-slid-

ing cutter moves, being guided by a curved slot. Upon the end of the other lever is secured one end of the sliding cutter, which is provided with a series of holes for adjustment. Two short braces, placed upon either side, confine more closely the working-parts and prevent displacement.

Claim.—The combination of the hooked lever A, lever B, and obliquely-sliding cutter E, provided with an elongated slot, G^2, for the passage of the guide bolt or pin H and formed with a series of holes, G, or slot, for adjusting the same vertically upon its fulcrum-bolt F, as herein shown and described.

134,923.—*Soldering-Iron.*—JAMES D. NORTON, St. Louis, Mo.

Claim.—The internally-threaded copper A having threaded shank, the end-threaded shank B, the sleeve-screw C, and the nut D, all combined, constructed, and arranged as and for the purpose described.

134,924.—*Railroad-Rail Joint.*—SOLOMON NUNAMAKER, Nineveh, Pa.

The fish-plate on one side of the rail is concavo-convex in form, and on the other side has vertical ribs upon its inner face, both constructions being designed to secure elasticity.

Claim.—1. The improved rail-splice and nut lock, consisting of the concavo-convex elastic fish-plate D′ and the ribbed elastic fish-plate D, substantially as specified.

2. The ribbed elastic fish-plate D, constructed and applied substantially as specified.

134,925.—*Sash-Holder.*—DANIEL PIKE, New Orleans, La., assignor of one-half his right to CHRISTOPHER SATTERLY, same place.

A wedge-shaped bar, having a longitudinal slot, passes over a pin or pivot fastened to the inside of the sash, and through which it is capable of either vertical movement or of rotary motion. Within the slot a coiled spring is fastened, one end being attached to the pin and the other to the upper end of the bar, thus securing upward pressure to hold the sash automatically in elevated position. A thumb-piece is attached to the upper end of the bar, and a notch is cut upon the side of the bar to receive a holding-pin when in reverse position. There is also a recess or indentation in the side of the window-frame to receive the upper end of the bar when it has been thrown around, thus allowing the sash to be firmly locked in position.

Claim.—The slotted bar A, having the notch a^2 and inclosing the spring C, in combination with the pins a^1 and *b*, as shown and described, and the recess or indentation G, for the purpose specified.

134,926.—*Apparatus for Manufacturing Window-Glass.*—WILLIAM W. PILKINGTON, St. Helens, England.

A combination of mechanisms for facilitating the operations of the "blower," viz: First, supporting the blower's tube and the glass attached thereto; second, aiding the glass-blower to impart the necessary swinging motion; third, imparting rotary motion to the tube and glass by mechanical agency; and fourth, effecting the blowing by compressed air—the above operations being simultaneously performed.

Claim.—1. The carriage-frame *f*, wheels *d*, and anti canting wheel *e*, in combination with the cross-shaft *g* and glass-blower's tube *i*, all adapted to serve on rails at the side of the swing-hole, as herein specified.

2. The combination of the provisions *m*, *l*, *n*, *o*, *p*, *q*, and *q′*, with the glass-blower's tube *i*, so mounted and arranged on the carriage-frame *f* and wheels *d* as to allow of the swinging and revolving motion, as specified.

3. The combination of the ducts r r^2 and their connections, and valve r^3 for blowing and controlling the blowing action, with the tube *i*, carriage *f*, and provisions for allowing the tube to be rotated on the said carriage, as herein specified.

4. The combination of mechanisms for facilitating the several operations in the manufacture of glass, of supporting, swinging, rotating, and blowing, arranged and constructed substantially as herein described.

134,927.—*Lift and Force Pump.*—ASHTON H. POWELL, Philadelphia, Pa., assignor to himself, JOSEPH WOOD, Red Bank, N. J., and EDWIN R. BENNAT, New York, N. Y.

Closing the bore of the body of the pump at the upper end and inserting a tube or lining in the latter; passing the bucket-rod through a stuffing-box and arranging the discharge-pipe at some distance below the closed end, thus converting that portion of the box within the tube into an air-chamber.

Claim.—1. The combination of the wooden case A, lining or tube *i* extending to the discharge-pipe and closed at the top, and bucket-rod extending through a stuffing-box at the top of the tube.

2. The cap or plate *f*, lining *i*, and bucket-rod *a*, connected together and adapted to and detachable from the case A, as set forth.

134,928.—*Grain-Register.*—JACOB S. PRICE, Champaign county, and PETER MILLER, Clarke county, Ohio.

A reciprocating double-slide gate or cut-off is arranged below a receiving-hopper, so that when pressed forward the grain will fall through an opening in its upper slide into the measuring-chamber closed at the bottom by the lower slide, and when drawn backward the upper slide will be closed while the grain in the chamber falls through an opening in the lower slide. A counting-register, tripped by the reciprocating movement of the alternating cut-off, indicates the quantity passed.

Claim.—The combination and arrangement of shields *f*, slides *e* and *e′*, hopper A, and grain-receptacle B, as and for the purposes hereinbefore set forth.

134,929.—*Car-Wheel.*—ROBERT RAMSAY, Irwin's Station, Pa.

Upon an annular chamber within the hub are arranged projections of peculiar form, each having a funnel-shaped orifice through its center for the admission of oil. These projections will carry the oil above and allow it to drip upon the journal.

Claim.—1. The combination of the annular oil-chamber *b* and the nipples *d d d* provided with orifices for the introduction of oil, and arranged as described for that purpose, each constructed substantially as and for the purpose described.

2. The combination of the nipples *d d d* having the outer form, and the orifices *e e e* of the peculiar form described, and the arrangement described with reference to the length of the chamber *b* and the said oil-chamber itself, substantially in the manner shown and described, and for the purpose set forth.

3. The nipples *d d d*, having the peculiar outer form and interior orifice *e*, substantially as shown and described, for the purpose set forth.

134,930.—*Truck for Moving Buildings.*—THOMAS J. REAMY, Tarborough, N. C.

Claim.—The roller B provided with the ratchet E and located in the pivoted frame A, in combination with the lever F and double pawl G, substantially as and for the purpose specified.

134,931.—*Mold for Casting Metal Knobs.*—CHRISTIAN REBSTOCK and JOSEPH OTTNER, Bridgeport, Conn.

A mold so constructed as to receive a bush. Also an eyelet, and a removable ring, by which the two parts of the shell are separated.

Claim.—1. A mold for casting knobs, so constructed that a bushing-tube around the spindle and an eyelet for bushing the fastening-screw hole may be set, substantially as shown and described.

2. In combination with a mold for casting knobs, the removable ring E, substantially as and for the purposes described.

134,932.—*Vise.*—IRVIN ROBERTS, Meriden, Ill., assignor of one-half his right to JOHN T. BREARLEY, same place.

The jaw A′ is operated by the foot-treadle F and toggle-joint levers G, forcing its lower end either in or out.

Claim.—In combination, the rigid jaw A attached to the part B, the headed bar C supporting the movable jaw A′ and constituting its fulcrum, the brace E and treadle F pivoted thereto, the toggle G pivoted to the lower end of the jaw A′ and connected to the treadle, all constructed and arranged together substantially as shown and described, and for the purposes specified.

134,933.—*Heel-Stiffener.*—ICHABOD R. ROGERS, Lynn, Mass., assignor to himself, JOHN WOOLDRIDGE, and GEORGE E. BARTLETT, same place.

Thin inferior leather is made serviceable for heel-stiffeners by inserting between the leather and cloth lining a metallic spring, shaped to impart to the stiffener the requisite form and rigidity in the direction of its length.

Claim.—A heel-stiffener having the narrow spring *c* inserted between the lining *b* and outer piece *a*; said spring being fastened in position substantially as described.

134,934.—*Car-Brake.*—ALBION M. ROUSE, South St. Louis, assignor of one-half his right to CASHIER AMSLAR, St. Louis, Mo.

A shaft is arranged between the trucks, either vertically or horizontally, which is provided with an arm at either end, and is allowed play in one of its bearings so that it will adapt itself to the power applied and both brake-shoes will be equally applied, regardless of their difference in thickness. A lever, fulcrumed at its center to the car, answers as an equalizer.

Claim.—The combination, as herein specified, of equalizing-lever E, pulleys G, rope or chain H, levers I, crank-shafts J M, slotted bearings L, and connecting-rods *m* for applying and equalizing the pressure on the two brakes of a pair of trucks, and on the two brake-bars of each, as herein set forth.

134,935.—*Apparatus for Dyeing and Washing Fibrous Materials.*—CHARLES G. SARGENT, Graniteville, Mass.

Claim.—1. The lifting-rake S, arranged at the foot of the inclined chute J, as and for the purposes set forth.

2. The inclined chute J, provided with the fixed inclined teeth or projections P, substantially as shown and described.

3. The pivoted weighted teeth M, mounted in slots in the chute J, substantially as shown and described.

4. The curved chute J, in combination with the swinging carrier-rake W, for conveying the fiber toward the squeezing-rolls.

5. The rake-lever *p*, having its upper end mounted in the sleeve L and provided with the nuts *t*, and its middle provided with the shoulder *q*, in combination with the sleeve *m* attached to crank *k*, as shown and described.

6. The carrier-rake W, in combination with the curved chute J having fixed inclined teeth, the stirring-rake F, and the squeezing-rolls I.

7. The combination of the stirring-rake F, lifting-rake S, chute J, carrier-rake W, and squeezing-rolls I.

8. The conveying-rolls *y*, having their surfaces arranged to travel at different rates of speed, as and for the purpose set forth.

9. The tank or receptacle Y, arranged below the chute, between the main tank or bowl and the squeezing-rolls, as and for the purpose set forth.

10. The rakes F and W, having the sleeves which support their upper ends made adjustable laterally, as described.

134,936.—*Fluting-Machine.*—DAVID R. SAUNDERS, Houston, Tex.

Has a corrugated bed-plate, upon which works a correspondingly-corrugated roller with a handle. Bed-plate has a gage attached to the ends by screws, said gage regulating the width of the fluted part.

Claim.—1. In combination with a plate fluting or crimping machine, the gage A, substantially as described.

2. The bed B, roller E, gage A, and handle D, constructed, combined, and arranged substantially as described, for the purposes set forth.

134,937.—*Refrigerator.*—JOHN GEORGE SELTZER and ANDREW JACKSON FINK, Reading, Pa.

The inside of the ice-box and the outside of the ice-rack incline in opposite directions so as to form a sufficient space for the free circulation of air. The refrigerator is also divided into two or more compartments, and have apertures through the partitions for the passage of air from one to the other, the air being regulated by means of valves arranged within said partition.

Claim.—1. The combination, with the cage having inclined sides, of the box A, the sides of which are inclined in an opposite direction from those of the cage, as set forth.

2. The combination, substantially as described, of the said ice-box and cage with the drip-catcher D and the apertures *a*, *a′*, &c., by which communication is established between the said ice-box and a series of provision-chambers.

3. The adjoining provision-chambers B, B′, &c., communicating with each other at the bottom through openings provided with valves or slides *g*.

4. The combination, substantially as described, of the inlet and outlet pipes J and L with the elevated ice-box A, its cage K, the deflecting drip-catcher D, and communicating provision-chambers B.

134,938.—*Machine for Making Brass Kettles and other Hollow Ware.*—FREDERICK J. SEYMOUR, Wolcottville, Conn.

The tool *i* spins up the article in the former, while tool *o* acts against *a* and reduces and smooths the metal.

Claim.—The tools *i* and *o*, in combination with the revolving form *a*, for reducing a sheet-metal blank into a kettle or hollow article, substantially as set forth.

134,939.—*Spinning Articles of Sheet Metal.*—FREDERICK J. SEYMOUR, Wolcottville, Conn., assignor to himself, ACHILLE F. MIGEON, same place, and FRANKLIN FARRELL, Ansonia, Conn.

The sheet of metal is heated in a furnace and clamped in the machine if sufficiently thick to retain the heat during the operation; otherwise, a jet of gas and atmosphere in combustion may be directed upon the blank.

Claim.—1. The method of spinning hollow articles of sheet-iron or similar metal by the action of the spinning mechanism upon the sheet of metal in a heated state, substantially as set forth.

2. The combination of spinning mechanism, substantially as specified, with means for directing upon the revolving blank of sheet metal a blast of artificial heat or flame, substantially as set forth.

3. A kettle or other hollow article made of one piece of sheet iron or steel, shaped and reduced to a proper thickness by a rolling operation, the same forming a new article of manufacture.

4. A revolving form or mold and a spinning tool or roller mounted in a spring or yielding bearing so as to spin the metal to the shape of the mold, in combination with a roller or tool acting against the first roller or tool to spread the metal and prevent wrinkles and inequalities, substantially as set forth.

134,940.—*Piano-Forte Action.*—JOHN SHAUDELLE, Huntsville, Ala.

Claim.—An India-rubber hammer-head for pianos, provided with an opening near its tip or striking-surface, as described.

134,941.—*Bleaching-Safe.*—CATHERINE W. SHIVELEY, Peru, Ind.

A chest provided with a series of drawers having slotted drawers to admit of the free circulation of the sulphurous acid through them, and pegs for support of the hats or bonnets.

Claim.—The combination of the bleaching-safe, A, and a series of perforated drawers, F, for the support of the goods to be bleached, substantially as specified.

134,942.—*Corn-Planter.*—ALGERNON D. SMITH, Cincinnati, Ohio.

The invention consists in a rubber stop and holder, to lessen the jar.

Claim.—A new article of manufacture, the compressible and elastic stop D *d* F or F′ G, for attachment to a hand corn-planter, as set forth.

134,943.—*Expanding Rock-Drill for Shaft-Boring Apparatus.*—HUGO SONTAG, St. Louis, Mo.

When the apparatus reaches the lower end of the casing the bit is forced out by the spring. Its movement is regulated by the screw.

Claim.—The combination of the horizontally-sliding bit L, cross-bar O, spring P, and set-screw R, constructed and operated as and for the purpose set forth.

134,944.—*Cam for Operating Valves for Steam-Engines.*—EDWIN SPRAGUE, Allegheny, Pa.

The ordinary axis of motion of the common full-stroke cam is arranged eccentric to the axis of the crank-shaft of the steam-engine, so that it will be rotated around the axis of the crank-shaft, thereby imparting to the cam-rod and its yoke a continuous motion.

Claim.—The hereinbefore-described method of tripping "cut-off gear" of steam-engines by the ordinary full-stroke cam, so that its axis of motion shall be eccentric to its ordinary axis of motion, whereby it will perform the function of the full-stroke cam, and also trip said "cut-off gear" by a single cam-rod and cam-yoke, as and in the manner set forth.

134,945.—*Hub for Vehicles.*—SYLVESTER T. F. STERICK, Georgetown, D. C., assignor to WILLIAM M. KING.

Claim.—1. A back cap, B, secured to the inner end of the axle-box, and concealing from view the nuts *n n*, substantially as described.

2. The metallic disks H K connected by the double inclined faces of the projections L L, in combination with the back cap B provided with lugs I I, which abut against the concealed nuts *n n*, substantially as described.

3. The perforated cap P provided with the interior cylindrical bearing Q, for surrounding the axle-box and supporting the spoke-disk K, as and for the purpose set forth.

4. The combination of the perforated cap P provided with the bearing Q for the axle-box, and the octagonal-shaped nut R screwed on the exterior of the axle-box, whereby the parts are bound securely together, and compensation may be made for the wear of the parts, as set forth.

5. The nut and hub-band S formed in one piece, in combination with the nut R and cap P, substantially as described.

6. The combination of the axle-box A, back cap B provided with lugs I I, metallic disks H K connected by projections L L, conical cap P having the cylindrical bearing Q for the axle-box, octagonal nut R, and combined nut and hub-band S, substantially as set forth.

134,946.—*Two-Horse Evener.*—JAMES STURGIS, Minneapolis, Minn.

The double-tree is allowed to move, and the chains turn the plate or wheel, which carries the rear end of the chain of the forward horse nearer in line with the center of draft, while the end of the chain of the rear horse is carried further out of line.

Claim.—The combination of the pivoted plate E, pulleys D, chains G, double-tree F, and whiffletrees H, when arranged to operate substantially as described.

134,947.—*Can for Packing and Transporting Paints, &c.*—HIRAM TUCKER, Newton, Mass.

The can is stood upon its base, and the plunger forced down, causing the contents to be discharged only so fast as the plunger is forced down.

Claim.—1. A can for holding and transporting paints or semi-solid substances, provided with a follower or plunger to force the material from the can, substantially as shown and described.

2. In a can having a plunger, a cap, *c*, provided with a central orifice, *f*, for reaching the plunger without removing the cap of the can.

3. In combination with the fixed head, a nut applied in or to such head to receive the screw which operates the plunger.

4. A can headed at top and at bottom, and having inclosed a solid plunger fitting the sides at all points, the stem of the plunger working through a central opening in the head, substantially as shown and described.

5. In combination with a can constructed substantially as described, a press adapted to be used therewith, substantially as set forth.

134,948.—*Manufacture of Horseshoe-Nails.*—DAVID TURNAYNE and GEORGE M. WYMAN, Boston, Mass., assignors to GLOBE NAIL COMPANY, same place.

Between two pairs of rolls is situated a conveyer-plate having a tapered groove with flaring sides, over which is swung a gate held by a spring. A stoppage occurring in the conveyer, from any irregularity in the form of a nail, will cause the accumulating blanks to press against the gate, forcing it open, and releasing a spring-trigger, projecting from above, that intercepts the flow of blanks.

Claim.—1. The nail-guiding plate, having the gate held by a spring or other device, and arranged to be opened by pressure of accumulating blanks, substantially as described.

2. The nail-plate, having a passage formed with the flaring sides *e* for pressing the accumulating blanks against the gate, substantially as described.

3. In combination with the gate, the hook or intercepter *r* operating substantially as shown and described.

134,949.—*Cultivator.*—GEORGE WAGGONER, New Kingston, Pa.

The tongue and frame are both articulated on the axle, so that either the frame or tongue may be raised and the two connected in that position by a rod.

Claim.—The combination of the tongue H, axle A, frame B E, bar J, shoulder M, and slotted plate L, all arranged as and for the purpose specified.

134,950.—*Truck for Moving Buildings.*—WILLIAM E. WALKER, Albion, Iowa.

The motive power is applied independently of the trucks.

Claim.—The braces I J, when combined and arranged, as described, with the axle B, sand-board C having curved slot, bolster D, and king-bolt E, so that the bolster is thus re-enforced and strengthened without being prevented from turning in the sand-board.

134,951.—*Rock-Drilling Machine.*—FRANK WALTS, Watertown, N. Y.

The notch in the staple retains the link until the plate has made nearly half a revolution, and then, releasing it, allows the drill to fall. The springs compensate for the cessation of the lifting-strain.

Claim.—The combination of the pivoted double-acting cam H provided with ball L and notches O O, slide I, spring K, and chain or rope N, all substantially as set forth.

134,952.—*Spool-Holder.*—LEWIS F. WARD, Marathon, N. Y.

The spool-holder is a circular disk revolving upon a support. The disk has a series of slots around its outer edge, in which the spools are placed and held securely by elastic cords passing under and above them. An opening passes from the edge of the disk to the slot, through which the thread is drawn.

Claim.—The within-described spool-holder, consisting of the revolving disk B mounted upon a suitable support, and provided with the slots C and elastic strips D, substantially as and for the purpose described.

134,953.—*Ejecting Apparatus for Bottles.*—WILLIAM S. WARD, New York, N. Y.

A small force-pump is arranged within a perfumery or other bottle, and having a hollow piston-rod passing through the stopper and terminating at the upper end in a small cup, so constructed that by pressing down the piston-rod a quantity of the fluid in the bottle will be ejected.

Claim.—1. The hollow piston-rod having a concave push-piece, F, attached to the upper end, substantially as specified.

2. The combination of the spring G with the pump-cylinder and piston-rod of an ejecting attachment for bottles, substantially as specified.

134,954.—*Pitman-Connection for Harvesters.*—BENJAMIN F. WATERS, Garrettsville, Ohio, assignor to F. W. ANDREWS, Titusville, Pa.

The lip C is caused to overhang the head, and thereby effectually to prevent the displacement of the pitman when at work.

Claim.—The pitman or pitman-coupling piece A, constructed substantially as described, whereby it is adapted to be held in joint with the sickle-head without aid of removable parts, as set forth.

134,955.—*Bushing for Piston-Rods, &c.*—GEORGE W. WELCH, Fort Wayne, Ind.

A bushing with a tapering recess and shoulder, in which is placed the packing, is adjusted by a gland.

Claim.—The adjustable bushing A, provided with the tapering recess *b* and shoulder *d* for the packing *z*, in combination with the gland D, all constructed and arranged as herein shown and described.

134,956.—*Cloth-Steaming Machine.*—CHARLES H. WESTON, Lowell, Mass.

The face side of the cloth passes over the steam-cylinder and box, and the cold-water tank rests against the back of the cloth and condenses the steam rising through the cloth.

Claim.—A cold-water tank in a steaming-machine, in combination with a steaming apparatus, when so arranged that the cloth is kept cool upon one side while being steamed upon the other, as is herein fully set forth.

134,957.—*Brake-Clutch for Hoisting Apparatus.*—THOMAS A. WESTON, Ridgewood, N. J.

Clutches a pulley-wheel or other driver to and releases it from a shaft.

Claim.—1. The combination of a friction-wheel, B, on a shaft, a loose pulley, D, a friction-band, G, the lever E, and knee-joint arms arranged to operate the said lever, all substantially as described.

2. The end of the friction-band G and its projection *p*, in combination with the key K and its wedge-shaped rib *t*, the whole being adapted to the rim of the pulley D, substantially as set forth.

134,958.—*Brake-Clutch for Hoisting-Machines.*—THOMAS A. WESTON, Ridgewood, N. J.

When the weight has to be lowered, all that is necessary is to retard or turn back the driving-wheel, when the wheel D will be free from the control of the friction-band and the barrel will be at liberty to revolve freely on the shaft, or it may be retarded to any extent desired by the manipulation of the driving-wheel.

Claim.—1. In a clutch-brake, the combination of a friction-wheel and a friction-band with a lever, E, through the medium of which the band is controlled, substantially in the manner described.

2. The combination of the driving-wheel H and its curved slot *h*, the lever E and its pin or slot *n*, adapted to the said slot, the friction-band G, wheel D, and barrel A.

3. A spring, *g*, forming the inner edge of the slot *h* in the driving-wheel, as and for the purpose specified.

134,959.—*Compound for Destroying Caterpillars.*—GREEN F. WHITEHART, Chapel Hill, Tex.

Paris green, arsenic, lime, and flour.

Claim.—The compound of Paris green, arsenic, lime, and flour, herein described, for the purpose set forth.

134,960.—*Brake for Spinning-Mules.*—JOHN W. WHITEHEAD, Saco, Me.

The pulley on the side of the carriage passes, at the end of each traverse, under one of the springs so that it may be gradually brought to a stand, and a rebound avoided.

Claim.—The combination of the pulley *e* on the mule-carriage with the springs d d, substantially as described, and for the purpose mentioned.

134,961.—*Sewing-Machine.*—JOHN H. WHITNEY, Rochester, Minn.

The disk and hook are in this instance applied to the upper end of the rotary reciprocating looper-shaft of a Grover & Baker sewing-machine. The hook carries the needle-thread around the bobbin and forms a lock-stitch.

Claim.—1. The hook or looper a having the V-shaped groove in its front edge, and provided with the rearwardly-curved lip *b*, by which the thread is depressed and passed under and around the bobbin, as set forth.

2. The combination of the reciprocating needle C and rotating lip a with the bobbin-holder H, bobbin J, disk G, and rim *c*, all constructed and arranged to operate substantially as set forth.

134,962.—*Coin-Counting Implement.*—AMOS WHITTEMORE, Cambridgeport, Mass.

A shovel is provided with a compact series of shallow recesses adapted to the size of the coin to be counted, so that when filled by being passed under a loose pile a determinate number will be transferred to a tilting chute, and thus deposited in the appropriate receptacle.

Claim.—1. The shovel or plate C provided with a handle, C^1, and constructed with circular depressions *b*, the bottoms of which are perforated, substantially as set forth.

2. The combination, with such counter, of a trough, A, and pivoted chute C^2, substantially as described.

134,963.—*Nut and Bolt Fastening.*—EDWARD B. WINGATE, Friendship, N. Y.

One end of the pivoted dog projects from the top of the nut, and serves to disengage the teeth of the dog, which are held in place by a spring from the nut-seat to allow the nut to be unscrewed.

Claim.—A screw-nut, D, having a pivoted dog, E, arranged in a vertical recess, *v*, so as to engage with the seat of the nut, and constructed and operating substantially as herein described.

REISSUE PATENTS.

5,229.—*Cotton-Gin Saw.*—THOMAS C. CRAVEN, Northampton, Mass., assignor to BARTON H. JENKS, Philadelphia, Pa.—Patent No. 115,441, dated May 30, 1871.

The cotton-gin saw is corrugated in any desired lines by dies.

Claim.—1. A saw for cotton-gins, stiffened or straightened by corrugating, as and for the purpose set forth.

2. A corrugated cotton-gin saw as a new article of manufacture.

5,230.—*Process of Manufacturing Hard Rubber.*—AUSTIN G. DAY, New York, N. Y.—Patent No. 21,121, dated August 10, 1858; reissue No. 620, dated November 9, 1858; extended seven years.—Division A.

Claim.—1. Running the heat for vulcanizing flexible and elastic hard-gum compounds through the high range of temperature and the comparatively great length of time, substantially as set forth—that is to say, commencing the heat at about 275° and carrying the same to 300° and upwards, substantially as described.

2. Making, as described, the flexible and elastic hard-gum composition of two parts by weight of rubber or other vulcanizable gum and one part of sulphur, when such composition is preparatory to the running of the heat, as described in these specifications.

5,231.—*Manufacture of Hard Flexible Rubber.*—AUSTIN G. DAY, New York, N. Y.—Patent No. 21,122, dated August 10, 1858; reissue No. 620, dated November 9, 1858; extended seven years.—Division B.

Claim.—1. The herein-described special process of producing vulcanized hard compounds which possess the properties of flexibility and elasticity, as set forth, by vulcanizing in any suitable apparatus a mixture composed of two parts, by weight, of India rubber or other vulcanizable gum, and one part, by weight, of sulphur, at a temperature commenced at or about 275° Fahrenheit and carried to the degrees of temperature hereinabove mentioned, substantially in the manner and with the result herein described.

2. A heater or vulcanizing apparatus in which the temperature is equalized, substantially in the manner and for the purpose set forth.

5,232.—*Hard-Rubber.*—AUSTIN G. DAY, New York, N. Y.—Patent No. 21,123, dated August 10, 1858; reissue No. 620, dated November 9, 1858; extended seven years.—Division C.

Claim.—The herein-described special product formed by vulcanizing in any suitable apparatus a mixture of two parts, by weight, of India rubber or other vulcanizable gum, and one part, by weight, of sulphur at a temperature commenced at or about 275° and carried to the degrees of temperature hereinabove mentioned, so that such product shall possess the properties of flexibility and elasticity, substantially as described.

5,233.—*Stalk-Cutter.*—THOMAS A. GALT and GEORGE S. TRACY, Sterling, Ill.—Patent No. 121,353, dated November 28, 1871.

The implement is provided with supporting-wheels G G hung on pivoted curved levers *g*, by which the implement, when desired, may be supported with its cutters free from the ground.

Claim.—In a corn-stalk cutter having the cutting-reels C and the transverse beams or stop-bars *z*, the lever *g* pivoted between the stop-bars *z* and bearing at the ends of the lower arms the carrying-wheels G, substantially as specified.

5,234.—*Umbrella Frame, Runner, and Notch.*—ABRAM HERZBERG, Philadelphia, Pa., assignee of half interest to ISAAC HERZBERG. Patent No. 132,563, dated October 12, 1872.

Claim.—1. An umbrella in which the enlarged ends of the ribs or stretchers are connected to the notches or runners by projections on the latter bent partly round the said enlarged ends, substantially as set forth.

2. An umbrella notch or runner, consisting of a tube having at one end bent radial projections, as specified.

5,235.—*Whip-Socket.*—CHARLES B. MOREHOUSE, Newcastle, Ind., assignor, by mesne assignments, to EDWIN CHAMBERLIN and JOHN O. MERRIAM.—Patent No. 43,858, dated August 16, 1864.

Claim.—A clamp or fastening device consisting of the jaw B, in combination with the movable bar or cap B for the purpose of fastening a whip socket to the dash-rod D or other suitable part of a vehicle.

5,236.—*Machine for Cutting Of Lead-Pencils.*—PHILIP SCHWAG and PHILIP HUFELAND, New York, N. Y., assignors to EBERHARD FABER.—Patent No. 103,241, dated May 17, 1870.

No saws or files are required, the wood of the pencils is not liable to split, and the grinding-surface of the drum can be readily renewed at comparatively small expense.

Claim.—1. The combination of a moving grinding-surface, A, with a clamp, E, made to retain a series of pencils, and with a clamp-supporting rail, substantially in the manner and for the purpose specified.

2. A pencil-retaining clamp, provided with shoulders *d d'*, one of said shoulders being in advance of the other, in combination with a guide-rail and a moving grinding-surface, substantially as set forth.

3. The jacket or box C, inclosing the cutting-drum A, in combination with a pencil-retaining clamp, and with a tube, F, for connecting with an exhaust fan, substantially as and for the purpose described.

5,237.—*Carriage-Wheel.*—SIMON VREELAND, Pottstown, Pa., assignor, by mesne assignments, to METALLIC SUSPENSION-WHEEL COMPANY.—Patent No. 92,915, dated July 20, 1869.

Claim.—1. The combination, substantially as described, of the metal spokes, enlarged at their opposite ends, with the metal felly and hub.

2. The severed ring *d*, adapted to a collar on the axle, in combination with the box B, its cylinder C, and nut D, as set forth.

3. The spokes having threaded ends, in combination with the felly having openings through which the said ends of the spokes pass, and with nuts adapted to the interior of the felly and securing the same to the spokes, substantially as described.

5,238.—*Auger.*—BLASE WALCH, Frederick, Md.—Patent No. 111,099, dated January 17, 1871.

Claim.—1. An independent circumferential cutter, D, adjustable as and for the purpose described.

2. The combination, with an auger, A, of two cutters, C D, relatively constructed and arranged to operate as and for the purpose described.

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TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

BOUND VOLUMES OF PATENTS.

The following statement is furnished by way of answer to the frequent inquiries made at the Patent Office as to the conditions under which the bound volumes of the drawings and printed specifications of patents are being furnished to public libraries:

I. The joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. A part of these copies are to be bound in volumes and placed for free public inspection in the capitol of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

II. One hundred and fifty sets of the specifications and drawings of patents issued since July 1, 1871, have been bound into volumes for distribution under the provisions of this resolution. During the first year of the issuance of these volumes the patents of each week were bound into one volume. But as volumes per year (an issue takes place every Tuesday) were found to fill up the shelves of the libraries so fast as to [illegible] the custody of the volumes somewhat irksome and expensive. The Commissioner has, therefore, condensed the issues of each month into a single volume without making any deduction in the matter, the specifications and drawings being in full, but printed on both sides of the page, the drawings, four on a page. This change was made July 1, 1872. The contents are certified under the seal of the Patent Office, and each volume contains both a subject-matter index and an index of patentees. The usual annual index will also be prepared at the end of the year.

The volumes are bound in the best style, in law calf or in half-sheep, the former style costing $3.50 each, and the latter, $2.50. They can be sent through the mail, if so ordered, free of charge for transportation. Payments should be made in advance, and should cover a period of not less than three months.

III. Any library desiring to obtain a set of these volumes will be required to furnish evidence, satisfactory to the Commissioner of Patents, of its responsibility for the proper custody of the work, and of the facilities which it offers the public for consulting it. Special mention should be made of the number of hours in each day that the public will have access to the volumes, and particularly whether the library will be open for this purpose during the evening, which is considered a desirable arrangement whenever it can be adopted.

Evidence must also be furnished as to whether there are other public libraries in the same town or vicinity, and, if so, as to the character of such libraries, and as to the relative accommodation which the public would receive from the selection of the particular library making the application.

IV. Libraries will be permitted to receive the work only on the condition that it shall be carefully preserved; that the volumes shall not be loaned to individuals to be removed from the library rooms; and that the general public, whether subscribers to the remaining privileges of the library or not, shall, without charge, have unrestricted access to them during the established hours.

If it is found desirable to establish special rules for the use of the work, these rules should in all instances be reported to the Commissioner of Patents; and it is further understood that, if at any time the library is broken up, or declines longer to accede to the foregoing conditions, the volumes shall be held subject to the order of the Commissioner.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

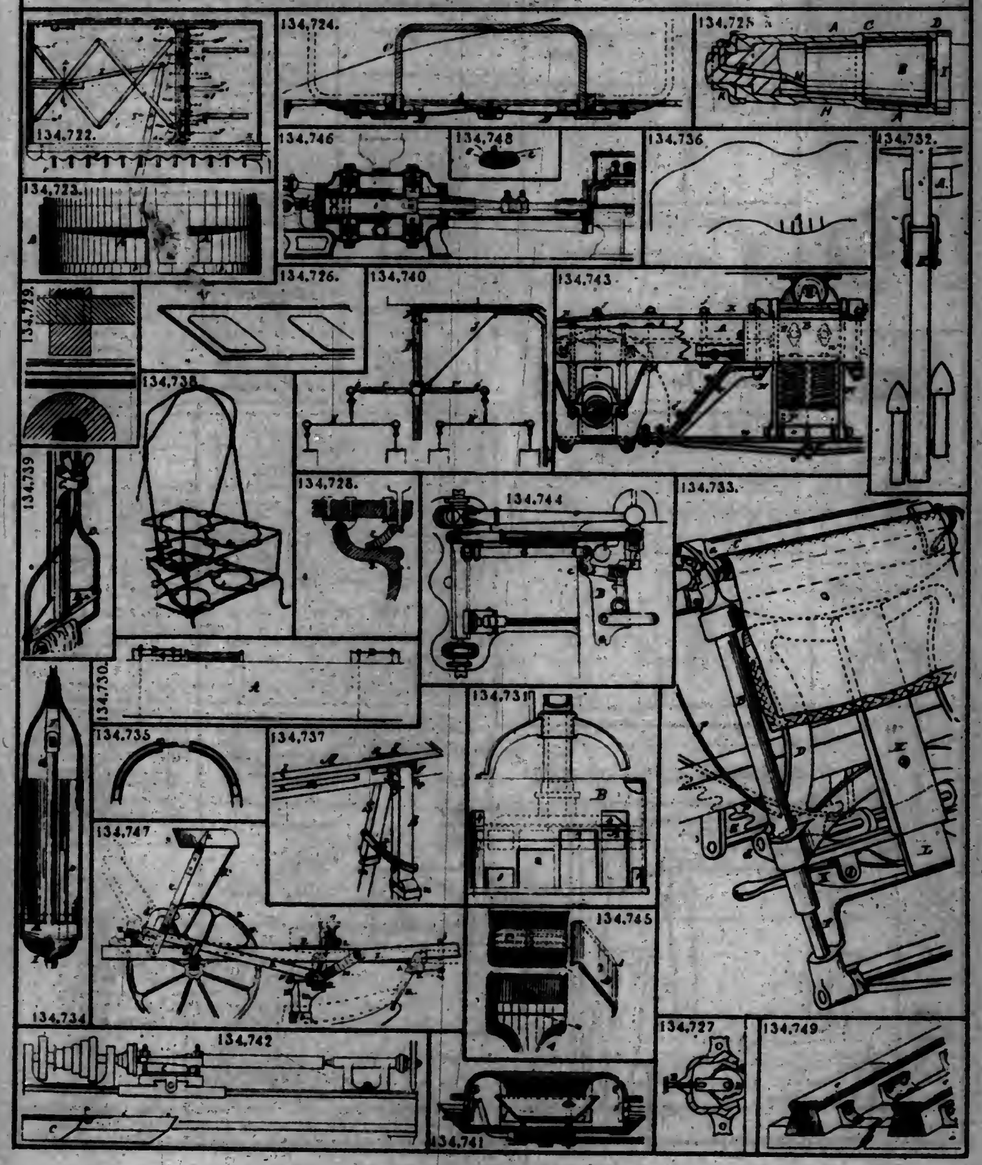
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OFFICIAL GAZETTE

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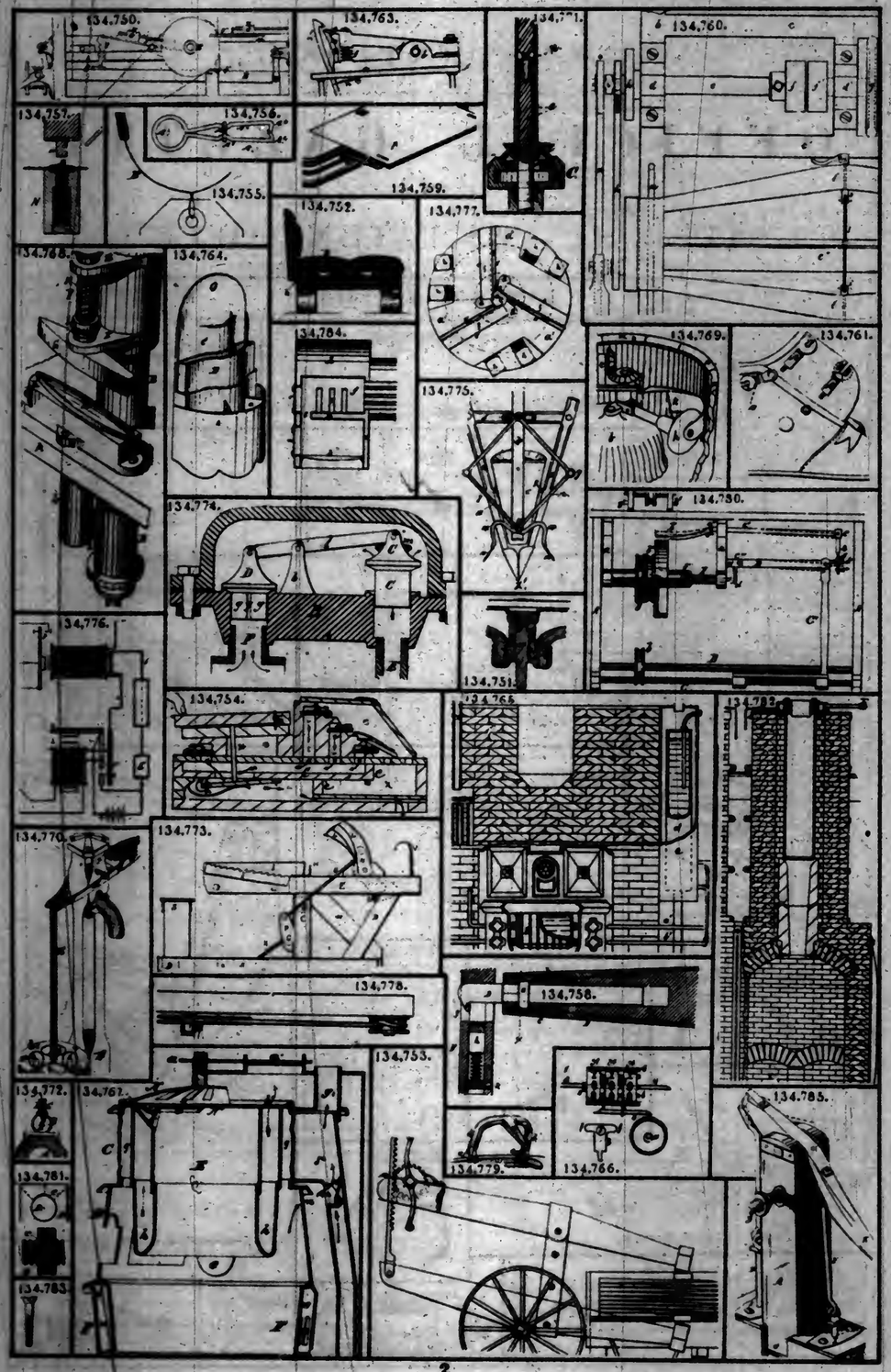
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ORIGINAL PATENTS Nos. 134,721 to 134,963. JANUARY 14, 1873. REISSUED PATENTS Nos. 5,236 to 5,250.



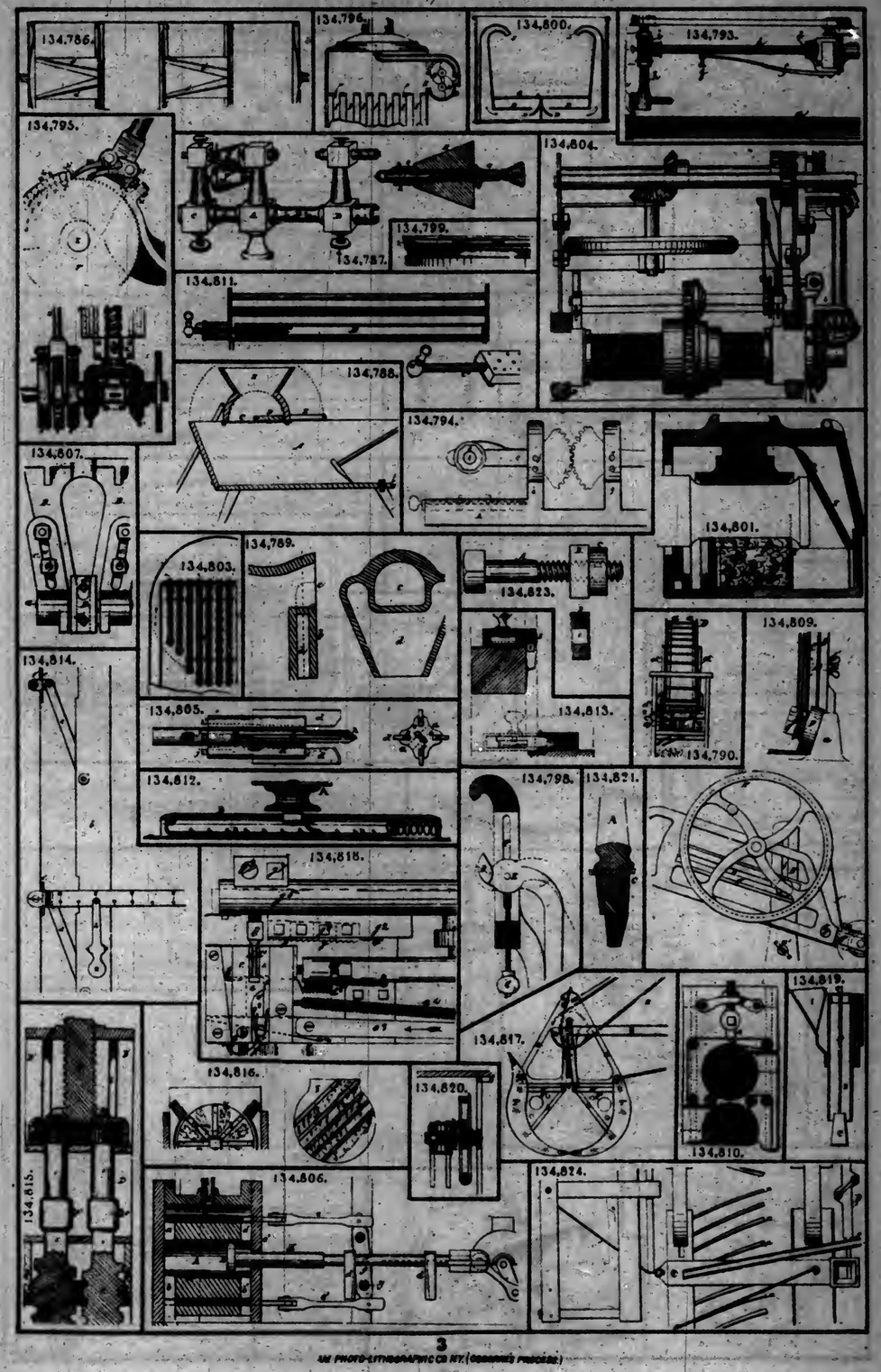
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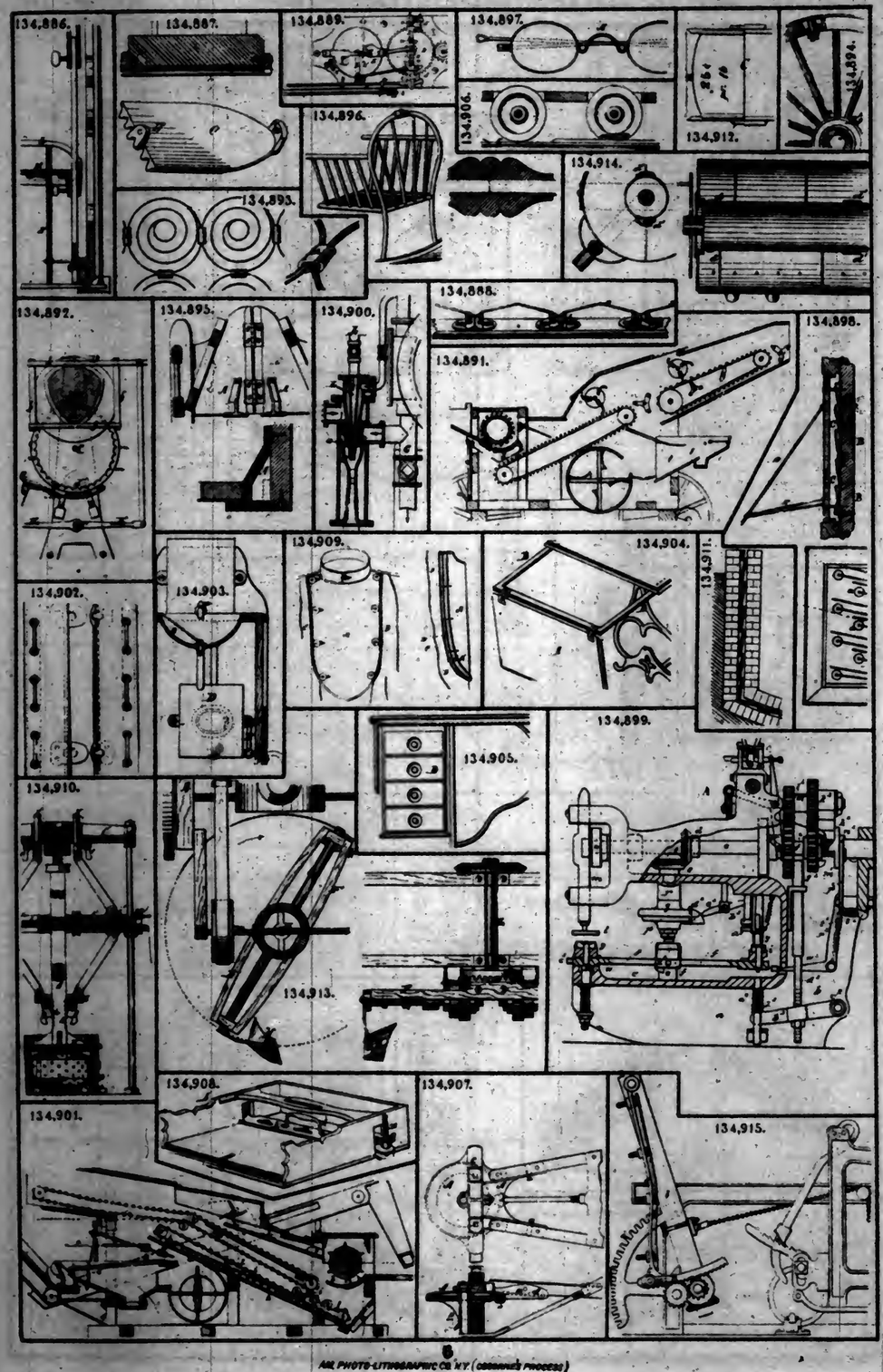
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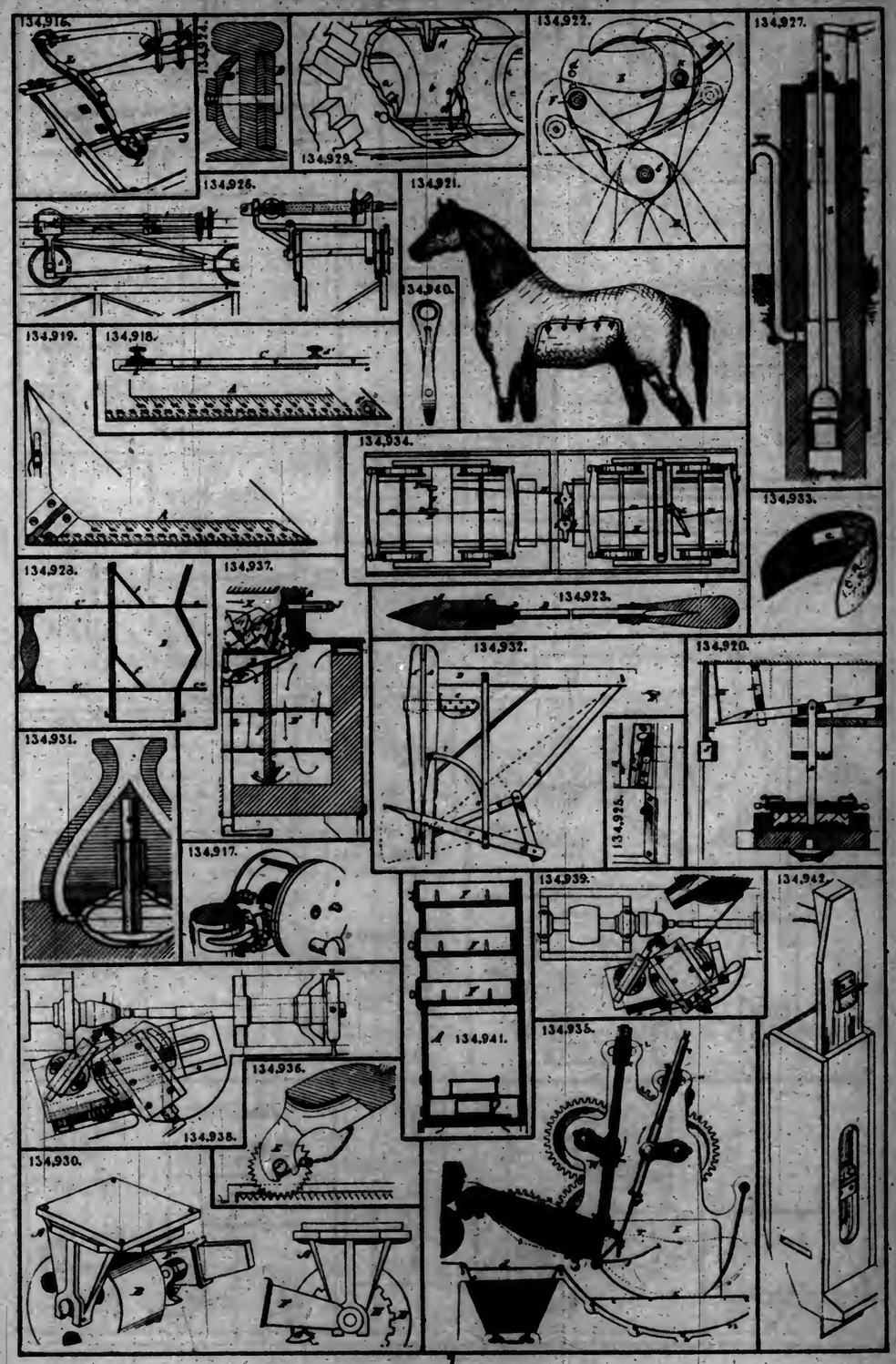
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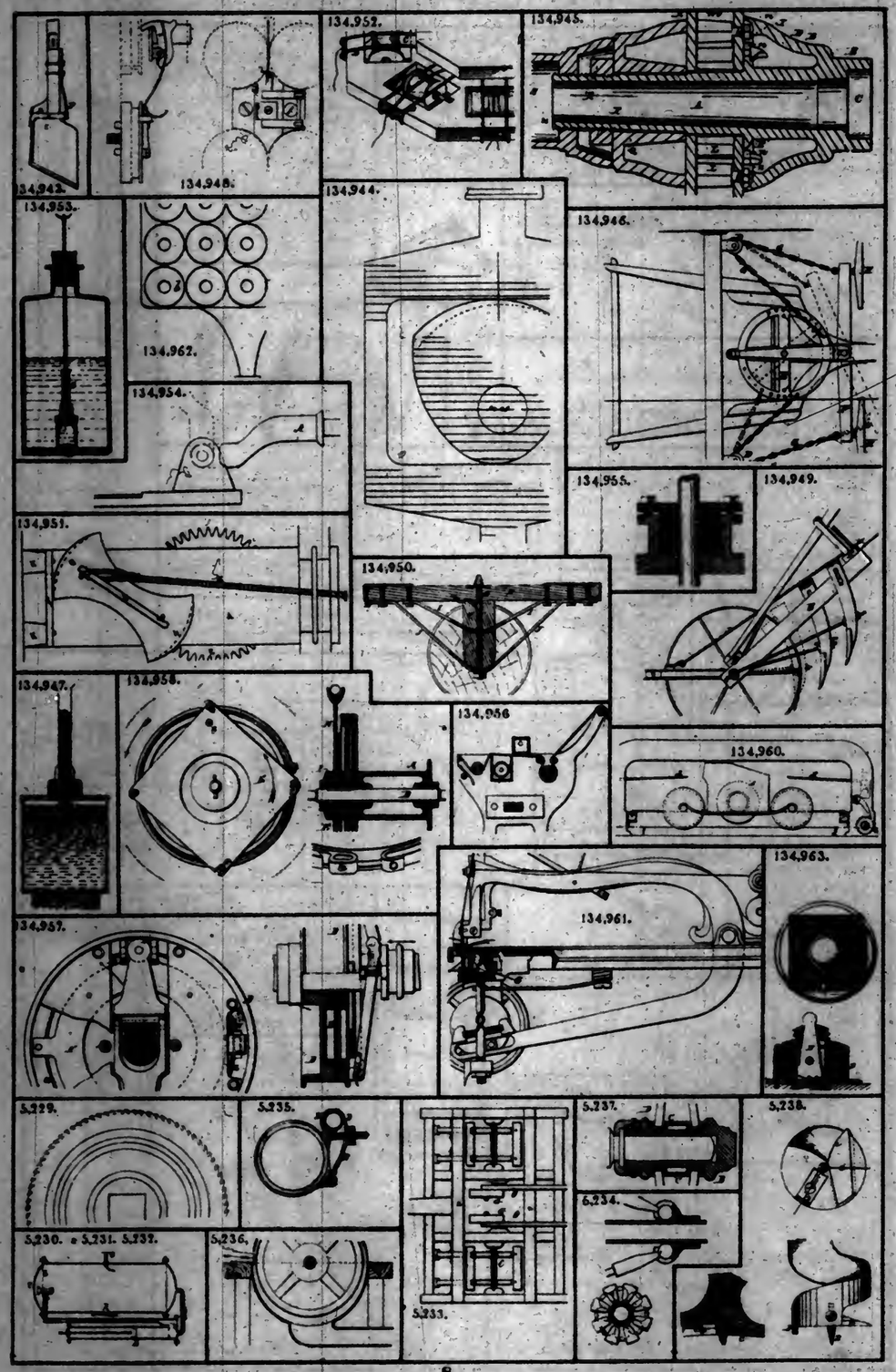
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OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 3.—NO. 3. TUESDAY, JANUARY 21, 1873. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1873 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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ANNUAL REPORT

OF

THE COMMISSIONER OF PATENTS

FOR THE YEAR 1872.

To the Senate and House of Representatives of the United States of America in Congress assembled:

In compliance with Section 9 of Patent Law, I submit the following as my annual report for the year ending December 31, 1872.

1. *Statement of moneys received.*

Amount received on applications for patents, reissues, extensions, caveats, disclaimers, appeals, and trade-marks	$616,865 00
Amount received for copies of specifications, drawings, and other papers	67,198 00
Amount received for recording assignments	15,735 30
Total	699,798 30

2. *Statement of moneys expended.*

Amount paid for salaries		$445,375 02
Amount paid for photo-lithographing current issues, (6 mos.)		16,366 31
Amount paid for illustrations for Gazette		26,618 43
Amount paid for photographing back issues		61,908 21
Amount paid for contingent and miscellaneous expenses, viz:		
Advertising	$4,029 07	
Stationery	17,033 37	
Tracings, &c	2,096 53	
Painting, glazing, varnishing, paper-hanging, &c	2,302 46	
File-boxes	112 00	
Furniture, carpeting, &c	12,900 39	
Fitting up cases in model-rooms, carpenter's work, and repairing furniture	20,680 41	
Plumbing and gas-fitting	1,703 56	
English patents	792 95	
Work on report and indexes	1,600 00	
Refunding money paid by mistake	795 00	
Hardware	838 50	
Pay of temporary employees	38,278 54	
Miscellaneous items, viz: Books for library, subscriptions to journals, freight, ice, washing towels, awnings, fees of judges in appeal cases, withdrawals, repairing carriage and harness, and keeping horse	11,512 25	
		115,427 03
Total		665,585 00

3. *Statement of the balance in the Treasury of the United States on account of the patent fund.*

Amount to the credit of the patent fund, January 1, 1872	$759,980 03
Amount of receipts during the year 1872	699,798 30
Total	1,459,778 33
From which deduct expenditures for the year 1872	665,585 00
Balance January 1, 1873	794,111 49

4. *Statement of the business of the Office for the year* 1872.

Number of applications for patents during the year 1872	18,946
Number of patents issued, including reissues and designs	13,500
Number of applications for extensions of patents	285
Number of patents extended	240
Number of caveats filed during the year	3,060
Number of patents expired during the year	3,481
Number of patents allowed but not issued for want of final fee	2,302
Number of applications for registering of trade-marks	531
Number of trade-marks registered	402
Of the patents granted there were to—	
Citizens of the United States	13,009
Subjects of Great Britain	445
Subjects of France	51
Subjects of other foreign governments	95
	13,600

5. *Number of patents issued by the United States Patent Office to residents of the different States, Territories, and foreign countries from January 1, 1872, to December 31, 1872.*

[The proportion of patents to population is shown in last column.]

States, &c.	No. of patents.	One to every—
Alabama	45	22,155
Arkansas	13	37,267
California	265	21,133
Colorado Territory	12	3,322
Connecticut	648	929
Dakota Territory	2	7,090
Delaware	42	2,977
District of Columbia	143	921
Florida	8	23,468
Georgia	59	20,070
Idaho Territory	1	14,999
Illinois	863	2,943
Indiana	385	4,367
Iowa	235	5,081
Kansas	73	4,991
Kentucky	145	9,110
Louisiana	76	9,565
Maine	170	3,688
Maryland	242	3,227
Massachusetts	1,435	1,014
Michigan	337	3,513
Minnesota	78	5,637
Mississippi	75	11,039
Missouri	251	6,858
Nebraska	22	5,591
Nevada	22	1,931
New Hampshire	122	1,098
New Jersey	662	1,398
New Mexico Territory	2	45,937
New York	3,079	1,423
North Carolina	36	29,204
Ohio	985	2,706
Oregon	23	3,853
Pennsylvania	1,575	2,236
Rhode Island	179	1,214
South Carolina	29	24,331
Tennessee	105	11,986
Texas	73	11,213
Utah Territory	3	28,929
Vermont	91	3,632
Virginia	106	11,558
Washington Territory	3	7,965
West Virginia	57	7,755
Wisconsin	201	5,247
Wyoming Territory	1	9,118
United States Army	7	.....
United States Navy	3	.....

6. *Comparative statement of the business of the Office from 1837 to 1872, inclusive.*

Year.	Applications.	Caveats filed.	Patents issued.	Cash received.	Cash expended.
1837	.....	.....	435	$29,229 08	$33,506 98
1838	.....	.....	580	42,123 54	37,402 10
1839	.....	.....	495	37,260 00	34,543 51
1840	765	228	473	38,656 51	39,020 67
1841	847	312	495	40,413 01	52,666 87
1842	761	391	517	36,305 68	31,241 48
1843	819	315	531	33,315 81	30,776 96
1844	1,045	360	502	42,509 26	36,344 73
1845	1,246	452	502	51,076 14	39,395 65
1846	1,272	448	619	50,264 16	46,158 71
1847	1,531	553	572	63,111 19	41,878 35
1848	1,628	603	660	67,576 69	58,905 84
1849	1,955	595	1,070	80,752 98	77,718 44
1850	2,193	602	995	86,927 65	80,100 95
1851	2,258	760	899	95,738 61	86,916 83
1852	2,639	996	1,020	112,656 34	95,916 91
1853	2,673	901	958	121,527 45	132,869 83
1854	3,324	868	1,002	163,789 84	167,146 32
1855	4,435	906	2,024	216,459 35	179,549 33
1856	4,960	1,024	2,502	192,588 02	199,931 02
1857	4,771	1,010	2,910	196,132 01	211,582 09
1858	5,364	934	3,710	203,716 16	193,193 74
1859	6,225	1,097	4,538	245,948 15	210,278 41
1860	7,653	1,084	4,819	256,352 30	252,230 60
1861	4,643	700	3,340	137,354 44	221,491 91
1862	5,036	624	3,221	215,754 99	169,810 30
1863	6,014	757	4,170	195,593 29	169,414 14
1864	6,932	1,063	5,020	240,919 98	229,868 00
1865	10,664	1,937	6,618	348,791 84	274,199 34
1866	15,309	2,723	9,450	495,665 38	361,724 28
1867	21,276	3,597	13,015	646,581 92	528,263 32
1868	20,420	3,705	13,278	681,565 98	625,679 77
1869	19,271	3,624	13,066	693,145 81	466,430 78
1870	19,171	3,273	13,321	699,456 76	557,149 19
1871	19,472	3,306	13,033	672,716 46	566,595 08
1872	18,246	3,000	13,500	690,736 39	665,591 36

It will be noticed that the number of applications for patents is less than the previous year, while the number of patents granted is greater. This is one of the consequences of a prompt distribution of the Office publications, giving to inventors, manufacturers, and attorneys reliable information as to what inventions are already patented, thereby securing better applications but fewer in number.

It will also be noticed that the accounts show a large increase of expenses over those of the previous year; which calls, perhaps, for a word of explanation. The new gallery in the model room, the finishing and furnishing of what is called the subscription rooms, under the southern porch of the Patent Office, and other rooms for deposit of Office files, has added over $20,000 to the incidental expenses, while the illustrations for the Patent Office Official Gazette, and the copies of drawings of patents, heretofore paid for by the Superintendent of Public Printing, have amounted in cost to over $60,000, making in all more than $80,000 for what has not before been required.

The $61,803.21 paid for reproducing the drawings of back issues is not properly chargeable to current expenses. This work will be completed within a few years, and the expense will then end.

THE PATENT OFFICE OFFICIAL GAZETTE.

The Patent Office Official Gazette was commenced on the first of January, 1871. During the first three months it was published without illustrations. Congress made an appropriation for furnishing illustrations for the Gazette in April last. The appropriation was intended to be sufficient only to furnish the illustrations from that time to the close of the year, but I found, by condensing a larger number of drawings than was originally intended upon a single page, that I could secure illustrations for all the patents issued during the year; consequently the whole volume has been illustrated.

The Gazette was designed to supply a large and growing demand for more prompt and complete information as to the work of the Office than was at that time, or ever had been, furnished by the Office publications. It has been issued regularly every week during the year. It embraces all of the more important decisions of the Commissioner of Patents, all of the decisions of the United States Supreme, Circuit, and District Courts, in cases involving patent or trade-mark questions. The promptness in furnishing these decisions to the Examiners in the Patent Office, to attorneys practising before the Office, and to inventors and manufacturers generally, has very perceptibly improved the character of the Office work. The Judges of the Courts, to whom we have regularly sent it, have expressed themselves highly pleased and greatly benefited by the promptness of the Gazette, in giving to each of them the use of the decisions of all the others in discussing and considering the intricate questions connected with the trials of patent cases. The Gazette has also contained a notice of all applications for extension, a brief digest of all the applications upon which patents have issued, the entire claims of all such patents, and so much of the drawings as would in small spaces best explain the claims.

The Gazette is mailed on Wednesday or Thursday of each week, and always contains a digest and illustrated description of all the patents issued for the week ending the previous Tuesday, thereby furnishing to inventors and manufacturers the means of keeping themselves constantly informed as to the state of any art in which they feel an interest. It is found that this information prevents, in a great degree, the duplication of applications for patents upon the same invention, yet it stimulates the inventive faculties of our mechanics, and improves the character of the applications.

This publication has more than realized the most sanguine expectations of its projectors, and has received unmeasured approbation from all quarters. Its continued publication is almost a public necessity. When the publication of the Gazette was commenced it was the intention of the Commissioner that it should be entirely self-sustaining. This, however, was rendered impossible when Congress appropriated nearly one-half of the edition authorized to be printed, for free distribution to public libraries and to members of Congress. I do not, however, complain of this action of Congress, for I deem the information contained in the Gazette of so much importance to the public that a free distribution of it to the extent authorized is fully justified.

THE MONTHLY VOLUME.

The joint resolution approved January 11, 1871, required that the Commissioner of Patents should cause to be printed and bound into volumes of suitable size, with suitable indexes, the specifications and drawings of all the patents issued, for free distribution to the clerks of all the United States District Courts, to the capital of each State, and to such public libraries as would pay the cost of binding and transportation. I have never been specially impressed with the wisdom of this provision. In accordance with it, however, during the year ending July 1, 1871, I caused to be prepared a volume of the specifications and drawings, complete each week, making fifty-two large volumes for the year, each volume having a name and subject-matter index. The size of these volumes and the numbers of them were so great as to make them comparatively worthless, as but few of the courts and very few libraries could afford the room to place them for any considerable length of time where they could be consulted by the persons for whom they were intended; consequently, since the first of July last, I have caused the specifications and drawings to be published in a more condensed form, running the specifications more closely together, and reducing the size of the drawings to one-fourth that of the previous year, thereby putting four drawings on a page and printing on both sides of the leaf. By this change of form the patents of a month can be put in the space formerly occupied by one week, thus reducing the number of volumes to twelve instead of fifty-two. The drawings, to some extent, will be found, perhaps, too small for critical examination, but this will not occur in more than one case in twenty.

When the drawing proves too small for careful examination any person desiring to learn more about it can order from the Patent Office a complete copy of the drawings of full size, at an expense not exceeding twenty-five cents. This publication might be made popular. If the Commissioner of Patents can be authorized to sell these volumes to subscribers at ten per cent. in advance of the cost of producing additional copies, a considerable number of volumes could be sold; but as the law now stands the Commissioner is not authorized to sell them at a less price than ten cents for each patent, which would make a set of the volumes for one year cost over $1,300, or more than $100 a volume. This, of course, effectually prevents their sale.

OLD DRAWINGS.

For several years past Congress has appropriated the sum of $10,000 a year to reproduce the old drawings in the Patent Office. This work is far more important than is believed by those not familiar with the work of the Office. When a man makes application for a patent, if he is anticipated by any former patent upon the same subject-matter, he is rejected by a reference to such patent. The Office is of course liable to err in this reference by not fully understanding exactly what the applicant desires to cover by his application. The applicant should therefore have the means of fully understanding the references. This can only be given by furnishing him a copy of the drawings of the patent upon which he is rejected.

It frequently happens that the reference only covers a portion of the applicant's claim, leaving him a valuable invention not anticipated. If the drawings of the references could be furnished him in full, he might so amend his application as to run clear of previous patents, and secure to himself what he has actually invented. To furnish such copies by the process of tracing would cost, in general, from two to five dollars in each case. By the process of photo-lithography one hundred and fifty copies may be made of each drawing at an expense to the Office of from three to six dollars. When the drawings are thus reproduced it will be an easy matter, at very trifling expense, to furnish a copy of each drawing referred to in rejections, thus informing inventors exactly as to their rights.

Another reason for reproducing the old drawings in considerable numbers is found in the great saving of time it would secure to the examining corps, and the increased facilities for thorough examinations. The drawings belonging to the classes of mowers and reapers, sewing-machines and attachments, printing-presses, types, and furniture, fire-arms, projectiles, fuses, blasting and torpedoes, carriage-wheels and their parts, felting and hats, &c., have all been reproduced by photo-lithography. Copies of the drawings of all the patents ever issued in these classes have been placed in the rooms of the Examiners having charge of the respective classes, where they may be consulted with care and without waste of time. In classes where the drawings have not yet been reproduced, the Examiners and all others desiring to examine the drawings are compelled to go to the general portfolios and wait upon each other.

Still another reason for reproducing these old drawings is found in the demand of manufacturers for them. A large number of persons have already purchased, at considerable advance above cost, the entire classes reproduced. I am satisfied that the money expended in this work is a wise expenditure, and will in the end be much more than refunded to the treasury by the saving of time and the sale of copies.

GENERAL INDEX.

There has never been published a complete general index, either of patentees or of the subject-matter of

patents. At the beginning of the present fiscal year I caused to be organized a force to prepare such an index. There is no one thing that is more needed by the Office at the present time. In view of the vast number of patents which have been issued, now numbering over 140,000, it is not easy to determine what has or what has not been patented without an index for reference. It is true that since 1836 there has been an annual index published, but these indexes are now so numerous as to make them comparatively worthless, making a general index down to the present time almost an absolute necessity. It will take considerable time, at least another year, before this can be completed; hence no appropriation for its publication will be asked for at this time.

DIGESTS.

An examination of the past work of the Office develops the fact that there are about 7,500 different things which are made the subjects of patents. In the new classification of these subjects which I have caused to be made during the past year, they have been grouped, according to their analogy, into 145 classes. It is very desirable that a thorough digest, showing clearly and fully the present state of the art in each one of these classes, should be made. This is a work that will need to be commenced very soon. The industry of the country, the interests of inventors and manufacturers, as well as the facility of the Office work demands such digest. If a competent person could take the subject of "fire-arms," for instance, giving the present state of the art in that class, by showing exactly what has been invented, and by whom, from time to time, and the improvements that have been made, it would enable the Office to make examinations with far greater facility and accuracy, and in much less time than at present; would enable manufacturers to know more exactly their own rights and the rights of patentees and the public; would enable attorneys and patent-solicitors to prepare their cases with far more intelligence and precision, and would greatly assist the Commissioner of Patents and the judges of the courts in deciding questions of patentability, interferences, and infringements. If such volumes could be prepared under the supervision of the Commissioner of Patents, and be published in sufficient numbers to supply the demand for the same, I am convinced they could be made not only profitable in the way of furnishing much-needed information, but remunerative to the Government. I would respectfully ask the attention of Congress to this matter, and that the Commissioner be authorized to immediately commence this work.

EXTENSIONS.

Until March 2, 1861, patents were granted for the term of fourteen years, with the right of extension when proper cause was shown. Said act provides that the term shall be for seventeen years with no right of extension. I have always doubted the wisdom of that law, and the more thoroughly I become acquainted with inventors and their peculiarities, the more thoroughly I am convinced that the change was an unwise one. It is a fact familiar to all who have given the subject-matter any considerable attention, that a very large proportion of the more valuable inventions are assigned in their infancy for trifling considerations, because of the indigent circumstances of the patentees. Assignees have, in general, made all the money that has been made from the original term of patents.

There is justice in giving a considerable portion of the profits arising from patents to assignees; for, generally, the talent required to create the demand for and to manufacture and successfully introduce into public use the thing invented, is as valuable and meritorious as that exercised by the inventor. That assignees of patents have made large profits is not, therefore, of itself an objection to the law; but the design of the patent laws, under the provision of the constitution, was to encourage and develop *invention* by giving to inventors a monopoly that might compensate them. Experience has developed the fact that a very large proportion of our most worthy and deserving inventors have been obliged to look to the extended terms of their patents for their remuneration. When the invention is first made it is often in advance of a demand for it. The public must be educated up to its want, requiring considerable time and expense before the invention can become remunerative. It is in this stage of the life of a patent that inventors are so often compelled by poverty to sell their inventions for very small sums. When the patent is extended, the extended term belonging to the inventor, and the public now understanding its value, the inventor is enabled to obtain a reasonable compensation for his patent. In this way the extended term becomes far more remunerative than the original.

As mere mechanics and copyists our people are greatly excelled by the older nations; but in useful and labor-saving inventions the people of the United States excel all others. It is difficult to overestimate the extent to which our country is indebted to the genius and industry of our inventors. No other nation has done so much to secure to its inventors the results of their brain-labor. In no other country have the legislatures and courts been so liberal and just in affording protection to the peculiar class of property covered by patents for inventions. The rich development of valuable inventions which have so distinguished our country is largely due to our recognition of the just rights of inventors. The act of March 2, 1861, I am fully persuaded, was legislation in the wrong direction, and that the encouragement of useful inventions, as well as justice to inventors, requires a right in the inventor to secure extensions in meritorious cases.

ROOM.

The question of room for the Patent Office is becoming more and more serious every day. At the present time the working force is greatly crowded, and we are compelled to occupy rooms under ground, and with necessarily very imperfect ventilation. The health of many employés has been very seriously impaired, and the work of the Office greatly impeded. Since I have been in the Office, now less than two years, eight persons have died, whose deaths were attributable, probably, to the occupancy of rooms unfit for such purpose. The files and the documents of the Office are crowded into such small and inconvenient spaces as to be very difficult of access, and very damaging to the files themselves. When additional rooms can be furnished for the working force of the Office, those now unsuitable for occupancy by employés can be fitted for receiving the Office files. I earnestly hope that some provision may

be made whereby the work of the bureau may have sufficient room to be promptly and properly executed.

The model gallery has long been a place of great interest, not only to inventors, but to all visitors at Washington. I believe that the United States is the only government which issues patents that demands models of the inventions. The wisdom of this demand cannot be questioned. Many of the points connected with patents that arise for examination before judges and juries, appeal boards and commissioners, are of such character that none but the most skilled experts could determine them from drawings and written descriptions alone. When an invention has been embodied in the form of a good model it has become tangible, and intelligible, and certain, to a much larger class of persons than when shown only in drawings. The spirit of our patent laws demands that before a monopoly shall be granted to an inventor he shall make his invention as *patent* to the public as possible; hence, I think a model should be required with every application.

The question of room wherein to keep the models has been the strong argument against requiring them. It is very apparent that the addition of over twenty thousand models a year to the present vast accumulation would ultimately occupy the whole of the Patent Office building, to the exclusion of everything else. The question of furnishing space for the models has long been a troublesome and puzzling one, and must of necessity be very soon settled. While I am of the opinion that models should always be demanded when the invention is of such a nature as to admit of being shown in a model, I am not so clear as to the necessity of their being forever retained. The models of rejected applications might be disposed of as soon as the applications are finally abandoned. Nearly all of the models upon which patents have been granted become useless to the Office and to the inventor as soon as the patents have expired and the inventions become public property. The models of fundamental inventions, and such others as may be necessary to show clearly the rise and progress of the different arts represented in the Office, should, of course, be always retained. All others might be removed from the model gallery soon after the expiration of the patents. Under authority of Section 14 of the Patent Act, I have disposed of over forty thousand models of rejected applications. Nearly all of these have been deposited in such colleges and other incorporated institutions of learning in the several States as cared enough for them to pay for boxing and transportation, and hold them subject to the order of the Commissioner of Patents. The influence of these models in our schools is reported as excellent. They aid materially in giving a knowledge of the practical application of the principles of mechanics, and in developing a taste for the useful arts. These models are simply loaned to these institutions, where they are held in trust for the Patent Office. Full lists of them are retained at the Office.

I would respectfully suggest that the Commissioner be authorized, under proper restraints, to make similar deposits of such models of expired patents as can be spared from the Patent Office. The determination of what models of expired patents may safely be sent from the Office should not be left to the Commissioner or any other one man. A commissioner of radical or eccentric notions on the subject might do irreparable damage to important classes by the removal of models constantly needed in the office. If the Commissioner of Patents and the member of the Board of Examiners-in-Chief oldest in commission should be constituted a permanent board for this purpose, and each of the Examiners in charge of the classes in turn become a member of said board when determining upon the models belonging to the classes under his special charge, there would be very little danger of mistakes being made in the disposition of models. Under the provisions of such a law the present model gallery will probably be abundantly sufficient for a century to come. I respectfully ask the early attention of Congress to this matter.

THE CIVIL SERVICE.

The new rules for the civil service went into operation in this bureau in May last. I was not sanguine as to the wisdom of their adoption, but determined they should have a fair and impartial test in the Patent Office. When called upon by the Honorable Secretary of the Interior for the name of a suitable person to be appointed on the Examining Board I named a man distinguished not only for scholarship, but for sound practical judgment. In the examinations I have in no way interfered, and have expressed no preferences for candidates. I believe the Examining Board have conscientiously framed their questions, and conducted their examinations with the single view of securing the best men for the vacant positions; and the result has greatly transcended my expectations. It has stimulated to study and efficiency the former employés, and has brought into the Office a class of intelligent, vigorous, and enterprising young men whom it would have been difficult to obtain by any other system. Men having the best qualifications and most merit will rely least upon outside influence and pressure for positions, and under the old system were generally the last to obtain them.

The design of the civil service rules is to secure the best qualified and the most meritorious. For this bureau the examinations have aimed to test the applicant's special fitness for the vacant positions, and the questions have been thoroughly practical. One hundred and ninety-two persons have been examined for promotions, seventy-four of whom passed above the minimum standard, and forty-nine have been promoted. Fifty-two have been examined for original appointment, twenty-two of whom passed above minimum, and nine have been appointed. The operation of the civil service rules has certainly very greatly improved the efficiency of the working force in the Patent Office.

The civil service is clogged and impeded, however, by obstacles not provided against in the new rules. If ten men are appointed to positions to-day, nine of whom prove to be well qualified, active, intelligent, and efficient, and one barely above the minimum in these requisites, four years hence will find that the nine have developed into men of too much spirit and enterprise to remain in clerical positions, and have entered the business pursuits of private life, while the tenth will probably be plodding along in the office, of less value than when first appointed, yet willing to stay without advancement as long as the appointing power, under pressure of outside influences, can be induced to retain him. By this process a comparatively worthless

sediment accumulates in the bureaus, impeding, depressing the character, and increasing the expense of the civil service. If the Civil Service Commission can invent a broom that will effectually sweep out this sediment I shall deem it worthy of a patent.

CANADIAN LAWS.

In my last annual report I took occasion to complain of the want of reciprocity in the patent laws of the Dominion of Canada. As those laws then stood they contained a provision that no patents should be granted except to persons who had resided for the year last past in Canada. This, of course, precluded citizens of the United States from obtaining patents there, while citizens of Canada could obtain patents here on the same terms as our own citizens, and without restriction as to residence. The last session of the Canadian Parliament, however, expunged that unfriendly provision, and in many other respects made their patent laws more liberal and more certain in their protection of inventors. Their new law is substantially the same as our own, and gives great satisfaction to our inventors.

REORGANIZATION.

Again I respectfully ask the attention of Congress to the President's special message and accompanying documents of March 15, 1872, in relation to the reorganization of the Patent Office. The commercial importance of patents for inventions is rapidly increasing. After careful and extended inquiry I am convinced that considerably more than one-half of the capital employed in manufacturing in the United States is thus invested, because of the security to specialties obtained from patents. For this reason the demand for better examinations and more care as to the wording of specifications and claims before issuing patents or rejecting applications, is increasing every day. In other words, the character of the work done in the office and the facilities for doing it promptly are not nearly up to the public demand. I am of the opinion, however, that no very considerable improvement can be made under the present organization. The business of the Office is being done under a plan of organization adopted in its infancy—a plan adequate to its wants at that time, but which has been outgrown by its enormous increase of business. Until a reorganization can be effected that will secure a revision of the most important work of the Office, the rights of inventors and manufacturers will be needlessly jeopardized, and the character of the Office and the utility of the patent laws will remain in doubt. The reorganization suggested is fully embodied in the bill for that purpose now pending in the House of Representatives.

Respectfully submitted.

M. D. LEGGETT,
Commissioner of Patents.

CANADA PATENT OFFICE.

ADDITION TO THE RULES AND REGULATIONS OF SEPTEMBER, 1872.

1. DRAWING.

In order to allow the Patent Office to have a Patent Office Record printed and published, containing the claims and drawings of all patents issued, it is further directed, in addition to the requirements of rule 13 and form 15, that—

One drawing on a sheet of card-board 8x13 inches will be required of each invention, in addition to those ordered by rule 13 and form 15. The sheet is to be without writing on its face, merely the usual lettering required on the drawing; written title, references, certificate, signature, &c., not being necessary.

Where several sheets and figures are furnished, in accordance with rule 13, any one figure which will best give a general idea of the invention will be sufficient.

The card-board to be used must have a smooth or calendered surface. A sheet of "double-thick Bristol board" or "Whatman's drawing-paper" is recommended.

All drawings must be clear, sharp, well defined, not too fine, and *perfectly black*.

Lines that are pale, ashy, very fine, ragged, or rotten, give bad results when photo-lithographed.

Brush-shading, tinting, and imitation surface-graining should never be used, and in fine shading the result should be attained with as few lines as possible.

Section lines also should be as open in their spacing as the case will admit of, and these, as well as all right lines, in order to insure clearness, should be made with a ruling pen. The shading of convex and concave surfaces may be dispensed with when the invention is otherwise well illustrated.

Shade lines may sometimes be used with good effect, but heavy shadows, where they would obscure lines or letters of reference, should be avoided.

The card-board drawing should be rolled on a roller for transmission to the office, as folding will prevent its usefulness for photo-lithography.

2. SPECIFICATIONS.

The duplicate specifications in every application must each be identified by the justice or judge, who takes the affidavit of the inventor, as "the specification referred to in the inventor's affidavit annexed," such identification to be, by certificate, written at end of and in each such specification: thus:

"This is the specification referred to in the affidavit of ——— ———, hereto annexed.

"Sworn before me this day of A. D. 18 .

"——— ———, *Judge or J. P.*"

3. AFFIDAVIT.

In all cases of applications for patents where the affidavits are made out of Canada, and before a judge, the seal of the court presided over by such judge must be affixed to such affidavit.

January 14, 1873.

COMMISSIONER'S DECISIONS.

SAML. B. JEROME.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Samuel B. Jerome for patent for* TABLET FOR CLOCK FRONT ORNAMENTATION, *filed January* 3, 1873.—*Decided January* 17, 1873.]

The words "article of manufacture" do not necessarily raise a device to the dignity of a patentable invention.

A case in which the description, instead of showing a new invention, merely describes a well-known practice.

LEGGETT, *Commissioner:*

Applicant says his invention consists in making an ornamental tablet for a clock-front by "applying paper, upon which the illustration or ornamentation is first made, to the back of a piece of glass, the paper first being moistened, then the edges turned over, and glued or otherwise secured to the front or outer surface of the glass, so that when the moistened paper dries it will shrink tight down upon the glass, giving it the same appearance as when the painting is made directly upon the glass," which latter, it is alleged, is the process heretofore employed.

His claim is—

"As an article of manufacture, the herein-described clock-tablet, consisting of the glass and paper illustration, combined and secured together as set forth."

He seems to rely on the words "article of manufacture" to raise his device to the dignity of a patentable invention. They do not have that virtue. The references cited by the Examiner are in point. Besides, in every picture-store will be found engravings attached to the backs of pieces of glass in this way, and it has been done no one knows how long. This is the "article" claimed, no matter to what use it may be applied.

The decision of the Board is affirmed.

FAIRBANKS AND ROBINSON.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Fairbanks and Robinson for patent for* BEVEL-SQUARES, *filed January* 2, 1873.—*Decided January* 18, 1873.]

A claim should conform to the parts and combinations shown, and should not be so broad as to cover a principle and preclude all improvement in an article.

References, as affording data in rejecting a claim, should be cited in preference to offering a mere legal opinion or a "simple dictum."

LEGGETT, *Commissioner:*

Applicant's "bevel-square" is composed of two centrally-slotted blades or tongues pivoted in one end of a suitable handle, and he says his invention consists—

"In combining in a single handle two adjustable and independent tongues, one of which may be set at right angles, while the other is free to be turned to any desired angle."

The decision of the Board was adverse as to his first and fourth claims, which are as follows:

"1. The combination of two blades in a single handle, both made adjustable and combined with a mechanism whereby one of the said blades may be set at a right or other defined angle, and the other adjustable to different angles, substantially in the manner herein set forth.

"4. In combination with a longitudinally-moving slide, L, in the handle of a bevel, we claim the inclined washer *i* between the blade and the said slide, so that the said slide being forced beneath the said washer, forces the said washer against the blade to secure the blade in position, substantially as described."

The first claim is as broad as the statement of invention, and applicant seeks by it to secure a monopoly of bevel squares having two blades, one of which may be set at right angles while the other is left free to move. In other words, he asks for an exclusive property in a certain general plan of construction of squares, without reference to any particular mechanism by means of which it is embodied. If his claim could be allowed, and could be sustained in court, it would prevent all improvement of this class of squares. All invention would be repressed by a monopoly of the broad idea or principle of construction. It is possible applicant has invented only an imperfect means of adjusting and securing his blades. It is desirable that no obstacle shall stand in the way of the production of the best means. But if applicant has produced the best means, then by claiming only the parts and combinations he actually shows he will be amply protected. In any event these are all he can lawfully secure.

The Examiner, in his answer to the reasons of appeal, says that he rejected the fourth claim "without a reference and on a simple dictum." He at the same time cites three opposite references, apparently by way of corroborating his judgment. They do not have that effect, however. They show that the subject-matter of the claim is old as a device for the purpose here accomplished, and not that if new in this connection it would not be patentable. In fact there is strong ground for a contrary opinion. It is proper sometimes to stand upon an *ipse dixit* or mere legal opinion, but it is only advisable in the absence of any other ground of adverse action. The practice is extremely likely to be unsatisfactory, because the opinion relied on may be erroneous. When there is a reference a "simple dictum" should not be resorted to. The Examiner in this instance should have cited his references, and that would probably have ended the question as to this claim.

The decision of the Board is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

DECKER *vs.* GROTE *et al.*

[*In Equity.—Before Blatchford, J.—Decision January* 2, 1873.]

PATENT OF LEVI DECKER, BILLIARD-TABLE CUSHIONS, DECEMBER 18, 1866—ABANDONED EXPERIMENT—EVIDENCE OF PRIOR USE—MODIFICATIONS IN REISSUES.

Decker's invention construed to be the placing and firmly securing along the upper edge or corner of the rubber cushion of a billiard-table a strong narrow cord to receive the impact of the ball and protect the cushion against such impact, by reason of its being placed at the point against which, and against which alone, the ball strikes.

Decker's invention is not anticipated by that of Carpenter, who inserts whalebone or wire in a groove made in the upper and outer edge of the cushion, the wire being lifted by the force of the ball, when the ball embeds itself in the face of the rubber underneath, and thus, by its action as a spring, tending to hug the ball firmly upon the table and prevent it from hopping or jumping—the wire, however, neither receiving the impact, nor reducing the friction caused thereby, nor concentrating the elasticity of the rubber at the point of impact, nor protecting the cushion from wear, nor securing greater accuracy of rebound.

Decker's invention not anticipated by the patent of Syrcher, who inserts a strip of horn in a long slit in the cushion in such position as both to destroy the homogeneous character of the cushion and to prevent the cushion from either receiving the impact of the ball in a horizontal direction or returning the resilience of the rubber in such direction.

Where a model was filed in the Patent Office which differed from the description of the specification and accompanying drawings, and which was afterward declared by the applicant not to show his invention "truly," a second model thereupon being filed which removed the discrepancy: *Held*, that whatever there was in the first model different from what was found in the second was an abandoned experiment.

Where a person was referred to in the answer without mention of his place of residence, merely as one who had made a prior application for a patent, alleged to show plaintiff's invention, and was subsequently examined by defendants as to his prior knowledge and use of said invention: *Held*, that such testimony was properly objected to.

Where plaintiff, in reissuing his patent, introduced certain modifications of the invention as originally patented, such modifications being the equivalents of the original device and resulting from experience in its use, but not involving any new or further invention: *Held*, that there was not such a repugnancy between the two patents that it must be held, as a matter of legal construction, that the new patent was not for the same invention as that secured in the original one.

A suit in equity, brought by Levi Decker against Frederick Grote and others, in the Southern District of

New York, for an alleged infringement of reissued patent for an "improvement in cushions for billiard-tables," granted complainant March 9, 1869, the original having been issued December 18, 1866.

The invention and the various defenses are fully stated in the opinion.

[*Abbott & Fuller*, for complainant.
B. F. Lee and *A. Pollok*, for defendants.]

BLATCHFORD, *Judge:*

This suit is brought on reissued letters patent granted to the plaintiff March 9, 1869, for an "improvement in cushions for billiard-tables," the original patent having been granted to him December 18, 1866. The specification of the reissued patent says: "My invention has for its object the preservation of cushions for billiard-tables against the impact of the ball. The nature of my invention consists in the employment or use of a catgut or other strong cord located in or at the upper corner or edge of the cushion, and immediately at the point against which the ball strikes when the game of billiards is played. * * * C is a body of rubber which forms a cushion against which the ball strikes. This said rubber cushion has its inner or face side beveled in such a manner that the ball strikes at about its center against the upper corner or point of the cushion, as clearly shown at *a* (Fig. 1.) For the purpose of protecting the upper corner or edge of the cushion C against the impact of the ball, I make a small concave or bed immediately, or as near as may be, in the upper corner of the cushion, so that a suitable cord, E, or other support may be fitted longitudinally the whole length of the said cushion around the table, so that the cushion is fully protected on all sides of the table against the impact of the ball. For this cord and support of the cushion I usually employ catgut, or cord may be used for the same purpose, but experience proves that catgut is most suitable for the purpose, as it is best adapted to prevent the cushion from giving way or yielding under the impact of the ball, it being understood that the ball only comes in contact with the cushion at *a*, the bevel or inclination being given the face of the cushion in order that all other parts of it will be kept clear of the ball. This cord E may be thoroughly secured in its position by molding it or embedding it entirely within the rubber near the corner, so as to perform the functions for which it is designed, or it may be secured by gluing a strip of cloth, *b*, over it, when not fully embedded in the rubber, or it may be secured by any other well-known means. D is a strip of elastic cloth which is cemented to the face-side of the rubber strip or cushion C, and attached at its lower edge to the lower part of B," (elsewhere described as a strip or cleat behind C,) "so as to support the upper edge *a* of C. It will be understood that the cord E is attached to D before the latter is secured to the cushion C and cleat B. To make the whole more secure, I usually cover the whole with the cloth F, and after cover the whole again with the usual green cloth G. This cord E performs two very important functions, viz: It gives stiffness to the angle or corner *a* of the cushion C, so that it cannot yield or give way under the impact of the ball, to allow the latter to pass over it; and it also gives prominence to the said angle so as to present, under the yielding of the cushion, a stiff narrow line to the ball, thus obviating much friction, so as not to impede the motion of the latter, and still not interfering in the least with the elastic effects of the cushion upon the ball."

The claim is in these words:

"The catgut or other cord E partially or fully embedded, or otherwise attached, at the angle *a* of the rubber cushion C, so as to protect said cushion against the impact of the ball, substantially as herein shown and described, and for the purposes set forth."

It is quite apparent that the invention set forth is the placing and firmly securing, along the upper edge or corner of the rubber cushion, a strong narrow cord to receive the impact of the ball, and protect the cushion against such impact, by reason of its being placed at the point against which, and against which alone, the ball strikes. When the impact comes the stiff cord receives it in substantially a horizontal direction, and prevents the cushion from giving way under such impact, and allowing the ball to ride over it and leave the table, while at the same time there is little friction from the impact, and the elastic force of the rubber acts fully, through the cord interposed between it and and the ball, to repel the ball in substantially a horizontal direction.

The great utility of the invention in tending toward perfection in the billiard-table is shown by the evidence. The inventor was an experienced manufacturer of billiard-tables. The cushion had, up to the time of his invention, in the latter part of 1864, been faced with a flat facing made of various materials. But the flat facing failed to add the necessary greater proportional strength to the upper corner or edge, and the plaintiff sought to do that, while at the same time the rubber below the edge not being faced would have its elastic action left unimpaired. The idea of a cord of catgut, to be secured to the upper edge, suggested itself to him. He arranged it in the manner described in the specification of the reissue, and shown in the drawing, by laying the catgut along the edge of the elastic cloth which he had been using as a facing, and securing it there by wrapping a piece of cloth around it and attaching that to the elastic cloth, and cementing the latter to the rubber. The moment the invention became known it went extensively into use, and the cushion thus made superseded all other forms. A resulting feature of the arrangement is shown by the evidence to be that a larger amount of the elasticity of the cushion is brought to bear at the point of contact of the ball with the cord than when, in the absence of the cord, the ball strikes the rubber itself. The cushion is also protected from wear. Greater accuracy also results in respect to the direction the ball takes in rebounding.

In the defendants' arrangement the cord is embedded in the rubber cushion at the upper edge of it, and is secured there by being placed in it while the rubber is plastic, and before it is vulcanized, and by having a thin portion of the rubber interposed between the cord and the outside of the edge. There is no doubt that the defendants' arrangement embodies the invention claimed in the plaintiff's reissued patent, and has the same mode of operation in use.

The novelty of the invention is attacked by reference to an application filed in the Patent Office January 18, 1858, by William B. Carpenter, for a patent for an "improvement in billiard-cushions," and which was rejected April 10, 1858. The specification filed by Carpenter says: "The nature of my invention consists in providing a block of India rubber, cut or molded in the desired shape, with a groove, which groove is to be made along the entire upper and outer edge, in which groove is to be placed a wire composed of whalebone, steel, brass, or other elastic material suitable for the purpose." Carpenter then proceeds to say, in the specification, that he makes a groove at the outer and along the entire upper edge of the rubber, and inserts in the groove along its length a round piece, the size of the groove, of whalebone or steel, or brass wire. The drawing shows the wire lying in the groove, and not otherwise secured, and with its upper face exposed to view. The specification says that the cushion is to be "covered with cloth in the usual manner of billiard cushions," and is then ready to be used. It then states, as the reasons for such arrangement of cushion, that if a ball is played against a square-edged cushion of rubber, all parts of the same being equally elastic, the momentum of the ball, if the stroke be an energetic one, will be liable to so far overcome the resistance of the rubber as to cause the ball to jump or hop either on or off of the table; that he wishes to preserve the delicate elasticity of the rubber, and at the same time to keep the ball at all times upon the table, and free from hopping or jumping; that to accomplish this he makes the groove in the rubber and inserts therein the whalebone or wire; and that this has the effect of stiffening the entire upper edge, and prevents the momentum of the ball from overcoming the weakest part of the rubber, because, "when the ball advances with considerable force and is embedded into the rubber, the whalebone or wire is lifted, the ball acting as a wedge, and, from the natural tendency of the wire to resume its former position, it hugs the ball firmly upon the table, which allows the rubber to repel the ball without hopping or jumping." The drawing accompanying Carpenter's specification corresponds therewith, in showing the rod of whalebone or wire as being laid in a groove cut in the top surface of the rubber, along the upper and outer edge; but the model he sent therewith showed the groove as cut just below the top surface, and in that face of the cushion which would be toward the bed of the table. The Patent Office, in a letter to Carpenter of January 20, 1858, called his attention to this discrepancy, and stated that the model showed the groove "along that face of the rubber cushion against which the ball strikes," and suggested to him that, if his specification and drawing were correctly understood, a different model would be necessary. In reply, he wrote to the Office saying that the specification exactly described what was meant to be described, and the drawing agreed therewith; that there was a discrepancy between the specification and drawing and the model; and that he would make another model showing the invention truly, as he wished it to be shown—that is, with the groove and wire "at the upper and outer edge of the rubber, and not at the inner edge, immediately in contact with the ball." The new model, constructed to correspond with the specification and drawing, was sent and filed January 26, 1858, and the application was rejected, as before stated. The ground of rejection was a patent granted to the present plaintiff December 15, 1857, "for the combination of a steel spring with India rubber, for the same purpose." The claim asked for and rejected was—

"The forming, in a block of rubber for billiard-cushions, the groove, and inserting therein the round whalebone, steel, or other wire, substantially and for the purpose as herein described."

On the 5th of June, 1858, Carpenter wrote to the Office that he withdrew his application.

It is impossible to regard this application as anticipating the plaintiff's invention. The invention of Carpenter, as shown in his specification and drawing and correct model, was one of a wholly different character from that of the plaintiff. Carpenter shows that he intended that the ball should be played against the rubber, and should embed itself "into the rubber," and that the rubber should not receive the impact of the ball through the medium of the whalebone or wire. His device was one merely to put a stiff piece of elastic material along the upper face of the rubber, which should be lifted by the force of the ball, when the ball embedded itself in the rubber beneath, and should, by its action as a spring, hug the ball down to the table and prevent its hopping or jumping. This is a different arrangement, and for a different purpose, from that of the plaintiff. In Carpenter's arrangement the whalebone or wire does not receive the impact of the ball, and does not protect the cushion against such impact, and is not placed at the point against which, and against which alone, the ball strikes; the whalebone or wire has no effect to reduce the friction of the impact of the ball; the elasticity of the rubber is not, by the wire, concentrated at the point of impact of the ball; the cushion is not protected by the wire from wear at the point where the ball strikes; and no greater accuracy of direction in the ball in rebounding results from the use of the wire. These are all features of the plaintiff's arrangement. The only feature that is common to the two arrangements is that the stiffening of the edge of the rubber has the effect to prevent the ball from jumping. But this, while it is an incident of the plaintiff's arrangement, does not cover other features which the claim of his patent, read in connection with the body of his specification, sets forth as inherent in his arrangement, and those features, so set forth, are not found in Carpenter's arrangement.

Another difficulty in Carpenter's arrangement is that he neither shows nor describes any mode of fastening or securing the whalebone or wire in the groove, except that, after it is "placed" or "inserted" in the groove, the cushion is to be "covered with cloth in the usual manner of billiard-cushions." It is evidently not intended to be secured or fastened so as to become, as is necessary in the plaintiff's arrangement, an integral part of the structure of the rubber cushion, for Carpenter describes it as intended to be lifted by the action of the ball, as a wedge, when embedded in the rubber beneath it. Hence, in Carpenter's arrangement the wire does not receive a practically horizontal blow from the ball, and in yielding compress the rubber behind it, and bring the elastic force of such rubber into action to repel the ball in a horizontal direction. That is an essential feature of the plaintiff's arrangement, for he says in the specification of his reissue that the face of the rubber cushion is so beveled that the ball strikes at about its center against the upper corner or edge of the cushion, along and in which the cord lies, and that the ball does not come in contact with the cushion at any other part of the cushion. A lifting of the cord, as in

Carpenter's arrangement, would entirely destroy the plaintiff's arrangement. Hence, the plaintiff firmly secures his cord in place, so that it may receive the horizontal blow. No such arrangement is found in Carpenter's specification. But such arrangement is found in the defendants' structure. The thin edge of rubber interposed between the defendants' cord and the outer extremity of the cushion merely acts to hold the cord in place, so that it may be always in position to receive a practically horizontal blow, and is a mere equivalent for the cloth in which the plaintiff wraps his cord. There is an advantage, as respects utilizing the elastic force of the rubber to the greatest possible degree, in having the cord as near to the ball as possible; but if it makes too prominent an edge, its covering is apt to wear too rapidly. But that is a question only of durability. The invention of the plaintiff is employed if the cord is found in the place indicated, so firmly secured and so arranged as to act always in the manner indicated, in combination with the cushion behind it, in reference to a blow from the ball delivered in the manner stated. The defendants make and sell a structure of that kind, and no such structure is found in Carpenter's arrangement.

As respects what appears in Carpenter's first or incorrect model, (both of the models being now in the Patent Office,) it is manifest that he never pretended to have made an invention of anything shown in it, if it shows anything different from what is shown in his second model. He expressly says in his letter to the Office that the first model does not show his invention "truly." Whatever there is in the first model, therefore, that is different from what is in the second model was, at most, a mere abandoned experiment, not amounting to an invention. It is manifest, moreover, that a structure like that represented by such first model would be open to many of the objections before specified, to which one like such second model is open.

Carpenter was examined as a witness on the part of the defendants. His name is not set forth in the answer as that of a person to or by whom the plaintiff's invention was previously known or used. His application of January 18, 1858, is referred to in the answer as containing the plaintiff's invention. But his place of residence at the time of putting in the answer is not given in the answer. After he was sworn as a witness, and before any questions were put to him, an objection was entered on the record, on the part of the plaintiff, to his being examined, on the ground that he had not been named in the answer, and that the notice required by statute had not been given of his examination. The bill in this suit was filed in August, 1871. He was cross-examined *de bene esse*, under the same objection so made to his direct examination. Such objection to the testimony of Carpenter, so far as it tends to prove prior knowledge or use of the plaintiff's invention, was insisted on at the hearing, and a motion was made by the plaintiff to strike out such testimony in such respect. The motion must be granted.

But even if the testimony of Carpenter were to be admitted in such respect, it adds nothing to what appears in his application. He says that he made experiments with "the cushions" shown in the two models before he applied for a patent; that those experiments were, using "a cushion," two feet or less long, screwed to the bed of a table, and tested for about half a day by various parties; that such experiments were considered satisfactory enough, in hindering the ball from jumping, to apply for a patent; and that the cushion stood the blows of the ball and the wire was not dislodged. It does not appear that any billiard-table provided with such cushions as Carpenter's was ever made by him or any one else. The whole matter, so far as Carpenter testifies to having done anything, was an abandoned experiment.

What is found in letters patent granted to John Syrcher, November 10, 1863, for a "billiard cushion," is adduced to destroy the novelty of the plaintiff's invention. Syrcher uses thin strips of horn cut spirally, in connection with hard or soft rubber, to form a cushion. The strip of horn is used as a facing to the rubber pad, or is inserted into a long slit cut in the pad and made fast therein by rubber cement. The grain of the horn in the spiral strip runs crosswise of the strip, so that when the ball strikes the cushion the spring action of the horn, although crosswise of the strip, is with the grain and not crosswise of the grain. When the strip is inserted in the pad it is shown as extending downward from the upper exterior corner of the pad in a slanting direction, away from the face of the pad. A facing to the pad presents nothing in common with the plaintiff's invention. In the case of the inserted strip of Syrcher, the action of the cushion under the impact of the ball is different from what it is in the plaintiff's arrangement. The cushion does not yield in substantially a horizontal direction, because of the interposition of the strip of horn. For the same reason the resilience of the rubber is not returned to the ball in substantially a horizontal direction. By inserting the strip Syrcher destroys the homogeneous character of the cushion. The plaintiff preserves the homogeneous character of the cushion. From this difference results the different action of the two cushions under the impact of the ball and in response thereto. It follows that nothing in Syrcher's arrangement anticipated the plaintiff's invention.

As to what Delaney did in California, he details a series of abortive and abandoned experiments. He himself calls them experiments. One of them he describes as the use of rubber with "whalebone and drum-snares cut into the upper edge, and there fastened into the groove with court-plaster, to hold the whalebone or drum-snares put into the rubber." He says that he inserted the drum-snares as close as possible to the upper edge of the cushion, along such edge, and "about one-fourth of an inch from the face where the ball strikes;" that he discontinued the use of drum-snares and commenced using whalebone, because he thought it was better, as having more elasticity; that he discontinued the use of whalebone because some one offered to furnish him strips at less money than he was paying if he would use such strips; and that he did not apply for a patent for inserting drum-snares or whalebone in rubber billiard-cushions because he did not think it was of any value at the time.

The answer sets up that the reissued patent granted to the plaintiff is void, for the reason that it describes and claims an invention different from any invention described or claimed, or intended to be, in the original patent, or shown in the model, drawings, or application on which the original patent was granted. The drawings of the reissue are the same as those of the original patent.

It is objected, (1) that the original patent states that the invention consists in applying a cord "to" the upper angle of the cushion, while the reissue states that it consists in using a cord located "in or at" the upper corner or edge of the cushion; (2) that the reissue states that a small concave or bed is made immediately, or as near as may be, in the upper corner of the cushion, in which the cord may be fitted, while the original specification and the drawing disclose no such concave or bed; (3) that the reissue states that the cord may be more thoroughly secured in its position by molding it or embedding it entirely within the rubber near the corner, while the original specification and the drawing do not suggest any such thing; (4) that the reissue suggests the embedding the cord partially in the rubber, while nothing to that effect is found in the original specification or in the drawing; (5) that the partially or fully embedding the cord, found in the claim of the reissue, is not suggested in the original specification or by the drawing. The specification of the original patent describes the cord as applied to the edge or angle of the cushion, by inclosing it in a strip of cloth cemented to a strip of elastic cloth, which itself is cemented to the face side of the rubber cushion. Whether this cord is wholly external to the rubber cushion, and so requires to be firmly attached to such cushion by applying means of adhesion, or is partly within such cushion, and so can be more easily attached with firmness thereto, or is wholly within the cushion, and so is kept firmly in its place by the rubber which is exterior to it, is a mere matter of mechanical adaptation, having no relation to the real invention. Each arrangement is an equivalent for the other, as respects such invention. One may involve more durability than the other, but that is a point aside from the invention. The plaintiff testifies that when he arranged the cord wholly external to the rubber, as described in the specification of his original patent, it "wore the cloth a little faster than it would otherwise," and that he then had a set of molds made in such a way as to leave a groove in the upper edge of the cushion to receive the cord, which obviated the objection of wearing out the cloth. This groove admitted of a partial embedding of the cord in the rubber. Embedding the cord wholly in the rubber was a mere question of degree. The plaintiff was entitled to use all these forms within his invention, as modifications resulting from experience in its use, not involving any new or further invention. Within the rule laid down in *Seymour* vs. *Osborne* (11 Wallace, 516) it cannot be said in this case that it is apparent, on the faces of the two patents, that the Commissioner has exceeded his authority in granting the reissue, or that there is such a repugnancy between the two patents that it must be held, as a matter of legal construction, that the new patent is not for the same invention as that embraced and secured in the original patent.

It results, from these considerations, that there must be a decree for the plaintiff for a perpetual injunction, and an account of profits and an ascertainment of damages, with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C COOK, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

22,941.—*Railroad-Car Springs.*—Granted to AUGUSTUS B. DAVIS, February 15, 1859; reissued January 6 and March 17, 1863. Hearing January 29, 1873.

22,947.—*Wrenches.*—Granted to DANIEL P. FOSTER, February 15, 1859. Hearing January 29, 1873.

22,990.—*Mop-Heads.*—Granted to LUKE TAYLOR, February 15, 1859; reissued November 10 and 24, 1868, and October 19, 1869. Hearing January 29, 1873.

23,001.—*Elastic Toys.*—Granted to LUCIUS P. FOSTER, February 15, 1859. Hearing January 29, 1873.

23,011.—*Water-Wheels.*—Granted to N. F. BURNHAM, February 22, 1859; reissued September 1, 1863. Hearing February 5, 1873.

23,022.—*Molding Covers for Cook-Stoves.*—Granted to GEORGE W. GARDNER, February 22, 1859. Hearing February 5, 1873.

23,032.—*Steam-Pressure Gages.*—Granted to T. W. LANE, February 22, 1859. Hearing February 5, 1873.

23,033.—*Hose-Couplings.*—Granted to ROBERT B. LAWTON and WILLIAM H. BLISS, February 22, 1859; reissued December 21, 1869. Hearing February 5, 1873.

23,034.—*Fire-Plugs.*—Granted to JOSEPH L. LOWRY, February 22, 1859; reissued August 14, 1860, and July 30, 1872. Hearing February 5, 1873.

23,040.—*Locks.*—Granted to LYMAN F. MUNGER, February 22, 1859; reissued December 12, 1871. Hearing February 5, 1873.

23,060.—*Electro-Magnetic Fire-Alarm Apparatus.*—Granted to MOSES G. FARMER, February 22, 1859. Hearing February 5, 1873.

23,085.—*Lamps.*—Granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859. Hearing February 12, 1873.

23,097.—*Machines for Crozing and Chamfering Barrels.*—Granted to HIRAM LITTLEJOHN, March 1, 1859. Hearing February 12, 1873.

23,105.—*Construction of Steam-Vessels.*—Granted to JAMES MONTGOMERY, March 1, 1859. Hearing February 12, 1873.

23,152.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 8, 1859. Hearing February 19, 1873.

23,172.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,263.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 18 3.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON E. PETTEE, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD EBER, March 29, 1859. Hearing March 12, 1873.

23,351.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 29, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,630.—*Burnishing Machines.*—Granted to LE ROY S. WHITE, April 6, 1859. Hearing March 19, 1873.

23,595.—*Railroad-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,633.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,636.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,590.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859 Hearing March 26, 1873.

23,629.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUANLER, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL ROY and MOSES R. SHALTENS, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,834, 4,835, and 4,836, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,920, 1,921, 1,922, and 1,923, June 6, 1865; No. 1,560 having been ordered to again reissue, No. 5,229, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,816.—*Regulators for Time-Keepers.*—Granted to RALPH S MERRIMON. April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,893.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,976.—*Stoves.*—Granted to JOHN G. WIDMAYR, May 10, 1859. Hearing April 23, 1873.

24,009.—*Machines for Upsetting Tires.*—Granted to CHAUNCEY L. UNDWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,093.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

EXTENSIONS GRANTED.

22,742.—*Improved Bed-Bottom*, granted to B. F. S. MONROE, January 25, 1859.

Claim.—The two frames A C, with the springs B secured between them, the frames being connected by the cross-bands F, covered or inclosed by any suitable fabric, E, and the upper frame supporting the seat or mattress D, the whole being arranged substantially as and for the purpose set forth.

22,753.—*Improvement in Many-Barreled Fire-Arms*, granted to CHRISTIAN SHARPS, January 25, 1859; reissued June 1st, 1861, numbered 1,199; reissued February 12, 1867, numbered 2,480.—Division A.

Claim.—The combination of a discharger with the hammer and the devices herein described, or the equivalents to the same, for changing the position of the discharger on the movement of the hammer.

22,787.—*Improvement in Stoves*, granted to POWTER DODGE, February 1, 1859. (WILLIAM M. PINGRY, administrator.)

Claim.—An improved air-tight stove, the several parts being constructed and arranged in relation to each other, substantially as shown and described.

22,792.—*Improved Machine for Manufacturing Wooden Troughs*, granted to SAMUEL T. FIELD, February 1, 1859.

Claim.—1. Arranging the bearings of the saw and the mechanism by which it is driven, substantially as described, whereby the upper surface, and also the interior of the saw, is left unobstructed, for the purpose set forth.

2. In combination with a cylindrical saw, a secondary cutter, arranged substantially as described, so as to groove the core of the stick while it is being sawed out by the cylindrical saw.

22,841.—*Improvement in Harness Saddle-Trees*, granted to SAMUEL E. TOMPKINS and JOHN MACLURE, February 1, 1859; reissued January 2, 1872, numbered 4,699.

Claim.—A projection attached to the tree passing through a recess in the seat block, substantially as described, in order to take the strain of the bolt passing through such recess from off the seat-block.

22,892.—*Improvement in Mills for Grinding Cane, &c.*, granted to ISAAC A. HEDGES, February 1, 1859.

Claim.—1. Surrounding the openings in the top and bottom plates with annular ledges L, when employed in connection with rollers having recesses corresponding with them in their top and bottom ends, substantially as described.

2. The regulator and adjuster, substantially as and for the purposes described.

3. The oil-tubes H, when used in connection with a recess containing waste oil to conduct the same through the rollers to the bearings below.

4. The corrugated shells, in combination with the rollers, for the purpose of readily converting the mill into a corrugated mill, constructed and adapted substantially as set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 21, 1873.]

6,342.—*Wood Type.*—JOHN F. BLACKMAN, Brooklyn, assignor to VANDERBURG, WELLS & CO., New York, N. Y.

6,343.—*Oil-Cloth.*—JAMES HUTCHISON, Newark, N. J., assignor to THOMAS POTTER, SON & CO., Philadelphia, Pa.

6,344.—*Oil-Cloth.*—JAMES HUTCHISON, Newark, N. J., assignor to THOMAS POTTER, SON & CO., Philadelphia, Pa.

6,345.—*Oil-Cloth.*—JAMES HUTCHISON, Newark, N. J., assignor to THOMAS POTTER, SON & CO., Philadelphia, Pa.

6,346.—*Oil-Cloth.*—JAMES HUTCHISON, Newark, N. J., assignor to THOMAS POTTER, SON & CO., Philadelphia, Pa.

6,347.—*Oil-Cloth.*—JAMES HUTCHISON, Newark, N. J., assignor to THOMAS POTTER, SON & CO., Philadelphia, Pa.

6,348.—*Lamp-Post.*—PETER H. JACKSON, New York, N. Y.

6,349.—*Oil-Cloth.*—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SON & CO., same place.

6,350.—*Oil-Cloth.*—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SON & CO., same place.

6,351.—*Printing-Type.*—RICHARD SMITH, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place.

6,352.—*Carpets.*—BENJAMIN CRABTREE, Jr., Philadelphia, Pa.

6,353.—*Carpets.*—BENJAMIN CRABTREE, Jr., Philadelphia, Pa.

6,354.—*Carpets.*—JOHN DORNAN, Philadelphia, Pa.

6,355.—*Carpets.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CERASE & SLOAN, same place.

6,356.—*Carpets.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CERASE & SLOAN, same place.

6,357.—*Carpets.*—WILLIAM J. HOGG, Philadelphia, Pa., assignor to WILLIAM HOGG, Jr., same place.

6,358.—*Carpets.*—HUGH S. KERR, Philadelphia, Pa., assignor to JOHN GAY, same place.

6,359.—*Printing-Type.*—ANDREW LITTLE, New York, N. Y.

6,360.—*Carpets.*—JOHN POWELL, Kidderminster, England, assignor to HENRY JECKS DIXON & SONS, same place.

6,361.—*Carpets.*—CHARLES RIGHTER, Philadelphia, Pa., assignor to JOHN GAY, same place.

6,362.—*Hinges.*—JOHN B. WHITNEY, New York, N. Y.

6,363.—*Door-Knobs.*—JOHN B. WHITNEY, New York, N. Y.

6,364.—*Door-Knobs.*—JOHN B. WHITNEY, New York, N. Y.

6,365.—*Key-Hole Escutcheons.*—JOHN B. WHITNEY, New York, N. Y.

6,365.—*Casing of Soda-Water Apparatus.*—GEORGE F. MEACHAM, Newton, assignor to JAMES W. TUFTS, Medford, Mass.

6,367.—*Casing of Soda-Water Apparatus.*—GEORGE F. MEACHAM, Newton, assignor to JAMES W. TUFTS, Medford, Mass.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date January 21, 1873.]

1,103.—*Blasting Squibs and Fuses.*—SAMUEL HARRIES DADDOW, St. Clair, Pa.

1,104.—*Umbrellas and Parasols.*—DAWES & FANNING, New York, N. Y.

1,105.—*Cigars.*—F. DE BARY & CO., New York, N. Y.

1,106.—*Printing-Presses, &c.*—JOB C. TRIPP, Fairhaven, Mass., assignor to BOSTON AND FAIRHAVEN IRON WORKS.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date January 21, 1873.]

ORIGINAL PATENTS.

134,964.—*Machine for Sizing Yarn.*—THOMAS ABBOTT, Blackburn, Great Britain.

The shaft that operates the marking and index apparatus consists of two parts held together by a clutch, and which, through the lever, may be disconnected to allow one part of the shaft to be moved independently by a winch, to reset the marking mechanism. The movement of this lever, through the devices enumerated in the second clause, removes from the index-plate the operative-gear, when a spring coiled around its shaft resets the index to the zero-point.

Claim.—1. The shaft, consisting of two sections, d d^*, which may be connected or disconnected, substantially as described, in combination with marking apparatus operated by the section d^*, which extends to the front of the machine, and is provided with a winch, n, or its equivalent.

2. The combination, with the lever f f, of the pin q, slot r, lever s, and slide t, Fig. 3, or other equivalent device, for returning the dial-plate or the index-finger to the "zero" point on adjusting the lever.

3. The combination, with the shaft d^* and lever f, of the finger e and stop p, or other equivalent device, for defining the position of the marking bowl or instrument at the commencement of a fresh beam.

134,965.—*Curing and Packing Meats.*—ISAAC ATKINSON, Hamilton, Canada.

The meat having been treated for about thirty days according to the common mode of salting, is then brushed in cold water, allowed to drain for twenty-four hours, wiped dry, sprinkled with fine ground alum, and packed between interposed layers of paper.

Claim.—Rolling meats in fine-ground alum after being fully salted and washed, and packing with an ordinary sheet of paper between each piece of meat to prevent injurious contact, as and for the purpose specified.

134,966.—*Tuck-Crosser.*—SYLVESTER P. BABCOCK, Adrian, Mich.

By changing the position of the latch, the distance between the ends of the nipping-points may be regulated to suit different materials.

Claim.—The recessed or notched latch I, pivoted to the standard F, as and for the purpose set forth.

134,967.—*Self-Locking Rail Fence.*—ALLEN BAGLEY, Ypsilanti, Mich.

The stakes which carry the rider are supported upon the lower rails. An opening may be made in the fence, and a firm support given to gate-posts by reversing one set of the long rails, interlocking them with the cross-rails.

Claim.—1. The fence described, consisting of the long rails A, short rails B, rail C, stakes G G, and riders D, the stakes G G being supported by the long rails A A, as shown.

2. In a fence of the described construction, the square section formed by reversing the long rails, whereby the same is adapted to support the gate-posts, as described.

134,968.—*Method of Setting Black Diamonds.*—THOMAS W. FAXTER, Chicago, Ill.

Claim.—1. The mode or method of setting or embedding carbon, boart, black-diamond, or equivalent points or tools in holders for mechanical purposes, substantially as hereinabove set forth.

2. The carbon, boart, black-diamond, or equivalent point set eccentric to that part of the stock in which the holder is secured, substantially as described, so that by turning the said holder in the stock the position of the cutting-point with relation to other cutting-points in the same stock may be varied, substantially as set forth.

3. In combination with the stock and the holder in which the black-diamond, boart, carbon, or other equivalent tool or point is embedded or held, an eccentric sleeve or equivalent therefor, substantially as described, so that the holder may be rotated independently of the said sleeve, for the purpose of adjusting the said tool or point to bring either one of its sides or faces to operate on the material to be cut without changing its position with relation to the other points in the same stock, while, at the same time, by turning the said sleeve the point may be adjusted laterally, if so desired, substantially as described.

134,969.—*Hinge.*—SOLON BINGHAM, Saratoga Springs, N. Y.

A ring or flange partially surrounds the hollow end pieces of a hinge, near the ball-tip of each, and this flange works in corresponding recesses in the swinging part of the hinge, the two in combination applying to a reversible hinge that is known as a bayonet-fastening device.

Claim.—The top joint-piece J and lower joint-piece B, provided with the ring or flange A, partially surrounding the same, in combination with the standing part A, swinging part D E having recesses m m, joint-piece B, and rod or pintle b, the several parts being constructed and arranged substantially as and for the purpose set forth.

134,970.—*Rivet-Pocket for Oil-Well Pumps.*—WILLIAM H. BIRGE, Franklin, Pa.

Between the working barrel and the standing-valve barrel is arranged a tube that holds the standing valve upright, and forms a pocket to catch any broken rivets that may fall down the working-barrel.

Claim.—The pocket F formed between the barrels A and tube E, in combination with the barrel B, valve C, seat c, and cage d, substantially as and for the purpose hereinbefore set forth.

134,971.—*Loom-Shuttle.*—FRANCIS BLANDING and ANDREW J. BLANDING, Lowell, Mass.

The spindle is split a part of its length and a sliding wedge arranged to be moved back and forth within it, pressing out the sides against the cop to hold it firmly when the spindle is in position, and withdrawn when the spindle is raised to allow the sides to be pressed toward each other, that the cop may be easily slid on or removed.

Claim.—The combination, with the shuttle-spindle, of the sliding wedge or pin C, so arranged as to be drawn back and forth within the spindle, substantially as and for the purpose specified.

134,972.—*Steam-Boiler Feeder.*—JAMES H. BLESSING, Albany, N. Y., assignor to himself and FREDERICK TOWNSEND, same place.

The feeding-chamber B receives steam from the boiler through pipe E, which terminates at the proper water-level. It receives water through F and discharges into the boiler through K and H. The pipes are flexible, and the chamber B sinks when filled with water and rises after discharge. As it rises the valve closes and the cock s' opens, and the back pressure from the boiler forces a portion of the water retained in chamber J through pipes J' and F and perforated plate, the shower producing a speedy vacuum in B.

Claim.—1. The combination of the valve v applied and actuated, as shown, single gravitating vessel B, arranged and actuated as described, and the pipes E, F, K, and H, with their appropriate valves or cocks, substantially in the manner and for the purpose set forth.

2. The cold-water supply-receiver J, communicating with a gravitating vessel, B, by means of the feed-pipes and a branch pipe, J', which latter is provided with a valve, s', all for the purpose of facilitating the condensation of steam in said gravitating vessel, substantially as described.

3. The cold-water receiver J, for the purpose of retaining some of the feed-water, and allowing the same to be forced by steam from the boiler back into the vessel B, thus producing a vacuum therein, substantially as described.

4. The combination of valves p, j, and s', and their respective pipes, with a gravitating vessel, B, substantially as described.

134,973.—*Fruit-Box.*—EZRA P. BOTHWELL, McArthur, Ohio.

The bottom box has end boards that extend to the top of the crate; then one or more movable boxes or trays are used. The side boards of said trays project at the ends over the end boards of the crate. The top tray has a cover, and nails are driven through the projecting ends of the upper tray into the end boards, which hold the crate and trays securely together.

Claim.—In a fruit-crate, the combination of the bottom box c, having end boards e extending to the top of the crate, with one or more movable trays or boxes, a b, having the side boards p projecting over the end boards e of the bottom box so that they overlap said end boards, and the top tray having a cover, T, all constructed and held together substantially as described.

134,974.—*Newspaper-File Holder.*—WILLIAM BRIGHT, St. Louis, Mo.

The clamp, composed of two bars between which the papers are secured by thumb-screws and nuts, is provided with journals by which it is attached to a desk.

Claim.—The clamp A, consisting of the parts *a a*¹, journals *a*², and set-screws B, in combination with the desk provided with suitable bearings, as described.

134,975.—*Tug-Strap.*—MARVIN CADWELL, Lansing, Mich.

The tug is cast of malleable iron.

Claim.—The hame tug-strap A, having the hook plate *a*, flanged edges *b*, loops *c c*, and hooks B C, as described.

134,976.—*Circular-Saw Mill.*—WILLIAM A. CAMPBELL, Manistee, Mich.

A brake is supplied to the machine, by which the impetus gained by the gearing in sigging, which might carry the carriage further than required, is taken up.

Claim.—1. The feed-shaft F having the double faced friction-wheel I secured thereon, and the friction-clutches J J' sleeved on said shaft and rotating in opposite directions, the clutch-yoke L and lever for moving the same, all arranged and operating substantially as and for the purpose set forth.

2. The arrangement, with relation to the friction-clutches J J', of the pulleys O P Q R and belts O' and S, as shown and set forth.

3. The brakes U U', lever V, links W, rod X, cranked shaft Y, and spring Z, as and for the purpose set forth.

134,977.—*Sleigh-Runner.*—CHRISTOPHE CHENETTE, Manchester, N. H.

The runner is applied to the axle of a carriage when the wheel is removed, so that the carriage may travel on runners instead of wheels.

Claim.—1. The sole C of the runner extended up, around, and over at the rear end, and inserted in the hub A of the runner, substantially as described.

2. The guard G, extending from the fore end of the runner to the outer end of the hub or axle, substantially as described.

3. In combination with the sole C, rail B, and hub A, the hoop-tire H extending entirely around the runner and hub, substantially as described.

4. In combination with the rail and sole, the braces E and F, arranged substantially as described.

5. In combination with the hub A and sole C, the spokes D D, set bracing between the hub and sole, substantially as described.

134,978.—*Grating for Sewer-Inlets.*—HENRY W. CLAFF, Concord, N. H.

The grating proper is elevated upon short supports, to prevent clogging by small rubbish.

Claim.—The grating for sewer-openings herein described, consisting of the ring *a*, supporting-pins *b*, and elevated grating, substantially as specified.

134,979.—*Medicated Candy.*—SIDNEY B. COLTON, Bloomfield, Conn.

The combination of calamus, gum myrrh, and gum guaiacum with each or all of the following essential oils, viz.: Peppermint, cinnamon, sassafras, hemlock, anise, wintergreen, and capsicum.

Claim.—1. The combination of the calamus, myrrh, and guaiac with candy, substantially in the proportions and manner specified, and for the purpose set forth.

2. The combination of the calamus, myrrh, and guaiac and one, more, or all of the essential oils specified, with candy, substantially in the proportions and manner specified, and for the purpose set forth.

134,980.—*Curtain-Fixture.*—GEORGE B. COWLES, Bridgeport, Conn., assignor to WHITE & COWLES, same place.

A pawl is arranged on the outer end of the supporting-bracket, which bears on the spring-roller that engages in slots made in the face of the roller-flange.

Claim.—1. The pawl F, as arranged, or its equivalent, bearing endwise on the roll, by which lateral motion is prevented.

2. The arrangement of the pawl F, ratchet *b* on flange G, shoulder 2, in combination with axle D, secured in standard or its equivalent B by pin E, as described and for the purpose specified.

134,981.—*Thill-Coupling.*—SHRIGLEY J. DIBBLE, Wethersfield, Conn.

Claim.—The combination of the square bolt *c*, the cylinder *d*, the bearing on the end of the strap *b*, made cam-shaped, and the rubber *a*, arranged and operating substantially as described, for the purposes set forth.

134,982.—*Cork-Cutting Machine.*—THOMAS S. DIXSTON, Philadelphia, Pa., assignor of one-half his right to HENRY DIXSTON, same place.

The cork-blanks previously punched out are fed into a hopper, which, at regular intervals, rises up and delivers them to a traveling carriage having rotary gripers. The blanks are then rotated as they travel over the edges of curved knives, to finish them either to a cylindrical or conical form.

Claim.—1. The combination, substantially as described, of the stationary knife or knives to trim the blanks, and the traveling carrier or carriers, to hold them against said knives.

2. The combination, substantially as described, of the stationary knife or knives, the traveling carrier or carriers, and the hopper or hoppers which feed the blanks automatically to said carriers.

3. The combination, substantially as described, of the stationary knife or knives and the traveling carrier or carriers with two or more sprocket-wheels and a chain, which is slack between every two of said wheels, so as to permit said carriers to pause for the purpose of gaining a blank.

4. The combination, substantially as described, of the stationary knife or knives, the traveling carrier or carriers, and the grinding or buffing wheel.

134,983.—*Medicated Paper.*—CHARLES J. EAMES, New York, N. Y., assignor to KIDDER, WETHERELL & CO., same place.

Carbolic acid combined with the pulp previous to making the paper, or the paper dipped in a solution of the acid.

Claim.—A medicated paper prepared substantially in the manner herein described.

134,984.—*Corn-Planter.*—WILLIAM A. EASTIN, Henderson county, assignor to W. L. RANKINS, Paris, Ky.

A hopper, seed-box, and running-wheels are supported by a flat block lying on the ground, its under surface being concave from side to side, with a drill-tooth in the middle. The wheels have only bearing enough to make them revolve the seed-box. It forms the ground into a rounded ridge with a furrow along the middle.

Claim.—1. The tobacco-hill maker A, having a concavity in its lower side, in combination with the wheels F F, axis *e*, and handles G G, substantially as set forth.

2. The combination of the cylinder C *c'*, plate E, axis *c*, wheels F, hopper D, tobacco-hill maker A *a*² *a*⁴, plow B, and handles G, substantially as and for the purpose set forth.

134,985.—*Wood Pavement.*—JOHN Q. FELT, Detroit, Mich.

The blocks are placed diagonally so as not to touch, and the interstices are filled, first, with coarse gravel, into which is poured a grouting composed of hydraulic cement one part, sand four parts, water *q. s.* The whole forms a wood pavement in a solid stone matrix.

Claim.—A pavement composed of the materials described, when laid substantially in the manner set forth.

134,986.—*Hand-Seeder.*—JOHN E. GARSIDE, Hennepin, Ill.

A long tube closed at both ends, divided equally by three lateral partitions, each compartment having another partition perforated in the center. There is one line of perforations along the length of the tube, through which the seed passes by centrifugal force, effected by a winch-wheel and band in a frame slung over the shoulders.

Claim.—In a seed-sower, consisting of a revolving cylinder, A, with closed ends, the combination of the fixed partitions 2 3, intermediate perforated partitions 5 6 7, sliding doors *a*, perforations *a*, fixed ribbed collars E *d* E *d*, circular flanged bearings C C, board B having the pulley of winch *k* arranged so that the band will pass around the cylinder, substantially as set forth.

134,987.—*Wrought-Iron Column.*—LUDWIG HERMAN, Detroit, Mich.

The column is formed of bars of ordinary merchantable iron radially placed in respect to a cylinder, and connected together by stays.

Claim.—An improved iron or steel column, composed of four or more radial bars, A, connected together at intervals by the stays C, substantially as described and shown.

134,988.—*Animal-Poke.*—CURTIS HINMAN, Akron, Ohio, assignor to himself and ROSWELL WILLETTS, same place.

The operating parts are cast in one piece.

Claim.—The casting D, provided with the cross-bar F, projections E E', and N, all cast in one piece, substantially in the manner and for the purposes set forth.

134,989.—*Velocipede.*—JOHN E. HOFFMIER, New Brunswick, N. J.

A stationary or removable seat facing the rear, and situate up on the angular reach of the vehicle.

Claim.—In a velocipede of the construction substantially as herein shown and described, the combination and arrangement upon the inclined bifurcated reach E E of the seat G facing rearward, the latter provided with the side pieces *d d* for adapting it to the bifurcated reach, substantially as herein shown and described.

134,990.—*Washer for Nut-Fastening.*—HARRISON P. HOOD, Indianapolis, Ind.

A circular washer with holes at intervals near its edge, through which nails are driven, the heads impinging against the side of the nut.

Claim.—The washer A provided with the perforations *a a*, substantially as shown and described, and for the purpose set forth.

134,991.—*Ditching-Machine.*—JAMES W. HUMPHREYS, La Fayette, Ind.

The ditching-point is raised and lowered to any desired position by means of the rack, pinion, ratchet, and lever, in the usual manner. The combination of elements named in the claim is for the purpose of adjusting and retaining the chute or elevator at any desired angle of elevation.

Claim.—In combination, the arms S S pivoted to the chute R and to the journals of the sheave-wheel T, the intermediate arms U U provided with key-holes secured to the journals of the sheave-wheel T, and the sheave V, the latter having its bearings in the arms W W pivoted to the chute R and terminating in the curves X X, all in the manner and for the purposes hereinbefore set forth.

134,992.—*Loom.*—LUCIUS J. KNOWLES, Worcester, Mass.

For mending broken warp-threads, they are brought into one plane by means of a hand-bar arranged to raise the free ends of the horizontal vibrating levers of the shedding mechanism, so as to put them in gear with the lifting mechanism, thereby raising all the heddles at once. To lock the pattern-cylinder during the shedding movement, the levers which are not raised by the pins are held down by a hooked arm actuated by a cam. The shuttle-boxes are operated by two compound levers, G, each connected with two separate gear-cranks and vibrating levers. The levers of the box and shedding mechanisms are attached to their fulcrum-rod by an adjustable cap, which holds their slotted ends down upon it. The connection between the shaft of the cylinder and its actuating-gear is broken, when desired, by withdrawing a spring-bolt from an arm on the end of the shaft. The levers actuated by the pins of the cylinder are made with a circular recess so arranged that they will not be immediately lowered when raised into position.

Claim.—1. The combination, with the vibrating levers B, of an elevating bar or plate independent of the pattern-chain, to raise said levers out of connection with the pattern-chain, and place them in gear with the lifting mechanism, for the purposes set forth.

2. The combination, with the free ends of the vibrating levers B, of the slotted plate B', substantially as and for the purposes set forth.

3. The combination, with levers B and locking device *d'* and *e*, of shaft *c*, arm *c'*, and cam *d*, substantially as and for the purposes set forth.

4. The movable cap or lever holder E, substantially as and for the purposes set forth.

5. The combination, with two separate gear-cranks, H H, and their vibrating levers B B, of the compound levers G and the connections *p p*, substantially as and for the purposes set forth.

6. The combination, with the vibrating arms B and their gear-cranks H, of the cogged lifting and depressing wheels C E and angle-levers C', said parts being constructed and relatively combined with each other on the elevated frame D', as shown and described.

7. In combination with the pattern-cylinder B'', the levers B having the curve *l*, as and for the purposes set forth.

8. The combination, with the shaft of the pattern chain or wheel and gear K, of the locking-arm L and its bolt, substantially as and for the purposes set forth.

134,993.—*Die for Forging Frowers.*—CHRISTIAN KONOLD, Pittsburg, Pa.

One part is used for welding and drawing down, another for straightening, and the third for beveling, the blade.

Claim.—The triple-faced dies, constructed as shown and described, for the purposes set forth.

134,994.—*Reversible Curb-Brick.*—EDWARD LINSON, Shoemakertown, Pa.

The side having an extended flat surface is presented to the soft earth, against which it is held by the harder material of the wall or roadway, which is compressed against the more limited flat surface of the opposite side of the brick.

Claim.—The within-described curb-brick, having one flat side of the same extent as the brick, and an opposite flat side of lesser area, and rounded upper and lower edges, as set forth.

134,995.—*Well Packing.*—JAMES H. LUTHER, Petroleum Centre, Pa.

The diameter of the packer is equal to that portion of the well which receives the casing. From the body four fingers project upward along the sides of the well to guide the lower end of the casing to its seat. This seat is a ring of lead inserted in the body of the packer. The lower portion of the body is cylindrical and receives a beveled ring, which is swiveled on it. The space between the body and the swiveled ring is wound with cotton-wicking. The packer being lowered into the well, the swiveled ring rests on the shoulder formed in the well, and the casing resting on the leaden ring, its great weight causes the lower end to embed itself in the lead and form a water-tight joint.

Claim.—1. The combination of the body P of the packer with the movable ring *r* and the elastic packing *w*, arranged and operating as described.

2. The compressible ring *l*, inserted in the top of the packer to form a water-tight seat in the lower end of the casing, as described.

3. The combination, with the packer P, of the arms *a a a a*, for the purpose of guiding the lower end of the casing to its seat, as specified.

134,996.—*Wagon-Body.*—HENRY AUGUSTUS LUTTGENS, Paterson, N. J.

The body is constructed with removable corner-pieces, the sides being sustained by trusses.

Claim.—The combination of corner-pieces C, panels A and B, sill D, truss-bars E F, and upright piece H, substantially in the manner and for the purpose as described.

134,997.—*Hay Raker and Loader.*—FRANK MARION and NICHOLAS E. WILSON, Groveland, Ill.

Curved metallic rake-teeth, with the head thereof pivoted and pressed by a spring, have a wing or beater revolving in the curve to elevate the accumulated hay onto an endless-apron conveyer, whence it is deposited on the wagon.

Claim.—1. The rake-bar C with its teeth *d* having a pivotal connection at each end with braces B B, and provided with raised arms *v v*, in combination with springs *s s*, substantially as and for the purpose set forth.

2. The revolving beater D, draper E, and elevator F, all arranged to operate together by means of the intermediate gearing connected with the driving-gear *m* of wheel *b*, in combination with the rake C *d*, substantially as set forth.

134,998.—*Apparatus for Preparing Waxed Ends.*—WILLIAM MAY, Binghamton, N. Y.

A series of wires are so arranged that strands of thread of different lengths may be drawn from the balls, which, when formed into a "waxed cord," the ends will have the desired taper.

Claim.—The device herein described, consisting of the tablet A, horizontal wires B, perpendicular wires C, springs *s s s*, thumb-screw and stop E, and rubber facing F, all being constructed substantially as and for the purpose hereinbefore set forth.

134,999.—*Attachment for Wash-Boilers.*—REUBEN A. MCCAULEY, Baltimore, Md.

The attachment is formed of a central tube to be placed in a boiler, the upper end of which tube has a pin so that a short tube, with a slot and inclined slots to make it adjustable, can be placed upon it. The upper end of the short tube has a cap, in which are flaring guides and radially-compressed tubes for directing the hot water and steam onto the clothing.

Claim.—1. In an attachment for wash-boilers, the base column B and cap-tube D, made adjustable in length to adapt the device to wash-boilers of different depths, as described.

2. The cap H having interior curved vanes *g*, in combination with the discharge-tubes, as and for the purpose described.

3. In a wash-boiler attachment, the double-vented and oppositely-inclined tubes E *e e* from single openings in the cap, as and for the purpose described.

4. The wash-boiler attachment having its several parts constructed and arranged for joint operation, substantially as herein described.

135,000.—*Sewing-Machine.*—JOHN N. MCLEAN and JOSEPH BENNOR, Philadelphia, Pa.

Machine makes a lock-stitch, completes each stitch separately, and the needle feeds the material. The cast-off rune diagonally across the head at the base of the hook, prevents the loop getting back of the head, and holds it in proper position until it is spread and cast over the bobbin. The arm projecting from the bobbin rests between lugs on the plate to prevent its rotation; the bobbin-thread is led through holes formed in it, and the loop of needle-thread passes up over this arm, giving the loop a half-twist. The head, bobbin-holder, and bobbin are respectively formed with grooves and lugs to confine them in proper working position.

Claim.—1. The rotating tubular head G provided with the hook *g* and the cast-off *r*, all constructed and arranged to operate substantially as described.

2. The lug *n* provided with a recess for the arm *i* of the bobbin-holder to rest in, said lug having a face or bearing at the point where the needle descends to force the thread inward and thus spread the loop, the whole being constructed and arranged to operate substantially as described.

3. The rotating head G provided with the internal groove *p*, in combination with the bobbin-holder L provided with the laterally-projecting lip *o*, substantially as set forth.

4. The bobbin-holder L provided with the internal circumferential groove, in combination with the bobbin M provided with the lip *l*, substantially as described.

5. The take-up, consisting of the arm R pivoted eccentrically on the end of the driving-shaft F, and having its slotted arm connected by a pin, *u*, to the needle-bar, as set forth.

6. A hemmer or other attachment for sewing-machines provided with an inclined arm or stud, *o*², and the hook *y* or its equivalent, whereby it is secured in place, substantially as described.

135,001.—*Method of Purifying Carbonic-Acid Gas.*—ASA P. METZERT, New Britain, Conn.

The gaseous products of combustion are forced through a pipe, to which is admitted a jet of steam, and they are passed either through or in contact with a solution with an alkaline or earthy carbonate, bicarbonate of soda being preferred.

Claim.—1. The method of purifying carbonic-acid gas by bringing the same in contact with an alkaline or earthy carbonate, substantially as and for the purpose set forth.

2. The method of purifying carbonic-acid gas by diffusing steam therewith, substantially as and for the purpose set forth.

3. The method of purifying carbonic-acid gas by diffusing steam therewith, and then bringing the same in contact with an alkaline or earthy carbonate, substantially as and for the purpose set forth.

135,002.—*Rotary Cultivator.*—JAMES W. MILROY, Haywood, Cal., assignor to himself, WM. M. MICHENER, and C. L. HOWARD, same place.

A series of spade-wheels revolving independently on an axle mounted in a frame supported on wheels. The supporting-wheels being attached to arms on the axle and controlled by a lever, the implement can be raised or lowered so as to carry the spades at a greater or less height, as desired.

Claim.—The frame A and axle B, wheels D D', and spindles C C', in combination with the independent revolving plows or teeth I I on the axle, and arranged to be raised or lowered by lever E, all substantially as and for the purpose herein specified.

135,003.—*Hot-Air Furnace.*—DWIGHT B. MONTAGUE, Springfield, Mass.

Air-pipes with numerous branches are located inside the combustion-chamber. A shield or door, having a weighted lever to close it, is placed inside the fuel to prevent escape of dust, &c. A like door is placed in the dust-flue near base of the fuel-chamber.

Claim.—1. The hot-air pipes P' having branches P'', all arranged in the combustion-chamber, and constructed substantially as described.

2. The curtain or fender suspended between the feed-door and the fire, in combination with the lever *t* and weight *t'* whereby it is held in position, substantially as set forth.

3. The dust-flue G having arranged therein the damper *g*, held in position by the weight *g'*, all substantially as set forth.

135,004.—*Hygienic Basin and Steam-Bath.*—EDGAR O. MURDEN, Highstown, N. J.

An oval basin provided with a lip formed with the basin having its lowest part commencing at a point near the bottom and the upper part slightly elevated above said basin. Also, a cover constructed to fit over the basin, leaving the top of the lip open.

Claim.—As a new article of manufacture, the basin A provided with the lip C and cover F, arranged to be used for a water or steam bath, substantially as and for the purpose set forth.

135,005.—*Farmer's Boiler.*—AARON B. NOTT, Fairhaven, Mass., assignor of one-half his right to JAMES E. CARD, same place.

When coal is used as fuel the grate and fire-bridge are employed, and when it is desirable to use wood as fuel the grate and also the fire-bridge J are removed from the fire-chamber so as to leave the entire heating-space free for receiving large logs that may extend the entire length of the ash-pit D.

Claim.—1. The horizontally-divided and upwardly-tapered sections A C and A' C', constructed and put together as herein described and shown.

2. The combination of the depressed ash-pit D and sections A C A' C' with the removable caldron B, and removable grate G, and the removable fire-bridge J, all substantially as described.

135,006.—*Coffin.*—PHILIP E. OBER, Beverly, Mass.

The coffin, which is made of cement or similar material, has two grooves made across its bottom to serve as guides to the ropes and to prevent them from slipping off while the coffin is being lowered.

Claim.—The sarcophagus made with the ledges C C and channels D D arranged in it, and with reference to each other and its bottom in manner as explained and shown.

135,007.—*Sawing-Machine.*—FURNANDO C. G. PAEP, Carter's Creek Station, Tenn.

The levers for raising and lowering the saw are so arranged as to be moved by the foot of the operator without removing his hands from the driving-crank.

Claim.—The saddles J and K, saw I, pin A, spring-boards L and Y, standard B, cord *s*, rollers *f* and *g*, in combination with the frame A, cog-wheels S and T, crank-wheel E, balance-wheel W, connecting-rod H, sliding bar G, and crank X, substantially as and for the purpose hereinbefore set forth.

135,008.—*Self-Acting Spinning-Mule.*—ARCHIBALD PAUL, Cohoes, N. Y., assignor of one-half his right to CAMPBELL & CLUTE, same place.

A rod, endless cord, or wire, arranged lengthwise of the carriage, is provided with a device that traverses along a movable rod or rods arranged lengthwise of the frame and connected with the shipping devices, so that on moving the rod, cord, or wire the second rod is also moved and the carriage then stopped in any position.

Claim.—In a mule or jack for spinning, the movable rod, or its equivalent, arranged lengthwise on the carriage and furnished with a device which traverses to and fro with the carriage along the movable rod or rods, or any equivalent therefor, which control the action of the belt-shipper or device by which the machine is stopped and started, when the whole is so constructed that the movements of the said rod, or its equivalent, on the carriage shall cause the stopping and the starting of the mule or jack when the carriage is at any point whatever in its to-and-fro movements, substantially as described.

135,009.—*Windlass.*—OLIVER REEDER, Baltimore, Md.

A fixed standard or column having an adjustable revolving drum on its top, with a pawl and ratchet, for the purpose of raising oyster-dredges.

Claim.—1. In an oyster-dredge winder, a lower fixed columnar frame, in combination with an upper adjustable frame for the winding devices, substantially as herein shown and described.

2. Within the bearings of the upper frame B, and passing through a winding-drum capable of only a revolving movement, the sliding shaft D, having the driver *d* and disk E, in combination with the pawl F pivoted to the upper frame, substantially as herein set forth, for the purpose specified.

3. In the drum C, the cavity prepared for the reception of the driver *d* and conforming to its shape, and the circular recess of a diameter larger than the greatest length of the driver, as and for the purpose set forth.

4. The crank-sockets *c'*, in combination with the disks E E' and cranks G, substantially as and for the purpose specified.

135,010.—*Draft-Tube for Soda-Fountains.*—RICHARD B. ROBBINS, Adrian, Mich.

A draft tube having side perforations near its closed end and adapted to be attached to the discharge-pipe of a soda-fountain.

Claim.—The improved draft-tube as having two or more perforations near one end, and used substantially as and for the purpose set forth.

135,011.—*Apparatus for Burning Hydrocarbons.*—EDWARD F. ROGERS, Chelsea, assignor to himself, LUTHER L. HOLDEN, and STOUGHTON B. HOLDEN, Woburn, Mass.

The coiled supply-pipe from the oil-reservoir passes through a water-chamber and terminates in a wire gauze or netting filled with a fibrous material to prevent too rapid feeding of the oil. The tube, where it terminates, is surrounded by a perforated jacket, which admits air to the flame.

Claim.—The combination of the oil-reservoir *a*, pipes *b'* *c*, water-receptacle *c*, generator *h'* having the air-ducts *i*, and jacket *l* having the inclined bottom *l'* and apertures *m* therein, all arranged as specified.

135,012.—*Stove-Leg.*—JOHN Q. C. SEARLE, Topeka, Kans.

The inner side of the enlargement of the stove-foot is made with lugs, with spaces between for the admission of lugs on the exterior of a projection on the under side of a stove-plate for locking the feet to the stove. When the feet are detached the projections serve as supports and protect the molding.

Claim.—1. A foot attachment for stoves in which a circular projection or projections on the under side of the plate, a circular enlargement at the upper end of the foot, and lugs upon both the said projection and enlargement, are combined, substantially as herein described.

2. A circular projection, D, on the under side of the bottom plate of a stove, for the twofold purpose specified.

135,013.—*Harvester.*—JOHN F. SEIBERLING, Akron, Ohio.

The reel is supported upon an adjustable lever and has attached to it a rocking-lever, on which is journaled tension-pulleys for the purpose of maintaining uniform tension, while the reel may be adjusted to any desirable height. The rake is driven from the center of the platform, and a stationary shield is employed to protect the gearing thereof from being obstructed.

Claim.—1. The combination of a supporting-fulcrum for the reel-supporting lever and the pivoted guiding-link connecting the reel-post and lever, substantially as and for the purpose set forth.

2. The centrally-pivoted rocking-lever K, constructed substantially as set forth, with two sets of tension-pulleys pivoted thereon, and having an adjustable-link connection with the reel-support, for the purposes set forth.

3. The combination of the sprocket-wheel on the inner end of the main axle, the rake-driving chain, and the sprocket-wheel on the inner end of the rake-driving shaft, which extends beneath the platform, the sprocket-pulley being in or near the line of the hinges of the platform, substantially as set forth.

4. The combination of the jointed rake-stale, the rotating driving-arm P, the connecting-links *r r'* pivoted to the driving-arm and stale, and the guide-cam, these members being constructed and operating in combination, substantially as set forth, to impart the requisite movements to the rake.

5. The combination of the revolving rake-arm and the stationary elastic shield, constructed as set forth, between which and the platform the rake-arm traverses, which shield rises to allow the rake-arm to pass, and then sinks to prevent the mechanism from clogging.

135,014.—*Treating Sugar with Sulphurous Acid in the Vacuum-Pan.*—AUGUSTUS H. SEYFERTH, Brunswick, Germany.

Treating sugar solutions or sirups in the vacuum-pan with sulphurous acid.

Claim.—1. The process herein described for producing a solution of sulphurous acid for use in the treatment of sugar solutions and sirups.

2. The apparatus herein described for producing a solution of sulphurous acid, consisting of the pan A, dome B, cooler C, condenser D, arranged with their respective appendages, substantially as set forth.

3. The subject-matter of the foregoing clause, in combination with the regulator H, as specified.

4. The process herein described for treating sugar solutions or sirups in the vacuum-pan with sulphurous acid, in the manner and for the purpose specified.

135,015.—*Condensing-Tube for Carding-Machines, &c.*—ALEXANDER W. SKINNER, Providence, R. I.

The small tube is for centralizing the roping after passing the cross-bar, so as to prevent its being broken by centrifugal action, and is made adjustable to and from the bar to vary the friction on the roping and thus regulate its size.

Claim.—1. The combination of the tube A with the cross-bar *b'* and tube D, or its equivalent, arranged substantially as described.

2. The combination of the tube A, the adjustable tube D, or its equivalent, and cross-bar *b'*, arranged substantially as described.

135,016.—*Draw-Point for Driven Well-Tubes.*—WILLIAM P. SMITH, New Orleans, La.

Above and below a collar on the draw-point are arranged right and-left handed screw-threads. Upon the left-hand screw-threads is secured a chamfered pipe. To the right-hand screw-threads is secured a ferrule, into which, in case of the draw-point striking a rock or other obstacle, a rod is inserted. The screwing up of the rod unscrews the draw-point so that it can be withdrawn from the chamfered pipe and a drill inserted in lieu thereof.

Claim.—1. The combination of the draw-point A, bearing on its outer circumference the right-and-left hand screw-threads, with the pipe B, which bears on its internal circumference a corresponding screw-thread, all constructed substantially as described, and for the purpose set forth.

2. The combination of the draw-point A with the pipes B E and ferrule or socket C, all constructed substantially as described, and for the purposes set forth.

3. As a new and improved article of manufacture, a draw-point for driven well-tubes, constructed of metal, bearing a right-and-left hand screw-thread on its outer circumference, substantially as described, and for the purposes set forth.

135,017.—*Railway-Car Brake.*—LORENZO STEBBINS, Hinsdale, N. H., assignor to himself and GEORGE P. STEBBINS, Vernon, Vt.

A brake-frame, to which the brake-rubbers are secured, is pivoted to the center bolster. A rock-shaft is provided at the end of the truck, and is connected by toggle-links to the brake-levers. One end of the brake-rod is attached to the rock-shaft, and the other end to a lever which turns on a bolt secured to the center of the car. The brake-rubber is applied directly to the rail instead of the wheel.

Claim.—1. The brake-shoe, constructed as described, with a sole turned up at each end to allow it to be applied when running either way, longitudinal corrugations to allow it to cut into without tearing up the surface of the rail, and a flange to bear against the inner side of the rail, as set forth.

2. The combination of the cranked rock-shaft, the toggle-links pivoted to the cranks of the rock-shaft, the flanged brake-shoes pivoted to the links, the link-rods attached to the shoes and pivoted centrally to the car, and the cross-brace connecting the link-rods, these members being constructed and operating as set forth.

3. The combination of a brake-lever, A, link-rods B B', rock-shafts, links D D', bracing-frames F¹ F² F³, and shoes, substantially as set forth, whereby the brakes are simultaneously brought to bear upon the track outside of the wheels and at each end of the car.

135,018.—*Parlor-Swing.*—BENEDIKT STRÄSSLE, Chicago, Ill.

The seat, front, and side rods being perforated for the suspending ropes to pass through. The upper balls have carved holes in them to act as locks upon the rest.

Claim.—1. In swings, the balls G for the purposes set forth.

2. The combination of the balls G with the cords C, rods D E, and seat A, substantially as described, and for the purposes set forth.

135,019.—*Blackboard.*—THOMAS J. THORP, Buffalo, N. Y., assignor of one-half his right to MARTIN TAYLOR, same place.

Four radiuses of double-leaf blackboards rotate upon a central standard. They are adjustable up and down horizontally to any point of the circle, and the outer leaf is extensible beyond the inner, being hinged thereto.

Claim.—1. The extension blackboard, consisting of a series of boards *f f f f*, hinged to a central revolving post, B, each board provided with a wing, *f'*, all held in place by the adjustable clamp C and set-screws *n p*, all arranged and operating in the manner and for the purpose specified.

2. The adjustable clamping device C, set loosely on the center post B, held at any point of its revolution by the set-screw *n*, and each arm D adjusted or held by its set-screw *p*, in combination with the boards *f* and pins *m*, all constructed as and for the purpose hereinbefore described.

3. Adjusting the folding blackboards higher or lower by means of the center post B, screw-cylinder *b*, and hollow screw *a* forming part of the standard A, and held at any height by set-screw *a'*, as hereinbefore fully explained.

4. The construction of the revolving, folding, and adjustable blackboard, consisting of the boards *f f'* hinged to center pivot B, the clamp C, the standard A, formed with the hollow screw *a*, and having the screw-cylinder *b* thereon with set screws *d d'*, all arranged and operating in the manner and for the purpose hereinbefore specified.

135,020.—*Machine for Carbureting Air.*—JAMES H. VAN HOUTEN, Newark, N. J., assignor to SAMUEL T. TATE, Brooklyn, N. Y., and EDWIN F. VAN HOUTEN, Newark, N. J.

An automatic feed to supply gasoline to the generating-chamber, so arranged that when the oil rises to a certain height a float rises and closes a valve, thereby shutting off the flow of oil to the gas-generator. The carbureting-wheel, constructed in several sections and soldered together, and arranged with a cylindrical wire screen, filled with sponge, inserted in the center of said wheel.

Claim.—1. In combination with the feed pipe *a*, the valve *d*, the same being bushed with glass or its equivalent, and the valve-stem being metal, or vice versa.

2. In combination with the carbureting cylinder B, operating as herein set forth, the float-chamber E, feed-pipe *a*, and equilibrium-pipes *c*, for supplying gasoline through the float-valve F to the chamber B, substantially as set forth, and for the purposes described.

3. The float F, in combination with the feed pipe *a*, when constructed and operating substantially as and for the purposes herein set forth.

4. The wheel C, composed of a series of flues, F, and sections G, and air-drum H, the whole combined and soldered together as herein set forth, and supported by and revolving upon journals I I, substantially as and for the purposes herein set forth and described.

5. The vertical air-inducting pipe D issuing from the top of and in combination with the cylinder B, and made sufficiently high to prevent the escape of vapor, substantially as set forth.

135,021.—*Combined Optic-Table and Bed.*—DAVID WALKER, Newark, N. J.

The top of the table is detachable. In each end of the table-frame are recesses to receive the ends of the mattress when not in use, and the frame is also provided with hinged ends that form the ends of the table-frame when used as a table, but help support the mattress when used as a bed. Underneath the table top is a hinged folding bottom that is spread out the whole length of the table-frame when the device is used as a bed. When used as a bed, the table top is removed.

Claim.—The table A, made convertible into a bed by means of the removable top T, folding bottom *a b c d e f*, and folding ends F F', and provided with recesses for the reception of the ends of the mattress M when not in use, substantially as described.

135,022.—*Harrow.*—JAMES N. WAMSLEY, Galena, Ohio.

There are two triangular frames, one placed within the other, and both furnished with sharp-edged and pointed teeth inclining rearward. The inner frame is supported by the outer by three points of attachment by links at the front and on two sides. Handles are secured to the outer frame.

Claim.—The harrow A A', when constructed as described, with a central section suspended by links B B B, both sections having teeth, as shown.

135,023.—*Self-Acting Dam.*—HERMAN WERNER, Louisville, Ky.

A self-acting dam for use in slack-water navigation. At high water the wings A B C lie flat, a dam not being then needed. At low stages water is introduced through the channel F beneath the wings, which, from their cellular structure, are floated up and assume position, A forming the dam and B the support. The present improvement introduces the "cross-wings" C, by which the escape of water is measurably prevented and very low stages of water utilized. Locks are, of course, brought into play to transfer boats when the dam is in use.

Claim.—The combination of the cross-wings C and C' with the principal wings A and B, substantially and for the purpose hereinbefore set forth.

135,024.—*Hydro-Steam Engine.*—JACOB WIDMER, Bristol, Conn.

Claim.—1. The combination of the steam-chest A, cylinders B B, pistons D D, water-chest C, and pipe *d*, arranged and operating substantially as and for the purpose described.

2. In combination with the subject-matter of claim 1, the water-wheel G, and its reservoir or tank F, all arranged and operating substantially as and for the purpose described.

135,025.—*Soldering-Tool.*—WILLIAM H. WIGHT, Princess Anne county, Va., assignor to himself and GEORGE H. WIGHT, Lowell, Mass.

The aperture G admits air which mixes with the gas before it arrives at the point of combustion in the hollow tool.

Claim.—The hollow soldering-tool A, provided with tube E, aperture G, and plug H, all substantially as described.

135,026.—*Earth-Closet.*—ROBERT S. WILLIAMS, Norristown, Pa.

An earth-receptacle attached to the under side of the lid, one end of the receptacle having a hinged cover for the reception of earth, and the other end provided with a chute, which receives a charge of earth when the lid is thrown into its upward position, and discharges it into the pan when it is brought to its closed position.

Claim.—The combination of the lid A of an earth-closet, and the earth-receptacle B having a door or cover, *a*, at one end, and a chute, *b*, at the other end, substantially in the manner and for the purpose set forth.

135,027.—*Barn-Door Fastening.*—ALAMANDER D. WRIGHT and AUBAN ROUS, Belleville, Mich., assignors to ALAMANDER D. WRIGHT.

An upright bolt, moved by a thumb-latch, is furnished at its upper end with a swinging or pivoted latch, which catches behind lugs upon the upper part of the door-frame. Thus a single movement only is required to lock the door, both at its top and bottom. The thumb-latch is furnished with a notch, which, when the door is thrown open, is automatically secured to a hook upon the side of the bar, for the purpose of holding the door open.

Claim.—The combination of the vertically-moving bolt G and the swinging latch F with suitable catches, the parts operating substantially as described, for the purpose set forth.

135,028.—*Metallic Compound for Coating Cutlery, &c.*—JOHN ZIMMER, Cleveland, Ohio, assignor of two-thirds his right to ROBERT SANDERSON and SAMUEL CUNTS, same place.

Tin, silver, nickel, bismuth, sulphur, sal-ammoniac, mercury.

Claim.—1. The metallic compound, substantially as and for the purpose set forth.

2. The coating or covering articles of cutlery, &c., with the metallic compound herein described, by the means or mode substantially as set forth.

135,029.—*Corn-Sheller Case.*—AUGUST BORNEMAN, Lancaster, Ohio.

Metallic bonnet, having an opening which forms the upper part of the cob-chute, can be removed without interfering with that part of the casing upon which the feed-throat is located.

Claim.—The herein-described shell or casing for a corn-sheller, consisting of the wooden portion B B' B² C and the metallic bonnet I I', substantially as described.

135,030.—*Cigar-Bunch Pressing and Molding Machine.*—WILLIAM D. BREWER, Charlestown, Mass.

A movable guard applied to a cigar mold and press for preventing injury to the hands by the descending die.

Claim.—A finger-guard, E, applied to a machine for pressing and molding cigar-bunches, consisting of a shield which automatically forces the hand away as the die descends, substantially as described.

135,031.—*Retainer for Pressed and Molded Cigar-Bunches.*—WILLIAM D. BREWER, Charlestown, Mass.

The tubular retainer is divided transversely instead of longitudinally, the upper and lower portions being slightly larger than the corresponding portions of the cigar-bunch. The forming of a seam on the side of the cigar is thus prevented.

Claim.—The within-described retainer, consisting of the two transversely-divided portions *a b*, substantially as and for the purpose set forth.

135,032.—*Sewing-Machine for Boots and Shoes.*—WILLIAM DUCHEMIN, Boston, Mass., assignor to himself and GEORGE B. BIGELOW, trustee, same place.

Designed to sew "turned shoes," and an improvement on Patent No. 91,101. The looper has an inclined point and a groove; is held on pins projecting from the reciprocating looper-carriage by a spring, which allows the looper to be moved laterally when an inclined face thereon strikes an inclined pin, in order to expand the loop of looper-thread held by it and taken from the looper, so that the looper will pass anew through its old loop, then in the needle's loop. The upper portion of the shoe-supporting standard is hinged so that it may be adjusted to different shoes, and the wedge which presses the standard up and holds it while the stitch is being formed is governed as to its movement by a spring so that the standard adapts itself to the thickness of the sole. When the needle passes through the material it strikes the under side of the carrier-guide and elevates it and the carrier so that the latter is in proper position to enter the loop of needle-thread.

Claim.—1. The looper c^6, constructed and operating substantially as set forth.

2. The thread-carrier g^9, in combination with the looper c^6, both constructed and operating substantially as set forth.

3. The standard m^2 provided with its hinged upper portion and clamping-screw, or their equivalents, substantially as described.

4. The combination of the wedge a^9, sliding bar a^8, spring a^7, clutch a^6, and actuating devices with the slotted standard m^2, substantially as set forth.

5. The combination of the thread carrier g^9, pivoted in a slot in the face-plate, the carrier guide g^8, and the needle, substantially as set forth.

6. The thread-controller or tension-rod f^1, provided with an angular arm adapted to carry the needle-thread, in combination with its cam f and adjustable stop f^3, substantially as and for the purpose set forth.

135,033.—*Machine for Stretching Hat-Bodies.*—RUDOLF EICKEMEYER, Yonkers, N. Y.

The upper and lower jaws are pivoted to each other where they cross, and the ends of the upper ones are pivoted to the ends of the lower ones. By means of a cam-shaft the two pairs are clamped together and spread automatically.

Claim.—A hat-stretching machine in which the radially-expanding jaws are automatically brought together to clamp and spread to stretch, the body, substantially as described.

135,034.—*Bottle-Label.*—HIRAM FRANK, Pittsburg, Pa.

Claim.—A bottle or jar and label, the latter consisting of a transparent plate with depressed letters or characters in its inner face, such depressions being filled with plaster of Paris or equivalent material and surrounded by a non-transparent and differently-colored composition, substantially as set forth.

135,035.—*Rain-Water Switch and Reversible Valve for Cisterns, &c.*—LOUIS GOUDREAU, Kankakee, Ill.

A box with a central pipe at the top and two pipes below is provided with a pivoted semicircular switch connected to a shaft with a crank on the outside, by which rain, &c., is guided into one or the other of the lower pipes.

Claim.—The arrangement and combination of the partition-plate H with the conduits C and D, and with the switch or reversible valve E, constructed in the manner and for the purposes herein described and set forth.

135,036.—*Valve-Gear for Steam-Engines.*—JOHN W. HACKWORTH, Darlington, England.

Extends the eccentric-rod beyond the pin or part which reciprocates in the changeable path, and the valve-rod is attached to each overhanging end. By this means can obtain, when the reciprocating path is adjusted to be exactly radial to the shaft, the proper amount of motion to allow for lap and lead, and an increase of travel. The toothed rack is connected to the valve-rod, and is operated by a worm-wheel on an upright shaft.

Claim.—The within-described arrangement of the valve rod M, pin *m*, and reciprocating pin D on the eccentric-rod C, in combination with the eccentric *b*, changeable path E, and means for changing the position of the latter at will, as and for the purposes herein specified.

135,037.—*Machine for Turning Wooden Heels.*—RICHARD HÜBLER, New York, N. Y.

A pattern is attached to one end of a revolving spindle, and the piece of wood from which the heel is to be formed is secured to the pattern. The cutting-tool is placed in a slide-rest, governed in its movements by a traveling guide, which bears against the pattern.

Claim.—1. The spindle D, carrying the pattern E, and a device, H, for securing the work against the end of the pattern, said spindle being connected with the driving-shaft C, substantially in the manner shown and described.

2. The tool-rest O and stop Q, in combination with the spindle D carrying the pattern E, and a device for fastening the work against said pattern, and with a screw-spindle, J, which is geared together with the driving-shaft, and serves to impart an automatic motion to the tool-rest, all constructed and operating substantially in the manner set forth.

135,038.—*Machine for Finishing Wooden Heels for Shoes.*—RICHARD HÜBLER, New York, N. Y.

The heel is secured upon an oscillating rest, where it is finished by a rotating cutter of suitable shape.

Claim.—1. The combination of a slide-rest constructed to retain a heel, H, with a cutter, G, a gage, L, and stop *k*, substantially in the manner and for the purpose herein shown and described.

2. The platform K made to swivel on the table A, in combination with the heel-retaining slide-rest and with a gage, L, and stop *k*, substantially as set forth.

3. The arbor F carrying a cutter, G, and connected to the driving-shaft D by a slotted arm, *a*, and hook *b*, in combination with the heel-retaining slide-rest and with a gage, L, and stop *k*, substantially as described.

135,039.—*Graining or Imitating Wood.*—JOHN JOHNSTON, New York, N. Y.

By etching the imitation of wood on glass by fluoric acid the applicant is enabled to transfer the same by means of a roller to any surface where it may be wanted.

Claim.—The process of producing the type of a design for imitations of wood, in the manner substantially as described in my specification.

135,040.—*Lap-Board.*—SARA MAHAN, Cleveland, Ohio.

To each end of the board and near its front edge is hinged a leg, and the two legs are connected together by a rail. An auxiliary leg or brace is also used on the back edge of the board. The legs are held in position by a peculiarly-bent hook.

Claim.—The legs B and G and spring-hook brace D, in combination with the board A, in the manner as and for the purpose set forth.

135,041.—*Harvester.*—JOHN P. MANNY, Rockford, Ill.

The coupling-frame and gear-frame vibrate about different centers and are connected by a link which permits free movement horizontally but retains the frames in the same relation vertically. A laterally-swinging seat is connected by a link to a post in the drag-bar. The finger-bar is hinged to the drag-bar in front of the line of cutters, and may be rocked by a lever extending upward from the shoe.

Claim.—1. The combination of the gear-frame vibrating about the main axle, the drag-bar vibrating about a pivot eccentric to that of the gear-frame, and the horizontally-flexible coupling-arm connecting the gear frame and drag bar, these members being constructed and operating in combination, substantially as hereinbefore set forth.

2. The combination of the gear-frame, the drag-bar, the coupling-arm, and the shoe hinged to the drag-bar in front of the cutters, all these members being constructed and operating in combination, substantially as hereinbefore set forth.

3. The combination of the shoe, the drag-bar, the coupling-arm, the post mounted on the drag-bar, the main frame, and the chain or cord connecting the post and main frame, all these members being constructed and operating in combination, substantially as hereinbefore set forth.

4. The combination of the main frame, the driver's seat oscillating laterally thereon, the hinged finger-beam, and the link-connections between the driver's seat and finger-beam, all these members being constructed to operate in combination substantially as hereinbefore set forth, to secure a uniform relation between the driver's seat and finger-beam.

5. The combination of the drag-bar, the shoe hinged to the drag-bar in front of the cutters, and the rocking arm fixed upon the shoe, all these members being constructed to operate in combination, substantially as hereinbefore set forth, to rock the finger-beam independently of the coupling arm.

6. The combination of the drag-bar, the post mounted thereon, bracket on the post, the shoe hinged to the drag-bar, and the rocking arm mounted on the shoe, all these members being constructed to operate in combination, substantially as hereinbefore set forth, to lock the finger-beam when desired.

7. The combination of the driving-wheel carrying an internal ratchet, the disk fast on the axle and carrying spring-pawls, and the oscillating recessed shipping ring encircling the disks, these members being constructed and operating as described.

135,042.—*Scraping and Loading Machine.*—DANIEL MARRS, Friends' Creek township, Macon county, Ill., assignor of two-thirds his right to HENRY H. MARRS and GRANVILLE B. CARTER, same place.

The machine is drawn forward and the horses released by detaching the pole. The scraper is then let down and the earth is carried up the scraper by an endless apron.

Claim.—The combination of the frame A A, constructed as described, pieces B B, wheels J J D D, rod E, cams *c c*, lever F, and segment G with the scraper H and endless apron I, all arranged as shown and described, and for the purpose set forth.

135,043.—*Inking-Pad.*—JOHN A. MILES, Charleston, Ill.

The upper one of two parts of pad, hinged together at one end, is supplied with ink from a funnel-shaped reservoir, with which it is provided, filled from the inner side, and stippled by rubber in the surface of other part.

Claim.—An inking-pad consisting of the cushion G, reservoir E, distributing perforated plate D, and a closing diaphragm or cover, F, substantially as described.

135,044.—*Construction of Buildings.*—WILLIAM J. MORLEY, Indianapolis, Ind.

A water tight metallic trough, *b*, is suspended between each pair of floor-joists, to save the water from penetrating to the ceiling underneath in case of flooding the floors when a fire occurs. The water is discharged through a pipe, *a*.

Claim.—1. The water-tight fire-proof receiver A placed between the flooring C and the joist D, substantially as and for the purpose herein specified.

2. The combination of the receivers A, the secondary joist B, flooring C, and main joist D, substantially as and for the purpose described.

3. The combination of the receivers A, the joists, the flooring, and the outlet *a*, substantially as described, for the purpose specified.

135,045.—*Limekiln.*—F. WILLIAM RAEDER, St Louis, Mo.

The grate surface widens inwardly. The arch covering it is supported at the inner end by wedge-shaped pieces containing air-channels opening above and below the grate. Similar air-channels are provided at other points, either through the masonry or by metallic tubes.

Claim.—1. The combination of the limekiln with grates gradually enlarging toward the interior and the insertion of a wedge-shaped pier, A, for each grate, for the purposes above described.

2. The combination, in a limekiln, of horizontal and vertical air-passages, acting automatically to regulate the supply of air above and below the grates, substantially in the manner shown and specified.

3. The combination, in a limekiln, of grates enlarging toward the interior, wedge-shaped, supporting-pier, and horizontal and vertical air-passages, the latter acting automatically to adjust and regulate the supply of air above and below the grate, substantially in the manner and for the purpose shown and specified.

135,046.—*Molding-Plane.*—ALEXANDER S. ROBERTSON, Boston, Mass., assignor of one-third his right to JOHN M. BEALS, same place.

The cutting-tool is formed like an ordinary wood-screw, the head being made with a sharp edge. By the thread of the screw it can be screwed into the stock and set at the distance required.

Claim.—1. The cutters C and C′, constructed, arranged, and operating as herein set forth and described, for the purpose specified.

2. In combination with the cutter C or C′, arranged and operating as set forth, the cutter D, constructed and arranged substantially as described.

135,047.—*Sewing-Machine for Boots and Shoes.*—GEORGE V. SHEFFIELD, Boston, Mass.

The thread is drawn through the sole as in ordinary sewing, a hooked needle being used, but the loops are not locked or enchained. The thread is carried by a whirl in the top of the post, and a circular hook surrounding the whirl catches the thread and draws from the bobbin a sufficient quantity to form one-half the staple-like fastening or stitch. The feeding device consists of a spindle provided at its lower end with a punch or awl, *n*, and this spindle is reciprocated in a frame which has a horizontal reciprocation, and the devices employed for giving motions to these parts are mentioned in the fourth, fifth, sixth, and seventh clauses. The nippers grasp and hold one loop or bight of thread while the next loop is being formed.

Claim.—1. The thread-feeding device A′ and rotating thread-carrying plate, combined and operating substantially as and for the purposes set forth.

2. The combination, with the work-table D′, of the tubular shafts 3 and 4 for operating the thread feeding and carrying devices, substantially as and for the purposes set forth.

3. The combination, with the tubular shaft 4, of gear *g*, rack *g′*, lever E, and gear *e″* and its stud *h*, substantially as and for the purposes set forth.

4. The combination, with the slide-frame F′, of the operating-arms G G, substantially as and for the purposes set forth.

5. The combination, with the feed and punch spindle J, stud J′, ring-lever I, and plate K, of cams M M′ and dog 5, substantially as and for the purposes set forth.

6. The combination, with the ring-lever I and punch and feed spindle or arm J, of gear H, flange 7, and cam *b*, substantially as and for the purposes set forth.

7. The combination, with the arms G G and their shaft G′ and cam-plate H″, of pin *k* and gear H, substantially as and for the purposes set forth.

8. The combination, with the punching and feeding devices, of the gage-arm 13, substantially as and for the purposes set forth.

9. The combination of the gage-arm 13 and slide *p*, having the curved part 15, with the cam 14 and spring 16, for the purposes set forth.

10. The combination, with the presser-foot L′, of the nippers 18, substantially as and for the purposes set forth.

11. The combination, with the nippers 18, of the cams 17 and their operating-shaft N, substantially as and for the purposes set forth.

135,048.—*Dredge-Box.*—THOMAS SMITH, Cleveland, Ohio.

A depression is made in the center of the cover, with an opening in the center of the depression. A metallic cap is fitted tightly in said depression, and to the under side of the cap a key is fitted which passes through the opening in the cover. The key prevents the cap from getting detached from the cover, but allows it to stand away from the cover so that the material contained in the box can pass out of the opening.

Claim.—A dredge-box having a recess or cavity, *a*, with an opening, *c*, in the cover or end B of said box, the cap D, and key E, arranged and operating in relation to each other substantially as and for the purpose set forth.

135,049.—*Compound for Paint.*—JAMES S. VOSSELLER, Plainfield, N. J.

Linseed-oil, (raw or boiled,) water, borate of manganese, glue, and pigments, such as lead and zinc, or mineral or earth paints.

Claim.—A compound pigment or paint formed of the several elements and in substantially the proportions hereinbefore described.

135,050.—*Cherry-Stoner.*—DEWITT C. WARNER, Chicago, Ill.

The main part is bent so that the wire forms two prongs and a head, while the third prong is looped over the head and is held between the other two by the coiled wire.

Claim.—The part A bent so as to form an enlarged head, and two prongs, B, in combination with the third prong bent, as shown, to form a loop at its upper end to engage the part A, when the said parts are secured together by a wire fastening placed below the enlarged part A, as described.

135,051.—*Rivet for Boots and Shoes.*—PEMBERT WEST, Worcester, Mass.

The thin piece of metal between the creases *b* keeps the stem whole until the points are driven down on the last, when the stem splits above the last and for the length of the creases.

Claim.—1. A boot or shoe rivet having its point notched and its sides creased, substantially as and for the purpose set forth.

2. A boot or shoe rivet, for fastening the soles to the uppers and for forming upper seams, having its head made with curved points *f f*, and with its point with points *e e*, and its sides creased, substantially as shown in Figs. 1 and 3 of the accompanying drawing.

135,052.—*Nut-Locking Device.*—JOHN WETMORE, Salem, Ohio.

Claim.—In combination with the bolt C, nut C′ having the recess *c′ c²*, and the washer C² having the ratcheted face and spur *c³*, the fish-plate or splice-bar B provided with the ratcheted or milled nut-seat *b*, substantially as described.

135,053.—*Brush.*—JOHN S. WHITE, Portland, Me.

A brush constructed with an inner tube or ferrule, to which the bristles are confined and held by an outer ferrule, leaving the center of the brush open. The inner ring or ferrule extends sufficiently above the end of the bristles to enter an opening or recess in the bottom of the handle, and space is left for a receiver or reservoir for the surplus paint which may find its way into the center of the brush.

Claim.—The combination, in either a round or oval brush, of the handle *d*, ferrule *c*, bristles *b*, and tube *a*, as shown in the accompanying drawing, in the manner and for the purposes as hereinbefore set forth.

135,054.—*Universal-Joint Coupling.*—HENRY B. WHITEHEAD, Holly Springs, Miss.

Hemispherical gears form the contiguous ends of two shafts, which are hung in sleeves, and are combined with slotted pivoted side-plates or links and adjusting-screws, all suitably arranged to permit the shafts to be set at any angle to each other, and yet permit their rotary movement at said angle in like manner as when the same are in alignment.

Claim.—The improved coupling formed of the hemispherical gears F and G, sleeves C D, side links or plates E E provided with slotted segmental projections *d* and set-screws *e*, all constructed and arranged and applied to the shafts A B, as shown and described.

135,055.—*Sail-Hank.*—JOHN G. YOUNG, Jr., Boston, Mass.

Claim.—As an improved article of manufacture, the above-described sail-hank, consisting of the parts *a b*, the bolt B, and turn-button or fastener *c*, constructed, arranged, and applied together, substantially in manner as shown and described.

135,056.—*Eaves-Trough Hanger.*—JONATHAN P. ABBOTT, Cleveland, Ohio.

The supporting-bar has a spur, which co-operates with the finger to form a ready attachment at that extremity, while the button secures the eaves-trough in place.

Claim.—The brace-bar D having a horizontal point or spur, *a*, and finger E, as shown in the drawing and described, and button F, in combination with the gutter A, substantially in the manner as and for the purpose set forth.

135,057.—*Apparatus for Filtering and Rectifying Spirits.*—CHRISTIAN W. ACKERMANN, Pekin, Ill.

The spirits to be rectified pass down through several alternate layers of charcoal and blankets confined between perforated heads and then up through a cylinder filled with cotton batting. The fusil-oil is retained in the upper layer of blankets and charcoal.

Claim.—The rectifier A A, constructed with the collar *d* and flanged head *a* bolted thereto, (the latter pierced with the pipe F,) and filled with several strata of charcoal or rectifiers' coal nearly to the top, each separated by woolen stuff or cotton batting, the whole confined between perforated heads D C, (to rectify spirits in that process in which the latter is passed downward through the filtering medium,) the eduction-pipe E and terminal rectifier F filled with cotton batting confined between woolen material, which batting is again confined between wire-gauze heads or perforated screens *f f*, substantially as described.

135,058.—*Steam Blow-Pipe.*—JOHN S. ANDERSON, Flintville, Wis.

A blow-pipe with two branches is arranged at the rear end of the furnace and communicates with the steam by a small tube. Small perforations are arranged in the branches to blow the fire and scatter the sawdust, when this is used as fuel.

Claim.—1. A steam blow-pipe located directly between the two boilers and behind the fire-front of a furnace, substantially as specified.

2. The steam blow-pipe, consisting of the vertical section E having the diverging perforated branches F, in combination with steam-drum D, constructed and arranged substantially as specified.

135,059.—*Saw-Straightening Machine.*—JOHN S. ANDERSON, Flintville, Wis.

The saw to be straightened revolves on a mandrel between two sets of ways parallel to each other. Two anvils slide on these ways and are adjusted on crossways to the sides of the saw by screws. Blows from a hammer straighten the saw against the faces of the anvils. The whole mechanism, including the saw, can be revolved on a horizontal turn-table.

Claim.—1. A saw-straightening machine having one or more adjustable anvils, substantially as and for the purpose specified.

2. The combination, with a saw-straightening machine, of a turn-table, substantially as and for the purpose set forth.

3. The combination of the longitudinally-adjustable anvils G, movable plates E, ways D, and adjusting-screws H, substantially as described.

135,060.—*Wheel for Vehicles.*—DANIEL ARGENBRIGHT, Tippecanoe, Ohio.

Claim.—1. The radial tongues C C', formed and arranged in the circumferential groove B of a wooden hub, A, when such tongues occupy grooves in the contiguous faces of the spoke-tenons, as herein shown and described, for the purposes set forth.

2. The spokes F, constructed with double taper ends and with longitudinal grooves *f f'* in their faces, as herein shown and described, in combination with the wooden hub A having a circumferential groove, B, and radial tongues C C' therein, and with the metallic band D D' E *e*, for the purpose specified.

135,061.—*Steam-Pump.*—WILLIAM ARTHUR, Newport, Ky.

The water is elevated by a number of steam-jets and number of corresponding water-tubes, through which the water is forced into a common pipe or receiver by the pressure of steam.

Claim.—The combination of two or more steam-nozzles, C, side by side, and a corresponding number of tubes, D, through which the water is forced into a common pipe or receiver, E, by the pressure of steam, in manner substantially as and for the purpose set forth.

135,062.—*Steam-Generator.*—JAMES S. BALDWIN, Newark, N. J.

In a steam-generator, tubes thickened externally and internally; externally for the purpose of forming a collar for clamping devices, and internally for forming a tapered joint with correspondingly hollow-tapered nipples. The tubes retain their maximum strength and set series or rows parallel to each other. The indentations caused by putting the round tubes together is filled in by solid iron rods to prevent the product of combustion from passing through. The hollow nipples or cups above alluded to form a mud-drum, thus forming an economic and simply constructed steam-generator.

Claim.—1. A tube, *a*, thickened externally and internally at each end, substantially as and for the purpose set forth.

2. The tube *a* thickened externally and internally, or externally alone, in combination with the tapering nipples or seats, and suitable clamping devices, substantially as specified.

3. The tubes *a* having the spaces between them closed by small iron rods, substantially as shown and described.

4. The mud-drum *b* and the tube *a* thickened either externally or internally, in combination with the plates *e* and clamps *f*, substantially as set forth.

135,063.—*Combined Blind-Opener and Slat-Regulator.*—ADIN BALL, Milford, Mass., assignor to himself and CHARLES P. NELSON, same place.

A blind-opener, operated by the ordinary scroll-wheel, crank-shaft, and segmental wheel, is combined with a lever pivoted to the lower part of the blind and a spring, and these latter connect with and operate the upright rod of the blind-slats. The outer end of the lever being attached to the slat-rod, its inner end, forced upward by the spring, projects under the last tooth of the segmental wheel in such manner that as the blind closes the forward end of the scroll strikes it and closes the slats. As the blind is again opened the action of the spring, in connection with the lever and slat-rod, opens the slats, thus forming a combined device, partly automatic, for operating both the shutter and the blind-slats.

Claim.—The combination of the lever H and spring I with the scroll-wheel D *d'*, segmental wheel F, crank-shaft C, and slat-rod *b'* of the blind B, substantially as herein shown and described, and for the purpose set forth.

135,064.—*Metal-Turning Lathe.*—ELDRIDGE F. BARNES and GEORGE A. BARNES, New Haven, Conn.

The head-stock of a lathe is pivoted in front to the bed and made adjustable laterally in the rear by means of screws on either side. The outer end, in swinging to the right or left of the central line, tests the axis of the arbor at an angle with the path of the movement of the turning-tool, thus permitting tapered articles to be turned or conical surfaces to be formed.

Claim.—The arrangement of the head-stock of a lathe upon a pivot, *a*, at the forward end, and made adjustable, substantially in the manner described, upon the said pivot.

135,065.—*Tuck-Creaser for Sewing-Machines.*—RUSSEL S. BARNUM, Chicago, Ill., assignor to HARRY C. GOODRICH, same place.

The material passes under the tongues on the spring bar and over the tongue on the plate. The vibrating arm first strikes the outer tongue, presses it and the tongue nearest the gage down on the fabric, holding and drawing it down over the edge of the central tongue, and in this condition the free end of the arm strikes the cloth just beyond the end of the central tongue, crowds it over, and pinches or presses it down against the edge of inner tongue.

Claim.—The combination of the arm E with the plate B, bar D, and tongues *e f g*, arranged to operate substantially as and for the purposes specified.

135,066.—*Pulley-Block.*—EDWARD A. BARRETT, New York, N. Y., assignor to himself and JOSEPH J. WALTON, same place.

A pulley-block provided with a pawl to grasp the chain and hold it in any desired position.

Claim.—A block, A, provided with the perforated rigid arm E, slotted hinged pawl G, eye H, in combination with the chain I and trip-line K, substantially as and for the purpose specified.

135,067.—*Lemon-Squeezer, &c.*—ABRAM BASSFORD, Fort Wayne, Ind.

The lever is hinged to the upright standard, and the presser is hinged to the lever. On the supporting-base of the apparatus is arranged an elastic or yielding cushion on which to place the glass or vessel that holds the fruit to be pressed.

Claim.—The lever *c* and presser *a* hinged thereto, and so constructed as to extend downward into the receptacle *m*, in combination with the elastic or yielding cushion *k*, arranged on the base of the apparatus to support said receptacle, substantially as shown and set forth.

135,068.—*Carriage-Axle and Axle-Box.*—BAYARD A. BERRYMAN, St. Louis, Mo.

The oil is poured in through the hole *g*, and, if in sufficient amount, most of it flows down the grooves *c* to reservoir *h*, from whence, when the wheel is in motion, it is supplied to the spindle.

Claim.—1. The fixed collar E shrunk into a circumferential groove in the axle and forming an abutment for the collar F to retain the wheel, as described.

2. The loose collar F, confined between the customary "lutting-ring" or collar B and the fixed collar E, as set forth.

3. The chambered cap H, covering the end of the spindle, screwed into a female thread within the end of the box and provided with a shoulder, *h*, to retain the hub, all as specified.

4. An axle-box and axle combined, having the fixed collar E, movable screw-collar F, grooved spindle C *c*, box G, chambered cap H, oil-hole *g*, and plug *g'*, all constructed and arranged to operate as set forth.

135,069.—*Wash-Boiler Attachment.*—HENRY BICKEL, Myerstown, Pa.

A plate of an oval form rests on a rim of the same form. The center of the plate is cut away and longitudinal bars put in the opening, and under these is a plate or dish secured to the top plate, with perforations in the ends. Tubes project from the ends of the oval plate, and they have a number of jet-tubes at the upper ends.

Claim.—The attachment for wash-boilers, herein described, consisting of the bottom plate A having the central opening C, and covered by the longitudinal bars D, and plate E and bent tubes D' with the jet-tubes *d*, substantially as specified.

135,070.—*Cultivator.*—CEALY BILLUPS, Norfolk, Va.

A slotted and corrugated wedge is interposed between the under side of the beam and standard by means of which the pitch of the plow can be varied. The lower end of the standard is provided with a pair of wings or scrapers, which are also adjustable to various heights.

Claim.—1. A slotted wedge, E, having the flanges *e e* and *e' e'* upon its opposite sides, applicable as and for the purpose described.

2. A cultivator-plow sweep having the shank *a* with hole *d* and stud *d'*, constructed substantially as and for the purpose described.

3. The standard C, having parallel pairs of holes *e e'* and intermediate slots *e''*, as described, to enable the sweeps to be either raised or depressed, and also allow their pitch to be changed.

135,071.—*Spool-Box.*—JULIUS C. BOHN, Centralia, Ill.

Having adjustable partitions and a tension-bar.

Claim.—1. The new article of manufacture consisting of a thread-box with changeable partitions B and the notches D, all constructed and arranged substantially as specified.

2. The combination of the tension bar F with the thread-box, constructed as above described.

135,072.—*Oil-Dripping Can.*—LEWIS R. BOYD, New Brunswick, N. J.

Claim.—1. An oil-can perforated at a point adjacent to the nozzle, as set forth.

2. The air passage or vent formed in the screw-cap by indenting that portion of the nozzle continued within the cup, as specified.

135,073.—*Crank Movement.*—HORACE C. BRADFORD, Providence, R. I.

The automatic reciprocating crank-arm, the center pin, and face-plate are connected with the semi-elliptic bearing, which constitutes the connecting medium between the crank-arm and the face-plate.

Claim.—The combination of the semi-elliptical auxiliary bearings *f h* with the rotary face-plate, the automatically-reciprocating crank-arm, its center-pin, and steady-pin, substantially as and for the purposes specified.

135,074.—*Safety Apparatus for Lamps.*—CLARK J. BROWN, Plymouth, N. H.

Constructed of a funnel, by means of which the lamp is filled from the oil-can by means of tubes.

Claim.—1. The combination of the flexile tube D and the stationary tubes C E with the funnel A and cork or stopper F.

2. Also, the combination of the hooked bail B, or its equivalent, the funnel A, the cork F, and the stationary and flexile tubes C D E, all arranged substantially as and for use as specified.

135,075.—*Check-Hook.*—HENRY W. BURRESS, New Brighton, assignor to himself and H. EATON SHERMAN, Pittsburg, Pa.

Claim.—The check-hook *a a* having its spring *c* secured to the point *b* and opening inward, with a recess, *g*, in the head of the bolt *f* for the reception of the detached end of the spring, as herein described, and for the purpose set forth.

135,076.—*Hoe.*—HARRY CAMP, Covington, Ky.

Claim.—As a new article of manufacture, the rectangular hoe-blade A, having two adjacent edges curved and the other two plane or flat, substantially as specified.

135,077.—*Medical Compound for Cure of the Catarrh.*—JOSHUA A. CARPENTER, Waverly, N. Y.

Oil of tar, gum camphor, salt, (chloride of sodium,) glycerine, and water.

Claim.—The ingredients herein specified, combined substantially in the manner and about the proportions set forth.

135,078.—*Tuck-Creaser.*—WILLIAM CARPENTER, Lawrence, Kans.

The sliding bars, provided with the nipping jaws, are moved in opposite directions and caused to crease the fabric elevated by the ribs by means of pins on the rocking shaft that enter holes in the bars.

Claim.—1. The perforated sliding bars G G provided with spring *d* and jaws *f f*, and operated from the needle-bar of the machine by the lever E, rocking shaft D, and pins or lugs *e e*, substantially as and for the purposes herein set forth.

2. The combination of the bed-plate A with edges or ribs A A, gage B, plate C with ears *a a*, rocking shaft D with pins or lugs *i i*, arm E, spring *b*, and perforated sliding bars G G with spring *d*, and jaws *f f*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

135,079.—*Corset-Steel.*—CHARLES S. CHAFFEE, Birmingham, Conn., assignor to ROBERT N. BARRETT, same place.

Two or more strips or wires form the edges of the corset-spring, and are covered, when a third strip or steel is placed in the recess between them.

Claim.—A corset-steel having the outer or edge portions inclosed within a covering, the said covering forming a web longitudinally through the space between the said outer portions, leaving a recess between the said edge portions into which the center spring *c* is placed, substantially as described.

135,080.—*Writing-Pen.*—RICHARD H. CHIEN, Washington, D. C.

The back of the pen writes as freely as the front, the ink is agitated and flows freely, and spring and elasticity are added to the pen.

Claim.—The point A of the pen, having openings C and D at each end of the slit B, an angular bend, H, across the point and slit, and the curved tongues J J on each side of the bend H, and the gutter P at the back of the point, when constructed and operating as herein described, and for the purposes set forth.

135,081.—*Calk for Horseshoes.*—THOMAS M. CLARKE, Winsted, Conn.

The hole through the calk is designed for a pin to be driven through it and into the shoe to hold them together temporarily for heating and welding.

Claim.—As an article of manufacture, the herein-described toe calk, having one or more perforations vertically, or nearly so, therethrough, substantially as set forth.

135,082.—*Railroad-Rail Joint.*—JAMES M. CLEM, Opelika, Ala.

The bolt is confined by a spring-washer and vertical notched key, which, in case of becoming loose, is replaced in position by the flange of the passing wheel.

Claim.—The horizontal flat bolt C combined with a vertical notched key, E, held by a spring-washer, as and for the purpose described.

135,083.—*Oyster-Packing Can.*—LEVI R. COMSTOCK, Baltimore, Md.

A sheet-metal can, having an inner flange extending up parallel with its walls, and being provided with a suitable cover, is inclosed within an outer case, which is so constructed that the same may be securely locked by a suitable device arranged for that purpose.

Claim.—1. The combination, with a can and cover having a vertical flange, *b*, of an inner wall or flange, B, secured to the can-wall and forming an annular space, *c*, to receive said flange *b* of the cover.

2. The combination, with the case D, of the crossed suspension-bars A and metallic ring *u* having the handles G, substantially as specified.

3. The combination, with the case D and cover E, of the ring F carrying the bolts *s*, designed to be inserted through the case into cover, substantially as specified.

135,084.—*Wrench.*—EDWARD A. COOPER, Lancaster, N. Y.

By slightly pressing inward, the flange or lip *c* is kept in contact with the top of the nut and prevents the wrench from slipping past the same, thereby retaining the jaws of the notch in their proper position with reference to the nut.

Claim.—A wrench constructed with a flange or lip, *c*, arranged so as to partially obstruct on one side of the wrench the notch or recess which receives the nut and prevents the accidental displacement of the wrench, substantially as herein before set forth.

135,085.—*Feeding-Screen for Bran-Dusters.*—GEORGE S. COOPER, Baraboo, Wis.

Feeding-screen supported at each end on adjustable spring-pieces, and reciprocated by eccentric working in a yoke.

Claim.—1. The combination of yoke G I, brace K, slotted springs E F, adjusting-bolts Q', and the feed-shoe hinged to said springs, as shown and described, whereby the shoe may be reciprocated and vertically adjusted at either or both ends, for the purpose specified.

2. The spring-supports F for the lower end of the shoe having the bow Q, as specified.

135,086.—*Spring Attachment to Car-Windows.*—GEORGE CORNWALL, Brooklyn, N. Y.

The springs are adapted to keep the sash out of contact with the casing on either side, and serve as handles for raising and lowering the sash.

Claim.—The arrangement of the bow-spring C with the sash A and casing B, as shown and described, whereby it prevents rattling, and also serves the purpose of a handle, as specified.

135,087.—*Manufacture of Jewelry-Bases.*—SHUBAEL COTTLE, New York, N. Y.—Case C.

An annular disk, integral with a flange turned at right angles thereto along its outer edge, has an inner rim or flange formed upon it by placing it upon and around a recessed mandrel and spinning the inner edge of the annulus over against the wall of the recess.

Claim.—1. The mandrel D, having edge *d'* and cavity *d*, constructed as described, and combined with a burnisher and ring, as and for the purpose set forth.

2. The method of forming on the blank A an inner barrel, C, concentric with outer barrel, substantially as described.

135,088.—*Manufacture of Jewelry-Bases.*—SHUBAEL COTTLE, New York, N. Y.—Case B.

An annular rim, integral with and springing from and at right angles to a flat disk, has its edge turned over inwardly, (as at *b*,) by placing the disk in a ledge in a recess of a mandrel, the edge of the rim projecting above the wall of the recess, and, with a blunt tool, spinning the margin of the rim inward until it is brought to a plane parallel to that of the disk.

Claim.—1. The mandrel having cavity *c* and ledge *c'*, combined with a burnisher, as and for the purpose described.

2. The method of forming the flange *b* on base B, substantially as described.

135,089.—*School-Desk.*—SYLVANUS COX and WILLIAM W. FANNING, Richmond, Ind.

The end frames of the desk are provided in their central portions with a circular recess having two steps or cushions on one side, and are connected by a bolt with a boss on the seat-arm, which has steps or projections that work in the recess in the desk-frames.

Claim.—The described arrangement of seat-frames *F F'* having the bosses H H' and bolts E E' connecting them with the central intersecting portions of the standards A A', in the described combination with the circular grooves or cavities C and steps G G', I I', as and for the purpose set forth.

135,090.—*Handle for Brushes.*—ROBERT S. CRAIG, Cincinnati, Ohio.

A broom or brush head, on which is firmly held a plate with a projecting center or lug, to which is connected, by pivot, a swinging yoke, through which passes a screw-bolt connected by a nut in the handle which passes through the yoke, and its point resting upon or in a slot in the projecting center or lug, that the brush or broom may be held at a proper angle for its use.

Claim.—The combination of plate B *b'*, swinging adjustable yoke C *c*, and set-screw handle D *d*, connected and operating substantially as and for the purpose specified.

135,091.—*Steam Water Elevator and Injector.*—ALONZO W. CRAM, Litchfield, Ill.

A tapering nozzle or siphon-tube is provided with a series of steam-jets to contract, and thereby increase the power correspondingly, and cause the water to flow with greater velocity and intensify its current.

Claim.—An injector consisting of the tapering or cone-shaped pipe A and a series of steam-jets, *a b c*, the whole being constructed and arranged to operate substantially as described.

135,092.—*Key-Check.*—JAMES J. DE BARRY, Chicago, Ill.

The pointers, connected together by a sleeve, nut, and screw, are set opposite the hour of return on one face, and the place at which the person occupying the room indicated by the number on the check may most likely be found, said check being provided with spurs to prevent its being carried in the pocket.

Claim.—A key-check provided on one side with a dial and a pointer, and on the opposite side with words or other characters and a pointer, as described, both pointers being connected together, substantially as set forth.

135,093.—*Trace-Buckle.*—MANUEL P. DE SILVA and GEORGE T. BENJAMIN, Cleveland, Ohio.

The device is an improvement on Patent No. 123,060, and consists of a plate or thumb-piece attached to or forming part of the cam. The plate has a straight rigid tongue on its under side at its outer end.

Claim.—The plate D with its outer end turned up, and a straight pin, *b*, formed on its under side, when said plate is used with an eccentric-pivoted roll, C, substantially as set forth.

135,094.—*Means of Operating Ships' Pumps.*—SPENCER R. DEVERELL, Mount Gambier, South Australia.

A heavy weight is suspended from a rocking shaft, which shaft is journaled in a rocking frame, and these parts are so connected by bevel-gearing, ratchet-wheels, and pawls to a main working-shaft, that the oscillations in any direction of the weight give a continuous motion in one direction to the said working-shaft.

Claim.—The frame *x x* primary axis *c c* supported in bearings *v v*, secondary axis *b b*, and oscillating weight R, in connection with the shafts *d q*, wheels *g h n o p*, and pawls *m* and *t*, the whole constructed and operated to give rotation of a shaft in one direction, as and for the purpose set forth.

135,095.—*Stove-Grate.*—EZRA DEWITT, Belvidere, N. J.

The two sections of the grate are pivoted at their adjacent edges. The outer edges are operated by cams on the shaft beneath. The opening between the two sections is covered by a guard-plate.

Claim.—The combination of the sectional vibratory gratings D E, pivoted at their adjacent edges, with the cam shaft D', eccentrics F, and central guard-plate or bridge Z, substantially as specified.

135,096.—*Stove-Grate.*—EZRA DEWITT, Belvidere, N. J.

In dumping, both grates are cleared of their loads, that which is between the gratings passing freely out between the perimeters.

Claim.—The combination of the lower circular dumping-grate A, the intermediate collar or washer *a*, the upper horizontally-rotating grate B, and the elongated central pivot-pin C, arranged to allow the upper grate to rise as obstructions increase between the said grates, substantially as described.

135,097.—*Corset.*—STEPHEN DIXON, Nottingham, England.

A corset having thin strips of cork sewn in between the fabric.

Claim.—As a new article of manufacture, a corset or stay having incorporated with it or attached to it thin strips, bands, or sheets of cork, for the purpose and substantially in the manner described.

135,098.—*Corn-Planter.*—STEPHEN DIXSON, Roseville, Ill.

A rearward continuation of the tongue beyond the axle-tree forms a frame, beneath which a front tool cuts off a superficial slice of the ground and throws it beyond the furrow; the furrower follows, and then the seed-drill with a conducting-tube above it. On each side of the drill is a shovel to loosen the soil. Hinged behind the frame, mounted on a roller, is the hopper, which has revolving in it, by a belt and drums, seed-cups on the ends of radial arms, each in turn delivering its contents into the seed-conductor.

Claim.—1. The combination of plows G J J, cutter H, and shoe I, for preparing the soil for the reception of the seed, in manner specified.

2. The combination of plows G J J, cutter H, and shoe I, duct L, seed-box M, cups S, and roller N, when arranged for joint operation, in manner set forth.

135,099.—*Scroll-Saw.*—WILLIAM H. DOANE and WILLIAM H. DOANE, Cincinnati, Ohio, assignors to J. A. FAY & CO., same place.

A brake is attached to the belt-shifter in such a manner that shifting the belt to the loose pulley applies the brake to the periphery of the crank-wheel. The lower guides are also made laterally adjustable.

Claim.—1. In combination with the frame A *a'''* and driving shaft and pulleys C *e* D D', the shifter-rod and wedge-brake E *e' e''*, substantially as and for the purpose described.

2. The slide F when formed by the combination of grooved slides *f'* and inserted web *f''*, connected substantially as and for the purposes specified.

3. The combination of swiveling guide G, rod I, washer *i*, adjusting-nut K, and spring J, substantially as and for the purpose specified.

135,100.—*Sewing-Machine Cover Hook.*—JOHN C. KOLY, Philadelphia, Pa.

The hook-fastening for the cover is adjustably secured so that if the wood of the cover or of the table should shrink or warp it may be adjusted to the change. The hook is secured to a plate which adjusts by slots through which the fastening-screws pass. The hook is in a recess in the table, and over it is placed a slotted plate through which it projects.

Claim.—The adjustable hook C, arranged in combination with the slotted fastening-plate *d*, substantially as and for the purpose herein shown and described.

135,101.—*Turn-Table.*—JOHN ENRIGHT, Cleveland, Ohio.

The table is mainly supported on the central pivot, while the flange *b'* and lubricated groove *a* steady its movements. Dust is measurably excluded by the outer flange *b*, while the inner flange is intended totally to exclude it from the pivot. The pivot-cup is chamfered away at the top, as well as groove *c*, to allow room for a quantity of oil.

Claim.—1. A rotary table, B, having a spindle, *b'*, rotating in a step, *c'*, of bed C, and a flange, *b'*, rotating in a groove, *c*, of said bed, as and for the purpose described.

2. The step *c'* and groove *c*, enlarged so as to receive lubricating material to last, as described.

135,102.—*Machine for Cold-Rolling Sheet Metal.*—JAMES EVANS, Portsmouth, Ohio.

A series of five or more cylindrical rolls of equal diameters, resting horizontally one upon another. Power is applied to the the lower roll, while the others are driven by friction from it. Adjustable weighted levers hold the lower roll of the two being used against the sheet. When a roll becomes worn it is renewed by being placed higher up in the series, where it will receive the friction of two rolls.

Claim.—1. The arrangement, substantially as described, of a tier of five or more interchangeable rolls resting upon one another, and all propelled from one of them by simple friction of their peripheries, as and for the purpose set forth.

2. In the described combination with the vertical range of horizontal rolls resting one upon another, the cheeks C, saddles I, rider J, yokes L, hooked lugs M, and weighted levers N, or their equivalents, for the purpose set forth.

3. The supplementary loading devices I' L' M', as and for the purpose represented.

135,103.—*Damper-Regulator.*—BENAIAH FITTS, Worcester, Mass., assignor to UNION WATER-METER COMPANY, same place.

An automatic damper-regulator operated by two piston-heads belted together, between which one end of a tubular diaphragm is secured, and the other end is fastened between two flanges above and outside of the cylinder, said diaphragm allowing the piston to move up and down, and at the same time prevents the fluid from being forced out the top of the cylinder, while the piston operates the damper in the flue through springs and levers. The damper is also manipulated by a peculiar hand mechanism.

Claim.—1. An automatic damper-regulator, consisting of a water-chamber, S, pipe T, water-channel P, cylinder A, piston B F, diaphragm G, and weighted lever C, the whole being arranged and operated in the manner substantially as described.

2. The combination, substantially as described, of a damper, E, in the smoke-flue of a chimney, or its equivalent, with the devices set forth in the first claim.

3. The combination of the hand-levers M N, catches *v*, standards *r*, and flexible connection *w* with the crank-lever I of the damper E, for the purpose set forth.

4. The combination of the damper E with the crank-lever J, slotted rod K, spring *l*, and weighted lever C of an automatic regulator, for the purpose set forth.

5. The combination of the devices set forth in the third claim, or their equivalents, with the crank-lever J, slotted rod K, spring L, and weighted lever C of an automatic regulator, for the purpose set forth.

6. The tubular diaphragm G, connected to the piston F and cylinder A, as and for the purpose set forth.

7. The water-chamber S, when constructed with an enlargement at top, and arranged to operate substantially as shown and described, for the purpose set forth.

135,104.—*Water-Elevator.*—THOMAS FOWLDS, Jr., Trevorton, Pa., assignor of one-half his right to JOHN H. GABEL, same place.

The exhaust steam is condensed in the receiving-pipe of the pump and, by creating a vacuum, assists in elevating the water, and is more especially adapted to mines, &c.

Claim.—1. The pipe *c*, provided with the stop-cocks *c 2*, so as to exhaust into the air or the receiving-pipe of the pump, substantially as shown and described.

2. The combination of the cylinder *c*, exhaust-pipe *c*, and pump *i*, constructed and arranged to operate substantially as specified.

135,105.—*Steam-Boiler Furnace.*—CHARLES H. FOX, New Orleans, La.

The suspended or supported deflector is perforated so as not to retard the draft too much, and at the same time imparting its heat more readily to the boiler.

Claim.—1. The perforated, suspended, or supported deflector D, in combination with a boiler, A, substantially as and for the purpose herein set forth.

2. The combination of the perforated deflector D, boiler A, and concave arch F, arranged substantially as shown, and for the purposes herein set forth.

135,106.—*Steam-Boiler Furnace.*—CHARLES H. FOX, New Orleans, La.

The deflectors are supported by columns or pillars instead of pipes, as heretofore, to avoid possibility of falling in case pipes are burnt.

Claim.—1. The deflector E, in combination with the columns or supports F, when arranged substantially as and for the purpose set forth.

2. The arrangement of bridge-wall D with the deflector E, columns F, and curved floor G, all constructed substantially as shown, and for the purpose specified.

135,107.—*Clothes-Drier.*—ERASTUS S. FRENCH, Westminster, Mass., assignor to FREDERIC S. COOLIDGE, same place.

A clothes-drier, constructed with uprights or supports, on the top of which are side pieces, through which are pivoted bars for the clothing to be dried upon, and when not in use are arranged to be folded or contracted to occupy very small space.

Claim.—1. The clothes-rack having the side pieces A, pivoted supports B, rigid frame F with double-beveled ends, pivoted frames E with single-beveled ends, and the pivoted outer frames D, all arranged substantially as specified.

2. In a clothes-rack having the pivoted supports B, side pieces A, and pivoted frames D E, the rounded projecting outside the pieces A and serving as stops to the supports B, substantially as specified.

135,108.—*Packing Box.*—LUDOLPH A. FULLGRAFF, New York, N. Y.

The sides and ends of the box are made of wood, with a rabbet around the upper edge. The bottom and cover are made of stout paper, the cover made to fit in the rabbet and the outside flush with the box.

Claim.—As a new article of manufacture, the packing-box herein described, formed of the wooden body and paper cover and bottom, as specified.

135,109.—*Automatic Dental Drill.*—MARION I. GALLAGHER, Savannah, Ga.

The drill for use in the mouth is operated by a band passing over a pulley, which is driven by a spring and gear-wheel. A brake is applied to the periphery of the pulley-wheel, and may be used either in checking or entirely stopping the revolutions of the drill.

Claim.—1. In a hand dental drill for the purpose specified, the spur-wheel C', spring B, pawl and ratchet *a b*, winding-arbor C, the belt-wheel F, pinion D, belt H, pulley I, and drill-spindle G, each part being constructed and arranged in respect to each other, within the case A, as herein shown and described.

2. In a hand dental drill for operating upon the teeth while in the mouth, the lever K, formed as described, pivoted within the case for controlling the movement of the belt-wheel, substantially as and for the purpose specified.

135,110.—*Device for Making Cigarettes.*—HUGO GERIKE, Berlin, Prussia, assignor to BRUNO HARRASS, Böhlen, Germany.

A tube and revolving spiral blade are arranged in a tobacco-pouch. The wrapper is slipped on over the tube and stopper, and is carried along by the stopper as the filling by the spiral advances. To the stopper is attached a spindle, which enters the center of the spiral and guides the outward rotary movement of the cigarette while being formed.

Claim.—The cigarette-filling apparatus, composed of the receptacle B, rotary spiral blade S, tube R, needle N, and stopper K, all arranged substantially as herein shown and described.

135,111.—*Lasting-Machine.*—CHARLES W. GLIDDEN, Lynn, Mass.

The last, with the upper drawn over it, is held rigidly by means of plates, which gripe it just below the plane of the top surface. A series of slides attached to a series of plates, which receive motion from a ring which has limited rotary movement, and as the ring is turned in one direction the slides are moved laterally, thereby forcing the projecting edge of the upper over upon the outer surface of the inner sole.

Claim.—1. In combination with the last-holding jack, the plates *l* simultaneously opened and closed, substantially as described.

2. In combination with the pressers *r* and bars *y*, springs *d''*, against the stress of which the pressers may yield vertically, substantially as described.

135,112.—*Hat-Stretching Machine.*—SAMUEL GOODMAN, Natick, Mass.

Improvement on 46,553, for 1865. The jaws of the radially-arranged stretching-arm are spring-seated, to provide a yielding pressure.

Claim.—A jaw, B, for hat-stretchers having a curved convexity on its working-face, and on its rear-face end a spring rod connecting it with arm A, as described, so that the hat may be stretched from the tip downward.

135,113.—*Compound for Fish-Baits.*—SAMUEL A. GOODMAN, Jr., Jamestown, Tex.

A composition of vegetable and animal matters is mixed with ordinary bait.

Claim.—A mixture or compound of the substances herein specified, substantially as described, and the combination of the same with the ordinary bait or with nets for fishing, as set forth.

135,114.—*Nail.*—WILLIAM N. HALL, Mexia, Tex.

Two sides of the nail are beveled to form sharp edges about two-thirds of its length, where a second bevel is commenced to form a chisel-point at right angles to the sharp edges.

Claim.—The nail, substantially as herein described, as a new article of manufacture and trade.

135,115.—*Door-Check.*—ALEXANDER HANNA, Dover, Ky.

A double-hooked plate, one arm of which is shorter than the other, projects outward from the wall and drops into a recess between two shoulders on the bracket to which it is pivoted. This bracket is hinged to swing up against the wall when the hooked plate is not in use in holding the door.

Claim.—1. The notched or double hooked plate A with arms C and D pivoted to the bracket B and fitting into a recess between the shoulders E and F and arranged relatively to the door, substantially as specified.

2. The bracket B jointed at H, as described and arranged, for swinging up against the wall carrying with it the notched plate A, substantially as specified.

135,116.—*Sad-Iron and Fluting Iron.*—JOHN HEWITT, New York, N. Y.

A sad-iron constructed with two polished surfaces is attached, for fluting, to a corrugated plate by a stud and screw, (by which it is easily detached,) the corrugations extending through its length, of uniform dimensions.

Claim.—The reversible iron A and the detachable corrugated plate F, when the same are constructed, combined, and arranged to operate substantially as described.

135,117.—*Cradle.*—LEVI HEYWOOD, Gardner, Mass., assignor to HEYWOOD BROTHERS AND COMPANY, same place.

A cradle constructed of wood, supported by upright ribs, with a supporting edge or cap, all from pieces bent to form, and attached together by screws or rivets.

Claim.—A child's cradle, having the body thereof constructed wholly of bent strips or frames of wood, in the manner and for the purposes described.

135,118.—*Writing-Pen.*—JOHN HOLLAND, Cincinnati, Ohio.

A pen having fluted sides for conducting the ink supplied from a fountain formed by piercing it transversely with intersecting holes.

Claim.—The grooved and perforated detachable metallic point C *c' c''*, substantially as and for the purpose specified.

135,119.—*Wheel for Vehicles.*—JEREMIAH C. HURLEY, Cincinnati, Ohio.

Claim.—The spoke having its inner end tapering and provided with the slot G, shoulder A, and passage H, in combination with the hub-band C having the radial partitions D, substantially as specified.

135,120.—*Vault-Light.*—THADDEUS HYATT, New York, N. Y.

Claim.—A vault-cover, sidewalk, floor-light, &c., composed of metal and glass in which the glass panels are provided upon their upper surfaces with a plurality of bearing and light-refracting points of considerable elevation, and the supporting frame has channels which permit water falling upon said panels to flow away and dirt or dust to be blown or swept away, substantially as and for the purpose specified.

135,121.—*Sewing-Machine-Table Cover.*—EDWIN A. JEFFERY, Jersey City, N. J.

The cover has on one side upper and lower hooks. The upper hooks engage with eyes secured to the under side of the table-top. The lower hooks engage with a bail passing through eyes secured to the leg-frame of the table.

Claim.—The cover of a sewing-machine provided with hooks C C', as set forth, adapted to engage with the eyes D D and *f f* on the table, the hooks C' and eyes *f f* having an intermediate brace or bail connection, E, substantially as described, for the purpose specified.

135,122.—*Gathering or Ruffling Attachment for Sewing-Machines.*—ALLAN JOHNSTON, Ottumwa, Iowa.

The gathering-blade is not slotted, as usual, to hold the cloth until the needle enters it, but is moved back a little just as the needle is approaching the cloth by means of a starting-lever operated by the bell-crank lever.

Claim.—1. In a gathering and ruffling attachment for sewing-machines, the combination, with a reciprocating gathering-blade and a vibratory lever for actuating the same, operating together substantially as specified, of the means herein described, or their substantial equivalent, whereby the gathering-blade, when the needle commences to descend, and before it reaches said blade, will be removed from the path of the needle, substantially as and for the purposes herein shown and set forth.

2. In a gathering and ruffling attachment, the combination of a reciprocating gatherer, a vibratory lever for imparting movement to the same from the needle bar or arm, and a starting-lever operated from said main vibratory lever to retract the gatherer out of the path of the needle when the latter commences to descend, and before the said main lever begins to act directly upon the gatherer, as set forth.

3. The combination of an upper stationary holding-blade, an under reciprocating gatherer having an unslotted gathering-edge, a vibratory lever for actuating said gatherer, and the means herein described, or the substantial equivalent of the same, for drawing back said gatherer from the path of the needle immediately upon the descent of the latter, and before the vibratory lever begins to act on the gatherer, substantially as herein shown and set forth.

135,123.—*Gathering or Ruffling Attachment for Sewing-Machines.*—ALLEN JOHNSTON, Ottumwa, Iowa.

When the edge-gage is in the position shown in the drawing, or down, the material will be ruffled at the edge, but when elevated the material passes quite under the ruffler, allowing the knife to engage the material at a distance from its edge.

Claim.—1. In gathering and ruffling attachments for sewing-machines in which the goods to be gathered can pass under the attachment and be drawn back toward the rear of the same so as to be operated on by the gathering knife or blade at a distance from the edge, as specified, I claim an edge-gage hinged to the frame of the attachment in the position substantially as shown and described, and operating as set forth.

2. The combination, with the frame and the foot and holding-blade attached to the same, of the hinged edge-gage and the reciprocating gathering-blade, connected with its supporting-plate by a bowed or bent arm, constructed substantially as described, said parts being arranged for operation as set forth.

135,124.—*Chevron.*—FRANCIS S. JOHNSTON, Philadelphia, Pa., assignor to GEORGE FENCUM JONES, same place.

The different ranks are indicated by lines of stitching made directly upon the material itself.

Claim.—The improved article of manufacture herein described, consisting of a chevron cut from cloth in any desired pattern, with stitched lines, as set forth.

135,125.—*Bobbin for Sewing-Machine Shuttles.*—GEORGE JUENGST, Somers, N. Y.

The spindle may have slight indentations in it before the head is put on, into which the metal of the head is pressed.

Claim.—A bobbin for sewing-machine shuttles with a wire spindle and heads of thin sheet metal, the holes in the latter being spread by a punch to form projections that are afterward pressed down against the spindle to secure the heads, substantially as set forth.

135,126.—*Piano Sounding-Board.*—THOMAS KATER, Hamilton, Canada.

Two sounding-boards of equal size are joined by side and end strips, the sides strengthened by iron plates, and an elastic bridge of the form of the string-bridge connects the upper board to the lower. The whole rests mainly upon its ends.

Claim.—1. The sounding-boards A′ B′, each of a corresponding shape and size, connected together at their edges by the strip C C′ and either or both of the metallic plates D E, as herein set forth.

2. In a double sounding-board for pianos, the sympathetic spring-bridge K, as and for the purpose set forth.

3. The sympathetic spring-bridge K, corresponding in form with the curved bridge L and secured immediately below the same to the sounding-boards, as shown and described.

4. The sounding-boards A′ B′, connected by metallic plates D E and combined with the series of bridges M M attached to the lower board and extending through the upper board, and arranged with respect to the curved bridge L and the strings, as shown and described.

5. A sounding-board for pianos, consisting of the boards A′ B′, metallic plates D E, and connecting-strips C C′, in combination with the series of bridges M, curved bridge L, and sympathetic spring-bridge, substantially as described.

6. The sound-boards supported within the case, as described, and removed from contact with the treble cheek-piece, the iron bar, and iron frame, as and for the purpose set forth.

135,127.—*Packing for Piston-Rods, &c.*—LEOPOLD KATZENSTEIN, New York, N. Y.

Claim.—The packing-rings C D E F having screw-sockets *b* and arranged to form grooves *a*, in combination with rods H and rod B, all constructed as and for the purpose set forth.

135,128.—*Traction or Portable Engine.*—DAN. W. KELLOGG, Battle Creek, Mich.

A novel construction of clutch devices operates the eccentric of the valve. Connects one of the traction-wheels with its driving-shaft by means of a clutch, in order that when the engine is moving around a curve, by detaching one wheel and driving by the other, he avoids the slipping of one wheel. Hangs the intermediate shaft at the forward end of the boiler, to impart the desired tension to the chains of the driving-wheels. Places removable chains on the wheels instead of ribs or corrugations.

Claim.—1. The combination of the crank-shaft C¹, the eccentric *e* mounted loosely on said shaft, and the clutch or shouldered collar *c*¹ secured rigidly to the shaft, these parts being constructed and arranged to operate as set forth.

2. The combination of the crank-shank C¹, loose eccentric *e*, clutch *c*¹, hand-wheel *c*², governor-wheel *c*³, and a connecting-belt, substantially as described.

3. In combination with the shaft E and its hangers, the supporting-rods *g* attached to the front end of the boiler, to relieve the central portion of the boiler from undue strain, substantially as described.

4. The combination of the shaft E, jointed hangers G G′, and adjustable rods *g*, substantially as described, and for the purpose set forth.

5. The combination of engine-shaft C¹, spurred wheel D, second shaft E, spurred wheel D¹ with the traction and supporting wheels D², spurred wheels E³ E⁴ and their connecting-chains, whereby the power of the engine may be applied either to propel the engine or to drive machinery, substantially as described.

6. The combination of the chains *b*³ with the wheels, for the purpose of increasing the traction, substantially as described.

135,129.—*Well-Boring Machine.*—JOHN A. KING, Hamburg, Iowa.

Claim.—1. The arrangement of the frame A, standards B B, cap C, and swival-braces E E, substantially as shown and described.

2. The arms O O, with cylinder P and knives *v v*, constructed and operating substantially as and for the purposes herein set forth.

3. The combination of the grooved screw-shaft D, having the collar *b* and lever G, and passing through the bisected nut *a*, with the cylinder P, arms O O, knives *v v*, and a well auger, all constructed to operate substantially as set forth.

135,130.—*Portfolio for Music.*—JOHN C. KOCH, Brooklyn, N. Y.

The binding-cords are armed with needles passed through retaining eyes, and are connected to elastic tabs. A flap is attached to one cover, to support it in an inclined position as a music-supporter.

Claim.—1. The eyes *n*, loops *o*, and elastic connections *p* to the cover *a*, in combination with the cords *l*, needles *f*, eyes *i*, and elastic connections *d*, as and for the purposes set forth.

2. The flap *m* attached at one edge to the cover *a*, and provided with the tape or ribbon *r* for retaining said flap in place, when employed for supporting the cover *a* at an inclination for use as a music or sheet support, or desk, as set forth.

135,131.—*Machine for Dressing Nuts and Bolts.*—JOSEPH KOHLER, Cincinnati, Ohio.

The nuts to be dressed are on a mandrel between centers, which are on a rest that is fed up to the emery wheel and along its disk or cutting-face by means of two screws at right angles to each other. The nuts are placed and held in position by a graduated wheel attached to the mandrel. A spring or pawl falling into the notches in the wheel holds it in any position desired.

Claim.—1. The combination of the compound rest A with the mandrel *a a*′, centers D D′, and graduated index-plate F for passing the nuts or bolt-heads to be shaped across the flat-side surface or front face of the revolving emery wheel H, substantially as specified.

2. The wheel H, arranged to grind the nuts or bolt-heads by the attrition of its flat-side surface or front face, so as to remain true and flat, in combination with the compound rest A, its attached index F and spring-catch G mandrel *a a*′, and centers D D′, arranged and operating substantially as and for the purposes specified.

135,132.—*Weather-Threshold.*—JOHN W. KRAMER, Bloomsburg, Pa.

The closing of the door presses the spring-lever, and through the rod and pocket raises the metallic threshold-strip into the recess in the bottom of the door.

Claim.—The combination of the spring-lever E and rod *f* with the door-strip D and pocket *g*, substantially as specified.

135,133.—*Lasting Boots and Shoes.*—RICHARD C. LAMBART, Quincy, assignor of one-third his right to NATHAN C. LOMBARD, Boston, Mass.; said LAMBART & LOMBARD assignors to said LOMBARD, trustee of THE LAMBART BOOT AND SHOE MACHINE ASSOCIATION, same place.

Thongs cut from the edge of the upper, but not detached, are forced into slits cut in the inner sole.

Claim.—1. The process of lasting boots or shoes and securing the uppers to the inner soles without the use of nails, pegs, or sewing, by forcing thongs cut from and forming a part of the "upper" into slits cut in the inner soles, substantially as described.

2. The angular arrangement of the slits *a*, *b*, and *d*, as herein set forth and described, for the purpose specified.

135,134.—*Animal-Trap.*—WILLIAM S. LAWRENCE, Winchester, Ky.

A spring and guide-pin, to overcome the inertia of a weight, is so contrived as to transfix the passing animal by pointed rods.

Claim.—The spring *b*, in combination with the "dead fall" B and pin I, substantially as and for the purpose specified.

135,135.—*Water-Heater for Heating Buildings.*—AMBROSE MARRIOTT, St. Louis, Mo.

The concentric water-chambers are arranged above and connecting with the hollow grate-bars, said chambers being cast in semi-annular sections. A removable perforated cap is placed near top of the cylinder P.

Claim.—1. The provisions, in a water-heating apparatus, of the tubular fire-grate C C′, D, pipe H, and annular castings J J′, *j*, K K′, *k*, and M M′, whether made in sections, as described, or otherwise, and tubes L L′, all arranged substantially as set forth.

2. The combination of the annular castings J J′ K K′, and M M′ with tubes L L′, when said castings are made in semi-annular sections, substantially as and for the purposes set forth.

3. The perforated neck *y* and imperforate cylinder *y*, substantially as and for the purpose set forth.

135,136.—*Table-Cutlery.*—CHARLES MCDONALD, Ottawa, Ill.

Two rectangular pieces are slotted and placed over each other at right angles. In the quadrangular space between the ends the tang of the blade is inserted. Molten metal is then poured around, filling the spaces, forming a bolster and securing all the parts firmly.

Claim.—1. The pieces A and B, constructed as described, and provided with slots *a* and *b d*, respectively, to form a handle for table-cutlery, substantially as herein set forth.

2. In combination with the pieces A and B, constructed as described, the bolster *f*, ribs *i i*, and solid piece *h*, all formed in one piece of cast metal, substantially as herein set forth.

135,137.—*Coupling for Steam Heating Apparatus for Railroad Cars.*—WILLIAM N. MCDUFFEE and BENJAMIN F. JAQUES, Petersburg, Va., assignors of one-third their right to D. W. LASSITER, same place.

The latches fasten the two parts, which together form the steam connection between the cars, and the valves—one in each part—when actuated move the latches.

Claim.—1. The pipe-coupling G in two parts, *g g*, held together by latch-levers J J on one and studs *k k* on the other, as described.

2. The combination, with valves H and levers J, of the hand-shafts I having sectional collars L L, as described, so that the valves will be closed whenever the latches are lifted.

135,138.—*Folding Cradle or Crib.*—MICHAEL MCNAMARA, Philadelphia, Pa.

The cradle or crib is constructed with hinged or jointed sides, in four sections, and so arranged with its ends, to which the sides are connected by hinges, as to admit of its being folded with its canvas hammock and hinged bottom into a very small and convenient space for packing or transportation.

Claim.—1. The cradle or crib composed of the end boards A B, posts C, sides E made in sections hinged to each other and to the posts C, and the bottom F, also made in sections, said parts being constructed and arranged in connection with each other, substantially as herein shown and described.

2. The combination of the cloth or netting G and rods H with the frame-work of a cradle or crib, substantially as herein shown and described, to form a hammock or summer bed, as and for the purpose set forth.

135,139.—*Machine for Pitching Barrels, Casks, &c.*—GUSTAVUS MEYER, of Quincy, Ill., assignor of one-half his right to JACOB DICK, same place.

The shaft is provided with a series of eccentric disks operating horizontally for the purpose of giving the keg or barrel a continuous rotary as well as a tilting movement.

Claim.—1. The shaft C provided with disks D E, and operating horizontally for the purpose of giving the keg or barrel a continuous rotary and tilting movement, substantially as shown and described.

2. The combination of the shaft C, provided with the disks D E, in combination with the roller F, substantially as shown and described.

135,140.—*Horseshoe-Nail Machine.*—JAMES MILLS, Keeseville, N. Y.

The nail-rod is presented, through a vertically-oscillating nose-piece, to the alternate action of a pair of striking-hammers, and a revolving roller-hammer, acting on a series of dies situated on an intermittently-revolving anvil. At every complete revolution of the anvil a cutter is raised, the nose-piece depressed, and the pressure of the roller-hammer on the raised cutter, acting against a stationary cutter, severs the finished nail from the rod.

Claim.—The combination, in a horse-shoe nail machine, of a revolving roller-hammer, intermittingly-revolving anvil, and striking-hammers, constructed and arranged to operate substantially as and for the purpose described.

135,141.—*Mustache-Spoon.*—ELLEN B. A. MITCHESON, Philadelphia, Pa.

An ordinary spoon with a plate extending longitudinally from the tip of the bowl to the point where the latter is united to the handle, leaving a portion of the bowl open or exposed. The side of the cover or guard is left open in sufficient space to allow the liquid to pass into the mouth without being brought in contact with the mustache.

Claim.—The combination, substantially as described, of the shield *a* with the bowl of a spoon, for the purpose specified.

135,142.—*Steam Boiling Apparatus.*—ELIE MOREUSE, New York, N. Y.

A steam-dome within and near the bottom of the boiler, connected with steam and waste-water pipe of any convenient steam-generator.

Claim.—The steam-dome *c* and supply-pipe *d* introduced within the vessel *a* and attached at the bottom thereof, substantially as and for the purposes set forth.

135,143.—*Postage-Stamp Affixer.*—EDWIN B. MORGAN, Paterson, N. J.

The paper, damped between a pressing-roll and a wet sponge, is laid over the spring-seated stamp-case, within which the stamps rest upon a fixed block. The plunger slides the case down until the paper is in contact with the stamps, the upper one adhering thereto.

1. A stamp-holding case, C, combined with a post, D, plate E, and a spring, F, substantially as specified.

2. The combination, with the sponge and sponge-holder, of the presser B′, substantially as specified.

135,144.—*Paper-File.*—EMANUEL MOTZ, Woodward, Pa.

The papers are confined to the stock B by winding the string C upon the windlass.

Claim.—The paper-file composed of the bar A, pin B, and string C, substantially as herein shown and described.

135,145.—*Paper-Bag Machine.*—MERRICK MURPHY, Cincinnati, Ohio.

The sheet of paper from a reel has one edge pressed by a roll against a belt running in a paste-vat, and is carried by feed-rollers between the cutters and under a former. The upper cutter is fixed to revolving heads and shears against a stationary blade, severing the blank, which is carried forward by an endless belt until its forward end projects against the drying-cylinder. During this movement its sides have been turned over to form the tube, the front projecting lap of which is struck by the folding-blade, which, in its upward movement, bears against a roll in a paste-vat, which doubles the end between the apron guide-roll and the drying-cylinder, around which it passes until it is ejected at the rear of the machine.

Claim.—1. The arrangement of paste-vat D, belt C and its rollers *c c*′, and guide-roller *b*′, for applying paste to the edge of a continuous sheet of paper, substantially as specified.

2. In combination with the former-plate I, the hook *i* and grooved or recessed feed-roller *h*, as and for the purpose set forth.

3. The combination of the former-plate I, endless carrying-belt G and its guide-roll *h*‴, drying-cylinder M, arranged outside of the said belt, and a folding-blade, the whole operating substantially as specified.

4. The combination of the folding and pasting blade K, drying-cylinder M, belt G, and its guide-roller *h*‴, for forming the bottom seam of the bag, substantially as specified.

5. In combination with the elements of the fourth claim, the paste-vat L and paste-roller *m*, the whole arranged and operating substantially in the manner and for the purpose specified.

135,146.—*Double-Acting Pump.*—KAYRAN NOLAN, Galesburg, Ill., assignor of one-half his right to BARNARD RYAN, same place.

Five valves are so arranged that the pump will be double-acting in this manner: Upon the up-stroke of the piston, both valves in the center pipe, which contains the piston, are opened, together with the upper exit-valve. Upon the down-stroke, the lower valve in the center pipe, the valve in that perpendicular side pipe which is furthest from the exit and the lower exit-valve are opened.

Claim.—In combination with the cylinders A C C′ and connecting-tubes D *e*, the five valves J K L M N, arranged for operation with relation to the piston B, in manner substantially as and for the purpose specified.

135,147.—*Knob-Latch.*—EMERY PARKES, New Britain, Conn., assignor to THE RUSSELL AND ERWIN MANUFACTURING COMPANY, same place.

The hub or "follower" is provided with a collar which projects beyond the outer face of the lock-case sufficiently far to receive and support the knob-shank, whereby the case may be dressed off by planing, grinding, or other means, with a comparatively small expense to that which would be necessary if the supporting-collar formed a part of the case itself.

Claim.—That improvement in "rim-locks" which consists in constructing the hub or follower B with a shank-support, D, for the knob and combining the same with the lock-case A, substantially as described, for the purposes specified.

135,148.—*Cultivator.*—JAMES H. PATTEE, Monmouth, Ill., assignor to himself, HENRY H. PATTEE, and ITHAMER P. PILLSBURY, same place.

The braces between the standards and beams are rendered adjustable by means of corrugated plates. A bolt in a segmental recess in the beam-plate limits the vertical movement of the plow-beam.

Claim.—1. The braces K, adjustably attached between the beams G G and standards H H by ratchet-plates I′ and M′, substantially as described, and for the purpose set forth.

2. The beam-plate N having a segmental recess in the outer end, in combination with the journal-plate P, bolts *n* and R, and spindle B, substantially as described, and for the purpose specified.

135,149.—*Screw-Propeller.*—NEWTON A. PATTERSON, Athens, assignor to himself, MCKENDRIE F. MILLER, and LANDON N. MILLER, Rheatown, Tenn.

Peculiar construction claimed whereby centrifugal action is obviated and an increasing pitch of screw is made.

Claim.—The blade A, made concavo convex and provided with pointed extensions C, as described.

135,150.—*Machine for Bending Sheet Metal.*—JOHN PEARCE, Brooklyn, N. Y., assignor to MELVIN STEPHENS, same place.

A convex and a concave roller and a shoe, so arranged as to bend longitudinally and transversely at the same time. The diameter of the longitudinal bend may be raised by adjusting the shoe.

Claim.—The combination of a shoe with the convex roller *a* and the concave roller *c*, in substantially the manner set forth, for bending a sheet-metal ring, substantially as set forth.

135,151.—*Band-Pulley.*—CHARLES HENRY PERKINS, Providence, R. I.

Claim.—1. In the band-wheel or pulley, the combination of the flanged rim A and the joint lap or laps *i* with the chambered hub C and the spokes B formed and applied to the hub and the rim, as set forth, all being combined and arranged substantially as specified.

2. In a wrought-iron band-wheel or pulley, a flanged rim made in one piece, or more, with a lap-piece arranged at and secured to the rim at each joint, as set forth, and with the spokes bolted or fastened to the flange or flanges of the rim, all being essentially as specified.

135,152.—*Fire-Proof Compound for Coating Roofs, &c.*—RICHARD U. PIPER, Girard, Michigan, assignor of one-half his right to MONROE HEATH, Chicago, Ill.

Alum, China clay, Glauber salts, and wood or coal ashes, in equal parts, made into a paste by mixing with flour and water.

Claim.—The within-described compound for fire-proofing the surfaces of roofs, walls, &c., or any substance to which the same may be applied, substantially as set forth.

135,153.—*Fire-Proof Paper for Roofs, &c.*—RICHARD U. PIPER, Girard, Mich., assignor of one-half his right to MONROE HEATH, Chicago, Ill.

Prepares the paper by drawing it through a bath composed of liquid silica and paint or coloring matter, and then passing it between calender-rolls.

Claim.—Submitting paper to a mixture of either hot or cold liquid silica or quartz and paint or suitable coloring matter, and then calendering the surface of the paper or otherwise suitably finishing off the surface of the same, as and for the purpose set forth.

135,154.—*School-Desk.*—CHARLES H. PRESBREY, Sterling, Ill., assignor to NOVELTY IRON WORKS MANUFACTURING COMPANY, same place.

The arm that projects upward from the desk-frame has on its outside a circular recessed projection, and on its inside a conical trunnion, with a seat-arm on said trunnion; and the slotted washer is fitted on the trunnion outside of the seat-arm. The slot in the lower end of said washer engages with the lug that projects from the desk-arm just below the conical trunnion. The desk-arm, seat-arm, and washer are secured together by a bolt and nut.

Claim.—The combination of the frame A with lug *f*, the circular recessed projection H with conical trunnion *e*, the arm G placed on said trunnion, the slotted washer I placed over the lug

f, and fitting on the end of the trunnion *a*, and the bolt and nut *d e* for confining the whole together, all substantially as and for the purposes herein set forth.

135,155.—*Coffin-Plate.*—GEORGE B. RANSOM, Chester, Conn., assignor to himself and JAMES B. CLARK, same place.

The inscription-plate is protected by a hinged cover and an interposed packing of tin-foil.

Claim.—The combination of the inscription-plate A and covering-plate C, substantially as and for the purpose specified, and with or without the packing between the two.

135,156.—*Butter-Knife Rest.*—BENJAMIN D. REED, Westfield, Mass.

Three or more spring-wires having at the lower end of each a bend to encircle the edge of the dish, and a short distance above, on each wire, a hook to serve as a rest for the knife. The wires are united at their upper ends in a head or any other ornament to form a suitable handle.

Claim.—Three or more spring-wires, A A, meeting at the top, and having handle B, each wire formed with the bend *a* and hook *b*, substantially as and for the purpose set forth.

135,157.—*Truck-Barrow.*—JAMES J. RICHARDSON, Marion, S. C.

Claim.—The cross-bar I arranged to both connect the side portions of the barrow and scrape the wheels D, as specified.

135,158.—*Slate.*—E. WALTER ROBERTS, Troy, N. Y., assignor of one-third his right to T. S. WOTKYNS, same place.

Two slates are hinged in such a manner as to open or lie flat on each other to expose either side, as desired.

Claim.—A pair of slates connected together at their edges by means of the pivoted metal bars C or their equivalent, so as to be capable of folding together in either direction, substantially as and for the purpose specified.

135,159.—*Refrigerator for Preserving Butter, &c.*—GEORGE B. ROHRER, Oxford, Ohio.

A refrigerator with three compartments, the middle one to contain the ice, the others being wider with doors opening into one end from the top to the bottom, and containing galvanized iron, tin, or zinc pans, one upon another, with spaces between; also, spaces between the said pans and the side walls for the circulation of air.

Claim.—1. The uncovered butter-chambers D D having perforations R, combined with an intermediate ice-chamber, E, having perforations K L, as described, for the purpose of producing a circulation of air.

2. The butter-pans H having the ribs P Q to cause a space between the pans and partitions, and to prevent any mobility thereof, as set forth.

135,160.—*Tube-Welding Machine.*—JAMES SADLER, New York, N. Y.

A bulb upon a mandrel is situated between an upper and lower die and inside of the tube which is repaired. The part is heated in the furnace and pushed forward between the dies, when the tube is rotated by one hand and repeated light blows are struck by a hammer in the other hand upon the upper die. The parts are interchangeable to adapt the machine to tubes of varying sizes.

Claim.—1. The tube-welding machine A, constructed substantially as shown and described.

2. The combination of the machine A with a forge, B, substantially as described, for the purposes set forth.

3. The adjustable supporting-arch N and springs Q Q, in combination with the die E, as and for the purposes described.

4. The adjustable gage H, in combination with the mandrel of a tube-welding machine, as and for the purposes described.

135,161.—*Car-Brake.*—WILLIAM H. M. SANGER, Bay Side, N. Y., assignor to KATIE SANGER, same place.

A brake-bar hinged upon the cow-catcher and operated by an upright and a horizontal lever.

Claim.—The brake-bar *f* hinged upon the cow-catcher, and provided with the shoes *r r*, in combination with the levers *g* and *h*, and rope or chain *i*, as and for the purposes set forth.

135,162.—*Excavator.*—F. WILLIAM SCHULTZ, Mount Pleasant, Iowa, assignor of one-half his right to WILLIAM E. BEATTY, same place.

The machine is carried upon three wheels, the forward of which, or steering-wheel, is arranged to turn freely in all directions to allow of turning in a small space. The earth is excavated by a plow hinged to the fore end of the elevator-trough, and is adjustable vertically by the means specified. The excavated earth is carried up through the trough by an endless chain-band and buckets or scrapers operated from the main wheels, and is deposited in the earth-box between the said wheels. The dumping is effected by a lever beside the driver's seat, which, through connecting-rods, operates the hinged gates composing the bottom of the box. Said connecting-rods are severally supported at their ends in pivoted bearings in the lever to provide for its varying angle of inclination.

Claim.—1. The arrangement of the box C with the metal bars D D, binding its side edges and extending forward to form the frame of my machine, substantially as herein set forth.

2. The combination of the stationary ring E grooved on its under side, the rotating ring G, rigid axle *b*, wheel H, metal straps *d d*, and tongue I, all constructed and arranged substantially as and for the purposes herein set forth.

3. The arrangement of the drive-wheels A with cog-wheels J, endless chains *e*, and pinions *f* with clutches for operating the shaft A, substantially as herein set forth.

4. The arrangement of the crank-shaft *n* with lever K, links *m m*, jointed bars *i i*, and springs *k k* for throwing the pinions *f f* in and out of gear, substantially as herein set forth.

5. The combination of the hoes *s s* on the endless chain *p*, the trough M, and the plow N, hinged to the lower end of said trough, substantially as and for the purposes herein set forth.

6. The arrangement, with the plow, conductor, and hoes, of the curved arms *s*, hinged frame O with lever P and spring-pawl *b'*, rack R, and connecting-arms *a'*, all substantially as and for the purposes herein set forth.

7. The oscillating bearings *m'* arranged in or upon the lever T, and each having a rod, *h'*, passing through it, in combination with the cranks *t'* and the gates S, all substantially as and for the purposes herein set forth.

135,163.—*Muff.*—RAPHAEL M. SELDIS, New York, N. Y.

Two pieces, one of fur, the other of leather, and each equal in size to one side of the muff, have a dovetail-shaped piece cut from their centers. These pieces are transposed and sewed into place, and the leather piece forms the back and the fur piece the front of the muff.

Claim.—As a new article of manufacture, a muff the front of which is formed of a piece, *a*, of leather and a piece, *d*, of fur, while its back is formed of a piece, *c*, of fur and a piece, *b*, of leather, substantially as shown and described.

135,164.—*Band-Saw Gang.*—HENRY SILLMAN, Brooklyn, N. Y.

The pulleys which carry the saws are placed in echelon and one saw in advance of the others.

Claim.—1. The double-boxes R S, adjusting-screws K L, gear-wheels P P, and vertical shaft and gears O, by means of which the saws are strained and one of them adjusted laterally, substantially as shown and described, for the purposes set forth.

2. The pulleys D D and E E, arranged as shown and described, to adapt them for operating saws C C of equal length.

135,165.—*Cultivator.*—ZACHARIAH B. SIMS, Bonham, Tex.

A cultivator constructed with a perforated head, which admits of the shovels being laterally adjustable. It is further provided with angular-shaped braces, which are fastened to the tongue and the perforated cross-head.

Claim.—The combination of the angular-shaped iron braces C provided with the perforations *c*, the perforated beam A, the perforated cross-head B, and reversible shovel F, substantially as and for the purpose specified.

135,166.—*Blind-Slat Adjuster.*—WILLIAM B. SLOAN, Hamburg, Iowa.

A disk of rubber is secured to the flat surface of one of the blind-slats near its end, and bears against the frame so as to retain the slats in any desired position.

Claim.—1. A rubber block, attached to one of the slats at its end, as shown at *d*, and having a frictional bearing against the blind-frame, substantially as described.

2. The blind-frame *a*, having the beveled edges *b* and plane surface *m*, in combination with the rubber block *d* attached to one of the slats, as and for the purpose described.

135,167.—*Oyster-Tongs.*—ISAAC SMITH, Bruceport, Washington Territory.

The strengthening stays run through projections upon the shank, to be more readily renewed if broken.

Claim.—The head A, having shank B with transversely-perforated ribs D thereon, combined with stale and bars E, as and for the purpose described.

135,168.—*Binder's Table for Harvesters.*—JAMES H. SMITH, Orford, Iowa.

A binding and dumping table is pivoted to either side of the machine. These tables are provided with pins to retain the bundles, and are connected together by levers so that they are both dumped by one operation of the driver.

Claim.—1. The hinged binding-tables D, rods G, and levers F F, connected by slot and pin, arranged on the frame A, with reference to the trough B and platform C, as shown and described, to adapt them to operate in the manner set forth.

2. The dumping-tables provided with stud-pins to hold the bundles, so that they will not be shaken off while being carried, substantially as specified.

135,169.—*Milk-Cooler.*—SMITH SPENCER, Kiantone, N. Y.

The flanges of the milk-vessel rest upon suitable packings upon the inner edge of the ring, which also rests upon packing upon the edge of the ice-vessel, so that an air-tight space is left for the reception of ice. The frame E supports the strainer E' and steadies the cooling apparatus. The funnel is provided with legs, which rest upon the ring.

Claim.—1. The combination of the bucket A, flanged ring B, can C, and packings *a c'*, all arranged as described.

2. The combination of the bucket A, flanged ring B, can C, and packings *a c'* with the tunnel D having legs *d*, all arranged as specified.

3. The combination of the bucket A, flanged ring B, can C, packings *a c'*, and tunnel D with the frame E and strainer-pail E', all arranged as set forth.

135,170.—*Stove-Pipe.*—WILLIAM H. STEPHENSON, Bluffton, Ind.

The pipe may be made larger or smaller to adapt it to any-sized flue or stove-collar.

Claim.—The overlapping and slotted stove-pipe, in combination with the internal plate B and its bolts, for the purpose of securing the pipe in position after adjustment and covering the slots in the pipe, as is herein set forth.

135,171.—*Starching-Machine.*—LEOPOLD STERNBERGER, Philadelphia, Pa.

A table with movable center having on its face an elliptical depression, over which is suspended, by a pivot, an arm with its bottom enlarged and formed to fit the depression. From this arm is attached a pitman connecting it to the shaft of the machine, and motion given it by an ordinary crank. To the under side of the table is connected an upright shaft with a treadle worked by the foot, by which tension or pressure is given to the parts in contact by the aid of a bell-lever. The foot of the arm is constructed with a shoulder in the enlargement, to which is connected, by spiral spring, a device which passes over the buttons on garments in the process of starching.

Claim.—1. In a starching-machine, the combination, substantially as described, of an oscillating rubber, A, with a rubbing-bed, D, rendered adjustable toward and from the said rubber.

2. The oscillating rubber A, with its rounded face *m* and recess *p*, in combination with the concavity *b* of the rubbing-bed.

3. The combination, substantially as described, of the yielding stud *s* with the recessed rubber A and rubbing-bed.

4. In a starching-machine, the combination, substantially as described, of the operating-treadle E and connecting-rod *a* of the rubbing-bed with the rod *f*, bell-crank lever *i*, slotted arm *h*, and belt-shifter *b*, or any equivalent devices, whereby the oscillating rubber may be set in motion simultaneously with the raising of the bed by the treadle, and stopped simultaneously with the lowering of the said bed.

135,172.—*Gasometer or Gas-Holder.*—JOSEPH C. TIFFANY, Portsmouth, N. H.

A dry gas-holder composed of flexible sides united to a rigid top and bottom, the sides having rings which move over upright rods so as to prevent the sides from falling inward or outward when the holder is collapsed.

Claim.—1. The stationary bottom D and movable crown or head L of a gasometer, connected together by a flexible curtain or body, K, said curtain being guided in its vertical movement by loops or eyes Q, traveling on guide-stems P, substantially as and for the purpose set forth.

2. The flexible body K of the gasometer, secured to the bottom D and movable head L by clamping bands or rings M, substantially as shown and described.

3. The bottom D of a gasometer made concave or corrugated for the reception of condensed material or substance, as described.

4. A screen or false bottom, arranged and supported at or near the bottom of a gasometer, substantially as described.

5. The combination, with a concave or corrugated bottom, D, of the diaphragm or false bottom R, substantially as and for the purpose specified.

6. One or more siphon or discharge tubes, S, combined with the bottom D of a gasometer, for the purpose specified.

7. The movable crown or top L of the gasometer, consisting of a skeleton metallic head and a flexible covering attached to the same, substantially as and for the purpose described.

8. One or more hoops or bands connected with the flexible curtain of a gasometer, for the purpose specified.

135,173.—*Plant-Protector.*—THEODORE R. TIMBY, Tarrytown, N. Y.

The joint between the funnel and the bell is made sufficiently open to allow the passage of rain when both are used together; or apertures may be formed in either at their juncture for the same purpose.

Claim.—1. The bell or cover A, constructed with a funnel-shaped top conducting to a central opening of any desired size, and adapted for use as herein described, and for the purposes set forth.

2. The combination of the bells A and D, adapted for combined use as herein described.

135,174.—*Sugar-Cane Cultivator.*—ALCIDE TROUARD, New Orleans, La.

A furrow is plowed upon each side of the row of cane stubble, called "barring." The cultivator has a cylinder armed with radiating teeth, which is adjustably mounted on runners. The teeth are forced in among the cane stubble as the machine is drawn over the ground, and thus loosening the soil around the canes.

Claim.—The improved machine for grubbing sugar-cane stubble, the same consisting of frame G G', runners I I, and the cylinder A provided with the teeth B, having points constructed as described, said cylinder being mounted on the axle-shaft C journaled in the pivoted levers D, which are adjusted at their free ends by the standards E and pins *d*, all as shown and described.

135,175.—*Sheep-Holder.*—SAMUEL TUCKER, Wabash City, Ind.

The holder is applied to a table by ordinary pins, and has clamps at each end for holding the feet in gains. The clamps are held up when out of use by springs.

Claim.—1. An apparatus for holding sheep when being sheared, consisting of the bed-bar B, head-pieces C C, uprights E E, clamps F F, and recesses or gains H H, substantially as set forth.

2. The springs G G, fastening-wires I I, and pins J J, in combination with the bed-bar B and clamps F F, as and for the purposes described.

135,176.—*Dish-Washing Machine.*—JOSEPH USHER, West Albany, N. Y.

A lower ventilated chest having a drawer in which the frame with dishes is placed to dry. Above this chest is an upper water-tight box having a hinged cover. Inside of this box is placed a revolving water-tight box. In the inner box is placed a frame for holding the dishes; said frame is divided into one or more compartments, and is provided with movable grates, hook-bars, and springs, so as to properly secure the dishes in place.

Claim.—1. The portable frame I divided into one or more compartments, lower movable pivoted grates J, springs K, upper movable pivoted grates L, pivoted hook-bars M for hooking on the upper grates L for the purpose of securing and holding the dishes, substantially as herein shown and described.

2. The combination of the revolving water-tight case F G and its attachments and frame I with its internal arrangements, with outer chest A, ventilated box D, and ventilated drawer E, substantially as herein shown and described, and for the purposes set forth.

135,177.—*Apparatus for Detaching Horses from Vehicles.*—THOMAS Y. VANCLEAVE, Cornersville, Tenn.

A device attaching and detaching the shafts, and an apron-roller and cover attached to the dash.

Claim.—The combination, with the axle A, of the angular lever C, arms *a a*, rods D D and G G, loops *b b*, ears *d d*, shaft-clips *e e*, and the hubs H H with stops *i i*, all constructed and operating substantially as set forth.

135,178.—*Corn-Planter.*—SOLOMON VANNUYS and HEZEKIAH VANNUYS, Bethel, Ind.

To prevent crushing and bruising of the seed, two flat springs, one above, the other below a reciprocating slide covering its seed-cup, permit the entrance, and retention therein, of the seed during its passage to the outlet.

Claim.—In combination with the feed-slide of a corn-planter or seeder, the spring-plates C and D, when arranged substantially as shown, and for the purpose set forth.

135,179.—*Machine for Cutting Files.*—CHARLES VOGT, New York, N. Y.

The file-bed carriage rests wholly on the feed-screw, and a toggled frame serves to raise it off the screw at the end of its journey. The blank is held by spring-clamps in contact with its edges. The cutter is connected to the end of a rod projecting downward from a piston that works in an air-chamber, which rod and piston are elevated by a cam. A valve opening outward from the chamber and controllable by the workman is regulated to allow more or less air to escape, and thus proportion the force of the blow to the varying width of the blank. The feed-pawl, operating by friction upon the periphery of a disk on the feed-screw, is made elastic, so that the deflection of it, caused by resistance of the disk, will, in its relaxation, occupy the time required for the crank to pass its center.

Claim.—1. The bed *a* resting upon and supported by the screw *b*, in combination with file-cutting mechanism, said screw *b* being of sufficient strength to support the bed while the file is being cut, substantially as set forth.

2. The frame composed of the bars A and parallel-motion links, in combination with the saddle-shaped bed *a* and screw *b*, for the purposes set forth.

3. The gage *n* and its arm *o*, in combination with the cutter *i*, air-cylinder *w*, and beds *l* and *a* for maintaining the surface of the file-blank parallel with the edge of the cutter, substantially as set forth.

4. The clamping-jaws *p s* and spring *t*, constructed substantially as specified, and employed for holding the file-blank, as and for the purposes set forth.

5. The slides *v* adjusted by the screws 11 12, in combination with the stock *n* of the cutter *i*, and the air-piston *w'*, substantially as set forth.

6. The valve 20 opening outwardly from the cylinder *w*, and allowing the air to pass freely, in combination with the rock-shaft and toe, or their equivalents, to regulate the point to which the valve shall close each movement of the piston and determine the force of the blow, as set forth.

7. The feeding-clamp *g* acting upon the cylindrical flange of the screw *b*, and provided with a flexible or yielding arm, *c'*, and connection to the adjustable crank-pin 2, substantially as and for the purposes set forth.

135,180.—*Condenser for Steam-Engines.*—GEORGE WALES, Brooklyn, N. Y.

Two cast metallic sections, convexo-concave in form, are bolted together, with a division-plate in the center, having two series of tubes set in perforated heads, placed a sufficient distance apart to form a chamber, in which there are two division-plates cast; also induction and eduction nozzles for steam and water, the same passing in opposite directions, one passing through the tube, while the other passes around and through them a second time after induction.

Claim.—1. A condenser consisting of a series of circular tubes arranged within a casing and supported therein by the tube-heads, substantially as described, for the purpose specified.

2. The division-plate C combined with the tube-heads C^1 C^2, in the manner described, and so arranged in respect to the circular pipes as to form two compartments, substantially as described.

3. The combination of a series of circular pipes with the division-plate C, tube-heads C^1 C^2, divided casing A B, and induction and eduction nozzles, substantially as described, for the purpose specified.

135,181.—*Feed-Water Heater.*—GEORGE WALES, Brooklyn, N. Y.

Claim.—The feed-water heater, consisting of the U-shaped cases D^1 D^2 bolted together and to the steam induction and eduction chambers A B, as described, in combination with the series of U-shaped tubes F F, tube-sheets E E', drip-pipes H H, and valve I, substantially as described.

135,182.—*Cutter-Holder for Planing-Machines.*—WILLIAM WALKINGTON, Leeds, England.

The two cutters are arranged in a box in such a manner as to cut in opposite directions as the table reciprocates. Both of these cutters are hinged in the box for facilitating their adjustment. The parts are all held together firmly when the cutters are operating by a hook. The cutters are adjusted by eccentrics.

Claim.—The box A provided with the rigid portion *a* and swinging portion *a'* and clamps for holding the adjustable tools *c d*, in combination with the slide *i*, eccentric *j* or its equivalent, hook *f*, and stud *g*, all constructed and arranged substantially as herein shown and specified.

135,183.—*Potato-Digger.*—WILLIAM H. WALL, Elbridge, N. Y., assignor of one-half his right to HARRISON W. GARRISON, same place.

The end of the plow-beam has grooves that receive the shares.

Claim.—1. The combined beam and standard, rounded up, as shown at *i i i*, and adapted, by the construction of its lower end, for attachment either to the digger D or plow P, substantially as and for the purposes specified.

2. The potato-digger attachment D, consisting of the wings *d d*, the point *d'*, the two sets of prongs *e e'*, arranged as described, and the arms *d² n* for securing it to the part A C, substantially as and for the purposes set forth.

135,184.—*Sash-Holder.*—JOHN R. WATSON, Allegheny City, Pa.

A rubber roller is pivoted in an adjustable bearing, which is formed with a beveled back fitting into a beveled recess at the corner of the sash. This bearing is provided with a lug, through which a set-screw passes, serving to move the whole device downward and outward in its beveled recess, thus adjusting the roller to bear upon the window-frame with the exact degree of pressure requisite to hold the sash in desired position.

Claim.—The adjustable bearing A', provided with a beveled back, lug *f*, and set-screw *e*, and placed in a recess in the sash B, the back of the said recess being beveled to correspond to the back of the bearing, as hereinbefore described, and for the purpose set forth.

135,185.—*Measuring-Wheel.*—THOMAS R. WAY, Springfield, Ohio.

The loose index on the graduated traveling-wheel, for measuring wagon-tires, &c., is set to the desired point by a nut, and carries upon it a second adjustable index also set thereto by a screw or nut, for marking off any required allowance for expansion.

Claim.—In combination with the measuring-wheel, provided with the adjustable pointer D, the pointer F, when arranged as and for the purpose set forth.

135,186.—*Grain-Drill Tooth.*—JAMES D. WELSH, Farmland, Ind.

For the reception of the arm, to which it is attached, it has two projecting flanges in front at its top. This chamber is one with the interior of the tooth, all being open at the top. The arm is pivoted at its bottom, and has a wooden pin above, which breaks when the tooth meets an unyielding obstruction. There is a slot in front of this pin to facilitate the removal of the broken pin.

Claim.—The drill-tooth, constructed as described, having the slot E in the rectangular socket B, and adapted for connection with the shank C, substantially as and for the purpose specified.

135,187.—*Car-Starter.*—JAMES J. WHEELER, Grinnell, Iowa.

To a frame provided with a drum and crank, two clamping devices are attached, one which will grasp the rail more firmly as the frame is raised from the track, while the other operates to tighten as the frame is depressed.

Claim.—1. The combination, with the slotted shanks of clamp-jaws, of a wedge attached to a leg of frame A B C and pivoted to a sliding bolt, I, as and for the purpose described.

2. The frame A B C, the drum D with crank E, and the chain F, combined with the clamp to form a car-mover, as described.

135,188.—*Iron Fence.*—JOHN B. WICKERSHAM, Philadelphia, Pa.

The end of the perpendicular rod forms the top of the ornament, the enlarged portion being formed around it. The horizontal bars are secured to the perpendiculars by wedges or keys within metallic connecting-blocks.

Claim.—1. The metal connecting-blocks D, made with seats for the wedges or keys, and binding the bars of the fence, in the manner set forth.

2. The ends to the pickets, formed of the upright bar and of the collar thereon, as set forth.

3. An iron fence made with the pickets *a*, connecting-blocks D, rail *i* placed flatwise, and rail *m* placed edgewise, as and for the purposes set forth.

135,189.—*Spindle-Step for Spinning-Machines.*—CHARLES F. WILSON, Northbridge, Mass., assignor to himself and JESSE E. FOLK, Brooklyn, N. Y.

The spout of the oil-can is prevented from touching the spindle, and the whole device forms a cheap and efficient lubricating step and cover.

Claim.—1. In a spindle-lubricating device, a sheet-metal case or cover, A, having its oil-hole formed by punching back a portion of the case, substantially as and for the purpose specified.

2. A spindle-lubricating device formed of the sheet-metal case or shell A, bent inward at the top, and inclosing the step-block B, provided with holes G, H, and F, for passage of the oil, all constructed and arranged as shown and described, for the purpose specified.

135,190.—*Spindle-Bolster for Spinning-Machines.*—CHARLES F. WILSON, Northbridge, Mass., assignor to himself and JESSE E. FOLK, Brooklyn, N. Y.

Oil poured into the reservoir flows down between the spindle and the shell into the cup, and is, by the rotation of the latter, elevated and passed in again to the spindle by means of the lips and apertures.

Claim.—1. A spindle-bearing consisting of the shell C, box D, and cup E, constructed and arranged substantially as described.

2. In combination with the spindle B, the cup E and the sheet-metal bearing-sleeve or box D having an oil-reservoir formed on its upper end, and provided with apertures J and ears or lips K projecting outward and over the same, all as shown and described, whereby the oil supplied to the reservoir of said sleeve will be fed gradually through it and returned through its central apertures, a circulation of the lubricant being thus maintained in contact with the spindle, as specified.

135,191.—*Land-Roller.*—JOHN WOOLRIDGE, Dean's Corner's, Ill.

Land-rollers constructed in sections, each section being pivoted or attached to hangers, which are secured to a cross-bar, constructed in two parts and attached to the tongue at an oblique angle. One roller remains stationary while the other moves on the arc of a circle in turning around, and is, when the roller moves forward, brought into proper position and locked by the forward movement of the same.

Claim.—1. Two rolls, J J, connected by a two-part bar, B, that is attached to tongue at an oblique angle, and of which the lower section is pivoted, in the manner and for the purpose described.

2. The means described for holding the rolls to each end of the bar B so that they may turn laterally in passing over obstructions, consisting of the frames H and blocks G, constructed and pivoted together, substantially as set forth.

3. The means described for allowing the pivoted section of bar B to stand still while the roller is being turned at the end of a "land," and yet to be automatically locked by the moving forward of the team, consisting of the obliqued groove and overhanging lip at the outer end of each section of bar B, constructed substantially as specified.

135,192.—*Spring for Doors, Gates, &c.*—ROBERT ESPEY, St. Louis, Mo.

A coil-spring is given the proper amount of torsion by a key fitting in a seat in a bracket screwed to the post. Semicircular grooves are made upon the periphery of the key, and also of the seat, and a pin inserted in these holds the key firmly and prevents rotation.

Claim.—The pin A and socket-bracket E F, each constructed with longitudinal grooves relatively spaced, to operate as described, in combination with the key G, adapted to occupy the key-seats successively formed by the rotation of the pin, to adjust the spring, substantially as herein set forth, for the purpose specified.

REISSUE PATENTS.

5,239.—*Stove-Pipe Damper.*—R. MOSS BRECKENRIDGE, West Meriden, Conn.—Patent No. 56,891, dated August 7, 1866.

The rod is bent to fit into a groove of corresponding form in the damper-plate. The handle-end of the rod is bent, forming a spring to hold the damper in position.

Claim.—1. The rod A combined and arranged with the damper-plate C, substantially as and for the purpose herein set forth.

2. The rod or handle of the damper-plate, constructed or provided with a spring arranged to enter and bear against the edges of the aperture in the pipe through which said rod passes, essentially as specified.

5,240.—*Broiler.*—WILLIAM T. HOWARD, Baltimore, Md., assignor to HENRY G. LEISENRING.—Patent No. 113,886, dated April 18, 1871.

Claim.—In a broiler, the broad knife-edged bars *g g*, inclined and arranged with relation to the parallel-grooved bars *d d*, as herein shown and described, whereby the heat and flame are allowed free access to the entire surface of the meat, and the juices thereof conducted into the trough *e*, the whole constructed and combined so as to operate in the manner set forth.

5,241.—*Billiard-Table Cushion.*—HUGH W. COLLENDER, New York, N. Y.—Patent No. 114,410, dated May 2, 1871.

Claim.—A billiard-cushion constructed to operate upon the principle and in substantially the manner described, for the purposes set forth.

5,242.—*Horse Hay-Rake.*—CALISTA E. COX, West Somerset, N. Y., executrix of HARVEY W. SABIN, deceased.—Patent No. 7,813, dated December 3, 1850; extended fourteen years.—Division A.

A clutch between the rotating axle and the bar which lifts the teeth is thrown into action by a hand-lever, and automatically disconnected by a tripping-plate on the machine.

Claim.—1. An oscillating horse hay-rake which discharges its gathered load at the will of the operator by the draft or power of the team, substantially as described.

2. A wheeled horse hay-rake, both capable of discharging its gathered load upon the ground by the draft of the team and automatically resetting itself to gather a fresh load, substantially as described.

3. An oscillating horse-rake, the teeth of which do not rotate with their shaft, so constructed that its teeth may either be elevated by the draft of the team or by the attendant, substantially as described.

5,243.—*Horse Hay-Rake.*—CALISTA E. COX, West Somerset, N. Y., executrix of HARVEY W. SABIN, deceased.—Patent No. 7,813, dated December 3, 1850; extended fourteen years.—Division B.

The gathered hay upon the teeth of the rake may be discharged at the will of the operator or automatically.

Claim.—1. Rake-teeth arranged directly on the axle of the carriage-wheels, and so that they can articulate upon said axle, for the purpose set forth.

2. An oscillating bar for raising rake-teeth arranged directly on the axle of the carriage-wheels, and so that it can articulate on said axle, for the purpose set forth.

3. An oscillating bar for exerting pressure upon rake-teeth arranged upon the axle of the carriage-wheels, and so that it can articulate on said axle as its center of motion, for the purpose set forth.

4. An oscillating pressure-lever or a coupling-lever arranged on the axle of the carriage-wheels, and so that either or both can articulate on said axle, for the purpose set forth.

5. A clearer to rake-teeth arranged upon an extension of the thills in rear of the axle of the carriage-wheels, said axle extending entirely across the carriage-frame, and so that, with the thills, it can articulate or oscillate on the axle, for the purposes set forth.

5,244.—*Horse Hay-Rake.*—CALISTA E. COX, West Somerset, N. Y., executrix of HARVEY W. SABIN, deceased.—Patent No. 7,813, dated December 3, 1850; extended fourteen years.—Division C.

Claim.—1. The application of pressure, at the will of the operator, to metallic spring rake-teeth, which are so constructed as to have a spring action within themselves from their gathering ends to the point (or forward thereof) where the pressure is applied, to hold them down to their work, by means substantially as herein described.

2. The combination of independently-articulating rake-teeth which are springs within themselves and a pressure contrivance which is under the control of the operator, substantially as and for the purposes herein described.

5,245.—*Horse Hay-Rake.*—CALISTA E. COX, West Somerset, N. Y., executrix of HARVEY W. SABIN, deceased.—Patent No. 7,813, dated December 3, 1850; extended fourteen years.—Division D.

When it is desired to have the teeth placed a greater distance apart than the length of the eye-bearings will permit, rings may be introduced between the abutting ends of the bearings.

Claim.—Rake-teeth arranged on articulating tubular laterally-bracing and vertically-supporting eye-bearings, so that the attaching end of each tooth shall cross or intersect a vertical plane passing longitudinally through the axis of the bearings, substantially as described.

5,246.—*Culinary Pot.*—JOHN S. KIDD and MARY L. MELVILLE, Brooklyn, N. Y.—Patent No. 129,034, dated July 16, 1872.

Two or more independent pots, adapted for use singly or together in one pot-hole or in a cluster of separate holes in the stove-plate.

Claim.—1. Two or more pots nested or concentrated in a cluster in the manner described, and adapted for use in a single hole of a stove or in a cluster of special holes, substantially as specified.

2. The combination, with the said cluster of pots, of a cover, F, for ordinary pot-holes, or a stove-plate having a cluster of holes, E, corresponding to the cluster of pots, substantially as specified.

5,247.—*Carbureter.*—HIRAM S. MAXIM, New York, N. Y., assignor, by mesne assignments, to MAXIM GAS-MACHINE COMPANY.—Patent No. 81,923, dated September 8, 1868.

The generating-chamber is connected above and below by pipes with a supplemental chamber, in which is a cylindrical float. The supplemental chamber connects by a pipe, in which is a valve, with a heating-chamber below the main generating-chamber. Above the generator is a gas-holder with weighted diaphragm, and a series of levers and valves, so connected as to regulate the flow of gas from the generator to the gas-holder.

Claim.—1. A gas-holder, a tube supplying hydrocarbon vapors, an air-inlet, a valve and automatic mechanism operated by the moving portion of the gas-holder for opening said valve fully when illuminating-gas is required in the holder, and closing the same entirely when the requisite supply has passed to the holder, substantially as set forth.

2. A valve actuated automatically, substantially as specified, in combination with the jet-nozzle, air-induction openings, and mixing-tube, substantially as set forth.

3. A hydrocarbon vapor-generating apparatus heated by artificial heat, a connection to the liquid hydrocarbon supply, a jet-nozzle, a mixing-tube and a gas-holder, in combination with an automatic valve and a connection to the moving portion of the gas-holder to entirely open or close the valve with rapidity, substantially as set forth.

4. A gas-generator heated by a portion of its own contents, in combination with an automatic intermitting valve and an atmospheric induction, substantially as set forth, for mixing hydrocarbon vapor and atmosphere with uniformity, regardless of the quantity of illuminating-gas that is being consumed, as specified.

5. The cylinder *c* connected with the inclosed tank D, to show the height and pressure of the contents of the tank, and to convey part of them to the heating-chamber, as specified.

6. The combination with each other of the four separate vessels A, B, D, and I, the latter having the elastic diaphragm J stretched across it, substantially as herein shown and described.

7. The device for automatically operating the valve *s*, which regulates the flow of gas into the gas-holder I, said device consisting of the diaphragm J, pin *o*, lever L, lever *t*, arms *w x*, and springs *y*, all arranged, combined, and operating substantially as herein shown and described.

8. The cam *z* for keeping the valve *s* closed, as set forth.

9. The pipe *f'* for conducting illuminating-gas from the gas-holder I to the heating-chamber *a*, substantially as and for the purposes herein shown and described.

5,248.—*Flour-Sifter.*—LUCY S. NOURSE, Barre, Mass., assignor to H. A. HILDRETH and W. J. JOHNSON.—Patent No. 110,673, dated January 3, 1871; antedated December 17, 1870.

The sifter is pressed down into the flour and worked alternately to the right and left till filled. The flour can then be carried in the sifter or shaken through again.

Claim.—1. The sieve, having a body, A, of wire-cloth, a rim, B, and an operating-handle, adapted for sifting through the interstices of the body inward from the outside, substantially as specified.

2. The combined sieve and measure herein described, having its bottom and sides of wire-cloth, a rim, B, and operating-handle, arranged and adapted for use, as specified.

3. A sieve having the body A formed of wire-cloth pressed into a dish-shaped receptacle, smaller at its bottom than at its top, with outwardly-inclined surface arranged to present all the openings of the cloth to the substance to be sifted, as the sieve is passed downward, substantially as specified.

5,249.—*Machine for Finishing Horseshoe-Nails.*—HARRY A. WILLS, Vergennes, Vt., assignor to JULIA A. WILLS and LUCY S. KINGSLAND.—Patent No. 122,870, dated January 16, 1872.

The nail is fed along by means of a screw and is turned to a horizontal position by passing over a curved plate. A pusher feeds the nail horizontally into a pair of dies, where it rests, while a roll runs over its upper surface from the head toward the point to give the finished shape.

Claim.—1. The combination of the scroll-shaped or approximately scroll-shaped guide B C with the feed-screw, substantially as specified.

2. The combination of the horizontally-acting pusher G with the roller and bed dies, the said pusher and roller-die and the operating devices therefor being arranged in such relation that said die is first caused to advance over the bed-die, and the nail then fed forward, point foremost, beneath the roller-die, until its head comes in contact with it, when the backward movement of the roller-die is commenced, in the manner herein described.

3. The combination of the pivoted or swinging head-holder with the bed-die and roller-die, substantially as specified.

5,250.—*Lining for Wooden Horse-Collars, &c.*—DEXTER CURTIS, Sun Prairie, Wis.—Patent No. 126,682, dated May 14, 1872.

Claim.—A sheet or plate zinc lining or facing for wooden horse-collars and ox-yokes, substantially as described, for the purpose specified.

5,251.—*Lining for Horse-Collar Caps and Harness.*—DEXTER CURTIS, Sun Prairie, Wis., assignor of one-half interest to HENRY GILMAN and GEORGE H. RICHARDS.—Patent No. 125,917, dated August 2, 1870.

A horse-collar cap and other harness are lined with zinc, which has curative properties.

Claim.—1. The horse collar cap, consisting of the curved metal plates A B, secured together substantially as described, so as to leave an air-passage between them, for the purposes specified.

2. A lining for the parts of a harness, struck up or otherwise formed in one piece from sheet or plate metal having a zinc surface, and shaped to the part of the harness to which it is to be applied, substantially as described, for the purposes specified.

5,252.—*Recording Steam-Gage.*—DAVID P. DAVIS, Jersey City, N. J., assignor of one-half interest to GILBERT J. HUNTER.—Patent No. 66,307, dated July 2, 1867.

The steam-gage is provided with a pencil operated by the spring-diaphragm, and a revolving time-dial moved by clock-work, in addition to the ordinary pressure-index and fixed dial.

Claim.—The indicating-hand and dial, the marker and moving recording-surface, in combination with the actuating-diaphragm, substantially as specified, whereby the hand and marker are simultaneously actuated by the pressure, substantially as set forth.

5,253.—*Sash-Lock.*—GEORGE MCGREGOR and GEORGE VOLL, Cincinnati, Ohio, assignors, by mesne assignments, to WILLIAM A. HOPKINS and FREDERICK Z. DICKINSON.—Patent No. 82,318, dated March 30, 1869.

The swinging lever, which locks together the two meeting-rails of a sash, carries within its inner arm a spring-bolt, the end of which works against a catch upon its plate and thus secures the lever from turning. This is all accomplished by devices independent entirely of the catch-plate upon the opposite rail.

Claim.—The combination, with the oscillatory lever and the plate to which it is pivoted, of the spring-bolt F and catch-segment *e*, or their equivalents, whereby the locking of the said lever to the said plate is effected, substantially as and for purpose set forth.

5,254.—*Medical Compound for Lung and other Diseases.*—WILLIAM TRINDER, Philadelphia, Pa.—Patent No. 132,149, dated October 8, 1872.

Lactic acid, phosphate of lime, gum arabic, sugar, glycerine, cod-liver oil, lime-water, oil myrrhbane.

Claim.—1. The combination of lacto-phosphate of lime and cod-liver oil.

2. In combination with the elements of the first claim, the use of gum arabic, for the purpose set forth.

3. Lacto-phosphate of lime and cod-liver oil prepared as an emulsion, substantially as set forth.

4. The above-described compound composed of the ingredients substantially as set forth.

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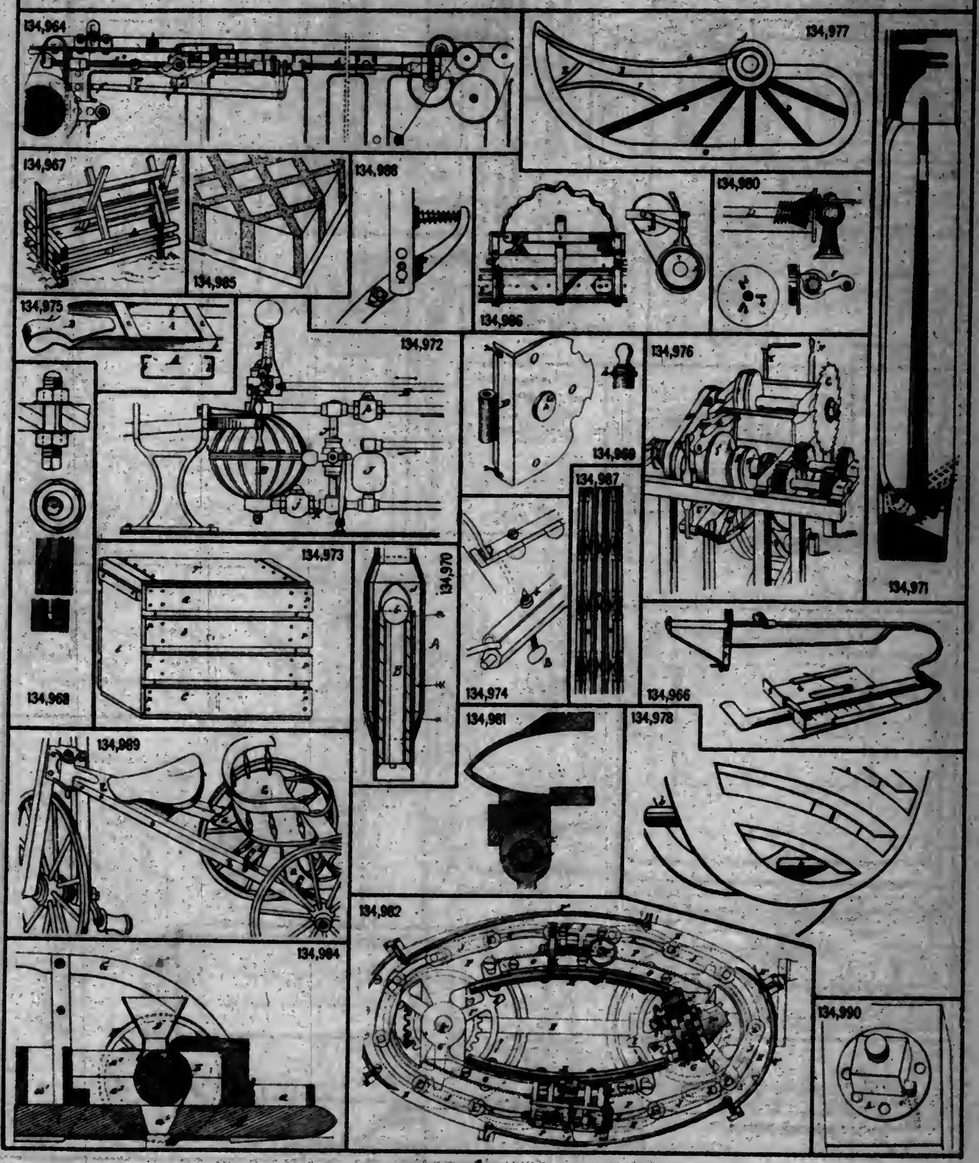
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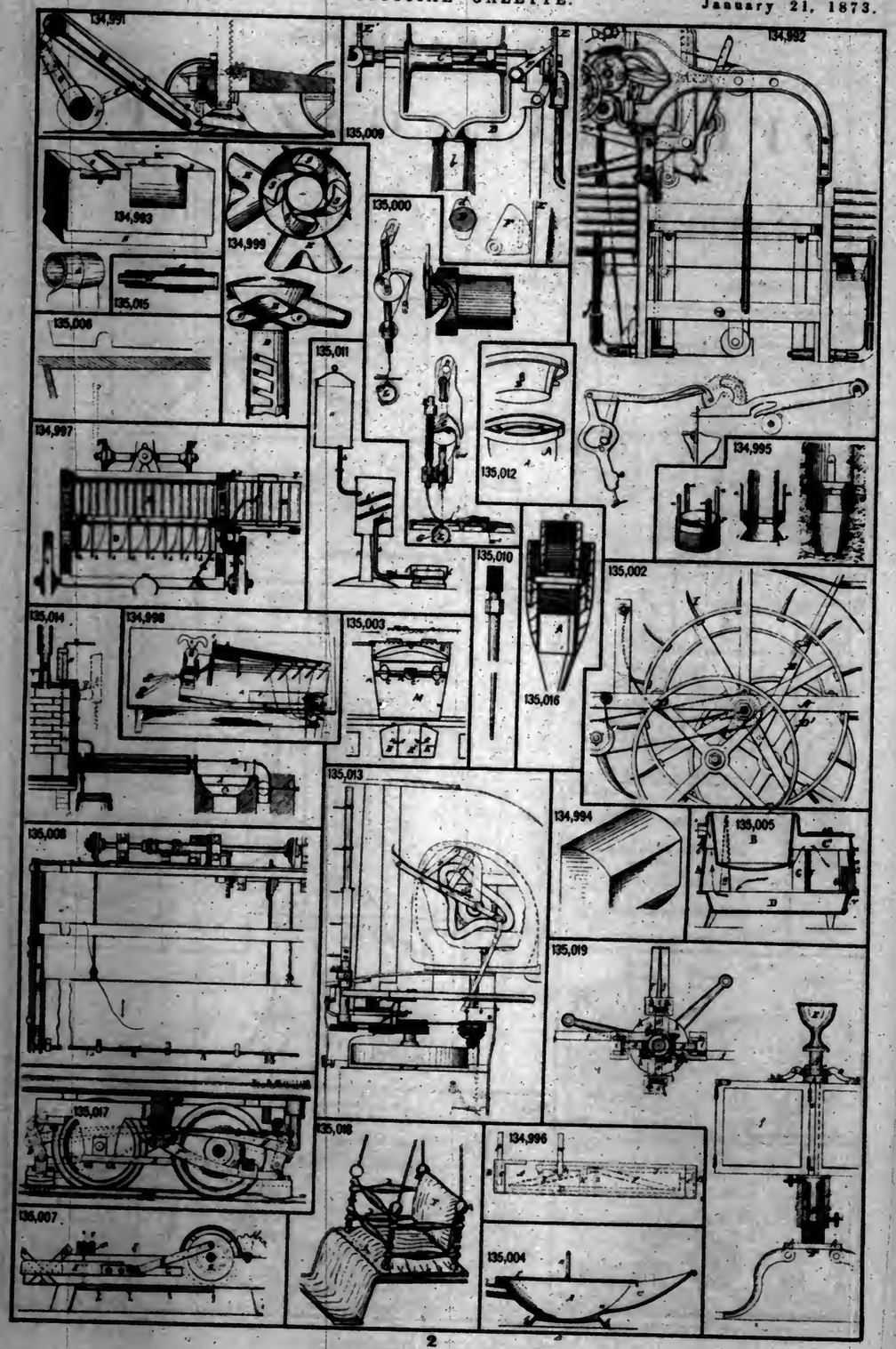
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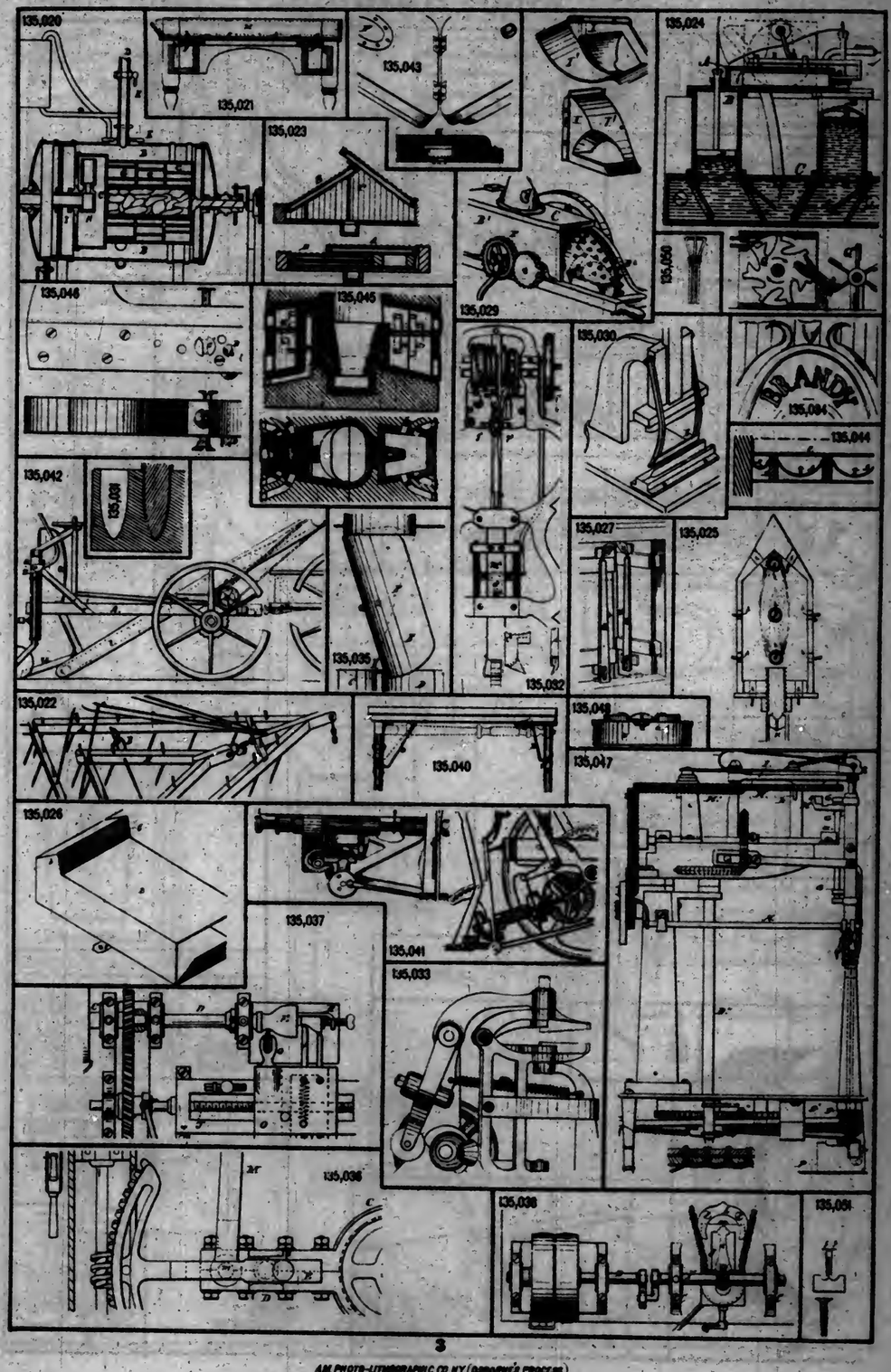


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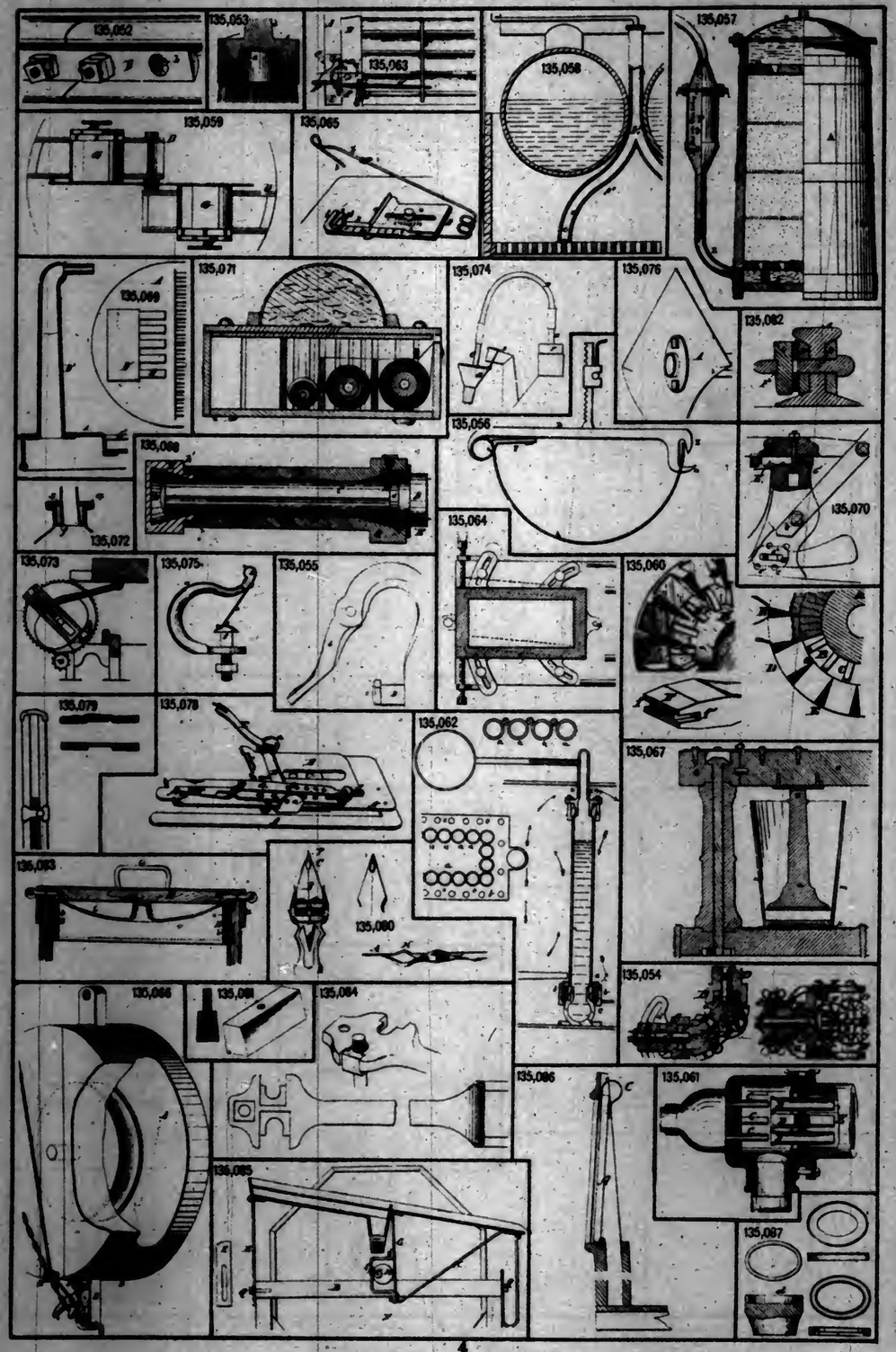
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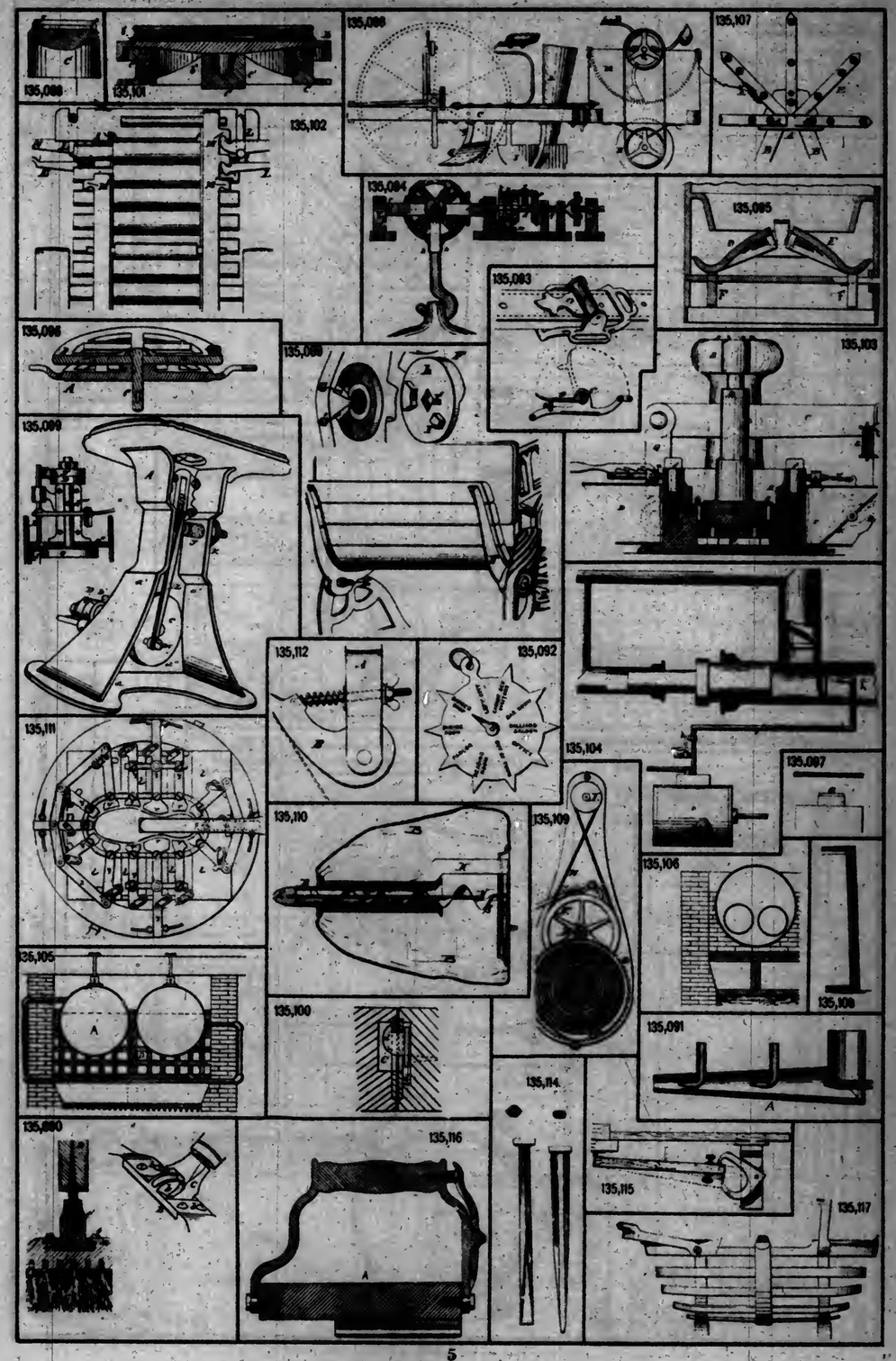
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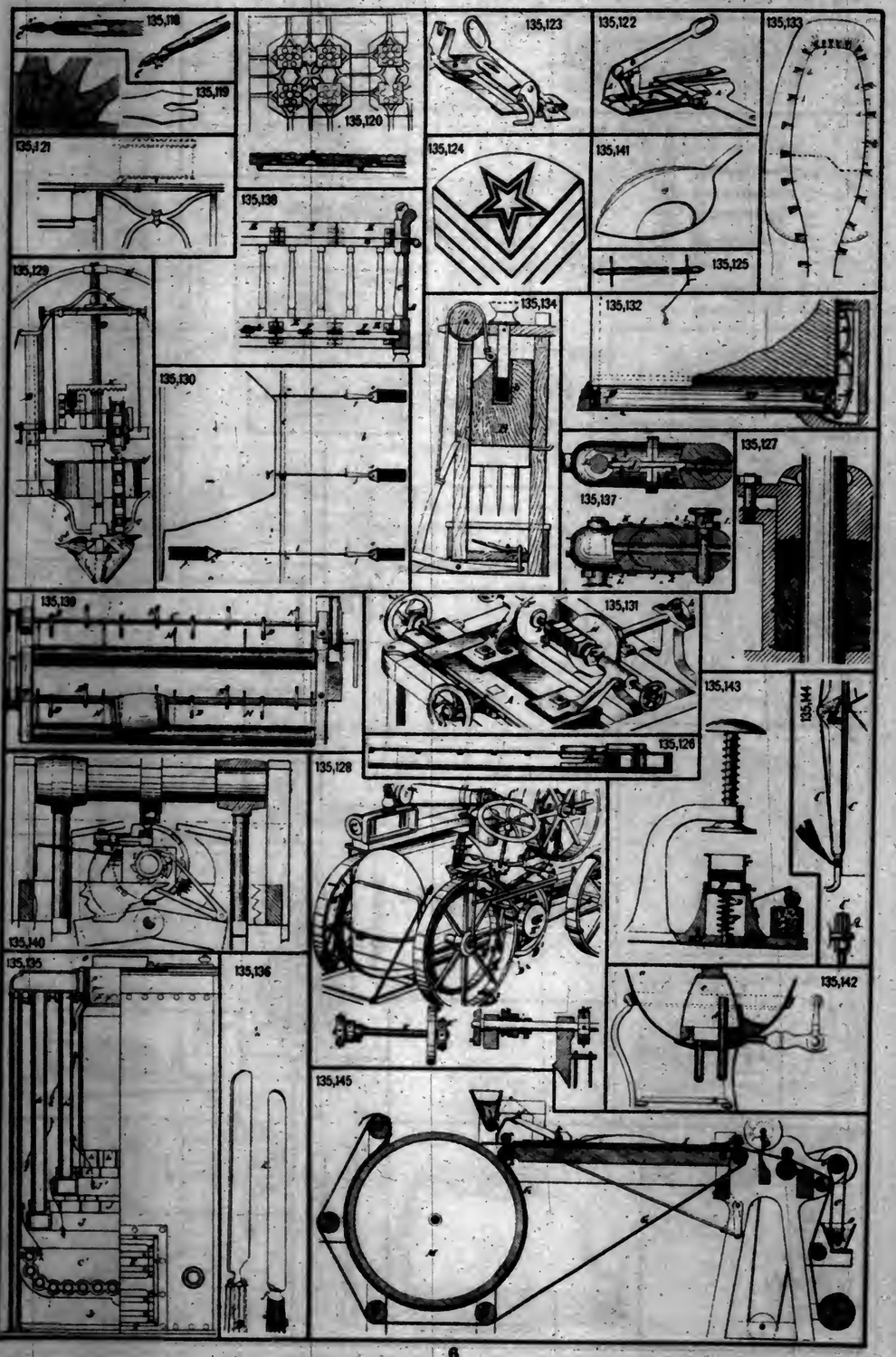
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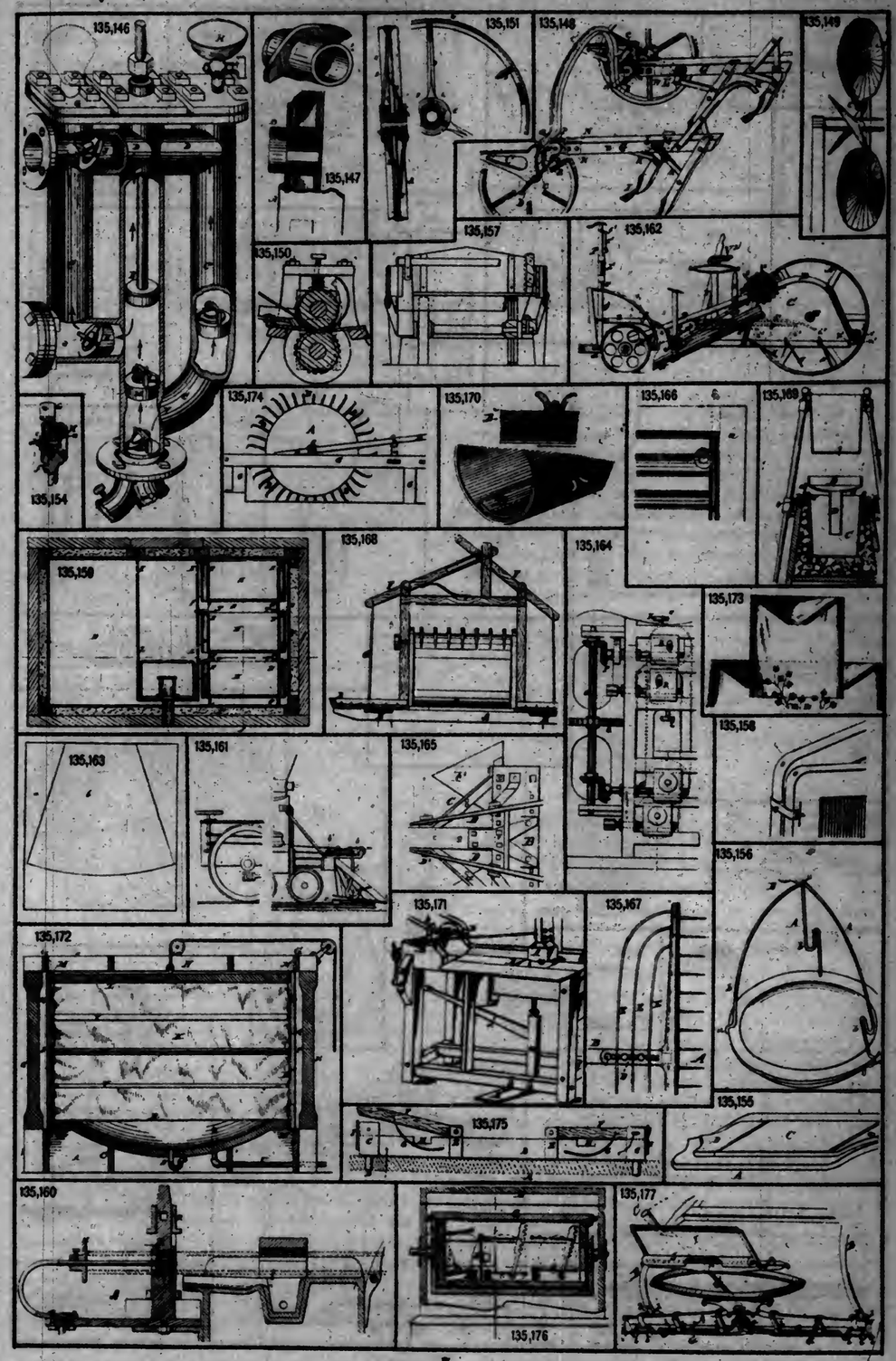
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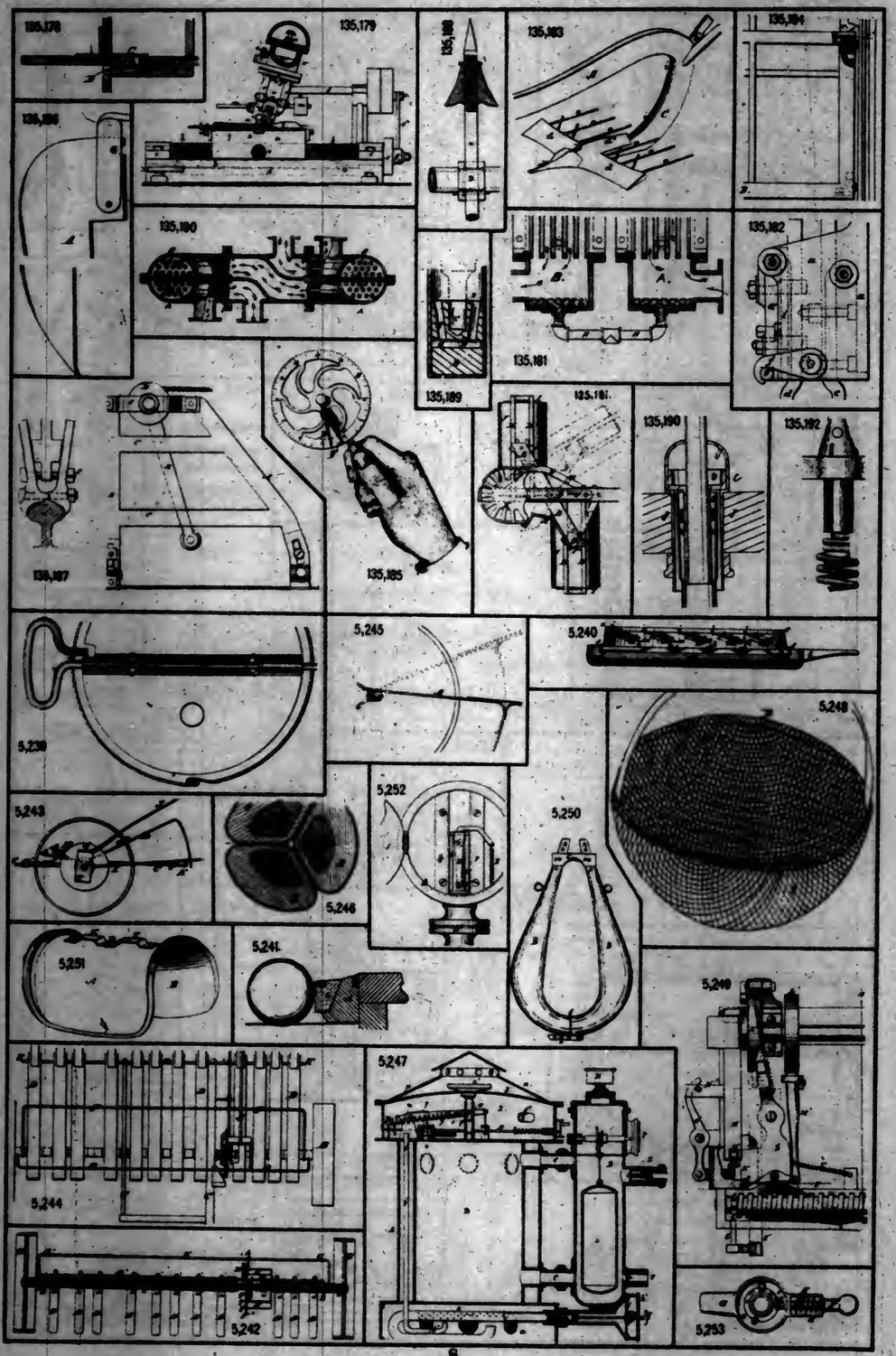
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COMMISSIONER'S DECISIONS.

COLLENDER *vs.* GRIFFITH.—*Interference.*

[*Appeal from the Principal Examiner in the matter of the interference between the application of H. W. Collender, for alleged* IMPROVEMENT IN BILLIARD-TABLES, *and the patent of W. H. Griffith, for a* DESIGN FOR BILLIARD-TABLES, *granted October 24, 1871. Decided January 30, 1873.*]

INTERFERENCE IN DESIGN CASES.

If an application is filed for a mechanical patent for a construction, and if a design for which a patent has been granted can be produced only by that construction, an interference should be declared between the application and the patent.

THACHER, *Acting Commissioner:*

This is an appeal from a decision of the Examiner dissolving the interference. The main reason for the dissolution is that an interference is improper between an application for a mechanical patent and a patent for a design.

This is urged on the ground that the interests are not and cannot be identical, inasmuch as the patentee of the design cannot reissue and obtain a claim for the construction, even if successful in the suit. Although this argument appears plausible, it is really unsound and should not prevail. An interference does not *necessarily* result in the grant of a patent to one of the parties for the subject-matter involved. It frequently happens that the prior inventor is adjudged, for various reasons, not to be entitled to a patent. The question in this case is not whether Griffith is entitled to a patent, but whether Collender shall have the patent for which he prays. Now, it is admitted that Griffith in applying his design must use the construction claimed by Collender, and therefore the grant to the latter of the patent sought would subordinate a design patent of earlier date. Under these circumstances it is perfectly evident that it would be improper to issue a patent to Collender until he proves himself the prior inventor. An interference, therefore, was necessary, and in this instance properly declared.

The decision of the Examiner dissolving the interference is overruled.

CHAS. G. DICKINSON.—*Extension.*

[*In the matter of the application of Charles G. Dickinson for the extension of Letters Patent No. 20,786, for* IMPROVEMENT IN HARVESTERS, *granted February 1, 1859.—Decided January 31, 1873.*]

EXTENSIONS OF REISSUED PATENTS.

Where an assignee of a patent has had it reissued, and the inventor has accepted an assignment of one-half of the reissued patent, he cannot have an extension of the original.

THACHER, *Acting Commissioner:*

The following facts, among others, appear in this case: In 1868 Dickinson assigned to J. R. Parsons all his right in the patent, "and in all extensions and reissues of the same." Although Dickinson was not at that time the owner of the entire interest in the patent, by the terms of the assignment all interest in an extension was transferred to Parsons. In May, 1871, Parsons surrendered and reissued, the new patent being granted to him as assignee.

To enable him to apply for an extension, applicant has obtained from Parsons a re-transfer of one-half his interest in the invention. He petitions for the extension of the original patent, and bases his right to the same on the fact that the reissue was obtained without his knowledge and consent, and that he never has taken an interest therein. If this was the fact the application would be proper, and the prayer of petitioner, the testimony being sufficient, might be granted.

In the re-assignment to Dickinson, however, Parsons transfers to him "one undivided half part of my entire

interest in said invention and letters patent issued therefor." Now, the only patent in which the assignor had an interest at the time of making this instrument was the reissue obtained by him, and it is evident, therefore, from the terms of the assignment, that by the transfer the assignee became invested with a one-half interest in the reissued patent. Judge Blatchford, in *Potter* vs. *Braunsdorf*, 7 Blatchford, 97, where the extension of an old patent which had been reissued was declared valid, bases his decision upon the fact that the original patentee had never assented to the reissue or acquired any title thereunder. This is set forth so distinctly as to authorize the conclusion that the converse must be true—that is, if the inventor by any act of his own has adopted the reissue, or in any way assented thereto, the extension of the original patent would be invalid. The purchase by the original patentee of an interest in the reissued patent stamps the act of surrender and reissue with his approval; an assent in words could not be stronger.

I have come to the conclusion, therefore, that the extension of the original patent in this case would be invalid, and the prayer of the petitioner must consequently be denied.

W. W. LEWIS.—*Extension.*

[*In the matter of the application of W. W. Lewis for extension of reissued patent No. 3,354, for* HORSESHOE-MACHINE, *granted March 30, 1869, original patent granted February 1, 1859.—Decided January 30, 1873.*]

Although a claim was originally allowed by the Appellate Court, yet the patent embracing it will not be extended until it is disclaimed, if the device is found to be an old one on references which were not before the Court.

The extension of a patent embracing a combination claim will not be refused on the ground that the elements specified do not co-operate, if the claim was originally allowed by the Appellate Court.

Testimony tending to sustain the applicant's case in chief will be excluded if taken on the rebuttal, although under a special order enlarging the time, but reserving the question of admissibility, if no reason is shown for its not being taken before.

There is no more reason in extension cases than in others that are contested for relaxing the rules for taking testimony, which are founded on principles of law and practice.

Less than $5,000 held to be an inadequate remuneration for a meritorious invention.

THACHER, *Acting Commissioner:*

The nature and objects of this invention are set forth in the specification as follows:

"Prior to my invention horse and oxshoe iron has been produced by machinery consisting of two rollers mounted or dressed with grooves and creasers, or of four rollers properly dressed for giving configuration to the iron from which the shoes are to be formed; but in these and all prior devices the principle upon which my improvements are founded is overlooked.

"Where iron is rolled in a plain grooved roller, in which the cross-section of the groove is a parallelogram, and a creaser is applied during the process of rolling, it is evident that the iron displaced by the creaser must be fixed against the sides of the groove. To accommodate this expansion, some play is allowed between the iron and the sides of the groove, or, in other words, the iron does not fit tightly in the groove. But it is evident that if any play be allowed, it becomes necessary to guide the iron in some way, so as to form the depression for the nails or crease in a line that is exactly parallel with the side of the shoe, as a variation from this parallelism would destroy the workmanship of the manufactured article.

"For the purpose of obviating this difficulty I place an inclined plane in the bottom of the groove opposite the creaser. The effect of this is to press the iron toward the opposite side of the groove, where the creaser operates, and to keep it against that side, which thus serves as a guide to preserve the parallelism. The effect is also to make the outer edge of the iron, which contains the crease, thicker than the inner edge, which is the natural form of the shoe.

"I also make the bottom of the groove eccentric, so as to make the shoe thicker at the heel than at the toe, and this will be effected, although the bar is of uniform thickness, when fed to the rolls, because the iron displaced by the creasers in the shallower portion being unable to escape, because of the lateral pressure against the sides, must be forced toward the ends where it will occupy the full depth of the groove.

"I place the creasers in the rolls in the form of a ring where the whole roll is used, or of a semi-ring where but half the circumference is employed. In the latter case I cut the roll radially so as to remove and replace one side of the roll opposite the creaser. This enables me to remove the creasers when they become worn or imperfect, or to substitute different sizes, as may be desired."

The claims are as follows:

"1. The combination, in a pair of rolls, of a groove with an inclined bottom and one or more creasers, for the purpose of guiding the iron and producing a thicker edge on the outside of the shoe, substantially as described.

"2. The combination of a pair of grooved rollers with one or more creasers, when the bottom of the groove or rolling surface of either roll is eccentric, so as to make the shoes thicker at the heels than at the point or toe, substantially as set forth.

"3. The combination, with a pair of rolls, of annular adjustable creasers, substantially as described."

A careful examination of the references cited shows that the first and second claims are not anticipated, and that, so far as mere inspection indicates, the combinations they embrace are of substantial utility. It is apparent from the specification that the word "adjustable" in the third claim signifies *removable*. I agree with the Examiner that this claim is fully anticipated. True, it was granted by the Court, but two of the references cited by the remonstrant do not appear to have been before the Court. The references and the testimony as to the use of rolls with creasers by Wheeler, at Fentonville, in 1853, are fatal to this claim. The point is made in behalf of the remonstrant that the parts claimed in the first and second claims do not co-operate in such a sense as to render them, as shown and claimed, a legal combination. In my opinion this point is not well taken. The object of the machine is to produce a horseshoe blank at one operation, so shaped as to be readily finished into a marketable horseshoe. Admitting, as maintained, that each feature claimed will perform its function as well independently of the other or the others, yet by acting in conjunction they co-operate to accomplish the single object of the machine, viz., to form the blank at one operation. There is not an aggregation of parts to accomplish different objects independently, but the parts combine to accomplish a single purpose by one process or operation. If this were not my opinion I should not, in view of the fact that these claims were granted by the Court, feel at liberty to question their legality.

After applicant and remonstrant had closed their testimony, the former made a motion for extension of time for the purpose of taking testimony in rebuttal, and also for the purpose of examining certain witnesses at Portsmouth, Ohio, whose testimony, it was alleged, could not be taken at the time testimony-in-chief was taken. The motion was granted on condition that the question of the admissibility of the testimony should be left open to be determined at the hearing. No objection appears to such of it as is strictly in rebuttal of that of the remonstrant. That which goes to prove applicant's case-in-chief, and to contradict one of h's own witnesses-in-chief, I need hardly say is inadmissible. No sufficient reason was shown why this testimony could not have been taken during the time originally allowed, and the requirements of the rules in other respects were not complied with. In a contested case for extension of a patent there is no more reason for a relaxation of the rules for taking testimony—which are intended to be based on principles of law and practice—than there is in any other contested case.

The testimony-in-chief of the witness Green is not positive to the effect that the Portsmouth machine has not a beveled groove, and there is enough evidence to satisfy my mind, without his subsequent correction, that the machine was constructed with a beveled groove, and substantially as set forth in the specification of the patent. (W. H. Carruthers, Int., 3.) The testimony of experts in behalf of remonstrants, as to the impracticability and inutility of the Lewis machine, is extremely weak in itself, and is wholly overthrown by the rebutting testimony. The diligence of the inventor has been exemplary, and the utility, value, and importance of his invention are rather made apparent by the vigorous interested opposition of the remonstrant than adversely affected. Less than five thousand dollars appears to have been realized by Lewis from his invention, and I regard this as much too small a reward.

I find this application in all respects a meritorious one, so far as the first and second claims are concerned, and with a disclaimer of the third claim the extension will be granted.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

THE LOCOMOTIVE-ENGINE SAFETY-TRUCK COMPANY *vs.* THE ERIE RAILWAY COMPANY.

[*In Equity.—Before Blatchford, Judge.—Decision December 30, 1872.*]

PATENT OF A. F. SMITH, FEBRUARY 11, 1862, FOR TRUCKS FOR LOCOMOTIVES—CLAIM OF PATENT AS AFFECTED BY THE TITLE—DOUBLE USE—JURISDICTION.

Smith's patent, "an improvement in trucks for locomotives," construed to be for the use in and the combination with a locomotive-engine—that is, a structure having at its rear end, not a swiveling truck, but non-swiveling driving-wheels with axles rigidly attached to the body of the engine—of a swiveling pilot or leading truck, provided with pendent links to allow the forward part of the engine to move laterally over the truck when the truck and the driving-wheels are not together in a straight track, whereby the forward part of the engine can move onward in a line tangent to a curve, while the axles of the driving-wheels are parallel, or nearly so, to the radial line of the curve, because the truck is made to swivel around the king-bolt by the action of the rails on the flanges of the truck-wheels.

The prior use of two such trucks *upon a car*, as described in the Kipple & Bullock patent, does not anticipate the use of one such pilot-truck, in combination with the driving-wheels of a locomotive fixed upon axles rigidly secured to the frame.

Smith's combination of truck-wheels with the rigid drivers of a locomotive produces a new mode of operation and new results in the structure as a whole, although the truck, as respects itself, in swiveling and in having a lateral movement, operates in the same way it did in the car which had two of such trucks.

Smith's invention, in which the truck not only admits of a swinging motion across the track of the engine over the truck, or the truck under the engine, but also has a swiveling motion on its axis, is substantially different, in operation and result, from the Bissell locomotive, in which the absence of free swiveling in the truck around its center prevents the action of the rails on the flanges of the truck-wheels from regulating the position of the axles on a curve.

The title of Smith's patent, "an improvement in trucks for locomotives," does not require that the claim should be one to an invention in respect to the truck *per se*.

An allegation of "making and using" is proved, to all intents and purposes, by proof of using alone.

Infringement by *use in the Southern District of New York* having been established, complainants are entitled to a decree for an accounting by the defendants, in respect of all infringements in said district, by making or using or vending, and to an injunction against making in said district, and against using therein, and against vending therein.

The defendants being suable in the Northern District of New York, the complainants, if they desire an accounting and injunction there, must proceed by bill filed in that District.

A suit in equity, brought by the Locomotive-Engine Safety-Truck Company, a corporation in the city of New York, against the Erie Railway Company, for an alleged infringement of the patent of Alba F. Smith, granted February 11, 1872, for an "improvement in trucks for locomotives."

[*Keller & Blake*, for complainant.
C. A. Seward, for defendant.]

BLATCHFORD, *Judge:*

This suit is founded on letters patent granted to Alba F. Smith, February 11, 1862, for an "improvement in trucks for locomotives." The specification describes the invention as an "improvement in trucks for locomotive-engines." It says:

"Several laterally-moving trucks have been made and applied to railroad cars. My invention does not relate broadly to such laterally-moving trucks, but my said invention consists in the employment, in a locomotive-engine, of a truck or pilot wheels, provided with pendent links to allow of a lateral movement, so that the driving-wheels of the locomotive-engine continue to move correctly on a curved track, in consequence of the lateral movement allowed to said pendent links, the forward part of the engine traveling as a tangent to the curve, while the axles of the drivers are parallel, or nearly so, to the radial line of curve. In the drawing I have represented my improved truck itself. The mode of applying the same to any ordinary locomotive-engine will be apparent to any competent mechanic, as my truck can be fitted in the place of those already constructed, or the same may be altered to include my improvement."

The truck has four wheels on two axles, and a frame made in the usual manner of the frame of an ordinary locomotive-truck. It has a center cross bearing plate or platform, made of two thicknesses of iron plate riveted together, and embracing the upper bars of the frame, and a bolster made of a flanged bar, through a hole in the center of which the king-bolt passes. The king-bolt also goes through an elongated opening in the bearing-plate, to allow lateral motion to the truck beneath the bolster. At the same time the king-bolt is a connection to hold the truck to the engine. The bolster takes the weight of the engine in the middle, and is itself suspended at the ends of bars attached to the moving ends of pendent links, which are attached by bolts at their upper ends to brackets on the frame. The distance between the bars, transversely of the truck, is slightly more than that between the bolts, so that the pendent links diverge slightly. The specification says:

"When running upon a straight road the engine preserves great steadiness, because any change of position transversely of the track, in consequence of the engine moving over the truck or the truck beneath the engine, is checked by the weight of the engine hanging upon the links, and, in consequence of their divergence, any side movement causes the links on the side toward which the movement occurs to assume a more inclined position, while the other links come vertical, or nearly so. Hence, the weight of the engine acts with a leverage upon the most inclined links to bring them into the same angle as the others, greatly promoting the steadiness of the engine in running in a straight line. As the pilot or truck-wheels enter a curve, a sidewise movement is given to the truck in consequence of the engine and drivers continuing to travel as a tangent to the curve of track. This movement and

the slight turn of the whole truck on the king-bolt not only causes the truck-wheels to travel correctly on the track, with their axles parallel to the radial line of the curve of track, but also elevates the outer side of the engine, preventing any tendency to run off the track upon the outer side of the curve. Upon entering a straight track the truck again assumes the central position, and, in case of irregularity in the track or any obstruction, the truck moves laterally without disturbing the movement of the engine. I do not claim laterally-moving trucks nor pendent links, separately considered."

The claim is:

"The employment, in a locomotive engine, of a truck or pilot-wheels, fitted with the pendent links *o o* to allow of lateral motion to the engine, as specified, whereby the drivers of said engine are allowed to remain correctly on the track, in consequence of the lateral motion of the truck allowed for by said pendent links, when running on a curve, as set forth."

The proof shows that the defendants have used, in this District, an engine built by them at Dunkirk, in the Northern District of this State, which has four flanged driving-wheels and contains the invention claimed in Smith's patent. The issue is as to the novelty of the invention. In order to determine this question it is necessary to clearly see what invention is claimed in Smith's patent.

He does not claim laterally-moving trucks—that is, trucks with laterally-swinging bolsters. Nor does he claim pendent links, by themselves. Laterally-moving trucks applied to railroad cars which had at each end one of such trucks, free also to swivel around a king-bolt which connected the car to the truck and passed through the center of the swinging bolster, which was the center of the truck, were old. The specification so admits. But Smith's invention, as claimed, is for the use in, and the combination with, a locomotive-engine—that is, a structure having at its rear end, not a swiveling truck, but non-swiveling driving-wheels, with axles rigidly attached to the body of the engine—of a swiveling pilot or leading truck, provided with pendent links to allow the forward part of the engine to move laterally over the truck when the truck and the driving-wheels are not together in a straight track, whereby the forward part of the engine can move onward in a line tangent to a curve, while the axles of the driving-wheels are parallel, or nearly so, to the radial line of the curve, and the axles of the truck-wheels also become parallel to the radial line of the curve, because the truck is made to swivel around the king-bolt by the action of the rails on the flanges of the truck-wheels.

In going around a curve with a locomotive-engine the axles of the two pairs of driving-wheels tend to assume a parallelism to that radius of the curve which is equidistant between the two axles. If the pilot-truck has no lateral swing to its bolster, but merely swivels on the king-bolt, the tendency of the action of the truck-wheels on a curve is to force the king-bolt into a position over the center of the track. That action is resisted by the body of the engine, and to accomplish it the driving-wheels must be twisted out of their proper position, and must slip and grind on the rails. The reason of this is that a line drawn longitudinally through the center of the engine, at right angles to that radius of the curve which is equidistant between the two axles of its driving-wheels, will not strike the king-bolt at the center of the track unless the driving-wheels are so caused to slip. Hence it was customary, with a pilot-truck which only swiveled and had no lateral swing to its bolster, to make the front driving-wheels without flanges, so that they might slide sidewise. But the antagonism is reconciled by allowing the king-bolt and the forward end of the engine to move laterally, so as to keep in a line substantially at right angles to the axles of the driving-wheels and outside of the center of the track, the king-bolt being no longer controlled in its position by the truck, and there being no twisting of the driving-wheels out of position.

Another feature developed in the use of the pendent links is pointed out in the specification, which is, that on entering a curve the outside of the engine, as the truck moves inward laterally under it, is elevated so as to counteract any tendency to run off of the track on the outside by the centrifugal motion, and as the mode of hanging the links causes the link on the outer side to assume a more inclined position, while the other link becomes more nearly vertical, the weight of the elevated engine acts to steady the engine and restore it to a position midway between the rails on returning to a straight track. This feature of the links also acts to keep the engine steady when on a straight track.

The patent granted to Bridges and Davenport, May 4, 1841, for an "improvement in railway carriages," shows a swinging bolster in a truck swiveling on a king-bolt, the body of the car being connected to the truck-frame by pendulous links, from which such body is hung, whereby a lateral motion of the truck is permitted, independently of the body of the car, the sidewise motion being checked by springs in the truck. But the specification of that patent does not suggest the use of such a truck in any other structure than a car having one of such trucks at each end and two king-bolts. Nor did it, or the use of two of such swinging bolsters in a car, suggest, from 1842 to 1862, the combination of such a swinging bolster-truck with a locomotive-engine, for the purpose set forth in Smith's specification.

In the truck described in Smith's specification the side springs of Bridges and Davenport are dispensed with, the divergence of the pendent links being used instead to check the sidewise movement. This precise construction of divergent links is shown in the patent granted to Kipple and Bullock, December 20, 1859, for an "improvement in car-trucks." Their use has the tendency to elevate the outside of the car on a curve, and the tendency to steady the body of the car through its weight on the links that are most inclined, and the tendency to limit the lateral movement without using side springs. But although the mode of operation of a Kipple and Bullock truck, *per se*, in a car having a like truck at its other end, is the same, for all the purposes of the truck itself, that it is in a structure which has driving-wheels at the other end, yet the moment the truck swiveling on the king-bolt is taken out of the other end of the structure, and driving-wheels takes its place, the mode of operation of the structure as a whole becomes different from the mode of operation of the structure with the two swiveling trucks. This is conceded by the expert for the defendants, and is quite manifest. The mode of operation becomes such as is described in Smith's specification, and no such mode of operation exists in the structure with the two trucks. Moreover, the existence of the Kipple and Bullock patent, and the use of cars each with two of their trucks, does not seem to have suggested, before the invention of Smith, the use of one of such trucks as a pilot-truck in a locomotive-engine to obviate the well-known difficulties in using the engine on a curve.

The only other pre-existing invention brought up to affect the novelty of the Smith invention is the patent granted to Levi Bissell, August 4, 1857, for an "improvement in trucks for locomotives." Bissell's truck is shown under the forward part of a locomotive-engine. It has a provision designed to allow a lateral motion to the truck independently of the motion of the body of the engine, and a provision to cause the forward part of the engine to mount up an incline toward the outer side, in a curve, and thus check the sidewise movement, and to descend by its gravity to the normal position on resuming the straight track. The specification of Bissell's patent says that the object of his invention is "to retain the truck with the axles always at right angles to the rail, whether on a straight or curved track, and prevent the truck swinging around on its center pin in case of meeting with any obstruction, and to make the curvature of the rail the means for turning the truck, so that the axles are parallel to the radial line of the given curve, in which position they are retained firmly until the direction of the track again changes." The specification then points out the difficulties in the use of locomotive-engines on curves with the ordinary pilot-truck, resulting in a "constant sidewise sliding motion on the rail," in consequence of the driving-wheels being forced in a line deflected from that of a cylindrical forward rolling motion, and in a constant bearing of the truck to the outer side of the curve, and in the tendency of the engine to go off the track, "particularly in case a broken rail or obstruction occurs, when the truck swivels around on its center-pin." It then proceeds:

"I therefore construct my truck in such a manner that the axles of the driving-wheels shall be on the line of, or parallel to, the radial line of the curve, so as always to have a direct forward propelling motion, and not strain or wear the rail or flanges of the wheels, and so that two or more pairs of drivers can be fitted with flanges. Consequently, the center line of the locomotive, in going around a curve, travels as a tangent to the center of the drivers, and to accommodate the curve I fit the truck or forward wheels in such a manner as to allow of a transverse motion, the said truck swinging laterally upon an axis of motion, *A*, located centrally between the center of the drivers and truck, (or slightly forward of the same,) so as to give a slight tendency to the truck to run to the inner side of the curved track. Thereby the axles of the truck-wheels are parallel (or nearly so) to the radial line of the curved rail, and the engine runs around any given curve without much more strain, either on the wheels or the track, than would occur on a straight railroad; and at the same time there is no chance for the truck to turn on its center-pin by any obstruction coming in contact with the wheels, and the wheels will pass over a broken rail and not be displaced unless all four wheels are simultaneously unsupported, and even then the wheels and truck, being set correctly to the angular position with the drivers and the curvature of the track, will continue to move in the correct direction, and pass over any obstacle or broken rail and attain the uninjured part of the track; and in running on a straight track the truck is held correctly in position, and will run over quite considerable obstruction without being turned aside. In running on either a straight or curved track one of the truck-wheels often breaks off, and the truck swivels around on its center-pin in consequence, and throws the engine off the track; but with my device one wheel, or even the two wheels on the opposite sides diagonally of the truck, might break off, and still the truck would not run off, because its position is set and it has no axis of motion around which it could swing when injured as above stated, or when meeting a broken rail or any obstruction, but is given a direct forward propulsion; and in all cases the axles of my wheels have only a strain and tension due to the difference of length between the outer and inner rails, instead of a strain due to the binding of the flanches of the wheels from the diagonal position of the axles, in addition to the above-named strain. Hence axles so often break when running around a curve. With my engine the friction on the rails in running around curves is avoided, and I am enabled to maintain a nearly uniform speed without any unusual strain or wear on any parts."

The specification of Bissell then describes the construction of his apparatus, with references to drawings. It says that the center-pin (which is the king-bolt in the center of the truck) in his arrangement "changes its character from a center of motion simply to that of a draft block or pin, while the center of motion is thrown back to the point *A*, which is slightly forward of the center between the drivers." There is at the center of the truck a block whose longest direction is across the track, and whose longest sides are parts of circles of which *A* is the center, or, as the specification expresses it, "curved from the center *A*." There is a similar curved slot in the top plate of the truck-frame, which slot is sufficiently long to allow of the lateral movements of the truck when the locomotive is on a curve of the smallest radius that it ever has to travel over. The curved block might, it is stated, be bolted directly to the under side of the engine, and the curved slot would bring the axles of the wheels parallel with the radial line, or nearly so; but to allow an easier motion to the parts, the block may be prevented from turning by radius bars leading to the center *A*. The patentee states, however, that he prefers that the radius bar should be attached to the truck-frame so as to cause the truck to swing on the center *A*, in which case the curved block may be made use of or the center-pin be fitted to move in a curved slot. He then describes the arrangement and use of the inclines before mentioned to check the lateral motion.

It is apparent that the truck in Bissell's locomotive has no swiveling motion around its center-pin or king-bolt—that is, around the center-pin in the center of the truck which connects the truck with the engine. Bissell expressly states that such center-pin loses its character as a center of motion, and becomes simply a draft block or pin, and that the center of motion of the truck—that is, its only center of motion—is thrown back to the point *A* outside of the truck. He further says that, although his truck has a center-pin, it has "no axis of motion around which it could swing." It has only a motion in the arc of a circle, of which the pin *A*, located between the truck and the driving-wheels, is the center, such motion being a swinging motion of the whole truck across the track. It follows, inevitably, that the position of the pin *A* regulates the position of the axles of the truck relatively to the track, and that the absence of free swiveling in the truck around its center prevents the action of the rails on the flanges of the truck-wheels from regulating the position of such axles on a curve. When the pin *A* is equidistant between the center between the axles of the driving-wheels and the center between the axles of the truck-wheels, the axles of the truck-wheels may, on a curve, be in their proper position—that is, parallel to a radius of such curve half-way between such axles. But that is not true in reference to any other position of the pin *A*; and even when the pin *A* is in that position, the axles of the truck-wheels can never be in such proper position when the engine is entering a curve or leaving a curve, or changing from a curve in one direction to a curve in another direction, because the position of such axles depends on the position of the pin *A* with reference to the track, and the driving-wheels control the position of the pin *A*. A geometrical demonstration shows that if the pin *A* be equidistant from the center between the axles of the drivers and the center between the axles of the truck-wheels, the axles of the drivers and the axles of the truck-wheels will, when they are all on the same

curve, be in their proper positions; that if the pin *h* is not thus equidistant, one or the other set or both sets of axles will, on the same curve, be in a wrong position; that when the drivers are on a curve and the truck-wheels are on a straight part of the road, the pin *h* can never be in such a position as to allow the axles of the truck-wheels and the axles of the drivers, all of them, to be in their proper position; and that this holds equally true when the truck-wheels are on a curve and the drivers are on a straight part of the road; and also when the truck-wheels are on one curve and the drivers are on another curve. The action of the drivers, through the pin *h*, is to twist the truck-wheels on the track and control the position of their axles in correspondence with the direction of the longitudinal center line of the engine.

In the engine of Smith the truck-wheels and the drivers can at all times, when the engine is on a curve, and when it is leaving a curve, and when it is passing from a curve in one direction to a curve in another direction, take their proper positions, respectively, without either being controlled or interfered with by the other. The reason for this is that the truck in the Smith engine has a swiveling motion on its king-bolt, and also admits of the swinging motion across the track of the engine over the truck or the truck under the engine. Neither of these motions affects the other. If either motion interfered with the other the same result would follow as in Bissell's engine, and the position of the drivers would at times control the position of the axles of the truck-wheels. But with Smith's arrangement the track alone controls the position of the axles of the truck-wheels, and therefore they assume their correct position on any track, straight or curved, and on any form of curve, and whether the drivers are on a straight track with the truck-wheels, or on the same curve with the truck-wheels, or on a straight track while the truck-wheels are on a curve, or on a curve while the truck-wheels on a straight track, or on one curve while the truck-wheels are on a different curve. This is a result not attained in Bissell's engine, and it results from the fact that the arrangements and modes of operation of the two structures are different. The truck-wheels in Smith's engine are never twisted on the track, and the direction of the longitudinal center line of the engine does not affect the position of their axles.

It results from these considerations that in the engine as a whole the Smith arrangement of truck is not merely an equivalent for the Bissell arrangement of truck, because, when the former is substituted for the latter, the resulting structure has a different mode of operation, and produces results which the other structure cannot produce. The thing to be looked at is the combined and mutual action of the drivers and the truck-wheels, for that was the problem which both Bissell and Smith were trying to solve. Smith's claim is substantially a claim to the combination, with the drivers, of a truck arranged as he describes, allowing of the lateral motion described, and securing the proper position of the drivers on the track on curves. That combination is not found in Bissell's engine.

It needs no argument to show, in view of the foregoing considerations, that there was a patentable novelty in the combination which Smith made in his engine, although the truck which he employed existed before, as the Kipple and Bullock truck. The combination produces a new mode of operation and new results in the structure as a whole, although the truck, as respects itself, in swiveling and in having a lateral movement operates in the same way it did in the car which had two of such trucks. It was not apparent, without experiment, that the use of a swinging-bolster swiveling truck in an engine would relieve all the difficulties attendant on the use of driving-wheels on curves. If it had been, Bissell would have adopted the truck of Bridges and Davenport instead of resorting to the contrivance he made. Hence, what Smith did was not, as is urged, merely to apply an old contrivance in an old way to an analogous use.

It is urged that Smith's patent is void, granted as it is for an "improvement in trucks for locomotives," because, although he may have invented a combination of the truck with a locomotive, yet he invented no improvement in the truck, but used the truck of Kipple and Bullock; that the invention of such combination is the invention of an improvement in locomotives, or of a new locomotive, or of an improved locomotive, or of a combination of truck and locomotive; and that the patent is void as a patent therefor because it is not granted as a patent therefor, but is granted as a patent for an "improvement in trucks for locomotives." In this connection reference is made to the fact that, in his specification, Smith says that figure 1 of his drawing is "a plan of my truck;" and also that "in the drawing I have represented my improved truck itself;" and also that "my truck can be fitted in the place of those already constructed." The body of the specification speaks of the invention as an "improvement in trucks for locomotive-engines." The statute required that the patent should contain a short description or title of the invention, correctly indicating its nature and design. This patent substantially conforms to the statute. As a truck to be used in a locomotive-engine, the truck Smith describes as to be employed is an improvement on Bissell's truck employed in an engine. Smith's invention is an improvement in the use of trucks in locomotive-engines, an improvement in the use, for locomotives, of trucks. It is a new and useful improvement, and the class of inventions to which it belongs, the class which embraces its nature and design, is that of trucks for locomotives, trucks used in locomotives. The claim is to the employment, in a locomotive, of a truck constructed in a certain way and producing a certain result in the action of the drivers on a curve. The title in the patent does not require that the claim should be one to an invention in respect to the truck *per se*. The expression "my truck" in the specification has reference, obviously, when the statement of the nature of the invention and the claim are considered, to the truck which Smith describes as the one he was intending to use in the engine to produce the results specified. The patent, therefore, is not open to the objection thus urged.

The answer sets up that the larger portion of the road of the defendants, and of the operations thereon conducted, is not within the jurisdiction of this Court; that all of the engines built by them which are alleged to infringe the Smith patent were constructed by them at Dunkirk; that the use of said engines is largely confined to the western division of their road; and that such construction and larger use were not, and are not, within the jurisdiction of this Court. It is contended for the defendants that, as the bill avers that they "have constructed and built, and caused to be constructed and built, and are now using trucks for locomotives constructed in accordance with and containing and embodying" the invention patented by Smith, and that the plaintiffs "have reason to believe that they will continue to make and use the same," and that the defendants refuse to pay to the plaintiffs any of the profits which they have realized from "such unlawful making and using," and as the bill prays that the defendants may be decreed to pay to the plaintiffs the profits which they have made "by reason of such unlawful manufacture and use," and may be enjoined "from making, constructing, and using trucks for locomotives constructed substantially in accordance with" the patented invention, the bill is based on the making *and* using in the conjunctive; that its frame is such, therefore, that if the plaintiffs cannot, under it, recover for the making, they cannot for the using; that they cannot, in this suit, recover for the making of the only engine proved to have been made or used by them containing the invention patented, because, although such engine is proved to have been used in this District, it is proved to have been made in the Northern District of this State; that, by the sixth section of the act of April 3, 1818, (3 U. S. Stat. at Large, 415,) the original jurisdiction of this Court is confined to causes arising within this District, and is declared not to extend to causes of action arising within the said Northern District; that the cause of action arising out of the making of such engines is, therefore, not within the jurisdiction of this Court; and that, as the bill is founded on the making *and* using, there can, consequently, be no recovery whatever under it on the evidence as to the one engine.

I do not think these views are sound. They overlook the fact that the bill avers that the defendants refuse "to desist from using" the invention patented; that the grant in the patent is of the right "of making, constructing, using, and vending to others to be used;" that an infringement may be committed by making, or constructing, or using, or vending to others to be used; that an allegation in the bill of making *or* using would be bad pleading; and that an allegation of making and using is proved, to all intents and purposes, by proof of using alone. Indeed, the allegation in the bill that the defendants have "constructed and built, and are now using, trucks for locomotives constructed in accordance with and containing and embodying" the patented invention, is by no means an allegation which necessarily implies that any of the structures which are used by the defendants were built by them, or that any of the structures which were built by them are used by them. It may as properly be read that they have constructed infringing structures, and that they are, also, using infringing structures.

Under this bill, therefore, the plaintiffs, having proved an infringement by the use in this District of the engine referred to, are entitled to a decree for an accounting by the defendants in respect of all infringements committed in this District, by making or using or vending therein, and to an injunction against making in this District, and against using therein, and against vending therein. If the plaintiffs desire to proceed for an account and an injunction in respect of infringements in the Northern District, they must proceed by bill filed there. The defendants are suable in the Circuit Court for that District, their legal existence, under their incorporation by the State of New York, being co-extensive with the territorial limits of that State.

The first section of the act of May 4, 1858, (11 U. S. Stat. at Large, 272,) which provides that "all suits not of a local nature hereafter to be brought in the Circuit and District Courts of the United States, in a District in any State containing more than one District, against a single defendant, shall be brought in the District in which the defendant resides," has no application to this case. Although this suit is one not of a local nature—that is, is what, if it were a suit at law, would be a transitory action—yet the act has no application to a case where the single defendant resides as fully in all the districts in the State as in any one of them. A corporation, if it can be properly said to "reside" at all, resides in all the districts of the State creating it. It is doubtful whether the act applies to corporations.

A decree will be entered in accordance with the foregoing directions, with costs to the plaintiffs.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

ENOCH PIPER *vs.* JAMES BROWN *et al.*

[*In Equity.—Before Shepley, Judge.—Decision January* 21, 1873.]

PATENT OF ENOCH PIPER—PROCESS OF PRESERVING FISH—INFRINGEMENT—DAMAGES—CONFIRMING MASTER'S REPORT—PLEADINGS AND PRACTICE.

Where a large quantity of fish is preserved by a patented process the enhanced price obtained for the fish that are left in consequence of withdrawing the others from the market, is an incident of trade too remote and indirect to be charged against the owner as profits he has made by infringing the patent.

The loss incurred during one season in carrying on the business wherein the infringement consists is not to be deducted from the profits made during another season, if there is no connection between the business of one season and that of the other, and the accounts of each are kept distinct.

No deduction from the profits the respondents have made by infringing a patent are to be allowed on account of their time and services, nor any commission on their sales when they have paid none.

The master having found that the defendants could not preserve fish in their apparatus as constructed without using the complainant's process, they thereupon altered their apparatus in that particular; but on their refusing to permit the master to inspect the chamber where they preserved fish afterward, he found them guilty of then infringing the process, and his report was confirmed.

The master's finding as to the construction of apparatus will not be set aside for error in fact, if it is founded on personal inspection made with the consent of parties, as well as upon the evidence of others, which is not all of it reported.

It is not competent for the master to receive further evidence after the draft of his report upon a hearing has been submitted to the counsel.

Hearing on exceptions to the report of E. F. Hodges, Esq., Master in Chancery, awarding $11,426.76 profits by infringement of the complainant's patent of March 19, 1861, for improved process of freezing and preserving fish, &c.

The following facts appeared in addition to those stated in the opinion of the Court:

After the draft of the master's first report had been submitted the counsel of the parties, the defendants' counsel addressed to him a petition for leave to introduce further evidence, but the master refused such leave, deciding that after such submission of the draft report to counsel it was not competent for him to hear further evidence.

The respondents' infringing business was one occupying but a portion of each year. At the close of each season the accounts were closed, and at no time did the business of one year run into or connect itself with that of another. Under these circumstances the master reported disallowing the claim of the defendants to deduct the amount of a loss alleged to have been suffered in the business of 1869 from the profits made in the other years.

[*Brown & Holmes*, for complainant.
R. B. Curtis and *Avery & Hobbs*, for respondents.]

SHEPLEY, *J.*:

Exceptions were duly taken to the report of the master in this case by both complainant and respondents. Complainant excepts that the master finds as a fact that the respondents, by preserving fish by the patented process and withdrawing them from the market during the season of abundance, have been enabled to demand and have received a large price for their green unpreserved fish remaining in their hands for sale in the market; that they have received for such green fish one and one-half cents per pound more than they would have done had they not withdrawn from the market the preserved salmon; and that the amount of green fish on which such advanced price was received was 413,612½ pounds, making a total profit of $6,204.19, and he claims that the master erred in disallowing the item of $6,204.19 profits resulting from the enhanced price of green fish.

The master finds that the gain and profits to the respondents resulting from said enhanced price of one and one-half cents per pound on the sales of green fish in the said year, is not gain or profit with which respondents are to be here charged, because it is an incident of trade too remote and indirect to be charged in this account.

Where profits are recoverable by the owner of a patented invention against an infringer, they are such profits or gains as result directly or immediately from the wrongful act of the infringer. Remote and contingent profits or gains, depending upon the result of successive schemes or investments, are never allowed. The resultant profits are ordinarily best arrived at by determining the difference between the actual ascertained cost and the actual ascertainable value to the infringer, which value, in case of sales by him, is the price obtained or the market value of the thing sold. Profits contingent upon future bargains or speculations, or future states of the market, are not estimated and are not recoverable. The distinction between such profits as are direct and immediate and those which are remote and contingent is recognized in *Masterton* vs. *Mayor of Brooklyn*, 7 Hill, 61, and *The Philadelphia, W. and B. Railroad* vs. *Howard*, 13 Howard, 307.

The second exception of the complainant is to the finding of a fact by the master.

The master found as a fact that, by the alterations made during the season of 1870 in defendants' apparatus, the atmosphere of the preserving-chamber mingled with the atmosphere of the chamber containing the freezing-mixture, making practically one atmosphere. The whole evidence upon which the master based this finding is not reported. In fact, the report leaves it to inferred that upon this question, in addition to the light afforded by the evidence of experts introduced by the defendants, the master was aided by the evidence of his own examination of the premises at Charlestown, at an inspection of them made by him in the presence and by consent of the parties. Under such circumstances the finding of the master on a question of fact will not be reversed. (*Sparhawk et ux.* vs. *Wells*, 7 Gray, 423; *Boston Iron Company* vs. *King*, 2 Cush., 405; *Adams* vs. *Brown*, 7 Cush., 242.)

Respondents except to the master's report as to his findings in respect to the operations of the year 1870. The respondents having been enjoined by the Court from the use of their Charlestown apparatus as used by them in 1866 and 1867, continued during the years 1868 and 1869 to preserve fish by the plaintiff's process in a similar apparatus situated in Cambridge, and belonging to other parties. Such use of the Cambridge apparatus having been also adjudged an infringement, they returned, in the year 1870, to the use of the building in Charlestown. The master finds that the apparatus at Charlestown was originally so constructed that its use by them for the purpose of freezing and preserving fish was an infringement of the complainant's patent. They attempted to satisfy the master, and did satisfy him, that at some time between the 20th of June and the 3d of December, 1870, they so altered their apparatus that it could be used without infringing complainant's patent. Whether it was so altered before December 3, 1870, they did not prove. The finding of the master that the use of the apparatus so altered would not infringe the complainant's patent was certainly as favorable for the respondents as the evidence would justify. The expert who testified upon the subject did not believe that it made any practical difference in the process whether the openings between the two chambers were large or small. He rejects the whole theory upon which complainant applied for his patent, and utterly ignores any utility in the process of the plaintiff, so far as it is distinguishable from other known processes and patented to him. From his point of view, the communication between the atmosphere of the two chambers being productive of no change whatever, being entirely immaterial, (except during the time of replenishing the chamber containing the freezing-mixture,) the smallest orifice between the two would have been as available to take the apparatus out from the pale of infringement as the largest, and this he frankly states, in substance, in his testimony. Respondents could not reasonably object that a finding was not sufficiently favorable to them based upon this evidence. In coming to this conclusion the master was unquestionably aided, if not governed, by the evidence of his own senses when he made the personal inspection. But at Charlestown he did not witness the process. He only saw a part of the apparatus not in use. Respondents contend that the master having found that the alterations made at some time prior to December 3 were such that the use of the altered apparatus to preserve fish would not infringe the patent, the burden of proof was then upon the complainant to show that the apparatus when used was restored to its former state. The answer to this position is that the master has never found any change in the *process* or in the apparatus in use. Respondents exhibited to the master such portions of the apparatus as were not in use, but neglected, and on request refused, to exhibit the chamber in which the fish of the catch of 1870 was being preserved. The patent is for a process, not for an apparatus. The exhibition of the modified apparatus not in use was of little moment compared to the exhibition of that part of the apparatus in which the process was going on. This apparatus, or this portion of the apparatus in which defendants preserved salmon in Charlestown in 1870, was never shown to the master to have contained the alterations in the summer of 1870, at the time the freezing and preserving were in process.

No commissions were paid by defendants for selling the fish preserved by them. It is not customary in estimating profits from an infringement to allow the infringing parties compensation for their own time and labor. The master's decision rejecting the allowance of commissions is sustained. His report is also sustained upon the other points to which exceptions are taken, for the reasons stated by him in his report.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,085.—*Lamps.*—Granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859. Hearing February 12, 1873.

23,097.—*Machines for Crozing and Chamfering Barrels.*—Granted to HIRAM LITTLEJOHN, March 1, 1859. Hearing February 12, 1873.

23,165.—*Construction of Steam-Vessels.*—Granted to JAMES MONTGOMERY, March 1, 1859. Hearing February 12, 1873.

23,169.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 8, 1859. Hearing February 19, 1873.

23,172.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,263.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON R. PETTER, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 29, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEHR, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,386.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PUTNAM and WILLIAM C. BOOBE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859. Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 19, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMONY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,824, 4,825, and 4,826, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,963, June 6, 1865; No. 1,960 having been ordered to again reissue, No. 3,829, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH R. STANWOOD, April 26, 1859. Hearing April 9, 1873.

22,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MENEMON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,830.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,836.—*Slate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,889.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,979.—*Rivets.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

24,009.—*Machines for Upsetting Tire.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,023.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,093.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

EXTENSIONS GRANTED.

22,869.—*Improvement in Bakers' Ovens*, granted to GEORGE C. JENNISON, February 1, 1859; reissued March 5, 1872, numbered 4,783.

Claim.—1. Arranging the heating-chamber directly under the cooking-chamber and in direct communication with it, in combination with a carrier adapted to change the position in the cooking-chamber of the bread or other material to be cooked.

2. The arrangement of the cooking-chamber with respect to the furnace and its discharge-flues, substantially as herein described, and as represented in the drawing, whereby the advantage of the ascending power of the heat is availed of, while the smoke or principal portion thereof is carried off by the flues.

3. The arrangement of the charging and discharging orifices of the baking-chamber with reference to it and the lower smoke-eduction passage leading into the discharge-flue of the oven.

4. The combination and arrangement of one or more openings, *i i*, and the damper or dampers *k*, or equivalent, with the baking-chamber and its furnace and flues, arranged as specified.

22,885.—*Improvement in Harvesters*, granted to WILLIAM K. MILLER, February 8, 1859; reissued June 5, 1866, numbered 2,266.

Claim.—1. A frame composed essentially of a coupling or drag bar and a brace, which are hinged to the main frame at two points and connected in the line of the hinges, and furnished with lugs by which they may be united to the shoe at two points, substantially as described.

2. In connection with a yielding coupling-arm and brace, an intermediate lug bolted to said arm and projecting therefrom at such points as to make it capable of being united to a lug placed at the heel of the shoe, substantially as described.

22,885.—*Improvement in Harvesters*, granted to WILLIAM K. MILLER, February 8, 1859; reissued June 5, 1866, numbered 2,267.

Claim.—1. The short finger-beam hinged to the coupling-arm or brace, so that said finger-beam may be raised up and folded to the rear in line with the driving-wheels, substantially as and for the purpose described.

2. So constructing and arranging the hinged or pivoted point, on which the finger-beam is thus folded backward, as that the outer or free end of said finger-beam in its folded position may conform to the inequalities of the ground over which it is drawn, and independent of the vertical movement of the machine, substantially as described.

22,885.—*Improvement in Harvesters*, granted to WILLIAM K. MILLER, February 8, 1859; reissued June 5, 1866, numbered 2,268.

Claim.—1. A draw or coupling-bar hinged to the main frame, in combination with an adjustable hinge-piece and one or more setting or tightening bolts, substantially as described.

2. A yielding coupling-arm, made of two or more pieces or parts, in combination with a pivot and tightening-bolts for adapting one part to the other part thereof, substantially as described.

3. Making the hinge-piece adjustable for the purpose of raising or lowering the points of the fingers or guards, substantially as described.

22,885.—*Improvement in Harvesters*, granted to WILLIAM K. MILLER, February 8, 1859; reissued June 5, 1866, numbered 2,269.

Claim.—The combination of a supporting-shoe hinged by its lugs to corresponding lugs on an adjustable hinge-piece, which latter is, in turn, hinged or pivoted to the yielding connection by which the progressive movement of the finger-beam is controlled, substantially as described.

22,885.—*Improvement in Harvesters*, granted to WILLIAM K. MILLER, February 8, 1859; reissued June 5, 1866, numbered 2,270.

Claim.—So constructing and arranging the cutting apparatus of a harvesting-machine and its connections with the main frame, as that it may be converted from a front to a rear cutting-machine by transposing said parts, without taking from or adding to the machine any other parts or pieces than those which constitute the cutting apparatus in either of its positions, substantially as described.

22,890.—*Improved Carpet-Sweeper*, granted to N. B. PRATT, February 8, 1859.

Claim.—The arrangement of the bearings of the friction driving-rollers *e e* in the oblong slots *g g* of the box A, and the rollers *d' d'* in the specified relation to the ends of the revolving broom or brush, substantially as and for the purposes set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date January 28, 1873.]

6,368.—*Monument.*—WILLIAM T. CROSS, Kewanee, Ill.

6,369.—*Stove.*—CONRAD HARRIS and EDWARD KUMMER, Cincinnati, Ohio, assignors to C. HARRIS & SON, same place.

6,370.—*Stove.*—CONRAD HARRIS and EDWARD KUMMER, Cincinnati, Ohio, assignors to C. HARRIS & SON, same place.

6,371.—*Stove.*—CONRAD HARRIS and EDWARD KUMMER, Cincinnati, Ohio, assignors to C. HARRIS & SON, same place.

6,372.—*Stove.*—CONRAD HARRIS and EDWARD KUMMER, Cincinnati, Ohio, assignors to C. HARRIS & SON, same place.

6,373.—*Iron Fence.*—MARTIN KRUMM, Columbus, Ohio.

6,374.—*Governor-Base.*—W. BARNET LE VAN, Philadelphia, Pa.

6,375.—*Sewing-Machine.*—GEORGE RENFUSS, Philadelphia, Pa., assignor to AMERICAN BUTTON-HOLE AND OVERSEAMING SEWING-MACHINE COMPANY, same place.

6,376.—*Handle of a Kettle-Cover.*—ROBERT B. WARDIN, Philadelphia, Pa.

6,377.—*Cooking-Stove.*—HENRY A. WOOD, Bangor, Me.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date January 28, 1873.]

1,107.—*Writing-Paper.*—ABEL BEACH, Iowa City, Iowa.

1,108.—*Pruning-Shears.*—CHESTY & HUGHES, Clyde, Ohio.

1,109.—*Cigars.*—F. DE BARY & CO., New York, N. Y.

1,110.—*Spoons, Forks, &c.*—HALL, ELTON & CO., Wallingford, Conn.

1,111.—*Cigars.*—S. JACOBY & CO., New York, N. Y.

1,112.—*Bitters.*—WILLIAM H. KNOEPFEL, New York, N. Y.

1,113.—(Suspended.)

1,114.—*Corsets.*—THOMAS, LANGDON & CO., New York, N. Y.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date January 28, 1873.]

ORIGINAL PATENTS.

135,193.—*Car-Starter.*—PETER BATES, Jr., Pittsburg, Pa.

Sliding draft-beams are provided at each end of the car, and to each beam are connected two levers, which are pivoted to levers attached to the farther axle. To these levers are pivoted pawls, which engage with a ratchet which is secured to the axle. By this arrangement the amount of power to be applied in starting a car is diminished.

Claim.—The combination and arrangement of the axles B, ratchet-wheels C, pawls D, levers *g* A, rods *e f*, springs *d*, and draft-beams *m n*, all constructed, arranged, and operating with relation to each other, as hereinbefore described, and for the purpose set forth.

135,194.—*Sewing-Machine.*—ALBERT BINGHAM, Newtonville, assignor to FREDERICK CURTIS, Boston, Mass.

The pressure of the shuttle against the wall is regulated by the latch *f*. The presser being hinged directly opposite the needle, constantly bears on the cloth around the needle, and it adapts itself to seams.

Claim.—1. The combination of the vibrating shuttle-box carrier, the shuttle-box hinged to said carrier, and the spring-latch for holding said carrier with a yielding pressure against the wall I during the vibrations of the carrier, substantially as and for the purposes set forth.

2. The herein-described combination of the vibrator K, shuttle-box *d*, turn-button *f*, shuttle *g*, bobbin *i*, and screw *k*, when constructed and operating as described.

3. In combination with the vibratory shuttle-carrier and shuttle-box and the feeding mechanism arranged on opposite side of the wall I, as shown and described, the divided sewing-plate, the one part covering and surrounding the shuttle and its operating mechanism, the other part covering the feeding mechanism, and both parts hinged separately and independently to the machine, as and for the purpose set forth.

4. The combination of a curved presser-foot hinged to its operating-bar, so that its point of oscillation shall be in a vertical plane passing through the needle at right angles with the line of feed, and a convex-surfaced and vibratory feed having its point of oscillation in the same vertical plane with that of the presser-foot, said parts being constructed and arranged to operate with each other and the needle, as shown and set forth.

5. In combination with the screw *y*, or its equivalent, attached to the frame of the machine and operating to regulate the feed, as described, the feed yoke or frame provided, upon that side with which the feed-cam is in contact when retracting the feed-plate, with a yielding face, which, after the cam has retracted the feed to the extent permitted by the regulating-screw will yield and thus allow the cam to pass it and complete its rotation, substantially as shown and described.

6. The combination, with the vibratory shuttle-box and the shuttle and bobbin, constructed and arranged to operate in connection with the wall I as specified, of the means, substantially as herein shown and described, for clamping said bobbin with a greater or less pressure against the wall in rear of the needle, for the purposes set forth.

135,195.—*Dumping-Wagon.*—PEARCE BODLEY, St. Louis, Mo.

Angular metallic frames connect the bolsters, and the body turns on an axle journaled in this frame. The end-board is held independent of the body by means of braces secured to the connecting-frames.

Claim.—The rear supporting-arms E E', tail-board F, catch G, angle-brace D, connecting-shaft *d*, main supports C C', tilting-shaft C², when arranged to operate in combination with a wagon-bed, A, and wheels B B', as and for the purpose set forth.

135,196.—*Machine for Making Bungs.*—REINHOLD BOEKLEN, Brooklyn, N. Y.

In connection with a series of rotating holders for the material is an oscillating cutter.

Claim.—1. The devices, herein shown and described, for feeding, for shaping, and for cutting off the bungs, when constructed and operated substantially as and for the purpose herein stated.

2. The combination of the sleeve L, with the slides K K, springs M, and arbor B, substantially as herein set forth.

3. The combination of the sleeve Q, the pawls E K with the secondary sleeve S, when operating substantially as and for the purpose herein described.

135,197.—*Revolving Bullet-Mold.*—JOHN BRADFORD, Chicago, Ill., assignor to CHICAGO SHOT-TOWER COMPANY.

Two revolving rings provided with corresponding molds or half-molds on their inner faces, and capable of being warped or sprung apart at the proper point by means of a separator to allow of the balls dropping out.

Claim.—1. The combination of two rings provided with molds and capable of being warped, arranged relatively and operating substantially as described.

2. The combination of two rings capable of being warped and provided with molds, with a clamp and a separator, all substantially as specified.

3. In combination the following parts or elements of a machine—viz., first, two rings provided with molds and capable of being warped; second, a clamp; third, a separator; and, fourth, a crown-plate capable of revolution; all these parts being combined and capable of operating substantially as hereinbefore set forth.

135,198.—*Steam Vacuum Pump.*—WILLIAM BURDON, Brooklyn, N. Y.—Y'.

A vacuum is formed in the vessel and water is forced up into it by atmospheric pressure. Should the water acquire a momentum the vessel will be lifted up to permit the water to escape till the momentum be entirely exhausted. On the filling of the vessel, the steam-valve is shifted to admit steam to it, whereby the vacuum is destroyed and the water discharged.

Claim.—1. The combination of the rising and falling vacuum-vessel A, having an enlarged lower portion, the discharge-box D, constituting the bottom thereof, and the central guide-stem B, forming both a steam-inlet and a condensing device, the whole operating substantially as and for the purpose set forth.

2. The combination, with the vessel A and stem B, of a water-cup, *c*, essentially as and for the purpose specified.

135,199.—*Steam Vacuum-Pump.*—WILLIAM BURDON, Brooklyn, N. Y.—Q'.

The velocity of revolution should be so regulated as to give each chamber just time to fill and discharge.

Claim.—The combination, with the three or more vacuum-chambers, of a valve common to all, and so actuated by a steam-engine or other motor as to give steam to and shut it off from the several chambers in succession, substantially as herein described.

135,200.—*Steam Vacuum-Pump.*—WILLIAM BURDON, Brooklyn, N. Y.—P'.

Claim.—1. The combination, with one or more vacuum-cylinders, A A', of a hollow base or water chest, of larger horizontal area than the said vessel or vessels, having a partition, *a*, and a system of inlet-valves, D D, substantially as herein described.

2. The combination, with one or more vacuum cylinders or vessels, A A', and a hollow base or water-box having larger horizontal area, of discharge-valves E E, arranged around the said cylinders or vessels in the top of said base or chest, substantially as and for the purpose herein specified.

3. The combination, with the hollow base or water-chest, of the side discharge-openings *m m* and valves *n n*, arranged to open at their upper edges, substantially as and for the purpose set forth.

4. The hollow base or water-chest, constructed with upper and lower compartments and with upper and lower valve-seats, in combination with the vacuum-chambers and suction-pipe, substantially as herein described.

5. The combination, with the water-chest and its discharge-valves E and *n*, of the curb G, arranged as herein described and shown, for keeping the upper part of the water-chest covered with the discharge-water and the valves submerged.

135,201.—*Steam Vacuum-Pump.*—WILLIAM BURDON, Brooklyn, N. Y.—Z'.

Claim.—A steam-engine, a steam vacuum-pump, and a water-wheel so combined that the exhaust steam from the engine is used to operate the pump, and the latter is made to supply the water-wheel with water, whereby the exhaust steam is converted into an auxiliary to the engine, substantially as and for the purpose herein set forth.

135,202.—*Steam Vacuum-Pump.*—WILLIAM BURDON, Brooklyn, N. Y.—U'.

Claim.—1. In combination with the vacuum-vessel A of a steam vacuum-pump the removable bottom I, constituting a discharge-valve of an area equal to the entire area of the transverse section of the aforesaid vessel, substantially as and for the purpose set forth.

2. The combination, with the suction-pipe leading to the upper part of the vacuum-vessel, and with the vacuum-vessel itself, of the branch pipe *f*, essentially as and for the purpose set forth.

3. The combination, with the suction-pipe F, of the branch pipe *g*, furnished with an outwardly-opening valve, substantially as and for the purpose herein specified.

135,203.—*Steam Vacuum-Pump Operated by Exhaust Steam.*—WILLIAM BURDON, Brooklyn, N. Y.—N'.

The inlet-valves of the pump-chambers are connected directly with the valve-gear of a steam-engine and operated by the exhaust steam of the engine; or the exhaust steam enters the pump direct by pipes connected thereto and forces the water out. By this arrangement a condenser is made of the pump. Has, also, elevated condensing-vessels, perforated near their bottoms, for retaining water to effect the condensation of the steam in the chambers.

Claim.—1. The combination of an apparatus, such as is herein termed a steam vacuum-pump, with the exhaust-pipe of a steam-engine, whereby the said apparatus is made to serve the additional purpose of a condenser to the steam engine.

2. The combination of the steam-inlet valves of the steam vacuum-pump with the exhaust valve or valves of the steam-engine, substantially as herein described, whereby the said inlet and exhaust valves are worked by the same rod or valve-gear.

3. The condensing-vessel J, supported in the upper part of either chamber for the retention of a portion of the water, and perforated near its bottom for the discharge of said water to effect condensation, substantially as herein described.

4. The arrangement of the exhaust-steam valve or valves of the engine, substantially as herein described, to serve as the steam-inlet valves of the vacuum-pump.

5. The combination of two separate exhaust pipes of the engine with two separate vacuum-chambers, one pipe being connected with one chamber and the other with the other chamber, substantially as herein described.

135,204.—*Article of Food.*—GEORGE G. CAMPBELL, Oswego, N. Y.

Claim.—1. The process herein described of passing rye meal through a sieve of suitable fineness, for the purpose specified, and adding to it an equal quantity of Indian meal, the two being then thoroughly mixed for the purpose set forth.

2. A mixture of Indian meal and rye meal, substantially as described, placed in packages, and constituting a new article of manufacture.

135,205.—*Truck.*—JOHN CHISHOLM and ISAAC C. MAYER, Toronto, Canada.

Three trucks are so arranged as to operate in combination in moving buildings. Chains pass through the corners of the sills in such a manner that power being applied, the sills shall be more firmly bound together.

Claim.—1. The side trucks, composed, each, of the tapering wheels A A, axle B, body C, of a single timber, at right angles to the axle, and the strap-braces *a a*, constructed as described, and arranged, in combination with the front truck, substantially as herein specified.

2. The front truck, composed of the tapering wheels A A, axle B having the chain-hole *b* therein, and the bolster-block G, held upon the axle by the king-bolt *d*, constructed and arranged substantially as herein specified.

3. The brace-chains H I K K, arranged substantially as and for the purpose herein specified.

135,206.—*Waste-Trap for Wash-Basins.*—HUGH H. CRAIGIE, New York, N. Y.

The water passing out of the basin floats a ball-valve, which drops into its seat when the trap only is full. The escape of smell is thus prevented when, by evaporation or otherwise, the trap is empty.

Claim.—The valve *m* within the chamber *n*, in combination with the trap *d* and screw-ferrule *b*, substantially as and for the purposes set forth.

135,207.—*Rotary Engine.*—JAMES C. CULVER, Cleveland, Ohio, assignor of one-fourth of his right to JOSEPH G. PETTIE, same place.

The engine has a sliding abutment provided with a piston-head, a piston-valve for operating the revolving wheel, and piston by which the engine may be reversed or stopped.

Claim.—1. The piston-valve K with ports *k' k''*, in combination with the revolving wheel C and abutment E, arranged substantially as set forth.

2. The valve G with its ports, in combination with cylinder F, abutment E, and disk *f*, as and for the purposes herein described.

3. The double saw-tooth packing or its equivalent on the revolving wheel C, arranged as shown, and for the purpose set forth.

4. The combination of casing A, revolving wheel C, piston-valve K, abutment E, valve G, cylinder F, and disk *f*, all arranged substantially as and for the purpose set forth.

135,208.—*Safety Check for Horses.*—JOSEPH W. DOMETT, Boston, Mass.

The check-rein is constructed with a choke-strap and is secured to the carriage. The whiffletree is constructed so as to allow the horse to move forward a short distance without drawing the carriage. In this condition the horse, when standing, is prevented from starting, or, when running, is stopped.

Claim.—1. The arrangement of the check-rein *h* (with or without the hook *q*) and spring *g*, in combination with the whiffletree *a a* and spring and spindle *d e*, constructed substantially as and for the purposes herein before specified.

2. The combination and arrangement of the rein *h*, loop *k*, spring *g*, and choker *m*, substantially as and for the purposes above set forth.

3. The combination and arrangement of the whiffletree *a a*, rubber springs *c c*, spring *d*, and spindle *e*, as and for the purpose hereinbefore described.

135,209.—*Refrigerator.*—EDWARD S. EARLEY, Philadelphia, Pa.

To increase the cooling surfaces a flanged ice-box, having a winged central tube which extends nearly to the top of the ice-box, is suspended upon ledges within the refrigerator, so as to leave a space between the sides of the ice-box and the refrigerator. The walls forming the dead-air chamber are covered with paper and asphaltum varnish.

Claim.—1. The ice box or chamber having a central cold-air discharge, substantially as set forth.

2. The winged pipe E and opening D, in combination with the ice box or chamber B, substantially as set forth.

3. The combination, with the body A, of the ice-box having a central discharge, D, and a side space or spaces, C, for cold air, substantially as stated.

4. The opposite inner faces of the double walls with linings of paper coated with varnish, substantially as and for the purpose set forth.

135,210.—*Corpse-Cooler.*—EDWARD S. EARLEY, Philadelphia, Pa.

By means of the winged central pipe of the ice box and the manner of its suspension, greater cooling surface is obtained. The walls of the dead-air space are lined and coated to ensure an equable temperature.

Claim.—1. The winged pipe E and opening D, in connection with the ice-box B of a corpse-preserver, substantially in the manner and for the purpose set forth.

2. In combination with the body A, the ice-box with an opening, D, and winged pipe E, and the side spaces C, substantially as and for the purpose set forth.

3. The opposite inner faces of the double walls with linings of paper coated with varnish, substantially as and for the purpose set forth.

135,211.—*Washing-Machine.*—BUTLER EDGAR, Espy, Pa.

Between the lower rolls are introduced perforated slats or divisions secured to the ribs or frame to prevent the clothing from passing between the rolls and to allow the water to pass off. Combined with the frames are springs and cross-bar, the journals of which pass through the ribs, and the shoulders resting against the inside of the frame to hold them in place.

Claim.—1. The slats K K, the saddle bar L, and the frames or ribs H and H', as constructed and for the purpose specified.

2. The main roller C, the small rollers G' G'', as constructed, acting upon each other, as specified, in combination with the slats K K with the saddle-bar L, the concave frames or ribs H H', the metal sliding-boxes E E, the rubber springs E'' E'', the metal staples or stirrups F F, the thumb-screws *f'' f''*, and rubber cushions or springs *h'' h''*, embodying the construction of a machine, whose action shall be uniform and vertical, however the power may be applied, as and for the purpose specified.

135,212.—*Railway-Car Brake.*—JAMES F. ELDER, Blairsville, Pa.

The brake-levers are pivoted to extensible fulcrum-posts, which are pivoted to the outside faces of the bolster. The fulcrum-post is provided with a ratchet and pawl, that the brake-rubber, when worn, may be readjusted.

Claim.—1. The brake levers *d d'* pivoted to the opposite outer faces of the bolster, operating the brake-bars by their lower ends, and being connected at their upper or opposite ends by the brake-chain *h*, substantially as set forth.

2. An extensible fulcrum-post consisting of two parts, one sliding on or in the other, the parts being held in the proper relative position when extended by means of a ratchet and pawl, substantially as and for the purposes set forth.

135,213.—*Alarm and Lubricating Device for Car-Axle Boxes.*—OLIVER EVANS, St. Paul, Minn.

The shaft is secured by fusible plug, thereby raising a rod which closes the oil-reservoir. The chamber contains an explosive cartridge. An arbor carries an indicator or finger on the outside of the box. The heating of the bearing melts the plug, thereby relieving a shaft, which is raised, and the hammer is forced against the tube which contains the cap, and the cartridge is exploded and the indicator turned. A rod is lowered, allowing oil from the reservoir to flow to the journal.

Claim.—In combination with a journal and its box, a fusible pin or plug, so connected with the signal that the fusing of the pin or plug will cause the signal to be seen or heard, substantially as set forth.

135,214.—*Tanning Hides.*—ADOLPH FLEISCHHAUER, Brooklyn, N. Y.

Sulphur, lime, carbonate of ammonia, soda, sulphate of zinc, potash, terra japonica, sumach, muriatic acid, nitric acid, and salt.

Claim.—The process of tanning hides by the formulas numbered first, second, third, fourth, using the chemicals in the combinations, and the combinations in the order of succession, hereinbefore described, substantially as and for the purpose specified.

135,215.—*Door-Button.*—OTTO F. FOGELSTRAND, Kensington, Conn.

The face-plate of the button is provided with a projecting shell, which serves as a guide and support to the button, which has a depression corresponding to its rounded upper end. Around the base of this projection is a small ring which is furnished with four spurs. Upon the under side of the button are four recesses corresponding to the spurs. About the rivet, which secures the button to the plate is a coiled spring which draws the two together and thus secures the button from turning unless force enough is applied to counteract the force of the spring and separate the two sufficiently for the spurs to pass out of the recesses above them. The button can, therefore, be partially secured in four different positions corresponding to the spurs and depressions.

Claim.—The combination of the base-plate A bearing the shell *c*, having the raised points *c²* around its foot, the button C having the shell *c* overlying the shell *c*, with notches at its base corresponding to the points *c²*, the rivet *d*, the flange *e*, and the spring *i*, the whole constructed, arranged, and designed to operate substantially as described, for the purpose set forth.

135,216.—*Wood Sawing Machine.*—SAMUEL FUNCK, Quincy, Ill.

The saw is strained in a reciprocating frame and suspended by cords, the excessive friction being obviated by placing the frame upon rollers.

Claim.—The saw-frame B, consisting of two vertical and one horizontal pieces, provided with the guide-rods H, rollers I, vertical slide-beds G, and pivot K, in combination with the pitman L, wheel N, axle O, and gear-wheels P and R, when arranged and operated substantially as shown and described.

135,217.—*Sash-Lock.*—CHARLES T. GIBSON, Baltimore, Md.

A bell-crank lever is used to convey motion from the lifting-knob to the sliding bolt. The lifting-knob is itself pivoted to the rear of the case at a point back of the bell-crank, so that the shorter arm of the angular lever rests with a sliding contact upon the top of the lifting-lever forward of the fulcrum of said lever, and at the same time the large arm of the pushing-lever passes centrally down through an oblong slot in the bolt and bears with a sliding contact against said bolt with a force directly in line with its movement.

Claim.—The combination of the lever-button or lever-knob *g g'*, the angular pushing-lever C, its short arm *c'*, bearing with a sliding contact upon the lifting-lever forward of the fulcrum thereof, and the spring sliding bolt B *b*, the whole being constructed and applied to the sash-plate A, substantially as and for the purpose described.

135,218.—*Gear-Cutting Machine.*—JOHN JAMES GREENOUGH, Syracuse, N. Y.

The mandrel has an index-wheel keyed to it and a worm-wheel turning loosely upon it, which is operated by a tangent-screw having its bearings in the frame which holds the mandrel. The ends of the frame are bent up at right angles to form bearings for the centers between which it revolves. The axis of the mandrel is at right angles to the axes of the centers. The teeth are formed by turning the index-wheel and fastening it to the worm-wheel. The shape of the tooth is formed by turning the tangent-screw a certain distance while the cutting-tool is being fed up.

Claim.—1. The combination of the index-wheel *c* and mandrel *m* with the forming-wheel *d*, moved by a tangent-screw, *f*, or its equivalent, substantially as and for the purposes herein set forth.

2. The combination of the mandrel *m* with the cutting-tool having a movement on the centers *b*, and governed by an index and forming movement, substantially as and for the purposes specified.

3. The tool-block *w w'* and frame *z*, in combination with mandrel *m*, by which I cut radial teeth on a globular surface, as described.

135,219.—*Steam-Generator.*—THEOPHILE HARANG, Bayou Grove Plantation, Parish of La Fourche, La.

Two conical-shaped flues, larger in diameter at their rear ends, act as sediment collectors, and have the steam-space in a separate vessel connected to the said tapering flues by side-pipes, by which a circulation in the boiler is continually kept up.

Claim.—A steam generator or boiler consisting of the conical vessels A and B, walls D, E, F, and G, and cylinder C, arranged in the form of a saddle, substantially as and for the purpose herein before set forth.

135,220.—*Duplex Safety-Valve.*—THEOPHILE HARANG, Bayou Grove Plantation, Parish of La Fourche, La.

A safety-valve, with two exit-ports, has two valves, each having a spring, one stronger than the other, for the gradual exit of steam from the boiler.

Claim.—The safety-valve B, constructed and arranged to operate substantially as described, and for the purpose herein before set forth.

135,221.—*Sash-Balance.*—BENJAMIN F. HARTMAN, Pickering Post, Charlestown Village, Pa.

A casing, provided with a toothed rack, is attached to the lower sash, into which works a pivoted bar provided with a tooth or detent fitting into the rack. There is also a spool secured upon a shaft, by means of which the available length of the connecting cords or tapes is adjusted.

Claim.—The means employed for adjusting the available length of the connecting cords or tapes, consisting of the casing K provided with the toothed rack O, the spool L secured upon the shaft *l* and provided with the partition-disk *l'*, the loosely-pivoted bar M provided with the tooth or projection *m'*, and knob N, and the spring *z*, when said parts are constructed and combined substantially as specified.

135,222.—*Filter.*—PROSPER HUBERE, San Francisco, Cal.

Two hollow semi-globes are screwed together to form a single hollow sphere, and have short tubes projecting from opposite sides. Inside of the hollow globe is a filtering-stone similar in shape to the globe, and having a hole passing from the center to one of the projecting tubes.

Claim.—The reversible hollow globe or oblong filtering-vessel A A, with its short tubes C C' and cleaning-faucet E, in combination with the round or circular filtering stone B, having a hole passing to its center and communicating with one of the tubes C C', substantially as and for the purpose above described.

135,223.—*Compound Steam-Engine.*—LAFAYETTE HUNTOON, Natick, Mass., assignor to himself and EDWIN C. HUNTOON, same place.

The exhaust steam of the expansion-cylinder is conducted into the rear of the piston of the high-pressure cylinder to equilibrate the pressure therein, while the exhaust steam from said high pressure cylinder is driving the piston of the expansion or low-pressure cylinder. Has only one valve, with a passage for both cylinders.

Claim.—1. In a double cylinder steam-engine operating with a single valve, substantially as specified, the mode herein described of equilibrating the pressure upon the piston of the small or primary cylinder, while the exhaust steam from said cylinder is driving the piston of the larger or second cylinder by bringing at that time that part of the first cylinder in rear of its piston in communication with that part of the said cylinder in front of said piston, and from which the exhaust steam is passing, substantially in the manner and by the means shown and set forth.

2. The valve J provided with a passage, *d*, and a chamber, *k*, substantially as described, in combination with the two cylinders and the ports *c*, *c'*, *f*, *f''*, and *g*, substantially as and for the purposes set forth.

135,224.—*Feed-Roll for Planing-Machines.*—STEPHEN INMAN, Rockford, Ill., assignor of one-half his right to HENRY P. STOCKTON, same place.

A series of elastic segments are secured upon a shaft by serrated washers placed between them, the segments being pressed together until the washers are wholly embedded.

Claim.—1. A flexible-faced feed-roller composed of a longitudinally-grooved shaft, A, toothed washers C, and sections or rings of rubber *b*, constructed, arranged, and secured together in the manner substantially as described.

2. The toothed washer C having the teeth *c* projecting on opposite sides as means of holding two adjacent rings of rubber together in the manner substantially as described.

3. The combination of the washers having tongues *c'*, staples *c''*, and wood plugs *d* with the shaft A of a feed-roller having groove *c''*, in the manner and for the purpose described.

4. The removable journal *a* having the collar A'' and screw-pin *e*, in combination with the tooth-washer C, rubber rings *b*, and shaft A, constructed and operating substantially as and for the purposes described.

135,225.—*Wash-Boiler Attachment.*—ROBERT JEFFERS and DAVID C. BOCKOVEN, South Sodus, N. Y.

A rim to insert in an ordinary wash boiler, has a floor near its upper part, and openings at the sides. Above the floor and through an opening in it is attached a vertical tube, on the upper end of which are two curved pipes with detachable perforated nozzles. Above the rim and floor are hinged perforated lids.

Claim.—The wash-boiler attachment, consisting of the floor A, perforated hinged disk B B with its supports, in combination with the central tube F, curved top E, nozzles D D, and lock *a*, constructed and arranged substantially as herein described and specified.

135,226.—*Apparatus for Making Ozone.*—CHARLES H. JOHNSON, New Brighton, Pa.

Claim.—1. The pan A and the jar B with tube *g*, and tube *e* with stop-cock *i*, and the combination of the boiler D with the atomiser C, (the boiler D containing water, and having heat applied for boiling,) and the combination of both the boiler D and the atomizer C with the jar B and pan A, for the rapid production of ozone from phosphorus placed under jar B, partly in water, by producing a rapid current of air through the jar B and an increase of temperature within the jar, both favoring the rapid production of ozone from the phosphorus.

2. The pan A and the jar B with tube *g*, and tube *e* having stop-cock *i*, and the bottle *j* containing an alkaline solution, and the combination of the boiler D with the atomiser C, (the boiler D containing water and having heat applied for boiling, and being connected with the atomiser C by the tube *l*) and the combination of both the boiler D and the atomiser C with the jar B, and with the bottle *j* containing an alkali in solution, for the purifying of ozone by bringing the alkali in a heated and atomized state into intimate contact with the ozone and acid gases passing upward from the phosphorus under jar B, eliminating the acid-gases by chemical action and leaving the ozone pure, in the manner hereinbefore fully set forth.

3. The jar B with tube *g*, and tube *e* with stop-cock *i*, the combination of the boiler D and atomiser C with each other and with the jar B, (the boiler D containing water and having heat applied for boiling, and being connected with the atomiser C by the tube *l*,) for expelling ozone formed from the phosphorus under jar B by producing a rapid current upward through the jar B, and outward through the tube *g*, by the means and in the manner hereinbefore fully set forth.

4. The construction of the apparatus as a whole, consisting of the pan A with its parallel bars *a a*, zinc plate *h*, curved tube *e* with stop-cock *i*, the jar B with horizontal tube *g*, and the atomiser C, bottle *j*, boiler D with tube *l*, the cross-bar *s* with thumb-screw over the jar B, all combined and arranged in the manner and for the purpose hereinbefore fully set forth.

135,227.—*Hot-Air Furnace.*—HORATIO N. LONGFELLOW, Lawrence, Mass.

An arrangement of flues and dampers to regulate the flow of the products of combustion, and to afford access for cleaning the interior of the furnace.

Claim.—1. The arrangement of the down-draft L, slides P and R, bed-plate A', and cover F, as and for the purposes hereinbefore described.

2. The arrangement of the pipes K, openings H, staves D D' D'', plate N, and down-draft L, as and for the purposes hereinbefore specified.

135,228.—*Security-Hook.*—JOHN K. MACDONALD, Newark, N. J.

A combined hook and pin has a spiral spring about its shank, which is fastened near its lower end and turned back to form a hook for the pin. The spring extends to the point where the hook terminates and is then bent over against it and downward in a line parallel with the shank, and terminates in a ring. The torsion of the spring secures any object to the hook.

Claim.—As a new article of manufacture, the security-pin constructed with the spring *d*, hook *e*, and rod and ring *f* attachment, substantially as and for the purposes specified.

135,229.—*Machine for Burnishing and Trimming the Edges of Boot and Shoe Soles.*—JAMES W. MALOY, Boston, assignor to BENJAMIN F. LARRABEE and SAMUEL H. HODGES, Lynn, Mass.

The jack is attached to an adjustable chuck, which is operated in connection with an eccentric cam, describing in its revolution the different curves of a boot or shoe. A similarly shaped cam (both attached to the same shaft) gives a corresponding movement to the tool-carrying frame.

Claim.—1. The combination of the shaft *l*, slotted arm *a*, eccentric *g*, chuck *e*, provided with cross-bars *p*, plates *e'*, and jack *a'*, all arranged and operating as and for the purpose specified.

2. The slide P having the nave N with a projection thereon and combined with the head I, having a recess to receive said projection, and combined also with the vibratory frame B, rotatory stem D, slotted bar O, and a rotary tool for cutting, trimming, burnishing, &c., all arranged as described.

3. The shaft *l* in combination with the cam *a'*, connecting-rod *y*, stem A, and vibratory frame B, all arranged as set forth.

4. The chuck *e* provided with the cross-bars *p* and combined with the plate *e'* and eccentric *g*, as explained.

5. The head-stock *d* provided with the ends *d' d''* and combined with the shaft *l*, spring *s*, and guide-way *c*, all arranged as and for the purpose specified.

135,230.—*Railroad-Chair.*—EUGENE D. MANN, Elyria, Ohio.

A self-acting clamp for compressing and confining the rail in its seat by the weight of the train.

Claim.—The clamps D E, constructed with the pivots *a* and clamping portions *m*, and forming the broad seat *d* for the rail, and the chair A B C and cushions *c c*, the several parts being combined and arranged substantially as and for the purpose herein set forth.

135,231.—*Tan-Vat.*—CHARLES H. MANNING, Washington, D. C.

The vat is adapted for tanning in vacuums and under pressure successively or separately.

Claim.—1. A tan-vat constructed of two or more thicknesses of wood or equivalent material, with an intermediate thickness of lead or equivalent metal, and one or more thicknesses of waterproof paper, substantially as and for the purpose herein specified.

2. A varnish or coating composed of bees wax and spirits of turpentine applied to the metallic and paper thicknesses of the tan-vat, for the purpose herein specified.

3. The groove or depression *h* in the top of the vat in combination with the cover A and its projecting packing-rim *i*, substantially as and for the purpose herein specified.

4. The packing gasket *l*, when applied to the rim *i* of the cover A, so as to project laterally beyond the edges thereof, for the purpose herein specified.

5. The hard soap or equivalent plastic substance applied in the groove *h* of the vat, in combination with the rim *i* of the vat-cover and the gasket *l* thereon, for the purpose herein specified.

6. The agitators E E connected together and arranged to vibrate vertically across the interior of the vat, in the manner as shown and described, and for the purpose herein specified.

135,232.—*Tan-Vat.*—CHARLES H. MANKINS, Washington, D. C.

Claim.—A tan-vat made of cast-iron lined inside with wood and with a layer or thickness of pitch, tar, asphaltum, or their equivalent between the iron and wood, substantially as and for the purposes herein specified.

135,233.—*Safety Gun-Lock.*—DILLON H. MAPOTHER, Louisville, Ky.

The hammer is securely locked when set in any position, and can only be released by a simultaneous duplex or two-fold action of the operator upon the lever P and the slide N.

Claim.—1. The combination of the bridle I with its key-socket J, key K, and operating-arm L, and the tumbler H, with its notch and lug T T, when arranged, constructed, and operated substantially as and for the purpose set forth.

2. The devices in the former claim, in connection with the thumb-slide N and lever P, with its spring Q, bolt S, and knob R, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

135,234.—*Spittoon.*—EMMETT MATHER, Chicago, Ill., assignor to FRANK STURGES & CO., same place.

The spittoon, in the sides and top is composed of a disk of sheet metal struck up, with a disk of sheet metal for the bottom.

Claim.—A new article of manufacture, consisting of a sheet-metal spittoon, the body and cover of which are made in one continuous piece attached to the bottom.

135,235.—*Back-Chain for Cart-Saddles.*—WILLIAM B. MCCLURE, Alexandria, Va., assignor to himself, H. O. CLAUGHTON, and JOHN C. GRAHAM, same place.

The links of a cart-chain are supplied with rollers and swivels, and adapted to operate over a cart-saddle.

Claim.—1. The link A having the enlargement a^1 with central orifice, the roller a^2, and shaft a^3, as and for the purpose described.

2. The combination of the link A, constructed as described, with the intermediate link B having the curved interior and flat exterior surfaces, as described.

3. The combination of the central portion of the chain, composed of roller-links and connecting-links, constructed as described, with the bar-links C, substantially as and for the purpose set forth.

4. The combination of the central portion of the chain and the bar-links with the swivels at each end, as and for the purpose described.

5. The described chain, consisting of the central portion, bar-links, swivels and links, and traveler, as a new article of manufacture.

135,236.—*Steam-Generator.*—ALEXANDER R. MCDONALD, Chicago, Ill.

The tubes communicate with the water and steam space, and are closed by screw-caps at the other end.

Claim.—Boiler A, in combination with dome D, smoke-stack E, and fines B, the whole arranged to operate substantially in the manner and for the purposes herein set forth.

135,237.—*Clothes-Wringer.*—THOMAS E. MCDONALD, Trenton, N. J.

A wringing-machine constructed with pressure-bars and springs, whose ends rest in contact with springs in which are located the journals of the rolls, which work in grooves in the sides of the frame with flanged projections. The clamping bars are constructed with a projecting bolt, which passes through the two pieces which compose the sides of the frame, and are firmly held by a nut. The roll is formed with a slot through or nearly through its center, and is oval in form. The space or slot is filled with rubber, and the surface covered or wound with cord or wire, and the roll formed by rubber over the whole.

Claim.—1. The presser-bars A'' A^x, springs a'', screw *a*, in combination with journal-boxes *c''* in grooves A^4, substantially as and for the purpose described.

2. The clamping-arm B, when constructed and applied in the manner and for the purpose substantially as described.

3. The wringer-roll C, constructed upon the spindle or shaft E, having the open slot and wound with the cord or wire, in combination with the rubber *f* in the open slot, and the rubber forming the roller surface, substantially as described.

135,238.—*Bridling Loop-Buckle.*—JAMES H. MCGARRAH, Princeton, Ind., assignor to SETH WARD, same place.

The side bars are arched, forming loops, and a depending tongue is attached to the bridge connecting said arches.

Claim.—The breeching-loop, consisting of the frame D E F, with arched bows C C springing from the side bars to form the loops *s s*, and connected by the bridge A having a downward-projecting tongue, B, substantially as and for the purpose described.

135,239.—*Railroad-Car Heater.*—JOSEPH PORTER MICHAELS and LEWIS WALLS BROADWELL, Vienna, Austria, assignors to themselves and PHILIP SIDNEY POST, same place.

The exhaust steam and waste products of combustion from the locomotive are directed through pipes extending to the rear of the train, the heat being utilized to warm the cars. The automatic pipe-couplings are constructed to adapt themselves to the vibrating motion of the cars when under way.

Claim.—1. The combination of the bent escape-steam pipe B, the valve *b*, the smoke-box A, the valve *d*, and the pipe E.

2. The conical hollow buffer-coupling L L, composed of springs *k*, flexible covering *l*, and padded flanges *m*, for automatically making connection between the vehicles, essentially as described.

135,240.—*Traction-Locomotive.*—THOMAS S. MENNIS, Meadville, Pa., assignor of two-thirds his right to EVANS W. SHIPPEN, same place.

The endless track is so constructed that it will not bend inwardly, and extends around traction-wheels, which are arranged within a rocking-frame so that the endless track may better conform to the irregularity of the road-bed. Between the cog-wheels on the outside of the traction-wheel is a cog-wheel on the axle, which allows the traction-wheels to be thrown out of gear by means of a sliding sleeve upon the axle.

Claim.—1. The combination of an endless traversing-track, its supporting-wheels, and a frame rocking on a transverse axis, substantially as set forth, to enable the track to conform to undulations of surface.

2. The combination, with a traction-locomotive, of two endless traversing-tracks, arranged one in front of the other, and each rocking on an independent central transverse axis, substantially in the manner set forth, to allow either end of the machine independent conformity to the surface over which it passes.

3. The combination, in a traction-locomotive, of an endless track, wheels upon which it traverses, and spring-cogs to lock together the wheels and track, substantially as set forth.

4. The combination, in a traction-locomotive, of an endless traversing-track with driving-wheels constructed with both frictional surfaces and cog-gearing, substantially as set forth, to obtain increased driving-power and to prevent undue strain on the wheels by the track.

5. An endless traversing-track for traction-locomotives, constructed, substantially in the manner set forth, of articulated interlocking links *g g'*, flexible outwardly, to traverse the wheels, but rigid against inward thrusts, to secure a broad bearing-surface.

135,241.—*Stem Winding and Setting Watch.*—CHARLES ADOLPHE MONTANDON, Locle, Switzerland.

The setting mechanism is thrown into gear by means of a pin projecting through the center of the rim in such relation to the pendent ring that when the ring is turned down on either side it presses in the pin if the cap on the same side is open. A spring retracts the pin when the ring is turned up.

Claim.—1. The slide *a* projecting out through an opening in the center of the rim A and separate from but in such respect to the stem, as described, as to be operated upon, whichever case is open, by turning of the ring E, as herein shown and set forth.

2. In a stem winding and setting watch, the mode, substantially herein described, of operating the gear of the index-hands by a pin projecting through the center of the rim and actuated by the turning upon it of the pendent bow, whichever cap is open.

135,242.—*Lock-Nut.*—WILLIAM H. NICHOLS, East Hampton, Conn.

A nut is fitted on a square portion of the bolt, immediately below the threads. A second nut is screwed tight against the first, and a pin introduced between the nuts in corresponding grooves, made in the face of each, prevents their loosening.

Claim.—The dummy nut or washer held from turning upon the bolt by means of the shape of the orifice in the washer through which the bolt runs, and the real nut held from turning upon the washer by means of a pin or pins driven into a corresponding groove or grooves in the opposed faces of the nut and washer, the whole combined, constructed, and arranged to operate substantially as described, for the purpose set forth.

135,243.—*Machine for Pressing and Shaping Cigar-Fillers.*—CHARLES H. PALMER, New York, N. Y.

The bottom mold is divided longitudinally and provided with adjustable tip-cutting dies, one of the parts being pivoted. The "lever-knife," which carries the upper pressing and tip-cutting die, has a flattened hub to receive the action of a retaining-spring and a projection for disengaging a catch, which holds together the bottom mold.

Claim.—1. The combination, substantially as herein set forth, of a bottom mold for pressing and shaping cigar-fillers, and a movable or adjustable die or dies for cutting the tips.

2. A bottom mold for pressing and shaping cigar-fillers and cutting their tips, divided into two parts by a vertical plane passing longitudinally through between them.

3. A bottom mold for pressing and shaping cigar-fillers, divided into two parts by a vertical plane passing longitudinally through said mold, one or both parts being pivoted at one end and provided with adjustable tip-cutting dies.

4. A cigar-pressing, shaping, and tip-cutting lever-knife provided with a bearing or stud at one end, on which it may vibrate in the arc of a circle, a hub fitted to receive a retaining-spring and a lever projection to actuate a lever for disengaging the catch of the bottom mold.

5. The combination, substantially as herein set forth, of a bottom cigar-mold divided into two parts by a vertical plane passing longitudinally through said mold, provided with tip-cutting edges, and a lever-knife moving in the arc of a circle for pressing and shaping cigar-fillers, and provided with tip-cutting edges for cutting the tips of the same.

6. The combination, substantially as herein set forth, of a bottom cigar-mold divided into two parts, as hereinbefore described, a pressing, shaping, and tip-cutting lever-knife, a lever for disengaging the catch, and a catch for holding the parts of the mold together.

7. The combination, substantially as herein set forth of a cigar-shaping, pressing, and tip-cutting mold, a lever-knife provided with a bearing or stud, on which it may vibrate in the arc of a circle, a hub flattened to fit a retaining-spring, and a retaining-spring.

135,244.—*Wheel for Vehicles.*—NELSON PALMER, Athens, N. Y., assignor to DAVIS WHEEL AND PALMER FORK COMPANY, New York, N. Y.

Claim.—1. The spokes S S, held in their position at the center of the wheel by means of a single tube, C, on the axle-box and within the shell of the hub, and nut or nuts D, substantially as set forth.

2. A tube, C, passing through the center of a wheel within the shells G and G' on the axle-box, and receiving a clamping-plate, B', and nut D on one end, and a clamping-plate, B, with or without a nut on the other end, substantially as set forth.

3. In a vehicle-wheel, the combination of the axle-box A, tube C having clamping-plates B B', spokes S S, nuts D, E, and F, shells G G', lug L, spiral spring K, and recon-plate or nut N, all constructed and arranged substantially as set forth.

135,245.—*Brewing Beer and Ale.*—LOUIS PASTEUR, Paris, France.

The wort, prepared in the usual manner, while boiling hot is introduced into a closed tank and a current of carbonic-acid gas admitted, which drives out the air, after which water is sprayed over the tank to cool the contents.

Claim.—Subjecting the wort to a process for the expulsion of the air and cooling it off, substantially as and for the purposes set forth.

135,246.—*Metallic Shutter.*—WILLIAM HENRY RODDEN, Toronto, Canada.

The movable slats are operated by a tangent screw and wheel, H, connected with the vertical rod C. This mechanism also serves as an efficient lock to prevent turning the shutter slats from the outside.

Claim.—1. A shutter, composed of an angle iron or steel frame, A, eccentric movable metallic slats B B beat at the ends and pivoted there to the frame A on shouldered rivets, and wired at one edge to connect them with the upright or transverse working rod or bar C, substantially as herein specified.

2. In combination with the movable slats B B and working bar or rod C, the slat lock or fastener, composed of the screw G and worm-wheel H, with its crank-pin *g*, substantially as herein specified, and for the purpose set forth.

135,247.—*Truck.*—MARTIN L. SENDERLING, Jersey City, N. J.

A bent axle is provided, that the truck-frame may be carried lower? The frame has projections on its rear cross-bar, to prevent the cask from sliding, and the truck has chains, to which are attached cant-hooks, so arranged that the same may hold the cask securely.

Claim.—The combination of the cant-hooks H and one or more back-retainers, G, with the bent or cranked axle C, the shafts or runners B B, the main wheels D D, and the frame A, open in the rear of the truck, substantially as specified.

135,248.—*Attaching Hair-Spring to Watch-Balances.*—JACOB SHAW, Shelby, Ohio.

A small flanged sleeve, fitting tightly on the balance-staff, receives the inner end of the hair-spring around it, and the said hair-spring is held in place by a nut screwing down upon its coiled edge. This allows the sleeve and its attached spring to be adjusted upon the balance-staff, being held thereon simply by friction.

Claim.—The plate F and tube, and the nut G in combination with the spring D and the balance-staff E, substantially as shown and described, and for the purpose set forth.

135,249.—*Diamond-Gage.*—WARREN SHUMARD, Richmond, Ind.

The diamond, secured in the end of a graduated and adjustable rod, is operated by a swivel secured in a flexible-seated base.

Claim.—1. The base A having the elastic cushion C attached, substantially as described.

2. The rod H, as described, in combination with the swivel B and cap G and base A, as specified.

135,250.—*Tilting-Machine.*—GEORGE J. SMALE, Chicago, Ill.

The see-saw has seats which can be adjusted at different points on the bar for balancing different weights, and also can be placed so as to enable the person to sit astride the beam or sidewise.

Claim.—The seats C C, constructed substantially as described, and adjustably attached to the balancing-bar B, arranged upon a suitable support, substantially as and for the purposes specified.

135,251.—*Refrigerator.*—APOLOS B. SPENCER, Cleveland, Ohio.

The ice-box slides from side to side on rollers, and the waste water is conducted in a side trough to the waste-pipe.

Claim.—The box A, box B, false bottom E, the ice-box D, the three-part lid K, when the parts are constructed and arranged in relation to each other substantially as shown and described, and for the purpose set forth.

135,252.—*Process for Treating Lamp-Wick.*—ST. CLAIR F. SUTHERLAND, Baltimore, Md.

Claim.—Lamp-wicks prepared by the successive application thereto of asbestus and silicates of soda or potassa, as and for the purpose specified.

135,253.—*Picker for Looms.*—WILLIAM TAYLOR, Maynard, Mass., assignor of one-half his right to WILLIAM MAYNARD, same place.

A layer or layers of sheet metal incorporated with the layers of rawhide to strengthen the latter.

Claim.—1. A rawhide picker having its plug connected to its shank, as above described.

2. A rawhide picker having its spindle-sleeve connected to its shank, as above described.

135,254.—*School-Satchel.*—HENRY WALLS, St. Louis, Mo.

The satchel, constructed to swing on the back, contains a lunch-box above the book-box, and a receptacle for pens, pencils, and ink below.

Claim.—1. The arrangement of a metallic lunch-box, G, with a satchel, as herein shown and described, as and for the purpose set forth.

2. The bottom C of a satchel, hollowed or mortised, as herein shown and described, as and for the purpose set forth.

3. An improved school-satchel, consisting of lunch-box G, shoulder-straps E, outside rubber bands F, pen pencil-case C^1, inkstand C^2, lid H, turn-catches A^3, satchel-parts A, B, B^1, C, and D, all constructed to operate as and for the purpose set forth.

135,255.—*Car-Coupling.*—SAMUEL H. ZINK, Knoxmeater, Mo.

To a crank-shaft, which is attached to the top of the draw-head, is secured a pawl, which holds the link, the latter engaging with the opposite end of the other link when the draw-heads meet. The draw-heads are uncoupled by turning the crank, which raises the link to a level and releases the pawl.

Claim.—The combination of the draw-head A, tongue B with head *d*, shaft *a* with crank *b*, pawl C with crank *f*, and the spring D, all constructed and arranged substantially as and for the purposes herein set forth.

135,256.—*Machine for Sharpening Gin-Saws.*—JASPER M. BAILEY, Meridian, Miss.

Claim.—A file-holder, O, having a turned-up end, which is connected by link N with the crank M of a drive-wheel, as described, so as to give a reciprocating motion in the smallest space and without friction.

135,257.—*Vibrating Propeller for Vessels.*—DAVID BAINBRIDGE, Philadelphia, Pa.

A paddle-blade is directly connected to a bent or crank-shaft, whereby an oscillating and vibrating motion is imparted to the blade.

Claim.—The combination of the blade A and a shaft, D, to the central portion of the crank *b'* of which the blade is attached, as described.

135,258.—*Meat-Chopper.*—ISAAC BATTEY, Manchester, N. J.

By pawls and a shifting device the chopping-box is made to travel back and forth alternately. A double rack, having each set of teeth arranged alternately, causes the blade to strike in intermediate places at each movement of the box. The rectangular box is arranged to be turned horizontally, to give a cross-cut to the meat.

Claim.—1. The combination of the vertically-moving chopping-blade, horizontally-moving chopping box, double reversed ratchet-bar, pawl-slide, pawls, and pawl-shifting plate, the pawl-slide being operated by the crank-shaft, and the pawl-shifter being worked by the ratchet-bar, all substantially as specified.

2. The combination, with the vertically-moving chopping-blade, of a square horizontally-moving chopping box, arranged to turn horizontally to present the meat for cross chopping, substantially as specified.

3. The relative arrangement of the two sets of teeth of the ratchet bar to cause the blade to strike, in one movement of the box, between the cuts made during the reverse movement, substantially as specified.

135,259.—*Method of Burnishing Boot and Shoe Heels by Machinery.*—JOSHUA BRADLEY, Lynn, Mass., assignor to TAPLEY HEEL-BURNISHING-MACHINE ASSOCIATION, same place.

The burnisher either revolves entirely around the heel or the heel entirely around the burnisher.

Claim.—The mode herein specified of burnishing boot and shoe heels by machinery—that is to say, giving the burnishing-tool or the heel to be burnished, or both, such a vibratory movement that at each vibration of either or both the tool shall be caused to pass around the whole or nearly the whole curved portion of the heel while maintained in yielding-pressure contact therewith, substantially as described.

135,260.—*Molasses Jug or Pitcher.*—MARK J. BENNETT, Braddocks, Pa.

A molasses jug or pitcher has an extended or raised top within the cap, through which the syrup passes when in use. The drip from the top is covered by the cap, and by the shoulders in the extended top is conducted to the body of the pitcher.

Claim.—The formation of the glass or earthenware body of the jug or pitcher with a spout or mouth, a shoulder, and a notch or its equivalent, substantially as and for the purposes described.

135,261.—*Washing-Machine.*—SAMUEL BERRY, New York, N. Y.

A washing-machine constructed with its rubber on its under surface covered with brushes of bristles and the bottom of the tub with corrugations. To the rubber is attached an upright shaft, and on its upper end a double or cross handle by which motion is given to the rubber.

Claim.—The corrugated bottom B, combined with a circular brush, C, operated in a close box, A C, as and for the purpose described.

135,262.—*Car-Coupling Attachment.*—WILLIAM G. BROWN and JAMES W. JENKINS, Monmouth, Me.

Means for guiding the link. A bell has downwardly-projecting arms, which receive the link of the approaching car. The

ball itself guides the link of the draw-head to which it is attached, operated by means of a spring-shaft extending to each side of the car, through suitable connecting-arms.

Claim.—The combination of the ball E, provided with downwardly-inclined arms M, the side arms F, connecting-bars G, levers H, shafts I, arms J, springs K, and levers L with each other to adapt them to be connected with a car-coupling, substantially as herein shown and described, and for the purpose set forth.

135,263.—*Mechanical Movement.*—CHARLES W. CARR, Paola, Kans.

Reciprocating motion is imparted to the branched connecting-rod by means of the cam provided with tappets which strike the rod in their revolutions.

Claim.—The combination of a cam-wheel, B, with three, five, or more tappets or leaves, with a branched connecting-rod having two toes, E F, the tappets and toes being relatively arranged, substantially as specified.

135,264.—*Cultivator.*—AMOS B. COLVER and JOHN PRIEST, Albany, Oregon.

The cultivator-frame is raised both front and rear at the same time by means of lever L, link O, and lever D. The frame is held in its elevated position by the latches R.

Claim.—1. The combination, with the cultivator, the truck, and the caster, of the housings, the levers D L, standards F K N, the connecting-link O, the pins P, and the adjustable collar Q, substantially as specified.

2. The combination of the hooks R, rods T, and lever S with the truck and cultivator, substantially as specified.

135,265.—*Device for Feeding Stoves.*—BERNARD CONNELLY, Williamsburg, N. Y.

The cylindrical part of the scuttle is inserted in the hole in the top of the stove, and the locking-pin is withdrawn from the chain, which allows the hinged part of the bottom to drop into position.

Claim.—An improved coal-scuttle, formed of the body A made conical in its upper part, cylindrical in its lower part, and provided with an outwardly-projecting flange, *a'*, the cover B made in two parts, one stationary and the other hinged; the bottom C made in two parts, one stationary and inclined and the other hinged; and the chain D, said parts being constructed and operating in connection with each other, substantially as herein shown and described.

135,266.—*Leather-Cutting Machine.*—RICHARD CROCKER, Marshalltown, Iowa.

An adjustable frame, which may be detached from the knives and so supported that a portion of a wide piece of leather may project while the remainder is being cut.

Claim.—1. In a strap-cutting machine, the annular cutters C having their surfaces centrally serrated to prevent their turning on the shaft D, substantially as specified.

2. The yoke G secured to the standard E^1, and constructed with the depending plate E^2 supporting one end of the cutter-shaft D and the combs I, substantially as specified.

3. The grooved guiding-roller L, in combination with the adjustable frame N, the frame A, and the parallel rotating knives, substantially as specified.

135,267.—*Bottle-Stopper.*—DAVID M. CUMINGS, Newburyport, Mass.

The metallic center-pin of the stopper is provided with a flange, through holes in which the bent portion of a hinged yoke passes and is secured by the bent arm of a hinged lever, which is swung up and crowded over it. An elastic covering surrounds the entire stopper on all sides except the bottom.

Claim.—The combination, with an elastic stopper, of a flanged pin, C, a yoke, E, passing through the part *c* of said pin, a fastening-lever, H *e*, and rings F G, as shown and described.

135,268.—*Animal-Trap.*—FRANK FLORA, Pierce, Ohio.

Rabbeted jaws instead of the usual plain or toothed jaws; and a single two-piece on the treadle catching in the rabbet.

Claim.—1. The jaws B, made with a rabbet or flange upon their inner sides, substantially as herein shown and described.

2. The toe *d'* formed upon the shank of the bait-pan D to catch upon the jaw B in setting the trap, substantially as herein shown and described.

135,269.—*Pump-Handle.*—ISAAC N. FRAZER, Elmer, N. J.

The lever or handle is made of two pieces joined together. To one of the parts a fulcrum-piece is attached for connecting the handle to the bracket of a pump. The outer end of the other piece is designed for connection to the piston-rod. This construction, gives a drawing motion to the handle and is a substitute for a rigid lever.

Claim.—A bifurcated pump-handle, or lever, composed of the parts A B C, substantially in the manner and for the purpose set forth.

135,270.—*Lock for Sewing-Machines.*—EDWARD L. GAYLORD, Bridgeport, Conn.

A fixed bar, beveled at its lower end, projects through the case of the lock, and has combined with it a pivoted hook-bolt operated by a spring. With this construction there is no need of a second hole in the striker-plate to receive a steady-pin to prevent the case from sliding upon the table.

Claim.—The fixed plate or bar B beveled at its lower end, which projects through the case A of the lock, in combination with the hook-bolt C pivoted at *c'*, and the spring D, all arranged to operate as specified.

135,271.—*Flower-Pot.*—MARCUS B. GOULD, Buffalo, N. Y., assignor to himself and SAMUEL D. OAKE, same place.

A flower-pot has a base water-reservoir, and is provided at the top with a cap, and a tube which extends downward and into the reservoir. Between the cap and the reservoir is interposed a piece upon which the cap and tube are supported. The bottom portion of the tube is provided with holes, through which the water passes into the tube, and thus the plants are watered by capillary attraction.

Claim.—The combination, with the base water-reservoir A and cap and bearing B B', of the flower-pot C provided with conducting-tube C', which extends downward into the reservoir, substantially as herein before set forth.

135,272.—*Card-Rack.*—JEFFERSON J. GRAY, Boston, Mass.

The vertical ribs of a frame have saw-slits curved so as to bend the card when inserted therein and enable its spring to hold it in place.

Claim.—The combination of the curved grooves *s s s* or *s s s s*, with the upright pieces B B' or C C' provided with suitable end pieces A A', substantially in the manner described, as and for the purposes set forth.

135,273.—*Cooking-Stove.*—WILLIAM A. GREENE, Medford, Mass.

The flues for the products of combustion are arranged to encompass the auxiliary oven. The space occupied by the outer end of the flue is taken out of one or both ovens. The wire sifter has a firm frame and is supported under the grate upon a central bar, on which it may be vibrated.

Claim.—1. The flue K, consisting of the portions 8, 9, 10, 11, and 12, constructed and arranged substantially in the manner and for the purpose described.

2. A horizontal flue, formed at and occupying a portion of the back of an oven, substantially as and for the purpose described.

3. The sifter T, composed of wire-netting, and provided with a handle, A, and metallic bands *s*, in combination with the bar U and side plates R R', substantially as described.

135,274.—*Extension Table.*—MATHIAS HOFMAN, Darlington, Wis.

The table-top is made adjustable vertically, and connected by toggle-levers with the two extension frames. Over the end of each frame are rigidly attached leaves, and to these leaves, on each side of the table, double leaves are hinged. When the table is extended, the top rests on the frame between the two rigidly-attached leaves; and when not extended it rests on said leaves.

Claim.—1. The vertically-adjustable table-top A connected by toggle-levers B B with the extension frames C C, and combined with the extension and supporting plates F F, as specified.

2. The combination of the table-top A, jointed toggles B B, the plates F F, and the jointed leaves G G having extensions *d d*, as and for the purpose described.

135,275.—*Paper-Bag Machine.*—TRUMAN HOTCHKISS, Stratford, Conn.

The paper is fed by rolls from under the delivery-table over the recess of the folding-table, where it is held on one side by a spring and on the other by a gravitating bar, when a bag-length is cut by the shears. A right-angular bar, rocked in and out of a vat, applies paste to one edge and part of the rear end. The rectangular former descending, carries the blank into the forming-box, causing its sides to stand vertically, that which dragged from under the bar being longest to form the overlap or seam. The folding-plate moves forward to lay one lap, followed by the opposite combined plate and roller, which lays the other flap and completes a square tube. These folding devices are so connected by levers that one shall move in advance of the other, and the last folder plays under the pasting-table. The side-end folders are reciprocated successively to lay the side folds of the bag end, the pasted one first, over which partially-completed end a paste-roll, vibrated out of a paste-vat, lays a line of paste on the inside surfaces of the top and bottom end folds, the latter being protected by a supporting-lip. The side folders retreating, the upper end folder descends and lays its fold, and, retreating, is followed by the lower-end folder, which completes the bottom. The former now rises, and, as a new feed is accomplished, its interior piston ejects the bag from the former onto a table, from which it is fed by an apron against the upper of a pair of rolls, where a vibrating bar breaks down its upper edge and forces the lower corner of the bottom into the bite of said rolls, which press and deliver it flat.

Claim.—1. The combination, with the recessed table, paper-holding bar, and spring, of the pasting-bars U V, substantially as and for the purpose set forth.

2. The combination with former, recessed table, and end-folders, of the pasting-roller *h'*, substantially as and for the purpose specified.

3. The combination, with the former and with folders g^1 g^1 that do not come quite together, of the pasting-roll *h'*, arranged as described on a spring-bar, *j*, which is rotated by a crank, *l'*, so as to lift said roll to its maximum height, and then thrust it forward between the ends of said folders, as and for the purpose set forth.

4. The combination of pasting device *h' j'* operated by crank *l'*, of the lip g^3 arranged on the plate *r'*, as described, to hold the lower part g^1 of bag, so as to receive the paste from said roll on its downward movement.

5. The combination of plates N *y*, roller *g*, connecting-bar *x*, and levers *w*, arranged as and for the purpose specified.

6. The folding-roller carrying-plate *y*, arranged under the pasting-plate C, substantially as and for the purpose described.

7. The discharger having toothed bar *v* combined with pinions *w' x'*, and toothed bar *v'*, arranged substantially as and for the purpose set forth.

135,276.—*Combined Horse Rake and Tedder.*—GEORGE L. IVES, Rome, N. Y.

A tedder-shaft, by means of swiveled bearings and rearwardly-projecting arms, is attached to the axle of a sulky-rake centrally and at each end, and operated by beveled pinions.

Claim.—1. The combination, with a tedder-shaft and with bars S' S' for connecting the same with the truck or an intermediate frame, of the swiveled bearings W, substantially as shown and described.

2. The combination, with the hay-rake truck, of the attaching devices for the tedder, consisting of the slotted bearing-boxes T for the shaft U, and the crank-arms P, wrists Q, and binding-nuts R, substantially as specified.

135,277.—*Street-Car.*—WILLIAM T. JENKS, Toledo, Ohio.

The lever is connected with the chain-shaft by loose rod or bar. To allow this rod to pass, the wheel of the body is cut away a sufficient space to allow the body to be reversed without disarranging the bar or interfering with the proper working of the brake-lever.

Claim.—A spring-lever, H, having foot-piece I on platform and stop-pin J at the back end, combined with a car pivoted to its truck, as described, to enable driver to lock or unlock the said car and truck, and then turn the former on the latter by means of his horses, as set forth.

135,278.—*Base-Burning Fire-Place Heater.*—WILLIAM MAGILL, Port Deposit, Md.

An induction-draft flue is arranged to cover the top or hood of the magazine, whence the draft-air descends through a flue to the space beneath the grate. An annular smoke-flue is arranged around the magazine, with a ring-damper and direct-draft damper.

Claim.—1. In a base-burning stove, an induction flue or space, D, covering and surrounding the top or hood C of the magazine and inclosed between said hood and the top of the stove-case E, and a diving-flue to carry air from said space D to the bottom of the stove beneath the grate, for the purpose set forth.

2. Combined with the cold-air flue or space D, as described, the annular smoke-flue H, above the fire-chamber and around the front of the stove, as set forth.

3. The combination and arrangement of the ring-damper G in the annular flue H and the angle-damper valve J, substantially as set forth.

4. In combination with the ring-damper G and the flues *d* and H, arranged as set forth, the angle-damper, arranged to close the flue *d* when the orifice is opened, as set forth.

135,279.—*Bedstead-Fastening.*—JOSEPH F. MANCHA, Ridgely, Md.

A casting to be attached to the post, open at the side and top, has a slot in its lower end, and shoulders upon the sides of its open upper end. A casting with shoulders upon its side edges, and a casting having a downwardly-projecting flange, are attached to the rail, which engages with the shoulder and slot on the casting attached to the post.

Claim.—An improved bedstead-fastening, formed of the casting C having a slot, c^3, formed in its closed lower end, and shoulders c^2 formed upon the upper ends of the sides of its open upper end, and whether made in one or two pieces, the casting D having shoulders d^2 formed upon its side edges, and the casting F having a downwardly-projecting flange, *e'*, formed upon its forward edge, said parts being constructed substantially as shown herein and described, to adapt them to operate as set forth.

135,280.—*Fire-Kindler.*—JOHN Y. MARKS, Rochester, Pa.

Pulverized cannel coal, melted resin, sawdust, alcohol.

Claim.—A fire-kindler composed of the ingredients substantially herein described.

135,281.—*Rotary Churn.*—WILSON MCCLURE, Sinking Spring, Ohio.

The legs of the churn are secured to its sides by rods, with nuts thereon, passing through the end pieces, and which may be tightened or relaxed, the legs reaching the top and tending outwardly. The upper bolt passes through a slot in the leg, which admits of vertical adaptation when the sides of the churn move by swelling or shrinkage.

Claim.—1. The spring posts or legs B and rods C, constructed and arranged in connection with the churn-box A, substantially as herein shown and described, and for the purposes set forth.

2. The dasher formed by the combination of the shaft D, radial arms E, and weighted round bars F G with each other, substantially as herein shown and described, and for the purposes set forth.

135,282.—*Rocking-Chair Fan.*—ALOIS NISSLE and JOSEF SCHÖBERL, New York, N. Y.

An auxiliary rocker is pivoted to one of the chair-rockers, and its rear portion heavily weighted. The forward end connects with an endless cord, revolving a friction-roller upon chair-rocker and the pulley upon the fan-shaft.

Claim.—The combination of the weighted lever B, endless cord C, and rotary fan D, friction-rollers *b*, and pulley *d*, with a rocking-chair, for operation substantially in manner herein shown and described.

135,283.—*Angling-Reel.*—CHARLES L. NOE, Bergen Point, N. J.

A fan-wheel connects with the reel gearing to prevent the line overrunning on long casts.

Claim.—The combination, with a fishing-reel, of a fan-regulator, T, and actuating devices connecting it with the reel-actuating gear, substantially as specified.

135,284.—*Milk-Cooler.*—FRANK S. OAKES, Cattaraugus, N. Y.

The bottom of the milk-cooler is elevated so as to form a chamber, which is provided with two water-conducting pipes arranged within the same in different horizontal planes, so that the coldest water and the warmest stratum of milk and the warmest water and coldest stratum of milk are brought into local relation, respectively.

Claim.—1. The arrangement, in a milk-receiving vessel or cooler, A, of two or more water-conducting pipes or their equivalents in different horizontal planes, as herein described, whereby the coolest water and the warmest stratum of milk and the warmest water and coolest stratum of milk are respectively brought into the local relation specified.

2. The pipe *i* and conduit arranged within the partition *h* of the vessel A, as and for the purpose set forth.

135,285.—*Hose-Bridge.*—GILBERT J. ORR and CHARLES E. GUILDERSLEVE, New York, N. Y.

The bridge is furnished beneath its central portion with a screw-clamp, by which means it is securely attached to the surface of the street-rail, and displacement by the passing car is thus prevented, while the hose is protected from injury.

Claim.—The rigid arm *C c'*, hinged arm D *d'*, pivoted open link or U-bar E, and clamping-screw F, in combination with the bridge B, substantially as herein shown and described, and for the purpose set forth.

135,286.—*Furniture-Caster.*—JOHN PARRY, Manchester, Great Britain.

The pivoted bracket of an ordinary furniture-caster, which may be of divers forms, is provided with a grooved wheel or roller journaled in a fork or upward projection of the bracket, and arranged to bear usually at an angle against the under side of a disk or plate on the socket, and forming a part of the caster. An annular rib on this socket, projecting downward, engages with the grooved wheel, thereby relieving the central pivot from lateral strain and strengthening the device.

Claim.—The combination, in a caster, of a grooved wheel on the bracket and an annular rib on the socket, adapted to the wheel as set forth.

135,287.—*Carriages.*—THOMAS B. PATTEN, West Amesbury, Mass.

The standards are constructed with branches on their upper and lower ends, which are firmly secured to braces in the top and bottom of the carriage.

Claim.—1. The means described for holding the rear standards A A of a buggy to its top and body, consisting of a branch and plate connected by suitable fastenings, as described.

2. The means described for holding the front standard of a buggy to its top and body, consisting of one plate bolted to a branch at top, and another plate bolted to a foot extending through frame C at bottom, as described.

135,288.—*Mechanical Movement for Converting Oscillating into Rotary Motion.*—JEFFERSON PEABODY, Bangor, Me.

Both ends of the oscillating beam are connected with the wheel by means of belts which pass over the same side of said wheel, so that whichever end of the beam is depressed it will revolve the wheel in the same direction.

Claim.—The combination of the lever A and string, belt, or chain C with the wheel B and roller *g*, when the parts are so arranged that the ends of the lever connect, by parts of said spring, with the same side of the wheel B, to operate as set forth.

135,289.—*Plow.*—JOSEPH W. REED, Careyville, Mo.

Claim.—The perpendicular standard E attached at one end to beam A, and at the other to land-side F, combined with a mold-board, J, and twisted bar K, all arranged and applied as and for the purpose described.

135,290.—*Cotton-Planter.*—WILLIAM E. RHODES, Darlington Court-House, S. C.

A hopper, on a pair of running-wheels, has one outlet at the bottom, and another at the rear. The former having a dropping-wheel operating in it, the latter permitting a flow, regulated only by a sliding panel, into a guiding-spout.

Claim.—A hopper having aperture *p'*, adjustable slide T, and spout U at the rear thereof, and provided with revolving fingers S on the inside, as described, and for the purpose set forth.

135,291.—*Hay and Cotton Press.*—PETER A. SHEARER, Morristown, Tenn.

Claim.—1. The combination of the plate *p p*, levers D D, combined rollers E E, pulleys E' E', groove *y*, double track F, ropes G G, shaft I, and the false head-block B, all arranged and operating substantially as shown and described.

2. The false head-block B, arranged and operating substantially as described.

3. The roller-pulleys E, in combination with the guide-pulleys E', arranged and operating as and for the purposes described.

4. The combination of the iron plates *p p* with the levers D D, substantially as described.

5. The combination of iron plates *p p*, levers D D, roller-pulleys E E, guide-pulleys E' E', double track F, and groove *y*, substantially as shown and described.

6. The ropes G G attached to staples K on the shaft I, and passing over pulleys E E and between guide-pulleys E' E' in grooves *y* toward and secured to staples H, substantially as shown and described.

135,292.—*Glass-Press.*—ALBERT M. SMITH, Brooklyn, N. Y.

The material in a plastic state is laid across the die, and the necessary quantity for the button, center stone, &c., is first cut off

by the slotted ring, thus finishing the article on the edges. It is then completed by the descent of the plunger.

Claim.—The combination of the plunger A, spring D, and slotted ring C with the die B for first cutting off the required amount of glass, and then pressing it into the die, by which the article is formed and finished on the edge at one operation, substantially as herein set forth.

135,293.—*Device for Transmitting Motive Power.*—ROSWELL T. SMITH, Nashua N. H., assignor to himself, J. G. BLUNT, J. K. PALMER, and WILLIAM EARL, same place.

A device for transmitting motive power in any desired direction and to any position by means of a system of shafts and gearing in which stirrups are so adjusted as to allow vertical and horizontal play.

Claim.—1. The shaft *k* and spur-wheel *b'*, supported by a standard, A, as means for transmitting rotary motion to a spur-wheel, *c*, on a shaft, *d*, which latter has its bearings in a horizontally-articulating stirrup, D', and has pivoted to it the stirrup D of a vertically-vibrating arm, G, substantially as described.

2. The revolving balanced shaft G', applied to articulate or swing on a standard, A, the shaft K, and their intermediate gear-wheels, combined substantially as and for the purpose described.

3. The combination of the vertical shaft A, the horizontally and vertically movable shaft G', the pendent swinging rod K, and gear-wheels universally connecting the same, substantially as described.

135,294.—*Hand-Planter.*—SIDNEY S. STULTS, Cedar Bluffs, Neb.

A strip of wood, reaching from the hand to the ground, has a handle at the top, a hopper at the back, with a curved seed-slide reciprocating therein and below it, a spout in front, and one of a pair of jaws at the bottom. The other jaw is at the bottom of a short stem to which the slide is attached. This stem is pivoted to the piece described, the jaws being held closed by a curved spring at the back of the stem. In front of the latter is an arm curving forward to the ground with a foot-piece at the bottom. The implement, used like a walking-stick, having been thrust into the ground, and its top pressed forward, pressure on the foot-piece opens the jaws at the time they are being withdrawn.

Claim.—The combination of the foot G, lever J', spring H, and staff A, with the jaws A' B' pivoted together at K, as shown and described.

135,295.—*Bearing for Spindles.*—JOSEPH TAYLOR, Jr., and JAMES PEART, Sheffield, England.

Claim.—1. The combination, with an ordinary solid bored or bushed bearing, of an adjustable bush of hard metal, made conical at one end, for maintaining in position a revolving shaft or spindle, substantially as hereinbefore described, and illustrated by our drawing.

2. The combination of the oil chamber, oil-cup, and aperture *h*, with the said adjustable conical bush, as and for the purpose hereinbefore described, and illustrated by our drawing.

135,296.—*Inkstand.*—JAMES B. THURSTON and FRANK M. WEST, New York, N. Y.

The bottles are suspended in a disk which is spring-seated, and revolves on a central post in frictional contact with the cover, being locked in position coincident with the opening in the cover by a simple detent.

Claim.—1. The ink-receptacles E, suspended by their upper edges from the perforated disk C, which is mounted on the post B so as to rotate in frictional contact with or directly beneath the cover D, as described.

2. The spring *a* and the locking projection *d* arranged in combination with the swiveled disk C of the multiple inkstand, as set forth.

135,297.—*Clutch Mechanism for Treadles for Sewing-Machines.*—JOSIAH TISDALE, Norwood, Mass., assignor to himself and JOHN PUTNAM, same place.

Rotating the fly-wheel by means of clutches connected to the reciprocating levers of the treadle.

Claim.—1. The gripers D E, the springs *l l*, and the jointed arm parts A f A f, constructed, arranged, and combined together and applied to a shaft-flanged disk and treadle, in manner and by means substantially as described.

2. The stationary shouldered arbor, the band-wheel, the flanged disk, the jointed arms F G, the gripers D E, and springs *l l*, arranged, constructed, and combined substantially in manner and to operate as shown and described.

135,298.—*Furnace for Burning Coal-Dust, Small Fuel, &c.*—JEAN TISSOT, Paris, France.

Claim.—1. The combination, with the bridge of a furnace, of an air-chamber, and openings arranged to permit the air to pass out at the rear side of the bridge, as set forth.

2. The combination of the air-passage with its register R, the ash-pit C, grate G, bridge-walls A and A', hot air chamber F with its perforations, and the register R', all substantially as described.

3. The combination, substantially as described, of the chamber D, with a furnace into which air is forced for the support of combustion.

135,299.—*Tug-Fastening.*—JONATHAN TURLEY, Mitchell, Ind.

A suitable hook is secured to the inside of a trace near its rear, and is attached to a socket-loop on the end of the whiffletree. The trace is thus made to extend beyond and cover the end of the whiffletree.

Claim.—The combination of hook on inside and near rear end of trace with loop-sleeve F G arranged on end of whiffletree, as and for the purpose described.

135,300.—*Railroad Track.*—DANIEL S. TUTHILL, Newburg, N. Y.

A wheel with an independent tread is provided to co-operate with the short piece of rail at the joint to relieve the pounding at the joint by temporarily transferring the weight to said short rail at that point.

Claim.—The combination, with the main rails A, of the short rails C at the joints, and car-wheels with treads adapted to work on said short rails, substantially in the manner described.

135,301.—*Corn-Coverer.*—JOHN TWEEDY, Vernon, Ind.

A clod mover of a triangular or V shape, loosely attached to the rear part of a cultivator-plow so as to adjust itself to the shape of the ridge and removes clods or other obstructions that might prevent corn from coming up.

Claim.—1. The clod-mover I, in combination with the semi-circular or arched mold-board H and plows G, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the long staples J, rod K, and guide or keeper L, with the clod-mover I, semicircular or arched mold-board H, and beam A, substantially as herein shown and described, and for the purposes set forth.

135,302.—*Lumber-Chute.*—WILLIAM VAN HAME and JAMES A. WAKEFIELD, Chippewa Falls, Wis.

Water is admitted beneath the hinged pieces through the passage from the flume. By this means the dam is elevated to the required height, the apron and finger-bars forming, with the bed-piece, a chute continuous with the slope of the dam, and merging into the bed of the stream. An outlet is provided for the lowering of the dam.

Claim.—1. The combination and arrangement of the bed A, piers B, dam C, gate D E, chamber H, dome K, passage I L, and gates therefor, all substantially as specified.

2. The apron M hinged to the bed-piece, and the bar P hinged to the apron, substantially as specified.

135,303.—*Ironing-Table.*—ABRAHAM WECHSLER, New York, N. Y.

An ironing board or table arranged at or near its center, with an adjustable or movable board, which is temporarily attached to it by tenons and staples, to be removed at pleasure, and the space occupied by a cover formed to hold and give shape to a shirt, &c., which is supported at its end by a frame passing under it and attached to a lever working under the table, by which it is moved in and out, and is provided on its outer end with uprights for holding the article to be ironed. The table is also provided with a hinged bar attached near its center, which can be passed over and firmly hold the shirt while being ironed, all of which can be removed and the table restored to an ordinary form for common use.

Claim.—1. An ironing-table provided with the movable top C, ironing-board D, and slide F, substantially as described.

2. The bar E, applied in conjunction with the subject-matter of the foregoing clause, as and for the purposes described.

3. The lever G, combined with the sliding frame F and uprights *g* to operate the same, as specified.

135,304.—*Turn-Table.*—WILLIAM WHARTON, Jr., Philadelphia, Pa.

The car is reversed by a semi-revolution of the table and run out upon a different track, leaving the table in position for future use without readjustment.

Claim.—The turn-table with two tracks, the rails of which are arranged side by side, in combination with the tracks of a permanent way, all substantially as described.

135,305.—*Tobacco-Topper.*—JOHN S. ACKLEY and DAVID S. RANNEY, Modus, Conn.

The cot is provided with an opening on the upper side for the knuckle of the thumb, and its interior is provided with a suitable lining.

Claim.—The combination of the elastic cot or stall A and the knife-blade B, constructed and arranged substantially as and for the purposes herein set forth.

135,306.—*Corn-Sheller.*—AUGUSTUS ADAMS, Sandwich, Ill.

The grate or screen is inclined from the side of the box toward the picker-wheel, causing the cobs to press against the same sufficiently to be carried forward and thrown out of the discharge-opening, the shelled corn falling through the grate into a suitable receptacle.

Claim.—1. The inclined grate or screen D placed between the picker-wheel and side of the corn-sheller, substantially as described, for the purpose specified.

2. The inclined grate or screen D in combination with the picker and feed wheels of a corn-sheller, substantially as described, for the purpose specified.

3. The guide block or plate G in combination with the inclined grate or screen to permit the discharge of the cobs from the machine, substantially as described.

4. The discharge-opening E A, the inclined grate or screen D, and the guide block or plate G in combination with an ordinary picker-wheel corn-sheller, substantially as described, for the purposes specified.

135,307.—*Potato-Digger.*—HANSON G. BARROWS, Benton, Me.

A potato-digger constructed of the ordinary shovel, with a series of parallel fingers projecting backward from the side of the sole or base of the standard in an oblique horizontal direction for depositing the potatoes free from the earth.

Claim.—The combination, with the standard E and shovel or excavating plow H, of a series of parallel fingers or tines, I, extending horizontally in an oblique direction from the sides of the standard, as and for the purpose specified.

135,308.—*Shoemaker's Edge-Plane.*—FREDERICK F. BAUMANN, Cambridge, Mass.

The adjustable gage admits of the use of the same tool in trimming and burnishing soles of varying thicknesses.

Claim.—The movable and adjustable lip or gage *n o*, substantially as described, in combination with the fixed lip or gage *m*, and the cutting or burnishing edge or face over which the adjustable gage moves.

135,309.—*Barrel-Truck.*—VERNON BELL, Minneapolis, Minn.

In letting down or taking up out of a cellar, or moving up or down any other steep grade, the truck is manipulated by means of the rope, and when this rope is drawn tightly, the guide through which said rope passes prevents the truck from tipping and causes it to run in line with the rope.

Claim.—1. In combination with a barrel-truck, the levers E E pivoted to the truck-frame, and having hooks *a a* formed upon their outer ends, and operated by means of the springs *d d*, substantially as and for the purposes herein set forth.

2. The combination of the frame C D D', axle A, wheels B B, swinging or pivoted levers E E, with hooks *a a*, springs *d d*, stationary hooks G, and swinging hook H, all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. In combination with the barrel-truck herein described, the arrangement of the rope *n* and guide *f*, substantially as and for the purposes herein set forth.

4. The combination of the wheels B B with toothed flanges *s s*, axle A, arms *f f*, pawls A A, rod *i*, and spring *h*, all substantially as and for the purposes herein set forth.

5. In combination with the pawls A A and rod *i*, the cord *m* and lever I, substantially as and for the purposes herein set forth.

135,310.—*Leather-Dressing Compound.*—FREDERICK G. BELL, New York, assignor to SAMUEL E. COX, Haverstraw, N. Y.

Castile soap, twenty pounds; common soda, sixteen pounds; bayberry tallow, one-half pound; carbonate of ammonia, one-half pound; borax, one-half pound; gum-tragacanth, one-half pound; lamp-black, two pounds; neatsfoot-oil, two gallons; water, eighteen gallons.

Claim.—The process of preparing dressing for leather, substantially as described.

135,311.—*Rotary Steam-Engine.*—JOSEPH B. BENNETT, Brooklyn, N. Y.

Circular springs are arranged in the recessed ends of the revolving cylinder to force out the pistons. These are provided with a small hole, which is covered by springs and constitutes a trap for steam to assist the circular springs in forcing out the pistons. Packing is arranged in the inner face of the hub of the covers to prevent the oil being blown from the shaft. The steam is admitted simultaneously behind two pistons on opposite ends of the abutments.

Claim.—1. The combination of the casing A having ports *b b'* with the inner revolving cylinder B provided with pistons D and circular springs E, constructed and arranged substantially as set forth.

2. The pistons D provided with springs *d* and holes *d'*, in combination with cylinder B, arranged as and for the purpose set forth.

3. The combination of the cover having hub provided with packing *e* with the cylinder B and casing A, constructed and arranged as and for the purpose described.

4. The combination of the casing A, steam-chest F, and valve G with the revolving cylinder B, pistons D D', and springs E, all constructed and arranged as shown, and for the purpose set forth.

5. The circular springs E arranged to operate the pistons D, in the manner and for the purpose set forth.

135,312.—*Nail-Separating Machine.*—BENJAMIN REVELANDER, Boston, Mass.

The nails are thrown into a hopper, where a vertically-reciprocating lifter with an inclined end carries them upward singly, when they fall into a second hopper, from which they are raised in like manner and fed separately to an inclined chute, down which they slide against a gage, where they are struck by a slide and made to turn onto their flat sides in order to pass under the gage. From this gage they slide down and rest against a bar, where a starter strikes their heads, sending them from the machine head foremost.

Claim.—1. In combination with the box or hopper *b*, the vertical lifter *d*, having the inclined top for lifting and discharging the blanks, and the agitator *l* operated by it, substantially as shown and described.

2. In combination with the box or hopper *b* and lifter *d*, the chamber *k* and lifter *n*, substantially as shown and described.

3. In combination with a chamber for entering and a lifter for raising the blanks one by one and discharging them, the inclined chute and the bar *u*, against which it next strikes.

4. In combination with the chute *o* and bar *u*, the starter-bar *x*, operating substantially as described.

5. In combination with the chute *o*, the gage-plate *o'* and slide *f'*, operating substantially as shown and described.

6. The combination of a blank-containing box or receptacle, mechanism for lifting, agitating, and for discharging blanks therefrom one by one, and mechanism for insuring the delivery of the blanks one by one, right face up, and head first, all substantially as shown and described.

135,313.—*Drilling-Machine.*—PARMITT BLAISDELL, Worcester, Mass.

The drill-shaft revolves in a movable bearing or sleeve, which is connected by a chain to a weight that balances their weight. The drill is raised and lowered by a pinion acting on a rack on the drill-shaft bearing. The worm-wheel on the shaft, with the pinion, is turned by a screw in a sliding bearing, which is thrown in or out of gear by a cam.

Claim.—1. The combination, with the spindle and its movable bearing in an upright drill, of a balancing device or mechanism, whereby, when the drill and its bearing and the drill-head are raised and lowered, the balance of the drill will remain the same, for the purposes stated.

2. The combination, with the frame A, spindle and spindle-bearing D C, of the balance-weight B and cord or chain *a*, substantially as and for the purposes set forth.

3. The combination, with drill-head F and drill bearing-piece C, of shafts *f* and *m* and gears *e*, *g*, and *n*, substantially as and for the purposes set forth.

4. The combination, with shaft *m*, worm *n*, and their frame, of handle S and cam *t*, as and for the purposes set forth.

135,314.—*Die-Plate.*—FRANCIS D. BLISS, New Bedford, Mass., assignor to himself and DARIUS P. GARDNER, same place.

These dies are constructed with flat faces on their peripheries so that two of the cutting-corners can be ground upon an ordinary grindstone at one time. The carriers that hold the dies are connected by means of screws, which can be made to adjust the carriers out of parallelism to each other for throwing the cutting-corners alternately nearer together on each side as they in turn out forward and backward upon the screw.

Claim.—1. The combination of the two die-plates with the two independent carriers, connected by the screw-bolts *f*, and arranged to be adjustable with relation to each other, substantially as and for the purposes specified.

2. The polygonal die-plates A and B, constructed substantially as described, with flat faces intervening between the tapped recesses, as and for the purposes specified.

135,315.—*Transparent-Slate Frame.*—WILLIAM F. BOUCHER, Philadelphia, Pa.

The back board is made longer than the inner length of the frame, and is held in place by springs.

Claim.—1. In a transparent slate, the combination, with the frame, of one or more springs operating to hold the writing glass and back board in the frame, substantially as set forth.

2. The frame B with grooves F, the lengthened glass C, back board E, and one or more springs, G, combined and operating substantially as set forth.

135,316.—*Car-Coupling.*—DAVID BRADFORD, Hamilton, Canada.

The cars are brought together and the buffers, coming in contact, are pushed inward until the hooked spring is thrown from engagement with the projection on the coupling-bar of one car, when the coupling-bar is revolved a quarter-turn by the spring at its rear, the bar having entered between the vertical bars on the other car, the corresponding coupling-bar on the other side having performed the same operation. Uncoupling is effected by means of levers.

Claim.—1. The revolving coupling bars D D with projections F F, notched disks G arranged in combination with vertical bars C C, and operated substantially in the manner and for the purpose shown.

2. The arrangement of the lateral spring-catch E, operating in combination with the coupling bar D.

3. The arrangement of the notched disk G on the coupling-bar D, the pin H, and spring J, all combined to operate the coupling-bar and prevent its entire revolution.

4. The arrangement of the series of levers K, K, and L, as shown, in combination with the coupler D for uncoupling from either side of the car-platform or top of box-car, all arranged substantially as and for the purpose set forth.

135,317.—*Apparatus for Expressing Liquid from Spent Tan-Bark.*—LAURENT BREVAL, Paris, France.

Within the space which is formed between the delivery and the main compressing rollers is arranged a perforated strainer, to convey the bark from one set of the rollers to the other, and it is so constructed that the liquid which is expressed from the bark may pass off through it to the sewer.

Claim.—The combination of the rollers or cylinders A B C and the perforated bar D, arranged as set forth, the rollers B C being provided with mechanism for revolving them, as specified, and the upper of said rollers B C being movable vertically and furnished with pressure devices, essentially as described, and the system of rollers A B C and perforated bar D being provided with a hopper, T, a liquid-receiver, G, and an inclined discharger or plane, J, or one or more of each, as occasion may require, the whole being substantially as and for the purpose as explained.

135,318.—*Washing-Machine.*—WILLARD P. BROOKS, Lawrence, Kan.

A tub with radial ribs in the bottom and radial grooves in a follower attached to a hinged cap and oscillated by horizontal and oblique levers.

Claim.—1. The combination of the oblique hand-lever G with the horizontal hand-lever F, connected to each other and to the hinged cap C, as described, with an oscillating follower, D, of a washing-machine, essentially as and for the purpose described.

2. In a washing-machine, the combination of the grooved oscillating follower D, hinged cap C, oblique and horizontal levers F G, beveled opening, and the tub constructed with ribs *n n'*, as described, the several parts being constructed and arranged for operation substantially as described.

135,319.—*Shutter-Fastener.*—NICHOLAS H. BYERLEY, Philadelphia, Pa.

A single piece of wire is bent and coiled to form a spiral or coil spring, the two ends or arms crossing each other and terminat-

ing in loops or hooks, to engage with the rings of the window-shutter. There is also a tightening and adjusting ring, which passes over the arms of the spring and serves to contract or adjust it, and thus fasten or bow the shutter at varying distances.

Claim.—The spiral spring A, with its arms B and loops or hooks C, in combination with the tightening-ring D, substantially for the purpose shown and described.

135,320.—*Vent.*—ORRIN S. CAMP, Grand Rapids, Mich.

A flattened flexible rubber tube attached at one end to a perforated stopper.

Claim.—The automatic vent herein described, constructed of the flattened tube C and perforated plug A, arranged as specified.

135,321.—*Manufacture of Runners and Top-Notches for Umbrellas.*—THOMAS COX and WILLIAM HOLLAND, Birmingham, England.

The runner or barrel is formed of sheet-metal and is flanged at the bottom, where a bead, formed of a cupped piece of metal with the center cut away, is pressed onto it. A shoulder on the runner near the top prevents the notch-ring from slipping down, and the runner being riveted over the ring, holds it on. The whole is then soldered together.

Claim.—The improvements in the manufacture of runners and top-notches for umbrellas and parasols herein before described and illustrated in the accompanying drawing—that is to say, temporarily fitting the notch-ring and bead of the runner in their places on the runner tube or barrel and the notch-ring on the top-notch tube, substantially in the manner described and illustrated, and soldering or firmly connecting the parts together by immersing or partly immersing the combined article or partly-made runner or top-notch in a bath of melted zinc, or of the other metals or alloys herein before enumerated.

135,322.—*Music-Leaf Turner.*—GEORGE DOMINY, Weymouth, England, assignor of one-half his right to JAMES RUSSELL, same place.

Claim.—1. The case I^4 containing the series of spring-impelled drums I^1, in combination with the radial arms I constructed to work in the same horizontal plane and provided with the fingers or clamps I^2, all arranged to operate substantially as described.

2. In combination with the arms I, the flexible helical fingers I^3 and vacuum-checks I^5 or their equivalents, substantially as shown and described.

3. The releasing-catch J, constructed of a series of compound levers, J^1 J^2 J^3, and catches J^4 and J^5 or their equivalents, arranged and operating substantially in the manner and for the purpose set forth.

4. The combination of the stave E^1 and center pin H^2, adjustable in relation to each other by means of the spring H^3 or its equivalent, and arm C G with its attachments, substantially as and for the purposes herein specified.

5. In a music-leaf turner, the catch K pivoted to the slotted plate and acted upon by a spring, as described, for the purpose of holding the leaves, substantially in the manner set forth.

135,323.—*Butter-Printing Machine.*—DAVID E. DUTROW, Washington, D. C.

The printing is accomplished within a vertical transparent hopper or cylinder, that the operation may be observed in its progress.

Claim.—1. In a machine for printing butter, the hopper in which the plunger operates, when said hopper is made of glass or other transparent material, substantially for the purposes herein set forth.

2. The combination of a hopper, a follower for pressing the butter down, and a movable print for receiving the butter and throwing it up after it is printed, substantially as herein set forth.

135,324.—*Apparatus for Treating Oil.*—ALFRED EDWARDS, New Haven, Conn., assignor to ALFRED R. EDWARDS, Chicago, Ill.

Air is forced into the air-chamber, which partially surrounds the cylinder, so as to prevent the direct contact of the fire and to heat the air which is afterward admitted into the cylinder to facilitate the rendering.

Claim.—1. The cylinder A, provided with the shaft B carrying suitable agitators, combined with the air-chamber H beneath the cylinder and the furnaces D, more or less in number, the fires in which set directly upon the casing G of the said chamber H, and pipes W opening communication from the said chamber directly into the cylinder to allow the passage of heated air directly from the said chamber into the said cylinder, substantially as set forth.

2. In combination with the rendering-cylinder A and an agitating device working within, the escape-pipe a and condenser-chamber b, the receiving-chamber h, outlet n, and with the water-supply m, substantially as set forth.

135,325.—*Cooking-Stove.*—MICHEL G. FAGAN, Troy, N. Y., assignor to himself and ALBERT C. COMER, same place.

Improvement on his patent 94,193 of 1869. The rear chamber or pit, similar to the front fuel-chamber, is adapted to receive either a fire-box or a water-reservoir; said chamber may extend partly or wholly beyond the rear end of the stove. The water-reservoir may be placed partly or wholly below the top-plate.

Claim.—1. A cooking-stove provided at its rear end with a chamber or pit similar in general form to the fuel-chamber situated at its front, when said pit or chamber is situated wholly or in part beyond the rear end of said stove, substantially as and for the purpose specified.

2. A cooking-stove provided at and within its rear end and upper side with a second and supplemental fuel-chamber, when said chamber is situated wholly or in part beyond the rear end of said stove, substantially as and for the purpose shown.

3. In combination with the pit or chamber K, situated at the rear end and upper side of the stove, and extending wholly or in part beyond said end, a water-reservoir, S, placed wholly or in part below the top plate E, substantially as and for the purpose set forth.

4. The combination and relative arrangement of the top flue Q, rear flues L and M, exit-flue R, chamber or pit K, and damper P, substantially as and for the purpose shown and described.

135,326.—*Machine for Cutting Food for Animals.*—REINHOLD FANSLAU, New Haven, Conn.

The cutters are protruding lips on the face of a cylinder with a semicircular cut below or in front of each lip.

Claim.—The sheet-iron cylinder C provided with the projecting cutters *d o d o*, formed by first cutting half-circle perforations in the sheet metal and then stamping upward the curved portions *d d* of the cutters, so as to form an arch, diminishing as it recedes from the punctures *o*, in arrangement with the frame A and box B, when constructed and operated in the manner and for the purpose set forth.

135,327.—*Securing Carriage-Wheels to their Axles.*—HERMANN S. FISCHER, Xenia, Ohio, and DATLEF BRUHN, Eckernforde, in Schleswig, Prussia.

The wheel is secured upon the axle by providing the latter with a circumferential groove, and the wheel with a transverse key bearing in said groove.

Claim.—In combination with the grooved axle A and the axle-box B, the transverse key C provided with an enlargement on its forward end, and with a nut or its equivalent on the rear end, as shown and described.

135,328.—*Sad-Iron.*—WILLIAM A. FREEMAN, Jr., Newark, N. J.

A tongue projecting on the front of the detachable handle engages with a loop on the top of the detachable heater so that the heater can be lifted out of the polishing-shoe.

Claim.—The tongue A on the detachable handle D, in combination with the loop *b* on the detachable heater A, substantially as shown and described.

135,329.—*Machine for Separating and Delivering Tacks.*—CHARLES W. GLIDDEN, Lynn, Mass.

Above a tack-containing hopper is a rotary cylinder having a soft surface. The hopper is raised intermittently to bring the tacks into contact with the cylinder; their points stick into the latter and they are carried around with it until stripped off, by means of a comb-like plate, into the spaces of which the shanks of the tacks slide. As these spaces converge into one main passage the tacks all slide down and form in a single column and drop into a tube, through which they pass to be driven.

Claim.—1. The tack receiving, separating, and delivering plate *r* having the points or teeth *t*, converging slots *s*, and main slot *u*, substantially as shown and described.

2. In combination with the tack receiver and separator, the tack-presenting cylinder *c*, operating substantially as shown and described.

3. In combination with the tack-receiver and separator, the finger g^2 for removing the tack singly, substantially as described.

4. In combination with the tack receiver and separator, the guiding-tube p^3, substantially as described.

5. The combination, with a tack-presenting mechanism, of the tack receiving and guiding mechanism, substantially as described, that delivers the tacks one by one, point downward.

135,330.—*Horse Hay-Rake.*—CHARLES NATHANIEL GOSS, Claremont, N. H.

Stub-axles, cast with the attaching-plate, are attached on the outside of the frame, which frame has a common pivoting-rod, for independently-pivoted teeth, in front of the axial line of the supporting-wheels, between which an unobstructed space is left for the movement of the teeth.

Claim.—1. A horse hay-rake having in combination the following elements, namely: side beams with stub or short axles affixed to the outsides of the same and a system of teeth independently pivoted forward of a line passing through the axes of the supporting-wheels, leaving the space to the rear of the pivotal line occupied only by the teeth, the devices for lifting the same, and the clearer-bars H, or their equivalents.

2. For use in a horse-rake, the plate G, constructed as shown and described—that is, angular in cross-section on its inner face, and on its outer faces provided with the strengthening ribs and protecting-flange and with a journal.

3. In combination with the sleeved tooth-head, provided with the flaring tooth-steadying flanges or walls 6 6 and a bolt-hole, a tooth having an eye therein whereby the head and tooth are secured firmly together.

4. The lifting-bar or treadle combined with the guide-yoke 7 and its friction-pulley, the rear end of the lever playing freely through the yoke, all substantially as shown and described.

135,331.—*Horse-Power.*—ANDREW G. HAGERSTRÖM, Red Wing, Minn.

Claim.—1. The draft-bars O and O', constructed as set forth and combined with each other by means of the bands P and pivoted tongues Q, substantially as and for the purpose shown.

2. The device as a whole, when its several parts are constructed and combined substantially as and for the purpose set forth.

135,332.—*Machine for Sawing and Splitting Wood.*—ANDREW G. HAGERSTRÖM, Red Wing, Minn.

The wood falls from the saw upon block W and is split by a

revolving knife, after which it is removed from the block by a holder which is actuated by a cam on the driving-wheel.

Claim.—1. The splitting blade or ax Y and block W, when constructed as shown, and combined with the frame of the machine and with the operating mechanism, substantially as and for the purpose set forth.

2. The means employed for sustaining the block while being split, and for afterward dumping the same, consisting of the holder X, the rock-shaft A' provided with the arms B' and C', the connecting-rods D' and E', the wooden bar F', and the metal bars G', when constructed as shown, and combined with each other, with the frame of the machine, and with the driving-wheel, substantially as described.

3. The means employed for furnishing a rolling support to the machine, consisting of the ground-wheels I', the forked pivoted bars K', the hooked rods M', the staples *m'*, the caster N', the roller O', the brace Q', and the draft-rod R', when constructed and combined with the frame of the machine, substantially as specified.

135,333.—*Artist's Scraper.*—HENRY J. HAIGHT, New York, N. Y.

A conveniently-arranged tool to remove paint by a graduated line from the edges of canvas, and clean pallets, &c.

Claim.—The sharpened edges *p p p* and *m*, as above described, and also the serrated and sharpened edges *e e e e*, with the movable oval-shaped metallic index-plate, Fig. 1, J, in combination with the graduated scale *m*, Fig. 1, as above described, and shown in the drawing.

135,334.—*Telegraph-Insulator.*—NATHAN HENDRICKS, Jersey City, N. J.

The head of the bar to which the wire is attached is inserted between two blocks of glass, which are confined by means of a base-plate and removable supporting-pins within a flanged box of suitable shape.

Claim.—The blocks D and E, constructed as described, and having confined between them, in a flanged box, A, the head of a suspension-bar, G, substantially as and for the purposes set forth.

135,335.—*Smoothing and Fluting Iron and Holder.*—JOHN HEWITT, Albany, N. Y.

A sad-iron plate and a corrugated faced handle-plate detachably connected, so that the handle-plate can be used with the corrugated face of the iron-holder. The two center ribs on the handle-plate extend its entire length, for use in ironing a single flute.

Claim.—1. The handle-plate B, corrugated so that its center ribs extend throughout its entire length to permit of the toe of said plate being used to iron a single flute.

2. An iron consisting of the sad-iron plate A and corrugated-faced handle-plate B, when said plates are so connected as to allow of their ready detachment to permit of the corrugated handle-plate being used in connection with the corrugated face *d* of the iron-holder D for ironing fluting, substantially as described.

135,336.—*Counting-Register.*—RUSSEL P. HINDS, Chicago, Ill.

The lock-wheels of a counting-register formed of a series of concave curves, adapted to the cylindrical portion of each preceding wheel, are provided with an impulse pin or tooth situated beneath the said concave serrated wheels and at about the middle point of the concave.

Claim.—As a means for transmitting rotary motion from a smooth wheel to a wheel having a series of peripheral concaves, the arm *h* upon the former arranged to strike lateral pins upon the latter at a point directly in line with the center of the two wheels and midway between the points *i* of the concave wheel, substantially as described, for the purpose specified.

135,337.—*Mortising-Machine.*—LEVI HOUSTON, Smithville, N. J.

The chisel is reversed by positive mechanism controlled by a lever and operated by a treadle. The bearing for the chisel is in conical opening, which can be tightened by a nut and screw as the same continues to wear away.

Claim.—1. In combination with the reciprocating chisel-spindle of a mortising-machine, a disk, D, with its pins *a* and *b*, the slide F, or its equivalent, and pawls E and E'.

2. The combination of the above with the pins *a a* and stop *f*.

3. The combination of the reversing device forming the subject-matter of the first claim with the treadle H for controlling the work-table and the intervening mechanism, whereby the table and reversing mechanism are caused to work in unison, as set forth.

4. The combination, substantially as described, with the reciprocating chisel-spindle A, of the adjustable conical split bearing B.

135,338.—*Machine for Twisting Oakum.*—LEWIS HOWARD and CHARLES HOWARD, Watkins, N. Y.

The spring-fingers, carried by the inner tube, bear upon the oakum and cause it to be twisted as the tubes revolve, and the guides condense and give it the desired shape and size.

Claim.—The rotary tube D, tube E having spring fingers F, guides I I, and drawing-rolls H H, combined and arranged as described, to form an improved machine for roping oakum.

135,339.—*Metal-Coating Tacks, Nails, &c.*—CYRUS D. HUNT, Fairhaven, Mass.

The articles are cleaned by acid mixed with a flux of resin and sal-ammoniac and a sufficient quantity of the metal with which the article is to be coated. They are then put in a closed cylinder, which can be run into a furnace, where it is kept in motion until the metal is melted and the articles coated. The articles are then washed in water and dried in sawdust.

Claim.—The within-described method of coating tacks, nails, screws, and other articles with tin, lead, or zinc in a cylinder, as herein set forth.

135,340.—*Screw-Driver.*—FRANKLIN B. HUNT, Richmond, Ind., assignor to EDWARD R. MATTHEWS and WILLIAM N. MATTHEWS, same place.

Headless screws are driven into or removed from the wood.

Claim.—The combination of the barrel A, jaws C, plunger B, and spring-band I, when operating in the manner and for the purpose substantially as described.

135,341.—*Plane for Scraping.*—JOSEPH JONES, Newark, N. J., assignor to WILLIAM A. FREEMAN, same place.

Claim.—The combination, with the holder D having lugs *g*, of the slotted supports F pivoted to the stock A and the tightening-bolt G, the whole arranged and operating substantially as and for the purpose herein set forth.

135,342.—*Carpenter's Bench.*—JOSEPH JONES, Newark, N. J., assignor to WILLIAM A. FREEMAN, same place.

The back hook is made adjustable in a slot and held by a pawl in the rack-plates. A coiled spring holds the hook to its place. A dog releases the pawl when the hook is to be moved backward.

Claim.—1. The combination, with the forward bench-hook B, of the back bench-hook C, the slide D, the lever E, and one or more springs, F, substantially as specified.

2. The independently adjustable back bench-hook C, in combination with the slotted slide D, the lever E, and spring or springs F, essentially as described.

3. The racks H H of the slotted slide D, in combination with the back bench-hook C and spring pawl or catch *f*, substantially as specified.

4. The springs *d d*, in combination with the stationary pieces *c c* and legs *b b* of the bench-hook B, essentially as and for the purpose herein set forth.

135,343.—*Car-Axle Box.*—JACOB KIEZER, Pittsburg, Pa.

The lid is provided with recesses and projections, which prevent the nut and bolt from turning or becoming loose. The addition of lugs and spring makes the lid complete in itself.

Claim.—1. In an independent hinged lid for journal-boxes, a wrought-iron bar, G, so curved and arranged as to serve the triple purpose of connecting the lugs I I, forming a bearing for the spring F, and supports for the hinges H H of the lid, all as shown and described.

2. A lid for journal-boxes with projecting arms C C and recessed openings C' C', operating, when the lid is closed, as a lock device to prevent the turning of the bolts and nuts, substantially as set forth.

3. The combined arrangement of the lid B having arms C C and recesses C' C', the spring F, the bent rod G, the lugs I I, forming an independent hinged lid for journal-boxes, substantially as shown and described.

135,344.—*Snap-Hook.*—WILLIAM W. KITCH, Crestline, Ohio.

At the end of the rein to be buckled are cut or punched apertures. The end of the band is pushed through the opening or slot between the bars *c* and *h*, and drawn around the bar *a* and pulled out under the bar *a*, one of its apertures resting over the pin *h'*, and in which position it is readily held.

Claim.—The plate A having a slot, C, which terminates in recessed heads *c c*, so as to afford within said slot suitable bearings for the free and undetached ends of the plate-spring C', in combination with tongue D having shoulders *d d*, the whole being so constructed, secured, and arranged as to operate in the manner described, as and for the purpose specified.

135,345.—*Machine for Selecting and Delivering Nails.*—ALDEN KNOWLTON, Boston, Mass., assignor to JAMES W. BROOKS, trustee, same place.

The nails are fed in a mass through a box into a deep groove in a reciprocating block. The groove is just large enough to receive a nail, and the latter rests while in the groove upon a long slide, which reciprocates intermittently and carries the nail to one side of the machine. When the slide stops at the limit of its movement the nail is dislodged and simultaneously therewith the opposite end of the slide is under the box receiving another nail, which is carried to the opposite side of the machine as before and dislodged there.

Claim.—The combination of the nail-containing box *b*, the block *c* with its groove *d*, and the nail carrier plate *e* with its nail-lodging edge or edges *h*, and devices for effecting dislodgment of the nails therefrom, all substantially as shown and described.

135,346.—*Door-Check.*—JONATHAN KOLB and ALBERT KOLB, Oxford, Ind.

The ordinary rubber-head door-bumper secured to the wainscot is provided with a ribbon-spring, bent to form a bulge in the middle, and fastened by its two ends to the side of the bumper. There is also a loop-spring, made of heavy wire, forming a rectangular loop with spiral arms, and this device is attached to the door in such manner that when it is swung back the bulge or angle of the ribbon-spring engages with the loop-spring and holds the door open, while the elasticity of both enables very slight pressure to release the hold and swing back the door.

Claim.—The combination, with the stop C and cushion D, of the bent ribbon-spring E and the loop-spring F, substantially as specified.

135,347.—*Exercising-Machine.*—CHRISTIAN KOLLE, New York, N. Y.

A seat suspended by rods is made to move over a tripping-block by means of revolving arms.

Claim.—The movable detainer *r* applied to and combined with the seats, suspended by the rods *l* and eyes from the arms A of the revolving frame, as and for the purposes specified.

135,348.—*Spring for Watch-Case.*—JACQUES LAURENT, New York, and JULES MENEGAY, Brooklyn, N. Y.

The projecting pointer finger of the spring for throwing open the case is arranged upon the middle part of the hoop-spring instead of being placed at its end.

Claim.—1. The spring for opening the cover of a watch case, composed of an arc or bow, or greater or less portion of a hoop of steel with the lip or tongue *c*, at or near the middle of its length, substantially as herein described.

2. The combination, with the band or hoop-spring having the lip or tongue *c* at or near the middle of its length, of the catch *a* formed at one end of the said spring, substantially as and for the purpose herein described.

135,349.—*Wash-Boiler.*—RALPH LAWYER, Pittsburg, Pa.

A wash-boiler constructed with a flange or projecting ring upon its bottom, (inside,) and with a detachable bottom with a flange or ring projecting downward of sufficient size to inclose the ring located upon its bottom, which projection or ring is perforated. On the upper side of the detachable bottom, at or near its center, is an upright pipe or conductor with a cap to govern the distribution of the water upon the clothing. The water, after passing through the clothing, is returned to be reheated, and again forced by the steam to be again passed through the clothing. On the top of the boiler is a hinged outlet or cover for the escape of steam, and a light of glass is introduced into the frame that the operation of the boiler may be seen through it.

Claim.—1. A wash-boiler constructed with a rim, *a*, on its bottom, as and for the purpose described.

2. The combination of the false bottom B, perforated flange *b*, and ribs C, as described.

3. The combination of the boiler A, rim *a*, false bottom B, flange *b*, and pipe D, as described.

4. In combination with the hinged-lid safety-valve of a wash-boiler cover a window placed in the lid, substantially as and for the purpose described.

135,350.—*Machine for Graining, Pebbling, and Softening Skins and Leather.*—NORMAN O. LOUNSBERRY, Wilmington, Del.

The surface of the leather is brought to the action of the roller B means of a concave apron suspended beneath and attached to crank-wheels, which give to the apron an eccentric motion, causing it to press the leather up to each side of the roller alternately. Motion is imparted to the crank-wheels from the roller-shaft by intermediate gearing.

Claim.—1. In a machine for softening, pebbling, or graining leather, the laterally-moving concave apron D, in combination with the roller B, substantially as specified.

2. The combination of the roller B, gearing C F E, cranks *e*, and concave apron D, substantially as described.

135,351.—*Flow for Unloading Cars.*—JOSEPH MCMULLIN, Casey, Iowa.

Upon the sides of flat cars are secured rails, which project beyond the ends of the cars, forming an endless track for the train; a sliding frame having convex shoes which slide upon the track; and upon the forward beam of the frame is a sliding box, which is attached to the forward part of the plow, that the point of the same may be so adjusted that the plow will throw the load to either side of the track. A sheave, laterally adjusted, is provided at the end of the car so that the power may be applied in a nearly direct line.

Claim.—1. A plow for unloading cars, combined with a guide-frame by which the plow is laterally adjusted, substantially as described.

2. A guide-frame combined with a plow for unloading cars when the plow is laterally adjustable in the same as to its point, so as to throw a greater or less part of the load to either side, substantially as described.

3. The plow D, combined with the sliding frame C and adjustable sheave H, substantially as described.

4. A car constructed with side rails B, projecting at its sides so as to form a continuous track, in combination with the frame C and convex shoes *s s*, substantially as described.

135,352.—*Combined Stop and Check Valve.*—OSCAR E. MCMURRAY, Lansingburg, N. Y.

A stop-cock having a tapering chamber in its plug, said chamber having in it a check-valve and seat, the plug having a screw-cap, whereby the valve may be easily reached. It may be used for a stop-cock or check-valve, as may be desired.

Claim.—The combination, with the case A with inlet and outlet pipes B C, of the plug D with valve seat *a* and the check-valve E, constructed and arranged to rest on said seat, all substantially as set forth.

135,353.—*Brick-Machine.*—JOHN W. METZ, Stout's Post Office, Ohio.

The driving-shaft, situated below the machine, operates the vertical plunger by means of cranks, on each end thereof, connected to pitmen attached to a cross-head, and moves the racked mold-bed by segment-wheels *v v'*, also thereon.

Claim.—The combination in a brick-machine of the low horizontal driving shaft B *b b'*, segment-wheels V V', pitmen G G', and cross-head E, with the hopper M *m'*, vertical plunger L I, traversing-molds T *t* U *u u'*, and mold-guides S *s* S' *s'* above the driving-shaft, all constructed, arranged, and operating substantially as herein described and set forth.

135,354.—*Fire-Escape.*—ENOCH R. MORRISON, Washington, D. C., assignor to himself and JOHN S. STILES, same place.

Claim.—In a fire-escape, the combination of the flat band wound helically upon an arbor, the gear-wheel C, and the worm-wheel D, carrying the radially-expanding friction-governor E E, all arranged within the portable and compact case, substantially as described, said case being adjusted to be attached either to the person or to the building, as specified.

135,355.—*Revolving Sieve.*—ADDIS E. NEAT, New Albany, Ind.

A revolving sieve in which a compound may be pulverized, separated, and sifted.

Claim.—The combination of an exterior and an interior cylindrical sieve, both placed upon a single shaft and revolving with the same, and each provided with one or more interior loose rollers, substantially as herein set forth.

135,356.—*Heating and Cooking Range.*—HENRY L. PALMER, New York, N. Y.—Division A.

By means of the two-way damper C' the smoke-flue A or A' can be used, and thus the products of combustion will be forced up and around the elevated oven, or used to heat the hot-air flue A''.

Claim.—1. A second and alternative draft-flue, A', in an elevated oven-range placed back of the oven and front flue, and arranged to conduct the draft into the chimney independently or without passing around the oven.

2. A center front-flue, A, for leading the draft into the oven-chamber, in combination with a back flue, A', for conducting the draft back of the oven when alternately opened and closed by a two way damper.

3. The double damper C' having its two parts placed at right angles to each other, and operating as described.

4. A front center draft-flue, A, a back draft flue, A', and an air-heating flue, A'', in combination.

5. A back draft-flue, A', provided with a door or opening, *d'*, for access in cleaning the same.

6. A back draft-flue, A', arranged to conduct the draft back of and away from the oven in an elevated oven-range, in combination with a back heating flue or chamber.

7. The combination and arrangement of front center flue A, back draft-flue A', air-heating flue A'', and damper C' with an elevated oven, O, as herein shown.

135,357.—*Gang-Plow.*—SAMUEL E. PARE, Smithville, Ill.

The frame is so constructed that a gang of plows or a stalk-cutter can be attached at pleasure, and to this end the tongue and one clevis are adjustable.

Claim.—The bent axle B, having slot *c*, in combination with the frame A *a' b' c'*, vertical post *d*, adjustable tongue *s'*, and joint C, constructed and arranged so that the beams of a gang-plow or stalk-cutter can be readily attached, substantially in the manner as herein shown and set forth.

135,358.—*Sash-Holder.*—CHARLES PANTELLO, Watertown, N. Y.

The fastening-stud and the thumb-lever for operating it are cast in a single piece, with an offset at right angles to the common plane of them both, and furnished also with securing-pins. The flat steel spring is secured by one end to the offset or space between the stud and the thumb-lever. A small groove around the base of the stud may serve to retain firmly the end of the steel-spring, or an additional rivet may be used for this purpose. This method of securing the spring and the other parts together is to avoid the working loose of the spring and fastening stud, which often happens with springs of the ordinary construction.

Claim.—The sash-fastening consisting of the operating-lever A, locking-pin B, and intermediate plate *t*, cast or formed in one piece, with one or more pins, *g*, and combined with the spring D, substantially in the manner described, for the purpose specified.

135,359.—*Buffer for Sewing-Machines.*—THOMAS G. PERKINS, Chicago, Ill.

The adjustable elbow and plate provide for the lateral and vertical adjustment of the lever that actuates the feed-frame.

Claim.—1. The lever E D F, constructed as described, and combined with the adjustable elbow T, for the purpose of adjusting the lever to the pin *r* to regulate the length of stroke of the feed frame.

2. The lever E D F, constructed as described, combined with the elbow T and adjustable plate W, for setting the lever to the pin *r*, as and for the purpose specified.

135,360.—*Plow-Coupling.*—JAMES K. PITTS, McLean, Ill.

Two half-boxes encircle the horizontal arm of the axle-tree to permit vertical movement, and a pivot permits lateral movement, so that the plow-beams may have both a vertical and lateral movement.

Claim.—The plow coupling shown, consisting of the plates A and A' provided at their forward ends with the cylindrical opening C, and at their rear ends with the semi-spherical bosses *a a* and recess or slot D, connected together by the bolt B, and combined with the tongued bar E and E' by means of the bolt F, substantially as and for the purpose specified.

135,361.—*Saw-Swaging Machine.*—GUSTAVUS A. PRESCOTT, Sandy Hill, N. Y.

A die, on which the saw-tooth rests, and a cam, adjusted in an eccentric thimble, are situated in a movable head to allow its being adjusted to different positions. A follower and screw hold the saw against the swage while being operated upon by the cam.

Claim.—1. A rotating head or other suitable device for holding the dies, so that they can be adjusted to any desired position, as set forth.

2. In a saw-swaging device, the eccentric thimble *j* for adjusting the distance between the dies, as specified.

3. The rotary head F provided with the dies and the thimble *j*, in combination with the frame A and follower B, substantially as set forth.

135,362.—*Corn-Sheller.*—JOHN RANKIN, Binghamton, N. Y.

A yielding sectional concave is supported in an adjustable case. Each section of the rows of sections bears down its succeeding one, as it is depressed by the overlapping or interlocking ends. The sections are held apart by deflectors, so that the corn can pass through and prevent wedging of the cobs and deflect any ears of corn that may enter end first. The peculiar arrangement of the teeth on the cylinder and concave facilitates the egress of the grain separated from the cob.

Claim.—1. A machine constructed with a concave and cylinder, provided with suitable means for separating the grain from the cob, and having combined with the yielding sections of the concave deflectors and retainers *m* for holding apart the sections of the concave and preventing the wedging in of any cob.

2. In combination with the main frame and cylinder, the sectional concave mounted in a case, R, which is adjustable so that it may be set and held with the concave at different distances from the cylinder, as and for the purposes as described.

3. A concave composed of semicircular rows of sections J provided with teeth *f*, and each section of each row overlapping the end of the next section, while all rest on sustaining-springs, substantially as and for the purposes described.

4. The peculiar combined arrangement of the shelling-teeth on the cylinder and concave, as hereinbefore described.

135,363.—*Plow.*—EDWIN REESE, Eutaw, Ala., assignor to CHARLOTTE M. REESE, same place.

The landside is hinged at its point of union with the share, so that its heel can have an angular vertical adjustment. This adjustment is affected by an adjusting-brace pivoted to the heel of the land-side, and secured to the porterior portion of the standard.

Claim.—A bottom-concaved land-side, having the rear section D jointed to a fixed section, E, for the purpose of giving angular adjustment to the rear section of land-side as the bottom of share wears, and thus preserve the cutting-edge of said share always at or about the true angle.

135,364.—*Machine for Breaking Metal Bars.*—WILLIAM RICHTER, Eintrachtshuette, Germany.

The bar is clamped upon the table with the point at which it is to be broken set at the end of the clamp. The projecting end rests upon a block on the end of a crank, which block rises and turns said end to a vertical position. By means of an automatic belt shifting and stopping device the block is returned and the end brought back to a horizontal position, which breaks it, when the machine becomes stopped. The operation can be repeated if necessary, or the rod can be fed along and another break effected at any part desired.

Claim.—1. In a machine for breaking bar-iron, the combination of a hinged breaking-block, F', a bed-plate, G, and the pivoted adjustable block H with its arm I and screw K, these parts operating relatively to each other and to the iron bar essentially as described.

2. The combination of a hinged block, F', a bed-plate, G, a clamp, L, with a cross-bar, *g*, or its equivalent, for holding and breaking off a bar of metal, as set forth.

3. In combination with the breaking-block F', the worm W on shaft U, the segment M with its pins *b b'*, weighted and slotted lever N, lever Q, slide T with its arms S' S', the pulleys V V' V' with one cross and one straight belt, to give the reciprocating rotary motion to the block F', and as an automatic shifting device, essentially as described.

4. In combination with the next above, the lever *v*, catch *z*, shaft *u*, lever *w*, pin *w'*, and arm *y* of the slide T, as an automatic device for arresting the motion of the machine, essentially as described.

5. A machine for breaking bar-iron, the several parts of which are constructed, arranged, and operating essentially as herein described and shown.

135,365.—*Dust-Guard for Car-Windows.*—OBED C. RIFE, North Manchester, Ind., assignor of one-half his right to JOHNSON M. BURDGE, same place.

Dust-guards are attached to stationary plates on either side of a car-window, the guard engaging in notched lugs upon a projecting flange formed on the lower end of the stationary plates; a spring is used to keep the dust-guards down upon said lugs.

Claim.—The combination, with the journal-box D, and spring *d'*, and the base-plate C having the notched lugs *d*, of the dust-excluding wing E having its upper journal passing through the spring-box and attached to spring *d'*, as specified.

135,366.—*Insect-Trap.*—MARK RICKLI, Newton, Ala.

A trap, formed with windows or lights projecting from its sides, constructed to be removed for cleaning. Between these are uprights or divisions with polished surfaces to attract insects, and an enlarged bottom with an upright flange for holding water to receive the insect after death.

Claim.—1. A lantern for insect traps provided with a series of windows arranged therearound, as shown and described, and for the purpose set forth.

2. The vertical plates D, combined with dishes and windows of the lantern, as and for the purpose set forth.

3. The detachable window B, made round or oblong and entirely of glass, as and for the purpose specified.

135,367.—*Turbine Water-Wheel.*—THEODORE H. RISDON and WILLIAM W. TYLER, Mount Holly, N. J.

The buckets of this wheel have their upper edge radial, or nearly so, at the end next the hub, but curved forward outwardly so as to be at the outer end almost a tangent to the periphery of the wheel, the lower edge of said buckets being curved downward outwardly, and the lower portion of the buckets inclosed by an outwardly-flaring band. The water is enabled to enter and issue from the wheel without retarding its velocity whether the gate be fully opened or partly closed.

Claim.—A vertical-discharge wheel, the lower portion of whose buckets is inclosed by an outwardly-flaring band, and in which the lower edge of said buckets is curved downward outwardly, and the upper edge thereof is radial, or nearly so, at its inner end, but curved forward into nearly a tangent to the periphery of the wheel, substantially as shown and described.

135,368.—*Fastening for Rush-Ropes.*—LESTER RUSSELL, Otsego, Mich.

A piece of wire is bent in the center to form nearly a complete ring for clamping around the knotted end of the cord. Before fully completing the ring the ends are bent under forming jaws, while the arms or free ends extend straight upward; the device is then inserted in a recess in the sash, the ring on the inside acting as a spring to force the jaws together, and the arms are driven or otherwise forced up into the sash, thus securely fastening the sash-rope in position.

Claim.—The device or fastening C, made of wire, bent so as to form the ring *d*, jaws *e e*, and arms *h h*, to be inserted in a recess and driven or otherwise forced up into the sash, substantially in the manner and for the purposes herein set forth.

135,369.—*Buffer-Spring for Railroad Cars.*—CYRUS W. SALADEE, St. Catharine's, Canada.

A torsional spring passes through the arm which receives the thrust or the draft of the draw-head and communicates it to the spring.

Claim.—A buffer or coupling for railway cars provided with a torsional spring, substantially as and for the purpose set forth.

135,370.—*Cider-Mill.*—JULES EDOUARD SAUOT, Washington, D. C.

Claim.—1. The combination of a series of circular saws arranged spirally upon the rotating crasher and feeder F and bladed adjustable hopper side H C, substantially as and for the purpose set forth.

2. The described combination of hopper A having the inclined adjustable and channelled side C e I, armed with knives H, and stationary side B, armed with clearers L, which knives and clearers intervene between the consecutive circular saws F separated by washers G, the whole being arranged and operating substantially as and for the purpose set forth.

135,371.—*Ship's Lantern.*—HERBERT SAUNDERS, South Kingston, R. I.

A perforated and vertically-adjustable cap regulates the discharge of the heated air and smoke.

Claim.—1. The vertically-adjustable perforated cap D, in combination with its socket and means for securing it in place, substantially as described.

2. The combination of the cylinders B B', diaphragm C, cap D, and pin E, in a ship's lantern, as described, for the purpose set forth.

135,372.—*Combined Inhaler and Nasal Douche.*—EDWIN SCHOFIELD, Worcester, Mass.

The main receptacle is formed with a flat bottom for resting upon the table. The inlet-tube joins the main receptacle near the bottom; is entirely without it, and is furnished with a bulb for containing a medicament, over which the air is to pass during its ingress. The receptacle and inlet-tube are both formed from one and the same piece of glass. The upper part of the receptacle is fitted with a cork and a draft-tube, which latter is furnished with a nasal-plug. The inhaler may be inverted and serve for a nasal douche.

Claim.—A combined medical inhaler and nasal douche, consisting of the main receptacle A, standard A', inlet-tube C situated entirely without the main receptacle and furnished with a siphon-bulb, E, and the draft-tube B, all as described, and for the purposes set forth.

135,373.—*Purifying and Deodorizing Tallow Obtained in Rendering Offal.*—BENJAMIN F. SHAW, Cambridge, Mass.

To three thousand pounds of scrap on its removal from the digester, three thousand pounds of soup, and all the tallow expelled from the same, add fifteen hundred pounds acid phosphate of lime, nine hundred pounds of water, (preferably mixed with carbon and sulphate of lime;) reduce to gravity of 5° Baumé, mix thoroughly, close the tank, or keep in a room at 100° Fahrenheit. Boil the mass until the tissues are desolved, then allow it to rest, keeping at 140° to 200° Fahrenheit. Remove supernatant fat.

Claim.—1. The use of acid phosphate of lime, alone or in combination with carbon or sulphuric acid, or their salts, or with any other mixture, in the isolation, purification, and deodorization of tallow, fats, oils, or grease, substantially as described.

2. In combination with the use of acid phosphate of lime, alone or in combination with carbon or sulphuric acid, or their salts, or with any other mixture, in the isolation, purification, and deodorization of tallow, fats, oils, or grease, the use of covers to the tallow-isolating or superphosphate tank, for the purpose specified, the maintaining of the fluidity of the surface fat by means of a high temperature, and the maintaining in the gelatine or watery

mass the light gravity or thinness required, all substantially as described.

135,374.—*Wash-Boiler.*—ANTHONY SLUTHOUR, New Philadelphia, Ohio.

An ordinary wash-boiler has a tube connected with the cover, a drip-pipe and cup, detachable inner sides, a movable bottom with a dividing-rib and steam-trap.

Claim.—1. In combination with the boiler A and cover F, provided with the opening *f* and tube *f'*, the pipe H and cup I, substantially as and for the purpose shown.

2. The detachable inner sides or walls B, when constructed separate, as shown, and combined with the boiler A by means of the wings B' and flanges *b'*, substantially as and for the purpose set forth.

3. The false or movable bottom D, constructed in the form seen, and combined with the boiler A and false sides B, substantially as and for the purpose shown and described.

4. The combined dividing-rib and steam-trap E, constructed as shown, and combined with the false bottom D, substantially as and for the purpose specified.

5. The hereinbefore-described device as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose set forth.

135,375.—*Glass Button.*—ALBERT M. SMITH, Brooklyn, N. Y.

A glass button, while the glass is in a plastic state, is pressed into a backing of wire-cloth. The shank is secured between the wire and glass, and extends nearly to the periphery of the button on both sides.

Claim.—As an improved article of manufacture, a glass button having a back of wire-cloth, perforated or corrugated metal, and a flat shank, both embedded in it by pressure when in a hot plastic condition, thus strengthening the glass and supporting the shank.

135,376.—*Duster.*—GAWN M. SMITH, Louisville, Ky.

A duster composed of a body of fine fiber, with a stiffening of feathers or other material.

Claim.—The new article of manufacture of a duster, composed of a body of fine fiber, A, with stiffening B, and provided with a handle, D, substantially as and for the purpose herein specified.

135,377.—*Revolving Fire-Arm.*—OTIS A. SMITH, Middlefield, Conn..—Case A.

The head or finger-piece is forced into a notch by a spring-stud so as to secure the same in place, and be readily removable for detaching the cylinder; also, the combination of a lifting-arm or pawl with the hammer, a loose pin and the spring-cylinder stop, for raising said stop before the cylinder begins its rotary movement.

Claim.—1. In a revolving fire-arm, the center-pin, provided with the finger-piece F working between the arm E and the barrel, the said arm E formed with a notch, *a*, and having a spring-stud, *d*, to force and hold the said finger-piece into the said notch, substantially as described.

2. In combination with the cylinder C, stop G, and hammer D of a revolving fire-arm, the latch *n* and the slide *f*, constructed and arranged to operate substantially as set forth.

135,378.—*Revolving Fire-Arm.*—OTIS A. SMITH, Middlefield, Conn.—B.

A central spindle and an auxiliary spindle are arranged within the hollow extractor-arm so that the central spindle may readily be withdrawn as desired, and in combination with the above a spring-catch for securing the parts in place.

Claim.—1. In combination with the barrel A, cylinder B, and arm C, the spindles *a* and E, the said spindle *a* arranged axially within the said arm C, and so as to engage the spindle E, substantially as and for the purpose described.

2. In combination with the subject-matter of the first clause of claim, the notch *f* in the arm C, the projection *d*, and the spring *n*, substantially as and for the purpose described.

135,379.—*Bustle.*—TIMOTHY S. STRRAT, New York, N. Y.

The stays of the bustle are each formed of one continuous piece of wire. At the stem portion, which rests upon the body of the wearer, the wire is double, and at the waistband it is coiled into a spring and then radiates in a curve from the waistband, holding the bows of the bustle in eyelets formed by a single coil at different points on its length.

Claim.—1. In a lady's bustle or skirt, the combination therewith of a web-support having an extension-stay, D, a holding-stem or stems, F, and a coil-spring brace, E, essentially as and for the purpose set forth.

2. A bustle-spring having its web-stay or stays D, holding-stem or stems F, and coiled-spring brace or braces E of a single strand of spring-wire, as described.

3. The web stays or supports having a series of eyes, *c*, formed as described, and for the purpose set forth.

4. In a bustle spring, constructed as described, the coil-spring brace E, located and arranged as described, to serve as a spring-hinge for the web, as described.

5. The clamp I for the holding stem pockets H, arranged contiguous to the coil-spring hinge E to resist the recoiling-force of the latter, as described.

135,380.—*Mode of Adjusting the Length of Pitmen.*—NORMAN C. STILES, Middletown, Conn., assignor to THE STILES & PARKER PRESS COMPANY, same place.

Claim.—The herein-described mechanical adjustment for pitmen or connecting-rods, consisting of the eccentric B, toothed upon its periphery, arranged in one end of the pitman and combined with the pinion D, the axis of which pinion is parallel with the axis of the eccentric and provided with set-screws E, or other suitable clamping device acting directly upon the eccentric independent of the pinion, substantially as set forth.

135,381.—*Binder for Sewing-Machines.*—MARSHALL J. STOLL, Middletown, Conn.

The outer end of the folding device is secured to the outer end of the spring in order that the folder may readily adapt itself to any thickness of material, and the projecting forward end of the folder is steadied between the foot and spring and forms a guide for the folded material quite up to the needle.

Claim.—The folding device D attached at or near its receiving end to the spring C, and provided with a lip, F, extending forward between the presser-foot and the spring C, all constructed and operating as described.

135,382.—*Self-Waiting Table.*—MELVIN STONE, Vermillion, Ohio.

A central shaft, on which revolve two tables that are separated from each other by conoidal hubs. The tables are provided with cruet-stands and with knobs for revolving the tables.

Claim.—The improved dining-table stand, consisting of the shaft A, revolving tables B B', having the conoidal hubs E E,' and provided, respectively, with the cruet-stands G and knobs F, substantially as specified.

135,383.—*Treating Offal and Manufacturing Fertilizers.*—JACOB J. S. ORER, Boston, Mass.

The offal is placed in a revolving cylinder and the flame passed directly over it.

Claim.—1. The process and apparatus, substantially as and for the purpose described.

2. The drying of offal, blood, or other animal matter in a cylinder, for the purpose of preparing it for a fertilizer, by passing flame and products of combustion through the cylinder only, not around or outside of it, directly over or in contact with said material, substantially as and for the purposes described.

3. In combination with the cylinder and fire-place, with or without the use of pulverized fuel, the gas and flame mingling and combustion chamber and the concave bottom of said chamber, substantially as and for the purposes described.

4. The production of a fertilizer from offal, blood, and other animal matter by drying it, and from tank-water by evaporating it, by the direct contact or radiation of flame or the products of combustion of solid or pulverized fuel, gases, or steam, substantially as described.

5. The drying of offal, blood, or other animal matter in a cylinder, for the purpose of preparing it for a fertilizer, by passing the flame of pulverized fuel and other products of combustion through the cylinder directly over or in contact with said material, substantially as and for the purposes described.

135,384.—*Printer's Lead-Casting Machine.*—JOHN I. STURGIS, Milwaukee, Wis.

The parts of the mold are supported by a hinged frame clamped together by a screw. A lever is provided to "jerk" the mold and settle the metal in casting thin leads, and a lamp is provided to heat the lower extremity of the mold and prevent too sudden cooling.

Claim.—1. Molds D and arms C, in combination with lever E, substantially as and for the purpose described.

2. Molds D, hung as specified, in combination with lamp F, substantially as and for the purpose set forth.

135,385.—*Rudder for Vessels.*—OLIVER P. THARP, Cincinnati, Ohio.

The stern-post of the vessel has a metallic frame-work securely fastened to its upper end, and the weight of the rudder is adjustably supported on this framing by a set-screw and nut. The rudder is confined below to the rudder-post by the ordinary bolts and gudgeons or hinges, which allow it to have its usual lateral play.

Claim.—The supporting-arm F, clip H, and screw or pin *h'*, in combination with a bolt-shipped rudder, substantially as specified.

135,386.—*Car-Axle Lubricator.*—THEODORE R. TIMBY, Tarrytown, N. Y.

Claim.—The bottomless crib, constructed as herein described, adapting it to be applied to an axle-box of common form and to hold a body of capillary material in contact with the journal, as explained.

135,387.—*Car-Coupling.*—WILLIAM TODD, Portland, Me.

The coupling-hook is recessed just back of its beak and a plate extends across the draw-head, which plate partly fills this recess. When the forward end of the link falls the rear end is received against the plate instead of the hook. The bumper and draw-head are so arranged in relation to each other that the concussion occasioned by the meeting of the cars is equally distributed between the draw-head and the bumper.

Claim.—1. The plate *f*, when used in a car-coupling having a horizontal hook, in the manner and for the purposes as set forth.

2. The combination of the draw-head having the recesses *m m*, the straps K K, collar *j*, block *i*, and buffers *q' q'*, as set forth.

135,388.—*Casting Centers on Cast-Iron Screws.*—THEODORE M. TUCKER, Newark, N. J.

Conical centers are cast on the ends of the screw-blank or other article to be turned, which centers are received into corresponding recessed centers in a lathe in which it is to be turned.

Claim.—The male centers B B cast on a chair-screw or other cast article requiring to be turned between lathe-centers, substantially as and for the purpose herein set forth.

135,389.—*Frame for Pillow-Spreads.*—PETER W. VAN EST, Rochester, N. Y.

An oblong frame covered with soft flexible pads on each corner and provided with buttons or knobs to attach the spread to.

Claim.—The frame B, provided with the pads *a a* and buttons *b b*, or their equivalents, and used either with or without the cross-rod B², constructed substantially in the manner and for the purpose specified.

135,390.—*Furnace-Grate.*—THEODOR VON BOLZANO, Schlan, Kingdom of Bohemia, Austria.

A feed-box has a grate with two inclined tiers, and one horizontal with levers whereby the alternate bars of the inclined tiers are shaken, the coal being transferred from one tier to the other by the shaking of the bars, and is more particularly designed for burning fine coal. The box is hung and swings on trunnions, thereby feeding the furnace without admitting cold air.

Claim.—1. The feed-box D swinging on gudgeons *m*, and abutting against the plates E F, in combination with a grate, A B C, constructed and operating substantially in the manner herein set forth.

2. The arrangement of transverse rods *g*, which are actuated by a hand-lever, and engage with the alternate grate-bars, substantially in the manner described.

3. The grates A B C, each constructed and arranged in respect to each other, as herein shown and described, in combination with the openings *o' o²*, and levers *i* and *j*, and transverse rods *k* and *g*, substantially as set forth.

135,391.—*Funnel.*—CHARLES G. WAY, Boston, Mass.

A funnel composed of flexible material and having an exteriorly and interiorly corrugated spout.

Claim.—The new article of manufacture herein described and shown, the same consisting of a flexible funnel having a corrugated spout, and made of India rubber in any of its elastic compounds.

135,392.—*Sewing-Machine Table Top.*—WILLIAM WILSON, Madison, Ind.

A supplementary table-top extending on all sides outside of the permanent top, and supported solely by a projecting molding formed on the outer edge of the permanent table-top.

Claim.—A removable supplementary top for sewing-machine tables, when the said top B is supported solely by a projecting molding on the outer edge of the permanent table-top A, substantially as shown and described, and for the purpose set forth.

135,393.—*Device for Adjusting Millstones.*—ALEXANDER W. WINALL, Cincinnati, Ohio.

The bridge-tree is suspended and rendered simultaneously adjustable at each end, insuring true parallelism of the runner.

Claim.—1. In a grinding-mill, a bridge-tree suspended at or by its ends, and the same made simultaneously adjustable toward or from the millstones, substantially as and for the purpose specified.

2. In combination with the bridge-tree K, the threaded rods M, nuts N, bevel-pinions O and O', and the shaft P, substantially as and for the purpose shown.

135,394.—*Harvester.*—CHARLES M. YOUNG, Meadville, Pa.

The main frame is adapted to receive two coupling-frames, by means of which the cutting apparatus may be arranged in front, at the center, or in rear of the main frame.

Claim.—1. The main frame provided with its points of attachment A^2 *a a'* for the reversible coupling and brace-arms D G, in combination with the extension-axle B' as a point of attachment for the coupling-arm D', and the interchangeable tongue-sockets F F', as described, whereby the machine is adapted to be used with a front cut in mowing, and with either a center or rear cut for reaping, as described.

2. The combination of the rock-shaft E with the removable coupling-arm D', for adapting the sickle to be operated in a center cut by the same gearing and connecting-rod or pitman by which it is operated in a front or rear cut, as described.

3. The combination of the swiveled leading-wheel H with the forward extended end of the pivoted brace G, substantially as described.

4. The combination of the two bevel-pinions J^1 J^2 of different diameters on the crank-shaft with a bevel driving-wheel, the face of which is set obliquely to the line of said crank-shaft crossing the same, substantially as and for the purpose set forth.

5. The double or reversible V-shaped pawls L and adjusting-block M and springs, in combination with the recessed hubs of the driving-wheels and the reversible tongue for reversing the direction of rotation of the driving-wheels, as described.

6. The lifting segment and lever provided with the sliding yielding bolt and spring, and connected with the coupling-arm, substantially as described, for relieving the drag of the cutting apparatus on the ground when the lifting-lever is locked.

REISSUE PATENTS.

5,255.—*Ore-Washing Apparatus for Hydraulic Mining.*—JOSEPH M. ALLENWOOD, Timbuctoo, Cal., assignor to RANDOLPH R. CRAIG and JOSEPH CRAIG.—Patent No. 43,468, dated July 12, 1864.

Claim.—1. The combination of a discharge-pipe provided with guides or diaphragms, and the elbow C, connected by a working-joint with the supply-pipe A, substantially as and for the purpose above specified.

2. The combination of two elbows, C A, with the swiveling-joint D, substantially as and for the purposes above described.

3. The combination of the two working joints or couplings, D and E, with the discharge-pipe N and supply-pipe A, by means of which both the horizontal and vertical motions are obtained, substantially as and for the purposes specified.

4. The combination of the parts set forth in the accompanying specification, constituting a new and improved machine for the uses and purposes above described.

5,256.—*Cheese-Press.*—GEORGE B. BOOMER, Syracuse, N. Y., THOMAS G. MORSE, Erie, Pa, and RUFUS E. BOSCHERT, Syracuse, N. Y.; said MORSE assignor to said BOOMER.—Patent No. 108,753, dated November 1, 1870.

Claim.—In combination with the sliding standards, supported laterally and guided in the frame of the press, the double screw-shaft supported in or against the sliding standards, substantially as and for the purpose described.

5,257.—*Dies for Forming Sheet-Metal Ware.*—MELLEN BRAY Newton, Mass.—Patent No. 133,919, dated December 17, 1872.

Claim.—1. The combination of a cylindrical male-forming die, a female-forming die, having a cylindrical bore and a plane-holding surface, as described, and a holding-die which surrounds the male die, and has its holding-surface parallel to the holding-surface of the female die, and is suitably held to the same so as to gripe the metal plate between them, as described, all constructed and operated substantially as described.

2. The combination, with the said male and female forming-dies and the holding-surfaces of the spring-fingers, or their equivalent, for removing the article formed from the male die, substantially as described.

5,258.—*Governor for Steam-Engines.*—GEORGE W. CLARK, Council Bluffs, Iowa.—Patent No. 120,856, dated November 14, 1871.

Claim.—1. The combination of a governor-lever, M, a piston, D, and devices connecting the same, the piston being subject to the action of the live steam, and the said connecting devices arranged to operate the lever M as the steam-pressure varies and the piston rises or falls, substantially as and for the purposes herein set forth.

2. The combination of the steam-chest B, flexible cover C, piston D, lever E, spring S, link R, and lever M, all substantially as and for the purposes herein set forth.

3. The combination of a shifting re-enforcing weight, P, a piston, D, and connecting devices therefor, with a governor-lever, M, the piston being subject to the action of the live steam, and the said connecting devices being arranged to cause the weight to shift along the said lever as the steam-pressure varies and the piston rises or falls, all substantially as specified.

4. The combination and arrangement of the piston D, lever E, elbow-lever H, notched bar L, weight P, governor-lever M, and springs S, all substantially as specified.

5,259.—*Lady's Collar and Cuff.*—WILLIAM E. LOCKWOOD, Philadelphia, Pa.—Patent No. 33,771, dated April 26, 1862; reissue No. 1,960, dated June 6, 1865.

A compound fabric of paper and muslin has its paper face embossed in imitation of the figure and fiber of a woven fabric.

Claim.—A collar having a paper surface imitative of the textile face and fiber of a dressed linen collar, as set forth.

5,260.—*Sewing-Machine.*—GEORGE RENFUSS, Philadelphia, Pa., assignor to AMERICAN BUTTON-HOLE, OVERSEAMING, AND SEWING MACHINE COMPANY.—Patent No. 51,066, dated November 21, 1865; antedated November 11, 1865.

For working button-holes the adjustable plate which supports the lever that carries needle *s* is moved into operative position, and the thread carried by this needle beyond the edge of the fabric, is caught by the hook on the rotary-reciprocating sleeve, and laid in loop-form under the vertically-reciprocating needle. For plain sewing with needle and shuttle, the lever is turned aside, and the cam-wheel on the driving-shaft is moved forward and receives within its groove the pin projecting from the arm connected with the shuttle-carrier, which has been turned up in operative position. When the lock-stitch is being made a plate, which is pivoted to the head of the machine and which enters the annular groove in the sleeve, is disengaged from such sleeve, and the latter is connected to and reciprocates with the needle-bar, but does not turn as when button-holes are being worked.

Claim.—1. The lever K and its needle *s* carrying a loop of thread across the edge of the fabric, when the said lever is so connected to a permanent part of the machine as to be adjustable, substantially in the manner and for the purpose specified.

2. The combination of the shuttle-carrier O, the cam-wheel S', and arm Q', the whole being constructed and arranged for adjustment, substantially as and for the purpose herein set forth.

3. The sleeve E, adapted to the needle-bar and to the stationary arm B in the manner described, in combination with the devices herein set forth, or their equivalents, whereby the said sleeve may be put in or out of action, as desired.

4. The take-up mechanism, consisting of the adjustable pin *i* on the needle-arm D, the lever G and its arm *k*, and tension device 3, the whole being arranged and operating substantially as and for the purpose herein set forth.

5,261.—*Clothes-Wringer.*—AUGUST ALBRECHT, Philadelphia, Pa., assignor, by mesne assignments, to AMERICAN MACHINE COMPANY.—Patent No. 112,669, dated March 14, 1871.

A clothes-wringer with its frame constructed with a standard and curved top holding the journals of the upper roll, and forming the projecting legs for attaching it to the tub, and on which rests the rubber springs, and with a standard on its opposite side, with journals, from which the lever holding the lower roll is held,

which rests on the springs and is connected with the journals of the standard by hooks, which regulate the tension of the rolls. The standards are constructed with projections to give them tenacity.

Claim.—1. A clothes-wringer in which are combined, substantially in the manner described, levers D carrying the roller G, and a spring, E, situated between the fulcrum of each lever and the said roller.

2. The combination described, of the projections *m* of the frames and their bearings for the upper roller, with the levers D carrying the lower roller.

3. The combination of the frame A and its fulcrum *f* with the lever D, having a hooked end, *h*, all substantially as specified.

5,262.—*Clamping Movable Seat for Carriages.*—SYLVESTER W. BEACH, Ypsilanti, Mich., assignor to BEACH PATENT SHIFTING CARRIAGE-SEAT MANUFACTURING COMPANY.—Patent No. 109,103, dated November 8, 1870.

The seat is seat is secured to ways which are attached to the inner sides of the body by means of clamping-guides, these being moved vertically by means of a cam which has its bearing upon the bottom of the seat.

Claim.—1. The clamping-guides *g'*, operated by the cam *h*, substantially for the purposes set forth.

2. In connection with the clamping-guides *g'* and plate *d*, the cam *h*, for the purposes specified.

3. In connection with the clamping-guides *g'* and plate *d* and cam *h* the bale *m*, substantially as described, and for the purposes described.

4. The combination of the bale *m*, the clamping-guides *g'*, the ways *c*, the guides *g*, and the wheels *s*, when constructed and arranged substantially as and for the purposes set forth.

5,263.—*Lifting-Jack.*—JOHN D. OTSTOT, Springfield, Ohio.—Patent No. 133,949, dated December 17, 1872.

Claim.—1. The combination of the lifting-lever G and its lifting-pawl D, when said lever is pivoted by trunnions thereon working in open bearings upon the stock A, as and for the purpose described and represented.

2. In combination with the lifting-pawl D, the lateral projections *i* upon its head and the recessed ways *j* in the flanges of the stock, as and for the purpose described.

3. In combination with the lifting-lever G and the holding-pawl E, the projection *r* upon the latter, so that it may be struck by said lever to throw said pawl out of action with the lifting-bar, as and for the purpose described.

4. The combination and arrangement of the stock, lifting-bar and its cap, and lifting-lever and its lifting-pawl, whereby the bar cannot be removed without first removing the cap, and the lifting-lever and its pawl cannot be removed without first removing the lifting-bar, as and for the purpose described and represented.

5. In combination with the lifting-lever G and lifting-pawl D, the guides or ways *v*, by which, when the lever is thrown up to release the holding-pawl, the lifting-pawl will be drawn out of action also, as described and represented.

5,264.—*Wheel for Vehicles.*—ALBERT L. BLACKMAN, Cross Plains, Tenn., assignor of part interest to SAMUEL K. SCHWENK and JOHN E. SAUNDERS.—Patent No. 127,300, dated May 28, 1872.

The wheel can be made straight without any dish, the spokes can be replaced without injury to the hub or rim, and the tire can be tightened without cutting.

Claim.—1. The combination of cast cylinder A having the concave-shaped flanged B on its inner end, and axle-bearings *a a'*, the adjustable concave flange C in their respective forms, or mechanical equivalents, the whole constructed and arranged substantially as and for purposes set forth.

2. Cast cylinder A with its mortised or recessed concave flange D, mortised or recessed concave flange or disk E, confining-screw F, in combination with the spokes, bread based or dovetailed one way and wedge-shaped the other, in their respective forms, or mechanical equivalents, the whole constructed and arranged substantially as and for purposes set forth.

3. The combination of the cast cylinder A having the concave recessed flange D, the adjustable concave recessed flange E, the flange-nut or confining-screw F, in their respective forms, or mechanical equivalents, with or without the removable axle-bearings *a a'*, the whole constructed and arranged substantially as and for the purposes set forth.

4. The vehicle-wheel hub complete, having either form of flange, spokes G in their trapezoidal or wedge-shaped form one way, and dovetailed form the other, with or without removable axle-bearings *a a'*, thimble-screw tenon *e*, and the mitered or obliquely-cut and matched felly-joint *f*, the whole constructed and arranged substantially as described, and for the purposes set forth.

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The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

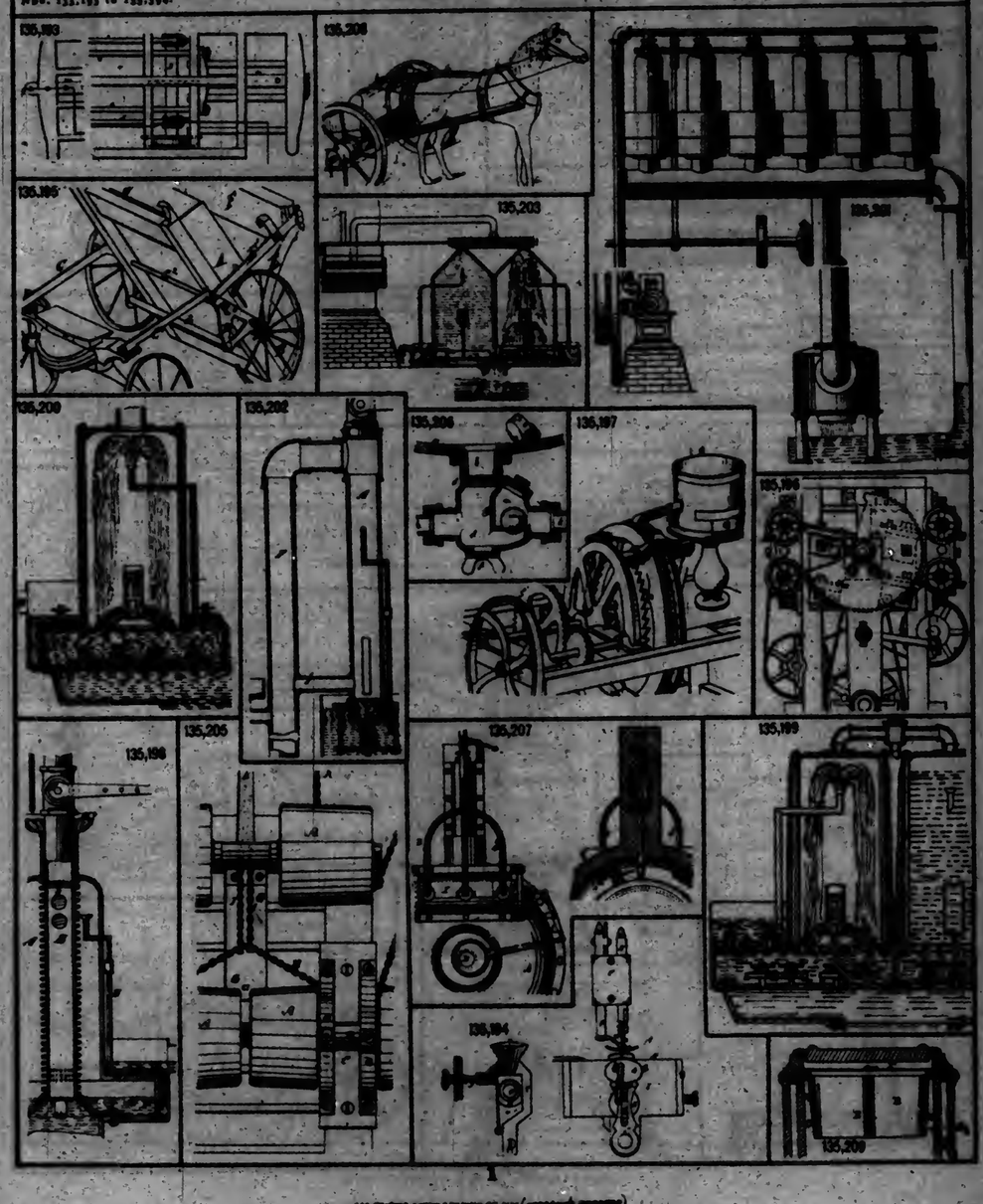
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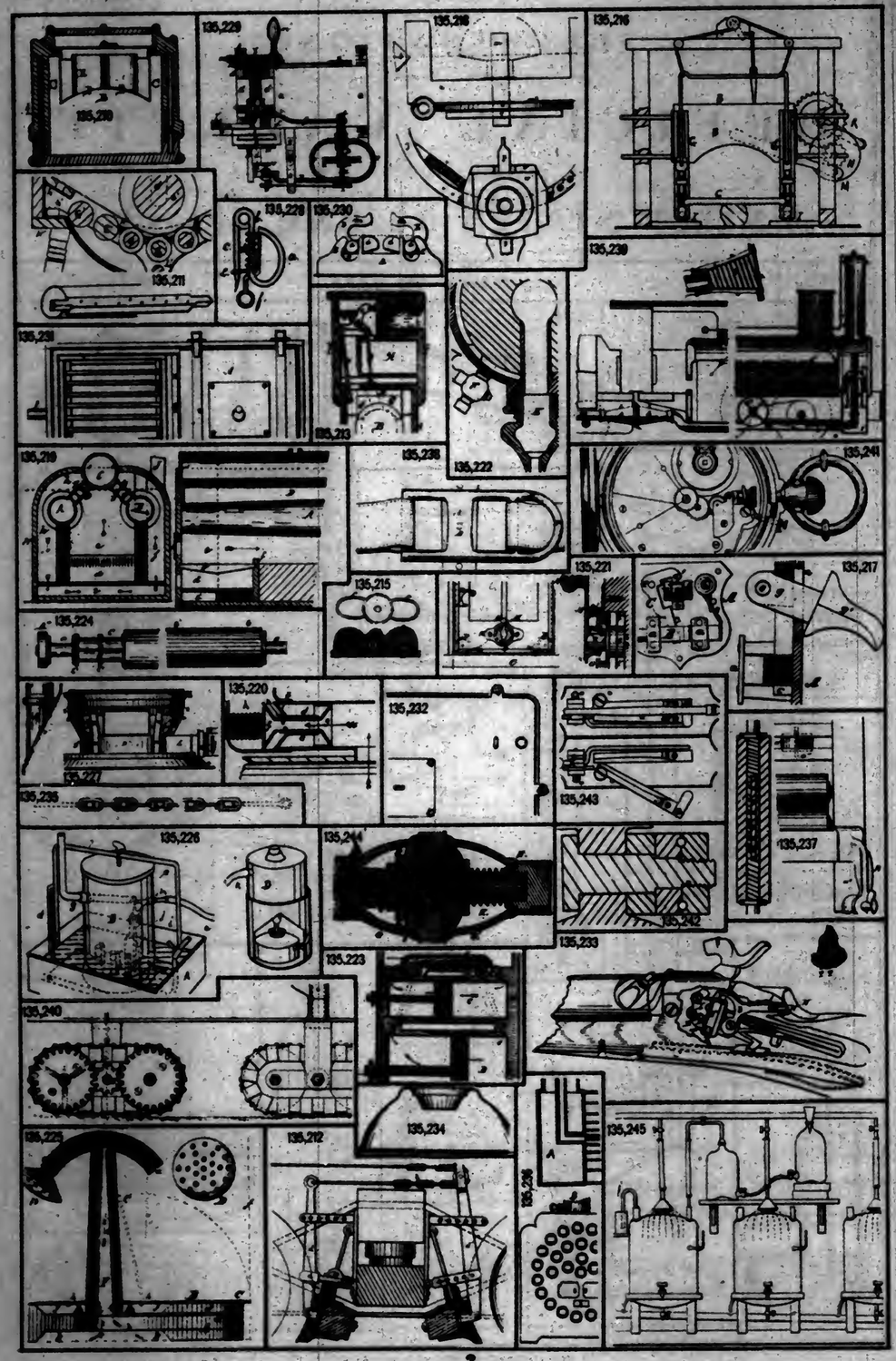
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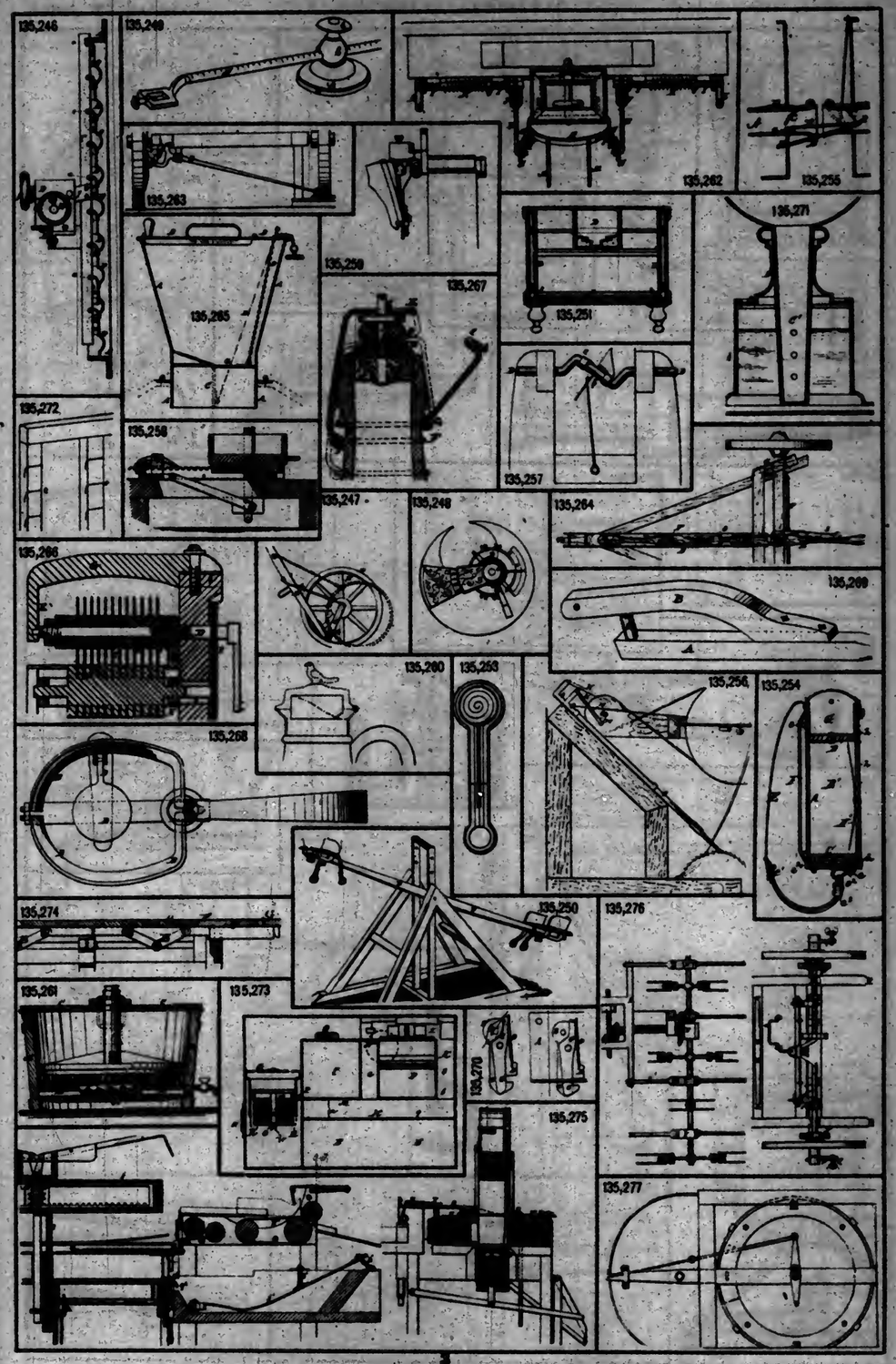
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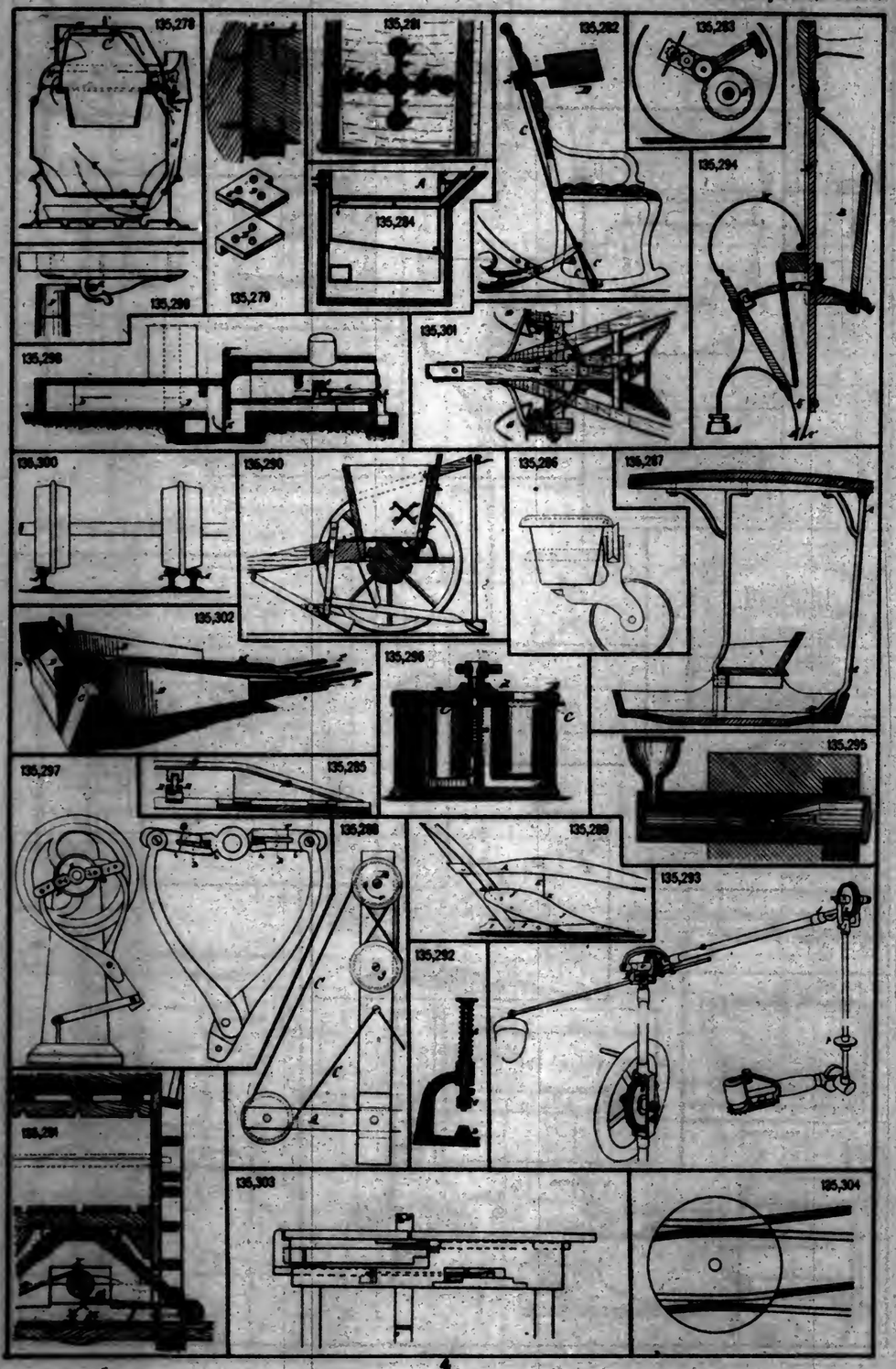
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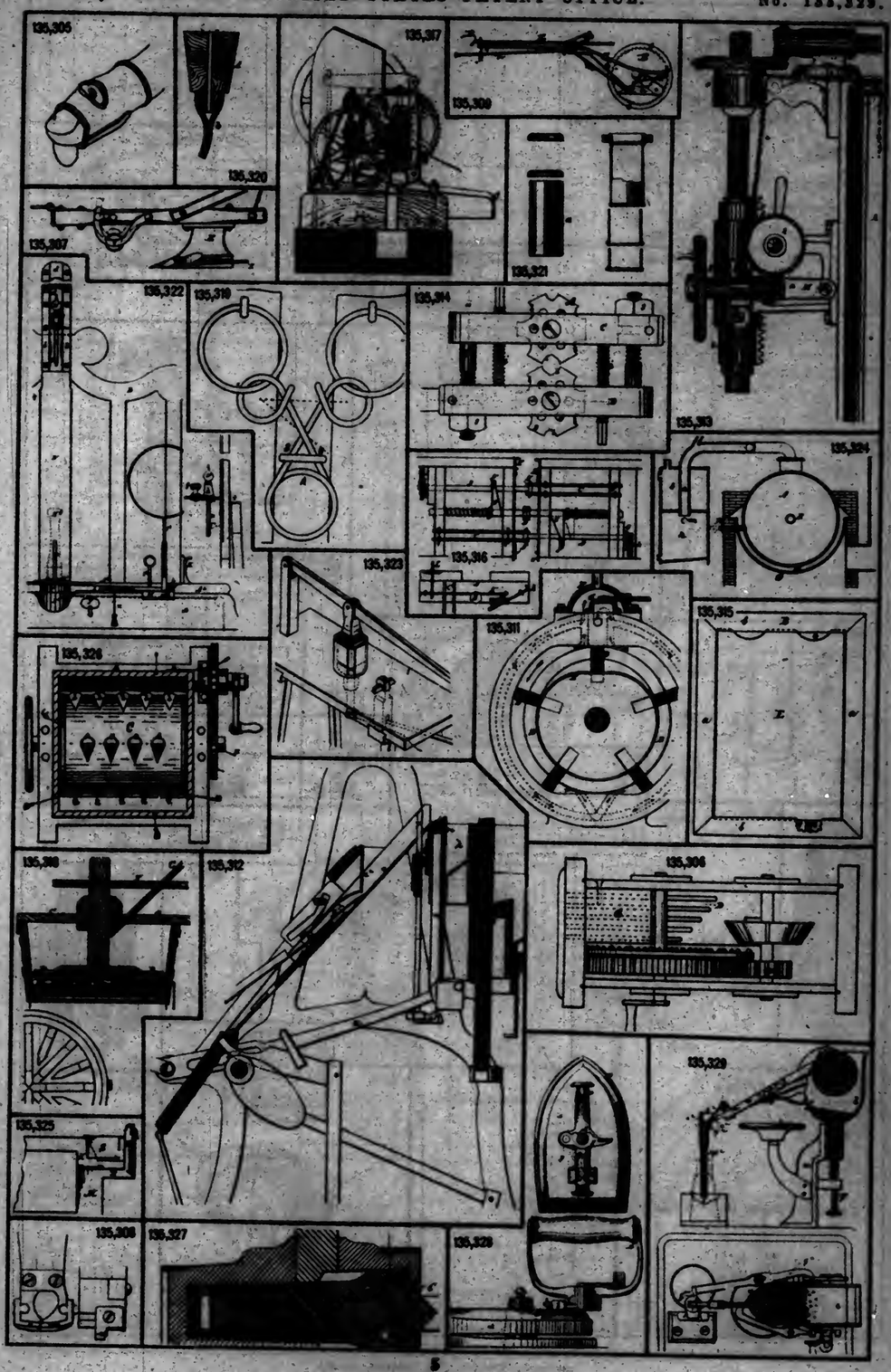
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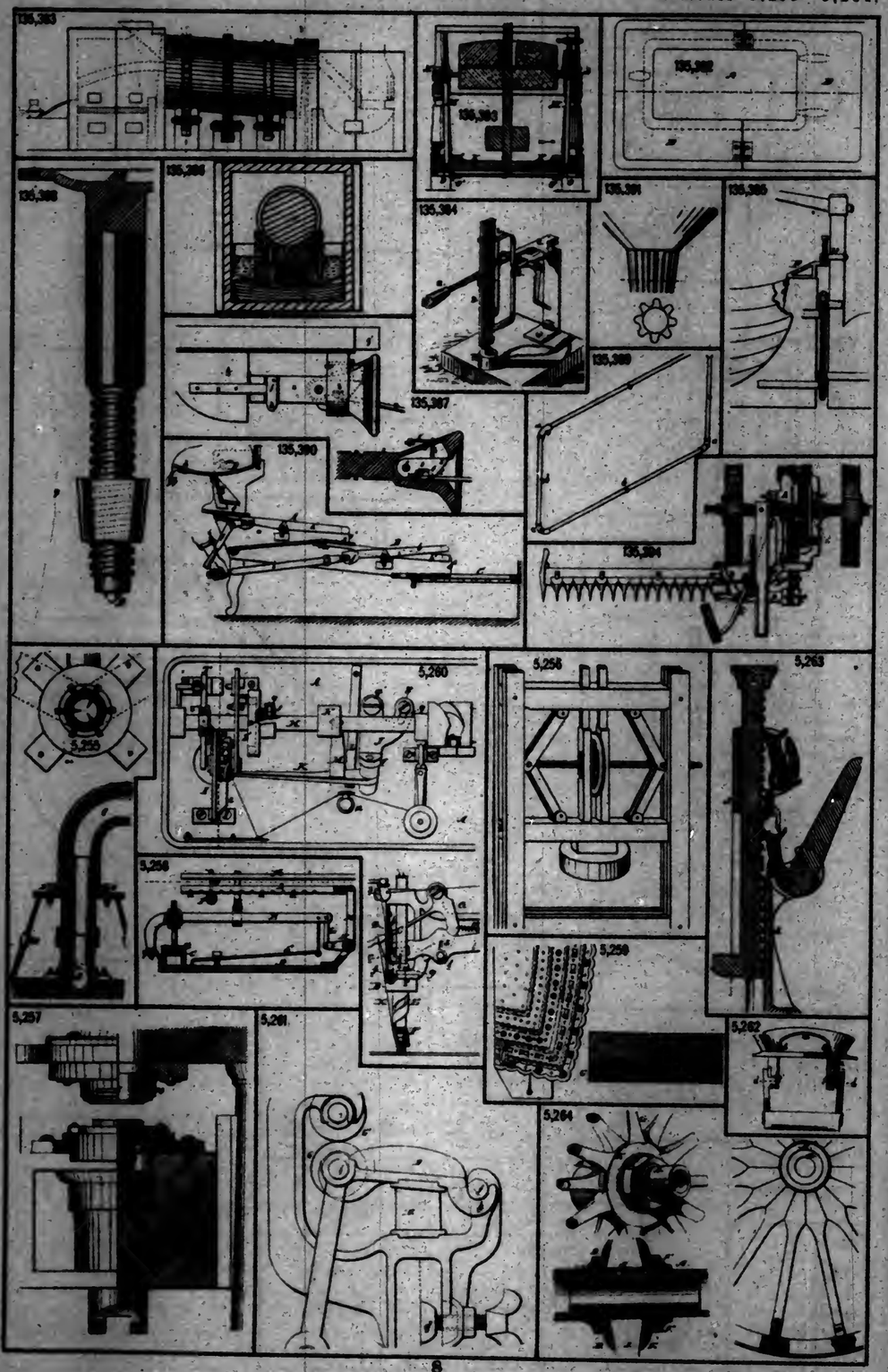
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COMMISSIONER'S DECISIONS.

C. W. JENKINS *vs.* BARNEY & BERRY.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of C. W. Jenkins and the patent of Barney & Berry, No. 77,862, for an* IMPROVEMENT IN SKATES.—*Decided February 1, 1873.*]

ABANDONMENT AND INTERFERENCE—DISTINCTION—APPEALS—PRACTICE.

The question whether an invention has been forfeited should be kept entirely distinct from the question whether it has been abandoned.

If one party to an interference is adjudged the prior inventor by the Examiner of Interferences, but is refused a patent on the ground that he has abandoned the invention in consequence of its having been in public use or on sale for two years before he filed his application, an appeal by him brings up the question of abandonment only, and not that of priority of invention.

He may appeal from the decision of the Commissioner on question of abandonment to the Supreme Court of the District of Columbia.

If the adverse party desires to have the decision of the Examiner of Interferences on the question of priority revised, he must appeal from it.

If the Examiner of Interferences decides that the party who first conceived of the invention has, by his negligence in prosecuting it, forfeited his right to it in favor of another who reduced it to practice before him, an appeal by him brings up both questions.

No appeal can be allowed in such a case from the decision of the Commissioner.

Where the decision of the Examiner of Interferences left it in doubt whether he held that the party whom he found was the prior inventor had abandoned the invention or had forfeited it by his negligence in favor of his competitor, the case was remanded in order that his decision should be made explicit on that point.

LEGGETT, *Commissioner:*

The real question at issue is not very evident in this case. The Examiner of Interferences says:

"The first question which naturally arises from these facts is whether Jenkins's right to a patent has been affected by the doctrine of equitable estoppel. But before this question can be considered it must be shown that Barney & Berry, the patentees, were original and independent inventors. They are accused by Jenkins of having pirated the invention from him, and if this accusation be true, Jenkins is entitled to judgment, provided it does not appear that he has abandoned the invention to the public."

Again he says: "It remains only to be considered if the delay upon the part of Jenkins has been sufficient under the circumstances to work a forfeiture of his right to a patent." Further on he discusses and cites authorities, without discrimination, upon the question of diligence, as affecting the question of priority of invention, and the question of abandonment. The closing paragraph of his decision is as follows: "Priority of invention is awarded to Jenkins, but his right to a patent is denied for the reasons given above."

Thus the questions of diligence and abandonment, which are quite distinct, are so blended that it is not clear which of them is actually involved in the decision. There is much to indicate that priority of invention, in legal contemplation, may have been intended to be awarded to the patentee, on the ground of failure by the applicant through want of diligence, under authority of *Ransom* vs. *Mayor of New York*, and other kindred decisions. On the other hand, there is about as much to indicate that the Examiner has found the applicant to be the first inventor, and at the same time to have abandoned his invention to the public. The contestants, prompted by their opposite interests, have respectively adopted these opposite constructions of the decision. Assuming that the question of priority of invention was settled in his favor, the applicant appealed to the Board on the single question of abandonment. He now stoutly maintains that that question only is before the Commissioner—that the question of priority has been adjudicated in his favor and not appealed from by the pat-

entee. The patentee says: "If he" (the applicant) "had desired to avoid a forfeiture of his rights as inventor he should have made some little effort to secure those rights." The Board seem to have considered only the question of abandonment, yet it is by no means clear that that question was properly before them. It is quite important that all decisions, and the grounds for them, in interference cases, be particularly clear and unambiguous, that the rights of the parties under the law may be properly guarded. If priority of invention be awarded to one party because of lack of reasonable diligence of the other party, then the decision of the Commissioner is final. But if priority be awarded to a party, and at the same time it is adjudged upon the proof that he has abandoned his invention to the public, then, unless the question of priority be further contested, the question of abandonment becomes an *ex parte* question, and appeal may be taken to the Supreme Court of the District of Columbia. It is doubtful whether forfeiture and abandonment can be adjudged against the same party at the same time. The two findings are not in harmony. If a party has forfeited his right to a patent by want of diligence, then he is not, in the eye of the law, the prior inventor, and cannot, therefore, have abandoned his invention to the public. Priority in such a case is always adjudged to be with the opposing party who, though subsequent to devise, has been first to reduce the invention to practice and confer it upon the public. The necessity for appeal, too, is changed according to the construction which is placed upon the facts in proof. The party against whom judgment of priority is pronounced must appeal from that judgment if he wishes it to be reviewed, no matter whether it is accompanied or followed by judgment of abandonment or not, because the questions of abandonment and priority of invention are entirely distinct and separate questions.

This case is therefore returned to the Examiner of Interferences, who will review his decision and free it from uncertainty as to his intentions in the matter above indicated.

C. E. RICHARDSON *et al.*—*Appeal.*

[*Appeal from the Examiner of Trade-Marks in the matter of the application of Charles E. Richardson et al. for the registration of a Trade-Mark.—Decided February* 7, 1873.]

TRADE-MARKS—THE WORD "PATENT" IN TRADE-MARKS.

The name under which a patented article has been sold during the lifetime of the patent becomes public property when the patent expires, as well as the article, and cannot be appropriated as a trade-mark.

After a patent has expired, to include the word "Patent" in a trade-mark for the article is calculated to mislead the public, and the registration of it will not be allowed.

The words "A. Richardson's Patent Union Leather-Splitting Machine," under which the article protected has been sold during the lifetime of the patent, cannot be appropriated as a trade-mark for it after the patent has expired, neither can they be though the word "Patent" is omitted.

The word "Union," having been attached to a patented article during the life-time of the patent, has acquired a distinctive meaning, has lost its character as an arbitrary symbol, and is not registrable as a trade-mark.

LEGGETT, *Commissioner:*

Applicant petitions for the registration of the words "A. Richardson's Patent Union Leather-Splitting Machine." It appears that the leather-splitting machine he proposes to manufacture and place this alleged trade-mark upon has been patented, manufactured, and put upon the market under the above caption during the past twenty years, and that the patent has expired. The Examiner has therefore held that the word "Patent" cannot properly be sanctioned as part of this trade-mark, because it would tend to deceive the public and perhaps induce a violation of section 39 of the patent act. Applicant then proposes to drop this word, and asks that the words "A. Richardson's Union Leather-Splitting Machine" be registered, if, in the opinion of the Commissioner, the words as originally submitted must be rejected. This does not relieve the case of another objection. The words presented have become the generic name of these machines by which the public now know them. They have been before the country under this caption as patented devices. The right to make them has now fallen into the hands of the public, and why should the public not have the right to use the name by which they are known and which they have acquired by virtue of the patent? When a device becomes public property its name must also. If the word "Union" were now adopted for the first time, it would no doubt in this connection be an arbitrary symbol and render the words presented registrable. But it has become a part of the name of the device to which it is proposed to be applied, and therefore registration must be refused.

STERNBERGER *vs.* THALHEIMER & HIRSCH.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Leopold Sternberger, for registration of a certain Trade-Mark, and a certificate of registration granted Thalheimer & Hirsch.—Decided February* 8, 1873.]

ADOPTION OF TRADE-MARK—ADMISSIBILITY OF EVIDENCE.

Parties who employ a word in an experimental way in five or six instances, and take no further steps with it for three months, do not thereby gain a title to it as a trade-mark as against one who has in the meanwhile adopted it and put it into general use.

Neither will the latter lose his right to it because the others procure it to be registered.

Upon an interference between an application for the registry of a trade-mark and a trade-mark already registered, evidence was adduced tending to show that the applicant had admitted in conversation that he had not previously made use of the trade-mark: *Held*, that it was competent for him to prove, although upon the rebuttal, that he had been in the use of it prior to the conversation.

THACHER, *Acting Commissioner:*

The subject-matter of this controversy is the word "Centennial" to be used as a trade-mark for certain articles of clothing.

The question for determination is somewhat different from that which arises in interferences between applications for patents. It is not priority of invention or priority of production even, but priority of adoption by actual use. This circumstance will be of some assistance in deciding a preliminary question as to admissibility of certain testimony. Under an extension of time Sternberger proceeded to take rebutting testimony, to most of which objection is taken by respondents on the ground that, as it goes to prove the date and extent of use of the mark by Sternberger, it is direct and not responsive evidence on their part. In the testimony for Thalheimer & Hirsch a certain conversation between them and Sternberger is sworn to. The latter had some time previous obtained certificate of registration for the word "centennial" in connection with certain devices. Burgaeur swears that Sternberger, alluding to this, said: "We have that patent laying at home, but I do not know whether we will ever make use of it." Thalheimer says: "Mr. Sternberger remarked, although they had that trade-mark registered previous to ours, he did not know whether they would ever make any use of it." This is equivalent to an admission on the part of Sternberger that he had not used the mark up to the date of the conversation, and as it occurred subsequent to the date of use sworn to by Thalheimer & Hirsch, would be fatal to the claim of the former. A simple denial of the conversation would hardly be sufficient under the circumstances. The testimony of these witnesses could be successfully rebutted only by proof of actual use before the conversation took place. I think, therefore, that the evidence is competent and should be admitted.

Thalheimer & Hirsch state that they commenced the use of their mark the beginning of March, 1872, and this averment they support by testimony of their engraver, box-maker, and one of their salesmen.

The only attempt to fix a precise date, however, is in the deposition of Hirsch, who states that the application for registration was forwarded the 20th of March, 1872, and that they had used the mark two weeks previously, which would make the date of first use about the 6th of March. It is left a matter of uncertainty, however, and might vary four or five days either way. Their box-maker, Hoover, was called by Sternberger in rebuttal. His testimony throws some light upon the nature of this first use of the mark by his employers. He says that some time in February or March, Hirsch gave him five or six of the labels which he pasted on boxes and returned; that the object in making up these few boxes was to decide the question of colors; and that the first considerable quantity was not delivered until the 13th of June, 1872. This is somewhat damaging to the statement of Thalheimer & Hirsch that these labels were affixed to boxes containing shirts and exposed for sale, and that their use was continuous from that time forward. The whole matter is left in a cloud of doubt and uncertainty, and I am unable to decide just when the respondents began to use the mark in such way as to constitute adoption.

On the other hand, the testimony is conclusive that on the 12th of March, 1872, at least twelve dozen shirts were stamped with the word "Centennial" for Sternberger, which were exposed in his store and some of them actually sold. The 25th of June following another lot of forty-five dozen was stamped in the same way and put on sale. In view of the fact that Sternberger had as early as February, 1872, obtained a certificate of registration for a trade-mark of which the word "Centennial" constituted a part, thus giving evidence and publication to the world of his intention to use the word for trade-mark purposes, and that he fixes definitely the actual commencement of its use as such but a little later, I am of the opinion that the weight of evidence is in his favor.

The decision of the Examiner of Trade-Marks is therefore affirmed, and the right to a certificate of registration awarded to Sternberger.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

ABEL E. BRIDGE *et al. vs.* RUFUS H. BROWN *et al.*—*Infringement.*

[*In Equity.—Before Shepley, Judge.—October Term*, 1872.]

A patent for an apparatus for making extracts from tan-bark by means of exhaust steam, which claims in combination an exhaust-steam pipe, a leach, and intermediate boxes in which the steam is condensed, and also expands so as to avoid back pressure on the piston, is not infringed by a similar apparatus in which there is no exhaust-pipe nor provision for avoiding back pressure, but the steam is taken directly from the boiler.

[*T. L. Wakefield*, for complainants.

Ives & Lincoln and *G. L. Roberts*, for defendants.]

SHEPLEY, *J.:*

Letters Patent No. 50,626, issued October 20, 1865, to S. M. Pingree, for a new and improved apparatus for making extracts from tan-bark. The patentee declares that "the object of this invention is to utilize *exhaust steam* from a steam-engine for the purpose of making extracts from tan-bark and other materials." The invention consists, according to the specifications of the patent, in the arrangement of a box with perforated sides and bottom, in combination with a pipe which conducts the exhaust steam to the leach containing the bark or other material to be extracted, in such manner that the steam is free to expand and made to condense partially as it passes from the exhaust-pipe into said box, and all back pressure on the piston is avoided, and at the same time the full benefit of the action of the steam on the bark or other material is obtained. The patentee then describes a leach, which is provided with a tightly-fitting cover, and which, for the sake of convenience, may be divided off by transverse partitions into a series of compartments. A pipe extends over the entire length of the leach, and branch pipes lead from this pipe down into the several compartments. The bark or material to be extracted rests on slotted or perforated false bottoms, and the branch pipes lead into boxes which are situated close to the leach. The cross-section of the boxes is considerably larger than that of the pipes, so that the steam in passing into the same is free to expand, and the sides of said boxes are perforated with a large number of holes through which the steam passes out to the bark. The pipe D is intended to connect with the exhaust-pipe of a steam-engine, and as the exhaust steam passes through said pipe and the branch pipes into the boxes, it expands readily and a partial condensation takes place, both within said boxes and outside of the same, and by this partial condensation, combined with the rapid expansion of the steam as it reaches the boxes, all back pressure on the piston of the engine is avoided. Thus he says: "By my apparatus the exhaust steam is utilized and a great saving in fuel is effected." The claim of the patent is for—

"The boxes G with perforated sides, applied in combination with the exhaust-pipe D and leach A or its equivalent, in the manner and for the purpose substantially as set forth."

The patent is for an apparatus for making extracts from tan-bark and other material, not for the process of extracting the tannin, but for an apparatus consist-

ing (*first*) of the boxes G with perforated sides, applied in combination with (*second*) *the exhaust-pipe D* and (third) leach A or its equivalent, (fourth) in the manner and (fifth) for the purpose substantially as set forth.

In the state of the art at the date of the invention of Pingree there was nothing new in the form or structure of his leach, nor in the mode or purpose of its use, apart from the introduction into it of steam from the exhaust-pipe of an engine instead of from a steam-pipe taking its supply directly from a boiler. The boxes with perforated sides are not claimed except as combined with the exhaust-pipe and leach, in the manner set forth in the patent, and for the purpose set forth. This purpose was the utilization of exhaust steam and the consequent saving of fuel in making extracts from tan-bark and other materials. There is no evidence in this case that the defendants use the complainants' combination. They do not use the boxes G in combination with the exhaust-pipe D in the manner or for the purpose set out in the patent, that manner and purpose being in the patented apparatus that the exhaust-pipe should conduct the exhaust steam to the leach in such manner that the steam is free to expand, and made to condense partially as it passes from the exhaust-pipe into said box, and *all back pressure on the piston is avoided*, and at the same time the full benefit of the action of the steam on the bark is obtained. Respondents do not use their boxes to conduct exhaust steam to the leach, nor for the purpose of condensing the steam and avoiding back pressure on the piston. They do not use exhaust steam, but take their steam directly from the boiler. They do not use their boxes in combination with complainants' exhaust-pipe, for they do not use any exhaust-pipe or any equivalent for it. The pipe used by them is not like the pipe D, the exhaust-pipe of a steam-engine, and is not capable of being used for that purpose. The dimensions of the pipe are such as would effectually prevent its use for any such purpose, in connection with the process for which it is used by the respondents. It is contended by complainants that although the apparatus patented by Pingree is designed for exhaust steam, their patent would cover its use for any cognate purpose. It is a sufficient answer to this position that it has already been shown that respondents do not use all the elements of their combination as described and claimed in their patent. Respondents' steam-pipe is not the exhaust-pipe D or the equivalent of the pipe D described in Pingree's claim. No case of infringement is made out, and complainants' bill must be dismissed.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

ELI W. BLAKE *et al. vs.* GEORGE W. RAWSON.

[*In Equity.—Before Shepley, Judge.—October Term*, 1872.]

NOVELTY IN STONE-CRUSHERS—ABANDONED EXPERIMENTS—PRACTICE IN INJUNCTION CASES.

Blake's stone-crusher, consisting of two jaws nearly vertical, but inclining from each other upward, and by a reciprocating movement of one to and from the other, crushing the stone as it falls till the fragments pass out at the bottom, is novel, although a previous machine crushed and ground stone between a horizontal cylinder oscillating on its axis and the sides of an eccentric basin approximating to the periphery of the cylinder at the bottom.

The existence twenty years before of a single machine similar to that described in a patent, which was abandoned directly, and which appears to have been impracticable, will not invalidate the patent.

Upon a motion for an injunction the merits of the patent will be considered anew, although it has been sustained on similar hearings before other judges, if it is alleged that new facts are in proof, and that the merits were not properly presented on those hearings.

[*H. T. Blake* and *G. W. Baldwin*, for complainants.
Shennan & Drew, for defendant.]

SHEPLEY, *J.*:

This bill in equity is brought for an alleged infringement of the reissued patent of January 9, 1866, to Eli W. Blake, for a new and useful machine for breaking stones for road and other purposes.

This patent has already been before the court, and has been sustained by Judge Shipman in the case of *Blake* vs. *Stafford*, (3 Fisher, 294,) whose decision in that case was sustained by Mr. Justice Nelson on a motion for a new trial, and also in the case before Judge Drummond. (*Blake* vs. *Eagle Works Mfg. Co.*, 4 Fisher, 591.)

The principal points relied upon in the present case by the learned and able counsel for the respondents, are those which are also set up in the answer in relation to the alleged prior inventions of James Hamilton, as described in letters patent of the United States issued to him on the 3d of January, A. D. 1854, for "Improvements in machinery for crushing and grinding quartz and other hard substances," and also of one Samuel Forward (or Forwood,) of Louisville, Kentucky, who constructed a machine for breaking stones for roads in Louisville, in the year 1847.

The answer sets forth, and counsel contends that the facts and law applicable to these two machines as compared with the combination patented to the complainant, were not properly presented to the judges who tried and decided those cases, and also shows that some of the facts adduced and proved by this respondent in support of some of the allegations now made by this respondent were not made and proved in either of the causes above named. For these reasons we have carefully considered the testimony of the witnesses and the opinions of the experts in relation to the quartz-crusher of Hamilton, and the rock-breaker of Forwood, without regard to any previous action on this patent by any court, as if it had never been tried or adjudicated upon.

The essential characteristics of Blake's stone-crusher are two jaws between which the stones are to be broken, having their acting faces so nearly in an upright position that stones to be broken will descend by force of gravity between them, and convergent downward one toward the other in such manner that, while the space between them at the top is such as to receive the stones to be broken, the space at the bottom is only sufficient to allow the fragments to pass when broken to the required size; and a revolving shaft with a fly-wheel driven by steam or other power, with such intervening mechanism between the revolving shaft and the movable jaw as shall impart to the jaw a definite vibratory movement, causing it to advance with great power toward the other jaw through a short and definitely-limited space, and alternately to recede and advance, so that the stones fall down between the jaws until their descent is arrested between the convergent faces, when

the movable jaw advancing crushes the stones, and, receding, liberates the fragments and they again descend, and if too large to pass through the space at the bottom of the jaws, they are again arrested and broken by the advancing movable jaw until the fragments are sufficiently reduced in size to pass through. The patentee does not claim the manner of supporting the jaws in their proper relative position, or his particular mode of imparting the definite motion with the required power to the movable jaw from the revolving shaft. These, he claims, may be varied indefinitely without affecting the principle of the operation. After describing the invention which he claims, the patentee describes the form in which he embodies his invention, and it is evident from the claims in his patent, taken in connection with the specification to which they refer, that although he describes a crank, lever, and toggle-joint as one mode, and the mode adopted by him of communicating a definite motion to the movable jaw from the revolving shaft, no construction can properly be given to the patent, such as is suggested by respondents, which would limit it to the toggle-joint mechanism, which is described by the patentee as the particular form in which one element of the patented combination is constructed and embodied in one form of his machine. The machine patented frequently has a broader scope than the particular *form* of the machine described as the form *used* by the patentee. The question of novelty is to be settled by a comparison of prior machines with the machine patented rather than the form of the machine in use.

The Hamilton quartz-crusher, relied upon as an invention antedating the complainant's, is a combination of certain elements which, separately considered, do not materially differ from the elements of the combination described in the Blake patent. All the elements of the combination are old in both machines. The novelty in both consisted in the peculiar mechanical combination of the members of the contrivance and the resultant mode of operation. The movable jaw in the Blake machine advances toward and recedes from the fixed jaw in a direction substantially at right angles with the faces of the jaws, so that, when advancing, the stones are nipped and crushed between the jaws, and when receding the stones are liberated. In the Hamilton quartz-crusher there is a cylindrical roller or pestle in a basin having its sides eccentric to the circle of the movement of the roller or cylindrical pestle, the inner sides at the bottom of the curved basin gradually approximating to the circle of movement of the cylindrical roller. This cylinder is made to move around its central shaft with a reciprocating vibratory movement, but being cylindrical and turning upon a fixed central axis, can only move in the direction of the periphery of the cylinder. The surfaces of the cylinder operate upon the material by a grinding process tending to rotate the stones on their own axis, and at the same time to draw them down into a space where, by reason of the eccentricity of the opposite surfaces, they are nearer to each other than at the point where they begin to operate on the stones to be crushed. In the Hamilton machine every point on the acting face of the roller moves in the segment of the circle of the periphery. In the Blake machine it is strictly correct to say that the points in the movable jaw advanced toward the fixed jaw in an arc of a circle, but the *whole* movable jaw advances toward and recedes from the fixed jaw, and the space through which it moves is so small, compared with the periphery of the circle which would be described if its rotation were continued, that the operation upon the material is substantially the same as if the movable jaw were advanced toward the fixed jaw in a direction at right angles with the face of the jaw, nipping and crushing the material at the points of impact without any tendency to a rotating or grinding action upon it. In the Hamilton crusher the surface of the rotating cylinder passes laterally by the surface of the basin, reducing the material both by the grinding operation and by moving it into a space progressively narrower, as if it was passing between rollers. The mode of operation is different in the two machines. It is not always enough to prove that two combinations of elements are equivalent, to show that each element of the combination in one may be regarded under some circumstances as the equivalent of the corresponding element in the other, when the elements are separately considered. If the mechanical combination of the members of the two machines be such that the action and mode of operation differ in the two machines, then one is something more than a mere mechanical equivalent for the other. A careful examination of the evidence in the case, and close comparison of the working models of the two machines, has resulted in forcing upon my mind the same conclusion arrived at by Mr. Justice Nelson, in the case of *Blake* vs. *Stafford*, when he says: "Hamilton's quartz-crusher neither embodies the arrangement nor mode of operation of the plaintiff's machine, but operates upon a different principle and embodying a different set of ideas."

The Forwood machine is not in existence, and no such machine is proved to have been in existence within twenty years. There is no evidence tending to show that more than one Forwood machine was ever made or used. Only two persons testify to having seen that machine. Only one witness testifies to anything which can possibly be claimed to have been any other than an experimental use. The model introduced in evidence, constructed to correspond with the description of the machine as testified to by these two witnesses, according to their recollection, after the lapse of twenty years, does not in some important particulars correspond with the drawings given by one of the witnesses, and the two witnesses differ also materially in their statements. The principal feature of the Forwood machine was that it had two horizontal jaws, each from six to seven feet long, whose opposite bearings were from twelve to fourteen feet apart. The crushing-faces of these jaws were proximately segments of a circle, the radius of which is represented by the length of the jaw. In the downward movement of the two jaws they operated in the crushing process upon the material as if it were passing between two cylinders of a diameter of twelve or fourteen feet. The idea of the machine seems to have been, by use of two segments of cylinders of this diameter, to avoid the use of such cumbrous and expensive devices as two cylinders of such great diameter and great weight and expense as their requisite strength would have involved, and at the same time to obtain the same result. There was no lateral movement by which the jaws could be made to recede from each other

after the crushing process resulting from the downward movement. The upward movement of the jaws was one which threw them against and lifted the whole mass of superincumbent material. In view of this obvious feature of the machine, it is impossible to credit the testimony of Johnson or to agree with the opinion of the expert that this was ever a practically successful machine. The inference that it was not is also strengthened by the fact that it was immediately abandoned, and never appears to have been used afterward, and there is no evidence that a second one like it was ever made. It is difficult to see how Blake could have been aided in the development of the ideas embodied in his structure by any suggestions he could possibly have received from Forwood's machine, if that had been in existence and known to Blake when he was developing his invention.

It is too clear to require any extended remarks, that no one of the other machines referred to in the answer anticipated the invention of Blake. He is therefore to be considered as the original and first inventor of what he claims in his patent. Applying the construction already given to those claims, the infringement by the Rawson machine is obvious.

Decree for complainants.

U. S. CIRCUIT COURT—DISTRICT OF MAINE.

JAMES R. OSGOOD *et al. vs.* EDWARD C. ALLEN.

[*In Equity.—Before Shepley, Circuit Judge.—Decided December,* 1872.]

COPYRIGHT IN TITLE—TRADE-MARK AND INVASION THEREOF.

A title separate from the publication which it is used to designate is not protected by the copyright law. It is only as a part of the copyrighted book, and as the title to that particular literary composition, that the title is within the provisions of the copyright act.

The office of a trade-mark is to point distinctively to the origin or ownership of the article to which it is affixed.

Generic names and those merely descriptive of an article or of its qualities or ingredients, and geographical names which point out only the place of production and not the producer, are not the subject of trade-mark.

In all cases of invasion of rights to the exclusive use of a trade-mark, the essence of the wrong consists in the sale of the goods of one manufacturer or vender as those of another.

A suit in equity brought by the complainants, proprietors and publishers, at Boston, Massachusetts, of an illustrated copyrighted monthly magazine, entitled "Our Young Folks, an Illustrated Magazine for Boys and Girls," against the defendant, publisher, at Augusta, Maine, of a semi-monthly paper, also copyrighted, entitled "Our Young Folks' Illustrated Paper." The two publications were in no respect similar, excepting in the use in the title of each of the words, "Our Young Folks."

Upon bill founded upon alleged copyright and trade-mark right in the words "Our Young Folks," filed to restrain the defendant from continuing the publication of his paper: *Held*, 1. That the complainants had no copyright in the words "Our Young Folks" separate from the copyrighted magazine. 2. That the cause should be referred to a master to ascertain whether the public had been deceived, or was in danger of being deceived, into the belief that the respondents' publication was, in fact, that of the complainants', and thereby led to purchase the same.

[*R. M. Morse, Jr.*, and *R. Stone, Jr., Butler & Fessenden*, of Portland, for plaintiffs.

Orestes Brown and *J. B. Holmes, A. R. Strout*, of Portland, for defendants.]

SHEPLEY, *J.*:

The complainants are the proprietors and publishers of an illustrated magazine for boys and girls, entitled "Our Young Folks," which has been published monthly, in the city of Boston, under the same title, since December, 1864. Previous to the publication of the first number the publishers duly entered the title of their magazine for securing the copyright thereof. The publication and sale have been continued in regular monthly numbers by the firm of Ticknor & Fields and their successors, including the complainants, and the copyright of each number was taken out and secured according to law, previous to its publication. Complainants allege that when the copyright of the first number was taken out the title "Our Young Folks" had not been adopted and was not in use for any other similar publication, and has not been used for any similar publication since, except by the defendant; that they have expended large sums of money in publishing and selling the same; that by reason of their expenditure and the care and skill by them bestowed, the magazine has acquired an extensive and valuable reputation throughout the United States and elsewhere as a publication for young people under the title of "Our Young Folks," and was a source of profit to complainants.

The respondent, a publisher at Augusta, Maine, announced by advertisements and otherwise that he would publish on the first and fifteenth days of each month, commencing October 1, 1871, an illustrated publication for young people under the title "Our Young Folks' Illustrated Paper."

It is admitted that he accordingly did issue a very large edition of his illustrated publication, a copy of which is filed with the proofs in the case, and that, upon demand by the complainants before publication, he refused, and still refuses, to withdraw the announcement of the publication or to change the title, and has published and sold large numbers under said title. The complainants claim that they are entitled to a remedy under the law of copyright, and also that they have a right to the exclusive use of the name "Our Young Folks," as indicating a periodical, according to the doctrine of trade-marks as applied to the protection of literary publications. It is apparent upon inspection, and not disputed, that the publications of the complainants and the respondent are in no respect the same or even similar, except in the use by both of the words "Our Young Folks" as a part of the title. The title of the one on the title page is "Our Young Folks; an Illustrated Magazine for Boys and Girls;" of the other "Our Young Folks' Illustrated Paper." Both are illustrated periodicals for the young. The reading matter and the illustrations are not the same or similar.

Copyright laws are designed for the encouragement of learning by securing to authors and their representatives the exclusive right to the publication of their literary compositions, as patent laws secure to inventors certain exclusive rights in their discoveries. The constitution conferred upon Congress the power to promote the progress of science and the useful arts "by securing for limited times to authors and inventors the exclusive rights to their respective writings and discoveries." Accordingly, in 1790, Congress passed an act for the encouragement of learning by securing the copies of maps, charts, and books to the authors and proprietors of such copies, during the times therein mentioned.

This act provided that the author and authors of any

map, chart, book or books * * * "shall have the sole right and liberty of printing, reprinting, publishing and vending such map, chart, book or books for fourteen years from the time of recording the title thereof." The remedy provided by this statute was a right of action given to the proprietor of the copyright against any person who, without his consent, should publish, sell or expose to sale, or cause to be published, sold or exposed to sale any copy of such map, chart, book or books.

The act of 1870 "to revise, consolidate and amend the statutes relating to patents and copyrights," provides that the author * * * or proprietors of any books, &c., shall, upon complying with the provisions of this act, have the sole liberty of printing, reprinting, publishing, completing, copying, executing, finishing, and vending the same.

The nineteenth section provides that no person shall be entitled to the benefit of the act unless he shall, before publication, deposit in the mail for the librarian of Congress a printed copy of the title of such book, and shall, within ten days after publication, mail to the librarian two copies of such copyright book. The remedy of the author or proprietor under this statute is against the person who, without the consent in writing of the proprietor of the copyright, shall print, publish, or import, or knowing the same to be so printed, published, or imported, shall sell or expose to sale any copy of such book.

By the plain terms of the statute, the copyright protected is the copyright in "the book," the word "book" being used to describe any literary composition. Although a printed copy of the title of such book is required before the publication to be sent to the librarian of Congress, yet this is only as a designation of the book to be copyrighted, and the right is not perfected under the statute until the required copies of such copyright book are, after publication, also sent. It is only as a part of the book and as the title to that particular literary composition, that the title is embraced within the provision of the act. It may possibly be necessary in some cases, in order to protect the copyrighted literary composition, for courts to secure the title from piracy, as well as the other productions of the mind of the author in the book. The right secured by the act, however, is the property in the literary composition, the product of the mind and genius of the author, and not in the name or title given to it. The title does not necessarily involve any literary composition; it may not be, and certainly the statute does not require, that it should be the product of the author's mind. It is not necessary that it should be novel or original. It is a mere appendage which only identifies and frequently does not in any way describe the literary composition itself or represent its character. By publishing, in accordance with the requirements of the copyright law, a book under the title of the life of any distinguished statesman, jurist, or author, the publisher could not prevent any other author from publishing an entirely different and original biography under the same title. When the title itself is original and the product of the author's own mind, and is appropriated by the infringement, as well as the whole or a part of the literary composition itself, in protecting the other portions of the literary compositions courts would probably also protect the title. But no case can be found either in England or this country in which, under the law of copyright, courts have protected the title alone separate from the book which it is used to designate. In *Jollie* vs. *Jacques*, 1 Blatchford 627, Mr. Justice Nelson says: "The title or name is an appendage to the book or piece of music for which the copyright is taken out, and if the latter fails to be protected, the title goes with it as certainly as the principal carries with it the incident." The only doubt expressed by Mr. Justice Nelson in that case is how the question might be decided in case of a valid copyright of a book and an infringement of the title by the defendant. While expressing no opinion upon this question, the reasoning by which he arrives at the conclusion that when the book fails to be protected the title goes with it would seem clearly to point to a similar result in a case of alleged infringement of copyright of the book, namely, that if there was no piracy of the copyrighted book, there could be no remedy under the act for the use of a title which could not be copyrighted independently of the book. The injunction granted in the case of *Hogg* vs. *Kirby*, 8 Vesey, 215, was not founded on copyright, but on the power a court of equity has to restrain one person from carrying on a trade or from publishing a work under a fraudulent representation that such trade or work is that of another. The chancellor (Lord Eldon) in the opinion in that case says: "In this case, protesting against the argument that a man is not at liberty to do anything which affects the sale of another work of this kind, and that because the sale if affected, therefore there is an injury, (for if there is a fair competition by another original work really new, be the loss what it may, there is no damage or injury,) I shall state the question to be, not whether this work is the same, but in a question between these parties whether the defendant has not represented it to be the same; and whether the injury to the plaintiff is not as great and the loss accruing ought not to be regarded in equity upon the same principles between them as if it was in fact the same work. Upon the point whether the work was in fact meant to be represented to the public as the same, I do not say that it is not a question proper for a jury." In the case of *Jollie* vs. *Jacques*, Mr. Justice Nelson declined to consider the question whether the court will interfere to prevent the use of a title in fraud of the plaintiff upon principles relating to the good will of trades, because, in the case before him, both parties were residents, and, for aught that appeared in the case, citizens of New York, and therefore independently of copyright, the Court had no jurisdiction in the case.

In the case before this Court the bill is filed by complainants as citizens of the Commonwealth of Massachusetts, against the defendant, a citizen of Maine. Relief is sought not only under the law of copyright but upon the general ground of equity as related to the good will of trades and the doctrine of trade-marks. It becomes necessary for the Court to determine, in this case, how far the complainants are entitled to a remedy upon these grounds of equity jurisdiction and upon the general principles governing courts of equity jurisdiction. Property in the use of a trade-mark or name has very little analogy to that which exists in copyrights or patents for inventions. In all cases where rights to the exclusive use of a trade-mark are invaded, the essence

of the wrong consists in the sale of the goods of one manufacturer or vender as those of another. It is only when this false representation is directly or indirectly made that the party who appeals to a court of equity can have relief. *Canal Company* vs. *Clark*, 13 Wallace, 311, 322; words or devices may be adopted as trade-marks, which are not original inventions of the one who adopts and uses them. Words in common use may be adopted if, at the time of adoption, they were not used to designate the same or similar articles of production. A generic name, or a name merely descriptive of an article of trade or its qualities or ingredients, cannot be adopted as a trade-mark so as to give a right to the exclusive use of it. The office of a trade-mark is to point distinctively to the origin or ownership of the article to which it is affixed. Marks which only indicate the names or qualities of products cannot become the subjects of exclusive use, for from the nature of the case any other producer may employ, with equal truth and the same right, the same marks for like products. Geographical names which point out only the plan of production, and not the producer, cannot be appropriated exclusively, so as to prevent others from using them and selling articles produced in the districts they describe under these appellations. In the case of *Brooklyn White Lead Company* vs. *Masury*, 25 Barbour 416, the Court said that as both plaintiff and defendant dealt in the same article, and both manufactured it at Brooklyn, each had the same right to describe it as Brooklyn white lead.

Lord Langdale, master of the rolls, well expresses the whole law of trade-marks by names in the case of the *Collins Company* vs. *Cowen*, 3 Kay & Johns 428. He says: "There is no such thing as property in a trade-mark as *an abstract name*. It is the right which a person has to use a certain name for articles which he has manufactured, so that he may prevent another person from using it, because the mark or name denotes that articles so marked were manufactured *by a certain person*, and no one else can have the right to put the same name upon his goods and then represent them to have been manufactured by the person whose mark it is. Applying these principles to the case before the Court, the question presented on this branch of the case is whether the defendant has so simulated the mark of the complainant as to deceive the public so that the public will naturally mistake his publication for that of the complainant."

Complainants aver that defendant fraudulently designing to procure the custom and trade of persons who are in the habit of buying their magazine, and to induce them and the public to believe that his publication is in fact the complainants', and in order to obtain for himself the benefit of the reputation of complainants' publication, advertises, prints, and offers for sale his publication under that title, and alleges thereby the public will be deceived by the title, and led to purchase respondent's publication under the belief that it is the magazine of the complainants. The agreed statement of facts is silent on the question whether the public are deceived or are in danger of being deceived as alleged. And whether the customers of the complainants or the public are induced to believe, or are in danger of being induced to believe, that respondent's publication is in fact the complainants', and thereby led to purchase the respondent's magazine under the belief that it is the complainants'.

The case will therefore be referred to a master to ascertain and report the fact upon the foregoing questions to the Court, and further proceedings in the case will be stayed until the coming in of the master's report.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,085.—*Lamps.*—Granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859. Hearing February 19, 1873.

23,097.—*Machines for Crozing and Chamfering Barrels.*—Granted to HIRAM LITTLEJOHN, March 1, 1859. Hearing February 12, 1873.

23,105.—*Construction of Steam-Vessels.*—Granted to JAMES MONTGOMERY, March 1, 1859. Hearing February 12, 1873.

23,152.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 8, 1859. Hearing February 19, 1873.

23,172.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,262.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON E. PETTEE, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEHR, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ATHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859 Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859 Hearing March 26, 1873.

23,629.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GERRISH, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GERRISH, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL R. ·Y and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, again in three divisions, Nos. 4,694, 4,695, and 4,696, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,691 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 16, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,9 3, June 6, 186 ; No 1,180 having been ordered to again reissue, No. 5,219, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S MERRIMON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Slate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIVELY, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,880.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,893.—*Slate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. H. BEARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859 Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

24,009.—*Machines for Upsetting Tires.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,098.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

EXTENSIONS GRANTED.

23,001.—*Improvement in Elastic Toys*, granted to LUCIUS P. PORTER, February 15, 1859.

Claim.—1. The combination of a reed or other speaking device with a hollow elastic toy made of caoutchouc or gutta percha, or their compounds, for acting together, the former by the latter, substantially as specified.

2. The manner herein described of securing the reed-frame to the toy by grooving the frame on its edges or periphery and inserting it in a hole in the toy, so as to be clasped in the groove by the edges of the elastic material in which the receiving aperture is made.

22,990.—*Improved Mop-Head*, granted to LUKE TAYLOR, February 15, 1859; reissued November 10, 1868, numbered 3,192; reissued November 24, 1868, numbered 3,215; reissued October 19, 1869, numbered 3,682.

Claim.—1. In a mop-head, in which the cross-head or stationary jaw is attached permanently and immovably to the handle, operating the movable jaw or binder by means of a tubular screw or socket fitted on the handle, and having its screw-thread on its exterior, in combination with a nut encompassing the screw, and connected with the movable jaw, so as to operate substantially as shown and described.

2. In a mop-head, in which the movable jaw or binder is operated through the medium of a screw-nut or collar, by means of thumb-ears attached to or formed with the said screw-nut or collar, placing the said ears outside the yoke or bow of the movable jaw or binder aforesaid, as herein described, for the purpose set forth.

22,947.—*Improvement in Wrenches*, granted to DANIEL P. FOSTER, February 15, 1859.

Claim.—Making the hinge-joint between the stationary and movable jaw of the wrench at *a*, viz., by the projection *c* on the stationary jaw and the depression *s* in the washer that is on the shank of the movable jaw, for the purpose of allowing the movable jaw to change its position in relation to the stationary one, as herein set forth, and for the purpose explained.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 4, 1873.]

6,378.—*Card-Receiver.*—GEORGE GILL, Taunton, Mass., assignor to REED and BARTON, same place.

6,379.—*Cake-Basket.*—GEORGE GILL, Taunton, Mass., assignor to REED & BARTON, same place.

6,380.—*Cake-Basket.*—GEORGE GILL, Taunton, Mass., assignor to REED and BARTON, same place.

6,381.—*Center-Piece.*—SAMUEL KELLETT, San Francisco, Ca.

6,382.—*Urn for Hot Water, &c.*—PHILIP P. MEYER, New York, N. Y.

6,383.—*Beer-Mugs.*—JOHN OESTERLING, Wheeling, W. Va.

6,384.—*Vase.*—WILLIAM H. WILKINSON, New York, N. Y., assignor to NORTH AMERICAN IRON WORKS, New York.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date February 4, 1873.]

1,115.—*Hams.*—EVANS BROTHERS, Cincinnati, Ohio.

1,116.—*Anti-Friction Metal and Journal Bearings.*—I X L METAL COMPANY, St. Louis, Mo., and Sacramento, Cal.

1,117.—*Galvanized Sheet-Iron.*—MCCULLOUGH IRON COMPANY, Philadelphia, Pa.

1,118.—*Galvanized Sheet-Iron.*—MCCULLOUGH IRON COMPANY, Philadelphia, Pa.

1,119.—*Boots and Shoes.*—CHARLES MERRITT, South Weymouth, Mass.

1,120.—*Gin.*—F. E. SUIRE & Co., Cincinnati, Ohio.

1,121.—*Gin.*—F. E. SUIRE & Co., Cincinnati, Ohio.

1,122.—*Gin.*—F. E. SUIRE & Co., Cincinnati, Ohio.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date February 4, 1873.]

ORIGINAL PATENTS.

135,395.—*Fire-Kindler.*—ROBERT ADAMS, East Enterprise, Ind.

Claim.—1. The combination of the sticks 1 2 3, &c., with the nail B or its equivalent, substantially as and for the purpose hereinbefore set forth.

2. The X-shape, together with the right-angle one-piece upon another construction of my kindler and resulting convenience in applying the combustible solution to the whole or part of the kindler, substantially as and for the purpose hereinbefore set forth.

135,396.—*Sash-Fastener.*—JOHN BISHOP, Northville, Mich.

A metallic shell, varying but slightly from the ordinary drawer-pull or sash-lift, is provided with a weighted bell-crank, hung by its short arm in the upper corner of the same. A bolt, having its inner end pivoted to the angle of the bell-crank, plays through a horizontal slot in the side of the lift. The long or weighted arm of the crank operating the bolt, and the case or shell with its concealed fixtures, is attached to the face of the sash, near the casing, serving as a combined sash lift and fastener.

Claim.—The combination of the lifting-case A, slotted at its side and arranged upon the surface of the sash, the weighted bell-crank B, and fastening-bolt C pivoted thereto, when these latter are concealed within the case, all substantially as described and shown, for the purpose set forth.

135,397.—*Gas-Retort Scraper.*—LA FAYETTE BLAIR, Painesville, Ohio.

A plate made to conform to the interior of the retort, and having attached at its upper exterior surface a series of spring-scrapers. Two guides are arranged at its lower corners to guide and steady the same while in use.

Claim.—1. The sectional spring-scrapers B, said scrapers conforming to the form of the plate C, substantially as and for the purpose as hereinbefore set forth.

2. The combination of the spring-scrapers B, plate C, and the slide-guides D, substantially as and for the purpose as hereinbefore set forth.

135,398.—*Elevator.*—JOHN H. BLOHM, New York, N. Y.

A sliding frame in the frame-work of the elevator is provided with a clutch or pinchers, whereby the rope or rod by which the engine that works the elevator is stopped, started ahead or back, can be griped whenever desired to operate the engine.

Claim.—1. The combination, with the rope or rod H which operates the engine, the clutch or pinchers G G' attached to a sliding frame, F, said pinchers being operated by suitable springs *n n* and ropes or chains *m m* attached to a wheel, J, fast to the spindle K, substantially as and for the purpose hereinbefore set forth.

2. The arrangement of the rope or rod H which operates the engine, outside of the inner paneling of the elevator, in combination with a clutch or pinchers, substantially in the manner and for the purpose described.

135,399.—*Machine for Felting Hat-Bodies.*—JOSEPH BOWDEN and ROBERT SHAW, Marple, assignors of one-half of their right to WILLIAM WILSON, Newcastle-on-Tyne, Great Britain.

A series of parallel elliptical rolls rotate in contact with and "work" or knead the hat retained between them. An intermittent reciprocating motion imparted to the bearings of the upper rolls raises the latter periodically to allow the hat-body to be placed or withdrawn.

Claim.—1. The combination, in a felting-machine, of a series of oval or elliptical rollers, arranged and acting substantially as and for the purposes hereinbefore set forth.

2. The lever *t* fitted with a screw, t^3, and a sliding weight, *w'*, and connected with the bearings of the upper roller, to which a vertical reciprocating motion is imparted, substantially as and for the purpose herein before set forth.

3. The combination, with the roller *g*, of the lever *n'* and cam *q'*, or equivalent self-acting mechanism for effecting the periodical separation of the rollers, substantially as and for the purpose hereinbefore set forth.

135,400.—*Combined Mop and Mop-Wringer.*—JAMES L. BOYDEN, Bridgeport, Conn.

A case or cylinder combined with a mop, which serves as part of the handle to the mop, and also holds the wringing device, and acts in connection therewith in wringing the mop.

Claim.—1. The combination of the case C with the plates or pressers E and the rod E', substantially as and for the purpose specified.

2. The case C, the neck of which is supplied with the angular projections *c c*, as and for the purpose described.

3. The combination, with a mop, of the case or cover C, which receives and holds the mop-brush during the wringing of the latter, for the purpose of assisting in expelling the water therefrom, substantially as shown and described.

4. The rod A, mop-brush B, case C with the plates E and rod E', hollow handle D, and handle F, combined substantially as and for purpose specified.

135,401.—*Cultivator.*—BYRON C. BRADLEY, Chicago, Ill.

Claim.—1. The parts A and B, constructed substantially as shown and described, and used in connection with a cultivator or plow beam and standard, substantially as and for the purpose herein specified.

2. The parts A B, beam E, and standard F, in combination with the piece or washer D and bolt, the several parts being constructed and arranged substantially as and for the purpose described.

135,402.—*Lock for Freight-Car Doors.*—WILLIAM S. BREWSTER, Chicago, Ill.

The spring-catch is applied to the inner side of the car-door, and is held in the locked position by means of the engaging spring, which enters an opening near the end of the catch. The bit of the key serves, when turned, to force the engaging spring out of contact with the catch and then engages with a ward upon said catch, so that by pulling the key the catch will be withdrawn.

Claim.—1. In combination with the spring-catch D provided with the post E, or its equivalent, and one or more wards, *d*, arranged as described, the spring *b* engaging the catch, substantially as and for the purpose specified.

2. The sliding plate I and perforated pin J arranged upon the case F so as to cover the key-hole and admit of being sealed, substantially as specified.

135,403.—*Corn-Harvester.*—HENRY M. CARTER, La Fayette, Ind.

Two upright boards, with forward projections at their lower ends, have a gate at their rear to receive the cut corn in an upright position, from whence it is periodically delivered by means of a foot-lever and connecting-rods.

Claim.—1. The combination of the retaining-gate I I, lever F, connecting-rod *g*, and foot-piece C.

2. The combination of the bracing-rods *a b*, the collar A, and the vertical bar L, by which the height of the cutter-bar and platform or apron M may be regulated.

135,404.—*Steering-Propeller.*—JAMES L. CATHCART, Washington, D. C.

A propeller-shaft with propeller attached is supported at its outward end in a bearing at the lower end of a vertical curved crane, and its inner end is sustained by a vertical shaft protruding above the deck, and is connected to the power-shaft by a universal joint. The shaft is moved laterally to any angle with the line of the ship's motion by arcs on the top of vertical shaft and actuated by chain fastened to said arcs, and extending around sheave on rudder-head.

Claim.—1. The slotted forks $d\ m^4$, on the ends of the propeller and engine shaft *m o*, and pins $d^2\ d^3$, by means of which the propeller and its shaft can readily be unshipped, substantially as described.

2. The slotted forks $d\ m^4$, in combination with the cross-piece a^1 provided with sliding boxes *v v*, substantially as described.

3. A laterally-adjustable propeller mounted in a frame, substantially as shown, so that it may be securely held at any desired angle with the line of motion of the vessel, as described.

4. The rudder-head provided with a sheave, e^4, and chain e^5, in combination with the radial sector-arms $m^5\ m^5$, perforated cap a^7, screw-bolt b^5, and nut n^4, substantially as and for the purpose described.

5. The detachable head e^6 provided with a grooved arc, n^4, substantially as described, for the purpose set forth.

6. A detachable crane for supporting screw-propellers made in two parts, and constructed to operate as set forth.

7. The vertical shaft *b*, constructed substantially as described, and provided with removable cap c^{10}, in combination with the propeller shaft *m*, substantially as and for the purpose specified.

8. The crane *h*, constructed as set forth, in combination with the vertical shafts *a b*, propeller B, and shaft *m*, substantially as described.

9. A propeller-shaft provided with a nut and key, or its equivalent, near its outer end, in combination with the propeller and after bearing of the propeller-shaft, whereby the propeller-hub and said after bearing are held together and obstructions thereby prevented from entering between them, and the frame kept from spreading or breaking, substantially as described.

135,405.—*Breech-Loading Fire-Arm.*—MARTIN J. CHAMBERLIN, Springfield, Mass.

The firing-pin is withdrawn within the breech-block upon opening the same, and the breech-block is readily manipulated and securely locked in place.

Claim.—1. The longitudinally-moving bar *f*, and cam *a* operated by the lever E, whereby the locking-brace *d* is moved from beneath the breech-block, and the breech-block moved down by the same movement of the said lever, substantially as described.

2. The longitudinally-moving bar *e* and cam *a* operated by the lever E, whereby the fire-pin *s* is forced back and the breech-block moved down by the same movement of said lever, substantially as described.

3. The pin *b*, in combination with the cam *a*, when operated by means of the lever E, all constructed and operating substantially as and for the purpose described.

4. The fire-pin *s* having thereon the projection *o*, in combination with the sliding bar *e*, whereby the said pin is forced back by suitable mechanism operating against said bar, substantially as described.

5. The pin *b* having combined therewith the cam *a*, the extractor *c*, and the finger *c'*, all substantially as and for the purpose described.

6. The combination of the lever E, pin *b*, cam *a*, bar *f*, and locking-brace *d*, all substantially as described.

7. The combination of the lever E, pin *b*, cam *a*, bar *e*, and fire-pin *s* having the projection *o* thereon, all substantially as and for the purpose set forth.

135,406.—*Die for Making Wrench-Heads.*—LUKE CHAPMAN, Collinsville, Conn., assignor to THE COLLINS COMPANY, same place.

The head is formed wholly by upsetting and swaging the end of a bar of the dimensions required for the shank. The bar is held by the dies, with its end protruding into a cavity, and the plunger being forced into the die from the opposite end staves up the metal, spreads it outward against the walls of the cavity, and thus gives proper shape to the head.

Claim.—1. The partible dies A and B, in combination with the plunger D, when constructed and designed for use substantially as described, for the purpose set forth.

2. The process of forming a head upon the end of a wrench-bar by means of the partible dies A and B and the plunger D, when operating substantially as described.

135,407.—*Self-Closing Faucet.*—MILFORD S. CLARK, New York, N. Y., assignor to CHARLES HARRISON, same place.

The handle is fixed upon a swivel, and when located it may be locked by a cap-screw. A hollow stem has a duct leading from the variable chamber to the induction and eduction passages, with two lateral openings, one smaller than the other.

Claim.—1. In a self-closing cock, a hollow valve-stem provided with openings f^2 and f^3, respectively, above and below the cap-leather *g*, when arranged with relation to the induction-passage A, substantially as described, and for the purposes set forth.

2. The combination of the swivel *i* and the ferrule *d* with the shell of a faucet or cock, substantially as described, and for the purpose set forth.

135,408.—*Buck-Saw Frame.*—WILLIAM CLEMSON, Middletown, N. Y.

The brace is formed of a square bar of iron twisted.

Claim.—The buck-saw frame above described, composed of end pieces A A, bar A', strain-rod *c*, and twisted brace or braces C, constructed and combined substantially as shown.

135,409.—*Driving-Belt.*—WALTER R. COLTON, Syracuse, N. Y.

The belt is made of flat sections of metal, which are hinged or pivoted together. A wooden V-shaped lug is secured to each link or section by a band of iron passed around it, the ends of the band being fastened to the link by screw and nut, or otherwise.

Claim.—1. A jointed belt, composed of flat metallic sections A, each provided with a V-shaped wooden block, C, rigidly attached, substantially as herein shown and described.

2. The combination of the metallic sections A, wooden blocks C, and adjustable bands *c*, all constructed and arranged substantially as herein described.

135,410.—*Reversing-Link-Motion Engine.*—THOMAS L. CROWLEY, Parker township, Butler county, Pa.

The link of the engine is pivoted and operated by chains or ropes connected thereto at top and bottom, and passing over sheaves or pulleys. The chains are connected at the other end to a lever, which may be held stationary by a screw.

Claim.—1. The link C of a steam-engine, in combination with the ropes or chains $C^1\ C^1$ and lever B *b*, arranged to operate substantially as specified.

2. The elements enumerated in the first claim, in combination with the clamping devices composed of the bars $d\ d^1$ and screw d^2, substantially as and for the purpose specified.

135,411.—*Inhaler.*—WILLIAM H. CUTLER, Buffalo, N. Y.

A roll of bibulous paper composed of small tubes is inserted in the ordinary glass tube forming the body of the inhaler. Sponge has been usually employed as the vehicle to carry the inhaling remedies, but under the action of some of the powerful medicaments the sponge loses its porosity in a great measure.

Claim.—A core, C C', for inhaling instruments, formed of a tube or tubes of bibulous paper or analogous material, as specified.

135,412.—*Turbine Water-Wheel Bucket.*—SAMUEL L. DENNEY, Gap, Pa.

This bucket is adapted to ride, as it were, upward on the current, thus relieving the pivot from friction and wear.

Claim.—The detachable turbine-bucket B, consisting of the front wall *a* curved downwardly and rearwardly to form the bottom, and the inner wall *b* curved upwardly and outwardly at *c* to form the top, said curvature *c* being varied according to the weight of the wheel and the head of water, substantially as specified.

135,413.—*Machine for Cutting and Bending Hoops.*—JACOB DOBBINS, Litchfield, Mich.

The bolt from which the hoops are cut is caught by the projections on reciprocating the bar and forced by the cutters and into the feed-rolls.

Claim.—The shaft G, gear H, crank *e*, pitman I, bar J, latch-button K, and spring *g*, constructed, arranged, and operating with relation to the knives D E substantially in the manner described, for the purpose specified.

135,414.—*Corn-Cultivator.*—IRA EMRICK, Vernon, Mich.

The standards and beam of adjustable and reversible cultivator-shovels are secured by means of a round cross-bar, a staple, and eyebolts, which may be easily loosened for purposes of adjustment.

Claim.—The described method of securing the standards and beams together by means of the cross-bar I, eyebolt K, and staple J, as and for the purpose set forth.

135,415.—*Manufacture of Brushes.*—ALANSON C. ESTABROOK, Florence, Mass., assignor to THE FLORENCE MANUFACTURING COMPANY, same place.

The bed or under piece of the mold or flask is constructed with a concavity to receive the form of the face of the brush with the bristles protruding. The second piece of the mold holds the form of the brush through which the bristles are passed and held in place. The third piece has an opening, through which the brush in form is passed with the bristles set. The fourth piece is then placed over the projecting bristles and the molds filled with the plastic substance when limpid and forced in contact with the bristles, after which the cap or fifth piece of the mold is added and the mold filled to form the handle and connect it with the brush-head, and the entire brush formed, after which the mold is separated by the device G and the brush taken out.

Claim.—1. The combination of the base-piece A and the plate B, with their recess and projections, and holes *i b*, for placing, holding, and giving penetration to the bristles, substantially as described.

2. A die, mold, or former, for making brushes in, composed of the members A B C D, acting together in the manner and for the purpose described and represented.

3. In combination with the die, mold, or former for making brushes in, the piece G, with its projections *n n*, for separating the parts A B from those C D, for the purpose of taking out the finished brush, substantially as described.

4. In combination with the die, mold, or former, and the piece G for separating them, the band or ring H for holding together the two parts that contain the brush, as and for the purpose described.

135,416.—*Machine for Making Dowel-Pins.*—CHARLOTTE EVERTS, Girard township, Erie county, Pa., administratrix of MARTIN EVERTS, deceased.

The bar H, operated by the pulley and crank, drives the stock against the knife and thence through the dowel-cutter.

Claim.—The machine composed of the frame A, pulley and crank B C, connecting-bar F, slide H, knife K, and cutter L, all constructed and operated substantially as and for the purpose hereinbefore set forth.

135,417.—*Toy Block.*—HENRY FAIRBANKS, St. Johnsbury, Vt.

Jointed blocks form toy-wagon frames of different patterns.

Claim.—1. The within-described toy composed of rectangular blocks A, each having circular mortises B and corresponding circular tenons *c*, adapted to notch together in varied relations, substantially as herein specified.

2. In combination with the toy blocks A having round tenons *c*, the round blocks $A^1\ A^2$ having central holes, and adapted to serve therewith, as herein specified.

135,418.—*Slide for Extension Tables.*—GEORGE FINKBEINER, Syracuse, N. Y.

The face of one of the wooden slides has two parallel grooves and a metallic strip extending the entire length of the slide and projecting over each groove. On the face of the other slide two U-shaped hooks are secured that engage over the respective edges of the strip secured to the first-mentioned slide.

Claim.—The combination of the metallic ribs *b* and hooks *c*, of U-form, as described, with the slides A, substantially as above specified, and for the purposes set forth.

135,419.—*Peg-Rasp.*—JEREMIAH W. FOARD, San Francisco, Cal.

The cutter is made detachable from the stock, and a bend in the stock protects the screw which fastens the cutter.

Claim.—The combination of the stock A with its bend B, follower F and its appropriate screw, and the cutter S, substantially as set forth and described, and for the purposes stated.

135,420.—*Smoke-Burning Furnace.*—SAMUEL A. FORD, Chicago, Ill.

A number of perforated chambers, placed in the rear of the grate-bars, are supplied with air and steam from the boiler, to assist in burning the smoke.

Claim.—1. The hot-air chamber D and pipe J, in combination with the perforated chambers F, constructed and arranged substantially as described, and for the purposes set forth.

2. The combination of the perforated chambers F, hot-air chamber D, air-pipe J, and steam-pipes G and H, arranged substantially as specified and shown, and for the purposes set forth.

135,421.—*Speaking-Tube.*—CHRISTIAN A. FREDERICKS, New York, N. Y.

A plate or piston at the end of the speaking-tube, just above the mouth-piece, is connected by a wire with an external plate, so as to indicate to the eye, by its position, when the tube has been blown into from the opposite end.

Claim.—1. The indicator composed of the plate I, rods J J, and plate K, in combination with a speaking-tube, substantially as shown and described.

2. The arrangement of the indicator and valve in the L-shaped terminus of a speaking-tube, substantially as shown and described.

3. The guards G H, in combination with the shaft F, upon which is fixed the valve E, substantially as shown and described.

135,422.—*Hot-Air Furnace.*—JACOB FRIDLEY, Jr., Carlisle, Pa.

Claim.—1. In a hot-air furnace, a series of simple hot-air tubes, B B, &c., in combination with a radiator through which the products of combustion circulate, passing around such air-tubes, substantially as described.

2. The combination of a tubular radiator, through which the products of combustion circulate, and cylinder D D, inclosing a

fire-place, A, and a hot-air chamber, C C, between said radiator and cylinder, substantially as and for the purpose set forth.

135,423.—*Governor.*—MERRITT GALLY, Rochester, N. Y.

A conoidal or curved-face pulley is connected by belts or friction-gear with pendulous governor-balls, and so arranged in its motions and relation to said balls, as regards their several planes, as to secure at all times a constant and invariable velocity of the pulley-shaft, no matter how much the speed of the balls may vary.

Claim.—1. In combination with the revolving pendulum or governor balls A A and shaft F, the curved-face or conoidal wheel Y, substantially as and for the purpose specified.

2. The method described of connecting the governor-balls and conoidal wheel, and securing the point of attachment correspondent at all times with the plane of said balls, by means of the several devices constructed and arranged substantially as herein set forth, for the purpose of converting a variable into an invariable velocity.

135,424.—*Shirt.*—OSCAR GOWING, Boston, Mass.

The bosom is larger than the opening in the body of the shirt which receives it, so that there is a fullness at the sides of the bosom which may be folded down smooth, but when the body of the wearer is bent the bosom may expand by the fullness and thereby prevent wrinkling.

Claim.—1. A shirt-bosom so constructed as to be capable of distension or expansion on the one hand and of contraction and folding upon the shirt-front on the other hand, substantially as and for purposes stated.

2. The employment of the lapels or wings C C or their equivalents as a means of attaching the bosom of a shirt to the front of the latter, substantially as and for purposes stated.

3. The patterns as shown by diagrams in Fig. 3 of the drawing.

135,425.—*Combined Cradle and Rocking-Chair.*—EPHRAIM HAMBUER, Detroit, Mich.

The chair has but one end or arm, and is provided with a hinged back that folds down on the seat when the chair is pushed into the frame of the cradle.

Claim.—The chair D, provided with the hinged back, in combination with the fixed cradle A, the chair D being adapted to slide into the cradle when the back is turned down, as described.

135,426.—*Steam-Pump.*—JOHN W. HANDREN, Jersey City, N. J.

Combines a single steam-pump with a double-cylinder engine having a small and large cylinder with suitable valves, so as to change it from a compound engine to a double engine.

Claim.—1. The arrangement of the valves F J *t* with suitable means of operating them relatively to each other and to the two cylinders d D and pump B, adapted to allow the steam portion of the machine to be changed at will from a double engine to a compound engine and back again, as herein set forth.

2. The cylinders *d D* with valves and operating mechanism, constructed substantially as described, in combination with a single pump-cylinder arranged to be operated thereby, as herein set forth.

135,427.—*Loom for Weaving Slats, Window-Shades, &c.*—EMORY B. HASTINGS, Palmer, and WILLIAM E. NICHOLS and WARREN L. MERRITT, Templeton, Mass.; said HASTINGS and NICHOLS assignors to said MERRITT.

To guide the stripe and insert them into the shed without injury to the warp, the lay is provided with a slot into which the stripe are fed by rollers, and also with a reciprocating cop which is stationary thereon while the strip is passing into the shed, but is moved upward at the beat of the lay to allow the strip to be released and to be placed in the fabric before the succeeding shed is made. The cutting device consists of two horizontal bars carrying near the ends the cutting knives, the upper bar having a vertically-reciprocating movement, being lifted, for the introduction of the slat under it, by the action of the lay, and falling by its own weight so as to trim both ends of the strip at the same time.

Claim.—1. The lay K, with its slit *e*, in combination with the sliding cap M and inclines *o o*, operating substantially in the manner and for the purpose set forth.

2. The cutting devices consisting of the stationary bar N and movable bar O, constructed and arranged as described, in combination with the lay K having the incline *p* for raising the bar O, substantially as and for the purpose set forth.

135,428.—*Hat-Pressing Machine.*—EMORY B. HASTINGS, Palmer, and JASON DRAPER, Barre, Mass.

The rigid dies are clothed with rubber padding, and are operated by a system of toggle-levers.

Claim.—1. The combination of the cross-head R, cross-tail T, rods Q, toggle-levers S S, pitman V with the rods or ways I I, crank-shaft W, gear-wheel X, clutch-collar *b*, pinion Y, and pinion-shaft *a*, for transmitting motion and pressure to the reciprocating die G, as shown and described.

2. The rigid male die G, having its entire surface covered with one or more thicknesses of India rubber, H, or other elastic material, for equalizing the pressure upon the hat, for operation in connection with a female die, D, substantially as set forth.

3. In combination with a female die, D, and the rigid die G with its elastic covering H, the patches *k n*, substantially as and for the purpose set forth.

135,429.—*Telegraph-Pole.*—CHARLES F. HOWES, Philadelphia, Pa., assignor to himself and MILARD W. HOWES, Boston, Mass.

Two uprights, meeting at the top, are strengthened by tension-wires which are held apart by struts. The uprights, which are made of angle-iron, pass through a base band to the stone or foundation below. Supporting-strips also join the base band to the foundation. Bands or rings having projections for holding the tension-wires apart are placed at intervals along the pole.

Claim.—1. A telegraph-pole formed of two or more uprights or strips, A, of iron, steel, or wood, supported or strengthened by tension-wires attached to the pole and held apart by struts G, or their equivalents, and arranged in relation thereto, substantially as described.

2. In combination with two or more uprights, A, of a telegraph-pole, bands or struts G having projections H, substantially as described.

135,430.—*Fruit Jar.*—HENRY HOWSON, Philadelphia, Pa., assignor to SALMON B. ROWLEY, same place.

The fruit-jar is formed with a spiral groove sunken into its neck, and terminating at a point above the packing, leaving thereby a cylindrical portion between such packing and the termination of the thread over which the screw-cap passes. The thread of the cap is also discontinued for a distance above its lower edge, leaving a plain cylindrical portion which embraces the cylindrical portion of the neck of the jar, and thereby isolates and confines the rubber packing in such a manner as to produce a perfect joint.

Claim.—1. A fruit-jar having in its neck a sunken thread terminating at a point above a shoulder, *c*, and a plain cylindrical portion between the two, substantially as described.

2. The combination, with the said neck, of a cap, B, having an internal thread discontinued above the lower edge of the said cap, leaving below the thread a plain cylindrical portion, as specified.

135,431.—*Wax-Thread Sewing-Machine.*—WILLIAM H. JOHNSON, Springfield, Mass.

The several parts of the machine are operated from one crank by diverging connecting-rods, one of which is connected with a vertically-sliding bar connected at bottom with the needle-lever, and the other with a similar bar connected at top with the awl-operating lever. Projecting from this last slide-bar is an arm that enters a slot in a bar connected with and operating the rock-shaft that vibrates the pivoted frame in which the needle and cast-off slide, and movement of this frame causes the needle to move the material for a new stitch.

Claim.—1. The combination of the driving-crank, the diagonal connecting-rod, and the slide, with the lever that works the awl, substantially as described.

2. The combination of the driving-crank, the diagonal connecting-rod, and the slide, with the lever that works the hook-needle, substantially as described.

3. The combination of the diagonal connecting-rods and the slides that work the awl and hook-needle, respectively, set obliquely to each other and actuated by the same crank, substantially as described.

4. The combination, with the hook-needle, of the rocker-shaft P, or its equivalent, when it is actuated by the mechanism that carries the awl, as described, so that it will feed the material along while the hook is in the material, substantially as described.

5. The combination, with the presser-foot, of the lever R, and spring S, as described, so that the spring will be raised from the presser-foot without raising the foot, substantially as described.

6. The adjustable block U, in combination with the lever R and the stud T, operating substantially as described.

135,432.—*Canteen.*—RICHARD KELLY, Red Bank, Cal.

The canvas sack with openings at each upper corner. In one is placed a filtering-sack through which the water is passed and strained or filtered and the foul matter retained in it, which, by means of a cord attached to it, can be raised out of the sack and cleared of the foul matter, and then be returned to it for further use.

Claim.—The canvas sack or canteen A with its filtering-sack C, in combination with the strings *d h*, substantially as and for the purpose above described.

135,433.—*Box for Preserving Cake and Bread.*—ALBERT R. LEDOUX, Cornwall Landing, N. Y.

A tin box or receptacle, constructed with a box attached to its bottom to hold a wet sponge, over which is placed a perforated plate through which the moist atmosphere from the sponge passes to the bread or cake placed upon it, and preserves it from drying.

Claim.—The combination of the pan C to receive a moist sponge, and the perforated plate D to support the articles to be kept moist, with the box A B, substantially as herein shown and described, and for the purpose set forth.

135,434.—*Wheel for Vehicles.*—HARMON B. LECKENBY, Kalamazoo, Mich.

Mortises and tenons are dispensed with.

Claim.—1. In combination with said spokes, secured by keys D, the holding-rings E, provided with studs or lugs *b*, as and for the purposes described.

2. A wagon-wheel wherein the hub A, metallic band B, spokes C, keys D, holding-rings E, and metallic flanges F are arranged and constructed to operate substantially as and for the purposes set forth.

135,435.—*Dentist's Stool.*—ISRAEL W. LYON, Brooklyn, N. Y.

The stool is adjustable both in height and inclination; in height by means of the rod affixed to the seat and the tubular support having a serrated lever to engage in a groove in the rod, and an inclination by means of a "ball-and-socket clamp joint," arranged preferably near the bottom of the standard.

Claim.—The tubular support or leg C, rod H with seat K, ratchet-lever F, weight G, or its equivalent, ball B with double-conical aperture *b b*, washer D, nuts E *c*, and base A, combined substantially as and for the purpose set forth.

135,436.—*Car-Stake Supporter.*—WILLIAM H. MASTERMAN and WILLIAM T. HOOPER, Stockton, Cal.

The stake being withdrawn from the socket, one end is secured by a projecting metallic plate which is fastened to its lower end, falling within a latch-plate which is secured by the side of the socket. The lower end is also secured by a chain, which is attached at one end to the projecting plate and the other end to a staple in the car. The other end of the stake is supported by a pin fastened to the side of the car.

Claim.—The standard C, with its downward-projecting plate *e*, when secured to the car-body by a chain, F, in combination with the latch-plate A and supporting-pin *i*, substantially as and for the purpose above described.

135,437.—*Automatic Relief-Valve for Steam Fire-Engines.*—ALVARADO MAYER, Detroit, Mich.

The relief-valve has a balanced piston playing in a cylinder above the relief-valve, which is placed at the end of a hose-gate, and has in connection therewith an adjustable pressure-gage actuating an equilibrium-valve through an intermediate lever and certain connecting-pipes, all arranged to prevent the hose from bursting by undue pressure.

Claim.—1. In pumping-engines, the combination of a relief-valve with an adjustable pressure-gage and valve, substantially in the manner shown and described.

2. In pumping-engines, a relief-valve H, having a piston, I, of greater area secured to its stem, but working in a separate cylinder, and so arranged as to keep the relief-valve closed by the pressure of the fluid upon both, in connection with independent valves *m S p* for relieving the piston from pressure, when the pressure under the relief-valve exceeds a given limit, substantially as shown and set forth.

3. The device described, consisting of water-way D', cylinders F F' separated by the diaphragm *a*, relief-valve H, stem H', piston I, return-pipe J, equilibrium-pipe K, chamber L, equilibrium-valve M, pipe N, chamber O, pressure-valve P, spring *c*, adjustable pressure-gland *f*, waste-pipe Q, chamber R, waste-valve S, stem S', and equalizing-lever T, arranged as shown and described, and for the purposes set forth.

135,438.—*Feed-Water Heater for Locomotives.*—EDWARD MOYER, Wyandotte, Kans.

Into a water-tight shell attached to the straight portion of a smoke-stack water is forced directly from the pumps, and is here partially heated by the waste heat passing up the stack before it is conveyed to the boiler.

Claim.—The stack A having the jacket B about its straight portion only, induction-pipes C C, and eduction-pipe D, the latter being arranged to deliver one-half of the water to each side of the boiler, as described.

135,439.—*Horse-Power.*—JOSEPH MÜLLER, Nacogdoches county, Tex.

Power is transmitted from several driving-pulleys in different directions horizontally, and from as many points vertically, at one and the same time.

Claim.—The improved horse-power herein described, when constructed, arranged, and operated as described, for the purposes specified.

135,440.—*Cupboard and Extension Table Combined.*—BENONI F. PARTRIDGE, Syracuse, N. Y.

A cupboard, the back and front having horizontally-hinged doors which, when let down, form tables.

Claim.—The combined cupboard and extension table, constructed substantially as herein shown and described, the leaves of the table folding up to form the front and rear of the cupboard when closed.

135,441.—*Shingle-Machine.*—HIRAM PEAVEY, Bangor, Me., assignor of one half his right to MICHAEL SCHWARTZ, same place.

The feed-table receives motion from the cam through a yoke and lever, thus giving a slow forward movement with a quick return.

Claim.—1. The combination of the carriage B, yoke *l*, and double cam *j*, constructed and operating substantially in the manner shown and before described.

2. The combination with the above of the friction-wheel *d* and connecting mechanism, substantially as set forth and described.

135,442.—*Refrigerating Cupboard.*—JACOB H. POLHAMUS, Albany, N. Y.

A double-walled cupboard is provided with an ice chamber at its base.

Claim.—The double-walled cupboard, constructed as described, provided at its base with the ice-chamber, as and for the purpose specified.

135,443.—*Machine for Making Spools.*—JOHN F. C. RIDER, South New Market, N. H.

A series of operations are performed by the machine, consisting of turning the blanks for the spools, cutting them off, dressing the ends and stamping them, boring the spools, and cutting the recess to receive the thread.

Claim.—1. In combination with mechanism, substantially as described, for supporting and advancing the stick, (viz., the stationary rests C *m'*, and the movable poppet B, and its operative mechanism,) the circular saw M, the series of rotary receivers D E F G, the boring mechanism, (viz., the stop-shaft *n*', and the boring tool *g*', and its operative mechanism,) the mechanism for dressing the ends of the blank, (viz., the rotary cutter-heads *f' e'* and their operative mechanism,) and the mechanism for reducing such blank circumferentially, (viz., the arbors *s' s''* and the carrier T, provided with a cutter and mechanism, as described, for operating them as explained,) the said saw and rotary receivers being provided with mechanism for operating them, essentially as set forth.

2. In combination with the combination or mechanism herein first claimed, one or more retainers, U U' U'' U''', arranged and applied in manner, and for the purpose, and provided with mechanism for operating it, as set forth.

3. In combination with the combination or mechanism herein first claimed, mechanism as described, or its equivalent, for stamping the ends of the blanks, such consisting of the stamping-heads *s' g'*, arranged and provided with operative mechanism, as described.

4. In combination with the mechanism herein first claimed, the series of inclined guides *s''*, arranged relatively to the rotary retainers D E F G, substantially as set forth.

5. In combination with the mechanism or spooling-machine herein first claimed, and as arranged therewith, the machine for rounding the stick preparatory to its introduction into the said spooling-machine.

135,444.—*Machine for Shaping the Elastic Dents of Combs for Looms.*—SUSANNAH ROBINSON, Accrington, England, administratrix of MATTHEW ROBINSON, deceased.

The wire passes from the reel to a bed, on which there is a frame having at the top a slide carrying two bowls and at one side two vertical bearings and boxes. These are made to operate, through suitable mechanism, the levers employed for bending and shaping the dents, which levers describe arcs corresponding in length to that required in the dents. At the outer extremity of each there is a pin and projection. When the lever is being turned the pin seizes the wire and bends it, when it passes behind a pin on a lever having an incline, which was depressed by the projection on the lever. The bends are nipped at each end by nippers operated by suitable mechanism and in connection with the pins on their respective levers. The dents thus shaped are drawn forward automatically and wound on a spindle.

Claim.—The levers A and B, carrying the arms *a'* and *b'*, in conjunction with the nipping-levers *e'* and *f'*, when mounted and operated substantially as and for the purpose described.

135,445.—*Setting and Sewing Ruches.*—MARCUS ROGGENBURGER and SIGMOND ROGGENBURGER, Philadelphia, Pa.

The central portion of the material to be formed into a ruche is pressed into the slot in the slotted plate B by the slotted clasping-strip, and this strip is confined to the slotted plate by bolts. The presser-foot has a tongue on its under side, which enters the central slot in the slotted strip and guides it in its proper course as the plate is moved by the feeding device which engages its under side, covered with rubber or other equivalent material. The enlarged toe of the presser opens the folded material to allow the passage of the needle.

Claim.—1. The slotted clasping-strip E, in combination with the slotted plate B and devices for holding the strip and plate together, substantially as described.

2. The presser-foot I having a tongue, *e*, and its front end rounded, in combination with the slotted strip E, substantially in the manner and for the purpose set forth.

135,446.—*Loom-Shuttle.*—CALEB K. SAWYER and GEORGE F. WRIGHT, Clinton, Mass.

To produce a shuttle, both light and strong, for weaving wire fabrics. The sides are of rawhide and these are firmly attached to end pieces made of wood. The cop of wire is hollow and the thread is delivered from the interior. To prevent the kinking of the wire a spring friction device is arranged to act upon the inner walls of the cop, which is held in position by spring-jaws.

Claim.—1. A shuttle made in whole or in part of rawhide, and having combined with it a cop of wire and tension mechanism, substantially as and for the purpose herein set forth.

2. The friction device consisting of box or disk *b* provided with spring-wires *a a*, and used in combination with a hollow cop, substantially as and for the purpose herein set forth.

3. In combination with the above, the spring-jaws *d d*, as and for the purpose set forth.

135,447.—*Grate-Bar.*—JAMES A. SINCLAIR, Bridgeport, assignor to himself and MATTHEW C. MCKROWS, Barnesville, Ohio.

The grate-bars are made with upwardly-projecting lugs having intervals between them, and either cast with bars or detachably bolted thereto.

Claim.—The right-angled lever F *f*, the parallel bearing-bar D centrally pivoted at *s'*, and the grate-bars C pivoted at their front ends and sliding at their rear ends, all arranged as shown and described.

135,448.—*Harrow.*—CYRUS SMITH, Irwin's Station, Pa.

The plows are arranged to throw right and left, and can be changed for ridging or marking.

Claim.—1. The arrangement of the teeth E, constructed as described, and applied to the frame A B C, provided with adjustable wheels K K K, and wide hitching-head D, when constructed and arranged as and for the purpose set forth.

2. In connection with the above, the plows M M attached to the removable bar F and to the harrow-frame, constructed as shown and described, and operating as set forth.

135,449.—*Heating-Stove.*—SAMUEL SMITH, Philadelphia, Pa.

The stove-cylinder, base, and grate-supporting plate are firmly secured in position.

Claim.—1. The annular plate C with its lugs *c'* and nutted screw-bolts B or their equivalent fastenings, in combination with the flange *a'''* of the base A for the purpose of adjustably securing the sheet-metal body D to the cast-iron base A of a stove, substantially in the manner and for the objects hereinbefore set forth.

2. In combination with the annular plate C the grate-supporting arm *c''*, substantially as and for the purpose hereinbefore described and set forth.

135,450.—*Anchor.*—WILLIAM WASTENEYS SMITH, Newcastle-on-Tyne, England.

An anchor having its arms journaled on the outer ends of a solid cross-head at the crown end, and swinging independently of each other, said arms provided with horns which assist the flukes in taking the ground. The arms have shoulders which bear against the crown-piece for the purpose of relieving the strain on the points of support.

Claim.—An anchor, constructed substantially as described, having the arms journaled on the outer ends of a solid cross-head at the crown end, and swinging independently of each other, said arms having horns which assist the flukes in taking the ground, and are provided with shoulders which bear against the crown-piece to relieve the strain on the points of support, as and for the purpose set forth.

135,451.—*Ratchet-Drill.*—JOSIAH SWANK, Delano, Pa.

A tooth near the center of a pawl, pivoted on a short arm, engages with a ratchet-wheel on the lower end of a sleeve, from the top of which the screw is fed. A cam, fixed to the stock above the arm on which the pawl is situated, raises the tooth from the ratchet and allows it to engage only once in each revolution of the drill.

Claim.—1. The hooked arm *f* and clamp *o* in combination with the cam *m* for regulating the feed, substantially as shown and described.

2. The sleeve *e* having the ratchet *d*, the hooked arm *f*, tooth *h'*, clamp *o'*, and arm *g*, in combination with the cam *m*, substantially as shown and described.

3. The tube *t* and screw *s* in combination with the sleeve *e* having ratchet *d*, constructed and arranged substantially as shown, for the purpose set forth.

4. The combination of the arms *h g*, hooked arm *f* having tooth *h'*, tube *t* having ratchet *n*, and sleeve *e* having ratchet *d*, substantially as described.

5. The sleeve *e* having ratchet *d*, cam *m*, hooked arm *f*, and arm *g*, or their equivalents, in combination with the ratchet-drill.

135,452.—*Straw or Mill Board.*—JUDSON L. THOMSON, Syracuse, N. Y.

Claim.—As an article of manufacture, straw or mill board coated with a colored size, either with or without a water-proof coating, as and for the purposes set forth.

135,453.—*Automatic Safety-Lock for Elevators.*—GUSTAVUS C. TEMPE, New Orleans, La.

Two levers working in longitudinal slots in the guides, and operated by a spring giving equal pressure to each for clutching the guide-posts of the elevator.

Claim.—The combination and arrangement, in a hoisting-cage or elevator-platform, of the above described safety-locks, clamp-brakes, or guides F, when arranged and operated to work to and from a center in common, substantially as set forth, and for the purposes described.

135,454.—*Elevator.*—GUSTAVUS C. TEMPE, New Orleans, La.

A hoist-rope running over and embracing two drums; also, a counterpoise weight, so that when the platform or counterpoise reach either their highest or lowest limit of travel the hoist rope is instantaneously slackened on the drums, which continue to revolve.

Claim.—1. The combination and arrangement of the pinion-wheels B on the driving-wheel shaft with geared wheels C, drum C', and gear-wheel D and drum D', the whole arranged and operating in connection with the hoist-rope or cable of a cage or platform, substantially as described, and for the purposes set forth.

2. The combination of the driving-wheel A with annular flange A', double brakes G G, rods V V, and inverted T-lever H, all constructed substantially as described, and for the purposes set forth.

3. The combination and arrangement of the inverted T-lever H with the double-ended lever I, trip-cords K and L, and weight W, all constructed substantially as described, and for the purposes set forth.

4. The combination and arrangement of the worm P, lever F, and ball J, with the shaft R, all constructed substantially as described, and for the purposes set forth.

135,455.—*Gas Apparatus.*—HENRY H. WAINWRIGHT, Philadelphia, Pa.

Two chambers containing dilute sulphuric acid, each communicating, through a valve at the bottom, with a generating-chamber containing a quantity of scrap metal supported upon a grating. A pipe, so arranged that at the time the gas commences to generate it may be opened to allow the air contained in the generating-chamber to escape. After the air has been entirely ejected the pipe is closed, and the gas then generated is allowed to pass through a branch pipe and radial arms into a hollow perforated ring, which is immersed in hydrocarbon, where it is discharged. Two evaporating-pans are so arranged that the contents of either chamber may be withdrawn and evaporated.

Claim.—1. A gas apparatus in which two acid-chambers, A and A', are combined with a single generating-chamber, E, containing a quantity of metal scrap, all substantially as and for the purpose specified.

2. The shelf or grating *b* arranged within the generating-chamber in respect to the openings provided with valves, and leading to the acid-chamber or chambers, substantially as herein described.

3. The combination, with the generating and acid chambers, of slide-valves D, for the purpose specified.

4. The combination, substantially as described, with the chambers E and G, of the air-pipe F and gas-pipe F' communicating therewith.

5. The combination with the carbureting-chamber, of the pipe F', radial arms G, and hollow ring *h*, all substantially as specified.

6. The combination, with each acid-chamber, of an evaporating vat or vats, J, for the purpose specified.

135,456.—*Grinding, Scouring, and Polishing Machine.*—ALMERN B. WALTERS, Philadelphia, Pa., assignor to himself and CHARLES SAUNDERS, same place.

Claim.—1. The post B provided with the slide C, made adjustable by the rack and crank E, in combination with the jointed arm D and the operative mechanism, as and for the purpose specified.

2. In combination with the adjustable swinging and jointed arm D, the attachments G^1, G^2, G^3, and G^4, substantially as and for the purpose set forth.

135,457.—*Top-Plate for Cooking-Stoves.*—EDWARD R. WEHRLE, Pittsburg, Pa.

The several parts of the top-plate are held together by the united action of lugs on the under sides.

Claim.—The transversely-slotted or hooked lugs *a'*, the laterally-holding lugs *a*, and the under-lapping lugs *b b'*, combined and formed at the joints of a cook-stove top, which is formed of several sections, as herein set forth.

135,458.—*Potato-Digger.*—JOHN S. WRIGHT and IRA BENEDICT, Palmyra, N. Y.

Friction-rollers are placed upon the standard of each plow to bear off the vines. The fingers upon which the soil and potatoes fall when leaving the share are given a vertical motion by means of a lever and crank-wheel, by means of which the potatoes are separated from the soil.

Claim.—1. The rollers F, when combined with the standards of the plows of a potato-digger, substantially as and for the purpose set forth.

2. The agitator I, in combination with the lever J, connecting-rod O, and crank-wheel N, as and for the purpose set forth.

135,459.—*Turbine Water-Wheel.*—PIERCE W. YARRELL, Garysburg, N. C.

An improvement on the wheels patented to the same inventor March 29, 1870, No. 101,402, and March 14, 1871, No. 112,667, consisting in suspending the wheel from the hemispherical case or dome, said case being provided with chutes projecting inwardly; also, in the application of a double-band gate operated by a pinion and ratchet, which separates the bands and permits the impact of the water first upon the apex of the V-shaped buckets.

Claim.—1. The dome-shaped case A formed or provided with the series of internal chutes, as set forth, and supporting a shaft, D, carrying a turbine-wheel, substantially as described, for the purpose specified.

2. The double band-gates provided with gear-teeth, and arranged upon the outside of the case A, in combination with the pinion or spur wheel I', rod J, and a series of chutes, substantially as described.

3. The bands *f g* arranged upon the buckets at the bottom and top of the wheel F, so as to c eate the intermediate space or entrance *e*, substantially as and for the purpose specified.

4. The turbine-wheel F suspended by the dome G from the end of a vertical shaft, D, which has its bearing above the wheel, substantially as described.

5. The dome G, in combination with U or V shaped buckets M N and bottom and top coverings or bands *f g*, substantially as described.

6. In a turbine-wheel, the dome G, wheel F, and annular chamber P, in combination with U or V shaped buckets, a series of chutes, and a double-band gate, substantially as described.

135,460.—*Wood Pavement.*—MARY H. ALEXANDER, Newark N. J.

Claim.—A paving-block, sharpened on the lower side and notched on one of the upper corners, as described.

135,461.—*Stop for Sewing-Machines.*—DAVID S. ALLING, Albany N. Y., assignor of one-half of his right to PETER C. LANDER same place.

A pivoted eccentric which allows the wheel to revolve in one direction but checks it in another.

Claim.—The combination of the cam D, or its equivalent, constructed and pivoted as described, with the arm A and stop E, or equivalent, as described, substantially as set forth, for the purpose specified.

135,462.—*Hoe.*—HARRY R. BARNES, Rock Stream, N. Y.—Case B.

A hoe constructed in triangular form has the handle attached at the center. Two sides of the hoe are made with plain cutting-edges, while the third side is constructed with corrugated teeth which stand at an angle to the face.

Claim.—A triangular hoe of concave form, when constructed with the plain edges *a a* on two sides, and the projecting teeth *c c* on the third, as herein shown and described, and for the purpose specified.

135,463.—*Gate.*—JESSE ELINN, Rockford, Ill.

The gate moves on rollers, and is operated by chains, a vibrating arm, and a rock-shaft. The gate is held in a vertical position by friction-rollers and a clamp engages with a groove in the top rail. Track-clearers serve to remove snow or other obstructions from the rails.

Claim.—1. The combination, with the gate, of the rock-shaft F, vibrating arm F', chains *f*, friction-roller *b*, and clamp c^3 engaging with a groove in the rail of the gate, substantially as and for the purpose set forth.

2. The combination of the track-clearers c^1 c^2 c^3 with the gate E, substantially as described.

135,464.—*Harrow.*—HIRAM CARTWRIGHT, Owatonna, Minn.

A harrow, constructed in two sections, is attached to a draw-bar by the center-beam of each section, and is further attached by rods which pass through the draw-bar and back to a bolt on the inside of each section.

Claim.—The described means for connecting two sections of a double harrow, consisting of the bar C, center-pieces B B, and rods D D, arranged and applied as set forth.

135,465.—*Sewing-Machine Chair.*—FRANKLIN CHICHESTER, Milwaukee, Wis.

The back posts are recessed to admit of a curved spring in each. Stops are affixed to the pivoted back that strike against the curved springs, and thereby adjust the inclination of the back. The inclination of the chair is made adjustable by means of curved bars arranged under the seat, having a series of notches in the upper edges, said notches receiving a sliding bolt that is attached to the spider-arms on each side of the chair. The chair-frame is pivoted to said spider.

Claim.—1. The combination of the springs J and stops K with the recessed back-posts H and pivoted back I, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the arms *e'*, pawls or latches E, and notched curved arms or bars F with the cross-bar or spider C and seat-frame D, substantially as herein shown and described, and for the purpose set forth.

135,466.—*Device for Transmitting Power.*—JOHN C. CLINE, Philadelphia, Pa., assignor of one-half his right to ALLEN MIDDLETON, Jr., same place.

The driving-shaft of a steam-engine is connected to a swinging frame carrying a revolving shaft that is provided with a fly-wheel, and a gear-wheel connecting with a gear-wheel on the driving-shaft. Said fly-wheel shaft is combined with vertical oscillating rods by means of crank-pins extending from arms of the shaft or the side of the fly-wheel, so that as the said crank-pins turn in their bearings in the upper ends of the oscillating rods, and the shaft in its bearings in the swinging frame, a very easy movement is given to the crank in the up-and down movement of the swinging frame, whereby they are carried freely over the dead points.

Claim.—The combination of the revolving shaft F, provided with one or more fly-wheels and with crank-pins *b b*, with the driving-shaft C by means of gear-wheels, and with oscillating rods H H and the frame E, having an oscillatory movement on the driving-shaft, substantially as and for the purpose set forth.

135,467.—*Machine for Pointing Pickets.*—ALPHEUS B. CORBY, Binghamton, N. Y.

The picket is placed upon an oscillating carrier, thus allowing a partial rotation while under the cutting-knife, which gives a rounded contour to the end of the picket.

Claim.—The grooved and inclined holder D, secured at one end to the base A by means of a screw-bolt, in combination with the knife-lever B pivoted to the raised part of the base, all as shown and described, whereby said holder may be adjusted at various horizontal angles to the knife-lever, as and for the purpose specified.

135,468.—*Curing Tobacco.*—JAMES D. CULP, Gilroy, Cal.

Claim.—The process of curing tobacco, as herein described, consisting of hanging the tobacco till it yellows, piling it in the usual manner, subjecting it to fermentation until the starch is turned to saccharine matter, and subsequently drying it, substantially as set forth.

135,469.—*Paper-Box.*—MOSES W. DILLINGHAM, Amsterdam, N. Y.

On the outside of the box near its upper edge, at the ends, strips are secured. On the inner edge of the cover are secured blocks or strips that spring over the strips on the box and hold the lid in place.

Claim.—The combination, with body A and cover B, of the pasteboard pieces *c d e*, constructed and arranged as and for the purpose set forth.

135,470.—*Hub for Vehicles.*—HOWARD M. DUBOIS, Philadelphia, Pa., assignor to himself and W. FILTER, same place.

Claim.—A wooden hub having annular groove B turned in at the center with sloping sides, combined with the two-part metallic side-beveled mortise-ring C having spoke-mortises D and transverse ribs G, and with the outer metallic ring I having large mortises K and transverse grooves L, as and for the purpose described.

135,471.—*Stove-Grate.*—SAMUEL DUNCAN, Syracuse, N. Y., assignor of one-half his right to JOEL D. OWEN, same place.

Claim.—A grate composed of a conical central section surrounded by one or more conical rings, each of which slopes substantially at the same angle and in the same direction as the central section, when said sections are so arranged that the upper surface of each section falls a little below that of the surrounding section, and when they are so combined that each section may be shaken separately, if desired, substantially as above described.

135,472.—*Harness-Maker's Gage.*—DEWITT G. GARLOCK, White Cloud, Kans.

A sliding bolt attached to the gage-bar holds the gage-head in rigid position when adjusted to cut the width required.

Claim.—The gage-head E, combined with the screw F, swiveled in cutter-head B, and provided with the perforated finger-wheel I J, and the gage-bar having slotted sliding bolt K, arranged as and for the purpose described.

135,473.—*Railway-Tank Feeder.*—AUGUSTUS GROCHAU, Duluth, Minn.

The track-platform is supported on eccentrics, which, through the levers, enable the lead to be gradually placed upon the piston, which forces the water up into the tank.

Claim.—The combination, with a vertically-movable railroad-platform, floating piston, water-tank, and pipe F, of the lever M, eccentrics I, shafts K, cranks L, and rod N, arranged and applied as and for the purpose described.

135,474.—*Ice-Cream Freezer.*—GEORGES GUINOT, Milton, Fla.

The ice-tub is provided with a false bottom and frame for supporting the annular ring near its top; also, with a disk which revolves upon a pivot affixed to the said false bottom. The cream-holder is provided with suitable scrapers within, which are arranged so as to remain stationary while the holder is being revolved; also, with studs upon its bottom to engage with the apertures in the disk while the same is being used, and serve as legs when removed from the ice-tub.

Claim.—1. An ice-cream freezer, composed of the tub B, rotary disk *b*, revolving cylinder A, cog-wheels *f h*, and stationary scrapers *m m* on the stationary rod E, all arranged to operate substantially as herein shown and described.

2. The cylinder A, provided with downwardly-projecting pins *d*, which enter cavities in the bearing-disk *b*, as specified.

135,475.—*Excavator.*—JOEL T. HAM, Liberty, Ind.

The scoop-frame is attached to the main frame by a pivot at the rear, so that the scoop can be driven from the rear instead of being drawn from the front. The scoop-frame, which also supports the front elevator, is movable on a vertical center in order to allow lateral adjustment of the scoop and elevator. The scoop is hinged to the front end of the frame and is adjusted vertically by the screw T, while the transverse adjustment is effected by the shaft and chains. The point of the scoop is removable for repairs, and it also has a colter for tough or strong soil. The rear apron is reversible so as to throw the dirt to either side of the machine, the pivot on which it oscillates being hollow to allow the passage of the operating-shaft.

Claim.—1. In an excavator, the arrangement of the frame P, to which the scoop-shaped plow S is attached, on a rear center-pin, *v*, so that the plow may be driven from the rear, substantially as herein set forth.

2. The pivot *w* with ball-joint for securing the scoop to its support, substantially as herein set forth.

3. The parallel rods W W and the standards *s' s'* to which they are attached, constructed and arranged substantially as and for the purposes herein set forth.

4. The arrangement of the frame Z, crank-shafts *c'*, ropes or chains *f'*, and pulleys *h'*, substantially as and for the purposes herein set forth.

5. The combination of the frame L with the gearing upon it for driving the forward apron K, pivoted as described, and the truck N moving upon the tram-way O, all substantially as and for the purposes herein set forth.

6. The tube A, arranged as described, for supporting the swinging frame H for forming a bearing for the shaft *f*, and for holding the adjusting-cam *n*, substantially as herein set forth.

7. The overhanging apron G and the reversible frame H that supports it for the purpose of elevating the dirt and delivering the same at right angles to and at either side of the carriage, substantially as herein set forth.

8. The combination of the adjustable bar I with arms *m m* and pinions *k k* and the stationary cam *n*, constructed and arranged substantially as and for the purposes herein set forth.

9. The frame B', with shafts *i' i''* and *m'*, having suitable ratchets and ropes connecting with the overhanging apron-frame, substantially as and for the purposes herein set forth.

10. The movable point *w'*, constructed as described, and provided with bar *p'* and wings *s'*, substantially as and for the purposes herein set forth.

11. The curved colter C', forked at its upper or rear end and its front or lower end attached to the removable point *w'*, substantially in the manner and for the purposes herein set forth.

135,476.—*Device for Burning Petroleum.*—FREDERICK A. HULL, Beloit, Wis.

Petroleum is fed into a furnace by means of a hollow cylinder provided with perforations at both ends, and made to reciprocate in a tube connecting the tank and the combustion-chamber.

Claim.—In combination with the tank A and furnace or combustion-chamber B, the hollow cylinder C', provided with perforations *c c'* and made to reciprocate in the connecting-tube C, substantially as and for the purpose set forth.

135,477.—*Adjustable Journal.*—MOSES JACKSON, Bevington, Pa.

Claim.—The combination, with the parts C D, of the tubular stem E and bolt F having reverse screw-threads, the conical chambered sleeve A, and washer G, as shown and described.

135,478.—*Shirt-Bosom.*—CHARLES W. JENKS, Somerville, Mass.

The upper half of the bosom only is attached to the shirt-body, the lower half being left free.

Claim.—As an improved manufacture and my invention, a shirt on which the lower half or portion of the bosom is unattached to the shirt-front, except by the upper portion or rest of the said bosom being sewed or connected at its edges to the front, all being substantially as shown and described.

135,479.—*Needle Setter, Threader, and Cutter.*—ALLEN JOHNSTON, Ottumwa, Iowa.

The needle is set so that its eye comes opposite the bowl, and it may be easily threaded by passing the end of the thread through the bowl. After the needle is threaded the bowl is turned up, and then the cutter extends below the pivot of the arm and in position for the operator to cut the thread when desired.

Claim.—1. The pivoted arm or plate A, provided at one end with a needle setting and threading bowl, at the other end with a thread-cutter, and adapted to be applied to the head of a sewing-machine, to operate substantially as shown and set forth.

2. A combined needle-setter, needle threader, and thread cutter, composed of an arm or plate carrying at one end the setter and threader, and at the other end the cutter, in combination with a jewed clamp, to which said arm is pivoted, the parts being arranged and adapted to operate substantially as shown and described.

135,480.—*Harvester.*—CHRISTOPHER LIDERS, La Fayette, Ind., assignor to himself and R. JACKSON, same place.

Grappling-rakes suspended from a crane over the platform are, by means of cams on the main axle and intervening mechanism, caused to grasp the grain on the platform, lift it, convey it to the rear, discharge it and await the accumulation of another gavel, and return to their first position to repeat the operation.

Claim.—1. The combination of the rake, the crane, and the mechanism for operating and closing the rake, a grain-platform pivoted to the truck-frame of the machine, with the cams and tappet on the truck-axle, and the arms and stirrups of the crane, and rake-actuating rod, all substantially as specified.

2. The combination of hollow crane-shaft, oscillating arm H, vertically-moving rod G, cam Q, and arm R, arranged substantially as specified.

3. The combination and arrangement of the oscillating arm H, rakes M, rods O O′, and the stationary arm P, substantially as specified.

4. The combination of the rod *i*, stationary arm *j*, and springs *k* with the crane-shaft C and cams *a′* and *b′*, substantially as specified.

5. The arrangement of the cams *a a′*, *b b′*, and arms *d e* of the crane-shaft, the tappet S and stirrup X of the rod G, and the axle of the truck, substantially as specified.

135,481.—*Binder's Stand and Table for Harvesters.*—WILLIAM R. LOW, Sandwich, Ill.

The binder's stand and tables are hinged to the frame of the machine so that they may be folded up thereon to pass obstructions in going from field to field.

Claim.—The binder's table B pivoted through slots *c c* to the frame A of a harvester, the foot-board E pivoted to the frame A as at *e e*, the jointed rods *f f*, and the rigid vertical rods *g g*, all combined and arranged substantially as specified.

135,482.—*Machine for Grinding Emery.*—HERMAN S. LUCAS, Chester, Mass.

Within a long upright cylinder is arranged, longitudinally, a shaft, upon which is secured the grinding apparatus, consisting of a number of cams with corrugated surfaces.

Claim.—The combination of the cylinder A, shaft B, and cams C either with or without the corrugated shoes *s* attached, all constructed and operating substantially as described.

135,483.—*Cooking Utensil.*—JOSEPH MANSFIELD, Jefferson, Wis.

The opening in one side of the supporting plate has a flanged aperture fitted for the ordinary pot-hole. Over this the gridiron can be placed. The hood above operates to retain the heat and cause the cooking fumes to be diverted into the fire.

Claim.—The gridiron-case, consisting of the plate A and cover B, with the parts all connected and made substantially as herein shown and described.

135,484.—*Tube-Cutter.*—EDWARD MANUEL, Milwaukee, Wis., assignor to himself and GEORGE GUT, same place.

The tube and spindle are held together by means of a groove and screw, and power is communicated between them by means of a ratchet connection regulated by a spring.

Claim.—The combination, with the spindle C, provided with the groove *b* and wrist-pin *c*, and the slotted case B having teeth *g*, of the ratchet cap D, feather *j*, spring *i*, cutter A, and screw *d*, to operate as shown and described.

135,485.—*Cotton-Gin.*—ORRIN MURRAY, New Market, N. H.

The cotton is fed upon a table and thence over wire fingers to the lower edge of the adjustably-held and inclined reciprocating knife, which descends past the edge and concave side of the stationary blade, the cotton being inducted by the surface of an endless apron in rear of the blade, said apron being made of several thicknesses of cloth united by a caoutchouc preparation, and thickened and fortified inside at its edge by pegged leather strips, which move in depressions near the ends of the two cylinders upon which the apron moves, the upper of these cylinders being hollow—all automatically operated.

Claim.—1. In a machine for ginning cotton, the hollow roller F, when constructed with the open space b^{5}, neck b^{6}, shoulder b^{4}, and openings b^{3} in the neck, substantially as and for the purpose described.

2. The endless feed-belt C′, constructed of five or more thicknesses of cloth cemented together with rubber, and having the interior projecting leather edge pieces *a* attached thereto by cement and pegs, in the manner substantially as and for the purpose described.

3. The adjustable stripper E, constructed, in the form shown in Figs. 4 and 5, with a convex face, *e*, and arranged to fit nearly upon the concave rear side *c′* of the presser-bar F, substantially as shown.

4. The combination of the endless feed-belt C′, constructed as described, and having its interior projecting edges *c′* thereon, with the rollers B′ and C, constructed and arranged to operate substantially as described.

135,486.—*Cotton-Press.*—ROBERT POWERS, Charleston, Miss.

To reverse the motion of the nut the adjustable pinion is moved to engage alternately with the pinions K on the counter-shaft.

Claim.—The combination, with the revolving nut C and pressscrew B, of the counter-shaft H, driving shaft I, pinions K, and the adjustable pinion L, substantially as specified.

135,487.—*Blackboard-Eraser.*—WINFIELD S. READ, Oakland, Cal.

The cushion of the eraser is covered with "corduroy" or other ribbed material.

Claim.—1. A blackboard eraser having a surface composed of ribs and grooves, substantially as and for the purposes described.

2. An eraser having a face covered with corduroy or similar material over a soft cushion of wadding and carpeting, or similar material, substantially as shown and described.

135,488.—*Combined Tobacco-Box and Match-Box.*—CHARLES REMHOF, Brooklyn, N. Y.

Claim.—As a new article of manufacture, the sheet-metal box, partitioned for the reception of the drawer, said drawer having a retaining check, and the hinged sides of the box being braced by said partition, substantially as described.

135,489.—*Hand Corn-Planter.*—LEWIS H. RICHARDS, Rising Sun, Md.

A narrow strip of wood, hinged at the middle, slides on the back of another piece, and, being pivoted at the bottom near the periphery of a seed-cup disk, causes it to partially revolve in the bottom of a hopper attached to the front strip. The latter is extended below the disk, for the purpose of penetrating the ground.

Claim.—The slide E F combined with bar B, wheel C, hopper A, and stirrer G, as and for the purpose described.

135,490.—*Device for Pitching Boats.*—WILLIAM H. RICHARDSON, Stillwater, Minn.

A portable receptacle for pitch, tar, white-lead, &c., has hollow perforated pipes or tubes connected with the reservoir, with brushes or swabs on their outer extremities for pitching the seams of vessels, &c.

Claim.—The brush N, having hollow perforated handle, combined with discharge-tubes J K K of pitch-vessel A, as and for the purpose described.

135,491.—*Wagon-Brake.*—ROBERT ROBERTS, Dubuque, Iowa.

The pressure of the load upon the rear bolster of the wagon applies the brakes by means of bell-crank levers and connecting-rods, and the draft upon the tongue releases them by like means.

Claim.—1. The combination of the bolster D, cranks *b b*, shaft *d*, rods *i i*, and brake-bar G, all constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The perforated plate H attached to the axle A, in combination with the rods A A attached to the bolster D, substantially as and for the purposes herein set forth.

3. In combination with the rocking-shaft *d* connected with the brake-bar G, the crank *m* and connections *n p s* to connect with a sliding double-tree on the slotted tongue K, substantially as and for the purposes herein set forth.

135,492.—*Belt-Fastening.*—THEODOR RUDIGER, Carver county, Minn.

The hinge clamps the ends of the belt between its two sides, and an inwardly-turned-up edge prevents the ends of the belt from drawing out.

Claim.—The combination and arrangement of lips or wedges D with clamps A and B, provided with pivotal bars *b* and E, substantially as shown, and for the purpose described.

135,493.—*Bee-Hive.*—H. PETER SIMMONS, Paterson, and ALBERT J. KING, Hudson, N. J.

The suspended frames are notched centrally at the bottom, and thus straddle an edged beam that rises from the floor, which is also notched, to prevent the frame from vibrating. The top moves horizontally on rollers, which sink into depressions at their place of rest; thus, when moving, it does not crush the bees.

Claim.—1. The combination of the rollers G with the top B of the hive and the bars D provided with recesses for the same, for the purpose of locking the top in its normal position, and raising it off the base when it is to be moved laterally, as shown and described.

2. The strip M secured to the central elevated portion of the bottom board J, in combination with the bottom bars N of the comb-frames, said strip and bottom bars being provided with bevel-notches, as and for the purpose specified.

3. The recesses R and S formed by cutting away the top of one side of the part A and the other by cutting away the lower edge of the top B on the opposite side, whereby said top may be moved over the comb-frames, and allowed to drop into place without injuring the bees, as set forth.

135,494.—*Game Apparatus.*—AMOS M. SMITH, Chicago, Ill.

Claim.—The child's-game apparatus, consisting of a table with guarded sides, at one end of which is placed an imitation cannon, arranged to propel, by a spring contrivance, a ball of rubber against figures of soldiers and their commanding officers placed at the other end of the table, and counted of different values according to their rank, substantially as specified.

135,495.—*Finger-Bar for Harvesters.*—CHARLES A. SMITH, Napa, Cal.

The guard fingers have angular shanks, which are clamped in grooves in the finger-bar by means of a metal plate screwed thereon.

Claim.—The combination and arrangement of the grooved finger-bar A with the clamping-plate B fastened to the bar with screws, so as to clamp the guard-fingers D D in the grooves of the finger-bar and hold them firmly without other fastening.

135,496.—*Flour-Bolt.*—GEORGE T. SMITH and AARON SMITH, Minneapolis, Minn.

Bolt-case, in which is hung oscillating bolt, having bolting-cloth at bottom only, and furnished with brushes to keep same clean. Air is drawn by fan through bolting-cloth, carrying off light specks, bran, &c.

Claim.—1. The combination of the case A, provided with the air-inlets S, oscillating bolt-case B, shaft *b*, bolt-cloth *c*, air-tube H, and fan J, when said parts are constructed and arranged to operate substantially in the manner and for the purpose described.

2. In combination with an oscillating bolt, the shelf *f*, gates *i* and *m*, and spout *h*, substantially as and for the purpose specified.

3. In combination with an oscillating bolt, the belts V and brushes *s*, substantially as described, and for the purpose set forth.

135,497.—*Bolt-Cutter.*—JOSEPH TOMLINSON, Onslow, Iowa.

A sliding jaw is used under a fixed jaw, somewhat in the style of a monkey-wrench.

Claim.—1. The bolt-cutter, provided with L-shaped knives, as herein shown and described.

2. The combination of the lever E and straps *e e* with the shank A and slide C of the bolt cutter, all arranged to operate as herein shown and described.

135,498.—*Tire-Bender.*—JOSEPH TOMLINSON, Onslow, Iowa.

A central roller in vertical bearings, and two side rollers placed in hinged cheek-pieces. The vertical posts are elevated or depressed by a screw in the bottom of the frame, and the side rollers either brought together or spread apart, to allow a short or long bend to be made in the tire.

Claim.—1. The tire-bender composed of the hinged cheek-pieces B B, adjustable rollers D D, and movable roller E, all arranged in respect to each other as herein shown and described.

2. The subject-matter of the foregoing clause, in combination with the movable posts *b b* and screw *f*, for adjusting the instrument to produce circles of suitable size, as specified.

3. The laterally-adjustable rollers *g g* arranged in the hinged cheek-pieces B B of a tire-bender, substantially as herein shown and described.

135,499.—*Railway Snow-Plow.*—WILLIAM WALKER, Fort Bridger, Wyoming Ter.

The body of the plow is divided longitudinally into two sections, each being tilted by means of levers, so arranged that as the sections are turned the sides are opened and permit the escape of the snow. A check-plate is hinged to the forward part of the plow, which permits the snow to enter the body, but prevents it falling off in front.

Claim.—1. The side plates *f f*, hinged at their lower edges to the platforms D D, and operated by suitable devices, as shown and described, whereby said plates form chute-extensions of the platforms when the same are tilted, as specified.

2. The levers E E and bar F arranged in combination with the hinged sides *f* and platforms D to operate the same simultaneously, as specified.

3. The hinged check-plate G, arranged between the upright end projections *s s* of a snow-plow, substantially as and for the purpose herein shown and described.

135,500.—*Harvester-Cutter.*—WARREN WASSON, PHINEAS F. POWERS, and GEORGE W. DUNGAN, Genoa, Nev.

Two parallel bars, one in front of the other, tongued and grooved together, the front one having two pins projecting from its front upper surface at an acute angle with the upper surface of the plate, and the rear bar having a pin projecting at a corresponding angle rearwardly, by means of which the cutter-sections are attached and locked.

Claim.—1. A cutter-bar consisting of two parts, F R, sliding upon each other in opposite directions, and having studs f^{2} and studs r^{2}, respectively, as described, for the purpose of fastening the cutter-sections.

2. The detachable, apertured, and slotted cutters C, made with a slight transverse curve, as and for the purpose set forth.

3. The apertured lever E, having pin *b′* combined with heads f^{1} r^{1}, as and for the purpose set forth.

4. The bushing A, combined with heads f^{1} r^{1} and lever E, as and for the purpose set forth.

5. The slotted plate E, having a notch, *c*, at each end, combined with reversely-movable heads f^{1} r^{1}, undercut at each end, as and for the purpose set forth.

135,501.—*Clothes-Pin.*—WILLIAM WELLINGTON, Rockford, Ill.

The pin is formed with a single piece of wood, with a diagonal kerf extending through a greater portion of its length, having one leg longer and thinner than the other, a notch in the short leg for the line, and transverse gains on the outside of each leg.

Claim.—1. A clothes-pin having the outside of its legs flat, and provided with the transverse gains or notches *a′ b′*, substantially as and for the purpose set forth.

2. A clothes-pin made of a single piece of wood, with one leg longer than the other, and having a diagonal kerf, C, thereby adapting the shorter leg to receive the line-seat, and to have the throat-chamfer cut entirely upon it, substantially as set forth.

135,502.—*Glass-Mold.*—HORACE WICKHAM, Jr., Chicago, Ill.

Glass lamps and chimneys are blown with perforations or slots therein.

Claim.—A glass-mold with perforated or slotted walls, in combination with sectional segments, having corresponding projections for entering said apertures, all as and for the purpose set forth.

135,503.—*Turbine Water-Wheel.*—ANTHONY WERALSH, Springfield, Ohio, assignor of two-thirds his right to EDWARD GWYN and WILLIAM BURNS, same place.

The water is introduced horizontally through openings, which give it a proper direction and discharge it directly into the buckets on the periphery of the wheel and allow of its escape outside the said periphery into the tail-race. The wheel is secured firmly to the shaft, with buckets, cast or otherwise fastened thereon, and they form a double row arranged concentrically with each other, but having the entry thereto from the chutes arranged above and below each other. The gate-ring is constructed so as to fit the inner side of the upper part of the case or cylinder tight enough to exclude the water when closed. On the inner side of the gate-ring are cast other diagonal stationary guides or chutes, and together they guide and control the water to the edge of the buckets.

Claim.—1. The gate-ring *f* and the stationary guides G attached to the inside thereof, constructed substantially as described, and for the purpose set forth.

2. The outer case or cylinder C with the stationary guides E and openings M, constructed substantially as described, and for the purpose set forth.

3. In combination with the case C and gate-ring *f*, the wheel D with its duplex series of buckets *e* and *e′* arranged concentrically, and having their point of discharge outside the periphery of the wheel D, substantially as described, and for the purpose set forth.

4. The combination of the gate-ring *f* and the cylinder or case C for the purpose of forming a register-gate, when constructed substantially as described, and for the purpose set forth.

135,504.—*Earth-Closet.*—JOHN L. YOUNG, New York, N. Y.

Distributing-spouts are cut from a sheet-metal plate which forms the bottom of the reservoir, the center of the plate being cut away and the spouts formed as shown. Two rings, which are revolved on the bottom of the reservoir by means of pawls operated by the cover. Ratchet-notches being cut in the top edges of the ring, serve to convey the earth from the reservoir. The lower edges of the rings are cut and bent to form buckets.

Claim.—1. The distributing spouts F, arranged substantially as shown and described.

2. The combination of two rings, H I, rotated in reverse directions on bottom of reservoir and immediately over bucket, as and for the purpose described.

3. The means for rotating said rings in reverse directions, consisting of the ratchet-teeth on their top edges, the pawls and the cover, combined and arranged as set forth.

135,505.—*Show-Case.*—AUGUST ARNOLD and HEINRICH MERZ, Chicago, Ill.

The frame-bars are rabbeted so as to permit the glass to lie flush with the outside of the frame. The frame and edge of the glass is then covered with a double-headed "ogee" molding, with a flat plinth between the two heads; through this plinth the screws are driven that secure the molding to the frame, and are concealed by a half-round bead fitting between the heads of the molding.

Claim.—The rabbeted frame-bars A and moldings C C′, constructed and arranged as described and shown, for the purpose set forth.

135,506.—*Shaft-Bearing.*—GEORGE M. BALL, Green Point, Brooklyn, assignor to ISAAC HERMAN, New York, N. Y.

A stationary, perforated, conical collar, combined with a cone at the base of the shaft, and step-screw arranged to project up within an oil-box, in which said collar and the cone of the shaft fitting the collar are placed. On supplying oil to the box it passes through the collar and lubricates the whole step-bearing surfaces of the shaft.

Claim.—The combination, with the oil-box B, of the perforated conical collar-bearing E, the cone C of the spindle, and the step-screw D, substantially as specified.

135,507.—*Ventilator.*—GEORGE R. BARKER, Germantown, (Philadelphia,) Pa.

The hot-air register and the register for contaminated air to escape are arranged one above the other, and divided by a transverse inside partition between the two series of register air-valves. The hot-air register communicates with a pipe arranged within the chimney-flue, which connects with a suitable heating apparatus, whereby a single opening in the wall of the chimney-flue is

made to convey fresh hot air into the room, and of allowing the contaminated air to escape through a separate register near the floor.

Claim.—1. In combination with one or the same chimney-flue F, the hot-air register A and the contaminated-air register C in one frame, D E, provided with a transverse partition, B, between the said two registers, substantially as and for the purposes herein-before set forth and described.

2. In a combined hot-air and contaminated-air register plate or frame, the arrangement of the fresh hot-air register A immediately above the contaminated-air register C, substantially as and for the purposes herein-before set forth and described.

135,508.—*Slab and Siding Holder for Saw-Mills.*—JOSEPH BARSALOUX and GUSTAVUS A. PRESCOTT, Sandy Hill, N. Y.

Two curved dogs are arranged to clasp the log, and when in position are retained by a pawl and ratchet.

Claim.—The combination of the jaws A and B, lever C, and dog D, constructed and arranged substantially as and for the purposes herein set forth.

135,509.—*Earth-Auger.*—WILLIAM H. BEACH and CHANCEY N. HANSON, Hamburg, Iowa, assignors to themselves, H. F. WHITE, and W. W. SMITH, same place.

The frame of the auger is composed of the bent bar I and top cross-bar J. The removable half-cylinders are attached to the bar I by loops and hooks, and the loops are held on the hooks by levers pivoted on the bar J. The bottom is rigidly secured to the frame and has the usual cutting-lips on its under face and sides.

Claim.—The combination of the frame I J, bottom K with cutters *f f* having side cutters *h h*, the half-cylinders L L with eyes *l l*, the hooks *b b*, and angular levers *m m*, all constructed and arranged substantially as and for the purposes herein set forth.

135,510.—*Means for Operating Earth-Augers.*—WILLIAM H. BEACH and CHANCEY N. HANSON, Hamburg, Iowa.

The bevel-gear wheel is held in gear by a latch passing over a pivot, when it is desired to elevate the excavated earth, the gear-wheels thus affording connection between the rotating shaft and the sprocket-wheel which carries the elevating chain and bucket. When the object is merely to rotate the auger the latch is released and the parts are thrown out of gear.

Claim.—1. The combination, with the shaft D and its gear-wheel G, of the movable shaft *d* with wheels G' and H, and the centrally-curved hinged latch I, the frame A B C, and keeper *x*, all substantially as and for the purposes herein set forth.

2. The combination of the shaft *c*, drum K, and gear-wheel J, movable shaft *d* with wheels G' H, latch I, and the shaft D with gear G, all substantially as and for the purposes herein set forth.

135,511.—*Elevating Apparatus.*—MOSES A. BLAKLEY and JOSEPH CAHILL, Chattanooga, Tenn.

A revolving crane elevates a series of buckets from cars, which are drawn by the same rope that elevates.

Claim.—A swinging elevator, consisting of the mast B secured at head and heel, boom C C, rope-wheel *g*, and counter-weights L L with intervening ropes and sheaves, substantially as hereinbefore set forth, for the purposes specified.

135,512.—*Manufacturing Iron and Steel.*—OGDEN BOLTON, Jr., and JOHN PEDDER, Pittsburg, Pa.

Claim.—The method herein described of manufacturing iron or steel direct from the ore by the inclosure of the component parts in molds or tubes, submitting the same to the proper heat and "working up" the molds or tubes with the metal, thus preventing oxidation by protecting the metal from contact with the air, substantially as specified.

135,513.—*Hoisting Apparatus.*—JOSEPH N. B. BOND, New York, N. Y.

A tightening device is combined with an endless rope that runs over a differential pulley, and through sheaves connected to the tightening device, so that when the rope is moved by turning the windlass or by a direct strain, the tightening device rises with a slow and powerful motion, and vice versa, while the rope is always kept tight, or the tightening device acts as an automatic brake.

Claim.—The combination of a tightening device, J, with pulleys A B and an endless rope or chain, H, a sheave, L, and a drum, E, the whole being constructed and operating substantially in the manner herein shown and described.

135,514.—*Cheese-Hoop.*—GEORGE B. BOOMER, Syracuse, N. Y.

A cheese-hoop, the ring or cylinder of which is made in three sections, one being stationary and secured to the base and the others hinged to the first.

Claim.—In a cheese-hoop, the combination with a base, A, and with a section, C, permanently and rigidly fastened thereto, the two sections D E hinged to the rigid section C, as and for the purpose described and represented.

135,515.—*Apparatus for Turning Ovals.*—MYRON T. BOULT, Battle Creek, Mich.

The mandrel is supported at one end by a steady rest. The projecting end is provided with a grooved and slotted head, in which a plate carrying a small mandrel or chuck is placed. Two screws pass through the slots in the large mandrel-head into the plate, and serve to adjust the small mandrel on either side of the center.

Claim.—The adjustable slide C, with stud E or chuck I, (one or both,) in combination with head B, as arranged, and for the purposes set forth and described in accompanying specification and drawing.

135,516.—*Feather-Renovator.*—STEPHEN A. BOYETT, Grenada, Miss.

Claim.—The combination of the exterior chamber B and interior chamber B', revolving independent of each other, with the slide-valves *d*, hollow journals *a a'*, steam-space *b*, valve openings *f*, discharge-pipes *m*, and rotary fan shaft H, when constructed and arranged substantially in the manner and for the purpose herein set forth.

135,517.—*Car-Axle Lubricator.*—GEORGE A. BRANNAN, Baltimore, Md.

The roller by which the journal is lubricated is provided at each end with an elastic flange and also with flexible flaps.

Claim.—The lubricating-roller C, provided with flanges *c c* and flexible flaps *c'*, combined and arranged, in relation to a car-axle journal and its box, so as to operate in the manner and for the purpose specified.

135,518.—*Apparatus for Washing Printed or Bleached Goods.*—BENJAMIN G. BROOKS, Manchester, N. H.

The wears at the ends of the curved bottom regulate the height and velocity of the water which flows through the wash-box. The perforated partition renders the flow of the water uniform throughout the machine.

Claim.—1. A water box or tank containing two vertical partitions or wears parallel to each other and near to the opposite sides of the box, and having between them a concave bottom, G, as herein described, and for the purpose specified.

2. The combination of the double wears and concave bottom with the inlet and outlet pipes placed with reference to each other, as herein described.

3. In combination with a water-box having double wears and a concave bottom, the horizontal perforated partition K, the inlet-pipe N, and the outlet-pipe P.

4. The adjustable roller D, in combination with the beater G and a water-box, W, constructed as herein described.

135,519.—*Low-Water Alarm for Steam-Boilers.*—JOSEPH R. BROWN and WILLIAM A. FOSKETT, New Haven, Conn.

Pipes connect with a steam-boiler at different levels. Chamber E is ordinarily filled with water, but when the water in the boiler sinks below the end of pipe F the water in E is replaced by steam, melting the plug and allowing steam to pass through pipes to the whistle. As this steam is taken from a point considerably above the water-level, the whistle does not scatter hot water.

Claim.—In combination with the chamber E having the hollow tube B arranged therein, and a passage, C, communicating to the alarm, the water-tube F, steam-tube L, and the fusible material *a*, the said fusible material arranged in the hollow tube B, so as to close the steam-tube L, substantially in the manner described, and for the purpose specified.

135,520.—*Cutter-Head for Pointing the Ends of Bolts.*—ORRIN C. BUNDICT, Buffalo, N. Y., assignor to himself and RALPH PLUMB, same place.

On the face of the cutter-head are pivoted four clamps, each of which holds a cutter situated radially. These cutters are beveled at their inner ends, and are brought up against a rod placed between them to cut it off and bevel it by turning the inner ends of the pivoted clamps simultaneously.

Claim.—1. In combination with the cutter-head and rotating disk H or its equivalent, provided with pins A, the pivoted cutter-clamps C, capable of adjustment out of a radial line, substantially in the manner and for the purpose set forth.

2. The combination, with the cutter-head B and the pivoted clamps C, of the adjusting-ring H provided with pins *h*, and the operating-shaft I, substantially as and for the purposes set forth.

3. The combination, with the cutter-head B, pivoted cutter-clamps C, and central adjusting-ring H provided with toothed segment *k*, of the shaft and pinion I *i*, substantially as hereinbefore set forth.

4. The combination, with the cutter-head B, and pivoted cutter-clamps C, of the fastening-screws *g* passing through curved slots *f*, substantially as and for the purpose hereinbefore set forth.

5. The arrangement, with the cutter-head and adjusting central ring H, of the cutter stocks or clamps, so as to overlap the edge of said ring and retain it in place, as hereinbefore shown and described.

135,521.—*Corn-Planter.*—ALLEN C. BURGNER and GEORGE F. BURGNER, Charleston, Ill.

The feeding devices and check-row markers are operated, either separately or in conjunction, by means of a double clutch upon the shaft. The check-row markers are provided with springs and joints, which render them flexible, in order that they may conform to inequalities of the ground.

Claim.—1. In a seed-planter, the combination of a seed-dropper, check-row markers, and intermediate devices which connect the dropper and markers, and cause them to act simultaneously.

2. A seed-dropper and check-row markers connected together as stated in the first claim, in combination with gearing for imparting motion to the dropper and markers, and devices by which the connected dropper and marker may first be disconnected from the actuating-gearing and then be shifted, for the purpose set forth.

3. The shaft C I, seed-slide D, and markers K, in combination with the loose wheel F F', sliding clutch G, and gearing M N', substantially as and for the purpose specified.

4. The combination of the shaft C or its equivalent and markers K pivoted thereon, the joint being stiffened by springs, substantially in the manner and for the purposes specified.

135,522.—*Machine for Doubling and Twisting Silks.*—HENRY A. CHAFFE, Bridgeport, Conn.

The separate strands are led from the spools around tension-pulleys, which are all adjustable at once; around the pulleys of the cable-lay governor, which preserves the twist in the several strands; around the pulleys of the yarn carrier, which twists the strands together; around the drawing-pulley, and then to the flier or bobbin.

Claim.—1. The tension device L, consisting of the shaft, the pulleys, the sliding collars connected to the shaft so as not to turn, and the device for regulating the tension on several threads simultaneously and equably, the said parts being combined and operating substantially as described.

2. The stationary cable-lay governor M, applied between the tension device L and yarn-carrier G, substantially as and for the purpose set forth.

3. The combination of the cable lay governor M, a yarn-carrier, G, and a drawing pulley, J, substantially as described.

4. The combination of the tension device L, cable lay governor M, yarn-carrier G, and drawing-pulley J, substantially as described.

5. The yarn-carrier G, constructed with pulley-supports and open at one side, as described, and arranged relatively with the drawing-pulley J, substantially as specified.

135,523.—*Combination Lock.*—HENRY CLARKE, Baltimore, Md.

The hook or bolt is held in the locked position by an eccentrically formed toothed plate secured to a sleeve, within which sliding notched tumblers are placed, the said tumblers being supported by a stationary outer disk, through which they pass, and an inner annular plate, and operated by means of an outside movable bead fitted to the said sleeve, which bead serves to draw out the tumblers, when they can be properly adjusted, and rotate the eccentric plate for the purpose of locking and unlocking the lock.

Claim.—1. The movable eccentrically-formed toothed plate *b b*, sleeve B, tumblers *d d'*, and case A, relatively arranged substantially as herein described, for the purpose specified.

2. The case A and bolt E, in combination with the sleeve B, band C, disk D, and tumblers *d d'* having the pins *h*, substantially as and for the purpose herein set forth.

3. In combination with the tumblers *d d'*, the spring G, disk D, circular plate F, and washer H, substantially as herein shown, for the purpose specified.

4. The spring-hook I *m*, pivoted within the case at *k*, and latch K, in combination with the plate *b b'*, adapted to be made stationary or movable by means of the tumblers *d d'* operating with it, substantially as herein set forth.

135,524.—*Automatic Fan.*—CHARLES H CLARK, Hartford, Conn., assignor to himself, CHARLES H. LONGLEY, and NEHEMIAH A. DURHAM, same place.

The handle of the fan contains mechanism for automatically operating it while held in the hand, and may be wound up by pulling a cord depending therefrom.

Claim.—1. In combination with the spring F, the spool G and the ribbon H, substantially as described, for the purpose set forth.

2. The combination and arrangement, within the handle or stock A, of the helical spring J, screw-shaft K, sleeve and pin L *l*, speeding train N P Q Q', and the shaft C, substantially as shown, and for the purpose set forth.

135,525.—*Broom-Head.*—BENJAMIN C. COOK, Richmond, Va.

A broom with a metallic cap covering the heads of the corn, through which openings are made and staples introduced extending outside the cap, through which a wedge covered with metal is passed, to hold or secure the corn firmly in its place.

Claim.—The combination of the case A, having slots *b b*, the loops *d d*, caps E E, and wedges G G, all substantially as and for the purposes herein set forth.

135,526.—*Bale-Tie.*—FREDERIC COOK, New Orleans, La.

Claim.—The openings between the bars C and D made by splitting off the bars C from the bars D without loss of metal, and the lips turned on the edges of the said bars for the purpose of enlarging the openings, and thus making more easy the introduction of the bent ends of the bands.

135,527.—*Railway Switch.*—ALONZO W. CRAM, Litchfield, Ill.

The crank-shaft and signal-staff are separated. A disk is attached to the former, and both are rotated until one end of the slot strikes the horn of the signal-staff, by which the latter is also rotated until the end of horn strikes one end of the notch or slot *b* in plate B, thus giving the crank shaft a revolution of one hundred and eighty degrees and the signal-staff one of ninety degrees. Notched plate H is to lock the crank-wrist F and the connecting-rod G in proper position.

Claim.—1. The combination of the shaft E, crank F, and signal staff J, having unequal rotation, substantially as and for the purpose set forth.

2. The combination of the shaft E, crank F, fixed plate or disk B with indentation *b*, turning-disk C with slot *a*, and signal staff J with horn *f*, substantially as and for the purpose set forth.

3. The combination of the crank F and notched holding-plate H, substantially as and for the purpose set forth.

135,528.—*Machine for Making Cotton Laps.*—THOMAS C. CRAVEN, Hudson, N. Y.

The evener cylinder allows only a certain amount of cotton to pass over the apron to the feeding-cylinder. The speed of the apron may be varied, and the cotton taken from it by the feeding-cylinder is passed to the gin and thence to the lap-forming mechanism.

Claim.—1. The combination of the toothed feeding-cylinder N, the endless apron M, and the evener-cylinder Q provided with the retracting-fingers *g*, substantially as described.

2. The toothed feeding-cylinder, endless apron, and evener-cylinder provided with retracting-fingers, in combination with a cotton-gin provided with saws and a brush-cylinder, substantially as described.

3. In combination with the devices of the second clause, a lap-forming mechanism constructed and operating substantially as described.

135,530.—*Apparatus for the Manufacture of Sugar.*—SANTIAGO DON, Havana, Cuba.

Claim.—1. The generator composed of a number of connected boilers, in combination with the flues *b*, and dividing-wall *c*, the steam-pipes A, and safety-column H with its pipe *l*, substantially as herein described.

2. The combination of the trough *w* and discharge-pipe *n* with either or all of the boilers, essentially as and for the purpose herein set forth.

135,530.—*Shawl-Strap.*—THEODORE R. DUNHAM, Newark, N. J.

A shawl-strap is constructed with a canvass flap or cover having the buckles at one of its sides, the straps at the other, and the handle in the center. A ring is attached at each end of the handle for a strap with which to carry or sling a package over the shoulder.

Claim.—1. In a shawl or package strap, a ring, *d*, attached at or near each end of the handle for the attachment of a strap to carry or sling the bundle over the shoulder, substantially as herein set forth.

2. The within-described shawl-strap, consisting of the flap E, with the straps G attached to one edge and the buckles attached to the other, and with stay-piece D and handle A secured to the longitudinal center of the flap, all substantially as and for the purposes herein set forth.

135,531.—*Circuit for Chemical Telegraphs.*—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C.

Reverse-induced current from electro-magnets in branch circuit neutralizes residual or extra current in main line, and thus avoids blurs and "tailings."

Claim.—One or more electro-magnets, arranged in a local or branch circuit, substantially as set forth, in combination with a chemical telegraphic receiving instrument, for the purposes set forth.

135,532.—*Stock-Car.*—GILES A. EGAN, Covington, Ky.

The trough is divided into alternate feed and water sections. The sections intended for water have perforated bottoms. Water is introduced at one end of the troughs, and rises within each water-section to the same height.

Claim.—In the described connection with a cattle-car, the elevated water-tank E and trough I, the latter being divided and partitioned, as shown, to form alternate feed and water cells, substantially as and for the purpose specified.

135,533.—*Beater and Compressing Press.*—GEORGE ESTELL, Quincy, Ill.

The driving shaft revolves, rotating the wheel, the beater-rope being caught up by the mouth of the rim or base of the swell on the wheel and wound upon the outer vertical surface of the rim, thus elevating the hammer-block, which, when it reaches its maximum elevation is tripped, the rope slipping over the wheel and allowing it to fall.

Claim.—1. The driving-wheel N provided with the inclined rim *p*, block O, and lug P, substantially as shown and described.

2. The levers S *s*, rod *t*, and pawl *u*, in combination with the sliding collar S, substantially as shown and described.

3. The oscillating pulley-axle Z provided with the pulley-wheels *z*, for the uses and purposes substantially as shown and described.

4. The rotating collar F, driving-wheel N provided with the rim *p*, swell V, and lug P, in combination with the beater-rope R, vertical pulley-wheels *h*, *i*, and *h*, and hammer-block L, substantially as shown and described.

5. The rotating collar F, for the uses and purposes substantially as shown and described.

6. The combination and arrangement of the rotating collar F and sliding collar S, for the uses and purposes substantially as shown and described.

7. The sliding collar S, presser-rope T, oscillating pulley-axle Z, in combination with the levers U, substantially as shown and described.

8. The rectangular hinges D, arranged and operating in connection with the door C, substantially as shown and described.

9. The box-journal *x*, in combination with the hook at the end of bars W, substantially as shown and described.

135,534.—*Animal-Trap.*—SAMUEL F. ESTELL, Chicago, Ill., assignor to ANDREW W. KENDRICK, Brooklyn, N. Y., and HARRISON GIBSON, Richmond, Ind.

In any position of the trap, simple pressure of the trap-spring sets the trap.

Claim.—1. The spring F, catch K, and inclined portion V, combined for the purposes and in the manner substantially as set forth.

2. The spring F, catch K, and inclined portion V, in combination with the staples H and U and wires C D, trap A, hooks M and O, and wire N, substantially as set forth, and in the manner indicated.

135,535.—*Machine for Grinding and Polishing Stone.*—JAMES FINN, Boston, Mass.

Different thicknesses of stone can be polished at the same time. Each of the tools is provided with a separate spring for pressing it into contact with the slab, and the tool adjusts itself to the varying thickness accordingly. An automatic widthwise movement is imparted to the tool simultaneously with the movement lengthwise.

Claim.—1. The reciprocating carriage E, the tool-carrier bars *c c*, the slotted connector G, cranked shaft I, gear *r*, worm *w*, and shaft H, combined and arranged together and in the frame A, and relatively to the bed B thereof, substantially in manner as described.

2. The combination of each of the tool-forks *i*, its spring *l*, supporting-standard *h*, screw *m*, and nut *n*, all arranged as described.

3. The combination and arrangement of the above with the bar *c* applied to the carriage E, and provided with operative mechanism, substantially as specified.

135,536.—*Sewing-Machine.*—JOSEPH LEONARD FOLLETT, Troy, N. Y.

The cup-shaped shuttle-holder, provided with a projection to fit the concavity in the double pointed shuttle, is pressed forward, thereby engaging and pressing the shuttle against the annular race by means of a spring within the hollow driving-shaft which presses against the holder-shaft, fitted to slide within and to rotate with the driving-shaft. The shuttle may be moved in either direction. By conducting the thread from the outer or inner side of the shuttle the stitch made will have the needle-thread either simply locked with or twisted about the needle-thread.

Claim.—1. A double-pointed crescent-shaped rotary shuttle, having its center or axis of motion within its body, and pierced axially with a thread-hole, which extends from front to back, and communicates intermediately with the bobbin-receptacle, substantially as described, whereby the thread from the bobbin may be caused to pass out either at the front or back of the shuttle, for the purposes set forth.

2. In a shuttle of the kind described, in which the thread-hole is formed and arranged as specified in the preceding clause, a bobbin-receptacle extending entirely through the shuttle from front to rear, substantially as and for the purposes set forth.

3. The arrangement in the shuttle of the herein-described bobbin, tension, and bobbin-locking plates, substantially in the manner set forth.

4. The shuttle holder or cup and its supporting rod, in combination with the tubular rotary shaft, in which said rod fits and slides, and the check-nut and spring and adjusting-screw, for regulating the movement of said holder, the parts being constructed and arranged substantially as shown and set forth.

5. In combination with the shuttle-holder and devices for holding and operating the same, the annular plate toward which the holder is pressed, and between which and the holder the shuttle when in place is supported, substantially as shown and described.

135,537.—*Car-Coupling.*—FRANZ FOX and FRANCIS A. HOWARTH, Providence, R. I.

The draw-head is supported at the rear by adjustable hangers, to allow of the draw-head being raised or lowered to bring it in line with other draw-heads at different altitudes with which it is to be coupled. Two coupling-bars are employed, and each consists of a straight shank, with a flat head at one end and a bellically-shaped flat head at the other end. The heads of the coupling-bar enter the draw-head flatwise and are then turned by mechanism within so as to bring the shoulder of the coupling-bar at right angles to the mouth of the draw-head, and are held tightly thereby. The lever connecting with the turning mechanism being reversed releases the coupling-bar.

Claim.—1. The combination of the draw head and the coupling-bars, constructed and operating substantially as described, for the purpose specified.

2. The coupling-bar, substantially as described, in combination with the mechanism for turning and uncoupling the same, substantially in the manner specified.

3. The combination of the sliding connection B at the rear of the draw-head and the adjustable hanger H, substantially as described, for the purpose specified.

135,538.—*Machine for Shaping the Edges of Boot and Shoe Soles.*—CHARLES W. GLIDDEN, Lynn, Mass.

A series of heel-holding plates are formed around the periphery of a rotating wheel, between which heel-blanks are placed, and as the wheel revolves each blank is subjected to radial pressure from a plunger, which is raised or lowered by suitable mechanism provided.

Claim.—1. In combination with blank-holding plates *e f*, sliding dies, substantially as shown and described, for compressing the edges of the lifts and shaping and forming the heel-edge.

2. In combination with the sliding and shaping dies, the wheel having the series of heel-holding plates, arranged substantially as shown and described.

3. The combination of the rotating wheel *d* having the blank-holding plates, the stationary die-holder *i*, and its sliding dies *k*, and the follower, arranged and operating substantially as shown and described.

4. In combination with the wheel *d* and follower *n*, the ratchet *s* and drag-pawl *t*, substantially as and for the purpose described.

5. The method of shaping heel-blanks by subjecting their edges to the pressure of a series of dies, *k*, having faces which unitedly in the shape to be imparted to the curved heel-edge, substantially as described.

135,539.—*Lasting-Machine for Boots and Shoes.*—CHARLES W. GLIDDEN, Lynn, Mass.

The lasted boot or shoe is held securely by jaws provided upon their inner surfaces with elastic cushions, which, upon being compressed, force the upper against the side of the last, when, by a series of presser-slides located around an opening in a horizontal plate, into which the last extends, the projecting edge of the upper is pressed down firmly upon the inner sole.

Claim.—1. The combination of the block *b* having elastic faces, into which the last is pressed and the series of simultaneously-actuated pressers that press over upon the top of the inner sole the edges of the upper that are pressed up and held by the blocks.

2. In combination with the last-receiving mechanism the ring *i*, hinged substantially as shown and described.

135,540.—*Machine for Lasting Boots and Shoes.*—CHARLES W. GLIDDEN, Lynn, Mass.

The jack is provided with intermittent movement in combination with griping mechanism that seizes the projecting edge of the upper and presses it down upon the inner sole, where it is secured by nailing mechanism.

Claim.—1. In combination with a jack or shoe-supporting mechanism, the griping mechanism, substantially as shown and described, for intermittently seizing the upper and drawing it over the edge of the inner sole.

2. The combination, with such a griping and drawing mechanism, of the mechanism, substantially as shown and described, for fastening the edge of the upper to the inner sole.

3. In combination with the griping mechanism, a jack having an intermittent-feed movement, substantially as described.

4. In combination with the jack, the slide bar o^3, pawl-bar l^3, pawl-pin p^3, stud-pin l^2, slide m^3, and stud-pin l^3, operating substantially as described.

5. In combination with the griper-jaw the nail-carrier n^3 and nail-driver p^3, and the mechanism, substantially as described, for operating them.

6. In combination with the griping mechanism and nail-driving mechanism, the nail-tube m^3, substantially as described.

7. In combination with the griper-jaw *l* the cutter o^3, for slitting the upper.

135,541.—*Compression Basin-Faucet.*—WILLIAM GORDON, Philadelphia, Pa., assignor of two-thirds his right to ANDREW MCCAMBRIDGE and THOMAS KENNEDY, same place.

A compression basin-faucet constructed with vertical holes and pins for adjusting the nozzle, and a peculiar arrangement of opening and closing the valve, with its cylindrical longitudinal lateral openings, as described.

Claim.—1. The combination of the cap B, having a screw-socket, D, with the stem C, substantially in the manner and for the purpose set forth.

2. The combination of the cap B, having a screw-socket, D, and stuffing-box A, with the screw-stem C and packing-ring *i*, substantially as described.

3. The upper valve-seat *b'*, on the lower end of the screw-socket D, in combination with the upper valve E', substantially as and for the purpose set forth.

4. The annular chamber *d*, in the lower end of the screw-socket D, in combination with the cross-opening *s* of the valve-stem, substantially as described.

5. The combination of the screw-cap H, the ball G of the nozzle, having an annular space, *n*, and the screw-stem C, having a side-opening, *o*, substantially in the manner and for the purpose above set forth.

6. The combination of the openings *f* and pin *m*, with the upper end of the screw stem, and the ball G of the nozzle, substantially as described.

135,542.—*Cheese-Skipper Extractor.*—CALEB GREEN, Osseo, Mich., assignor to himself, SETH D. MCNEAL, and ALFRED M. GREEN, same place.

Air is exhausted from the vessel for a period of twenty-four hours, when the cheese is taken out free from skippers.

Claim.—1. The within-described process for extracting skippers from cheese by placing the cheese on a grating or other suitable support in a vessel and excluding the air from the same for a certain length of time, substantially as herein set forth.

2. The within-described apparatus, consisting of the box A, grating or rests B, outside rim C with vent *c*, and the cap D with vent *d*, and screw-cap G, and used with water or other suitable substance for excluding the air from the box, substantially in the manner and for the purposes herein set forth.

135,543.—*Cloth-Steaming Machine.*—HENRY S. GREEN, Sherbrooke, Canada, assignor of one-half his right to C. H. WESTON, Lowell, Mass.

Steam issuing from perforated pipes within a box impinges against the face side of the cloth and softens it, and a cold blast of air blown against the back of the cloth condenses the steam and prevents it from affecting the back.

Claim.—The combination, in a cloth-steaming apparatus, of one or more steam-pipes, constructed and arranged to convey steam to one side of the cloth, with mechanism constructed and arranged to convey a blast of cold air to the opposite side of the cloth, substantially as specified.

135,544.—*Coffee-Pot.*—BAYLESS GRIGSBY and THOMAS C. BRASKETON, Princeton, Ind.

Claim.—The combination, with a coffee-pot, of the bottomless box A with valve *a*, tube B closed and perforated at its upper part, cap D, spring *b*, and the box C with perforated top and bottom, all constructed and used substantially as set forth.

135,545.—*Railway-Ferry Track-Platform.*—WILLIAM P. HALLIDAY, Cairo, Ill.

A railway-ferry barge is provided with drop track-platforms for the transference of tracks to suit changes of gage during the river transit, thus saving the usual stoppage and delay for this purpose.

Claim.—1. A transfer boat or barge for railway cars provided with drop-tables, by means of which car-trucks may be lowered into or raised from the hold, substantially as and for the purpose specified.

2. A transfer boat or barge for railway cars provided with vertically-moving drop-tables and horizontally and laterally moving transfer-tables, substantially as and for the purpose shown.

3. A transfer boat or barge provided upon its deck and within its hold with railroad tracks having different widths of gage, and having suitable drop and transfer tables for moving car-trucks, substantially as and for the purpose set forth.

135,546.—*Excavating-Cart.*—WILLIAM HARLES, Washington, Mo.

The earth is carried up between the tire, casing, and flange, and is thrown into the cart through the spout by the gate, which is operated by the rod and stud on the wheel.

Claim.—1. The flanged casing E and spout G, in combination with the wheel B^1 having the broad tire B^2 and buckets *b*, substantially as specified.

2. A wagon or cart having the wheel B^1 with broad tire B^2, buckets *b*, and studs K, the flanged casing E, spout G, gate A, rod I, and spring *i*, substantially as specified.

135,547.—*Riding-Stirrup.*—ANDREW J. HERRING, Mauch Chunk, Pa.

The stirrup is made of wood with a spring attachment beneath the connection, the whole secured together by a bolt.

Claim.—1. A wooden stirrup constructed in one piece, with a block, B, upon each end, which blocks, when the stirrup is bent up, bear against each other, and are held together by a transverse bolt, substantially as described, for the purpose specified.

2. The stirrup-strap connected to the stirrup by means of the spring-frame H, substantially as described, for the purpose specified.

3. The spring frame consisting essentially of the metal loop I, block J, and the springs K, supported between the loop and the under side of the blocks B, substantially as described, for the purpose specified.

4. In combination with the spring-frame, the shield L, substantially as described, for the purpose specified.

5. The spring-frame arranged as described, to hold the loop of the stirrup-strap beneath the top and between the sides of the stirrup, substantially as described, for the purpose specified.

135,548.—*Moccasin.*—THOMAS HERSEY, Bangor, Me.

The moccasin has a flap secured to the outside of the tongue or vamp, forming pockets which exclude dust when the moccasin is secured to the foot.

Claim.—In a moccasin or shoe the pockets *g g*, formed, as described, by the combination of a front lap, *d*, and ordinary tongue *b*, united by stitches *f*, substantially as set forth and shown.

135,549.—*Ticket-Punch.*—HENRY W. HEWAT, Cincinnati, Ohio, assignor to HARVEY MILLER, same place.

The upper die is operated by two levers which unite to depress the die. The die is retracted after its cutting action by a spring.

Claim.—1. The vibrating or movable lever D of a card-punching instrument, when provided with a projecting shield, *d*, extending beyond the frame A, as and for the purpose specified.

2. The conical-sided die B secured in the frame A by the swaged indentations *a'''*, substantially as specified.

3. The grooved male die or punch C *c*, in combination with the swaged indentations *a'*, as and for the purpose specified.

4. The combination, in a card-punching machine, of a reciprocating punch or male die C, intermediate lever E, and handle-lever D, operating substantially as and for the purpose described.

5. In a card-punching machine, the reciprocating punch or male die, C, intermediate lever E, and handle D, in combination with the bent spring H, constructed and operating substantially as and for the purpose specified.

135,550.—*Sad-Iron Crimper.*—JOHN HEWITT, New York, N. Y.

A sad and crimping iron, with a detachable corrugated shoe connected by pivots. The shoe is constructed square or nearly so, and the corrugation extends the entire length of its lower surface.

Claim.—The corrugated shoe-plate B, having suitable bearings to connect it with a handle-block, A, or equivalent device, when said plate is of such form as to permit of its corrugations *b' b'* covering the entire surface of the plate and of their being of uniform length, so as to permit of the fluting being ironed with the flat surface of the plate, substantially as described.

135,551.—*Lifting-Jack.*—JACOB H. HINTON, Wayne county, Ohio.

The lifting-rod is operated by means of a friction-plate. A swinging lever disengages the dog from contact with the rod.

Claim.—1. The dog *a* held in position by lifting-rod and slotted standard, substantially as set forth.

2. The pivoted lever *c f* or holding the dog from contact with the rod, substantially as shown.

3. The dog *a*, held as described, the lifting-plate A, rod *g*, and lever *c*, when arranged to operate as specified.

4. The standard *a*, lever *c*, slot *d*, dog *a*, rod *g*, lifting-plate A, and lever *i*, when all are combined to form a lifting-jack, substantially as shown and described.

135,552.—*Car-Coupling.*—JOHN E. HITT, Bement, Ill.

The coupling-pin is held vertically within a tube upon top of the draw-head by means of a sliding bar, which projects beyond the face of the draw-head, and is actuated by a spring inclosed within a case, into which the sliding bar enters. The coupling-link is formed like a shuttle, and has a bar through its center to prevent it being longitudinally displaced when the cars are about to be coupled.

Claim.—The shuttle-link C, having solid rounded ends *a* and a cross-bar, *b*, extending beyond the sides thereof, as shown, in combination with the concave draw-heads B, the coupling-pins G, and supporting-rods *f*, the whole arranged and operating as described.

135,553.—*Nut-Lock.*—HARRISON P. HOOD, Indianapolis, Ind., and WILLIAM COOMBS, Bangor, Me.

Claim.—The combination of the washer-plate *d* provided with a lip, *c*, in connection with a button, *a*, turned up at the inner end *b* to engage a nut, *k*, substantially as and for the purpose hereinbefore set forth.

135,554.—*Coal-Scuttle.*—GARDNER HOWLAND, Brunswick, N. Y.

Claim.—A pail or scuttle formed with lip E, hinged flap or lid F, and lifting and tipping handles H and C, the whole being formed and arranged substantially as and for the purpose described.

135,555.—*Propeller for Vessels.*—ERWIN C. HUBBARD, Green Bay, Wis.

A conical hub, attached longitudinally to and around a shaft, has curved serrated seats upon its periphery, upon which seats are fastened blades overlapping each other around the shaft and tapering outward and to the rear, forming a conical-shaped propeller-wheel. Apertures or openings between the blades allow the entrance of the water, which is expelled from the rear opening of the cone. Braces and set-screws between the blades regulate the extension or contraction of the blades.

Claim.—A propeller or wheel having the shaft F, with or without the sleeve, the hub E with serrated seats *f*, tapering blades A forming the openings *a*, and the stays or supports B, constructed as described, and for the purposes set forth.

135,556.—*Ice-Crusher.*—FRANK HUDNER and JAMES R. LITTLE, New York, N. Y.

A machine having a fixed jaw and a jaw moving in the arc of a circle, said jaws being armed with steel conical teeth.

Claim.—1. The combination, with the jaws, of removable lock-plates for convenience in removing and tightening the teeth, substantially as described.

2. The stationary jaw, hinged at its upper end, and adjustable at the bottom by means of set-screws, as described, in combination with a movable jaw, operated as set forth.

3. The movable jaw, provided with means for clearing the throat of obstructions, substantially as described.

4. The combination, in an ice-crusher, of the eccentric, pitman-rod, and means for operating them, with the pivoted jaw moving, as described, and the adjustable stationary jaw, all constructed and operating substantially as set forth.

135,557.—*Combined Seat and Desk for Railroad Cars.*—WILLIAM C. HUFFMAN, Toledo, Ohio.

A seat connected or attached to a hollow upright or sleeve, with a shield or guard resting upon a pedestal passing into the sleeve and supported by a platform or foot, from which, and passing within the guard, is a coiled spring attached to the foot, and its vertical and rotary motion controlled by upright tapes or cords attached to the foot and the inside of the shield. To the sleeve, at a convenient distance from the top, attached by a bracket, is a writing-desk.

Claim.—1. A combined seat and desk, supported upon or by means of springs, and capable of vertical and rotary motion within certain limits, substantially as and for the purpose hereinbefore specified.

2. The device, as a whole, consisting of the base A, standard B, sleeve C, seat D, housing E, spring F, checks G, foot-rest H, and desk I and K, when said parts are constructed and combined substantially as and for the purpose shown.

135,558.—*Potato-Digger.*—JAMES WYGANT INNIS, Newburg, N. Y.

A potato-digger constructed with the ordinary mold-board, with arms extending rearwardly and secured to the rear part of the frame. To the under side of the mold-board are a number of independent flexible tines, which are secured by passing through holes formed in a V-shaped piece secured beneath the mold-board. The tines are each passed through separate links attached to a cross-chain.

Claim.—1. The combination, with the shovel-plow A, of the separator or inverted rake D, composed of independently-flexible hinged tines, constructed and arranged for operation, substantially as specified.

2. The combination of the transversely-arranged chain *g* and its attached links h with the independently-flexible hinged tines *e* of the inverted rake D, essentially as described.

135,559.—*Winding and Setting Watches.*—CHARLES E. JACOT, Chaux De Fonds, Switzerland.

A cross arm or thumb-piece, covered by the outer back-case, is so connected by a suitable gear as to wind up the watch without further exposure; while an adjustable slide transfers the gear engagement from the barrel to the center-pinion, it is desired to set the hands.

Claim.—The wheel *i* connected with the arms *s* and provided with the slide *r* within the cap *c*, in combination with the gear-wheel *n* upon the arbor of the main-spring, and the pinion *o* upon the arbor of the hands, substantially as set forth.

135,560.—*Bolt.*—EDWARD M. JUDD, New Haven, Conn.

A spring foot-bolt is constructed in two parts sliding within an ornamental case. The upper part is a dog with rib and groove,

a spring to hold it in place, a foot-piece projecting upward above the case, and is notched to engage a rib or inward projection at the top of the case. The lower part is a skeleton shank carrying a bottom spring, which throws the bolt up, when the dog is liberated. Pressure on the foot-piece throws the dog forward, locking the bolt, and when the foot-piece is pushed back it is released from engagement with the rib at top of the case and the bolt automatically withdrawn.

Claim.—The dog *l*, with the groove *o* below the foot-piece *m*, in combination with the spring-bolt *f h*, case *a*, and spring *n*, substantially as and for the purposes set forth.

135,561.—*Cord-Tightener for Curtain-Fixtures.*—HUBERT L. JUDD, Brooklyn, N. Y.

The cord slide is cast in one piece, and combines the fixed sheave, the stock, and the projections. The wedge-block is also cast in one piece, and is provided with the projecting tooth and the flanges to hold the wedge-block in the rack-case.

Claim.—1. The fixed sheave *c*, stock *i*, and projections *s*, cast in one piece, in combination with the rack *a*, substantially as and for the purposes set forth.

2. The wedge-block *l* with its tooth *r* and flanges *v*, in combination with the sheave *c*, stock *i*, and projections *s*, as and for the purposes set forth.

135,562.—*Curtain-Fixture.*—SAMUEL KER, Washington, D. C.

The bracket has either a spike or screw formed shank so as to drive or screw into the casing, and is combined with a tripod or *spider* shaped brace having a collar to surround the bracket and feet which rest against or penetrate the casing or window-frame.

Claim.—The combination of the roller-brackets E F and braces G H, substantially as and for the purpose set forth.

135,563.—*Lawn-Mower.*—SIDNEY D. KING, Middletown, N. Y.

A reel for blowing away the cut grass from the cutters is driven by the same shaft which drives the cutters.

Claim.—The combination of the shaft F, eccentric H, standard I, bar *b'*, pivoted cutters b, gearing G G', and reel L, substantially as specified.

135,564.—*Car-Starter.*—WILLIAM W. LAMBERTON and DANIEL R. LEHMAN, New Orleans, La.

The power being applied the draw-bar is drawn partially out and thereby gives the motor a certain momentum to aid in starting the vehicle. By means of an expanding-drum, actuated by a rack on the draw-bar and a cam secured to the rear axle, the power exerted in starting is partially economized, and as the car moves the draw-bar continually recedes until the power of the starter is expended, when it resumes its normal position.

Claim.—1. The combination of the expanding-drum C, wheel F, rack-bar, G, and spring Y, substantially as specified.

2. The rack-bar G, expanding-drum C, wheel F, rope or chain L, and case A, substantially as set forth.

135,565.—*Coal-Car Elevator.*—PHILIP H. LAMEY, Wiconisco, Pa.

An armed stop-lever, having a hand-lever attached, is pressed upon when the car is ready to start, depressing the stop upon the track, and permitting the car to pass; also a presser whose arms abut against the bumpers and propel the car, the rear ends of the arms being pivoted to a truck, which travels on a track below the car-track, and to one end of said truck is attached a weighted cord for giving a proper counter-balance to the weight of the car.

Claim.—1. The pivoted stop E connected with a hand-lever, F, and bell mechanism, as described, so that the same movement of lever will depress the stop and notify the engineer that the car is ready to start.

2. The pusher G, arranged, as described, in rear of car and operated by any suitable mechanism against the bumpers of cars to carry them to end of landing and beginning of slope.

3. The means described for operating the pusher G, consisting of the wheeled truck arranged in a pit and moved on its own track by a weight or other suitable mechanism, as set forth.

4. The pusher G, pivoted and arranged to rise at an upward inclination against the truck to enable the heavy spread-chains to be slided upon the arms *g g*, as set forth.

5. The construction of the track with longitudinal recess *d* through middle, as described, to allow vertical and longitudinal play to the rope, according to the position of the car and to its own position on drum.

6. The pivoted and curved and bifurcated catch L, arranged, as described, over the channel *d* for the purpose of enabling the truck to be drawn back with the car.

7. A rising track, *m*, connecting the upper and lower pusher-tracks in order to enable pusher to take up its position behind car, as set forth.

8. The rising pivoted track *m* combined with upper and lower tracks N N, as described, so that the pusher may pass over or under the top track without let or hindrance.

9. The friction-disks P P, one on each side of pulley O, and the friction-slides Q Q on bottom of car, combined as described, to retain pulley O in advance of the rope, so as to avoid friction thereon.

135,566.—*Bee-Hive.*—WILLIAM LEHMAN, Lexington, Mo.

The comb-frames are pendent from the top of an interior frame with bee-head floor, and this interior frame may be drawn out without violence to the combs or separation of any of the parts. Entrances for moths are arranged right and left of the bee-entrance, and attached to the inner side of the wall are passages to decoy them to the trap below.

Claim.—1. The interior sliding rack, consisting of the inclined bottom D, back E, and posts *a a*, with cross-bar *b* for supporting the comb-frames G G, substantially as and for the purposes herein set forth.

2. In combination with the entrances A A and passages *h' h'* into the moth-drawer, the boxes *k k* attached to the inside of the door H, substantially as and for the purposes herein set forth.

135,567.—*Bird-Cage.*—OTTO LINDEMANN, New York, N. Y.

Claim.—The swivel-buttons *d* arranged upon the flat surface of the platform *a* for confining the bottom ring *c* of a bird-cage in the recess *b*, substantially as herein shown and described.

135,568.—*Hydrocarbon-Gas Apparatus.*—LOUIS MARINO and EMILE MERTZ, Basle, Switzerland.

The oil is admitted through a central pipe below the valves, falls upon a perforated plate attached to the valve-stems, and is sprayed upon the heated bottom of the retort and the projections thereof. The gas accumulates in the lower part of the retort until its pressure exceeds that of the water in the washer.

Claim.—1. The valve-frame *k s* provided with the finely-perforated bottom plate *g*, the whole hung within the retort and operating substantially as and for the purpose described.

2. In combination with the perforated plate *g*, the edges *e e* projecting upward from the bottom of the retort, substantially as and for the purpose described.

3. In combination with the retort and its valves *k k*, the inlet-pipe opening into the retort below the valves, and connecting with the open reservoir C, substantially as and for the purpose described.

4. The combination of the retort suspended by its rim *b*, with the box in which it is suspended, and the removable cover *n* substantially as and for the purpose described.

5. The combination of the open reservoir and its inlet-pipe, furnace, retort, and valve-frame, outlet-pipe, and water-basin, substantially as and for the purpose described.

135,569.—*Wash-Boiler Attachment.*—MATHIAS MARTIN, Baltimore, Md.

A wash-boiler attachment constructed with a flange projecting downward from the platform parallel with the side of the boiler, the end of which for a given space is perforated. Covering the perforations upon the inside are guards or conductors intended to give direction to the water and steam, to the pipe attached to the opposite end of the platform, and through it to be conducted to the clothing to be cleansed.

Claim.—The box A, having perforations *a*, and combined with the diaphragm B and tube A', substantially in the manner and for the purpose described.

135,570.—*Hub for Vehicles.*—SAMUEL MCGEE, Madison, assignor of one-fourth his right to JAMES S. ADAMS and FRANCIS H. FAIRCHILD, Morristown, N. J.

The axle is secured within the hub by means of a collar which is attached to the axle, and revolves between the inner faces of the end caps. An oil-chamber is provided within the hub by leaving a space between the periphery of the collar and the central division of the hub.

Claim.—1. An oil-box or reservoir combining in its construction a central section, A, threaded-end sections B and C, a nearly central oil-chamber, and a packing-box or collar, B', the parts being constructed and arranged substantially as and for the purpose set forth.

2. The combination of the cylinder A, caps B and C, and collared shaft F, the parts being arranged for regulating the end traverse of the axles, substantially as and for the purpose set forth.

135,571.—*Middlings-Purifier.*—CHARLES E. MCNEAL, Silver Creek, N. Y.

Currents of air are created for separating the bran and dust from the middlings by a force and suction fan acting in conjunction with each other within an angular air-chamber having double air-inlets or discharge-openings, separated from each other by a prismatic partition.

Claim.—1. The combination, with the air-chamber H, of the force-fan B arranged at one end thereof to throw the middlings into said chamber, and of the suction-fan F arranged at the opposite end of the chamber, substantially as specified.

2. The triangular air-chamber H having its apex downward and open for the admission of air, and having the fans B F at opposite ends of its base, which is turned upward, substantially as specified.

3. The combination, with the fans B F and air-chamber H having double air-inlets I I at its lower end, of the air-leg D leading from the top of said chamber near the fan B into the top of the fan F.

4. The chamber H having the double air-openings I I separated by the prismatic partition J having its horizontal side downward, substantially as specified.

135,572.—*Cigar-Mold.*—FREDERICK C. MILLER, Cincinnati, Ohio, assignor to himself and HENRY C. PETERS.

In the bottom of the lower die is a heart-shaped section, from which the other parts are lifted to receive the full complement of tobacco, and in their descent a perfect cigar-bunch is formed.

Claim.—The plates or boards D and E, provided with a series of cigar-molds, each of which is composed of the parts A, B, and C, in combination with the base F having jaws *f f*, substantially as and for the purpose specified.

135,573.—*Cot-Bed.*—LEANDER B. MORSE, Athol, Mass., assignor of one-half his right to LABAN MORSE, same place.

The cross-bars are attached to the longitudinal girders and to the girders folding legs. In the upper side of the cross-bars are pins. The slats are slotted to receive the pins, and a slat holds

them in place at the foot. A head-board is hinged to the top, and also acts as a cleat upon the slats at that end.

Claim.—1. A bed-frame consisting of the cross-bars A and A' and the girders or side pieces B B, provided with the legs D, and secured to said cross-bars in such a manner that, while they serve as stretchers to keep said bars the proper distance apart they may be rotated for the purpose of folding the legs under the bed when not in use, substantially as described.

2. The combination of the slats C C provided with the slots *d d*, the cross-bar A having inserted in its upper side the pins *b b* to fit into said slots, and the holding-down cleat F, all constructed and arranged substantially as described.

3. In combination with the slats C C provided with slots *d d*, and the cross-bar A having inserted therein the pins *b b*, I claim the head-board G, hinged to the cross-bar *A* in such a manner that it may be placed in a perpendicular position or folded down onto the slats and serve the purpose of holding the slats in position on the pins while they are free to move endwise thereon, substantially as described.

135,574.—*Lightning-Rod.*—WILLIAM B. MUNN, Cleveland, Ohio.

The rod consists of two or more wire cores, enveloped closely with sheet-copper, whose meeting edges are tucked inward between the two adjacent wires.

Claim.—A lightning-rod composed of a central wire cable core, or its equivalent, surrounded by a sheet-metal conducting covering, when the edges of such covering are tucked away, substantially in the manner and for the purposes herein set forth.

135,575.—*Sawing-Machine.*—WILLIAM NEIDENTER, Mitchell, Ind.

Claim.—1. The combination of the spring L, spur-wheel J, pawl and ratchet *e* N, gearing E *f f' f'' f'''*, shaft L', and saw D, substantially as specified.

2. The adjustable shaft *s* provided with the friction-roller E' and the lever or dog G, in combination with the saw-shaft D' having the friction-roller F, the rack *g*, and the spring L, substantially as specified.

135,576.—*Ice-Machine.*—HENRY NORMAN and CHARLES F. DIETRICH, New Orleans, La.

The air from the condensing apparatus passes through a drying cylinder containing chloride of calcium into a cooler constructed of coiled pipe immersed in water, and on to the refrigerating-chamber through the air-regulating apparatus.

Claim.—1. The drier, Fig. 3, consisting of the outer cylinder A^3 and interior cylinders A^4 and B^4, and which latter have their bottoms perforated, as stated, tube E^1, and cap F^1, the whole being so combined and arranged as to compel the air introduced into the outer cylinder to expand through the drying material contained in the inner cylinder B^4, substantially as described.

2. The air-regulator, Fig. 7, consisting of the chamber A^5, perforated tube P, valve P^1, piston-rod c^1, piston d^1, and cup D^4, the whole being so combined and arranged as to operate substantially as described.

3. A refrigerating apparatus consisting of the pump, air-compressing engine, cooler, reservoir, and distributer, when the same are constructed as described, and so combined and arranged as to operate substantially as specified.

135,577.—*Device for Pressing Hats.*—CHARLES M. OSGOOD, Amherst, Mass.

The hat-body is pressed into the metallic die by the rubber core expanded by wedge and cam.

Claim.—An auxiliary male pressing die, of India rubber or other suitable material, combined with the dies of a hat-press, and expanded by a wedge advanced by a cam or other equivalent mechanism, substantially in the manner and for the purpose herein set forth.

135,578.—*Treating Tin Scrap and Obtaining Useful Products.*—HENRY PANTON, New York, N. Y.

The tin scrap is placed in a revolving inclined box provided with hollow journals, through which is passed dry chlorine gas so as to form and carry over to a condenser bichloride of tin, which is precipitated as oxide and reduced. The iron is formed into hollow ingots and melted to form steel or worked into bars.

Claim.—1. A treating-chamber which, by being made to revolve, will agitate and turn the tin-plate scraps within it over, so as to expose all parts of their surface to the action of chlorine gas.

2. The rectangular-shaped chamber or receptacle, supported, at an inclination of a few degrees, by hollow journals turning between friction-rollers, on a frame, and having at the upper end a man-hole, and on one of the sides, near the lower end, a second man-hole—the first through which to charge the chamber, the second to discharge its contents—all arranged and constructed substantially as described.

3. The compact hollow ingot of treated tin-plate scraps, of about the proportions described, and for the insertion of the powdered charcoal, pyrolusite, and other ingredients used in the manufacture of cast-steel, substantially as described.

4. The combination of a revolving treating-chamber with a chlorine generator and a condenser, as and for the purpose set forth.

5. The mold herein described for forming hollow ingots of scrap-iron, composed of the sides *i i*, perforated anvil *j*, piston *l*, and hammer *q*, combined and arranged to operate as set forth.

135,579.—*Feeding Mechanism for Sewing-Machines.*—CHARLES PARHAM, Philadelphia, Pa.

The frame A is secured by the bolt to a slotted hanger projecting from the under side of the cloth plate. In this frame is a shaft having a boss that fits the end of the bolt and serves as the axis of the feed-wheel, which is made and operated by clutches, as usual, except that the foot of the actuating arm of the clutch is hinged to remain at all times in the same position with reference to its actuating cam, notwithstanding the lateral movement of the wheel and shaft. The shaft carries a ratchet-wheel with a cam-grooved hub, into which projects a pin fixed to the frame, and as the ratchet and cam are turned the shaft and wheel are moved laterally according to any desired pattern.

Claim.—1. In combination with the clutch-arm *g*, the foot *i*, hinged to the clutch, and provided with pin *j*, adapted to a recess in the frame, so as to allow the feed-wheel to move laterally without so moving the foot *i*, as and for the purpose described and represented.

2. In combination with the frame A, the b lt K, when serving not only to unite the frame and its varied parts to the bed of the machine, but when also serving as a support for the hub-boss M that carries the feed-wheel K, as described and represented.

3. The combination of the cam I, its yoke J, and pawl *q*, operated by the shaft C, with the ratchet *d*, cam O, and shaft M, for the purpose of giving a lateral motion to the feed-wheel, substantially as described.

4. The combination, with the ratchet and pawl, of the shield *p* for covering said ratchet, and so preventing the pawl from reaching it, and thus throwing the laterally-moving parts out of action, as and for the purpose described.

5. In combination with the frame A for sustaining and carrying most of the feed mechanism, the projections *b* and set-screws *a*, for adjusting said mechanism, so as to work true with parts otherwise sustained on the sewing-machine, as described.

6. The frame A, constructed as herein described and represented, and for the purpose set forth.

135,580.—*Bed-Bottom.*—CHESTER PENFIELD, New Britain, Conn.

Upon a rectangular frame are cars with slots and holes. To these cars are hung head and foot bars. Within the bars compressing springs are inserted that hook into the eyes of the links. Each link has three eyes, into which hooks are inserted to join the fabric together.

Claim.—1. The combination of the cars D D, the pins *d d*, the heads C C, the springs *m*, and the hooks *n*, substantially as described, and for the purpose set forth.

2. The solid link *b*, with its triplet of eyes *a a a* formed upon the end, substantially as and for the purpose described.

135,581.—*Reed-Organ Reed.*—JOSEPH R. PERRY, Wilkesbarre, Pa.

The reed frame or block is cut through for only about one-half the vibrating length of the reed to confine the current to the free end thereof.

Claim.—The block B formed with a partial opening less in length than the vibrating portion of the reed-tongue, substantially as described and shown, and combined with the tongue A, as and for the purpose specified.

135,582.—*Compound for Hydraulic Cement.*—ANTHONY PFUND, New York, N. Y.

The term "Pfundite" is applied to a mineral exhibiting the following analysis:

Silica	61 30
Alumina	21.85
Oxide of iron	14.10
Lime	1 30
Magnesia	1 3
Hygrometer moisture, and loss	.82
	100.00

Claim.—1. A compound produced by subjecting Pfundite to a red heat, substantially as described, whether alone or previously or subsequently combined with other materials, as set forth.

2. A compound produced by burning Pfundite, then mixing it with hydraulic lime or cement, and with sawdust, peat, charcoal, or other bad conductor of heat, substantially as set forth.

135,583.—*Packing-Case.*—EDWARD A. PEABO, Philadelphia, Pa.

A packing case or bucket of ordinary construction, with an annular groove, into which is fitted, within the top or near the top of the bucket, a metallic ring with projecting hooks, into which is fitted one of less size, to which the cover is attached. The inner or upper ring is constructed with notches, through which the hooks of the lower ring are passed, and by a slight rotary motion or turn the hooks are brought in contact with an incline face upon the upper ring and the cover securely fastened.

Claim.—1. The ring B fitting in the chine-slot and provided with the grooved ears b^2, as set forth.

2. The combination of the rings B and D, constructed as described, with the vessel A and head C, as set forth.

135,584.—*Machine for Dressing Cam-Grooves.*—GEORGE M. PRATT and VICTOR A. KING, Middletown, Conn., assignors to THE VICTOR SEWING-MACHINE COMPANY, same place.

The blank to be finished has previously a cam-groove formed around it, either by casting, milling, or otherwise; it is then clamped in this machine upon a mandrel, which rotates it. A milling-tool, situated upon a pivoted holder, is made to follow the groove as it turns, which vibrates the said holder. The tool is automatically oscillated, as it mills the edges of the cam-groove, by means of an arm that connects the tool with the frame, the vibrations of the holder effecting this movement.

Claim.—1. In combination with the mandrel A, to hold and revolve the blank D, the vibrating tool-holder G, the center of vibration being distant from the axial line of the cam equal, or near-

ly so, to the length of the arm to be revolved by the cam, substantially as described.

2. The tool *d* for milling the groove of the cam, having the teeth cut in A-form and running spirally around the tool, substantially as set forth.

135,585.—*Clothes-Wringer.*—GEORGE S. PRINDLE, Washington, D. C., assignor to THE QUEEN CITY WRINGER COMPANY, Cincinnati, Ohio.

A crank is attached to the shaft formed with a shoulder and secured by an ordinary screw. From the crank a second shoulder is formed, to which is fitted a screw with a thread of less pitch than the other, to securely hold the crank in position by a jam-nut. On the opposite end of the shaft is a gear with projecting sides or edges into which the upper gear meshes to secure it against side motion. On the lower end of the frame or sides thumb-screws are passed through the oblong openings and held by a nut within it, by a button to which an elastic pad is attached to secure it to the tub and prevent abrasion.

Claim.—1. In combination with the roller-shafts of a wringing-machine, a plain gear-wheel and a double-flanged gear-wheel, combined and working together substantially as and for the purpose specified.

2. In combination with a roller-shaft and with a crank screwed upon the end of the same, a jam or locking nut placed upon said shaft outside of said crank when the screw-thread within said nut and upon which it traverses has a less or finer pitch than the screw-thread upon which said crank is placed, substantially as and for the purpose shown.

3. In combination with the pivoted button M and clamping-screw L, connected with and operating through the leg A', as shown, the pad N, constructed of or from elastic material and secured to or within said button, substantially as and for the purpose set forth.

135,586.—*Cotton-Cleaner.*—JOE RALSTON, Brenham, Tex., assignor of part interest to DARIUS S. SKINNER, NATHAN B. HALL, and EDWARD J. BICKNALL, Providence, R. I.

A breaker and a cleaner are arranged for simultaneous operation by one motor, the breaker carrying the cotton upon an endless apron to pass between a peculiarly-spurred roller and a toothed bar, to be delivered over the roller to another apron, which feeds the cleaner in like manner.

Claim.—1. The endless apron of cleaner B, in combination with the saws G, clearers H, roller N, ribs M, substantially as described.

2. The endless apron of cleaner B, in combination with the saws G, stripper I, conductor L, and ribs M, substantially as described.

3. The endless apron of cleaner B, in combination with the saws G, clearers H, ribs M, roller N, stripper I conductors L, blowers O and P, and trunk K, all as herein described, and for the purpose described.

135,587.—*Lining for Fire-Places.*—ALBERT J. REDWAY, Cincinnati, Ohio, assignor to REDWAY AND BURTON, same place.

Claim.—The refractory blocks recessed at *a a' a''*, in combination with the metallic frame *B b d d'* and detachable clamping-bar *C c c'*, substantially as specified.

135,588.—*Flour-Bolt.*—FREDERICK RENDER, Beech House, Etchells, England.

Pipe conveying blast connected to reel by crank, so as always to be at same distance from reel.

Claim.—The pipe B and chamber C, in combination with a reel, A, and with oscillating and adjusting devices, substantially as set forth.

135,589.—*Stuffing-Box for Pi ton-Rods, &c.*—PHILLIP W. RICHARDS, Boston Highlands, Mass.

Sectional rings of peculiar form are adjusted by set-screws and springs arranged in an encircling ring.

Claim.—A ring for stuffing-boxes formed in sections *f g h m*, adjusted by set-screws *b*, as herein shown, and arranged to operate in connection with an outside ring, substantially as and for the purpose specified.

135,590.—*Spoon, Fork, &c.*—GEORGE C. ROBINSON, Cincinnati, Ohio.

An ordinary spoon or fork constructed with projecting ribs upon the handle, bowl, or tines of the fork, that the wear by friction shall be limited or confined to the rib and the plain or polished surface be protected.

Claim.—In the construction of spoons, forks, or other article of similar character, I claim the visible definitely-formed ribs or projections *a*, of any suitable material, raised above the ordinary bearing-surfaces of the spoon or fork, and attached thereto by soldering, riveting, or other suitable manner, or by forcing them up from the body of metal of which the article is composed, for the purpose of receiving and definitely limiting the extent of the wear upon the bearing-surfaces of such articles, substantially as set forth.

135,591.—*Boot and Shoe.*—HOMER ROGERS, Sudbury, and LEWIS FELTON, Marlborough, assignors to themselves and STEPHEN MOORE, Sudbury, Mass.

The boot or shoe is made of leather and leather board. That part of the shoe most exposed to dampness and subject to extraordinary strain from stitching or nailing is made of leather, and the remainder of paper. The two materials are united edge to edge.

Claim.—1. A boot or shoe vamp or quarter made of leather and leather board, the leather being that part which is to be united to the sole and the leather-board portion being the remainder of the vamp or quarter.

2. A boot or shoe having its upper made partly of ordinary leather, as described, and partly of leather board, the leather board and leather being united edge to edge.

135,592.—*Combined Torch and Fire Lighter.*—PHILIP RYAN, Albany, N. Y.

A torch is attached to the end of an arm secured to a plunger, and so arranged as to be operated by the foot for purpose of lighting the fire of a steam fire-engine while under way.

Claim.—The combination of the plunger E, spring C, and arm F with the torch I, when arranged to operate as and for the purpose herein specified.

135,593.—*Carriage-Painter's Jack.*—ALVARO G. RYKERT, Attica, N. Y.

A standard is provided with a semicircular catch-wheel or sector, in the top of which is pivoted a movable cross-armed platform, to which the carriage-body may be attached.

Claim.—1 The cross-bars *f f'*, provided with the slots *j j* and grooves *m m*, in combination with the keys *k k* and wedges *n*, said bars being swiveled upon a sector-wheel by the shaft and plate *d*, substantially as and for the purpose specified.

2. The sector-wheel B provided with the socket *c*, for the shaft and plate *d* of the platform, in combination with the spring-pivoted catch A, substantially as and for the purpose specified.

3. In combination with the sector-wheel B and pivoted cross-bars *f f'* the locking-pin *i*, substantially as described.

135,594.—*Wheel-Plow.*—MARSHALL SATTLEY, Taylorville, Ill.

By the action of the lever provided with two arms, the point of the tongue is depressed and the plow is raised by the same operation.

Claim.—1. In combination with the frame of the machine and with the pivoted plow-beam, the tongue I pivoted in front of its rear end, the lever K provided with the arms *k* and *x*, and the connection L, substantially as and for the purpose shown.

2. The hereinbefore-described machine, consisting of the axle A, ground-wheels B, rails C and C', plow-beam E, clevis F, plow G, standards H and H', pole I, lever K and *k*, detent K', connection L, and quadrant M, when said parts are constructed and combined to operate substantially as and for the purpose specified.

135,595.—*Mustard-Pot.*—THEODORE M. SCHLEIER, Knoxville, Tenn.

The vessel has near its bottom a spout, which is closed by a gate, that is connected by a rod with a lever-arm arranged on the cover. A rod extends from the lever-arm through the center of the cover, and terminates in a piston furnished with a downward-opening valve. A spring under the lever-arm causes the gate to shut automatically and lowers the piston.

Claim.—The combination of the cup A, spout B, piston I, valve L, gate C, and operating devices E, E', H, and D, substantially as and for the objects stated.

135,596.—*Traveling-Bag.*—REINHARDT SCHMITT, Newark, N. J.

Claim.—1. The loops *d* made with flanges 2 that are secured by means of the cap A that is applied to and combined with the loop *d*, substantially as set forth.

2. The loop *d*, bolt 3, and cap A, in combination with the handle *e* and the hook 5, as and for the purposes set forth.

135,597.—*Paper-Feeding Machine.*—SOCRATES SCHOLFIELD, Providence, R. I., and CHARLES E. BAKER, Mont Clair, N. J.

The upper sheet of the pile of paper is separated by pads, it being penetrated by pointed fingers which prevent the other sheets from moving, over which it passes and from which it is torn upon its seizure by the gripers of the printing-press.

Claim.—1. An inclined holding-pin, D, arranged to press upon the top of a pile of paper, and upon the inclined point of which the top sheet is drawn by means of friction-pads or otherwise.

2. The combination of the inclined pins D D, cross-bar B, pad E, and slide G, operating to first draw the sheet upon the pins, and then to raise the edge of the sheet, substantially as described.

135,598.—*Paper-Feeding Machine.*—SOCRATES SCHOLFIELD, Providence, R. I., and CHARLES E. BAKER, Mont Clair, N. J.

Upon the backward movement of carriage, pads pivoted thereon carry the upper sheet of paper, from pile on pivoted and self-adjusting table, over pointed bars, which are alternately held to permit such movement by pivoted griping-bars operated by suitable levers, and is then carried against spring-guides, which, through reaction, register it, a spring-guide with surface to lift the edge forming a side register. A stop-motion, consisting of an armature and a pointed lever, upon the feeding of more than one sheet, or none being fed through lever vibrating in the path of their end oscillations, shifts the driving belt.

Claim.—1. The combination of the pressure-finger *a*, bearing-roller *b* or an equivalent, and gripers *c* and *d*, operating substantially as described.

2. The combination of the friction-pads P P, carriage L, spurs X X, and registering-springs Y Y, operating to first draw the sheet beyond the proper point of register to be returned thereto by the reaction of the springs, substantially as described.

3. The registering-guide Z, arranged with an inclined or lifting face for first raising the edge of the sheet and then forcing it to the proper point, substantially as described.

4. The combination, with the operative mechanism of a self-feeding printing-press, of either the lifting device *l'* or holding device *y* with the indicating-lever *t*, vibrating lever *r*, and shipper *p* or its equivalent, operating substantially as described.

5. The spur *s*, used for the purpose of indicating the distinction between one and two sheets by their varying resistance to puncture.

6. The roaking-fly *a'* operating to strike fair upon the top of the increasing pile of paper, substantially as described.

135,599.—*Paper-Feeding Machine.*—SOCRATES SCHOLFIELD, Providence, R. I., and CHARLES E. BAKER, Mont Clair, N. J.

The blunt-edged holding instrument is pressed firmly upon the upper sheet of the bank of paper, and tears a chip from the upper sheet when it is moved, the instrument holding the sheets beneath from being moved.

Claim.—A holding instrument with a non-penetrating point or edge, when applied under proper pressure to the top sheet of a pile of paper, and constructed, as described, so that, by reason of its desired failure to cut or penetrate the said sheet, it will tear a slight chip therefrom whenever the sheet first commences its proper movement under the action of friction-pads or otherwise.

135,600.—*Folding Door-Key.*—JOSEPH SEIBERT, Pittsburg, Pa., assignor to THE JONES AND NEBUCK MANUFACTURING COMPANY, same place.

A circular groove, provided with a stop, is formed around the rivet in the inner face of one part of the key, and suitable projections or stops extending from the other part into the groove, which stops serve to limit the motion of the parts in opening and closing the key.

Claim.—The groove *c* in combination with suitably-arranged stops *d*, *f*, and *f'*, for limiting the motion of the parts *a* and *b*, substantially as described.

135,601.—*Harness-Tug Buckle.*—FRED. SEIVERT, Knoxville, Iowa.

Claim.—In a harness-tug buckle having inclined side openings and edges, the sliding buckle-plate D having the stud *d*, wedging-arms *e*, movable fulcrums *e'*, and thumb-piece *f*, all substantially as and for the purpose specified.

135,602.—*Grain-Scourer.*—THOMAS SHIVELEY, North Lansing, assignor of one-half his right to BENJAMIN E. HART, Lansing, Mich.

Two revolving spiral-toothed cylinders inclosed in cylindrical cases, connected by a tube, and having a fan-attachment for cleaning and scouring grain.

Claim.—In a grain-scouring machine, the combination, with the cylindrical cases C, the connecting-tube F, and the fan-attachment E, of the cylinders B having teeth arranged spirally but in opposite directions, and arranged to revolve in said cases, substantially as specified.

135,603.—*Pencil-Holder.*—GEORGE A. SMITH, Boston, Mass., assignor to W. H. W. CAMPBELL, Norwich, Conn.

A short tube, holding the pencil loosely, has its inner end slotted, whereby it is adapted to be clamped upon the pencil when inserted within a tubular handle.

Claim.—The combination of the tubular case and the clamping device, composed of a section of tube open at both ends and slotted at one, the retention of the pencil being effected by forcing the clamping device within the case, all as and for the purposes above shown and described.

135,604.—*Mortising-Machine.*—JOHN H. STAHL, Stanton's Mills, Pa.

A carriage for holding the material is so arranged as to have a vertical motion as well as a lateral and longitudinal movement upon a horizontal plane.

Claim.—1. The hinged vertically-adjustable clamp *g'*, screw, nut *I*, spring *J*, and moving table G, substantially as specified.

2. In a mortising-machine, the screw D, in combination with the adjustable frame C holding the longitudinally-moving table F and the laterally-moving table G, substantially as specified.

3. In a mortising-machine, the adjustable screw-rod L having its bearing in the standards M, in combination with the horizontal sliding table F, cord *f'*, weight *f*, and pulley *f''*, operating in the manner substantially as specified.

135,605.—*Ditching-Machine.*—REUBEN STARBRICK, Wilmington, Ohio.

The frame of the wheel is carried on a wagon-truck, and is raised and lowered by means of a rack and pinion. The ditching-wheel is suspended from the frame, between the standards, and the spades are caused to reciprocate through the slots in the rim of the wheel by means of the followers at their rear ends, which travel on the inside of the cam F and on the outside of the cam F'.

Claim.—The improved ditching-machine, having the rotary ditching-wheel D with slotted rim devoid of flanges, the semi-elliptical cams F F' of different sizes rigidly secured to the standard B', the reciprocating spades E having the followers *e*, the scraper-plow G', and semicircular dirt box or spout G, in combination with the frame A having the toothed racks I, cutters H', and scraper H, and the wagon J supporting the pinion-shaft L, all substantially as and for the purpose specified.

135,606.—*Ironing Apparatus.*—ELISHA SUMPTION, South Bend, Ind.

The top of the table is movable on rollers. Side pieces and standards are attached to the table, and between these a wheel is operated by treadles and cords. Cords are also attached to the wheel and a horizontal pitman, at one end of which is secured a smoothing-iron that operates on clothing on the table.

Claim.—The combination of the table A, the top movable on friction-rollers, with side pieces *h* and standards *i j*, the treadles *g*, cords *f*, wheel B, the pitman E, and the smoothing-iron C, as and for the purpose specified.

135,607.—*Fire-Kindling.*—WILLIAM B. TUCKER, Baltimore, Md., assignor to JOHN G. MCCULLOUGH, same place.

Claim.—Treating wood, spent tan-bark, or sawdust with heated resin-oil or heated paraffine-oil, substantially as described, for making fire-kindlings.

135,608.—*Metallic Fabric for Scouring Grain and Percolating Purposes.*—ANDREW J. VANDEGRIFT, Covington, Ky.

Slips of sheet metal, folded at their ends, secured in grooved posts and strengthened by external rings. Folds keep the slips apart, forming interstices between them.

Claim.—1. The combination of folded plates A and grooved posts B, substantially as described, and for the purpose specified.

2. The combination of folded plates A, grooved posts B, and rings C, connected substantially as and for the purpose specified.

135,609.—*Spool-Stand and Thread-Cutter.*—LEWIS F. WARD, Marathon, N. Y.

The thread-cutter is movable about the center of the stand.

Claim.—1. The thread-guide C provided with the elastic band D, in combination with a series of spool-holders, substantially as and for the purpose specified.

2. The combination of the spool-stand, substantially as herein described, with the cutting apparatus arranged to operate horizontally and to revolve on a vertical axis, as and for the purposes specified.

135,610.—*Machine for Marking Designs on Glass, &c.*—HENRY A. WASHELL, Stourbridge, England.

A convenient arrangement for holding the glass articles by a perpendicular rotating spindle, with an elastic arrangement for holding the etching-needles.

Claim.—1. A machine constructed substantially as hereinbefore described, and for the purposes set forth, in which the object in glass or other material to be operated upon preparatory to etching is placed and worked in a vertical position.

2. The radial or operating-arm D, with its universally-jointed bracket I and needle-holder, together with the spindles C, H, and J, and sliding stem *f'*, by which the said needle-holder may be fixed or adjusted and operated at any diameter or at any angle to suit objects of a spherical or other shape.

3. The needle-holder, as shown, with its adjustable needles operated by elastic bands to press and act equally upon any irregular or rounded surface.

4. The device, shown in Figs. 6 and 7, for producing wave motion.

5. The devices for producing reciprocating or continuous vertical movement, consisting of eccentric *e*, and drum and clutch *e'* *e''*, and draw-chain connection, which, in combination with the rotary and stop movements of the object to be etched, produce vertical and spiral patterns.

6. The devices for holding glass or other objects on the operating-disk *c* without clamps, consisting of the swivel-pad *k*, sliding stem K, and spring *k'*, with pulley and cord, as shown, for lifting the pad when changing the work.

135,611.—*Stove-Damper.*—JAMES D. WILLOUGHBY, Washington, D. C.

An expansible strip of metal in the oven, in its movements under heat or cold, operates, by means of a crank-shaft and eccentric, a damper in the stove-pipe. To the damper an index-finger is attached on the outside of the pipe.

Claim.—1. An automatic damper-controlling apparatus, combined with and located in the oven of a stove or range, and connected by suitable mechanical appliances to a damper, which, when moved by the action of the heat, will cause an increase or decrease of heat in the oven, as may be desired, substantially as and for the purpose set forth.

2. The sleeve 8, the disk or piece 12, and arm 9, connected to the damper, and arm 6 provided with an adjustable catch or nut, 7, as and for the purpose set forth.

3. The combination, with the thermostat for a stove-pipe, of the shaft 37, eccentric 31, and damper, substantially as described, and as shown in Figs. 5 and 6, and for the purpose set forth.

4. The combination, substantially as described and as illustrated in Fig. 5, of two or more thermostats, whereby their force and motion will be in the same direction, and they will have greater force and length of movement that can be obtained by a single thermostat made of thicker metal.

135,612.—*Depurator for the Teeth and Gums.*—JOHN DANIEL WINGATE, Carbondale, Pa.

The vacuum-cup is supplied with a nozzle and lip, which latter is lined with India-rubber. From the upper end of the vacuum-cup a rubber hose extends to the air-pump. The opening at the lip end conforms to the shape of the gums somewhat, and by means of the rubber readily conforms thereto.

Claim.—An apparatus for treating the gums, consisting of the cup A, nozzle B, and soft-rubber lip *a*, all arranged for connection with an exhaust apparatus, as described.

135,613.—*Drilling-Machine.*—EDWARD J. WORCESTER, Worcester, Mass.

Two parallel vertical shafts are fixed in a frame. One is the drill-shaft, with a feed-screw swiveled into its upper end. The nut which lowers the drill has a beveled wheel, and a crown ratchet-wheel attached to it, which is operated by a pawl actuated by a cam on the shaft G. The shaft G is connected to the drill-shaft by gear-wheels. A loose beveled gear-wheel on the shaft G is raised in contact with the beveled wheel on the feed-nut to reverse its motion and raise the drill rapidly.

Claim.—1. The drill-shaft G', having its lower section vertically adjustable, and connected to its upper section by means of the

feed-screw P, in combination with the crown ratchet-wheel L, dog L^1, pivoted arms L^2 M, cam I', and shaft G, substantially as specified.

2. In combination with the gear-wheel K, the stud K^2 sliding in a socket of the frame A, and pivoted to the lever K^3, by means of which the wheel K is raised and lowered, substantially as set forth.

3. The combination of the spring N, the pivoted arms L^2 M, dog L^1, and ratchet L, and shaft G, substantially as specified.

4. The combination of the stud Z and adjusting-screw O, with the arms M M^1, dog L^1, and ratchet L, substantially as and for the purpose specified.

5. The arm I depending from the dog L^1, in combination with the adjustable wheel K, wheel K^1, ratchet-wheel L, and drill-shaft G', substantially as specified.

6. In a drilling-machine, the shaft G, having an oval cam, I', with its lower surface recessed to form a clutch-box, substantially as and for the purpose set forth.

135,614.—*Railroad-Car Truck.*—WALTER YOUMANS, Lansingburg, N. Y.

Means for facilitating the turning of curves.

Claim.—1. A truck-frame the parts of which are pivoted together so that it may be distorted, (or the wheel-pieces may be moved to assume different angles with the end bars,) substantially as and for the purposes described.

2. The combination, with the truck-frame, axle, and jaws, of boxes adapted to turn within the jaws, substantially as and for the purposes described.

3. A center-beam pivoted or hinged at each end to the wheel-pieces, substantially as and for the purposes described.

4. In combination with the truck-frame and hinged center-beam, the straight grooved shoe-pieces F or their equivalents, substantially as and for the purposes described.

135,615.—*Mode of Treating Leather Remnants.*—BARKER C. YOUNG, Boston, Mass.

Claim.—The process of treating leather trimmings or remnants, consisting in subjecting them to a solution of soda and potash to extract the color, &c., and then immersing them in a solution of sumac, salt, and alum in water to color and soften the leather, substantially as set forth.

REISSUE PATENTS.

5,265.—*Wringing-Machine.*—HERMAN GLASS, Honeoye Falls, N. Y., assignor, by mesne assignments, to BAILEY WASHING AND WRINGING MACHINE COMPANY.—Patent No. 39,141, dated July 7, 1863.

A wringing-machine of the ordinary construction, with two elastic rollers, has a flexible curved clamp attached to the standards, for the purpose of clamping the machine to a round or square tub, and is adjusted by set-screws.

Claim.—1. In a clothes-wringer having rubber rollers, an adjustable, curved, flexible clamp for the purpose of attaching said wringer to a tub or other receptacle.

2. In a clothes-wringer having rubber rollers, an adjustable curved clamp, as described, operated by means of set-screws.

3. In a clothes-wringer having rubber rollers, a curved clamp, in combination with set-screws and supporting-standards, or their equivalent, substantially as described.

4. In a clothes-wringer having rubber rollers, a curved clamp and set-screws, in combination with elastic strips or equivalent means for drawing back the clamp when loosed from the tub or receptacle.

5. The standards A A, having central vertical openings or cuts in their lower ends, when portions of the sides of the opening in each standard are beveled so as to conform to the curvature of a circular tub, while other portions remain parallel with the length of the machine and render it adjustable also to a straight-sided receptacle, in combination with the clamp G, substantially as shown and described.

6. A device for clamping a clothes-wringer to a tub or other receptacle, consisting of a curved clamp, G, set-screws i, cross-piece b or equivalent support, guide-pins g, elastic strips h or their equivalents, and standards A, substantially as described.

5,266.—*Stuffing for Mattresses.*—FREDERICK A. LANE, Cleveland, Ohio, assignee, by mesne assignments, to himself, LUTHER S. LANE, and EPHRAIM KENDALL.—Patent No. 90,304, dated May 23, 1869.

The material used for stuffing is composed of the fibers of refuse woolen goods, rags, &c., which is bleached or curled to render it less liable to pack or mat together.

Claim.—The prepared homogeneous woolen fiber for stuffing, bedding, upholstering, &c., when made from the waste or refuse of woolen goods, rags, &c., and by separating the woven or interlocking fibers thereof, and rendering them free and open, substantially as set forth.

5,267.—*Printing-Telegraph.*—GEORGE LITTLE, Rutherford Park, N. J.—Patent No. 123,563, dated April 9, 1872.

The type-wheel is made the pole of an electro-magnet by having a coil surrounding its shaft, and thus attracts or repels a vibrating electro-magnet, for the purposes of making the desired impressions. The type-wheel is revolved by a radially-swinging friction-lever, which acts as an armature to a third electro-magnet.

Claim.—1. An iron type-wheel, polarized by induction, in combination with a magnet, to effect the impression when the polarity of the type-wheel is changed, substantially as set forth.

2. The type-wheel upon an arbor running through a coil, and provided with a swinging armature-clamp to move the type-wheel, in combination with an electro-magnet for said armature, substantially as set forth.

3. The electro-magnet m' n set to swing and carry the armature n' and impression-roller l', in combination with the type-wheel, as and for the purposes specified.

4. A magnetized type-wheel, in combination with the swinging electro-magnet, to effect the impression and feed of the paper when the polarity is reversed, substantially as specified.

5. Two or more magnetized type-wheels in one electric circuit, and revolved in unison by pulsations from the transmitting instrument, substantially as specified.

6. A radially-swinging armature upon the type-wheel shaft, in combination with a type-wheel and an electro-magnet, whereby said type-wheel is moved around progressively by the direct action of the armature upon the shaft, substantially as set forth.

5,268.—*Elevator.*—HENRY S. STEWART, Newark, N. J.—Patent No. 21,821, dated December 12, 1871.

Claim.—1. The buckets G G, secured between the endless parallel chains F F, and supported by end flanges m m upon the links f^1 f^2 having a free end, as shown, so that said links lift and turn the buckets as the chains pass over two drums arranged above a lower drum, as herein set forth, for the purpose specified.

2. The endless chains F, formed by the combination of the slotted links f^1 f^2 and bolts f^3, the latter being made with a round head at one and a flattened head at the opposite end, substantially as described.

5,269.—*Egg Stand and Boiler.*—EDWARD P. WOODS and DANIEL SHERWOOD, Lowell, Mass., assignors to themselves and CYRUS H. LATHAM.—Patent No. 70,769, dated November 12, 1867.—Division A.

A spiral wire forms the body, having side ribs that also form the legs of the stand, and also cross-bars on the top of the stand. The handle is formed of a number of wires twisted together, then doubled to form the loop, and then united by a compound twist. One of these strands for each holder required is formed into a ring, and the remaining strands are twisted to form the continuation and unite the rings and the bottom of the stand together.

Claim.—As a new and improved article of manufacture, a wire stand or holder, constructed substantially in the manner described, and for the purposes specified.

5,270.—*Egg Stand and Boiler.*—EDWARD P. WOODS and DANIEL SHERWOOD, Lowell, Mass., assignors to themselves and CYRUS H. LATHAM.—Patent No. 70,769, dated November 12, 1867.—Division B.

The handle is formed of a number of wires twisted together, then doubled to form the loop, and then united by a compound twist. The wires are then separated, and one strand, for each holder or ring required, is formed into a ring. The remaining strands are twisted together and continued to, and united with, the bottom of the stand.

Claim.—The combination with a stand or holder made of twisted wire of the compound twist shown in the handle A, for doubling and uniting the twisted wire together in the construction of the handle, and then separating the wires, to be again twisted for the parts of the stand, substantially as described and specified.

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COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture.	2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles	1,200
FELTING and HATS; including caps, bonnets, flock, &c	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)	

The specifications of patents have been reprinted back to November 20, 1866; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

BOUND VOLUMES OF PATENTS.

The following statement is furnished by way of answer to the frequent inquiries made at the Patent Office as to the conditions under which the bound volumes of the drawings and printed specifications of patents are being furnished to public libraries:

I. The joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. A part of these copies are to be bound in volumes and placed for free public inspection in the capitol of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

II. One hundred and fifty sets of the specifications and drawings of patents issued since July 1, 1871, have been bound into volumes for distribution under the provisions of this resolution. During the first year of the issuance of these volumes the patents of each week were bound into one volume. Fifty-two volumes per year (an issue takes place every Tuesday) was found to fill up the shelves of the libraries so fast as to make the custody of the volumes somewhat irksome and expensive. The Commissioner has, therefore, condensed the issues of each month into a single volume without making any deduction in the matter, the specifications and drawings being in full, but printed on both sides of the page, the drawings, four on a page. This change was made July 1, 1872. The contents are certified under the seal of the Patent Office; and each volume contains both a subject-matter index and an index of patentees. The usual annual index will also be prepared at the end of the year.

The volumes are bound in the best style, in law calf or in half-sheep, the former style costing $3.50 each, and the latter, $2.50. They can be sent through the mail, if so ordered, free of charge for transportation. Payments should be made in advance, and should cover a period of not less than three months.

III. Any library desiring to obtain a set of these volumes will be required to furnish evidence, satisfactory to the Commissioner of Patents, of its responsibility for the proper custody of the work, and of the facilities which it offers the public for consulting it. Special mention should be made of the number of hours in each day that the public will have access to the volumes, and particularly whether the library will be open for this purpose during the evening, which is considered a desirable arrangement whenever it can be adopted.

Evidence must also be furnished as to whether there are other public libraries in the same town or vicinity, and, if so, as to the character of such libraries, and as to the relative accommodation which the public would receive from the selection of the particular library making the application.

IV. Libraries will be permitted to receive the work only on the condition that it shall be carefully preserved; that the volumes shall not be loaned to individuals to be removed from the library rooms; and that the general public, whether subscribers to the remaining privileges of the library or not, shall, without charge, have unrestricted access to them during the established hours.

If it is found desirable to establish special rules for the use of the work, these rules should in all instances be reported to the Commissioner of Patents; and it is further understood that, if at any time the library is broken up, or declines longer to accede to the foregoing conditions, the volumes shall be held subject to the order of the Commissioner.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

The following abbreviated form of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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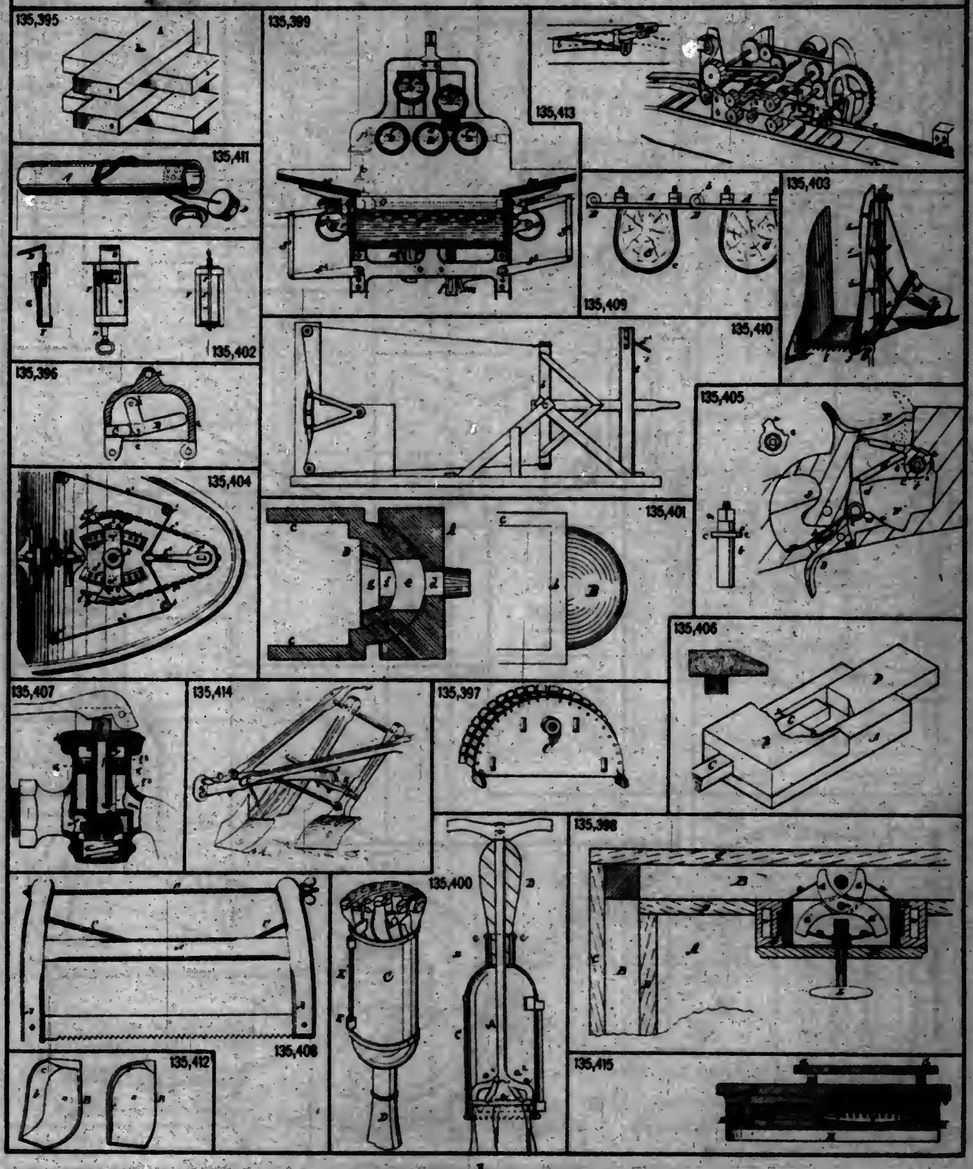
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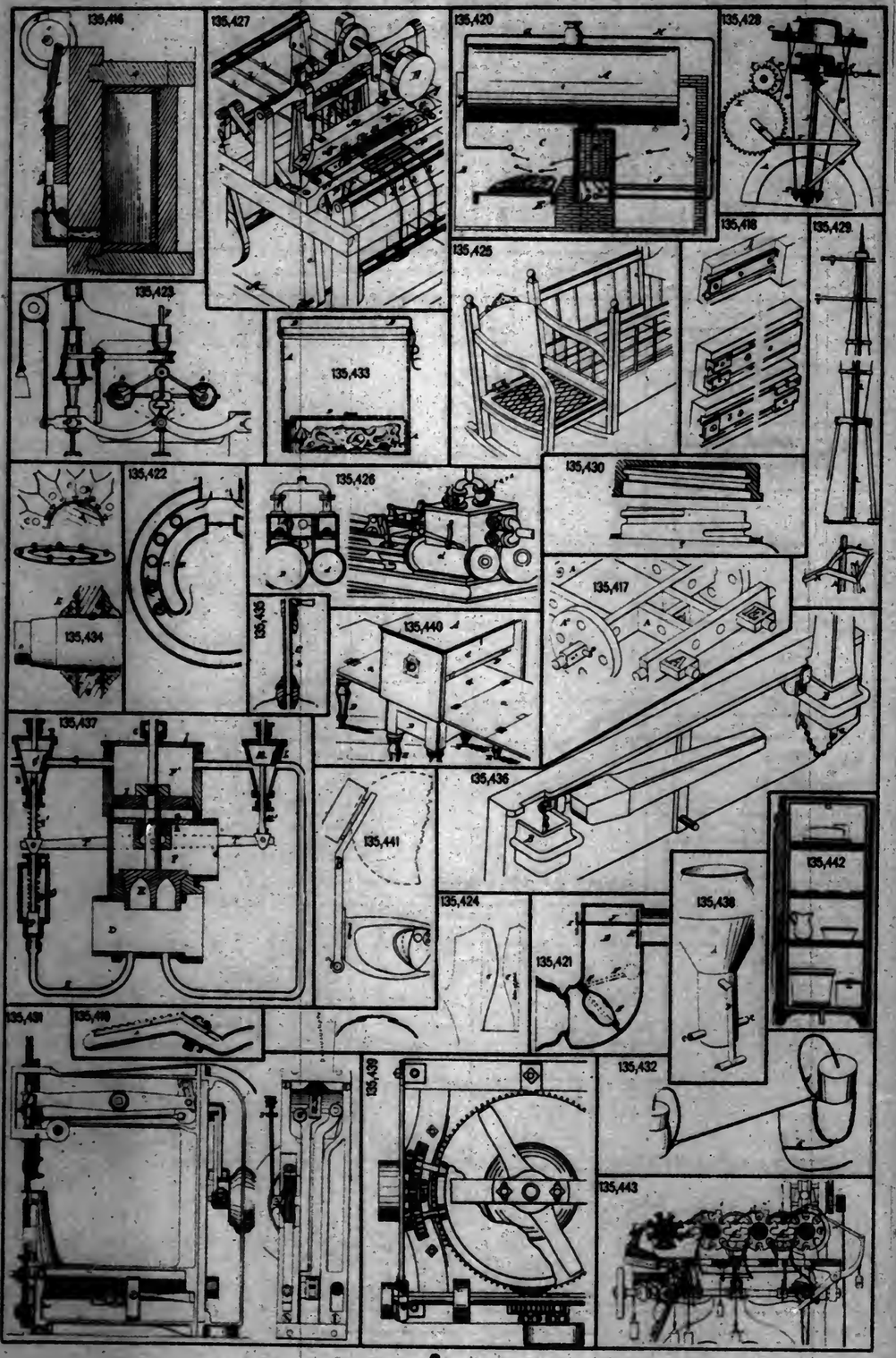
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ORIGINAL PATENTS Nos. 135,395 to 135,615. FEBRUARY 4, 1873. REISSUED PATENTS Nos. 5,065 to 5,070.

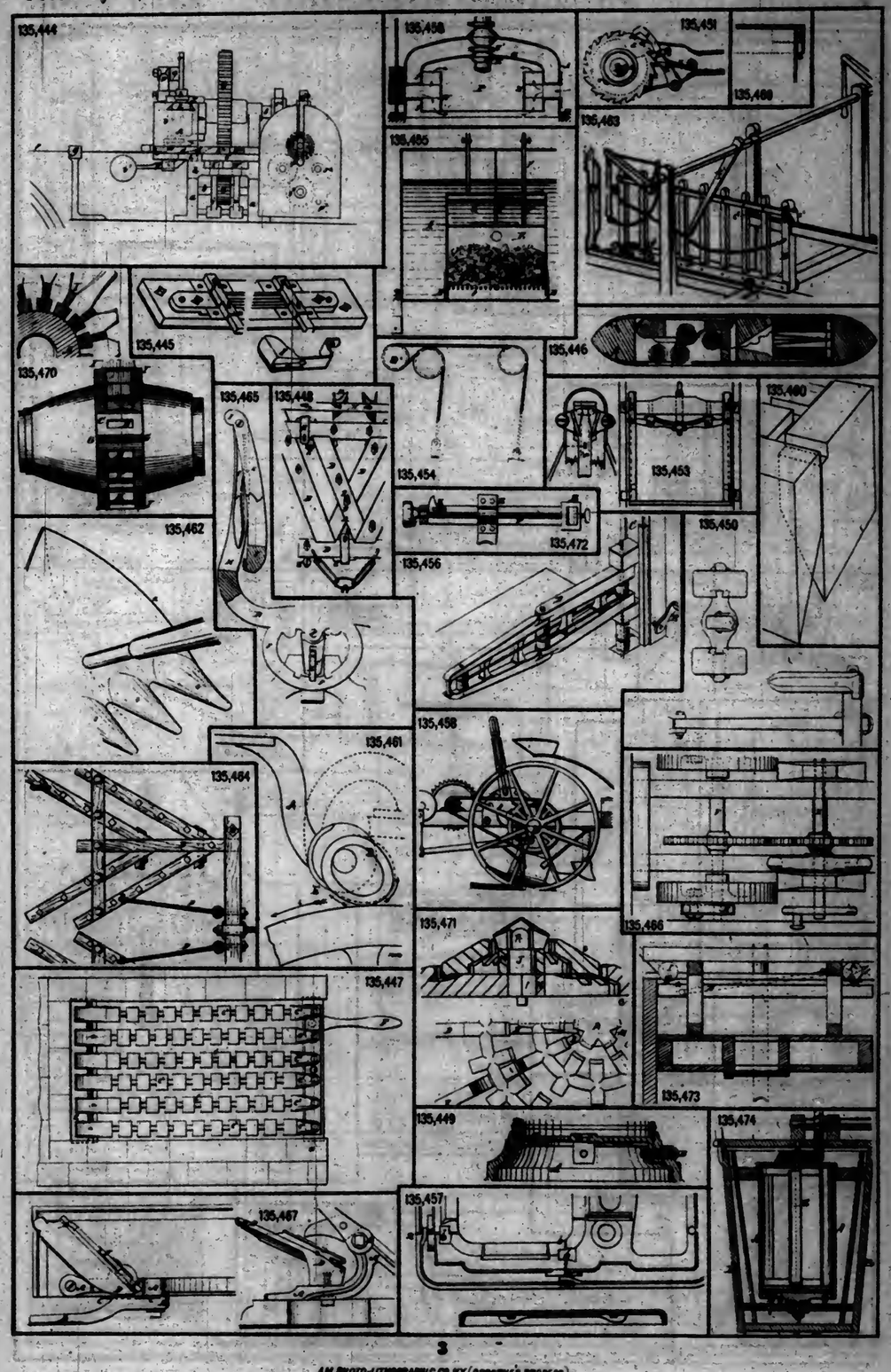


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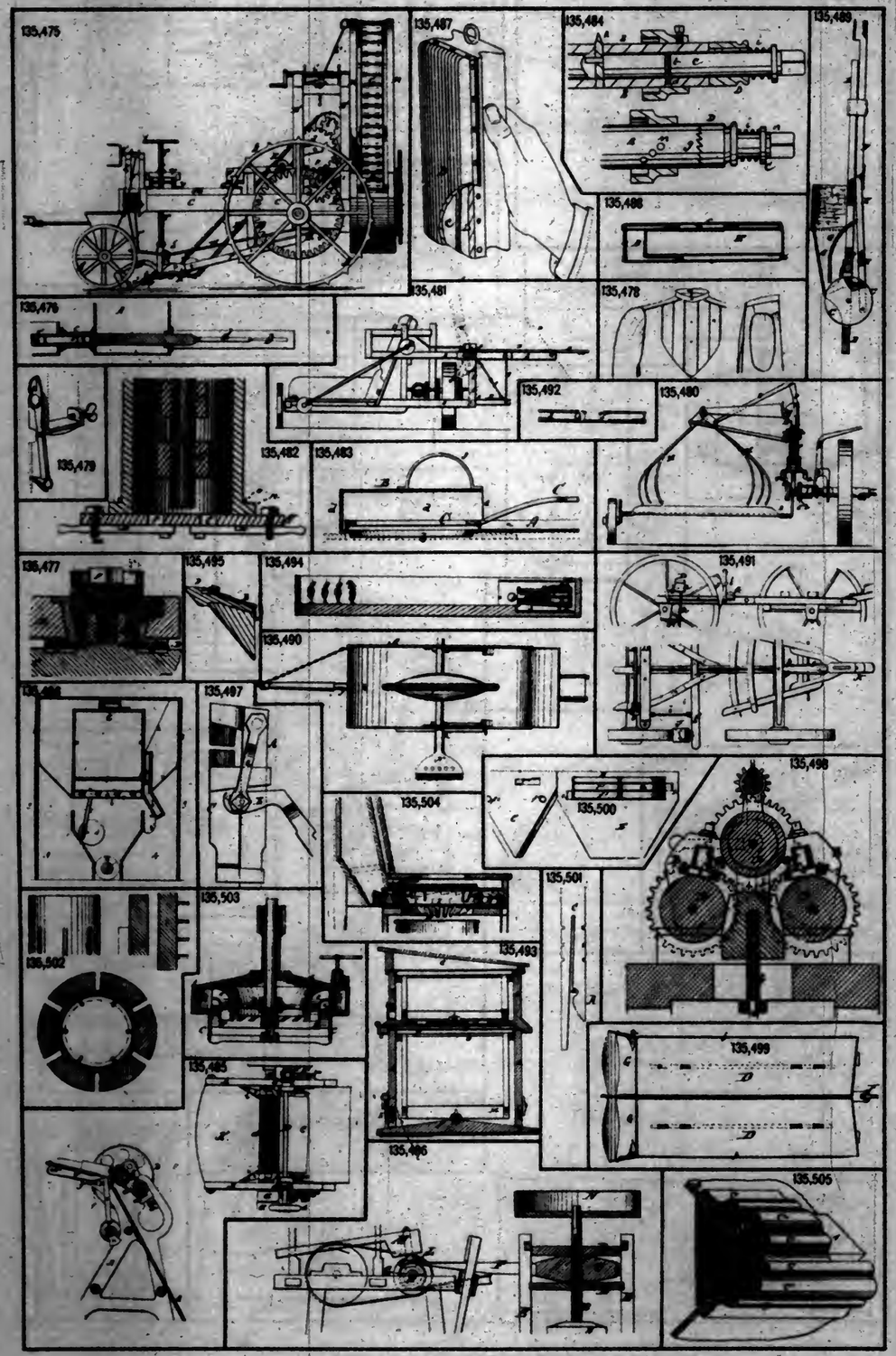
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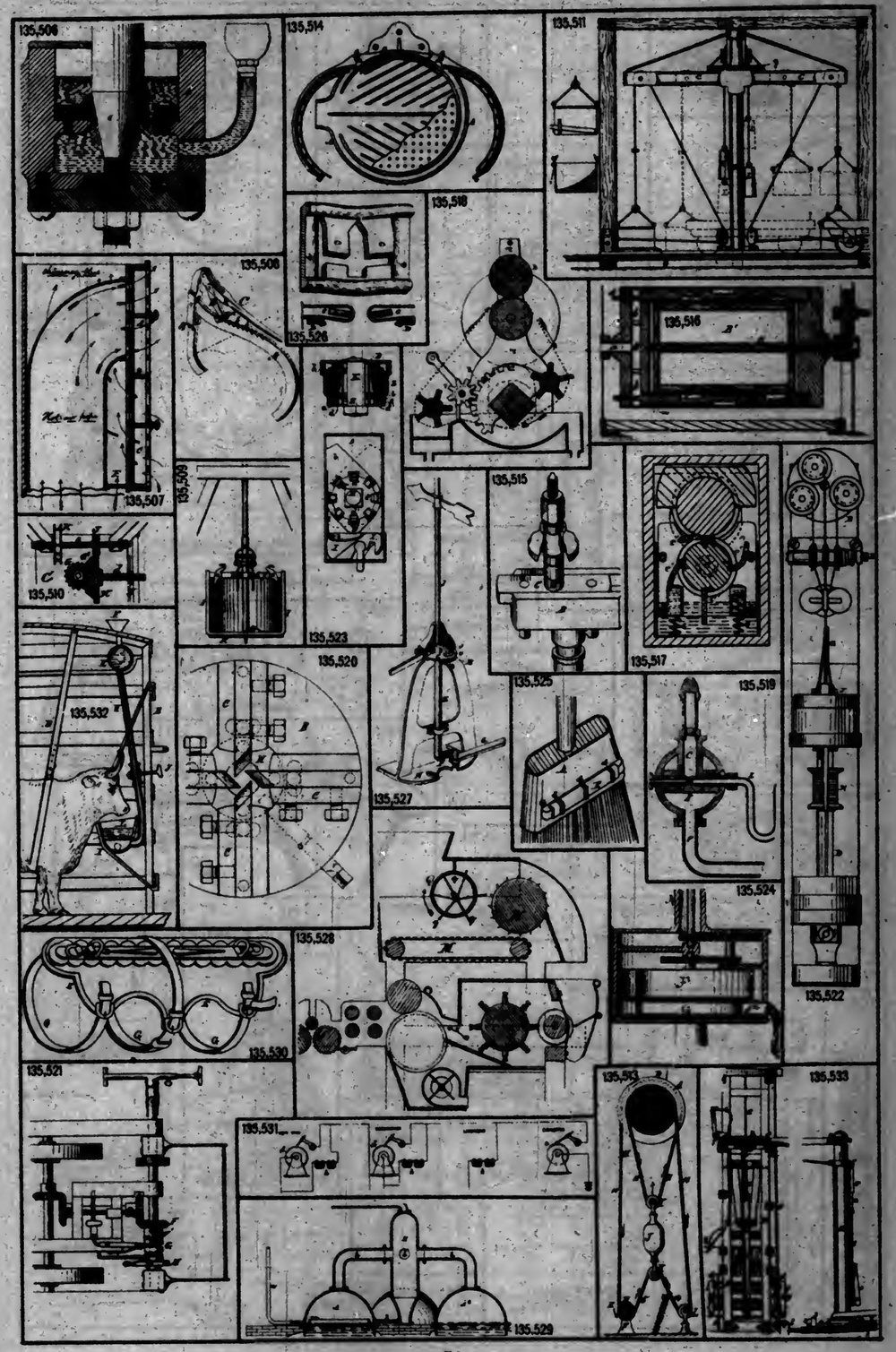
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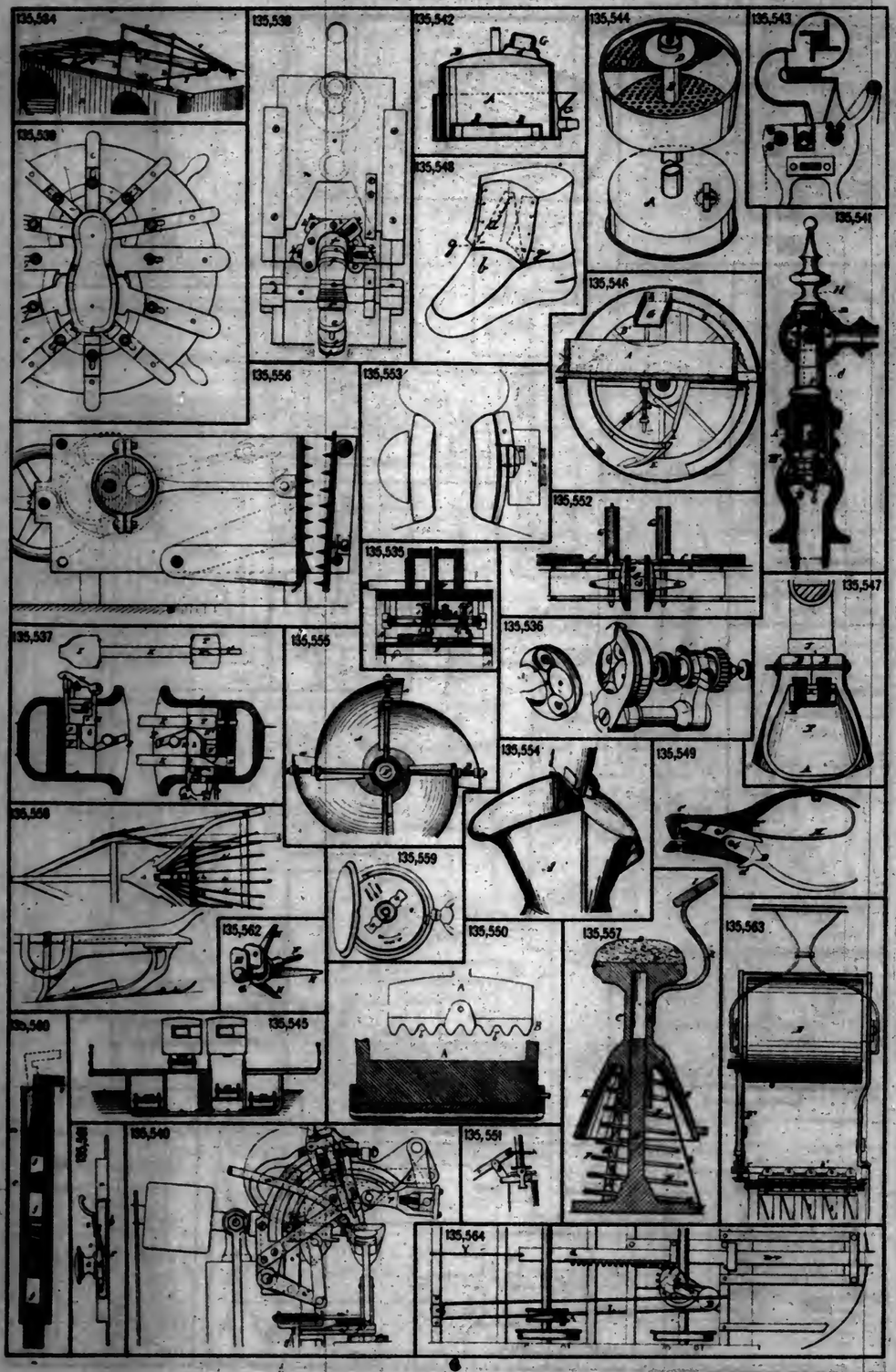
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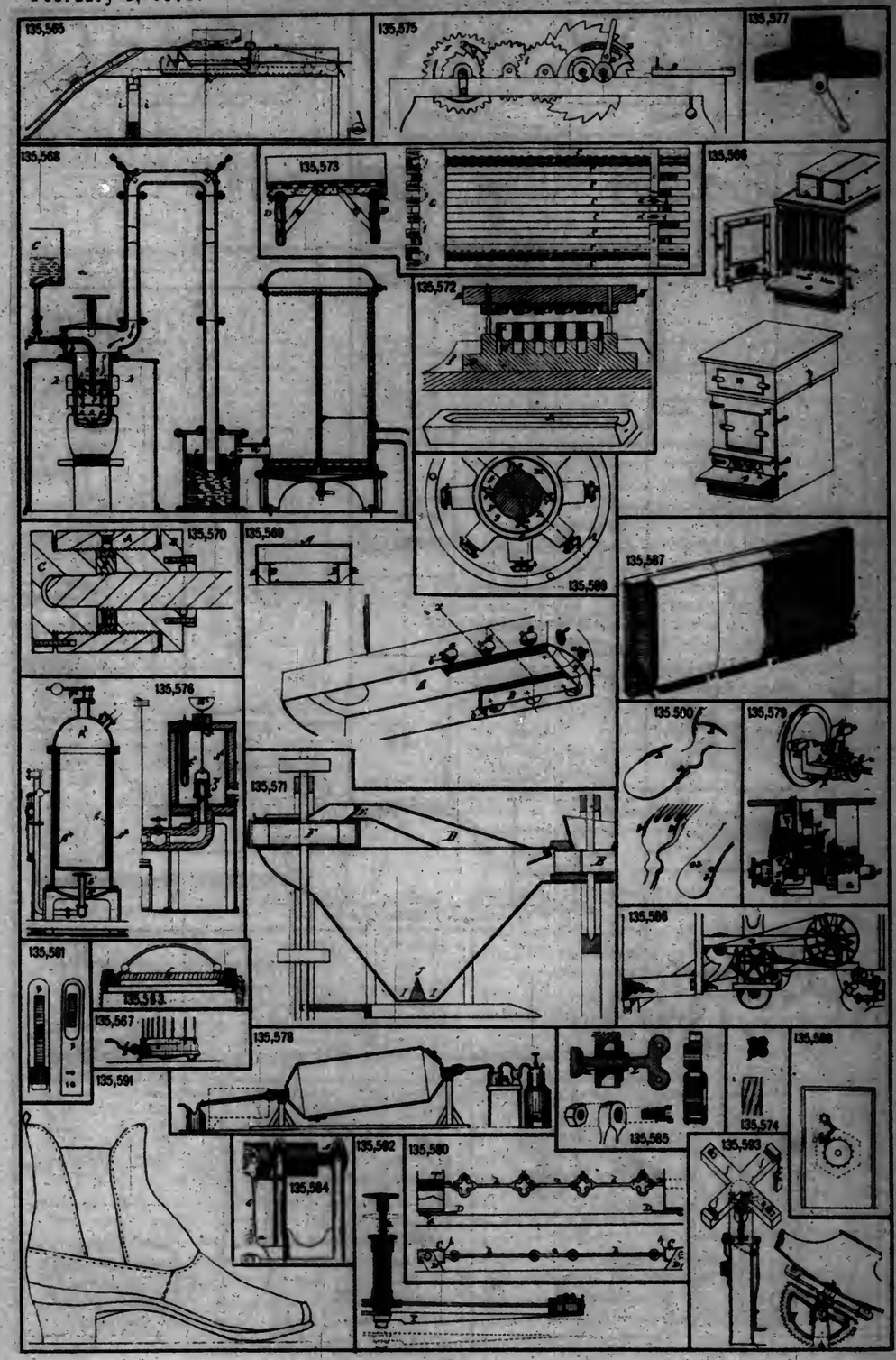
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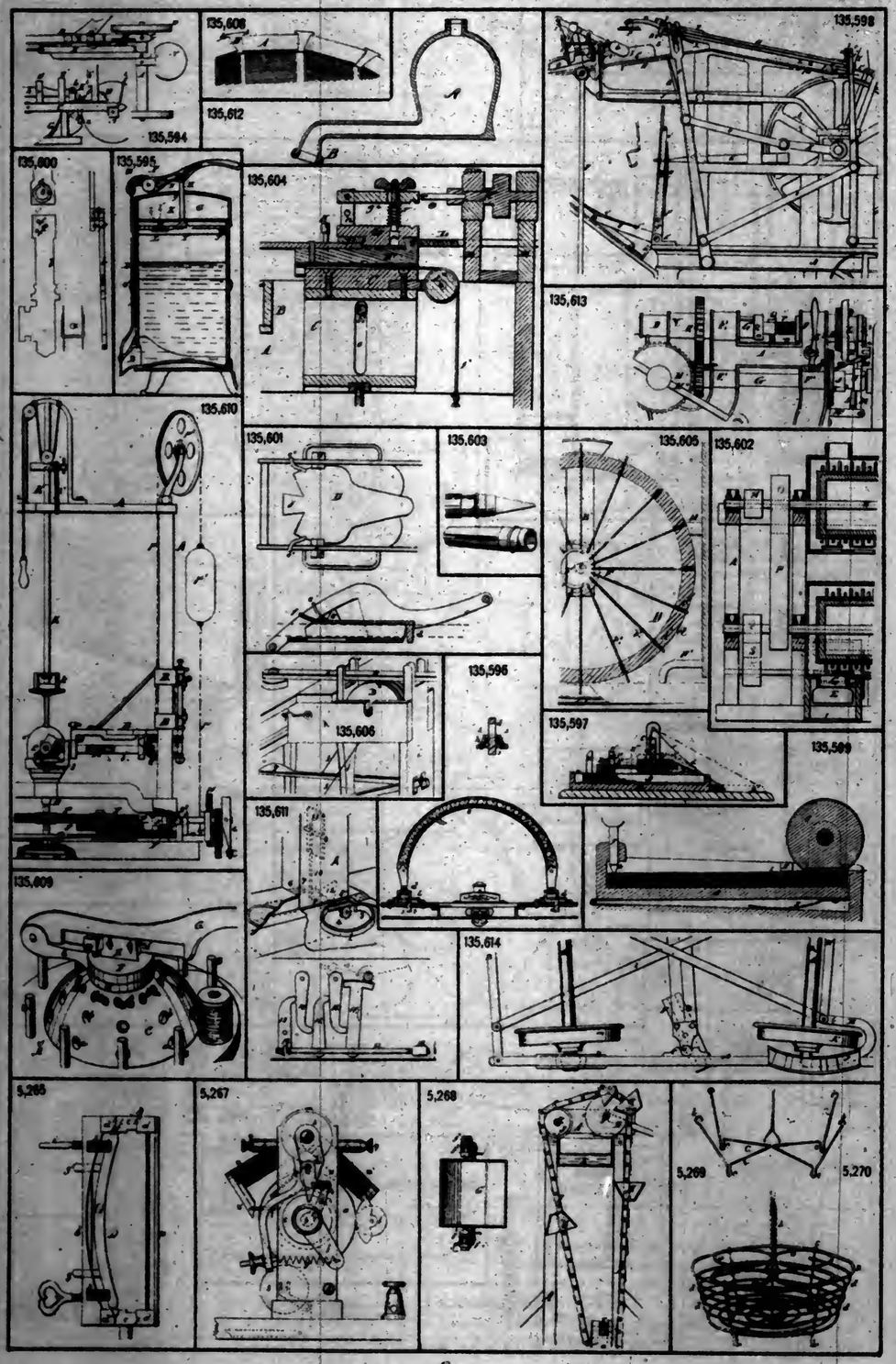
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COMMISSIONER'S DECISIONS.

HOVEY *vs.* MULLER *et al*—*Interference.*

[*Appeal from the Principal Examiner in the matter of the interference between the applications of S. D. Hovey, F. H. Muller, and Philip Hufeland, and the patent of Wm. K Evans, for alleged* IMPROVEMENT IN LEAD-PENCILS.—*Decided February* 10, 1873.]

After the determination of an interference a new one should not be declared, without the order of the Commissioner, between the application of the successful party and applications filed by the other parties which were not included in the first interference, although they claim a feature shown in the successful application but not claimed in it.

The successful party should have his patent issued to him upon disclaiming the feature in question as being embraced in another application filed by him, if such is the case.

THACHER, *Acting Commissioner:*

This is an appeal from a decision of the Examiner denying a motion to dissolve the interference.

The subject-matter involved is presented in two claims, one covering the invention to which Hufeland was declared to be entitled in a former interference, and another, subordinate to the first, relating to the particular manner of finishing up the pencil. Although the latter device was shown, the claim never was incorporated in the application of Hufeland formerly in interference, but has been inserted in another application, which is also included in the new interference. Evans has filed a concession acknowledging priority in favor of Hufeland. The remaining parties, Hovey and Muller, were also parties to the former interference. Hufeland now moves to dissolve the interference so far as his earlier application is concerned, so that he may be allowed to receive a patent for the invention to which he has been declared entitled.

The Examiner errs in his statement of the subject-matter of the former interference. It was not "the broad combination of a wooden pencil, a paper tube, and an eraser." It was distinctly stated in the decision of the case that the subject-matter was limited by the declaration of interference to the particular invention shown and described by Hufeland and Illfelder; that Hufeland was entitled to the patent for this invention; and furthermore, that it was neither shown in the application of Hovey nor proved ever to have been invented by him. Muller had withdrawn from the case before hearing. [*Hovey* vs. *Hufeland et al.*, OFFICIAL GAZETTE, vol. 2, p. 493.] This decision was a final adjudication of the case between Hufeland and all other parties to the interference, and a new interference ought not to have been declared with any of them, except under the rules providing for new trials. It does not appear that the new cause has been instituted in accordance with these rules No motion has been made for new trial, no information filed calling for such action by the Office. The Examiner appears to have acted without cause and on his own motion. His action was entirely wrong, except as to Evans, with whose patent an interference was proper, because he was not joined in the former.

Hufeland's right to this invention cannot be questioned in an interference with the same parties as before, but involving only the subordinate claim, and there is therefore no reason for withholding the patent for it, pending the issue of such interference, although the subject-matter is shown in the application. But to remove all objection on this score, Hufeland should file a disclaimer to the second claim, stating that it is the subject-matter of another application. Evans having conceded priority to Hufeland, the interference should be dissolved so far as the subject-matter of the former interference is concerned.

The decision of the Examiner is overruled, and he is instructed to send forward the earlier application of Hufeland for issue, upon the filing of the disclaimer required above.

LAWTON & BLISS.—*Extension.*

[*In the matter of the application of Lawton & Bliss for extension of patent No. 23,033, granted February 22, 1859, reissued December 21, 1869, No. 3,728, for* HOSE-COUPLING.—*Decided February 6, 1873.*]

A case in which the patent and reissue have been sustained in Court, but an extension is refused on the ground that the original patent and reissue were negligently granted, being infringements on a prior patent which was not before the Court.

LEGGETT, *Commissioner:*

This case fails at the first step in its consideration. It appears by reference to the rejected application of V. Fogerty, filed May 19, 1868, cited by the Examiner, that the device was not new at the date of the original grant of the patent. Yet the patent was not only granted, but it has been reissued, litigated, and sustained in Court. It is now for the first time suspected to be defective. These facts call for a close scrutiny and a careful comparison of the patent and reference, which I have made, and I fully concur with the Examiner's opinion that the two cases show substantially identical devices. Fogerty's application, it appears, was not before the Court. If it had been it must obviously have defeated the patent, for the reissued claims are as exactly applicable to Fogerty's coupling as to the patentees. The only difference between the two devices is that the latch in one is held in place by a spring, and in the other by a screw; but the patentee does not limit himself to the use of a screw, and if he did it would be immaterial. The common screw and the common spring, when used merely for the simple function of pressing and holding a latch in place, are as perfect mechanical equivalents as it would be possible to mention. The extension must be refused for want of novelty in the device at the date of the grant of the patent.

AUGUSTUS ADAMS.—*Appeal.*

Appeal from the Board of Examiners-in-Chief in the matter of the application of Augustus Adams for a patent for an alleged IMPROVEMENT IN CULTIVATORS, *filed January 24, 1873.—Decided February 1, 1873.*]

ARTICLE OF MANUFACTURE—PATENTABILITY.

A claim for an article of manufacture may be embraced in the same application with other claims.

Although a production is called an "article of manufacture" it must possess the same requisites for patentability as in other cases, and have the same evidence of invention and novelty.

TEACHER, *Acting Commissioner:*

Applicant presents two claims—the first for a draft-hook of peculiar construction "as a new article of manufacture," and the second for what may be construed as a combination of this hook with several other devices.

The Examiner refuses to consider both claims in the same application, taking the broad ground that "an article of manufacture" must be covered as an entirety by a single claim, and that no other claim can be entertained in the same application.

It is a little remarkable that this position should be again assumed after the decision of the Commissioner in the case of E. R. Sumner, C. D. 1871, p. 180, in which this doctrine was strongly condemned in an appeal from this same Examiner, on nearly the same question. It is true that was not a precisely parallel case, but the principle announced undoubtedly applies to the present application, and should have controlled the Examiner in his action thereon.

The error is occasioned by a mistaken impression as to the phrase "article of manufacture." A strange hallucination appears to exist in the minds of many as to the effect of these words and their presence in a claim is supposed, in some miraculous manner, to change the nature of the invention. This is all a mistake. The same rules apply in determining the patentability of an article of manufacture as in any other case—there must be the same evidence of invention, the same proof of novelty.

Suppose the words "article of manufacture" stricken from the first claim in this application and the device claimed simply as a draft-hook, the nature of the invention and the character of the claim would not be changed in the least; but no one would then think of objecting to the second claim because the hook had been claimed as an entirety in the first. This is precisely what the claim covers in its present form, and the error of the Examiner's decision is just as palpable in the one case as it would be in the other.

I remark in conclusion that the combination of parts mentioned in the second claim appears to be perfectly legitimate; but that, if any of these parts are not represented by the model, it should be amended by incorporating the missing devices.

The decision of the Examiner is overruled, and he is instructed to proceed with the examination of the case.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

THE EICKEMEYER HAT-BLOCKING MACHINE COMPANY *vs.* H. O. PEARCE *et al.*

[*In Equity.—Before Blatchford, Judge.—Decision January 31, 1873.*]

PATENT OF EICKEMEYER—MACHINE FOR STRETCHING HAT-BODIES—PRIOR INVENTION—VALIDITY OF REISSUES.

A machine for stretching hat-bodies, consisting of a skeleton-ribbed former carrying the hat-body to be stretched, and of a series of external rollers arranged concentrically with the axis of the ribbed former, and acting upon the outside portions of the hat-body in opposition to the internal action of the ribs of the skeleton-former, and in the center of the recesses between such ribs, is infringed by a machine in which the external stretching device consists of fixed round-edged surfaces, although with such a device, differently from the rollers, the stretching of any part of the fabric which has once begun continues until all parts are released from tension.

That the defendants have added some features of construction and operation which are not found in the plaintiff's patent, whereby the machine may be improved, cannot relieve the defendants from the charge of infringing the patent, in view of their use of the inventions covered by the claims.

Although prior to Eickemeyer's invention, Hutchinson had stretched hat-bodies between two detached ribbed formers, laid one over the other, yet his devices were practically useless, not being combined into an organized machine. They lacked the combination and arrangement which Eickemeyer made, and which secures circumferential equality of action of the stretching devices on the material, the requisite intervention of the ribs between the stretching devices, and accuracy of operation by means of the concentric approach to and recession from each other of the ribs and stretching devices.

Detached instruments never combined into an organized machine, and not operated continuously, but broken in part after a few trials and then laid away and never used thereafter, cannot avail to defeat a patent upon an operative machine in which those hand devices appear as elements of the combination.

There was no *mechanical combination* of Hutchinson's stretching devices as he used them.

It is not a good objection to the claims of a reissue to set up that these claims were not intended to be made when the original was taken out.

A suit under the reissue, granted December 1, 1868, of letters patent originally granted to Rudolph Eickemeyer, February 28, 1865, for an improvement in machines for stretching hat-bodies, brought by The Eickemeyer Hat-Blocking Machine Company against Hosea O. Pearce, Charles Hall, the Sheldon Hat-Blocking Company, Archibald T. Finn, and Joseph H. Plume.

The invention covered by complainants' patent and the defenses set up, are fully stated in the opinion of the Court.

At the same time with the above suit there was submitted the case of the Eickemeyer Hat-Blocking Machine Company against William H. Tweedy, Thomas E. Tweedy, John E. Dann, Edmund T. Tweedy, the Sheldon Hat-Blocking Company, Archibald T. Finn, and Joseph H. Plume, the Court holding in this case that the so-called "Sheldon" machine was an infringement of the first, second, third, and fourth claims of the reissued Eickemeyer patent, under which the suit was brought.

[*Geo. Gifford,* for complainants.

C. M. Keller, for defendants.]

BLATCHFORD, *Judge:*

This suit is brought on reissued letters patent granted to the plaintiffs, as assignees of Rudolf Eickemeyer, December 1, 1868, for an "improvement in machines for stretching hat-bodies," the original letters patent having been granted to said Eickemeyer, February 28, 1865. The specification, which is signed by Eickemeyer, says:

"In the manufacture of felt hats, the bodies having been formed of a conical shape and subjected to the process of felting, termed by hatters 'sizing,' retain their conical form and require to be stretched in the tip and crown, and also at the brim, to enable the hats to receive and maintain the form subsequently given to them by the operation of blocking. The hat-body being of a conical form, rounded at the tip, is nevertheless made with reference to the hat to be produced, and the different parts of it which are afterward to be developed into the 'tip,' 'square,' 'side-crown,' 'band,' and 'brim' of the finished hat are distinguished by imaginary lines or zones around the hat-body, and the same names applied to them, the lower part of the sides being termed the 'brim,' the upper part of the sides the 'side-crown,' the line of division between the side-crown and brim the 'band,' the rounded upper part the 'tip,' and the dividing line between the tip and side-crown the 'square.' In stretching hat-bodies for blocking, the 'band' is not generally stretched circumferentially, or but slightly stretched, the stretching being required in the crown and tip to produce the square or angular corner of the cylindrical or bell-crowned hat, and at the brim in order that the latter may lie flat or at right angles, or nearly so, to the side-crown when blocked; and it is necessary that the body shall be stretched more in these parts which require stretching than would be sufficient to conform it to the shape of the hat-block, because if not overstretched before blocking the hat will shrink when, in wear, it is exposed to moisture, and tend to resume its conical shape, but if overstretched and suffered to shrink to the block, will retain its figure afterward, under ordinary wear and exposure. In stretching a hat-body for square-crowned hats the upper part of the hat-body is circumferentially stretched most at the square or angle of intersection between the side-crown and tip, beginning to stretch gradually from the center of the tip and from the band, and increasing toward the square. The lower part of the body is stretched circumferentially most at the edge of the brim, beginning to stretch gradually from the band. This stretching operation has hitherto been commonly performed by hand, notwithstanding the attempts that have been made to use expanding blocks or expanding devices inside of the bodies for stretching the tips or crowns. Hat-bodies are generally made of unequal thickness from tip to brim, but of equal thickness, as near as may be, in the direction of the circumference, and the operation of stretching, sometimes called 'wet-blocking,' by hand requires great skill and care to stretch the parts requiring to be stretched, and preserve the requisite circumferential equality of thickness of the body, without overstraining or tearing the hat. The object of my invention is to perform this operation of stretching hat-bodies by machinery, and to this end I have invented the new and improved machine hereinafter described, whereby both the tip and brim, or either, may be properly stretched by the operation of the machine.

"My said invention of a new and improved machine for stretching hat-bodies consists generally of a radially-ribbed or skeleton former, whereon the hat-body is placed to be stretched, and the ribs of which act as internal supporting and stretching surfaces, and a series of external stretching devices which act upon the outside portions of the hat-body that are to be stretched, in opposition to the internal action of the ribs of the skeleton former, and between the lines of support of the same, the internal and external supporting and stretching devices being so combined and arranged, with relation to each other and the work to be done, that when they are brought together with force they operate to stretch the hat-body embraced between them in the required places to develope the desired shape of the hat; and for the purpose of holding the hat-body in place upon the former, so that the proper portions will be stretched, a clamping-ring is also combined with the machine. I have also made the exterior pressing or stretching devices radially adjustable in position, relatively to the axis of the ribbed skeleton former, to accommodate the variations of form required; and, in order to vary the degree of stretching of either the tip or brim at pleasure, I have made the external pressing or stretching devices independent of each other and independently adjustable. It will be observed, upon inspection of the machine as illustrated in the drawings, that, although the general principle and mode of operation of the parts of the machine which act to stretch the tip are the same as in those parts that act to stretch the brim, the adaptation and arrangement of the parts for the two operations are different. The ribs which support the tip have curved or otherwise inclined surfaces to conform to the rounded tip of the hat-body, and the ribs themselves are arranged so that the recesses between them extend inward to the axis, or nearly so, in order to give room for the portions of the tip and side-crown that are pressed in by the external stretching devices, and the external stretching devices converge closely together to act upon the upper surface of the tip to be stretched. The ribs which support the brim have straight surfaces radiating from a circle or cylinder of the diameter of the band, and the recesses do not necessarily extend inside of that circle or cylinder, which may be the hub or support of the ribs of the former. The ribs are more in number than the ribs which support the tip, because of the greater surface of the brim to be stretched by them, and the external stretching or pressing devices are not converged together so closely as those which act upon the tip; and it will also be observed that the construction and arrangement, respectively, of the parts for stretching the tip and brim of the hat-body differ so much that neither will perform the office of the other, although both will perform their offices at the same time upon the same hat-body. For the purpose of securing circumferential equality of action of the stretching devices upon the portions of the hat-body to be stretched, and for convenience and accuracy of adjustment, and facility of operating the stretching devices in a practical machine, I have mounted the internal stretching devices which constitute the skeleton or ribbed former concentrically upon the upper end of a vertical sliding spindle, which is moved up and down in guides, in a frame, by a lever, and have attached the exterior stretching devices to the frame in positions concentric to the axis of the ribbed former, so that the latter may be lowered to put on and take off the hat-body, and lifted when the hat-body is put on, to bring the parts together so as to stretch all the parts operated upon equably in the direction of the circumference of the hat-body. If the exterior and interior devices which act upon the hat-body to stretch it were not guided in this or some equivalent manner, parts of a given zone of the circumference of the body would be apt to stretch more than others, according to their texture, but by causing the stretching-surfaces to act equably, by means of the frame and guides, uniformity in stretching is secured, as far as practicable in such operations."

Then follows a description of the construction of the mechanism, with references to three figures of drawings, figure 1 being a vertical central section of the machine; figure 2, a plan of the radially ribbed or skeleton former, and the lower series of stretching-rollers; and figure 3, a plan of the arrangement of the upper series of stretching-rollers. There is an upright frame, on the top of which is a stationary horizontal table having a central circular opening, under and partly within which is situated the skeleton-former, made of wood or other suitable material. This former has its vertical profile of conical or other form, corresponding with that of the hat-body before the stretching operation; and a portion of it, at about the middle of its height, is of complete circular form in its horizontal section, but above and below this portion it has a number of ver-

tical recesses, between which is left a corresponding number of equidistant radial ribs, the edges of which ribs form the profile of the former. The former is secured firmly and concentrically upon the upper end of a vertical spindle, which is arranged to slide up and down in guides in the center of the frame concentric with the opening in the said horizontal table, and which has applied to it a lever or treadle, by which it can be lifted up to raise the former. A metal clamping-ring, the interior of which is of such size and form as to fit the circular portion of the former between the upper and lower ribs, is attached by vertical rods to and below a headpiece of such weight as to be capable of producing the requisite degree of pressure to hold a hat-body upon the former. These rods work up and down by sliding through guides in a stationary horizontal plate, which is supported by vertical pillars upon the said horizontal table, and the clamping-ring is thereby kept concentric with the former. Such ring is supported, when not supported by the former, by means of a vertical screw which screws through a tapped hole in the headpiece, and the lower end of which, bearing upon said horizontal plate, prevents the ring from descending below a given position. A series of thin round-edged rollers, corresponding in number with the upper recesses and ribs of the former, is arranged above the horizontal line of the circular portion of the former, radial to the axis of the former and clamping-ring and opposite the centers of said recesses. The axles of these rollers are supported in hangers which are secured by screws to the said horizontal plate, said screws passing through radial slots in said plate, to enable the rollers to be adjusted toward and from the axis of the former. The surfaces of such ribs and rollers are the stretching-surfaces for the tip and crown of the hat-body. A series of thin round-edged rollers, corresponding in number with the lower recesses and ribs of the former, is arranged below the horizontal line of the circular portion of the former, radial to the axis of the former and clamping-ring, and opposite the centers of said recesses. The axles of these rollers are supported in hangers which are secured by screws to the said horizontal table, the said screws passing through radial slots in the said horizontal table, to enable the rollers to be adjusted toward and from the axis of the former. The surfaces of such ribs and rollers are the stretching-surfaces for the brim of the hat-body. The clamping-ring is so adjusted by the screw which supports it, and the two series of rollers are so adjusted by setting the hangers in which they are supported, that when a hat-body upon the former is in contact with said ring, while said screw rests upon the said horizontal plate, the edges of the two series of rollers are a short distance outside of the profile of the former.

The operation of stretching a hat-body in the machine is as follows: The former is first allowed to descend to such a position as to permit the hat-body to be put on and drawn tightly over it. The hat-body, wet with hot water or steam, is put on and the former is raised up by depressing the outer end of the treadle or lever. When the hat-body comes in contact with the clamping-ring the weight of the ring and of the attached head piece causes the ring to hold the hat-body with sufficient firmness against the circular portion of the former to prevent it from slipping between the ring and the former, and the continued upward movement of the former, produced by a suitable pressure upon the outer end of the lever or treadle, brings the hat-body into contact with the two series of rollers, which are thus made to press upon and stretch the portions of the hat body which are between the rollers and the corresponding ribs of the former into the recesses. Such portions are thereby stretched over the ribs. By this means the hat-body is brought to a suitable shape for blocking and shaping the crown and brim of the hat.

The specification states that fixed round-edged surfaces may be substituted for, and would be the equivalents of, the two series of rollers, but that the inventor prefers to use the rollers, as by preventing friction upon the hat-body they prevent it from being torn in the stretching operation.

The claims are as follows:

"1. In a machine for stretching hat-bodies, a skeleton or ribbed and recessed former, substantially such as is herein described.

"2. The combination and arrangement of the crown and tip supporting-ribs with the upper series of stretching devices, substantially as described, operating to stretch the tip and side-crown of the hat-body between them, substantially in the manner hereinbefore set forth.

"3. The combination and arrangement of the brim-supporting ribs with the lower series of stretching devices, substantially as described, operating to stretch the brim of the hat-body between them, substantially in the manner set forth.

"4. In combination with the supporting-ribs of the skeleton former, the stretching devices, operating, as hereinbefore set forth, to stretch the hat-body between them at one operation, as required for blocking, substantially as described.

"5. The clamping-ring, in combination with the ribs of the skeleton or ribbed former, operating to hold the hat-body thereon during the operation of stretching, substantially as described.

"6. The combination, in a machine for stretching hats, of the skeleton or ribbed and recessed former, a clamping-ring, and a system of stretching arms or rollers, the whole combined and operating substantially as described.

"7. Making the stretching devices for the tip or brim adjustable radially with relation to each other, so as to vary the degree of stretching of either tip or brim, substantially as described."

The defendants use for stretching the tip and side-crown of a hat-body a machine which does not and cannot stretch the brim; and to stretch the brim they use a separate machine, which does not and cannot stretch the tip and side crown. The defendants' tip and side-crown stretcher has ribs which support the tip and side-crown, and a series of stretching devices, which, instead of being rollers, are fixed round-edged surfaces. The ribs and stretching devices operate to stretch the tip and side-crown between them. In the plaintiffs' arrangement, however, the operation is such that the rollers which act upon the exterior of the hat-body and wrinkle or corrugate it inwardly between the ribs of the former, and thus increase its diameter, act on different points in the hat-body in succession, in lines extending toward the base of it, the parts which have been acted upon being relieved from the pressure of contact with the rollers as new parts are brought into such contact. In the defendants' tip and side-crown stretcher the hat-body is placed on a convex-ribbed former, above which is another ribbed former, the ribs of which, when the hat-body reaches the concave part of the latter former, enter between the ribs of the convex former, and the hat-body is wrinkled by the action so as to be increased in diameter. As the convex former continues to be lifted, the ribs act on the different parts of the hat-body in succession; but so far from any part already acted upon being relieved at any time, the stretching of every part, the stretching of which has once commenced, continues so long as there is any stretching done to any part.

The defendants' brim-stretcher has ribs which support the brim, and a series of stretching devices which, instead of being rollers, are fixed round-edged surfaces. The ribs and stretching devices operate to stretch the brim between them. But in the defendants' arrangement there is a convex-ribbed former on which the hat-body is placed, which is formed like the ribs and stretchers of an umbrella, the hat-body being placed on the former when the ribs are in their lowest position. Above this is another ribbed former, and when the brim on the convex former has reached the concave part of the other former the wrinkling commences, by the action of the ribs of one former between the ribs of the other former, and then a hand-lever throws out or expands the ribs of the convex former by an operation like that of opening an umbrella, and the stretching is thereby completed, the ribs of the convex former during the latter operation bearing, in their whole length, on the brim, in lines extending from the band to the outside of the brim. The action in the first part of the operation is like that in the defendants' tip-stretcher, but in the latter part of the operation there is an action not found in such tip-stretcher nor in the plaintiffs' arrangement.

It is shown by the evidence that the defendants' arrangements in their two stretchers, from the fact that the action is on the whole of a given wrinkle at the same time, are better adapted to the stretching of tender hat-bodies, such as those made of fur, as generally made, than is the plaintiffs' arrangement. But while the defendants' arrangements may contain improvements on the plaintiffs' arrangement, yet they embody what is claimed in the second and third claims of the plaintiffs' patent. The defendants' tip and side-crown stretcher has ribs supporting the tip and side-crown, and a series of stretching devices, which ribs are substantially the same as those of the patent, and which stretching devices are substantially the upper series of stretching devices in the patent, when made in the shape of a fixed round-edged surface, as suggested in the patent, and the ribs and stretching devices are combined and arranged substantially as described in the patent. They operate to stretch the tip and side-crown between them, substantially in the manner set forth in the patent. So, too, the defendants' brim-stretcher has ribs supporting the brim, and a series of stretching devices, which ribs are substantially the same as those of the patent, and which stretching devices are substantially the lower series of stretching devices in the patent, when made in the shape of fixed round-edged surfaces, as suggested in the patent, and the ribs and stretching devices are combined and arranged substantially as described in the patent. They operate to stretch the brim between them substantially in the manner set forth in the patent. The defendants' lower formers are radially ribbed. The hat-body to be stretched is placed on them. The ribs of those formers act as internal supporting and stretching surfaces. The defendants have external stretching devices in series, which act on the outside portions o the hat-body that are to to be stretched, in opposition to the internal action of the ribs of the lower formers and between such ribs, and in the centers of the recesses between such ribs. The mechanical combination and arrangement of the internal and external supporting and stretching devices in the defendants' machines, with relation to each other and to the work to be done, are such that the two sets of devices are brought together accurately and automatically, so that their parts interlock properly and stretch the interposed material in the required places, and equality in the action, circumferentially, of the stretching devices on the parts to be stretched and facility of operation are secured. The combination consists in mounting the set of ribs and the set of stretching devices concentrically, with a coincident axis, and moving one set accurately toward the other by mechanical guides, the stretching devices being opposite the centers of the recesses between the ribs. All these features the defendants' machines have in common with the plaintiffs'. These features are essential features in the plaintiffs' arrangement, and are the features covered, as respects the tip-stretcher, by the second claim of the patent, and, as respects the brim-stretcher, by the third claim of the patent. That the defendants have added some features of construction and operation which are not found in the plaintiffs' patent, whereby the machine may be improved, cannot relieve the defendants from the charge of infringing the second and third claims of the patent, in view of their use of the inventions covered by those claims.

The principal ground of defense urged is that, before Eickemeyer made his invention, one John Hutchinson, at Matteawan, New York, invented and constructed, and successfully used, in a crude way, instruments for stretching the tips and the brims of hat-bodies, which instruments had the same mode of operation as that of instruments found in the defendants' machines. The date of Eickemeyer's invention was the summer of 1861. The identical instruments which Hutchinson used are produced. They were used by Hutchinson in 1860. They are, and always were, detached parts, and never were organized into a machine working automatically. Hutchinson's parts to stretch the brim of a hat-body are three in number—a convex conical-shaped former, with ribs; a concave conical-shaped former, with ribs pivoted like the ribs of an umbrella; and a dome-shaped piece. They are manipulated by handling them. The hat-body is placed on the convex former. The concave former is then placed on the top of the hat-body, with its ribs resting on the hat-body. The dome-shaped piece, which is hollow, is then placed over the concave former and forced down so as to drive the ribs of the concave former into the recesses between the ribs of the convex former, and carry the brim in wrinkles toward the axis of the convex former. In the defendants' brim-stretcher the brim is carried in wrinkles away from the axis of the convex former; because the wrinkling is performed by an operation like that of opening an umbrella. In Hutchinson's device the wrinkling is performed by an operation like that of shutting an umbrella. Hutchinson's parts to stretch the tip of the hat-body consist of a concave-ribbed former and a convex-ribbed former, manipulated by hand, and like the two formers in the defendants' tip-stretcher in construction, as ribbed formers, and brought together to stretch the tip between them, placed on the convex former, by pressing the ribs of one former between the recesses in the other former. Hutchinson, in using his brim-stretching devices, employed a lever

which had its fulcrum in a post which formed a part of a building, to make pressure on the top of the dome-shaped piece, the fulcrum being at the end of the lever. There was no organized machine. The description given of the use of the devices is that they were tried to see whether they would block a hat or not; that they were not operated continuously; that sometimes Hutchinson would make an alteration, and then another trial would be made to see whether the alteration was any improvement; that but one brim-stretcher was made, and that of wood, which was broken several times in operating it; that the tip-stretcher was of wood, and was tried on a few tips, and was broken in use and never repaired; that Hutchinson had the idea of constructing a machine embodying the principle of such devices, but had no definite plan as to the appliances by which the machine was to work out such principle; that nothing was done toward carrying out such intention; that the devices were tried in 1860, prior to, but not later than, June; that they were then stowed away in a closet, where old books and papers were kept, in a factory where Hutchinson continued to be employed for two years afterward; and that they remained in that closet, unused, for three years and a half, and were then removed to another place, whence they were taken to be used as evidence in favor of the parties defending this suit. These devices of Hutchinson amounted to nothing, and were practically useless, for the reason that they were not combined in an organized machine. They lacked the combination and arrangement of them which Eickemeyer made, and which secures circumferential equality of action of the stretching devices on the material, and accuracy of operation, by means of the concentric approach to, and recession from, each other, of the ribs and stretching devices. The equable intervention of the ribs between the stretching devices is an essential feature of the patent, due to the mechanical organization. There is no such feature in Hutchinson's devices, because there is no mechanical organization capable of developing such feature. Whether the ribs and stretching devices in Hutchinson's tools will move concentrically or not is a matter of accident, and dependent on the skill of the person handling the tools, and the equability of intervention of the ribs and stretching devices is equally a matter of accident and skill in handling.

There is, therefore, nothing in what Hutchinson did that can interfere with the second and third claims of the patent, which are the only ones involved in this suit. Even if Eickemeyer had seen and known of what Hutchinson did, he would have been entitled to make those two claims. It has been attempted to be shown that Eickemeyer knew of, and saw, Hutchinson's devices. Whether he did or not is of no importance; but the evidence wholly fails to show that he did. Hutchinson's devices amounted to nothing. They needed the addition of what is found in the defendants' machines, and which makes of them combinations that were invented by Eickemeyer. It is a mistake to say that the claims of the plaintiffs' patent cover Hutchinson's instruments. So far as the plaintiffs' patent is concerned, those instruments are free to be used by the defendants in the manner in which Hutchinson used them.

The claims of the original patent granted to Eickemeyer were as follows:

"1. The employment, in the process of stretching hats, of a skeleton or ribbed and recessed former, substantially such as herein described.

"2. The pressing-ring E in combination with the skeleton or ribbed and recessed former, substantially as and for the purpose herein specified.

"3. The employment, substantially as herein described, in combination with the skeleton or ribbed and recessed former, of pressing-rollers K M, or other equivalent pressing devices, operating as herein set forth.

"4. The combination, in a machine for stretching hats, of a skeleton or ribbed and recessed former, a pressing-ring, and a system of rollers, or other equivalent pressing devices, the whole combined and operating substantially as and for the purpose herein specified."

Because Eickemeyer did not, in his original patent, make the claims which are made in the second and third claims of the reissued patent, but only made claims which were substantially the same as the first, fourth, fifth, and sixth claims of the reissued patent, it is argued that he must have seen the devices of Hutchinson. I draw the very opposite inference, for, if he had seen them it would have been in his mind, in taking out his patent, that the upper ribs and upper stretching devices might be used separately from the lower ribs and lower stretching devices, as Hutchinson used his tools, and, with such idea, Eickemeyer would have made, in his original patent, claims like the second and third claims of the reissued patent, which are fully warranted by what is found in the specification and drawings of the original patent. It would not detract a particle from the merit or validity of Eickemeyer's invention if he had seen Hutchinson's tools; but there is no satifactory evidence derived from witnesses, or from the history of the case, to warrant the conclusion that he saw or knew of them.

There is no more warrant for saying, in this case, that Eickemeyer did not intend, in taking out his orignal patent, to make such claims as the second and third claims of the reissued patent, than there is, in every case of a reissue, for saying that claims in the reissue, not found in the original, were not intended to be made when the original was taken out because they were not put in as claims in the original. On this principle there never could be a reissue covering claims not substantially found, as claims, in the original.

The argument on the part of the defendants seems to be founded on the idea that the second and third claims of the reissued patent cover the use of Hutchinson's tools as Hutchinson used them. This is an error. The use of Hutchinson's tools, as he used them, are not combinations of them, such as the second and third claims of the plaintiffs' patent intend and cover. There are no mechanical combinations of Hutchinson's tools when they are used as he used them. The second claim of the reissue does not cover, broadly, the use of the tip-former in connection with the upper series of stretchers, detached from the mechanical combination and arrangement of such former and stretchers, found in the plaintiffs' patent and not found in Hutchinson's tools. So, too, the third claim of the reissue does not cover, broadly, the use of the brim-former in connection with the lower series of stretchers, detached from the mechanical combination and arrangement of such former and stretchers, found in the plaintiffs' patent and not found in Hutchinson's tools.

There must be a decree for the plaintiffs for a perpetual injunction and an account of profits, and an ascertainment of damages, with costs, in respect to the second and third claims of the patent.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,833.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,085.—*Lamps.*—Granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859. Hearing February 12, 1873.

23,097.—*Machines for Crozing and Chamfering Barrels.*—Granted to HIRAM LITTLEJOHN, March 1, 1859. Hearing February 19, 1873.

23,105.—*Construction of Steam-Vessels.*—Granted to JAMES MONTGOMERY, March 1, 1859. Hearing February 12, 1873.

23,152.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 8, 1859. Hearing February 19, 1873.

23,173.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,263.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON R. PETERS, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEHR, March 22, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 19, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 19, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 19, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 19, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CRAMMER, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859 Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,643.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Distintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,659.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 9, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,894, 4,895, and 4,896, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,963, June 6, 1865; No. 1,960 having been ordered to again reissue, No. 5,359, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MERSHON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,893.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tyres.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,096.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,426.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,634.—*Pin-Sticking Machine.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

EXTENSIONS GRANTED.

22,812.—*Improved Machine for Rolling Horseshoe-Iron*, granted to WILLIAM W. LEWIS, February 1, 1859; reissued March 30, 1869, numbered 3,354.

Claim.—1. The combination, in a pair of rolls, of a groove with an inclined bottom and one or more creasers, for the purpose of guilding the iron, and producing a thicker edge on the outside of the shoe, substantially as described.

2. The combination of a pair of grooved rollers with one or more creasers, when the bottom of the groove, or rolling-surface of either roll is eccentric, so as to make the shoes thicker at the heels than at the point or toe, substantially as set forth.

3. The combination, with a pair of rolls, of annular adjustable creasers, substantially as described.

Disclaimer filed February 13, 1873.

Disclaims third clause of claim, as above set forth.

22,941.—*Improvement in Car-Springs*, granted to AUGUSTUS B. DAVIS, February 15, 1859; reissued January 6, 1863, numbered 1,371; and again reissued March 17, 1863, numbered 1,431.

Claim.—1. A box of any suitable form and a plate, C, or its equivalent, adapted to the open end of the said box, and connected to the latter by a bolt or bolts, D, or other suitable fastenings, substantially as set forth, in combination with a series or nest of springs, arranged side by side and free from contact with each other, each spring forming an integral part of the entire elastic medium composed of the whole of the springs, and the latter serving with the said box and plate to constitute an entire single self-contained car-spring, as described.

2. The use within a box, substantially as described, of a series or nest of spiral or coiled springs, when made of iron wire and treated by compression or impact prior to being deposited in the box, as set forth, for the purpose specified.

3. The series or nest of springs, combined with a box and plate so constructed that the compression of the said springs shall be limited and their constant available thereby preserved.

Disclaimer filed February 10, 1873.

Disclaims the following portion of his specification: "Or flat steel bars, the same being coiled or twisted or otherwise bent in whatever manner the constructor may deem most appropriate." Also,

Disclaimer filed February 15, 1873.

Disclaims third clause of claim, as above set forth.

23,011.—*Improvement in Water-Wheels*, granted to N. F. BURNHAM, February 22, 1859; reissued September 1, 1863, numbered 1,530.

Claim.—1. A hub, formed with a concave exterior in any manner, substantially as described, so as to derive a lifting tendency from the entrance of the water and deflect it downward, in the described combination with a bucket formed with a face vertical, or nearly so, at top to receive the direct force of the water, and inclined at bottom to receive its gravitating force.

2. The combination of the chutes or scrolls M M and wheel Q R, constructed as herein described, to adapt the wheel to operate with good effect with any proportionate quantity of water.

23,022.—*Improvement in Molding Covers for Cook-Stoves*, granted to GEORGE W. GARDNER, February 22, 1859.

Claim.—Combining with that part of the pattern which gives form to the recess of the cover, the pivoted projections, as and for the purposes herein set forth.

23,032.—*Improved Steam-Pressure Gage*, granted to T. W. LANE, February 22, 1859.

Claim.—1. So combining the indicating-tube with the pipe, through which the pressure within the boiler is transmitted to the gage that the length of tube in either direction from its junction with the pipe shall not exceed a semi-circle, and placing the tube in such a position that it shall descend at every point toward its junction with, and drain back into the pipe

2. Joining the pipe from the boiler with the indicating-tube at a point between its two ends, and bending the latter as set forth, so that the ends of the tube shall be nearly over the points where its two branches are rigidly supported, whereby the tube is rendered less sensitive to the vertical shocks to which it is subjected.

3. Bending the two portions of the indicating-tube symmetrically, or nearly so, upon opposite sides of a vertical line, as described, and connecting the two extremities of the tube with the lever *i*, as set forth, for the purpose of preventing the horizontal vibrations of the tube from being transmitted to the index-hand.

4. Pivoting the lever *i* to the indicating-tube without attachment to the case, for the purpose specified.

Disclaimer filed February 15, 1873.

Disclaims first, second, and third clauses of claim, as above set forth.

23,034.—*Improvement in Fire-Plugs*, granted to JOSEPH L. LOWRY February 22, 1859; reissued August 14, 1860, numbered 1,026; reissued July 30, 1872, numbered 5,017.

Claim.—1. In a fire-plug a removable hose-branch or plug-head, consisting of a vertical screw branch or stem, hose nozzles *p*, with their valves *l*, and the main-valve wrench or key *n f*, essentially as described.

2. A many-way valved fire-plug head for the attachment and supply of several hose at one and the same time, without interrupting the flow through such as are attached, in combination with a communicating supply-chamber of said plug, essentially as described.

3. A many-way valved plug-head or supply hose-branch, in combination with a valved fire plug pipe, essentially as described.

4. The chamber *j*, constructed so as to make it answer the double purpose of a through way for one or more branch pipes, and a readily accessible chamber containing a valve or valves, thus making one pit and one cover common to two, three, four, or more mains, instead of several, as now required, all substantially as set forth.

5. The combination of the fire-plug, with the chamber *j* and its branches, and the valve *v*, arranged for the purpose of effecting a circulation of the water under the valve or the fire-plug, to prevent it from freezing.

6. In a many-way fire-plug, I claim the screw hose-branches *p*, made to form the seats for the valves *b* thereof, as described.

7. The wrench *n f* of the many-valved plug-head or hose-branch, in combination with the valve *v* of the fire plug, as and for the purpose set forth.

8. The removable screw-seat *c* in the ends of the branches or bowls *y*, so as to renew the seats for the valves *b*, when necessary, without disturbing the main or stop cock, access to these seats being through a common chamber, *j*, as herein stated.

DISCLAIMERS FILED.

22,813.—WILLIAM W. LEWIS, Cincinnati, Ohio, as the owner of an undivided half interest in Letters Patent for *Improvement in Horseshoe-Machines*, dated February 1, 1859; reissued March 30, 1869, No. 3,354. Disclaims:

"That part of the claim in said specification which is in the following words, to wit:

'3. The combination, with a pair of rolls, of annular adjustable creasers, substantially as described.'"

22,941.—A. B. DAVIS, Philadelphia, Pa.—*Improvement in Car-Springs*, dated February 15, 1859; reissued January 6, 1863, No. 1,371; again reissued March 17, 1863, No. 1,431. Disclaims:

"That part of the claim in said specification which is in the following words, to wit: 'Thirdly, the series or nest of springs combined with a box and plate, so constructed that the compression of the said springs shall be limited and their constant available thereby preserved.'"

22,941.—A. B. DAVIS, Philadelphia, Pa.—*Improvement in Car-Springs*, dated February 15, 1859; reissued January 6, 1863, No. 1,371; again reissued March 17, 1863, No. 1,431. Disclaims:

"That part of the said reissued patent, which is in the following words, occurring in the body of the specification, to wit: 'or flat steel bars, the same being coiled or twisted, or otherwise bent in whatever manner the constructor may deem most appropriate.' Also to that part of the said reissued patent, which is in the following words, occurring in the body of the specification, to wit; 'or springs otherwise bent.'"

23,033.—THOMAS W. LANE, Meredith, N. H.—*Improvement in Steam-Pressure Gages*, dated February 22, 1859. Disclaims:

"So much of the subject-matter of said patent as is covered by and included in the first, second, and third clauses of the claim of said patent."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 11, 1873.]

6,385.—*Lamp.*—DANIEL ASHWORTH, Kenton county, Ky.

6,386.—*Carpet.*—JOHN H. BROMLEY, Philadelphia, Pa., assignor to JOHN BROMLEY & SONS, same place.

6,387.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,388.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,389.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,390.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,391.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,392.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,393.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,394.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,395.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,396.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,397.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,398.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,399.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,400.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,401.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,402.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,403.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,404.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,405.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,406.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,407.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,408.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,409.—*Shovel.*—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.

6,410.—*Landau Sleighs.*—JOHN C. GOOLD, Altany, N. Y.

6,411.—*Fences.*—JAMES I. HEALEY, Brooklyn, N. Y.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date February 11, 1873.]

1,123.—*Charts and Patterns for Cutting Dresses.*—WILLETT CORNWELL, Philadelphia, Pa.

1,124.—*Medicinal Compound.*—EMIL FRESE, San Francisco, Cal.

1,125.—*Packed Fresh Salmon.*—LEWIS H. NEWTON, Brooklyn, N. Y.

1,126.—*Axes and Hatchets.*—THE COLLINS COMPANY, Collinsville, Conn.

1,127.—*Harvesting-Machines.*—WHITELEY, FASSLER & KELLY, Springfield, Ohio.

1,128.—*Self-Rakes, Droppers, Reels, &c., of Harvesters.*—WHITELEY, FASSLER & KELLY, Springfield, Ohio.

1,129.—*Guard-Fingers, Knife-Sections, &c., of Harvesters.*—WHITELEY, FASSLER & KELLY, Springfield, Ohio.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date February 11, 1873.]

ORIGINAL PATENTS.

135,616.—*Drawing Mechanism for Spinning-Frames.*—REUBEN ACKROYD, Philadelphia, and WILLIAM COCKCROFT, Chester, Pa.

The friction-plate is a substitute for and is designed to accomplish the same object as the usual carrying-rollers, besides supporting the sliver close up to the bite of the drawing-rollers, preventing roller-laps and avoiding the use of much of the driving mechanism usually employed.

Claim.—The combination, substantially as described, of a friction-plate or plates, A, with the delivering and drawing rolls of a spinning-machine.

135,617.—*Soda Apparatus.*—MATTHEW S. ANDREWS, Somerville, assignor to JAMES W. TUFTS, Medford, Mass.

The rear end of each can rests upon ledges formed upon the side of the casing. The removable portion of the casing is made to slide in grooves at the corners of the apparatus, and is provided at its bottom with openings which fit over the necks of the cocks, so that the cans may be removed without unscrewing any coupling.

Claim.—The removable portion G, in combination with the cocks E and sirup-cans D, all constructed and arranged so the cans can be removed without unscrewing any coupling, substantially as described.

135,618.—*Printing-Press.*—FRANKLIN L. BAILEY, Boston, and JOSEPH WATSON, Everett, Mass.

The depression of the foot-treadle raises the peculiarly-shaped lever, the back of which slides against the frame and throws out the toggle to which the oscillating platen is attached, and near the completion of its stroke presses a secondary lever against a bearing on the toggle-lever to finish the impression.

Claim.—The combination of the lever L, lifter D, the frame E with its inclined plane, against which the lifter D slides, the toggle T, the connecting-rods C C, and the vibrating platen P, substantially as described.

135,619.—*Warping-Machine.*—JOSEPH B. BANCROFT, Hopedale, Mass.

The distance between the attendant and the reed is lessened, thereby facilitating the process of piecing the broken threads. The ordinary guide-rollers are dispensed with and the measuring-roller is made to perform their function, the drop-wires being placed in front of the measuring-roller and a drop tension-roller between it and the reed.

Claim.—The measuring-roll C, the drop-wires or their box D, the slack-take-up roller E, and the reed or guide A, arranged in manner, relatively to each other, substantially as shown and described.

135,620.—*Railroad Gate.*—JOSEPH BRAMBEDARYER, Sr., Campbellstown, Pa.

The gate is operated by the car-wheel flanges through the intervention of a vertically-moving piece, curved arms, rock-shaft, roller-arm, and ring projecting from the pivoted gate-post. The hooks which hold and release the gate in its open and closed positions are also actuated by the same movement of the platform, through a crank-shaft and connecting-rods.

Claim.—1. A vertically-movable platform, B, which is supported upon the upper extremities of levers H H', and guided by loops B', in a structure, A, in combination with springs S', connecting-rods P, link E², and an arm, E', on a rock-shaft, E, the latter carrying an arm, *f*, which acts on a wing, *b*, of the gate C, substantially as described.

2. The hooked latch *a'* on post D², connected by a rod, G, crank *r*, and a rod, E, to lever E', in combination with the platform B and swinging gate C, substantially as described.

3. The hooked latch *a* on post D, connected to the rock-shaft E by means of a rod, F, and crank *h*, in combination with the mechanism described for opening and closing the gate C, substantially as set forth.

4. The beveled wing *b* on the pivoted post of the gate C, in combination with the anti-friction arm *f* on the rock-shaft E, substantially as and for the purposes set forth.

135,621.—*Heating-Stove.*—PHILO D. BECKWITH, Dowagiac, Mich.

The several sections are secured together by bolts or rivets.

Claim.—1. The section A and section B, constructed and secured together by means of bolts or rivets, and the internal flange *b*, substantially as described.

2. The sheet-metal section C fitted into the fire-pot section B and secured thereto by means of bolts or rivets, substantially as described.

3. The sheet-metal sections C and F secured together by means of a ring, E, and bolts or rivets, substantially as described.

4. The top plate or section G secured to the section F by means of lugs and bolts or rivets, as set forth.

135,622.—*Apple-Parer.*—GEORGE BEEBNER, Washington, Mo.

A knife-stock and cutter arranged with a spring passing through the connecting hollow shaft and attached on one of the uprights holding the gear, by which motion is imparted to the machine and to the opposite upright to hold the knife, and by which tension is given to the knife-stock to hold it to the fruit to be pared.

Claim.—A knife-stock consisting of the stock B, formed with a hollow support, *b*, inclosing a spring, C, and carrying a cutter-head, D, and knife E, all constructed to operate as and for the purpose set forth.

135,623.—*Wheel for Vehicles.*—ALBERT L. BLACKMAN, Crots Plains, Tenn.

My wheel can be repaired, the spokes be replaced, and the tire and spokes tightened at any place; the wheel can be taken down without taking the hub from the axle; the tire tightened without cutting; the hub refilled with spokes at will; or any spoke can be replaced without removing the tire or rim.

Claim.—1. Cast cylinder B in its peculiar construction, with the beveled or concave flange or disk E cast with it on its inner or larger end, in combination with the adjustable, beveled, or concaved flange or disk A, that screws on from the front or nut end of the hub, or their mechanical equivalents, the whole constructed and arranged substantially as and for the purposes set forth.

2. The spoke C, with its broad flaring end one way and wedge or key-stone shape the other, in combination with the cylinder B having the flange or disk E on its inner end, and the adjustable disk or flange A screwed on the outer end of cylinder B, or their mechanical equivalents, the whole constructed and arranged substantially as and for the purposes set forth.

135,624.—*Combined Gun-Sheet and Spade.*—WILLIAM E. BLAKE, New York, N. Y.

Claim.—1. A shovel or spade formed of the head and shoulder rest A of a gun-stock, substantially as and for the purpose herein-before set forth.

2. A twist or bend given to the neck B of a gun-stock, substantially as and for the purpose hereinbefore set forth.

135,626.—*Weft-Thread Knitting-Machine.*—CORNELIUS CALLAHAN, Chelsea, Mass., assignor to himself and EDWIN E. SIBLEY, same place.

Alternate needles are pushed outward, to permit the introduction of a weft-thread, by the projection near the upper end of the needle-cylinder, and are brought gradually into line as they approach the knitting-point by moving down a long incline, a projection on the front of alternate slide engaging a projection on the inside of the cam-cylinder.

Claim.—1. The needle-cylinder C having the projection *m* arranged upon it, as described, with reference to the slide-guiding grooves, in combination with the slides *g*, constructed substantially as described, and actuated by a cam-groove, whereby the alternate needles *i*, as they are raised, are thrown out of line with respect to the other needles, and may return again into line when lowered, substantially as set forth.

2. The incline or projection *q* on the inside of the cam-cylinder B, in combination with the needle-slides *g*, provided with inclines or projections *p* and actuated by a cam-groove, whereby the needles *i* are brought back into line with respect to the other needles, substantially as set forth.

3. The cylinder B having the groove *s* with the long gradual incline 17 18, in combination with the cylinder C having the projection *m* and the needle-slides *g*, whereby the needles *i* are brought gradually into line with respect to the other needles as they approach the knitting-point, substantially as set forth.

135,627.—*Weather-Strip.*—ISAAC CASE, Des Moines, Iowa.

The metallic strips composing the device are hinged together and attached to the door in the usual manner. The lever co-operates with the catch to hold the strip up when the door is opened, and is released by contact with the step *f* when the door is closed, allowing the strip to fall.

Claim.—The strips *a a* and *b b*, the catch *c*, the bent lever *d d*, and the step *f*, made, combined, and operated with a door, in the manner described, and for the purposes specified.

135,628.—*Handle for Saws.*—WILLIAM CLEMSON, Middletown, N. Y.

The handle is made adjustable on the pivot.

Claim.—The handle B *B'*, having screws *b b' b'*, in combination with the saw-blade A having the pivot-hole *a* and adjusting concentric slots or series of holes *a' a'*, all constructed and arranged to operate in the manner described.

135,629.—*Ice-Creeper.*—EBENEZER B. COLBY, Franklin, N. H.

A lock mechanism is secured to lips or flanges at right angles to each other, and may be attached to the under and inner sides of a boot or shoe heel by screws through the flanges. The bolt of the locking device is serrated at its outer end, and forms a creeper when thrown down by use of a key.

Claim.—In an ice-creeper, the combination of either or both the lips B C with the box or case A and the serrated spar D, provided with mechanism for operating it, as described.

135,630.—*Evaporating-Pan for Salt, Sugar, &c.*—LEFFERT R. CORNELL, Brooklyn, N. Y.

Claim.—1. An evaporating-pan made up of sections running transversely of the said pan and secured by bolts extending horizontally through ribs or their equivalent attached to the same, substantially as hereinbefore set forth, whereby the length of the pan may be increased or diminished by adding or removing intermal sections, substantially as described.

2. The combination of the sections and half sections A and B with the sections C in the manner described, whereby the said sections and half sections A and B are made to break joints with the sections C C, substantially as described.

3. The combination of the upper and lower sections and the bolts *i*, substantially as described, whereby the said upper and lower sections are firmly secured together without extending the said bolts through the upper sections.

4. Dividing the sections A, B, and C longitudinally and securing them together by flanges and horizontal bolts and flanges, substantially as described, whereby the size of the sections transversely of the pan is reduced and two separate steam-chambers longitudinally of the pan are formed, substantially as hereinbefore set forth.

135,631.—*Bed-Plate for Rag or Paper Engines.*—GEORGE A. COMEN, Leicester, Mass., assignor to himself, ANTHONY HANKEY, and JAMES E. JONES, same place.

The angle-plates are secured in parallel diagonal lines between the side strips.

Claim.—1. The combination, with the bars A B, of the diagonally-arranged metal angle-plates *a* and diagonally wooden strips *b*, both varying in length, and arranged relatively, substantially as shown and described.

2. A bed-plate for rag or paper engines constructed substantially as described, and as shown in Fig. 1 of the accompanying drawing.

135,632.—*Bleaching Buffed Sole-Leather.*—HARRISON W. COTTLE, Lynn, Mass.

Compound consists of saturated solution of hyposulphite of soda, commercial sulphurous acid, and alcohol, which is applied to the buffed leather by means of a sponge.

Claim.—1. The above-described means or process of treating sole-leather, the same consisting in buffing the tanned skin or sole-leather, and subsequently applying to the buffed surface thereof sulphurous acid, or the composition as described, in which such constitutes a material part.

2. The above-described composition for application to buffed tanned skins or sole-leather, as and for the purpose specified.

135,633.—*Steam-Radiator.*—LEWIS S. DANIELS, Foxborough, Mass.

Claim.—The radiator described, consisting of the vertical pipes A B united at the top by the pipe C and at the bottom by the pipe D, the pipe D being provided with the separating-diaphragm E provided at its lower edge with an opening, *e*, for the passage of the water.

135,634.—*Brush-Machine.*—MILES DILLON, Albany, N. Y., assignor to himself and JOHN B. ARMOUR, same place.

A table, with a suitable recess for the reception of the flat brush, is provided with suitable pins and guards to regulate the size of the brush; and also with a detachable leaf. Suspended above the table, in a suitable frame, is the sliding clamping piece that holds the brush in place. To this sliding piece is attached a supplementary piece provided with one or more awls or punches to perforate through the band and brush for the reception of the nails. An envelope is also used to hold the points of the bristles close together, so that the band can be slipped over toward the butts.

Claim.—1. The bristle-table, consisting of the parts A and A', so arranged that the portion A' will be rendered detachable from the portion A, in combination with the guard *b* and gage-pieces *c c*, substantially as and for the purpose set forth.

2. In combination with the table A A' and gage-pieces *c c*, the pin *z*, (one or more,) when arranged to be operated substantially as and for the purpose set forth.

3. The combination of the clamping-piece B with the table A and gage-pieces *c c*, substantially as and for the purpose set forth.

4. In combination with the table A A' and clamping-piece B, the envelope *e e*, when the said envelope is arranged to operate substantially as and for the purpose set forth.

5. The combination of the supplementary piece B' and awls or punches *p* (one or more) with the clamping-piece B and table A, substantially as and for the purpose set forth.

135,635.—*Paint-Brush.*—MILES DILLON, Albany, N. Y., assignor to himself and JOHN B. ARMOUR, same place.

The butt or head of the handle has radial projections, which aid to hold the bristles in position.

Claim.—The arrangement of the several radial feathers *a a* or *a' a'* around the head of the handle of a brush or sash-tool, substantially as and for the purpose set forth.

135,636.—*Show-Card.*—ALEXANDER H. DIXON, Toronto, Canada.

Mounts a fabric on paper, cuts the letters out, and transfers them to card-board.

Claim.—A show-card formed of letters cut from fabric mounted on paper and transferred to pasteboard, as a new article of manufacture.

135,637.—*Machine for Shaving Hoops.*—JAMES A. DOUGLASS and JOHN WAGNER, Chest Springs, Pa.; said DOUGLASS assignor to said WAGNER.

Two revolving cutting-cylinders are placed near each other so as to score the wood to a proper depth, which is afterward removed by shaving-knives.

Claim.—1. The combination of a pair of cutting and feed rolls with planes for shaving the flat surfaces of the hoop, and pressure-rolls used in connection with said planes, all arranged and operating substantially as herein described.

2. The combination of the cutting-rolls, upper and lower sets of plane-bits, pressure-rolls, and edgers, all arranged in a suitable frame-work, and operating substantially as herein described.

135,638.—*Truss.*—CHARLES H. EGGLESTON, Marshall, Mich.

An exterior hollow cup has a small pad upon its interior, secured by a ball-and-socket joint. A clip is arranged upon the outside of the exterior cup, and through this a flat steel spring is passed, to the ends of which a band to encircle the body is secured. A single screw holds all the parts together except the flexible band.

Claim.—1. A truss-pad, composed of a cup or shell, *a*, and a ball, *b*, secured therein by means of a ball-and-socket joint, substantially as herein described.

2. The combination of a cup, *a*, ball *b*, clasp *d*, and plate *g*, when all said parts are secured together by means of a single screw or shank, substantially as herein described.

3. The combination of the pad *a b*, spring *e*, straps *e f*, and the buckles, clasp *d*, slotted plate *g*, and fastening screw or shank for securing the parts together, substantially as herein specified.

135,639.—*Metallurgic Gas-Furnace.*—HIRAM FRANK, Pittsburg, Pa.

Claim.—1. The tile *d d*, placed in the mouth of the furnace for the purpose of dividing the inflowing volume of gas and air into a number of smaller currents, for the purpose of causing their more intimate admixture prior to their entrance into the combustion chamber or bed, substantially as described.

2. The fire-bridge *f*, having a contracted or reduced opening, *g*, in combination with the tile *d d*, for the purpose of causing the more intimate admixture of the inflowing air and gas, substantially as described.

3. The fire-bridge *f*, made removable, substantially as and for the purposes described.

135,640.—*Regenerator-Furnace.*—HIRAM FRANK, Pittsburg, Pa.

The bricks of which the furnace-walls are constructed are made large, so that a multiplicity of joints is avoided, obviating the tendency to leak and the admixture of air and gas. The vertical and transverse flues are formed through the bricks.

Claim.—1. The walls A, constructed, as described, with vertical passages *a* and transverse passages *b*, such passages being made through the brick or tile which compose the walls.

2. The heating-chamber constructed with alternate walls A and chambers B, the former having vertical passages *a* extending between the chamber *c* and the fire-chamber and stack for the passage of the heated gases, and transverse passages *b* extending between the chambers B for the passage of the air to be heated, such passages being made through the brick or tile which compose the walls, substantially as described.

135,641.—*Rotary Sail.*—JULIO E. GARCIA, New York, N. Y.

Longitudinal bars of the frames play in grooved slotted segments that are attached to the shaft or a disk mounted thereon. In these slotted guides the frames are allowed free play in such a manner that the two sails pertaining to each arm will, when the wind strikes them on the inner or hollow side, be spread apart to offer a larger surface to the wind.

Claim.—The frames D D, provided with longitudinal bars *e e*, movable in slots of segments *f*, as and for the purpose described.

135,642.—*Machine for Cutting Stones.*—ALONZO S. GEAR, Boston, Mass.

The rotary wedge or disk splits and chips off any projections in the stone, which the diamond head may cut beneath.

Claim.—1. The above-described rotary cutter-head studded with diamonds, in combination with adjustable mechanism for moving the same vertically and laterally and a movable carrying-bed for feeding the stone to be cut, substantially as set forth.

2. The rotary cutter-head, composed of shaft G, hub H, and sectional rim-pieces P P P studded with diamonds, having a beveled surface, and connected to the hub by means of set-screws or their equivalents, substantially in the manner described, as and for the purposes set forth.

3. The chilled cast-iron rotary wedge or disk K, in combination with a rotary cutter-head studded with diamonds, substantially as and for the purposes set forth.

135,643.—*Sofa-Bedstead.*—JOSEPH B. HARLOW, Portland, Me.

The head-rests are hinged together and also to the stationary and folding frames. The position of the head-rest is regulated by a ratchet-bar operated by a cord. On the front rail is a sliding slotted bar, which has racks on its lower edge which engage with the notched top of the supporters or legs.

Claim.—1. The combination, in a sofa-bedstead, of the head-rest *r* and *b*, hinges *c c* and *c' c'*, ratchet *g*, and cord *q* with the mattress-frames, whose side-rails are shown at *e* and *e'*, when used in the manner and for the purposes as set forth.

2. The combination of the rail *a*, bar *w* having the slots *s s* and racks *k k*, with the supporters *i i* and mutilated gears *j j*, all as set forth.

135,644.—*Tool for Cutting Pipes.*—CORNELIUS E. HAYNES, Boston, assignor to himself and ISAAC GARDNER, 2d, Hingham, Mass.

Claim.—1. The cylinder B, with its cutters *g* or screw-dies *m*, and ratchet-wheel *n*, in combination with the hand-lever or holder A and pawl *b*, by which it is revolved, operating substantially in the manner and for the purpose described.

2. The cylinder B, constructed with a removable portion, *k*, in combination with the cutters *g* or screw-dies *m*, substantially as and for the purpose set forth.

3. The toothed ring E on the cylinder B, in combination with the gears C and cutters *g* or screw-dies *m*, so arranged that the revolution of the ring upon the cylinder will cause the cutters or dies to advance or recede, substantially as and for the purpose described.

4. The hand-lever or holder A, with its stationary portion *e* and movable portion *d* hinged thereto, in combination with the clamping-ring *c*, substantially as and for the purpose described.

135,645.—*Steam-Radiator.*—ENOCH L. HINCKLEY, Bath, Me.

In the bottom plate are holes directly opposite the mouths of the pipes. Each hole is provided with a screw plug or stopper, and thus the interior of the radiator can be easily reached for repair.

Claim.—The improved heat-radiator, composed of the hollow and partitioned base A, one or more series of tubes, C, and the bottom plate B, provided with the screw-holes *d* and plugs *f*, all arranged and combined substantially as specified.

135,646.—*Process for Converting Cast-Iron Articles into Steel.*—RICHARD A. JACKSON, Pittsburg, assignor to ISAAC CHARLES, Allegheny, Pa., and JAMES J. JOHNSTON, Columbiana, Ohio; said JOHNSTON assignor to WILLIAM D. EISENHART, Allegheny, Pa.

The articles are embedded within a furnace in a composition of charcoal, tan-bark, oxide of iron, and unburned limestone, and subjected to a process of cementation.

Claim.—The union of tan-bark and unburned limestone in compositions of the nature herein described, for the purpose set forth.

135,647.—*Apparatus for the Manufacture of Coal-Gas.*—EDWARD JONES, Boston, Mass.

Each pair of retorts are connected together by a pipe or channel within the furnace in such a manner that the gas or vapor from the most heavily-charged retorts is conducted into the less charged and consequently warmer retort, where it is superheated, and the coal-tar that follows with it from the warmer retort is subjected to additional heat, and the amount of illuminating-gas thereby greatly increased.

Claim.—1. The improved process for manufacturing coal-gas, as herein described, consisting in forcing the gas produced in one retort through one or more retorts without leaving the furnace, in a manner set forth.

2. A connecting-pipe or channel, *c*, or its equivalent, in the furnace between two or more retorts for the purpose of forcing the gas from one retort to another, as herein shown and described.

3. The process, as herein described, of charging a pair of retorts with unequal charges and forcing the gas from the heavier-charged retort into the lighter-charged and warmer retort without leaving the furnace, in a manner set forth.

135,648.—*Tobacco-Press.*—DUANE LA DU, Warner, assignor of one-half his right to JOHN P. HIER, Syracuse, N. Y.

The box on wheels has a shaft secured below, to the extremity of which a ratchet and pawl are attached. The shaft is connected with a bar above the box by a chain, which, as it is wound around the lower shaft, carries the upper bar with it and thereby depresses the follower.

Claim.—A tobacco-press, made in the form and operated substantially as described.

135,649.—*Tar or Petroleum Burner.*—JOHN LAW, London, Canada.

A hollow metallic body has four nozzles, to one of which is attached a pipe having a tube within it and screwed into a diaphragm in the center of the body, forming two chambers, the tar entering the central tube while the steam passes around it, both issuing together from a tapering nozzle onto a spreader, whereby they are distributed.

Claim.—A tar or petroleum burner, consisting of the body C with chambers *c c'*, in combination with tubes A and B, couplings E E', and spreader G, all being constructed and operating as described.

135,650.—*Puddling-Furnace.*—EVAN LLOYD, Pittsburg, Pa.

Beneath the hearth-plate is an air-passage, extending from the ash-pit to and communicating with the stack, whereby the base of the stack is protected and the gases from the hearth consumed.

Claim.—The air-conduit G, arranged beneath the hearth and communicating with the chimney or stack at the base thereof, for the purposes and in the manner substantially as described.

135,651.—*Lunch-Box.*—CHARLES E. LOCKWOOD, Bridgeport, Conn.

Claim.—A lunch or variety box with casing constructed as shown, and arranged with sliding drawers and canteen A B C D, and the grooved flange *b*, the ribbed cover or front E, all arranged as described, and for the purpose specified.

135,652.—*Loom-Shuttle.*—THOMAS MARTIN, Chelsea, Mass.

Claim.—The improved shuttle for weaving narrow fabrics having an open back to receive the quill-hook of the race, a slot through the frame of sufficient length to allow the yarn to extend in a straight line from the extremities of the quill to the delivery-eyelet, and the spring *a* and finger *b*, the whole constructed and arranged together, as specified.

135,653.—*Revolving Paddle.*—JOHN W. MCDERMOTT, New York, N. Y.

A revolving paddle is caused to slide in a slot in the axis of its driving-shaft, during the revolution of said shaft, by means of guides curved eccentrically to the latter, whereby the paddle is caused to strike the water at the proper point of the revolution and to recede into the shaft when not required to act upon the water.

Claim.—1. The bucket or paddle E, freely sliding in a mortise that goes transversely through the shaft D, substantially as herein described.

2. The sliding buckets or paddles E having the end friction-rollers *e e* and freely sliding in transverse mortise in shaft D, in combination with the guide-rods F, substantially as and for the purpose described.

3. The combination of the shaft D having a transverse mortise therein, sliding bucket E, and friction-rollers *e' e''*, substantially as herein described.

135,654.—*Gang-Plow.*—JOHN K. MCLENNAN, Elmira, Ill.

The plow-frame is vertically adjustable with reference to the axle by means of levers pivoted to the axle and having bearings on rods attached to the frame. The forward part of the frame is tilted by means of the foot-board or by a lever.

Claim.—1. The bent slotted levers D D, with their adjusting-detents G G, or equivalents, attached to the axle B, as constructed, in combination with their horizontal bars *k k*, attached to the plow-beams A A, substantially as described.

2. The plow-beams A A, when constructed as described, and carrying the axle-staples *i i*, and pivoted at the front to the heel of the tongue, and connected with the pivoted foot-board E; stirrup I I, connecting the latter to the heel of the tongue; the lever I, and

connecting-bar *r* pivoted to foot-board E, combined and arranged to operate in conjunction with the levers D D and supporting-rods *h h* of the plow-beams, as described.

135,655.—*Table.*—JACOB C. MILLER and EDSON S. ARMSTRONG, Sunbury, Ohio.

In the lower end of the corner-post is inserted a tubular casting having two vertical grooves formed on its inside and opposite each other. A short distance below the upper end of the casting are formed two inclines, each extending from one groove to the other. A stem or tenon is formed on the upper end of the leg, having a pin passing through it and projecting at both sides. The projecting pin passes up the grooves and inclines and wedges tightly on the inside of the casting, thus securing the leg to the post.

Claim.—The table-leg B formed with a shoulder at the top, and the extension D formed upon the leg and provided with the pin *s* and used in connection with the casting C and post A, all constructed and arranged for operation, as and for the purpose specified.

135,656.—*Device for Discharging Bilge-Water.*—JOHN A. MILLER, Paducah, Ky., assignor of one-half his right to HEZEKIAH P. MILLER, same place.

The bilge-water is drawn from a vessel of light draft by the tendency to a void created behind a projecting tube by rapid movement of the boat, and the discharge port and hole in the bottom of the vessel is securely closed against the access of water, mud, or sand by the raising or withdrawal of said tube.

Claim.—The drain-off pump, composed of the fixed cylinder B having inlet-hole *b'*, inner sliding cylinder C with inlet-hole *c*, discharge-hole *c'*, and packing *c''*, when constructed to operate in the manner and for the purpose substantially as described.

135,657.—*Martingale.*—ROBERT R. MILLER, Southington, Conn., assignor to himself and J. B. SAVAGE, same place.

Claim.—As an article of manufacture, a martingale formed from wire spiral springs, constructed substantially as described.

135,658.—*Stump-Extractor.*—CONRAD MÖRCHEN and PETER DOERFER, Eaton, Wis.

Lower the lever to permit securing the hooks under the stump; then take hold of the ends of lever and tilt one end down, and, as the standard near the other end rises put in one of the pins; then tilt the other end down, and as the other standard rises shift the pin down into the hole below, and so on alternately till the stump is raised out of the ground.

Claim.—The frame A with the curved iron-plate attachment D, in combination with the standards D', levers C H, link F, and hooks G, all constructed, arranged, and operated as described.

135,659.—*Straw-Feeding Attachment for Furnaces.*—DAVID MOREY, Watsonville, Cal.

Claim.—1. In combination, with a steam-boiler furnace, the detachable feeding-box B having the revolving partition C and hinged spring section *g*, substantially as and for the purpose set forth.

2. In combination with the feeding-box, the revolving partition C, elliptical cams *e*, and oppositely-acting springs *f f*, or equivalents, substantially as and for the purpose above described.

135,660.—*Sleigh.*—SANDERS MORRILL, Vienna, Me.

Claim.—The elastic steel brace, in combination with and secured to the standards, bar, and runners, substantially as herein described.

135,661.—*Broom-Head.*—DENNIS J. OWEN and JAMES G. BEYDLER, Springville, Pa.

A clamp constructed with a shank, diverging arms, and curved jaws, formed from one piece of metal, by which, with the aid of the spring in the shank and arms, the brush is held and the head covered with India rubber or leather.

Claim.—The self-fastening clamp, consisting of the shank A, diverging spring-arms B B, and curved jaws C C formed in one piece, and pocket D, all constructed and arranged substantially as and for the purpose specified.

135,662.—*Machine for Sewing Books.*—CHARLES H. PALMER, New York, N. Y., assignor to THE PAMPHLET-STITCHING MACHINE COMPANY, same place.

The signature, held between two slotted clamping-plates, is moved by them through shafts, connecting-levers, and the Geneva stop-machine intermittently under the needle of an ordinary sewing-machine, the upper plate, upon the completion of the sewing, being released from cam-pressure and raised by spring, a presser-foot operated by suitable cam holding it in contact with bed of machine during return movement of clamps. Two signatures can be alternately sewed, (upon the forward and backward movements of the clamps,) being separated by guides, one of which has a knife-edge to cut the thread, said clamps being moved longitudinally to place them into the path of the needle.

Claim.—1. In combination with a sewing-machine and suitable devices for holding the books, the slow and intermittently moving wheel E, controlled by the crank *e* and Geneva stop formed by the rotation of the crank and its attachments to the wheel, as herein specified.

2. The two parallel grooves in the periphery of the slow-wheel E, with the switch G, pin F, and connected shaft D^2 and carrier D, arranged for joint operation to move the carrier and the supported books outward and inward at each operation, as specified.

3. In combination with a sewing-machine and a carrier, D, operated as specified, the holding-plate K, raised at intervals and pressed down firmly upon the books during the sewing operation, substantially as herein specified.

4. The presser-foot N, in combination with mechanism, substantially as shown, by which it is pressed downward by a positive motion during the return motion of the carrier D, so as to hold the book between itself and the bed A, and cause it to be clamped by the next action of the clamping-plate K in a new position ready to present the thread to the knife, and by the succeeding movement free it from the machine, as specified.

5. The knife d^3, in combination with clamp D and K, as specified, so as to perform the double functions of a partition-piece to adjust the position of the books on each side, and of a knife to divide the thread which connects them, substantially as herein specified.

6. In combination with a sewing-machine having a holder-plate K, operated as shown, and adapted to hold and present books to the sewing-machine mechanism, as specified, the gage R with its shoulders R^1 R^2 and bend between them, provided with a yielding spring, *r*, to allow a slight backward motion of the carrier and of the books carried thereon, all as herein specified.

135,663.—*Metallic Packing for Piston-Rods, &c.*—FRANK W. PETTEE, Boston, Mass., assignor of one-half his right to WILLIAM P. WELCH and ALBION CHIPMAN, same place.

Segmental rings provided with ears are held together and forced against the rod radially by springs on bolts which pass through the ears, and vertically by springs on a holding device on top and bottom plates.

Claim.—1. The combination of the segments L with the ears *l*, screw N, and spring O, operating substantially as described, and for the purpose set forth.

2. The combination of the segments L with the blocks P, substantially as described, and for the purpose set forth.

3. The combination of the plates H and D with the segment-rings L M and holding device F E E H, substantially as described, and for the purpose set forth.

135,664.—*Rotary Cultivator.*—CHARLES N. POUNDSTONE, Livonia, Ill.

A common standard extends downward from the cultivator-beam. The lower end is provided with a swivel-head, upon which are placed four slotted arms extending horizontally. Adjustable teeth are set in the slots at a greater or less distance from the center of motion. The swivel-head can be turned to the right or left inclination and secured. The teeth can thus be caused to fit an inclined surface.

Claim.—1. The wheel D having arms *e* provided with slots *g*, in combination with teeth *f*, so as to render the latter adjustable, substantially as and for the purpose set forth.

2. The spindle *d* with shoe *a*, provided with pivotal rib *z* and slot *k*, in combination with wheel D, bolt *c*, and stem C, substantially as and for the purpose set forth.

135,665.—*Lamp-Chimney Cleaner.*—HENRY W. PROUTY, Boston, Mass.

A handle constructed with its end or head in three parts, two with tenons fitted to a ring which serves to give form to the rubber band, which is held in position by shoulders resting on the ring, which constitutes the device claimed.

Claim.—The above-described device, consisting of the stock or handle A B C and the rubber cylinder or elastic band D, combined and arranged as shown and described, and so as to operate as and for the purpose set forth.

135,666.—*Apparatus for the Manufacture of Gas from Hydrocarbons.*—JAMES RIGBY, Portsmouth, Ohio.

Paraffine or other hydrocarbon flows into a triangular retort set in the wheeled furnace, which is lined with tiles.

Claim.—1. A retort constructed with equal sides and adapted to present either side to the action of the flames, as described.

2. The retort D having the centrally-located pipe d^1 and openings in each angle from the pipe d^1, as described.

3. The combination of the furnace A, constructed as described, with the changeable retort D, as described.

4. The combination of the opening in the top, the furnace, the damper, and the chimney-base, as described, for the purpose of consuming smoke.

5. The combination of the furnace, made movable by wheels, as described, with the stationary washing-chamber, as and for the purpose set forth.

6. The combination of the retort D with the pipe E having the opening *e*, the pipe and retort being located on the same horizontal plane, as described.

7. The purifier, constructed and arranged as described.

8. The combination of the furnace, the retort, the supply-pipe, the connecting-pipes, the washing-chamber, and the paraffine, as described.

135,667.—*Railroad Track.*—ALEXANDER D. ROCK, Hamilton, New.

The inverted bowl-shaped bearings and jointed ties are combined with diagonal iron braces to form an improved iron bed for railways.

Claim.—The rail and bearing A, in combination with the hinged bar *b* and braces *c c*, substantially as described, and for the purpose set forth.

135,668.—*Composition for Coating Iron and other Metals.*—FREDERICK J. SEIBOLD, Chicago, Ill.

Claim.—A compound formed of asphaltum or pine-tar, sulphur, plumbago, and carbonate of lime, with or without sand, and in about the proportions specified.

135,669.—*Windmill.*—GEORGE SHAVER, Freeport, Ill.

A cranked wind-wheel shaft is arranged eccentric to the vertical axis of the post, and has its bearings on arms which connect with a cap, which rises and descends as the wind-wheel edges more or less to the wind.

Claim.—1. The cranked wind-wheel shaft C, arranged eccentric to the vertical axis of the post A, and having its bearings on arms *b b* of a cap, B, which latter is caused to rise and descend as the wind-wheel edges more or less to the wind, substantially as described.

2. The vibrating arm D, having the rod N connected to it and supported by the vertically-movable cap B, substantially as described.

3. The vane-arm G', radiating from an enlargement, *v*, on a tube, *m*, in combination with the vertically-movable cap B supporting the wind-wheel shaft, substantially as described.

4. The rod *f*, connected to the vane-stock G and to the arm D' of cap B, as described, in combination with the drawing-down connections *g' h*, substantially as set forth.

5. The vertically-sliding (but not rotating) tube *t* and swivel *s*, receiving through them the rod N and applied to the tube *n* and tongued plate *t*, substantially as described.

135,670.—*Reciprocating Steam-Engine.*—WILLIAM SIMPSON and ALFRED GARDNER, Ilford, England.

Piston-valves of different sizes are arranged on each side of the cylinder, the small one being the induction and the large one the eduction. A still smaller equilibrium-valve is connected with the main steam or the condenser and communicates by small pipes above and below with the inlet-valve. Steam being admitted at full pressure to the cylinder is cut off by the small equilibrium-valve, while the exhaust-valve remains open during the entire length of the stroke.

Claim.—The combination, with the cylinder of a steam-engine, of the inlet and outlet valves and the equilibrium-valve, all constructed and arranged substantially as described, for the purpose set forth.

135,671.—*Breech-Loading Fire-Arm.*—CHRISTOPHER M. SPENCER, Hartford, Conn.

Claim.—1. The combination, substantially as shown, of breech-block A, lever-guard B, and firing-pin *p*, whereby the firing-pin is withdrawn and the hammer started in the act of opening the breech, as set forth.

2. The combination, substantially as shown, of the breech-block A, lever-guard B, firing-pin *p*, and cam-surface *g*, whereby the firing-pin is withdrawn and the hammer started and continued to half-cock in the act of opening the breech, as set forth.

135,672.—*Candying-Machine.*—FREDERICK W. CHR. SPIESS, New York, N. Y.

Claim.—The combination of the frame A with two or more dragée or candying machines, together with the shaft C, which latter is provided with the pulley B, worms *w w'*, and clutches *v v'*, substantially as and for the purpose hereinbefore set forth.

135,673.—*Still for Petroleum and other Liquids.*—AUGUSTUS H. TAIT, Jersey City, N. J., and JOSEPH W. AVIS, Matteawan, N. Y.; said TAIT assignor to said AVIS.

Claim.—1. The arrangement in a still of partitions made in sections, the lower sections being made movable by means of hinge joints or slides, or otherwise, substantially as described.

2. The combination of shafts, operated by chains or other means on the outside of the still, with the vapor-valves in the stationary sections of the partitions of a still, substantially as set forth.

3. A tar-condenser communicating directly with the still, in combination with a valve, H, and cleaning-pipe *f*, substantially as described.

4. The arrangement of a check or stop valve inside the still on the mouth of the tar-discharge pipe, leading from the still to the tar-condenser, said valve being operated by a hand-wheel or other means from the outside of the still, substantially as set forth.

5. The arrangement of an index for the purpose of determining the position of the valve leading to the tar-discharge pipe, substantially in the manner shown and described.

6. A circular still divided in compartments by means of radiating partitions provided with apertures situated alternately at the inner and outer ends of said partitions, to cause the liquid to flow through the still in a zigzag course, substantially as set forth.

7. The arrangement of steam-jets, carrying wet or superheated steam and acting on the passages in the partitions of the still, substantially as described.

135,674.—*Furnace for Heating Metallic Bars, Tubes, &c.*—STEPHEN P. M. TASKER, Philadelphia, Pa.

The arch, having downward projections, is sprung over the hearth so as to be supported by the outer walls of the furnace, leaving the hearth unobstructed.

Claim.—The arch C, having one or more downward projections, *a*, which separate the heating-chambers, there being an open space beneath each projection communicating with the chamber to admit of the material of one chamber being removed to the other without removing it from the hearth, substantially as described.

135,675.—*Grain-Cleaning Machine.*—GARDNER E. THEOOP, Syracuse, N. Y.

A perforated case in a brush-machine is held in place over a series of concentric hoops at top and bottom. As the brush wears off hoops are removed, allowing the case to be brought nearer to the brush. Auxiliary fan on cylinder-shaft below and separated from cleaning-chamber, all the blast therefrom being forced up through dust-chamber.

Claim.—1. In combination with the cleaning apparatus, the adjustable case described, consisting of the heads A, case *a*, and rings *b*, together with the clamping devices *c d* or their equivalent, all constructed and for operation substantially as described.

2. The fan-chamber C disconnected from the cleaning-chamber, as herein set forth, and having the openings at *n n*, and the feathered fan-wheel *f*, having its blades constructed as shown, so combined that the entire blast is directed upward through the openings *n n* into the annular chamber and air-flues, all for the purposes described.

135,676.—*Device for Straightening Railroad Rails.*—THOMAS J. TODD, Somerville, N. J.

The two jaws grasping the head of a railroad rail are connected with the horizontal lever or handle by means of toggles, through which they are operated, (opened and closed.) The jaws are kept perpendicular by means of a toggle, which connects them with the handle. The rail to be bent is placed under the lever near the jaws, and by pressing down upon the end of said lever the rail can be straightened at any point desired.

Claim.—The combination of the lever, the toggle-jointed clamping-jaws, and links to connect the jaws with the lever so as to hold the jaws in proper position to be applied to their work, the parts being constructed substantially as described.

135,677.—*Umbrella-Runner.*—SIGOURNEY WALES, New York, N. Y.

The runner is locked by a catch-lever taking into a groove in the stick. Above the runner is a disk having an eccentric slot with an opening at the end, in which a tongue upon the lever works, being held in the opening by a spiral spring bearing upon the disk above. To unlock the runner, the disk is pressed up against the spring, releasing the tongue from the opening; the disk is turned, by which the tongue is carried along the eccentric slot, thereby drawing the lever from the groove and allowing the runner to move on the stick.

Claim.—1. The construction of the runner with A the catch or lever B having the tongue I, and E the revolving disk, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the runner, of E the disk, having a longitudinal and revolving action, with H the spiral spring, substantially as and for the purpose hereinbefore set forth.

3. F, the eccentric slot or groove in E the disk, substantially as and for the purpose hereinbefore set forth.

4. The opening or stop G in the disk E, substantially as and for the purpose hereinbefore set forth.

5. The combination, with the runner, of B the catch or lever, substantially as and for the purpose hereinbefore set forth.

135,678.—*Band-Cutter's Platform for Threshing-Machines.*—JAMES ALOYSIUS WALSH, Mount Hope, Wis.

A band-cutter's platform which can be attached to either side of the feeder's platform of a threshing-machine.

Claim.—An adjustable band-cutter's platform, C, with the pole *a*, the rods or chains *b b*, and the pins *c c*, as herein described, for use in connection with the feeder's platform of a thrashing-machine.

135,679.—*Mop-Head.*—GEORGE WASHINGTON WHEAT, Philippsburg, Pa.

A mop-head has a cross-bar, in the center of which is a tenoned joint, which is held in an extended position, to connect with the teeth of the frame by a spring located in the enlargement of the cross-bar.

Claim.—The combination of the frame A C D, having teeth *a*, and the jointed movable cross-bar G, all constructed and arranged substantially as and for the purposes herein set forth.

135,680.—*Apparatus for Filling Oil-Cans.*—ELI F. WILDER, Lowell, Mass.

Claim.—1. An emptying-pump, C, in combination with the filling-pump B, substantially as and for the purpose herein specified.

2. In combination with the pumps B C, the pinion *e* and racks *b a*, or their equivalent, for causing the movements of the two pump-pistons to alternate with each other, substantially as and for the purpose herein specified.

3. The three-way cock *w*, in combination with the pumps B C and their single nozzle *p*, substantially as and for the purpose herein specified.

135,681.—*Pegging-Machine for Boots and Shoes.*—ERASTUS WOODWARD, Charlestown, Mass., assignor to ASAHEL WHEELER, trustee for THE COMPOSITE CABLE-SCREW-WIRE ASSOCIATION.

Mechanism is provided for perforating the stock, feeding, cutting, and driving the wire all in the same parallel direction without changing the relative positions of the awl, wire, and driver to each other. Mechanism is also provided for riveting the driven nail from below.

Claim.—1. A pegging-machine constructed in the manner described, so as to first punch the hole in the stock, then feed the wire or wire-like material, and then cut it off, and lastly to drive it through a stationary throat-plate or driving-tube, all in the same parallel direction.

2. A pegging-machine in which the peg or pin is cut off from a wire or wire-like material and driven in the same location without changing the relative position of the remaining wire, awl, and driver to each other.

3. A pegging-machine in which the driver is operated above and the riveter below the stock.

4. The work-supporting presser-foot 13, in combination with the mechanism for operating the riveter 18 from below the stock.

5. The arrangement and use of a cam, 38, connecting-rod 40, cam-lever 41, sleeve 42, rod 30, lever 15, connection 17, cylinder 11, and presser-foot 13, or their equivalents, for the purpose of pressing the stock together and holding it till the peg or pin is driven and riveted.

6. The arrangement of the movable sleeve 2, pin 48, lever 47, rock-shaft 46 with its lever, cam 34, connection 33, rod 30, spring 36, treadle-lever 15, connection 17, and the cylinder 11 with the presser-foot 13, or their equivalents, for the partial regulation of the length of the peg, as fully set forth.

7. In combination, the regulating sleeve 2 and its connecting parts the presser-foot 13 and its connecting parts to operate the rod 30, and the rocking-cam 34 with its groove Y, as cut to move the peg-regulating sleeve 2 suddenly upward at the longest peg, and to allow the changing of stock without stopping the machine, for the purpose of preventing the waste of pegs, as fully shown and described.

8. In combination with the rocking awl, feed, and driver bars p, q, and r, and their registering projections p', q'', and r'', the arched frame 63, provided with a tapering groove, q''', as and for the purpose set forth.

9. The feed arrangement for the stock, consisting in the support 50, friction-wheel 53, and strap 59, shield-wheels 60 61, ratchet-wheel 56, and pawl-lever 57, operated in the manner and for the purpose as set forth and described.

10. In combination, the feed-tube u, sleeve t, connection w, knee-lever y, regulating-sleeve or incline 2, the operating-rod g, and the locking lever 3, as and for the purpose shown and described.

11. The mechanism for operating the riveter positively, consisting of the cam 29, lever 28, rod 27, universally-jointed levers 23 and 26, shaft 25, rod 12, arch 20, roller 19, and riveter 18, or their equivalents, as and for the purpose set forth.

12. In combination, the stationary axis i, operating-bar g, movable cylinder A with the awl, feed, and driver bars p, q, and r, and the knife-levers 5 5, arranged and operated in the manner as herein shown and described.

13. A swinging presser-foot or work-supporting point, 13, as constructed to swing in any direction around the upper end as a center for the purpose of pegging a boot or shoe, as herein shown and described.

135,682.—*Portable Cooking Apparatus.*—GEORGE YINGER, Harrisburg, Pa.

Claim.—1. The skirting W, in combination with boiler D and conducting-tubes m n p, when constructed and arranged to operate as and for the purpose herein set forth.

2. The grouped side arrangement of the tubes m n p, in combination with the stew-vessels A B C, as and for the purpose herein set forth.

3. The perforated, adjustable, detachable elbow-joints L L^1 L^2, in combination with the tubes m n p and the vessels A B C, when made to operate substantially as herein set forth.

4. The benches G G', in combination with the tubes m n p, as and for the purpose herein set forth.

135,683.—*Dumping-Platform.*—JESSE ATKINSON, Cameron, Tex.

Its two sections are held horizontally by a single support, the same being removable by means of levers and chains, in connection with a shaft, allowing the load upon the platform to be dumped.

Claim.—The combination of the springs F and their chains, the levers C, springs f, prongs d d', chains e, and shaft D with the hinged doors or sections B B, as and for the purpose specified.

135,684.—*Handle for Files.*—HENRY KNIGHT AUSTIN, Charlestown, Mass., assignor to himself and GEORGE V. MILLETT, same place.

The clamp-bar rests on the surface of the file, but the jaws that grasp the edges do not reach to the opposite surface; thus the clamp may be placed on the file at any point and yet leave the operative surface of the file free of obstruction.

Claim.—The combination, with handle B and post or arm c, of the head A provided with a stationary jaw a, and a sliding jaw, b, operated by screw d, the said jaws being provided with working-faces parallel with each other and adapted to grasp the opposite edges of the file proper, and being of a depth less than the thickness of the file, so that they cannot extend below the working-surface of the latter, as set forth.

135,685.—*Tree-Protector.*—CHARLES AYERS, Farmington Centre, Wis.

Tree-protector constructed of wire-gauze with ribs to support them a little distance from the tree. The protectors are held in position by elastic fastening, which permits of expansion without leaving an opening.

Claim.—A wire gauze wrapper provided with ribs G, as and for the purpose described.

135,686.—*Car-Coupling.*—CASPER S. BIGLER, Harrisburg, Pa.

To couple, the pin is raised and the link is drawn forward in the slot and thrown over the hook of the adjacent car, and is then drawn back so that the pin may be inserted.

Claim.—The combination of the link B and tapering pin C, whether operated by a screw or lever, with the hook A slotted at a', substantially as herein shown and described, and for the purpose set forth.

135,687.—*Reed-Organ.*—RILEY BURDETT, Erie, Pa.

To the ordinary reed-mute or stop-valve is hinged an auxiliary valve, which qualifies the effect of the mute or not, as desired.

Claim.—The veil B, in combination with the reed-mute to allow of a partial or full opening thereof, substantially as described.

135,688.—*Beer-Cooler.*—JOHN CHANDLESS, New York, N. Y.

Claim.—The zigzag funnel-topped pipe a B, provided with the air-escape d, combined with and applied to the refrigerator A, as and for the purpose set forth.

135,689.—*Hub and Axle for Vehicles.*—MARVIN CHAFIN, Erie, Pa.

To the box is affixed a flange, which forms a groove between it and the end of the box and hub; or a heavy band screwed on the end of the hub may be used for the same purpose; or the attachment may be made on the rim of the box without coming up to the full size of the hub.

Claim.—The bisected cylinder D, provided with screw-threads c, shoulder and groove e, and flange f, and used in combination with the flange C on a hub, collar b on an axle, and the nut G, the axle E and box B extending but partially through the hub A, all substantially as and for the purpose specified.

135,690.—*Reversible Magnet.*—JOHN L. CHURCHILL, Nokomis, Ill.

A series of small steel-bar magnets, pivoted at their centers to a suitable iron frame, are so geared together that they may be rotated in fixed relation to each other, and thus by the constant sum of their polarities form a compound magnet with reversible poles.

Claim.—1. The frame A, containing the end poles a a with the extension plates g g, and the arbors b b with the reversible magnets c c, all arranged to operate substantially as herein set forth and specified.

2. The combination of the armature-plates B B with the rotary magnets c c in the frame A, as specified.

135,691.—*Harvester-Rake.*—JAMES COLLINS, Guelph, Canada.

The rake-arm is connected to its supporting-standard by a swivel-joint, laterally adjustable, so that the plane of the rake, on entering the platform, may be parallel with the finger-bar or at an angle therein. The rake is operated by a horizontally-revolving bar provided with a vertical rod, which passes through a slot in the inclined rake-arm so that the revolving rod will vibrate the rake, and an adjustable nut on the rod will lift the rake above the platform at each return stroke.

Claim.—1. The combination of the rake-head, the upwardly-inclined slotted rake-arm, the swivel-joint, the bracket, the continuously-revolving arm, and the vertical rod that passes through the slot in the rake-arm and serves to operate it, substantially as described.

2. The combination of the rake-head, the slotted rake-arm, the bracket, the revolving rod, and the adjustable collar on the rod for regulating the height that the rake-head is lifted above the platform, substantially as described.

3. The combination of the rake-head, the rake-arm, the hinge-plate, the bracket-plate provided with means for adjusting the hinge plate and rake-arm relatively to the finger-beam, and the revolving crank-arm for operating the rake, all these parts being constructed and arranged substantially as described, for the purpose specified.

4. The combination of the bracket, the hinge-plate adjustable on the bracket, the inclined rake-arm pivoted to the hinge-plate, the rake-head, the friction-roller, and the adjustable guide-plate, all these parts being constructed and arranged for joint operation, substantially as described.

135,692.—*Scissors.*—JOHN A. CORREA, Green Bay, Wis.

A circular disk, with its edges increasing gradually in thickness from a certain point, is pivoted upon one of the blades just front of the usual fulcrum-pin of the shears. The fulcrum-pin has a lug cast upon one side, which enters a recess in the blade; thus the fulcrum-pin must turn with the blade as the scissors are opened or shut. The fulcrum-pin has a rectangular recess, in which the edge of the circular disk works as the scissors are opened and shut. The varying thickness of the edge of this disk acts as a cam in the recess of the pivot and binds the edges of the scissors together the more widely they are opened.

Claim.—1. One or more cam-wheels, g, in combination with the pivot-pin of scissors or shears, when the same is made to operate upon the blades, substantially as and for the purposes described.

2. The slot D in the fulcrum-pin of shears or scissors, as and for the purposes described.

3. The lug E on the pin and the recess F in the blade, as and for the purposes described.

135,693.—*Boring-Machine.*—ISAAC CORY, Dalton, Ind.

The frame is made adjustable by set-screws on the standards. The boring-frame is fed by the handle, and the auger is operated by the internal gear and pinion-wheels.

Claim.—A portable tree-tapping machine, consisting of platform A and legs B, adjustable with respect to each other by screws a, the inclined frame C movable therein, and provided with boring mechanism D E f g h, and the lever G, all constructed, arranged, and adapted to be used as set forth.

135,694.—*Machine for Trimming and Burnishing the Soles of Boots and Shoes.*—LOUIS COTÉ, Saint Hyacinthe, Canada.

The gage is arranged to slide upon the burnishing-sleeve, and may be adjusted to accommodate the burnishing-surface to the varying thicknesses of sole-edges.

Claim.—The adjustable gage E, provided with the recesses e or the equivalent thereof, in combination and arranged with the rasping or burnishing sleeve C, the clamping-guide D, arbor A, and clamp-screw, all substantially as specified.

135,695.—*Land-Marker.*—JOHN CUFF, Emery, Ohio.

A pair of carrying-wheels have marking-pieces attached laterally to their peripheries. Between them, swung to the axle-tree, descend two arms joined at the bottom by a lateral piece. At each end of the latter is a small wheel, and pivoted to the middle is a lever ascending through a longitudinal slot, and confined

therein by a shoulder below and a pin above. The seated driver, by pulling this lever, throws the weight of the carriage from off the larger wheels onto the smaller ones.

Claim.—The arms D D, pivoted at one end to the axle B of marking-wheels, and at the other to an axis, E, provided with small wheels F F and lever G, arranged as described.

135,696.—*Flower-Stand.*—ARCHELAUS C. DAKIN, Clinton, Mass.

A foot piece supports a central rod, upon which is placed rotating disks at any desired height. The rod being loose in its socket, all the disks can be rotated at once, or each separately.

Claim.—The socket A and loose-fitting post C, extending to the top of the stand, and combined with the shelves D D, spiders E E, and tubes a a, all constructed and arranged for operation as and for the purpose specified.

135,697.—*Device for Converting Circular into Reciprocating Motion.*—LUTHER DAME, Newburyport, Mass.

Claim.—The conversion of circular into reciprocating motion by means of adjustable eccentric C, connecting bolt-nipple d, core E, longitudinal slot b, and hollow cylinder A, substantially as and for the purpose described.

135,698.—*Safety-Valve.*—HENRY DAVIES, Newport, Ky.

Radial plates with rounded ends fit into a collar on the valve-stem and into a rabbet in an outer ring, and serve to protect the diaphragm, allowing it to move freely. The valve is made in two parts, held together by a spring for adjustability.

Claim.—1. The combination, with diaphragm G, of the radial plates H, constructed as shown and set forth, and arranged with the rear ends loose in the rabbets of ring I, and the front ends in the concavities of collar K, as and for the purpose described.

2. The valve D, made in two parts and held together on stem P by a spring, as and for the purpose described.

135,699.—*Scraping Instrument.*—VAN NESS DAVIS, Stoneham, Mass., assignor to himself and FRANK A. DAVIS, same place.

An implement or scraper for household use, constructed with an increased width of blade from its shank, forming acute angles or corners, for clearing and cleaning sharp corners, often found in cooking utensils, &c.

Claim.—As a new and useful article of manufacture, the scraping implement A, substantially as and for the purposes described.

135,700.—*Bale-Tie.*—PETER K. DEDRICK, Albany, N. Y.

Claim.—1. A bale-tie, consisting of a metal plate having one point of connection common to both ends of the band, and a projection of one or both ends from the point of connection along and over the taut portions of the band, adapted to secure the end of the band to be tied between said projection and the band, substantially as specified.

2. The mode of securing a wire band to the tie by passing the end of the band to be tied through a hole in the tie-plate or around it, and then between a projection of said plate along the band and the said band, substantially in the manner described.

135,701.—*Wheel for Vehicles.*—JEROME F. DOWNING and WELLINGTON DOWNING, Erie, Pa.

The tenons and wedges are glued when inserted into the hub. To prevent the wedges from being forced out of place a metallic band is forced out over the hub close up to the sides of the spokes and covering the ends of the wedges. Several screws are inserted through the band into the hub to prevent it from slipping.

Claim.—1. The spoke-tenon A, shaped as required in dovetailing, and with one of the narrow sides beveled, as at H, in combination with the mortised hub B, having mortises with the narrow sides opposite the ends of the hub converging in the direction of the center of the hub, but slanting or inclined the same way, so as to leave a space between one of the said narrow sides of each mortise and the spoke-tenon opposite to permit of the insertion of the dovetailing-wedge E, all constructed substantially as and for the purpose specified.

2. The wedge E employed for the purpose of completing the dovetailing of the spoke-tenon A with the mortised hub B, in combination with the mortised hub B and metallic bands F, substantially as described and shown.

3. The combination of the spoke-tenon A with the mortised hub B, the dovetailing-wedge E, and metallic bands F, all constructed and secured together substantially in the manner described, and for the purpose set forth.

135,702.—*Lock.*—ELIZABETH DUENZ and JOHN A. DUENZ, of Fayetteville, Ill., administrators of CASPER BODMER, deceased.

A lock provided with a series of wards, tumblers, and levers, to be operated by a double-bitted key. A false bottom is arranged within the lock and provided with a slot and cross-notches to admit pins attached to a sliding bar and one of the tumblers, for the purpose of holding the bolt in the locked position. One of the wards is provided with a projecting arm, which acts upon the pin of the sliding bar to release it from its notch in the false bottom.

Claim.—1. The false bottom G arranged within a lock and provided with the slot x and cross-notches p q z y to admit and lock the pins m and stop o, as set forth.

2. The tumbler F pivoted on the sliding bar J and provided with the stop o, to operate substantially as herein shown and described.

3. The ward N provided with the arm f^5 for the purpose of acting directly against the pin m, and thereby swing the tumbler F and bar J clear of obstructions, as set forth.

4. The tumbler Q pivoted to the pin r and cambed to hook over the pin m, in combination with a sliding bar J pivoted to the bolt, as specified.

5. The tumbler F pivoted on stud m of bar J and having a projection working in notch p of false bottom G, to operate substantially as herein shown and described.

6. The tumbler U and lever V arranged within the same plane, one to be moved and the other to remain undisturbed to enable the opening of the lock, as specified.

7. The vibrating plate W acting at once upon the pin h^3 and against the bolt, as set forth.

135,703.—*Dress-Elevator.*—MORIS FOX, New York, N. Y.

A hoop of the skirt or bustle is raised or lowered by means of levers attached to a pendant. The toothed lever works in a slot in the other lever, and locks it at the required height when lifting or lowering the skirt.

Claim.—1. The combination of the levers B and C with the hoop D of the ladies' dress-support, as and for the purpose set forth.

2. The combination of the inward projection f, slide e, rods g and h with the levers B and C, to operate in the manner described.

135,704.—*Seed-Planter.*—THOMAS C. GARLINGTON, La Fayette, Ala.

A frame on a carrying-wheel and coverers has affixed thereon two erect funnel-shaped hoppers, with auger-formed feeders, operated by belting from the carrying-wheel.

Claim.—The auger-stirrer J, having side fingers d d, spirally bent to correspond to thread of auger, as and for the purpose set forth.

135,705.—*Bridge.*—JAMES GATES, St. Louis, Mo.

Devices to secure better adjustment of tension, diminished weight, increased strength, and advantageous disposition of material.

Claim.—1. The lower chord, consisting of the tension-bars a a, the pins a^3 a^3, the packing-blocks E E E, the bridge-seat D, and the pins a^4 a^5, constructed and arranged substantially as described and shown.

2. The angle-block F, provided with the flanges f f, the flanges f^1 f^1 f^1, and the tubular projections f^2 f^2 f^2, substantially as described and shown.

3. The packing-blocks E, in combination with the pins a^3 a^3, constructed and arranged substantially as described and shown.

4. The joints in the lower chord, formed by the tension-bars a a, the pins a^3, and the packing-blocks E E E, constructed and arranged substantially as described and shown.

5. The bridge-seat D, provided with the shoulder d, the slots d^1 d^2, and the half-block d^3, constructed substantially as described and shown.

6. The upper chord K, consisting of the end angle-block P, the chord-pieces k, the angle-blocks H H, the keys L, and the pins N, constructed and arranged substantially as described and shown.

7. The angle-block H, consisting of the web h, provided with the vertical tubes h^1, the flanges h^2, and the piece h^4, substantially as described and shown.

8. In combination with the elements of the angle-block H, constructed as described, the half-block h^4, arranged as described.

9. In combination with the elements of the angle-block H, constructed as described, the short chord-pieces K K, as described.

10. The lateral braces O and rods I I, in combination with the angle-block H, constructed and arranged substantially as described and shown.

11. In an angle-block for a truss-bridge, the concave upper surfaces f^2 f^2, substantially as described.

135,706.—*Fire-Kindler.*—MONTRAVILLE GENNEY, Middleburg, N. Y.

Claim.—A fire-kindler prepared by immersing solid charcoal in water saturated with one part of chlorate and two parts of nitrate of potash, and then, after drying, in oil saturated with resin, as and for the purpose described.

135,707.—*Turbine Water-Wheel.*—WILLIAM P. HALE, Lockhaven, Pa.

The water comes in on one side of the curb under the wheel and rises up on an inclined scroll within the same, and the under side of the wheel being on an angle, the water is forced outward to the buckets. The scroll runs in the opposite direction to that of the buckets, which causes a direct action and a reaction at the same time, and the water entering on the inside of the wheel under full pressure and discharging on the outside of the wheel without any back pressure gives a greater amount of power than it would otherwise have.

Claim.—The water-wheel provided with the rim A and buckets B B, formed on a circle of one-half the diameter of the wheel, and the conical top plate C, and used in combination with the interior inclined scroll H, all constructed and arranged as and for the purpose herein set forth.

135,708.—*Wash-Boiler Attachment.*—RICHARD B. HART, Salado, Tex.

In an ordinary wash-boiler are placed two inverted shallow funnels provided with perforated vertical rims. On the vertical tubes of the funnels is placed a horizontal pipe provided with branch pipes. The tubes of funnels pass through a perforated flanged false bottom.

Claim.—The combination of the inverted shallow funnels C provided with vertical perforated rims, the tubes D E, the horizontal pipe F, connected with both tubes E and provided with numerous small discharge-pipes G, and the perforated and flanged false bottom H, with each other, substantially as herein shown and described, to adapt them to be used in connection with an ordinary wash-boiler, as and for the purpose set forth.

135,709.—*Hand Corn-Sheller.*—JAMES M. HAWLEY, Alma, Ill.

The ear of corn passes between two yielding toothed jaws fixed between two revolving carriers, which operation removes the corn from the cob.

Claim.—The combination of the disks A B, hand C, bars and hollow journals D E *d d'*, block or blocks F, pivoted arms G H, jaws I J, stop K, and rod and springs L M, with each other, substantially as herein shown and described, and for the purpose set forth.

135,710.—*Paddle Mechanism for Boats.*—CHARLES HOWARD, New York, N. Y.

Claim.—The paddle shank provided with the slot *c* or equivalent guide, by which the paddle is allowed to slide up and down on the pin or wrist of a crank in such a manner as to allow two cranks, *a b*, of different lengths, to be attached to the paddle, substantially as set forth.

135,711.—*Lantern.*—SEYMOUR HUGHES, Jersey City Heights, N. J.

Claim.—The crown or dome E slitted at the lower edge to form the spring-holding jaws *d d*, and made open or provided with a removable cover at its upper end, as shown and described, whereby the globe C may be inserted or removed through said crown, and adjusted and supported therein, as set forth.

135,712.—*Key-Ring.*—WILLIAM T. JENKS, Toledo, Ohio.

Claim.—As a new and improved article of manufacture, the key-ring herein described, formed of the circular piece A cut out or notched at the ends, and the clasp B pivoted thereto at *d*, and adapted to complete the circle when closed, in the manner described.

135,713.—*Window-Shade.*—EDWARD E. JOHNSON, Painesville, Ohio.

The shade or curtain is made of flexible material and provided with weighted sections, and with cords so arranged that the sections may be rolled together with the shade or separately.

Claim.—The flexible window blind or shade B provided with the weighted sections *b'*, and with cords arranged so that the said sections may be rolled together with the blind or shade, or separately, as described.

135,714.—*Car-Coupling.*—PATRICK KENNEDY, Jr., and ALBERT B. DIBB, Watertown, N. Y.

The link is guided by a hook suspended from a lever. The approaching draw-head strikes the bend on the lever and raises it until the hook is struck by the draw-head, when the end of the link is deposited in the mouth of the same.

Claim.—The lever D, pivoted to the draw-head, supported by a suitable projection thereof, and bent or curved upward at its front end, in combination with the hook E and link B, as shown and described, to operate as specified.

135,715.—*Tool-Holder.*—LEVI L. LAMB, Chelsea, Mass.

The lips on the box and cover, when closed, form a dovetail to hold the blade or tool.

Claim.—The box A and laterally-swinging cover B, each provided with a lip, E, so as to form, when closed, the dovetailed socket F, as described, for the purpose set forth.

135,716.—*Safety-Truck for Railroad Cars.*—BENJAMIN P. LAMASON, Milton, Pa.

To the extreme ends of the car-body are secured pivot-plates, which turn in corresponding plates secured to the ends of beams, which are fastened to the center of the trucks. The object of pivoting the trucks to the ends of the car is to lessen the liability of the car to overturn should it become disengaged from the trucks.

Claim.—The trucks pivoted at their extreme ends to the body of the car, as herein shown, by means of the plates *a b*, beams H H', and bolt *c*, all combined and operating substantially as herein described.

135,717.—*Railway Freight-Cars.*—BENJAMIN P. LAMASON, Milton, assignor of one-half his right to W. J. BRUNDRED, Oil City, Pa.

An oval-shaped car having an iron shell and wooden lining, between which is an air-space. The car is provided with inside and outside sliding doors on its sides, port-holes at its ends for the reception of lengthy freight that could not be entered at the sides, and discharge-vent underneath its center. The body is secured to the trucks by straps passing around it and bolting to the truck-frame, the bolsters of the latter being cut away to conform to the shape of the car. A railing is secured to each side of the car-body for the better security of the employés.

Claim.—An oval-shaped freight-car, composed of an iron shell, *c*, and inner wooden lining *a*, with heat-absorbing space *d* between the shell and lining, provided with doors B C, port-holes *f f*, manhole *e*, discharge-vent *g*, with or without wickets A, when constructed and arranged as described, and combined with a truck, in the manner and for the purpose set forth.

135,718.—*Driven Well.*—JAMES LARUE, Gill Hall, Pa.

The upper connecting section of tubing answers the purpose of a pump-barrel, while the lower section is perforated and provided with a concave cutter having a circumferential edge and central axial aperture closed by a screw-plug to prevent the earth from entering the tube while being driven. The plug has a right- and left-hand screw-thread, by which arrangement it may be withdrawn for a drill to enter through the tube to break such rock in advance of the pipe as would be impenetrable by the cutter.

Claim.—1. The concave cutter B with its central and detachable plug E, in combination with the perforated tube A, in the manner shown, for the purposes hereinbefore set forth.

2. The perforated tube A, concave cutter B, and detachable plug E, in combination with the upper tube N, its check-valve P, and sucker K, when the same are arranged substantially in the manner shown and set forth.

135,719.—*Combined Sod-Cutter and Land-Roller.*—CHARLES LEAVITT, Cleveland, Ohio.

A common land-roller is attached to a frame by tongue or shafts, by which it is drawn over the ground. A cutting-blade is attached by a hinged joint that unites the two frames. The roller serves to gage the depth to which the blade penetrates the earth. When the roller only is used the blade-frame is thrown over upon the roller-frame.

Claim.—The cutting device or blade G, having upturned ends G', with sharp cutting-edges, as arranged in combination with the frame C, and roller A, in the manner as and for the purpose set forth.

135,720.—*Apparatus for Loading and Unloading Hay.*—GEORGE W. LONG, Delaware Center, Iowa.

A sling having a loose rope on one side to be wound upon a crank-shaft upon a frame, to which is attached the other side of the sling with a latch, which releases the rope from the crank-shaft when the load is conveyed to the point desired.

Claim.—The combination of the sling A B, ropes C D, rope E, block F, crank-shaft H G, latch I, and trip-rope J with each other, substantially as herein shown and described, and for the purpose set forth.

135,721.—*Drain-Pipe.*—WILLIAM G. MONK, Brooklyn, N. Y.

Sand is heated and sulphur added; then cement is added to this mixture, the whole being thoroughly mixed and molded.

Claim.—The above-described composition drain-pipe, as a new article of manufacture.

135,722.—*Pulley.*—CHARLES C. MOORE, New York, N. Y.

Claim.—As an article of manufacture, a pulley or wheel revolving upon an axis, C, movable in the curved groove in the eye A, as and for the purpose set forth.

135,723.—*Drain.*—GEORGE B. MOORE, Lyons, Iowa.

A perforated cup with solid bottom is placed below the outlet of the sink and surrounded by a larger receptacle, drained of its contents by siphon-tubes communicating therewith, the fluid passing through the side perforations of the sediment-cup into a receptacle placed underneath, and thence through the siphon-tubes into the drain-pipe.

Claim.—The sediment-cup *c* in combination with the ring *b* and outside receptacle *d*, and arched passage to the outlet *e*, substantially as and for the purpose herein set forth.

135,724.—*Bed-Bottom.*—THOMAS L. ODELL and JOSEPH C. HUDSON, Iowa Falls, Iowa.

Elliptic springs clamped together at the ends; a coiled spring in the middle, the ends resting on a bar and held by a pin.

Claim.—The slats *a*, spring *b*, spring-beam *c*, and pins *d*, substantially as set forth.

135,725.—*Bed-Bottom.*—HARRISON OSBORN, Richmond, Ind., and ANDREW W. KENDRICK, Brooklyn, N. Y.

The springs are formed with hooks and eyes on the upper and lower sides, and on the ends of the wire terminating the coils are hooks which hook into the eyes, and the springs are graduated to form a bolster.

Claim.—1. A mattress, the springs of which are formed with hooks and eyes on the last coils thereof, when the ends of the wire forming the coils are secured to or around the eyes, substantially in the manner and for the purposes herein set forth.

2. A mattress constructed of the springs, as described, with a head or bolster elevation formed by graduating the springs at the head.

135,726.—*Cultivator.*—WILLIAM T. PARKER, Verona, Miss.

The frame which carries the cultivators and chopper is suspended from the main frame, so as to have a swinging lateral motion.

Claim.—1. The vibrating side pieces C C, jointed to cross-pieces D H and connected with tongue K, as described, and for the purpose set forth.

2. The combination of a chopper-shaft, F, with bearing-pieces D H, when the rear one of them has a vertical and elongated slot, as and for the purpose described.

135,727.—*Centrifugal Machine for Purifying Sugar.*—HERMANN PRIEW, Magdeburg, Prussia.

Claim.—1. The herein-described arrangement for using dried steam with air in a centrifugal machine, substantially in the manner and for the purpose set forth.

2. The cover D, in combination with the jacket or casing B, tubes C and A, steam-pipe E, and water-escape pipe F, attached to the top of a centrifugal machine, and arranged in the manner substantially as described, and for the purposes set forth.

135,728.—*Self-Closing Hatch.*—CHARLES H. REYNOLDS, Williamsburg, N. Y., assignor to himself and HENRY C. RICHARDSON, same place.

The hatches are held open by pivoted latches, to which a rod is attached, supported at its lower end by a prop on a weighted lever. A cord inclosed in a tube sustains this lever until a fire occurs, when this cord, exposed to the draft in the tube, is burned

allowing the rod D to fall and lift the latches, which in turn permit the hatches to fall by their weight and close the openings.

Claim.—1. The combination of the sliding rod D, pivoted latches E, and stops G with each other and with the arms H attached to the hatches C for holding said hatches open, substantially as herein shown and described.

2. The combination of the tube I having openings formed in it, the rope J, and the weighted and armed lever K L *b'* with the sliding rod D and pivoted latches E, substantially as herein shown and described, and for the purpose set forth.

135,729.—*Harvester.*—ALEXANDER RICKART, Schoharie, N. Y.

The shipping-lever is pivoted to a block hinged on the main axle and held in place by a collar thereon. A cam on the lever, arranged between vertical arms on the main frame, slides the latter on the axle, and thus separates the driving-gear from its pinion. One of the vertical arms is adjustable to compensate for wear.

Claim.—The combination of pin P, collar Q, and double-cammed lever R S, with studs T T and arm U on frame F, as and for the purpose described.

135,730.—*Machine for Stiffening Netting for Bonnet-Frames, &c.*—PETER C. RITCHIE, New York, N. Y.

The material on which the stiffening solution is to be applied is stretched on the frame and held by pins. The applying roller is mounted in journals on the movable trough that holds the stiffening solution, and as the trough is reciprocated the pinions on the axis of the roller engage the teeth of the rack, and the roller is turned to apply the solution to the net.

Claim.—The net-frame A having rack F on the lower side, the cloth-covered roller D provided with the pinions E E on its journals, and the movable trough C having bearings to receive said journals, all arranged and applied together, as and for the purpose described.

135,731.—*Harvester.*—WILLIAM H. SEYMOUR and DAYTON S. MORGAN, Brockport, N. Y.

The reel is hung on a post pivoted at its bottom, and caused to vibrate back and forth over the finger-bar by its connection with the driving mechanism, in unison with the movement of the rake.

Claim.—1. The combination of the rotating gathering-reel and mechanism, substantially such as described, for vibrating it, these members being constructed and operating in combination substantially as hereinbefore set forth, to cause the reel automatically to move forward in advance of the cutters to gather in the standing crop, and then to retract to sweep the cut grain behind the finger-beam.

2. The combination of the rotating reel moving backward and forward over the cutting apparatus and a side delivery-rake moving over the platform in unison with the reel, but in circular curves, substantially as set forth.

3. The combination of the slotted turning-post, the rotating driving-crank, and the rake-arm rocking in, turning with, and sliding through the post, these members being constructed and operating in combination substantially as set forth.

4. The combination of the rake-driving gear on the main axle, the driving-gear which carries the rake-arm, and the interposed idle-wheel mounted in a bearing swinging around the axes of both the gear-wheels above mentioned, substantially as set forth, to allow the machine to be raised or lowered without deranging the gearing.

5. The combination of the main driving-axle, the swing-frame, the main axle, the windlass, cord, and lever, substantially as set forth, to raise or lower the main frame.

135,732.—*Animal-Trap.*—EMILE ACHILLES CORDEIRO DA SILVA, New York, N. Y.

The trap tips the moment the pivot is passed, and is reset by its own gravity.

Claim.—The wire grating B, vertical slide C, bottom D, two-part top E F, bait-chamber I, hook J, and inclines L L, all combined, constructed, and arranged, in connection with box A, as and for the purpose described.

135,733.—*Apparatus for Treating Offal.*—JOHN A. SLATER, New Haven, Conn.

Claim.—1. The combination of the cylinders B provided with removable teeth, the pipes E F and jacketed tank, substantially as set forth.

2. In combination with the cylinders B, the detachable stirrers, as described.

3. The jacketed tank A, revolving cylinders B having detachable teeth, gears *c*, and pipes D, E, and F, when all are combined to operate in the manner and for the purpose set forth.

135,734.—*Belt-Punch.*—ALBERT N. SOUTHWICK, Boston, Mass.

Claim.—The combination of the punch A, slotted sleeve D, awl B, and thumb-screw *c*, constructed and arranged together as specified.

135,735.—*Stove-Grate.*—JOHN R. STONE, Round Grove, Kans.

A device for suspending, raising, and lowering the grate.

Claim.—The bent lever G, pawl I, notched yoke C, and catch plates or buttons F, in combination with the grate A, substantially as shown and described.

135,736.—*Cultivator.*—WILLIAM TAYLOR, Mansfield, Mass.

The expanding wings are connected by means of rods to a block sliding in the beam.

Claim.—The block J, arranged in a longitudinal slot of the beam A, the bars I, connected therewith at the under side and pivoted to the middle portion of the wings H, the lever N, and plate O, all as shown and described.

135,737.—*Fruit-Basket.*—WALTER D. TEMBLER, Dunkirk, N. Y.

The basket is made of paper or thin sheets of wood saturated with paraffine. The upper edges are strengthened by rods and cords, and feet are stamped in the bottom.

Claim.—A fruit-basket, with body A saturated with paraffine, having feet *a* in combination with rods *b* having cords *c*, substantially as and for the purpose specified.

135,738.—*Swing.*—EDWARD A. TUTTLE, Williamsburg, N. Y.

To prevent the too great elevation of a child in swinging, the inventor has contrived, by the aid of horizontal springs and two bars, to keep the seat moving in a horizontal line.

Claim.—The pivoted posts, uprights, or frame C and springs F, or equivalent counter-balance, for supporting the pendent bars or arms D and seat E, substantially as herein shown and described, and for the purpose set forth.

135,739.—*Button for Garments.*—ANNA CATHARINE WILHELM, Philadelphia, Pa.

The shank of the button is shouldered at its lower end, and has a transverse hole near its upper end to receive a small pin which fastens it to the disk. An annular screw-cap secures the pin, and also affords a means of producing a button of different design by the insertion of any desired material over the disks, or by changing the disks themselves.

Claim.—1. The shank A and detachable pin 3, in combination with the disk B, annular screw-cap C, and the changeable fabric D, the said parts being constructed and arranged, in their relation to each other, as and for the purposes hereinbefore set forth and described.

2. The shank A and detachable cap C', in combination with the changeable disk E or either of the beads F G, the said parts being secured together, respectively, substantially as and for the purposes hereinbefore set forth and described.

135,740.—*Millstone-Balance.*—GEORGE W. WILSON, Chebanse, Ill.

Adjustable weights are kept in place between the band and millstone by having their convex sides grooved or ribbed.

Claim.—A balance for burr-millstones, consisting of the riveted band B, and the grooved or ribbed weights C, arranged substantially as herein shown and described.

135,741.—*Harvester.*—THOMAS Y. WOOLFORD, Romney, W. Va.

The main driving-gear wheel is incased in the driving-wheel, and propelled by it by means of a pawl secured to the drive-wheel, and engages with ratchets on the gear-wheel, and, through intermediate gearing, motion is communicated to the cutters.

Claim.—The arrangement of the spring-pawls J, gear-wheel I, pinion-wheel K, shaft L, and gear-wheels N O, with respect to the recessed drive-wheel H, axle C, frame A, and driving-shaft P, substantially as herein shown and described, and for the purpose set forth.

135,742.—*Wagon-Coupling.*—ULYSSES WYNN, Sterling, Ill., assignor of three-fourths his right to WILLIAM L. PATTERSON and JOHN G. MANAHAN, same place.

Claim.—The combination of the socket A, body-loop B, socket C, king-bolt D, and clevis E, in combination with the spring H or other connecting device, all constructed and operating together substantially as described, as and for the purposes specified.

135,743.—*Seed-Dropper.*—FRANK W. YOUNG, Holden, Mo.

A flat circular box has at its central portion a concentric recess, between which and the periphery is a series of recesses, which form seed-cups with adjustable capacity. The disk is rotated by means of a reciprocating bar, the bifurcated ends engaging with teeth on the disk.

Claim.—The pivoted arms D and pivoted disk E, in combination with the pivoted wheel C provided with dropping-holes *c'*, substantially as herein shown and described, and for the purpose set forth.

135,744.—*Tug-Buckle for Harness.*—CHARLES W. ADAMS, Wheeling, W. Va.

The buckle consists of a rigid tongue, which projects from the outer side of the tug; a metallic box-slide or keeper, which is notched to embrace the tongue; and a metallic strap, which is riveted at both ends to the tug and forms a way for the slide. The metallic strap, by friction, prevents the displacement of the trace when the slide is properly adjusted.

Claim.—The combination of the metallic tug A, supporting a rigid tongue or spike, *c*, and the box-slide or keeper C applied to the face of said tug, and attached, guided, and held by a spring or metallic strap, *d*, as herein shown and described, for the purpose specified.

135,745.—*Heel-Trimming Machine.*—CHARLES J. ADDY, Boston, Mass., assignor of one-half his right to JOHN R. FOLSOM, same place.

The shaft of the revolving cutter-head has bearings in a sliding frame, which is provided with a pin resting, when the machine is in action, upon a movable guide. The upper side of this guide conforms in shape to the finished heel, while its opposite side has a rack which meshes into a pinion upon the periphery of the heel-plate. The cutting action of the wheel H is limited and regulated by the moving guide.

Claim.—1. The combination of the cutter H, the arm G' G², and the sliding frame K, substantially as described, and for the purpose set forth.

2. In a heel-trimming machine, the sliding guide *l D F*, operating, in combination with the cutter H, substantially as described, and for the purpose set forth.

135,746.—*Grain-Separator.*—WILLIAM B. ALLEN, Winona, Minn.

Flexible sieve having different-sized apertures, so as to deliver oats, cockle, &c., at different places, surrounded by a roller covered with yielding material. Grain fed in between roller and sieve.

Claim.—The combination of the cylinder A having at one of its ends the zigzag cam F and its outer surface covered with one or more thicknesses of soft cloth or leather, or their equivalent, and the flexible sieve B B, with its elastic straps or springs *a a*, substantially as and for the purpose hereinbefore set forth.

135,747.—*Railway-Track Lifter.*—AUGUSTUS H. ARNOT, Morristown, assignor of one-half his right to THOMAS J. SPECK, Rogersville, Tenn.

The beveled or front end of the foot and nose of the lever are inserted between the ties and under the rail. The power end of the lever is then depressed, the pawl following over the ratchet-teeth and locking the lever at the successive points or various angles.

Claim.—The foot-piece, beveled at its forward end and formed of the two like parts 2 2, the lever 1 (A B) pivoted between them at F, the block 6, and the standard formed of the parts 4 4, applied to the rear end of the foot-piece, as described, and the pawl 3, all constructed and arranged to operate as set forth.

135,748.—*Shuttle-Box Mechanism for Looms.*—WILLIAM ATKINSON and CHRISTIAN C. KLEIS, Philadelphia, Pa., assignors to THOMAS WOOD, same place.

The horizontal lifting-lever is actuated by a cam having inclines, each arranged as to length and pitch to move the boxes one step up or down. The reciprocations of this cam to the right or left, as required, are effected by means of a disk on the same shaft, having on its face two series of steps, so placed as to be acted upon by a swiveled double-pawl on a reciprocating sliding arm. The extent and direction of movement of the disk depend upon the position of the arms of the double pawl, which position is controlled by a pattern-chain having studs of different length. The cam having inclines is held against the disk by a spring-clutch to prevent breakage of the parts in case the boxes are obstructed.

Claim.—1. The cylinder *i* with steps projecting from its face, and the cam *k* provided with inclines, in combination with the swiveling double pawl *h*, carried by the reciprocating-bar *f* and with the lifting-lever *a*, all constructed and operating substantially as described.

2. The cylinder *i*, having steps on its face, and the cam *k* having inclines, in combination with the clutch 5, spring 6, and collar 7 upon the stud *g*, as and for the purpose set forth.

135,749.—*Lamp.*—LEWIS J. ATWOOD, Waterbury, Conn., assignor to THE PLUME AND ATWOOD MANUFACTURING COMPANY, same place.

The chimney-supporter is formed of bent wires passing under the cone and through the ratchet-case, thence upward, giving a support to the air-distributer, which is situated near the upper end of the wick-tube. The cap is detachable.

Claim.—The air-distributer near the upper end of the wick-tube, and the deflector resting upon the same, in combination with the cone *h*, chimney-supporting flange *k*, and spring chimney-clamps *s*, substantially as and for the purposes set forth.

135,750.—*Machine for Stamping Sheet-Metal Ware.*—THEODORE P. AUSTIN, New York, N. Y.

A hydraulic press adapted for stamping sheet-metal ware is operated by both a high and low pressure fluid, the high-pressure fluid being used to give the final depression to the "holding-down" block and the "stamping"-block; also to start the blocks back in case of binding.

Claim.—The combination of the high and low pressure fluid-reservoirs M M, and valves L l′ with the cylinders D E, the pistons F H, the holding-down block or ring G, the stamp I, and treadles K K′, when said valves are constructed and connected with both reservoirs for successive supply of the fluid at different pressures during the motion of the pistons, substantially as specified.

135,751.—*Paper-Ruling Machine.*—ELLICOTT DAVID AVERELL, New York, N. Y.

The paper is carried forward by the feed-apron until arrested by the stop-gate, which is raised to release it at the proper time by a cam on one end of the ruling-cylinder, which carries on its opposite end adjustable cam-plates operating a circuit-closing arm. As this arm is thus vibrated its conducting body is brought into contact with the finger connected with the battery to complete the circuit through the magnet, which attracts the armature and depresses the pen-beam attached to it, thus keeping the pens upon the paper until raised by the breaking of the circuit, as the insulated point of the circuit-arm is vibrated into contact with the conducting-finger. A second pen-beam, divided transversely, is arranged to rule faint or continuous lines.

Claim.—1. The combination, with an electro-magnet or magnets, O, armature N, and striking pen-beam K, actuated by the magnet, of the revolving cam S carrying adjustable sections *m n*, which operate the circuit breaker and closer R, substantially as and for the purpose herein set forth.

2. The pen-beam L, divided transversely at or near the middle of its length to form independent sections for separate or joint action, substantially as specified.

3. The transversely-divided or sectionally-constructed pen-beam L, in combination with the striking pen-beam K, essentially as described.

135,752.—*Machine for Setting Saws.*—JOHN G. BAKER, Philadelphia, Pa., assignor to ENTERPRISE MANUFACTURING COMPANY OF PENNSYLVANIA.

Near one end of the frame is attached an arm, acted on by a coiled spring, and carrying at its outer extremity an adjustable disk having a periphery of varying width that strikes on a cylindrical and reversible anvil-block, the edges of which are beveled eccentrically. An adjustable pointer determines the position of the saw-teeth on the anvil, and a set-screw, striking against projections near the pivoted end of the striker, limits the force of the blow.

Claim.—1. The combination of the said spring-arm with a striker, consisting of an adjustable disk having a periphery of varying width.

2. The combination of the said spring-arm and its set-screw *j* with two or more stops on the frame.

3. The combination of the said spring-arm with a rubber block or equivalent spring, *p*, on the frame, for the purpose specified.

4. The combination of the arm and its striking-disk, having a periphery of varying width, with the adjustable anvil F, having an eccentrically-beveled edge.

5. The cylindrical reversible anvil, having its opposite edges eccentrically beveled, as set forth.

6. The combination, substantially as described, of the adjustable pointed gage G with the striker and anvil and the shoulders or stops *s s* of the frame.

135,753.—*Mop-Head.*—JOSEPH W. BARBOUR, Winooski Falls, Vt., assignor of one-half his right to GEORGE D. NASH; said NASH assignor to THOMAS COLLAMER, same place.

A spring-clamp is pivoted on the inside of the mop-frame, and is provided at its lower end with a roller that presses against the lower part of the mop-frame and holds the mop-cloth between the clamp and frame.

Claim.—The spring-clamp C, pivoted to the mop-frame A, and provided with the round or roller F, in combination with the concave bar B, substantially as specified.

135,754.—*Drawer-Pull.*—CHARLES S. BARNARD and EDWARD A. BARNARD, West Meriden, Conn.

The pendent drawer-pull is made a part of the ordinary escutcheon-plate. Thus several screws and a large amount of labor and space upon drawer are saved.

Claim.—As an article of manufacture, the combined escutcheon and drop-pull, substantially as specified.

135,755.—*Saddle-Tree.*—PHILIP BECKER, Philadelphia, Pa.

The saddle is constructed almost entirely of leather and strengthened with steel springs.

Claim.—1. The saddle-tree constructed of leather, in connection with the springs K and stiffening end braces or bands, substantially as set forth.

2. The saddle-tree having its seat E constructed of overlapping pieces L L, substantially as and for the purpose set forth.

135,756.—*Feed-Water Heater and Condenser.*—ROBERT BERRYMAN, Hartford, Conn.

The steam is conducted from the heater to the condenser, and the water from the latter is carried back to the heater. The head of the heater, having suitable flanges, is connected to cast-metal U-shaped pipes, in preference to the tubes made of malleable or composition metal.

Claim.—1. The combination, with a condenser, A, and feed-water heater B, of pipes or passages *b c d*, whereby the steam is conducted from the heater to the condenser, and the water from the latter is carried back to the heater, as specified.

2. The combination, with the head C of the heater, of U-shaped pipes, made in whole or in part of cast metal, and secured substantially as specified.

135,757.—*Feed-Water Apparatus for Steam-Boilers.*—ROBERT BERRYMAN, Hartford, Conn.

A case provided with a diaphragm is connected by levers to the throttle-valve in the steam-pipe, and is combined with a pump and a series of boilers, so that the pressure of water in the feed-pipe is made the means of regulating the throttle and thereby automatically regulating the flow of water. To prevent any sudden descent of the diaphragm when it is elevated by the rising water, a check-valve having a slight lead or small hole through it (to allow the water to escape slowly) is arranged in the pipe leading to said diaphragm.

Claim.—1. The regulating apparatus, consisting of a case, A, diaphragm, chambers, and levers, or its equivalent, in combination with a pump and with a series of boilers, all arranged substantially as described, so that the pressure of water in the pipe leading from the pump to the boilers is made the means of regulating the throttle, and of automatically retarding, stopping, and starting the pump, for the purpose set forth.

2. The combination, with the pipe leading to the chamber *c*, of a valve, *i*, having a "lead" or opening, and operating as set forth.

135,758.—*Steam-Radiator.*—ROBERT BERRYMAN, Hartford, Conn.

Bent pipes, formed partly of cast and partly of malleable metal, communicate with independent chambers.

Claim.—The combination, with independent chambers, of one or more series of tubes, each communicating with both chambers, and each consisting of a section of cast metal and sections of thin malleable metal, as set forth.

135,759.—*Fire-Plate for Steam-Boilers.*—ETIENNE BOILEAU, St. Louis, Mo., assignor to BOILEAU PATENT STOVE AND FURNACE FIRE-PLATE COMPANY, same place.

Claim.—1. In combination with the slotted fire-plate A B, the overhanging top C, substantially as set forth.

2. The bracing-legs G, employed in connection with the fire-plate, in the manner and for the purpose set forth.

3. The apron L, substantially as and for the purpose set forth.

135,760.—*Blank-Book.*—JOHN C. BONNELL, Burlington, Iowa.

Spaces are left on full folio for entering the office, the name of the buyer, the form of coupon, through rate, number of coupon, class, and aggregate amount. The other folios are curtailed of the paper occupied by these spaces, the latter forming an index for the rest of the book, which is occupied by the names of the companies and rate and amount columns.

Claim.—As an article of manufacture, a blank-book provided with one full folio, while the remainder are cut out and the vacant space filled, in substantially the manner as and for the purpose set forth.

135,761.—*Churn.*—JOB BORTON and WILLIAM H. HARTLEY, Quaker City, Ohio.

The dasher is adjustably attached to the rod by set-screws. The rod is rigidly united to the rocking-shaft, as is also an exterior rod, which carries a weight, forming a pendulum.

Claim.—The dasher-staff B, slotted as described, in combination with the adjustable dasher C and the weighted rod *a*, as and for the purpose set forth.

135,762.—*Railroad Truck.*—JAMES W. BOWER, Greencastle, Ind.

Claim.—The railroad truck herein described, having the horizontal braced beams A B², holding at each end a journal-box, and provided at the middle with a square opening, F, to receive the transverse beams G and I, substantially as specified.

135,763.—*Machine for Setting Button and Lacing Hooks.*—HORACE C. BRADFORD, Providence, R. I.

The button-hooks are selected from a hopper and conducted to a clinching apparatus singly, and the prongs, after being inserted, are successively bent over and clinched.

Claim.—1. The finger-wheel, arranged to be intermittently rotated, in combination with the inclined chute, substantially as described, whereby the line of hooks in the chute may be held in place, and the lowest in line released and started downward, as and for the purposes specified.

2. The combination, with the transfer-bar and the nippers, of the finger *k*, arranged to retire on the descent of the nippers, substantially as described.

3. The turning-fingers, arranged to operate successively upon the prongs of the hook, in combination with the clincher, substantially as and for the purposes specified.

135,764.—*Child's Carriage.*—RODNEY G. BRITTON, Springfield, Vt.

Claim.—1. The front axle of a child's carriage, provided with lateral arms *d d*, and connected, by a swivel-joint, *a*, with the supporting-arms *b b* of the sills D D, substantially as described, for the purpose specified.

2. The segmental guide-bar *c*, provided with the L-shaped bracket, and arranged between the sills D D of a child's carriage, in combination with the front axle swiveled upon the pivot *a*, substantially as set forth.

3. The handle F of a child's carriage, connected with the same by a hinge-joint, in combination with the slotted brackets *g g* and set-screws *i i*.

4. The lips *k*, projecting from the ferrules or caps of the side bars of the handle, in combination with notches *l* in the brackets *g*, and with the set-screws *i*, substantially as set forth.

5. The sectional standards *m*, connected to each other by hinge-joints *n*, in combination with the top G of a children's carriage, substantially as and for the purpose herein shown and described.

135,765.—*Steam Water-Elevator.*—ALVAN D. BROCK, Washington, D. C.

Water is admitted from an elevated reservoir into a boiler arranged in a furnace. As soon as enough steam is generated it forces the water contained in the boiler out through a pipe having its exit near the lower end of the boiler. A check-valve in the pipe, connecting the reservoir and boiler, is opened when the boiler is empty and closed by the steam until this has escaped with water through the outlet-pipe.

Claim.—The combination, with a reservoir, C, and boiler B, of a supply-pipe, D, having an automatic check-valve, *d*, and a discharge-pipe, E, having its exit from the boiler below the water-line, all arranged substantially as and for the purpose specified.

135,766.—*Cotton-Planter.*—JAMES M. BROOKS, Woodbury, Ga.

A seed-box, supported upon a single wheel, is attached, by means of two pairs of link-hinges, to the back of the plow-standard, one pair at the top and the other at the bottom, so that the seed-box has a free vertical movement in parallel lines with the back of the standard. The seeding device within the seed-box is worked by means of the bearing-wheel.

Claim.—The combination of the standard B and the seed-box D, hinged thereto at its top and bottom by the staples *a a*, so that the box will move up and down on the standard in parallel lines thereto, substantially as set forth.

135,767.—*Machine for Turning Sewing-Machine-Needle Blanks.*—JOHN BROOKS, North Bridgewater, Mass., assignor to himself and CHARLES HOWARD & CO., same place.

This is an automatically-working machine throughout. It grasps the wire fed to it and carries it forward intermittingly to a reducing device or turning-tool, which is made to pass along it as it is rotated and fashion it to the contour of a finished needle. On a single length of wire several of these blanks are made in succession, and left connected as the wire comes from the machine. The wires are fed to the machine through the tubular shaft by hand.

Claim.—The combination and arrangement of the mechanism, operating substantially as described, to successively and automatically reduce the wire to form the needle-blanks.

135,768.—*Manufacture of Steel.*—THOMAS BROOKS, Canton, Ohio.

Tungsten, fourteen ounces; spiegeleisen, fourteen ounces; charcoal, eight ounces; manganese, half an ounce; Swedish bar iron, seventy-four pounds. Place in a smelting-furnace and treat in the usual way for production of steel.

Claim.—The herein-described compound of tungsten, manganese, and charcoal, when used substantially in the proportions and manner set forth, for the conversion of wrought or bar iron into steel.

135,769.—*Machine for Gumming Saws.*—CHARLES N. BROWN, Providence, R. I.

Artificial heat from 150° to 350° Fahrenheit, according to the degree of hardness of the saw, is applied at the part where the teeth are to be cut or gummed to render the saw elastic under such operation, and thus obviate the danger of the saw becoming broken at such time.

Claim.—1. The employment of artificial heat to render saw-plates and saws elastic before being cut or gummed, in the manner and for the purposes herein set forth.

2. The combination of a lamp or other heating device with a saw and punch or gumming-machine, for the purpose set forth.

3. The application of a thermometer to a saw-plate at the time of heating, substantially as described, and for the purposes set forth.

135,770.—*Automatic Toy.*—ARTHUR W. BROWNE, Bloomfield, N. J., assignor to ALTHOF, BERGMAN & CO., New York, N. Y.

The figures seem to rock themselves, the source of motion being concealed in the seat of the swing.

Claim.—A train of clock-work and revolving crank, swinging with the seat or platform to which they are attached, in combination with the suspending-rods and a connecting-link from the crank to one of said rods, substantially as and for the purposes set forth.

135,771.—*Carriage-Painter's Stand.*—JOEL BURTCH, Hall's Corners, N. Y.

The article to be painted can be raised or lowered, turned around, or tilted.

Claim.—1. The tilting piece G, combined with the universal joint D, for the purpose specified.

2. The revolving and adjustable standard C, for the purpose specified.

3. The general construction of the stand, for the purpose specified.

135,772.—*Apparatus for Extinguishing Fires.*—OSCAR F. BURTON, New York, N. Y.

Bridges are connected to buildings on opposite sides of the street, and water-pipes extending up from the main pipes in the street are provided with nozzles above and below, and with jackets to prevent the water in the pipes from freezing, and which also assist in supporting the bridge, the lower nozzles being so situated that they can be connected to a fire-engine, while the bridges give convenient access to the upper nozzle that a hose can be connected to them and that currents of water can be thrown on any portion of the adjacent buildings.

Claim.—1. The combination of bridges B B, connecting the roofs of buildings, with water-pipes C C extending up from the street, and provided with upper nozzles *a a* and with lower nozzles *b b*, substantially in the manner and for the purpose herein shown and described.

2. In combination with the bridges B B and water-pipes C C, the jackets D D, inclosing the water-pipes and serving as additional supports for the bridges, substantially as set forth.

135,773.—*Pipe-Wrench.*—WILLIAM H. BURTON, Selma, Ala.

A bifurcated or forked wrench with one jaw, made adjustable by means of the same being hinged and operated by a set-screw.

Claim.—The adjustable serrated or movable jaw-fork pipe-wrench, when the said jaw is held firmly by a set-screw or an equivalent device, for adjusting the opening or space E, between the jaws A and B, to receive and turn the pipe, substantially in the manner as herein shown and described.

135,774.—*Bed-Bottom.*—EZRA G. CAMERON, Ashtabula, Ohio, assignor of one-half his right to L. M. CROSBY, same place.

Each spring supports two slats, and the terminal coil of the spring is interwoven with the webbing.

Claim.—The combination of the slats D, springs B, and webbing C, two slats being supported upon each spring and the upper ends of the springs interwoven with or passing through and through the webbing, as and for the purpose specified.

135,775.—*Car-Coupling.*—WILLIAM J. CHAPLIN, Kalamazoo, Mich.

Claim.—The shoulders *s s* on each side of a vertical recess of a draw-bar for receiving the leg *d*, in combination with the bifurcated coupling-pin, substantially as described.

135,776.—*Pivot-Bridge.*—THOMAS C. CLARKE, Philadelphia, ADOLPHUS BOSMANO, and JOHN GRIFFEN, Phœnixville, assignors to CLARKE, REEVES & Co., Philadelphia, Pa.

The links are depressed by suitable mechanism when the bridge comes to its closed position, and encounter the plates G with their raised stops h, by which centering and arrest of vibration are speedily accomplished, and a firm bearing at multiple points secured during the transit of trains, which relieves the central pivot. The peculiar form here claimed is adapted to the repair of old bridges, another style being already patented for new ones.

Claim.—The combination of the links b, connected to a pivot-bridge and to any suitable operating mechanism, with the foundation-plate G and their stops h.

135,777.—*Lubricator.*—BENJAMIN F. CLEMINSHAW, Troy, N. Y.

Claim.—The wrench H, constructed as described, and passing through the stuffing-box G and head E, for operating both said head and the valve D, substantially as herein set forth.

135,778.—*Lamp-Shade Holder.*—ERNST E. CONRAD, Philadelphia, Pa., assignor of one-half his right to MATTHIAS MEIR, same place.

To remove the band it is only necessary to lift one section from the other, whereby the angles clear the ways, and the sections are immediately disengaged.

Claim.—1. The sections A′ and A″, with their locking-joints constructed of the angles d and ways e, adapted to be connected and disengaged, substantially in the manner set forth.

2. The combination, with the sections A′ and A″ and their joints d e, of the screw C, applied and operating substantially as described.

135,779.—*Wagon-Body.*—NELSON B. COOPER, Liberty, Ind.

The end posts are made of iron and have grooves for the reception of the sills, cross-bars, side boards, and end gates of the wagon-body.

Claim.—The rear posts having the braces E in the same piece, and being provided with grooves or notches for embracing the sills B, the cross-bar C, the side boards F, and the end gates G, and also with a ring or loop, D, for the stakes, substantially as set forth.

135,780.—*Boster-Press.*—JOEL COBY, Chicago, Ill.

Claim.—1. The combination of the levers B B, wheels a a, track C, pulleys b b, and rope S attached to one of the pulleys b, substantially as and for the purpose specified.

2. The frame D E, in combination with the platen J, levers B B, substantially as and for the purpose specified.

3. The wheel K, when provided with a flange, y, both upon its upper and lower side, the flanges being recessed, and one flange being provided with a removable piece, g, substantially as and for the purposes specified.

4. The wheel K, when provided with recessed flanges y and spring r, substantially as and for the purposes specified.

5. The combination of the wheel K, having recessed flanges y, with the spring-bolt h, pin i, and plate l, substantially as and for the purposes specified.

6. The combination of the wheel K, spring-bolt h, and stop or catch k, substantially as and for the purpose specified.

7. The combination of the drum M, lever N, brake-bars P P′, constructed and operating substantially as and for the purpose specified.

135,781.—*Meat-Crusher.*—ANDREW J. CRANE, Waterbury, Vt.

Two rolls or cylinders cast with teeth so arranged that the inner face of the teeth is brought in contact or opposite the opening of the teeth in one above it, by which, as a crusher, it is rendered more effective.

Claim.—The combination of two or more cylinders, each having concave-sided ribs broken into teeth, the spaces between the ribs running the whole length of the cylinder, the cylinders being so collocated that, in revolving, the ribs of each cylinder enter the spaces between the ribs of the other, and the teeth of each cylinder come opposite the intervals between the teeth of the other, all the parts being constructed and arranged to operate as specified.

135,782.—*Case for Exhibiting Spools.*—JOHN D. CUTTER, Brooklyn, N. Y.

The exhibitor is provided with curved rails or tracks for the heads of the spools to run upon, said rails terminating in front of the case, both above and below. Near the lower ends of the tracks pockets or breaks are made for the lowest spool to drop into, and operate as a stop to the spools above it on the same track.

Claim.—1. The case A of a spool-exhibiter constructed or provided with rails or tracks for the heads of the spools to run upon, substantially as and for the purposes herein set forth.

2. The semicircular rails or tracks C C arranged to terminate in front of the case A, both above and below, essentially as and for the purposes described.

3. The pockets or breaks g in the spool ways or tracks C C at the forward lower ends of the latter, substantially as specified.

135,783.—*Signal-Lantern.*—THOMAS A. DAVIES, New York, N. Y.

The colored glass is moved up and down by rods passing through tubular passages in the oil-cup.

Claim.—1. In combination with the oil-cup provided with the tubes C C and with the annular plate D for supporting the colored cylinder J, the rods F and H, jointed so as to fold, as specified.

2. The lantern oil-cup or lamp provided with the tubes C running vertically through it for receiving the elevating-rods F, as specified.

135,784.—*Life-Raft.*—WILLIAM B. DAVIES, New York, N. Y.

An annular cylinder, braided of rattan or basket-work, contains within it another cylinder, also of the same material, whose exterior is covered by some water-proof elastic material, the outer cylinder acting as a protection to the inner one.

Claim.—1. A life-raft, the boyant float of which is made of an interior frame of basket-work covered with flexible water-proof material, substantially as described.

2. In combination with such buoyant float a protecting-guard of basket-work, adapted to receive a bottom, C, substantially as and for the purpose specified.

135,785.—*Derrick.*—FRANK DONALD and GEORGE S. NEWTON, Waupun, Wis.

The beam rests upon the standard in a swivel, and consists of three parts, two of which are held in clamps and can be extended to the desired length, and the other is jointed to one end of the lower beam. The jointed part of the beam is operated by a double block and rope.

Claim.—1. The combination of standard A, beams B and C, clasp D, piece E, clasp F, chain K, hook L, poles R, and ropes S, substantially as described.

2. Double blocks I, rope P, and stakes O, in combination with rope H, substantially as described.

3. Hooks L, chain K, and rope S, all in combination, substantially as described.

4. Beam B, yoke Q, in combination with standard A, substantially as described.

135,786.—*Machine for Burnishing Heels.*—EBEN H. DOWNING and WILLIAM JOINT, Lynn, Mass.

The jack is supported upon a yielding standard, the upward movement of which is controlled by a screw and nut.

Claim.—1. In a machine for burnishing the heels of boots and shoes, the combination and arrangement, as herein set forth, of a burnishing-tool, B, provided with a spring, E, to press said tool onto the heel, and a jack for holding the shoe so mounted upon a spring, e, that it will yield to the increased pressure of the spring E when the burnishing-tool is passing over the higher parts of the heel, and rise again when the tool is passing over the sides of the heel, substantially as described.

2. The combination of the rocking block J with the rod F² of a jack passing freely through said block, and the spring e for controlling the position of the jack, substantially as described.

3. The combination of the rod F², the block J, the spring e, and the adjustable nut d, all arranged and operating substantially as described, for the purpose specified.

135,787.—*Sewing-Machine for Boots and Shoes.*—WILLIAM DUCHEMIN, Boston, Mass., assignor to GEORGE B. BIGELOW, trustee, same place.

The needle, which is eye-pointed, carries its thread from the bottom of the channel in the sole outward. Its loop is entered by the thread-carrier. The pick-up passes its point between the carrier and its thread, picks the thread up, and holds it until grasped by the fingers, which hold such loop while the carrier retracts, and until it again passes forward and through its own loop. The shoe is sewn as a turn, and is supported on an arm that enters the shoe.

Claim.—1. The needle and thread-carrier, combined and operating as described, so that the needle a^6 has a positive movement forward, as explained, after the thread-carrier has been withdrawn, in order to tighten the previous stitch.

2. The combination, with the thread-carrier b^4, of the picker-up c^3, and fingers n, these parts being constructed and operating substantially as described.

3. In combination with the thread-carrier b^4 and fingers n, the loop-gage n^7, for determining the length of the loop formed by said thread-carrier and fingers, substantially as described.

4. The take-up lever p, operated by the cam-rod a^1, slotted standard p^2, and spring p^7, for imparting tension to the needle-thread at each end of the stroke of the needle, substantially as described.

5. The adjustable stop p^6, in combination with the take-up lever p, and the tension-roll for regulating the tension of the needle thread during the forward stroke of the needle, substantially as described.

6. The combination of the slotted standard p^2, the bar p, and rollers p^1 p^2 p^3, substantially as described.

7. The combination of the sewing-gage K, presser-spring k^4, presser-arm k^3, and arm g^9 having its upper surface curved, substantially as set forth.

8. In combination with a needle or a thread-carrier moving in an arc of a circle, a stationary guide or support for the thread, arranged substantially in the described relation to the needle or thread-carrier, to prevent the thread from being deflected when the stitch is being drawn up, as set forth.

9. In combination with the thread-carrier b^4 and picker-up c, the standard s, for supporting the thread-carrier and maintaining the loop formed by it in proper position to be taken by the finger n, substantially as described.

10. The block n^5, in combination with the finger n and finger-carriage n^1, substantially as and for the purpose set forth.

11. In combination with standard g^1, the set-screw g^7, for adjusting the position of the top of the arm g^6 relative to the sewing-gage K and presser-spring k^4, substantially as described.

135,788.—*Apparatus for Treating Saccharine Liquids.*—CHARLES W. DURANT, New York, N. Y.

Claim.—1. The receiver I, provided with a vessel or "try-chamber," K, to receive a saccharometer for testing the contents or gravity of the liquid of the receiver, and for the purpose herein specified.

2. In combination with the receiver having a testing-chamber and connecting with the tail-pipes of the heating-coils of a vacuum-pan, essentially as described, the pipes M J N L, operating in respect to each other and to a steam-boiler, substantially as set forth, for the purpose specified.

135,789.—*Rotary Steam-Engine.*—JOHN F. EARLY, Ruckersville, Va.

The revolving wheel is provided with depressed cut-off cams and projecting pistons. The steam is admitted and exhausted by a notched wheel, provided with a series of valves having channel-ways that receive the steam and discharge it in front thereof.

Claim.—1. A wheel, B, having the steam-cut-off cams d arranged between the pistons D, as described.

2. A notched wheel, F, provided with the series of valves G having channel-ways that receive steam at f^2 and discharge it in front thereof, as described.

135,790.—*Harness and Saddle Pad.*—GEORGE ELSEY, Sterling, Ill.

The pad is made of sheep-skin with the wool turned inwardly.

Claim.—A harness or saddle pad, composed of sheep-skin or its equivalent, retaining the wool or hair, and having the same turned inward to form the packing, substantially as specified.

135,791.—*Sad-Iron.*—JOSEPH T. FEWKES, Philadelphia, Pa., assignor to himself, JOSEPH L. WILKINS, and W. CLARENCE CRANMER, same place.

A shell is used which has a post rising from its bottom and another post rising from the core, so that both posts meet near the center of the iron, and are there engaged by a locking-plate.

Claim.—1. The single post C rising from the shell A, in combination with the single post D rising from the core and arranged centrally with said shell and core in relation to the locking-plate, substantially as and for the purpose set forth.

2. The operating-lever J, in combination with the locking-plate G, and with the shell A, core B, and posts C D, substantially as and for the purpose set forth.

3. The guard H on the locking-plate G, in combination with the posts C D of the shell and core, substantially as and for the purpose set forth.

135,792.—*Car-Spring.*—GEORGE FRANKLIN, Philadelphia, Pa.

Claim.—1. A spring composed of plates A connected together at their ends, and arranged in zigzag form to cause the spring to act in the manner of an elliptical or spiral spring, substantially as described.

2. The scrolls a and a′ on the ends of the plates A for connecting the latter together, substantially in the manner and for the purpose set forth.

135,793.—*Razor.*—ELIJAH A. FREEMAN, Moscow, Pa.

The back of the razor blade is separate from the cutting-blade and both are pivoted together and to the handle at a point near one end. The back is grooved to receive the blade. When the razor is to be ground the back can be turned back out of the way until the sharpening process is completed. In this way a thinner edge can be easily put upon the blade.

Claim.—The combination of a razor blade and back pivoted together and to the handle at points near one end of each, the back being grooved along its front edge to receive the blade, substantially as described.

135,794.—*Cut-Off and Reversing Valve-Gear for Engines.*—RONERT MCC. FRYER, Nashville, Tenn., assignor of one-half his right to GEORGE W. SAULPAW.

Devices for changing the position of the eccentric which operates the valve of a steam or other engine, whereby the valve may be reversed, or have its cut-off action varied or adjusted to stop the engine.

Claim.—The combination of the rack M, the toothed sector N with its elbow N′, the rod O, the revolving support or box P, the block K of the revolving shaft F, and the eccentric H with its slot b, substantially as and for the purposes herein set forth.

135,795.—*Valve-Gear and Connections for Steam and other Engines.*—ROBERT MCC. FRYER, Nashville, Tenn., assignor of one-half his right to GEORGE W. SAULPAW.

Claim.—1. The combination of the crank C with the cross B or its equivalent, the crank D of the engine shaft E, and the piston-rods a a′ of the cylinders A A′, the whole being combined and arranged for operation as described.

2. The combination, with the elements recited in the preceding clause of claim, of the secondary shaft F, the wheels S S, the cross B′ or its equivalent, the eccentrics D′ D′, and the valve-rods e e′, substantially as and for the purposes herein set forth.

135,796.—*Valve-Gear for Engines.*—ROBERT MCC. FRYER, Nashville, Tenn., assignor of one-half his right to GEORGE W. SAULPAW.

A single eccentric operates two valves.

Claim.—The combination, with the revolving shaft E of the engine and its operating-cross B or its equivalent, of the secondary cross B′ or its equivalent, the eccentric D′, the slide C′, and the valve-rods e e′, the whole being arranged in relation with each other for operation substantially as specified.

135,797.—*Nail-Cutting Machine.*—CHARLES W. GLIDDEN, Lynn, assignor to JAMES W. BROOKS, trustee, Boston, Mass.

The nails are cut, heads and points, from a plate of the width equal to the length of the nails being cut. The outer end of the plate or bed upon which it rests is swung laterally after each cut in the usual manner for tapering the nails. Pivoted to this bed are two arms, the ends of which are alternately brought under the point of the nail being cut by the movements of the bed, so that when the nails fall, after being cut, their points will strike the ends of the arms and the nails will be tipped headforemost.

Claim.—In combination with a nail-plate feeding and cutting mechanism, mechanism for canting the nails and causing them to be delivered in uniform position, substantially as described.

135,798.—*Shedding Mechanism.*—WILLIAM GMEINDER, Reutlingen, Germany.

A graduated spring-tension is given to the heddle motion by means of vibrating levers, their inner ends taking hold of the heddles and one end of a spiral spring being suspended upon the lever between its fulcrum and outer joint by means of a sliding or rolling yoke, in such manner that the point at which the power of the spring acts upon the lever shall be farthest from the fulcrum when the lever is down and the heddle at rest; while with the upward motion of the lever the spring-yoke shall pass toward the fulcrum of the lever, and thus diminish its power to a minimum of resistance as the heddle approaches its highest position.

Claim.—In combination with the harness of a loom, the levers p p, springs d d, yokes s s, rollers f f, all relatively arranged to operate in the manner and for the purpose set forth.

135,799.—*Furnace-Grate Bar.*—ROBERT C. GRAVES, Barnesville, Ohio.

Claim.—The oscillating grate-bars, constructed in sets of three, having the side bars a of less depth than the middle bar A, as shown, in combination with the reciprocating bar D, constructed with recesses to allow limited play to the bars a, substantially as specified.

135,800.—*Wheel-Plow.*—WILLIAM S. GRIMSHAW, Pittsfield, Ill.

To lower or depress the plow a foot-lever hinged to the axle-tree is so shaped that it falls upon the cross-piece of the frame, while at the same time its forward end is convenient to the foot. When pressed upon by the foot it pushes down the frame containing the rock-shaft, to which the end of the plow-beam is fastened.

Claim.—1. The combination of the movable frame D D with the axle-tree B, said frame having the rock-shaft E, to which the plow-beam is fastened, substantially as described.

2. The rod P attached to the rock-shaft E and the plow-beam, and acting as an adjustable brace and guide to the plow.

3. The foot-lever K, in its combination with the axle-tree B and the frame D D, acting as a convenient and efficient device for lowering the plow.

4. The combination of the movable frame D D, the rod P, and the foot-lever K acting together, substantially as described, and for the purposes herein set forth.

135,801.—*Bustle.*—JOHN H. HALL, Ansonia, Conn.

Two crescent-shaped pockets, formed in one body and divided by a line of stitching, and being filled with suitable stuffing, have two similar pockets overlying them in such a position that the outer pocket of the upper pair shall come within the hollow between the lower pair.

Claim.—The herein-described bustle, consisting of the under pockets or parts A B combined with the overlying pockets or parts C D, united at the band E, and the parts having the relative position to each other described.

135,802.—*Iron Bridge.*—DAVID HAMMOND, MICHAEL ADLER, and JOB ABBOTT, Canton, Ohio.

Improvement in iron bow-string bridges of long span, by which lateral and vertical stiffness under rolling loads is enhanced without too great increase of cost.

Claim.—1. The combination of an iron-lattice brace-post with the arch and brace-beam of an iron bow-string bridge, said post having a vertical adjustment either at the arch or chord end, or at both of said points, substantially as and for the purpose specified.

2. The filling-plate V, in combination with the bent parts of side bars of a lattice brace-post, F, for the purpose of preventing the buckling of said bent parts when the post is subjected to a compressive strain, substantially as specified.

3. The arch-bolt F′, having a flattened head or "beaver-tail," f′, with recessed faces to receive post-bars f f, substantially as shown and specified.

4. The chord-bolt E with broad head c, in combination with the inside bars f of the lattice brace-post of a bow-string bridge, substantially as and for the purpose specified.

5. The combination, with the arches of a bow-string bridge, of an iron-lattice girder, Fig. 5, placed between said arches, and rigidly secured thereto by plates e e attached to its corners, and secured above and below the arch by a bolt run through said plates and arch, substantially as and for the purpose specified.

6. The combination, with the end of a raised lattice-girder for bow-string bridges, of an arch-bolt, H, rigidly secured to said girder, and extending down through the arches of said bridge, substantially as and for the purpose specified.

7. A raised lattice-girder for bow-string bridges, having its end bars g′ g′ arranged with bearings on the extreme horizontal parts of the arch A, and with a bolt, H, rigidly securing it to said arch, substantially as specified.

8. The combination, with the raised lattice-girder, Fig. 7, and arch A, of a tie, M, or strut M′, for holding said girder against the action of the lateral ties P, substantially as specified.

9. The combination, with the arches and brace-posts of an iron bow-string bridge, of the deep iron lattice-girder, Figs. 6 and 13, secured to the arches at its upper corners by a plate, e or e′, and at its lower corners to the posts at points considerably below the

arches by one or more bolts, 16 or 17, substantially as and for the purpose specified.

19. The girder-block G'', secured on the lower corners of the deep lattice-girders specified in preceding clauses, substantially as and for the purpose specified.

11. The combination, with the brace-beam, post, and overhead lattice-girders of a bow-string bridge, of a tension-rod, S, extending from the outer post of brace-beam across the post to the overhead lattice-girder, substantially as and for the purpose specified.

12. The lateral hitch-blocks N for the attachment of the lateral ties to the brace beams or overhead girders, said blocks having holes arranged for the passage on both ties and beveled end faces for the nuts of said ties, and being secured to said beam or girder by bolts or rivets passing through the body of the block and the flanges of the beam or girder, substantially as specified.

13. The lateral compressive strut Q, secured to the arches of a bow-string bridge at the heads of the intermediate posts, and connected at its center by lateral ties, to the ends of the lateral strut or girder at the head of the brace-posts, substantially as and for the purpose specified.

14. The arch-block W, rigidly secured to the arch A, and having an eye or hole, in which the end bolt of the lateral strut Q can be secured by jam-nuts, substantially as specified.

15. The grooved washer Y' and wrought-iron tie-plate D, in combination with the chords C and post-bolt E or clamping-bolt 22, substantially as and for the purpose specified.

16. The tie-plate Y, consisting of a short piece of flanged iron plate or its equivalent, having its web cut away at *y y*, and with holes formed in its flanges for the insertion of the tie-pins *d'*, substantially as specified.

17. The cast end thimble *c*, having its end of the form of the section of the brace-beam T, and secured thereto by strap *c'*, fitting into the recessed part of thimble-body, and to the web of the brace-beam, substantially as specified.

18. The cast side thimble *c''*, having a rear flange, 13, fitting between the flanges at the brace-beam T, and secured thereto by strap 14, fitting into recessed part of thimble-body, substantially as specified.

19. A wrought iron double tubular arch, having as the base of construction a horizontal plate, with two column-segments at each side, said base having combined with it suitable plates, channel-bars, and segments, to form an arch of the required cross-section and lateral capacity, substantially as is herein specified.

20. The combination, with the lower chords and brace-posts of a bow-string bridge, of a pair of rolled T or channel beams, trussed by a hog-chain on the under side, and held from upward deflection by a tension-rod on the upper side, substantially as and for the purpose specified.

135,803.—*Stud for Fastening Neck-Ties.*—JOSIAH A. HARD, Lawrence, Kans.

The outside disk of a button or stud is provided with a loop adapted to receive any ordinary hook, which is attached to the tie.

Claim.—The button A having disk D', provided with the loop *b* adapted for connection with the hook B, substantially as and for the purpose specified.

135,804.—*Cloth-Measure.*—COLLIER V. HEMENWAY, New London, Ohio, assignor of two-thirds his right to J. H. B. BEATTIE and A. A. POWERS, same place.

A narrow finger-extending from the handle of the portable instrument carries a shaft having a small roughened roller, which projects through an opening in one side of the finger. The instrument is designed for measuring cloth in the roll or package by inserting the said finger at a suitable place between the folds at the end of the roll and passing it around one or more turns of the cloth, a spring keeping the single thickness of cloth in contact with the small roller, which, by proper gear, indicates the length upon the dial at the opposite end of the handle.

Claim.—The burr *a* and pressure-spring *b*, in combination with the mechanical movement described, shaft F, pointer E, and indicator *c*, in the manner as and for the purpose specified.

135,805.—*Washing-Machine.*—FRANCIS W. HENSON, Philadelphia, Pa.

A wire cylinder, with beaters inside, corrugated to give motion or action to the clothes being washed, is attached to a shaft extending through it, with gears upon its end inside the casing, which shaft passes through the journal-box constructed in two parts and held in position by a jam-nut.

Claim.—1. A washing-machine, in which are combined a casing, B, to contain soap-suds, and a rotating wire-gauze cylinder or cage, A, constructed with internal rubbers to contain the clothes or other articles to be washed.

2. The combination, substantially as described, of the casing B, cylinder or cage A, gear-wheel *b'*, and the detachable crank D and its pinion *a*.

3. The combination, with the crank-shaft D and slotted end of the casing, of the clamping-plates *m* and *m'*, bolt or bearing *l*, and nut *q*, all substantially as and for the purpose specified.

135,806.—*Carbureting Apparatus.*—THOMAS HOLMES, Brooklyn, N. Y.

Claim.—The tray A and tubes *i* above the septums *e* in the vessel *a*, in combination with the supporting-bars *f g*, supply-vessel *n*, equalizing-pipe *o*, and pipe *m* to the tray A, as and for the purposes set forth.

135,807.—*Ditching-Machine.*—WILLIAM T. HOSKINS, Livia, Ky.

The block is elevated and dropped in a progressive frame in the ordinary manner. The wedge-shaped portion forms the ditch, while the truncated rear portion compacts the earth previously impressed by wedge *a*.

Claim.—A wedge-shaped ram, elongated as at *a*, and truncated as at *b*, substantially as and for the purpose hereinbefore set forth.

135,808.—*Washing-Machine.*—EDWIN HOYT, Stamford, Conn.

An upper corrugated roller revolves on the top edge of a box or tub. An inner frame, resting on springs, supports the under smooth roller, against the opposite sides of which are strips of India rubber to prevent the clothes from winding around it.

Claim.—The washing-machine, consisting of the long corrugated roller A, the short smooth roller B, the supporting and guiding-frame C J, the pliable bearing-strips D, the springs F, the supporting cross-bar E, and the cleats I, the whole arranged with respect to each other within the frame G H, as herein shown and described, for the purpose set forth.

135,809.—*Metallic Washer.*—MOSES G. HUBBARD, Syracuse, N.Y.

The washers are made of steel plate of uniform thickness, round and curved in one direction only.

Claim.—The form and construction of the elastic washer, substantially as and for the purposes set forth.

135,810.—*Middlings-Purifier.*—WILLIAM W. HUNTLEY and ABEL P. HOLCOMB, Silver Creek, N. Y.

A disintegrating-head, in connection with a wind-trunk and exhaust-fan, separates the middlings from the foreign substances, which are afterward passed through a series of graduated sieves.

Claim.—1. In a machine for purifying middlings, the combination of the disintegrating-head, an exhaust-fan, and a wind-trunk, when constructed substantially as described, and for the purpose set forth.

2. The combination of the hood D, the feed-hopper C, wind-trunk B, and fan F, when constructed and arranged to operate substantially as and for the purpose set forth.

3. The combination, in a machine for purifying middlings, of a disintegrator and a suitable series of sieves, the parts being constructed and arranged to operate with reference to each other, substantially as set forth.

135,811.—*Process of Purifying Middlings.*—WILLIAM W. HUNTLEY and ABEL P. HOLCOMB, Silver Creek, N. Y.

Middlings are simultaneously subjected to a beating action, which disintegrates lumps and loosens smut, dirt, &c., and to a blast of air, which carries off loosened impurities, then bolted over graduated sieves.

Claim.—The mode of purifying middlings, previously to their being separated into different grades by bolts or sieves for regrinding, by subjecting them to the action of whippers or beaters while passing through a current of air, substantially in the manner as set forth.

135,812.—*Combined Millstone Tram and Level.*—JOHN HUTCHINS, Portsmouth, Ohio.

The eye of the tram has adjusting-screws on each side. A level is attached adjustably to the tram, with the outer end of tram slotted and an adjustable quill arranged in slot, so that it can be used with different-sized stones.

Claim.—1. A millstone-tram and adjustable level combined, substantially as described.

2. A millstone-tram having an eye to receive the spindle provided with screws to fasten the eye to the spindle, in combination with an adjustable level, so that by the rotation of the spindle it can be plumbed and the stone leveled at the same time, substantially as described.

3. The combination of the slotted tram A, threaded stem *h*, tapped collar *l*, nut *m*, and quill *c*, all arranged as specified.

135,813.—*Corn-Planter.*—JOSEPH INGELS and WILLIAM R. MOUNT, Milton, Ind., assignors to "HOOSIER DRILL COMPANY," same place.

The cylindrical seed-box has a chamber upon the side of the seed-spout. The seed-valve is disk-like and rotates in a horizontal plane. A ball is placed in the chamber and is held by a keeper, and as the disk rotates the ball falls successively into the seed-holes and jars out the seed.

Claim.—In combination with the shaft *c* and its half-clutch fastened thereon, the combined half-clutch and worm 12 and clutch-lever E for moving said clutch and worm longitudinally on the shaft *c*, as and for the purpose described and represented.

2. The combination of the worm 2 that is always in gear with its pinion, the shaft C, gear *m*, and adjustable box or bearing *d*, so that the worm and gear may always remain in contact, and any wear compensated for by moving the worm and shaft up to the gear *m* without disarranging its other duties, substantially as described.

3. In combination with the dial or cell plate I, the chamber J in the hopper and the cage and ball arranged to operate inside of said chamber, and in connection with said dial-plate, for knocking or jarring the grains out of the cells at or over the dropping point, substantially as described.

135,814.—*Pad for Horses' Feet.*—JONATHAN JOHNSON, Lowell, Mass.

The buckling-strap is passed through the loop on the heel-piece; the boot is then placed upon the foot, the pad entering the cavity formed by the shoe. The heel-piece is then turned up and the buckling-strap passed through the buckle or through the loops of the fastenings. Upon drawing up and buckling the strap the boot will be fastened in its proper position upon the foot.

Claim.—1. The cap-piece B, constructed as shown and described, and for the purpose set forth.

2. The combination of plate A, cap-piece B, and brace C with heel-piece E and strap D, substantially as and for the purpose specified.

135,815.—*Carriage-Step.*—GEORGE A. KENNE, Lynn, Mass.

The pad is formed of India rubber in such shape that water will not remain upon its surface, and, by means of clamps combined with the pad in its manufacture, it may be readily attached to the metallic step.

Claim.—1. The foot-pad C, provided with the system of grooves *c* and projections *c'*, substantially as and for the purpose specified.

2. In combination with the step-tread B and pad C, the clamps E, substantially as and for the purpose shown.

135,816.—*Straw-Cutter.*—JOHN F. KELLER, Hagerstown, Md.

Between the feed-rollers and the stationary knife-edge is a bar in line with this knife, inclined on both sides, to guide the straw and to admit of sharpening the blade.

Claim.—The combination, with the feed-rollers of a fodder-cutter and fixed knife, E, of the intervening and inclined surfaces *f f'*, substantially as and for the purpose specified.

135,817.—*Earth-Closet.*—BENJAMIN L. KENT, Coatesville, Pa.

The earth-box has an open bottom, from which proceeds a flexible discharge-tube to an opening in the rear portion of the seat-lid. A U-shaped "cut-off," consisting of a bent rod provided with rearwardly-extending arms, is pivoted to the back part of the lid, so that by the action of the seat-lid the discharge of earth is regulated as it passes from the earth-box to the bucket.

Claim.—1. In an earth-closet, the combination, with the seat, bucket, and elevated earth-box, of a flexible discharge-tube and an automatic cut-off, substantially as specified.

2. The U-shaped cut-off I attached to the hinged lid D, in combination with the flexible tube H and transverse rod I, substantially as and for the purpose set forth.

135,818.—*Seal-Lock.*—GEORGE L. KITSON and JOSEPH BENNOR, Philadelphia, Pa., assignors to themselves and GEORGE W. CARR, same place.

The lock is provided with a rotary key-post having an extension armed with points which penetrate a sheet of paper confined between a hinged cap and the back of the lock-case, so that when the post is rotated, by means of a key or otherwise, the paper will be mutilated, thereby indicating that the lock has been tampered with.

Claim.—The post B, slotted to receive a key which operates the tumblers of the lock, provided with points, as set forth, and confined so as to have a rotary motion only, as specified.

135,819.—*Envelopes.*—RICHARD K. KUHN and THOMAS O. ATKINSON, Doylestown, Pa.

One end is cut and folded to form an angular projection from the main pocket, which extension may be torn off without injuring the contents of the envelope.

Claim.—An envelope having one or more angular projections in continuation of the main pocket, adapted to be torn or cut off to open the package without injuring the contents of the latter, substantially as described.

135,820.—*Piano Action.*—LEOPOLD KÜHKER, New York, N. Y.

Claim.—The shank of the key A, formed with the incline F and supporting the jack B, and the check D, in combination with the counterweight E, and hammer C, all constructed and arranged in respect to each other, as herein shown and described.

135,821.—*Separator for Thrashing-Machines.*—HENRY H. KURTZ, Salisbury, Pa.

A secondary fan and shoe placed underneath the ordinary fan and shoe receives the grain therefrom and completes cleaning. Secondary fan and shoe are of less width than the other, and so boxed up as to exclude dust and dirt.

Claim.—The combination, with the customary chaffing-shoe of a grain thrashing and separating machine, of the supplemental shoe B having a longitudinal shake and made of less width so as to have room at its sides for the operating mechanism and for the free passage of air to the fan P, as described.

135,822.—*Securing the Covers on Boxes for Stop-Cocks for Water and Gas Service-Pipes.*—FREDERICK H. LAFORGE, Waterbury, Conn.

Upon the under side of the cover are connected dogs by means of fulcrum-pins passing through slots in the dogs, which latter are arranged at their outer ends to catch into opposite sides of the box. The inner ends of said dogs are pivoted to a sliding nut operated by a screw entered from the outside of the cover so that the turning of the screw in opposite directions will release or fasten the dogs in the interior of the box.

Claim.—The combination, with the wooden box A and its cover B, of the dogs C C, made capable of operation from the exterior, and arranged to catch into the sides of the interior of the box, substantially as specified.

135,823.—*Knitting-Machine.*—JONATHAN LEONARD, Attica, Ohio.

The main elevating-cam has a pin projecting into the cam-groove in the wheel. At the end of each reciprocation of the carriage one of the cross-arms strikes one of the latches and the wheel is turned, thus raising or lowering the main cam, as the case may be.

Claim.—The wheel C, provided on the under side with a cam-groove, *c*, and on the upper side with cross-arms A A, in combination with the cam D and latches E E, substantially as and for the purposes herein set forth.

135,824.—*Nail-Carrier for Sole-Nailing Machines.*—ASA S. LIBBY, Lawrence, Mass.

A carrier-tube made to draw back to receive the nail-wire when the driver is down.

Claim.—The nail-carrier tube formed with movable jaws, substantially as described.

135,825.—*Road-Roller.*—ANDERS LINDELOF, Brooklyn, N. Y.

Claim.—1. The steering roller or rollers connected with the main frame by a cross joint or pin, in connection with the king-bolt, by which they are steered, to provide for a free or universal adjustment of said rollers, substantially as specified.

2. The yoke or saddle D constructed to form outside end bearings to the steering-roller or its axle, in combination with the cross-joint or pin *f* and the king-bolt *d*, connecting the steering roller or rollers with the main frame, essentially as herein described.

135,826.—*Grain-Binder.*—SYLVANUS D. LOCKE, Hoosick Falls, N. Y.

The cord is held between the two rigid jaws, one of which is provided with a solid hook and the other with a depression, so that the cord is prevented from slipping out while rotating.

Claim.—A rotating hook constructed with two rigid jaws having a concave front and solid retaining-shoulder, substantially as described.

135,827.—*Sewing-Machine Table.*—HENRY LOTH, Philadelphia, Pa.

The leaf is connected to the table by double-jointed hinges so that when the leaf is dropped it is drawn in out of the way, and rests against the supporting-leg of the table.

Claim.—The combination, substantially as described, of double-jointed hinges D with the leaf A and table B of a sewing-machine, for the purposes set forth.

135,828.—*Steam and Air Brake.*—WILLIAM LOUGHRIDGE, Baltimore, Md.

Claim.—1. The cylinder, piston-rod, pulleys, pulley-frame, the intermediate rope *h* or chain, when combined and operated with the hand-brake mechanism, in the manner and for the purposes as set forth.

2. The right-angled coupling-pipe *k* having a projecting pin, *y*, the ball *v*, and nut *u*, when constructed and operated for the purposes substantially as set forth.

3. The U-shaped pipe arranged with its arms or connecting-pipes passing up through the floor or platform of the car, with the main pipe entering below, and with the couplings above, substantially as shown and described.

135,829.—*Plow.*—JOHN LOVE, Cusseta, Tex.

The plow-irons are provided with long shanks fitting into a slot in the beam. The shanks are perforated and bolted through the curved and slotted brace.

Claim.—The subsoiler D, pulveriser C, and furrow-opener E, provided with long shanks F relatively adjustable through plates B B and long oblique slot of beam A', as and for the purpose set forth.

135,830.—*Screw-Cutting Device.*—JOEL BACON LOW, Ravenna, Ohio.

The dies are closed by a projecting flange on the end of a sleeve that slides on the cylinder, said flange being beveled on its outer edge, but flat on top, is forced under the ends of three bell-crank levers, in which are fastened the cutting-dies, by a lever having pinions on one end pivoted in the sliding sleeve, and working in a rack formed on the cylinder.

Claim.—The combination of the swinging die-holder A, the barrel D having a rack, *i*, the ring F, sliding sleeve G, and lever H having a segmental pinion, *h*, all arranged as specified.

135,831.—*Back-Band of Harness-Saddles.*—SAMUEL F. MARSHALL, Wilmington, Del.

The shaft-tug is made to swing on a pivot, and may be detached from the back-strap.

Claim.—The combination of the sections A and B, the latter having stud b^1 with ears b^2, and the former having opening a^2 with slots a^3, substantially as described.

135,832.—*Miter-Box.*—JOHN A. MCKINSTRY and WILLIAM WALDEN, Springfield, Mass.

The guide-posts, connected by the sliding bars, are fastened in any position by the double cam-wheel wedging the clamps on the front bar.

Claim.—In combination with a miter-box, the cam or clamp for setting the saw-guides at any desired angle or fraction of a degree, substantially as set forth.

135,833.—*Hold-Back.*—MICHAEL D. MYERS, Schuyler, N. Y.

Should the shaft become detached through derangement of the harness or other cause the hold-back fastenings will become automatically detached, freeing the animal from the wagon.

Claim.—The combination of the bed-piece A, its hook B having a projection, H, as herein described, and spring D with the link E having an elongated point, G, for the purpose specified.

135,834.—*Dash-Rail for Carriages.*—BAXTER B. NOYES and OSCAR G. STRATTON, Greenfield, Mass.

Claim.—The plate C, provided with the ears, in combination with the rail A and brace B, all constructed and arranged substantially as described.

135,835.—*Bed-Bottom.*—HARRISON OSBORN, Richmond, Ind., and ANDREW W. KENDRICK, Brooklyn, N. Y.

The slat is pierced with holes at each end so that a looped wire passing through them straddles the slat and forms a reversible hook to hold the end of the spring. At the coiled end of the spring the ends are driven into the bar, so that the arms of two adjoining springs are held by a broad-headed nail clamped down. The head-rest the slats of which work between the slats of the bed-bottom, is pivoted to the lower side of the rail, and operated by a ratchet-which engages with notches on the head-bar.

Claim.—1. The spring-holder formed by the double wire passing through holes in the slat, and forming a reversible hook or holder, as described.

2. Fastening the spring to the bars by inserting the ends through the bars and clasping the contiguous arms with the broad-headed nail, as described.

3. The head-elevator, pivoted to the lower side of the rails, and having the pawl and ratchet which engage with notches on the head-bar.

4. The combination of the frame and slats with the spring, the spring-fasteners, the holding-hooks, and the pivoted elevator, with ratchet and pawl, all constructed as described, and for the purposes set forth.

135,836.—*Leather-Stretching Frame.*—CHARLES P. OLIVER, Newark, N. J., assignor of one-half his right to THEODORE P. HOWELL, same place.

The hide is thrown over the fixed cross-bar, and its edges are then secured to the adjustable bar, which is forced down by levers.

Claim.—The leather-stretching frame herein described, having bars A and D, levers *e* and *f*, wrist-*y*, perforated plate *a*, and wrench H, constructed and arranged substantially as specified.

135,837.—*Portable Extension Fence.*—ADAM W. OVERHOLSER, Duchoyquet township, Auglaize county, Ohio.

Base-blocks are attached at intervals to the extended oblique bars, and move as the fence is extended. The fence may be connected with the sill of a gate by one of the extended oblique bars entering a mortise in the sill.

Claim.—1. The improved extension fencing composed of the oblique pivoted bars *f* and the movable blocks G, substantially as and for the purpose specified.

2. The extension fencing composed of the oblique pivoted bars *f*, one of which is extended, in combination with the gate-base A having the notch *g*, substantially as specified.

135,838.—*Hot-Air Furnace.*—HENRY L. PALMER, New York, N. Y.

The corrugated wall of the chamber of combustion and the corrugated jacket encircling it are so placed together that a series of hot-air tubes are formed around this chamber.

Claim.—Inner and outer corrugated plates, arranged in juxtaposition in a hot-air heater, so as to form heating-flues in one or more sets.

135,839.—*Railroad-Track.*—LOUIS H. PETELER, New Brighton, N. Y.

The tongues prevent displacement, while the wedge-keys firmly clamp the rails in place.

Claim.—The tongues *c* in the sides of the recesses *a* opposite the key-seats *b*, in combination with grooves *d* in the rails E, substantially as set forth.

135,840.—*Corn-Husker.*—PETER PHILIP, Stockport, N. Y.

Rolls tear the ears from the stalk, and the ears falling on outer rolls the husk is torn from it on its descent.

Claim.—1. The picking-rolls A B geared together at both ends by spiral gears, the teeth of which run in contrary directions at opposite ends of the rolls, substantially as and for the purposes set forth.

2. The grooved picking-rolls A B having longitudinal ribs *c* and corresponding grooves or depressions *c'*, substantially as and for the purpose specified.

3. The rolls C D geared together by spiral gears, in combination with the collar C^2 and groove D^2, substantially as and for the purpose specified.

135,841.—*Corn-Husker.*—PETER PHILIP, of Stockport, N. Y.

Reversed grooves and elevations on the end of the picking-rolls prevent the stalks from clogging the journals and bearings. Curved shield protects the ears of corn from injury from the lower picking-roll, and prevents the gearing of the husking-rolls from being clogged by detached strips of husk and stalk. Gravitating plate loosely suspended to prevent any ears bounding upward from the husking-rolls as they fall thereon from the picking-rolls. A table having diagonal partition guides the stalks to the proper end of the picking-rolls.

Claim.—1. The picking-rolls constructed with annular grooves and elevations A^1 B^1 and spiral grooves and elevations A^2 B^2, running in a direction reverse to the spiral grooves and elevations upon the main portion of the rolls, substantially as and for the purposes specified.

2. The shield C, constructed and arranged, with reference to the picking-rolls and the gearings D and E, substantially as and for the purpose specified.

3. The plate H, arranged above a pair of husking-rolls, being hinged at its upper end, and adjustably suspended by a cord or chain, I, at its lower end, substantially as and for the purpose specified.

4. The feed-table K K', constructed with the diagonal guide-board L and overhanging inclined guide board M, substantially as and for the purposes set forth.

135,842.—*Wrench.*—NATHAN L. POST, East Cleveland, Ohio.

By means of the handle the wrench is held to its work with one hand, while it is turned with the other by means of the shank A. A rubber ring is attached to the head so as to project through at the corners, and by its elasticity retain the nut after being taken off.

Claim.—1. The wrench A, when used in combination with a handle, C, pivoted to the same, as and for the purposes set forth.

2. The head B of a wrench, constructed as herein described, and used in combination with an elastic or flexible ring or block, G, as and for the purpose set forth.

135,843.—*Tool for Facing Bung-Holes.*—TREAT T. PROSSER and GEORGE W. GILLETT, Chicago, Ill.

An iron plug fitting the bung-hole of a barrel is provided with a central aperture which receives the guide-pin of the cutting-tool.

Claim.—The combination of the cutter B, stem or spindle C, and plug D, substantially as and for the purpose specified.

135,844.—*Bed-Bottom.*—ROLAND RAKESTRAW, Wyoming, Ill.

The foundation is formed of curved slats, with two side and one central curved slat below. At the ends they are clamped between bars. Upon two crossed slats are coiled springs.

Claim.—In a bed-bottom having curved or bowed slats A B, the combination of the rods *c c* and cross-slats or bars *a b* having wire or cord *n* arranged to fasten the ends together, in connection with the arrangement of the cross-slats *d d* provided with spiral springs *f*, in the manner and for the purpose as herein shown and set forth.

135,845.—*Grain-Register.*—STEPHEN RAMER, Winona, Minn.

The tallying arm or lever trips a four-toothed ratchet-wheel carrying a cam, which actuates the pawl of the count-wheel only on the alternate throws of the tallying lever; the intermediate throws bringing a movable arm marked "½" beside the stationary number, and withdrawing it, as the whole number is shifted, the object being to register half-bushel measures.

Claim.—1. The ratchet E, cam F, lever D^2, lever F^1, pawl G, arms G^1 G^2 G^3, pawl D^1, and spring *g*, in combination with the graduated ratchet-disk C, all constructed and arranged substantially as shown and described.

2. The combination, with the cam F and graduated disk C, of the lever H bearing the fraction-mark, operated by alternate movements of the arm G^3, substantially as specified.

3. The graduated toothed-bar m^1, in combination with the graduated disk C having the rim notched, the lever L, studs *c m*, and spring *L'*, substantially as and for the purpose specified.

4. The graduated bar m^2 having the teeth *m* N', in combination with the slotted blocks N and springs P, substantially as and for the purpose specified.

135,846.—*Machine For Distributing Fertilizers.*—ISAIAH M. REAMES, Oxford, N. C.

A box, open at top, with a hopper to be slung in front of the operator, is divided by a horizontal partition having an orifice adjusted by a slide. In each compartment, worked by pinions on the outside and a crank, is a horizontal spindle with a spiral plate around it. The seed is thus drawn to the orifice and then pushed to the outlet at the bottom of the box.

Claim.—The combination of the spirally-flanged conveyer-shafts E I revolving in opposite directions and arranged in the receiving and discharging compartments B C of a fertiliser or seed-planter, as herein shown and described.

135,847.—*Tin-Can-Soldering Machine.*—JOSEPHUS REDHEFFER, Philadelphia, Pa., assignor to WM. REDHEFFER, JAMES REDHEFFER, Jr., and THOMAS G. REDHEFFER, Kansas City, Mo.

A can-soldering cylinder has a gage-ring with pins supported therein to stop the can-stock at the desired point. The soldering-bar is adjustably attached to the gage-ring.

Claim.—1. The combination of a can-soldering cylinder and a gage-base or ring, either or both of which are adjustable with relation to the other, substantially as described, whereby the machine is practically adapted to the soldering of cans of different lengths.

2. The combination, with the expanding and contracting cylinder, of the gage-pins arranged to bear upon the surface of the cylinder, and to maintain proper contact therewith at all times, substantially as and for the purposes specified.

3. The soldering-bar G, secured to its base at its fulcrum by a connection which is adjustable on the circumferential line of the cylinder, substantially as described, whereby the bar may be brought at will to bear at different points on the cylinder, as and for the purposes specified.

135,848.—*Show-Case.*—WILLIAM H. REIFF, Philadelphia, Pa.

The case has inclined glass sides and ends, and an inclined door.

Claim.—In a show-case constructed with glazed front, sides, and ends, the arrangement of the door in an inwardly-inclining position, as shown and described.

135,849.—*Car-Coupling.*—JOHN ROYAL, MOSES A. LENTZ, and JEREMIAH M. DEINERT, La Fayette, Ind.

On the bottom of the bar, which acts as a stop for the pin, is a spring notched in two places, the notch nearest the handle retaining it wholly in the draw-head, and the furthest notch preventing its being entirely withdrawn.

Claim.—The combination of the slide C with spring *d* and catches *f f*, the swinging pin B, and the mouth of the bumper in which is a slot to allow the pin B to play, as and for the purpose herein set forth.

135,850.—*Plow.*—HENRY SELICK, Lewistown, Pa.

The beam is attached to the mold-board by means of a lug formed thereon, whereby a central draft may be obtained.

Claim.—The lug *b* on the inner side of the mold-board D, in combination with the beam A, the bolts *c d*, and sheath C, the whole being arranged substantially as and for the purposes herein set forth.

135,851.—*Toy Velocipede.*—WILLIAM SELLERS, New York, N. Y.

To vary the movements of the toy, moved by a clock-work attachment, the wheels, one or both, are connected or relieved from the axle by a clutch attachment so as to drive the toy in curves or straight lines.

Claim.—A toy velocipede, the driving-power of which is secured to an axle supported by two wheels, each of which is provided with a fastening device, serving to fasten the same to the axle or to release it therefrom, substantially in the manner and for the purpose herein shown and described.

135,852.—*Winding Mechanism for Spinning-Jacks.*—JAMES SHAW, Ballard Vale, Mass.

The radial arm is attached to the under side of the carriage, and, while traveling with it, it is vibrated by a band passing around the pulley on one end of the shaft at right angles to the screw, on the other end of which is a spur-gear which engages and turns another gear provided with a crank-pin working in a slot in the radial arm. This shaft also carries a sliding sleeve, on which are two bevel-gears, and which is grooved to receive one end of a pivoted lever connected with and operated from the counter-faller. Over or under tension of the yarn raises or lowers this lever and brings one or the other of the bevel-wheels into gear with that on the screw so as to turn the latter and govern the winding in the usual way.

Claim.—The combination of the lever A, the sleeve *e*, the three bevel-gears *b c d*, the pivotal shaft *a*, the pulley *g*, the gears *m m*, and stud *c'*, arranged and combined with the bracket A, the slotted radial arm *b'*, and operative screw *b'* of the nut *m'*, substantially as specified, the said lever to be connected with the follower so as to be operated by it, as described.

135,853.—*Cotton or Woolen Can.*—HENRY W. SHEPARD, New York, N. Y.

Claim.—As a new article of manufacture, a metallic can for cotton or woolen factories, consisting of the cylinder A, bottom B, and its inner turned-down hoop C formed out of a single piece of metal, and the outer band or hoop D, the several parts being attached together through bead or groove connections and without solder or rivets, substantially as described.

135,854.—*Cotton or Woolen Can.*—HENRY W. SHEPARD, New York, N. Y.

Claim.—As a new article of manufacture, a can consisting of the bottom and hoop A B, formed out of a single piece of metal, cylinder G, and band D, when the same are so connected by beads or grooves as to avoid the use of solder in attaching the several parts together, as and for the purpose specified.

135,855.—*Sheet-Metal Vessel.*—HENRY W. SHEPARD, New York, N. Y.

Claim.—As a new article of manufacture, the pail or vessel A, consisting of the cylinder B formed with a single-lap joint and having beads or grooves *b b*, the bottom C, and hoop D, when the latter is formed with beads or grooves *d d*, and out of the same piece of metal with the bottom, the whole being constructed, combined, and arranged substantially as described.

135,856.—*Wrench.*—JOSEPH SMILEY, Franklin, Pa.

By pressing the thumb on the stud the pin is relieved from the notches in the stem, when the outer jaw may be moved as required.

Claim.—In a hand-wrench, the combination, with the recessed and perforated stationary jaw B, of the serrated stem *b* of the movable jaw, and the spring-catch E, and thumb-stud *c*, substantially as specified.

135,857.—*Piano Sounding-Board.*—CHRISTIAN F. T. STEINWAY, New York, N. Y., assignor to himself, WILLIAM STEINWAY, and ALBERT STEINWAY.

To prevent the sounding-board bars from warp or giving way.

Claim.—The employment of one or more strips of hard wood inserted into the ribs B of the sounding-board of a piano-forte, substantially in the manner and for the purpose herein shown and described.

135,858.—*Bustle.*—THEODORE STOCKMAER, New York, N. Y.

The bustle is made of two or more skirts of corrugated material attached to the same waistband, and graduated in size, the largest being underneath and the smallest the top one.

Claim.—A bustle composed of two or more tiers of fluted, corrugated, or plaited material, arranged in relation with each other, as described, and attached at their upper edges to the waistband or strap, substantially as specified.

135,859.—*Washing-Machine.*—JOHN STRAHL, Lee, Ohio.

A box of ordinary form, with a frame for holding the rollers in the lower rubber, with a rubber suspended over it, all located and working in a metallic lining which is fitted to the form of the box, and may be removed at will for other purposes, rinsing, &c.

Claim.—In the washing-machine herein described, the combination of the boxes A and B, frames C and G, and rock-shaft *c*, constructed and made removable one from the other at will, as specified and shown.

135,860.—*Call-Bell.*—HENRY STRATTON, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place.

The bell is attached to its base in an inverted position, and the hammer is pivoted outside of and above its mouth, under a suitable cap or cover.

Claim.—The combination of the inverted bell C upon a suitable base, A, the striking instrument, pivoted above and arranged to swing across the mouth of the bell in a plane substantially at right angles thereto, the neck or cover E, and piston *b*, substantially as specified.

135,861.—*Three-Horse Evener.*—BENJAMIN W. SUTHERLIN, Fillmore, Minn.

The draw-bar is pivoted to the tongue so that its arms will be unequal in length, that two horses may be attached to one side and one horse to the other, the draft being equalized by an arrangement of levers.

Claim.—The draft-evener, consisting of the transverse movable bar F having arms of unequal length, the oblique rods e^1, the bent lever E' having unequal arms, and transverse bar B, substantially as specified.

135,862.—*Sectional Steam-Generator.*—JEROME B. SWEETLAND, Pontiac, Mich.

Claim.—1. In combination with the bottom section of a sectional steam-generator, the hollow standards or legs E E with screw-caps G G on their lower ends, substantially as and for the purposes herein set forth.

2. The buttons or studs *b b* formed on or attached to the upper side of each section of a sectional steam-generator, substantially as and for the purposes herein set forth.

3. The within-described steam-generator, consisting of one or more central hollow hubs, A, radial arms C, hollow rim B, studs *b b*, and hollow legs E provided with screw-caps G, all substantially as and for the purposes set forth.

135,863.—*Scraper Attachment for Plows.*—JAMES P. SWOFFORD, Brownville, Miss.

Claim.—The combination, with the plow-beam A, of the adjustable and curved beam D provided with the scraper G, the said beam being perforated, as shown, and bolted to the beam at *e* through one of said perforations, and connected at its front end to the lower end of the short arm *d* pivoted to the plow-beam, all substantially as and for the purposes herein set forth.

135,864.—*Nut-Lock.*—DAVID O. THOMPSON and BENJAMIN A. RICE, Pontiac, Mich., assignors of one-third of their right to JEROME B. SWEETLAND, same place.

A metallic casing, one end thick and screw-threaded, the other forming a box in which is fitted a rubber nut, held in place by ears or tabs turned down over the end.

Claim.—The within-described nut-lock, consisting of the solid metal head A, with a central screw-recess and hollow chamber, B, rubber nut C secured by the bent projections D, and the screw-bolt E, passing through the rubber and metal parts A C, all as set forth.

135,865.—*Coating and Preserving Rope and Cordage.*—WILLIAM A. TORREY, Mount Clair, N. J.

Dissolve the rubber or gutta-percha in naphtha, oil of tar, benzine, turpentine, bisulphide of carbon, or mixture of these solvents, and add sufficient naphtha or dead-oil to preserve the compound and the rope.

Claim.—1. The improved method herein described, for coating and preserving rope and cordage, the same consisting in the application of a solution of India rubber, prepared as set forth.

2. The new article of manufactured rope and cordage coated or saturated with solutions of rubber or other gums at low temperature, as and for the purpose described.

135,866.—*Car-Coupling.*—ADDISON TRUXELL and FREDERICK J. WILLIAMS, Toledo, Ohio.

Claim.—1. The combination and arrangement of the hooked draw-bars A B, clevis D, arm E, rod F, and operating-lever G, substantially as and for the purposes set forth.

2. The knuckle-joint H, having its respective members attached to the operating-lever G, and arm E, substantially as and for the purposes explained.

3. The cam I and ring J, in combination with the lever G, as set forth.

135,867.—*Saw-Set.*—WILLIAM TUNSTILL, Brooklyn, E. D., N. Y.

Peripheral dies, formed by alternate inclines. The projections on one wheel, fitting into corresponding depressions on the other, are fastened behind two wooden wheels, which feed and steady the saw-blade while the dies are bending the teeth.

Claim.—Peripheral dies, made by inclined planes in alternate opposite directions around the edges of a pair of wheels, substantially as set forth, in combination with the guide-wheels A A, as set forth.

135,868.—*Sewing-Machine Fan Attachment.*—CORNELIOUS B. VERDIER, Athens, Ga.

The fan has a threefold adjustment.

Claim.—The inclined or bent arm C, rocking bar A, double socket B with set-screws *a b*, socket D with set-screw *c*, and fan G, the several parts being constructed and arranged as herein set forth.

135,869.—*Boiler-Furnace.*—CHARLES D. WILLIAMS, St. Paul, Minn.

Claim.—The combination, with the boiler D, of the furnace A and the perforated chambers H H, arranged in the bottom of furnace above the grate C, and communicating with the steam space or dome E by means of the pipes G G, substantially as and for the purposes herein set forth.

135,870.—*Car-Wheel.*—WILLIAM WILMINGTON, Toledo, Ohio.

The wheel is first cast with the central portion of the tire indented, which is then chilled from the outside to the flange. The tire is then cut away, which leaves only the central portion chilled, while the outside of the tread and flange remain as cast.

Claim.—A car-wheel having the portion A chilled, and the portions B and C homogeneous with the rest of the wheel.

135,871.—*Car-Coupling.*—LISTON B. WILSON, Caldwell, assignor to ISAAC A. WILSON, Zanesville, Ohio.

A bar, having a weighted crank at one end and a gate formed upon the opposite end, turns upon the draw-head, and when the gate locks the link the same is held from swinging by a spring bearing upon it. To the crank chains connect by suitable devices with the sides and top of the car, that they may be uncoupled without entering between them.

Claim.—1. The bar D, as constructed, being made longer than the spring *e*, and used in combination with the shaft *d*, as and for the purpose set forth.

2. The combination of the draw-head B B' with convex inner walls *a a*, bearing-point *x*, recess *y*, and concaved back *b*, with the sliding spring-gate C, and link G, all substantially as set forth.

135,872.—*Cultivator.*—BENJAMIN WITTER, Sherrill's Mount, Iowa.

Claim.—The beam E with round tenon at its lower end, shoulder *x*, and groove *y*, in combination with the concaved block *f* with ears *z z*, the shovel G, strap A, and bolts *t t*, all substantially as and for the purposes herein set forth.

137,873.—*Eccentric Fastening for Boxes, &c.*—WILLIAM YOUNGBLOOD, Brooklyn, N. Y., assignor to ROSABELLE YOUNGBLOOD, same place.

A disk of thin metal is pivoted at its center and has a circular groove in the face fronting the box arranged eccentrically to the pivot, so that the hook or hasp of the box-cover, which drops into it through a radial notch will be pulled down, thus forcing the cover tightly upon the box-edge.

Claim.—The disk A pivoted centrally to the box, provided with an outer flange, C, and on its under side with an eccentric groove, D, and a radial groove, E, communicating therewith, as shown and described, whereby the hook of the hasp may be let into the portion of the groove D furthest from the pivot B and the fastening completed, as set forth.

REISSUE PATENTS.

5,271.—*Railway-Car Brake.*—STEPHEN BALKWILL and WASHINGTON W. BALKWILL, Cleveland, Ohio.—Patent No. 129,890, dated July 30, 1872.

A cone is cast on the inner side of each wheel of the truck and encircled by friction-bands, which are connected by levers in such a manner that power being applied the bands are tightened and are drawn inward, the object being to prevent the wheel from slipping off the ends of the axle when the friction-bands are applied.

Claim.—1. The cones cast with the wheels and combined with friction-bands encircling the cones, and operated substantially in the manner and for the purpose set forth.

2. The employment of friction-bands adapted to be tightened on cones by being drawn inward from the wheels toward the middle of the axle, substantially as described, for the purpose specified.

5,272.—*Whip-Socket.*—SYLVESTER W. BEACH, Ypsilanti, Mich.—Patent No. 130,006, dated July 30, 1872.

A spring-jaw is hinged within the socket, by means of which the whip is held firmly in position. The socket is secured to the dash by means of a fastener, which is jointed at one end, while the open ends are secured by a screw.

Claim.—1. The jaw B, made in two parts, connected together by the spring D, and arranged, in combination with the spring C, within the socket A, substantially as shown and described, and for the purposes set forth.

2. The jaw B, in combination with the socket A, when the jaw is hinged to the socket, substantially as and for the purposes set forth.

3. The clip or fastening G, formed of the two parts *a* and *b*, constructed and hinged together as described, and provided with the nut *c* and screw A, substantially as and for the purposes herein set forth.

5,273.—*Hand-Car.*—HENRY L. BROWN, Adrian, Mich.—Patent No. 94,469, dated September 7, 1869.—Division A.

Two gear-wheels of unequal diameters are secured to the double crank-shaft, and engage with pinions of different diameters on the car-axle. A double clutch is placed on the axle between the pinions, and so arranged that the driving-shaft may be thrown in gear with either pinion, and consequently change the speed of the car at will.

Claim.—1. In a hand-car, a double crank-shaft carrying two driving-wheels of unequal size, in combination with the pinions and double clutch arranged upon the axle, substantially as set forth.

2. In a hand-car, the combination of a double crank carrying two driving-wheels of unequal size with suitable mechanism on the axle, so that the speed can be changed at will, substantially as set forth.

5,274.—*Hand-Car.*—HENRY L. BROWN, Adrian, Mich.—Patent No. 94,469, dated September 7, 1869.—Division B.

Two hand-levers are fulcrumed upon the same shaft, one of which has a short dependent arm near its center. These are connected to a double-cranked axle by connecting-rods.

Claim.—The combination of the levers *c d*, connecting-rods *e*, and double cranks, when the parts are arranged to operate substantially as described.

5,275.—*Bedstead.*—SIMON CARO, Washington, D. C.—Patent No. 134,350, dated December 31, 1872.

There are wings attached to the posts, which slide in double head and foot boards, in the center of which are vertical partitions, which serve as stops. The slats are attached alternately to the side rails and rest upon a center bar, which is fastened to the head and foot boards, and has guide-blocks for the slats. There is also a central foot to sustain the center when the bedstead is extended.

Claim.—1. The hollow head and foot boards A B, open at both ends, and provided each with a central slat or partition, *a*, in combination with the posts C C, side rails D D, and wings G G, said wings being attached to the posts and sliding in the hollow head and foot boards, substantially as and for the purposes herein set forth.

2. In combination with the head and foot boards and side rails of a bedstead, capable of extension sidewise, the slats I I, attached alternately to the side rails, and the center bar E connecting the head and foot boards and supporting the slats, and provided with guide-blocks *b b*, between which the slats move, all as and for the purposes herein set forth.

3. In combination with the posts and side rails of a bedstead, the double or hollow head and foot boards A B, wings G G attached to the posts and sliding in said head and foot boards, the vertical partition *a*, the slats I I attached alternately to the side rails and resting upon the center bar E having guide-blocks *b b*, and the central foot H, all constructed as described, and for the purposes set forth.

5,276.—*Automatic Boiler-Feeder.*—SILAS COOK, Magnolia, Iowa, assignor, by mesne assignments, to THE AUTOMATIC BOILER-FEEDER COMPANY.—Patent No. 97,361, dated November 30, 1869.

Water forced from the cistern by exhaust or live steam, which enters a valve-chamber and passes through a port opened and closed by an automatically-moving valve into the reservoir of the feeder, passes into a partitioned chamber connecting with the reservoir, and upon attaining a certain elevation in one compartment flows through an orifice in the partition into the second compartment, and by raising a float journaled therein through suitable mechanism operates three valves, one closing the port which governs entry of steam to the cistern, another opening a port which connects through a second valve-chamber with the boiler, and the third opening a port which supplies the boiler with water. Steam enters the second valve-chamber when the water is below a certain point in the boiler, passes into the float-chamber, and, by establishing an equilibrium of pressure between the latter and the boiler, permits the water to fall by gravity into the boiler. Ports are provided in both valve-chambers to permit steam trapped to enter jacket.

Claim.—1. The valve R, operating, substantially as described, to control the communication between the steam-pipe and the cistern, and also the communication between the steam-chamber of the feeder and the cistern.

2. The combination, in a boiler-feeder, of a valve, R, and a float, B', or its equivalent, operating substantially as described, to control the entrance of steam into the cistern or tank, and thus automatically regulate the supply of water to the feeder.

3. The combination, in a boiler-feeder, of the steam-chamber B, the water-chamber D, and the float-chamber Y, substantially as described.

4. The combination of the water-chamber D, chamber Z having aperture *a*, and chamber Y, to raise the valve-float B' at the time specified, and for the purpose set forth.

5. The combination, in a boiler-feeder, of a water-chamber and inclosing steam-space, and a waste-pipe for the water of condensation, said waste-pipe connecting with the water-tank or cistern, substantially as shown.

6. The combination of the steam-space B and the float-chamber Y by means of the valve V and the ports *f* and A, substantially as and for the purpose set forth.

7. The float B', operated in the manner described, in combination with the short arm J' and the weighted wheel K' having pins *r r' r'' r''' s' s''* thereon to operate the valve-gear, in the manner specified.

5,277.—*Tool-Holder for Slotting-Machines.*—JAMES S. ETTENBOROUGH, Easton, Pa.—Patent No. 134,196, dated December 24, 1872.

To an enlarged head terminating the shank of the holder is hinged a broad plate, and to the latter is swiveled an ordinary tool-post, in which the tool is clamped. Behind the plate, at the upper end, is a spring, by which the lower part of the plate—that to which the post is attached—is forced back against the head, but which, on a return stroke, will yield, and thus allow the tool to drag more lightly.

Claim.—A slotting-tool holder, consisting of a shank, A, with a grooved head, B, a relief-plate, C, pivoted to the slotted head, a spring, E, a tool-post, F, and a binding-screw, H, combined and arranged substantially as specified.

5,278.—*Gas Fire-Log.*—ALBERT H. MERSHON, Philadelphia, Pa., assignor to himself and GEORGE B. MERSHON.—Patent No. 126,473, dated May 7, 1872.

This metallic gas fire-log has a corrugated and perforated face sloping from the highest part at the rear toward the front of the grate. A water-pipe laid along the corrugations affords means for heating water or making steam.

Claim.—1. The gas-heater, constructed of a metallic body, having a face sloping or curved, as stated, in connection with perforations in and corrugations on said face, so as to form a heating-surface on the front or toward the apartment, as set forth, and for the purpose specified.

2. In combination with a gas-heater, mechanism for obtaining hot water and steam, substantially as set forth.

5,279.—*Hay and Manure Fork.*—LESTER D. PITCHER, Dixon, Ill. Patent No. 90,463, dated May 25, 1869.

The tines of the fork are made of sheet metal, swaged into a V-form to give them strength, and they are fastened to two cross-heads, to which the handle is also secured. A wire bail rises from the outer ends of the upper bar and is sprung over the arched portion of the handle, and secured thereto.

Claim.—1. Hay and manure forks consisting of sheet-metal tines *d* fitted over and supported by the cross-bar *c* and under the cross-head *b*, and having handle *a* fitted over the cross-head *b* and under the cross-bar *c*, in the manner and for the purposes substantially as herein shown and described.

2. The bail *e*, constructed with bearings e^1 e^1, shoulders e^2 e^2, standards e^4 e^4, curved portions e^5, and a back, e^6, in combination with the handle *a* and cross-head *b* of a hay and manure fork, in the manner and for the purposes shown and described.

5,280.—*Handle for Milk-Cans.*—HENRY W. SHEPARD, New York, N. Y.—Patent No. 103,933, dated June 7, 1870.

The shield is stamped out of one piece of metal, and has a curved flange extending nearly across the top of the same. The handle is formed in the usual manner, except that it is provided with a guard that extends entirely across the upper portion, and thereby increases the bearing-surface.

Claim.—1. The handle B having parallel bars B^1 B^1, so as to afford, when used in connection with any ordinary handle-plate having a groove or recess or a sheet-metal fastening or loop, a continuous bearing-bar and stop-guard, substantially as described.

2. The shield A, when the same is stamped out of one piece of metal, having a curved flange, A^2, raised center A^1 with its opening *a* and grooves C C, and the handle B with its stop-guard B^2, when the whole is so constructed and arranged as to form a milk-can handle, substantially as described.

5,281.—*Burnisher for Photographs, &c.*—EMILE R. WESTON, East Corinth, Me., assignor of one-half his interest to TIMOTHY MCDONALD.—Patent No. 131,319, dated September 10, 1872.

The paper is drawn between a feeding roll and a stationary heated burnisher, and is surfaced by friction contact with the latter.

Claim.—1. A burnishing-machine, by which a surface is given to the article to be burnished by feeding it under pressure over a stationary burnishing-tool, as specified.

2. The combination of a stationary burnishing-tool and friction feed-roll, substantially as specified.

3. The combination of the feed-roll and burnishing-tool with the pressure-screw, substantially as set forth.

5,282.—*Machine for Making Weavers' Harness.*—JOSEPH S. WINSOR, Providence, assignor, by mesne assignments, to LYMAN A. COOK, Woonsocket, and JOHN KENDRICK, Providence, R. I.—Patent No. 12,175, dated January 2, 1855; extended seven years.

The machine is for forming and tying weavers' loose-heddles of two twines by a continuous operation, which ties the two knots to form the eye and a knot at each end around the bands, the same twines forming any number of heddles in succession and all connected.

Claim.—1. The mechanism, substantially as specified, by means of which each twine is formed in a loop, and the spool or its equivalent carrying such twine carried through such loop to form a knot, and then the spool or its equivalent which carries the other twine passed through such loop, that the twine thus carried through may be griped therein when the knot is drawn tight, thus forming the eye of two twines with a knot in each griping the other twine, as herein set forth.

2. In combination with the fingers, or their equivalents on which the knots are tied, the discharger or any equivalent therefor, by means of which the knots are discharged from the said fingers.

3. The fingers located between the side bands, and operating to gage the size of the eye.

4. The fingers operating to gage the size of the eye, in combination with mechanism, substantially such as described, which operates to tighten or draw up the twine out of which the next heddle is formed.

5. The mechanism for forming the knots, substantially as herein described, in combination with pinchers, substantially as described, or any equivalent therefor, for holding the twine tight after the knots at each end of the eye have been closed, and during the operation of drawing the twines tight around the bands, as set forth.

6. The mechanism, substantially as described, by means of which the twines are wrapped around the bands in succession and formed each into a loop, through which the spool or its equivalent for carrying the twine is passed to effect the tie, substantially as described.

7. The mechanism, substantially as described, for forming what is termed the loose of the harness by reversing the motions of the spools, or their equivalents, for carrying the twines, thus carrying the twined alternately on opposite sides of one band, as set forth.

8. The combination of the sliding bar, or its equivalent, and the rods, acting together substantially as described, whereby the loose is preserved after it is formed, and the heddles drawn away from the locality where they are formed by the reception of the heddles as they are formed on the stationary slats, and the movement of the sliding bar, or its equivalent, and the band attached thereto, to which the heddles are tied in the process of formation.

9. In a heddle-making machine, the marker for designating every nineteenth or other heddle, substantially as described.

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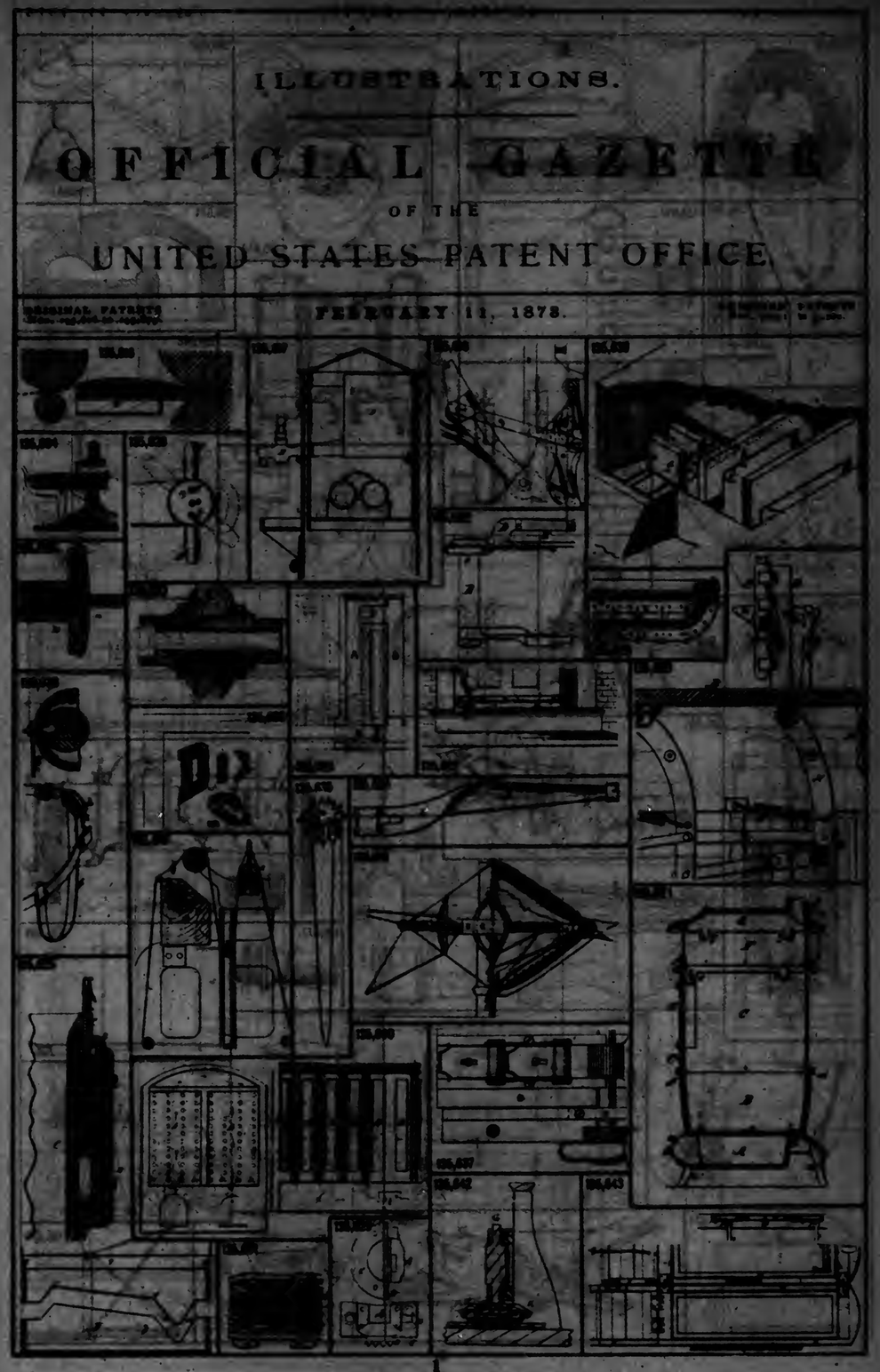
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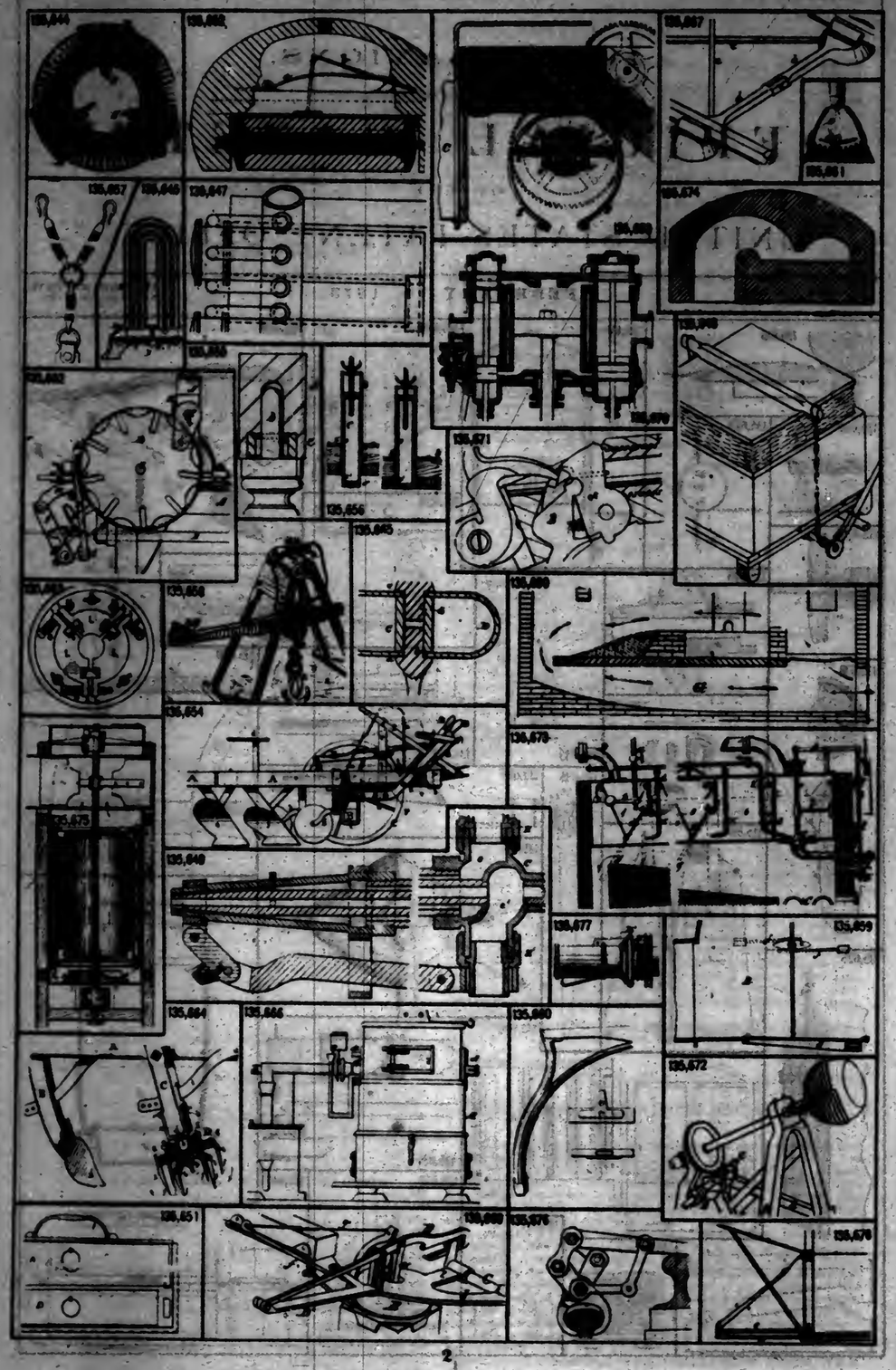
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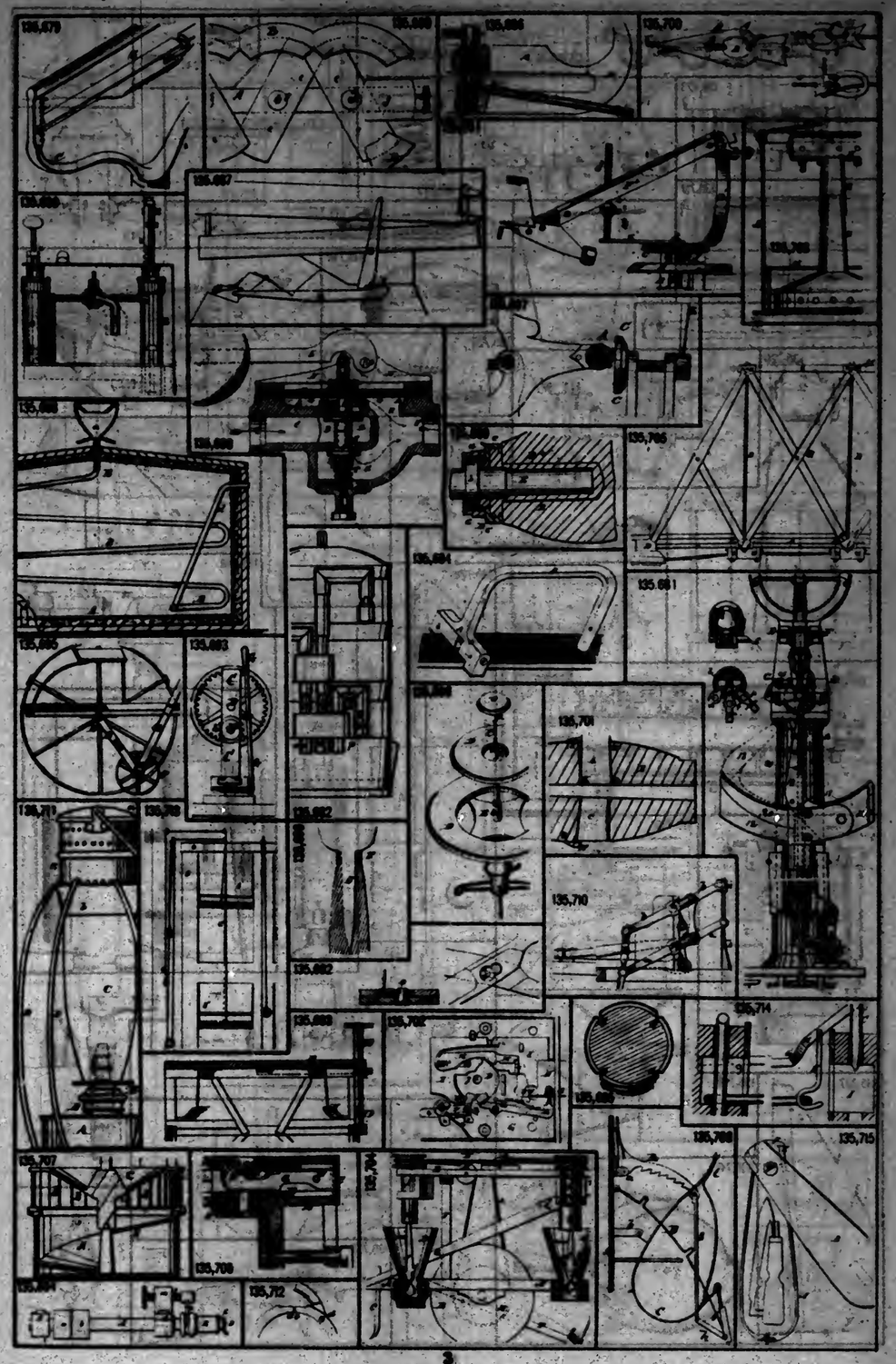
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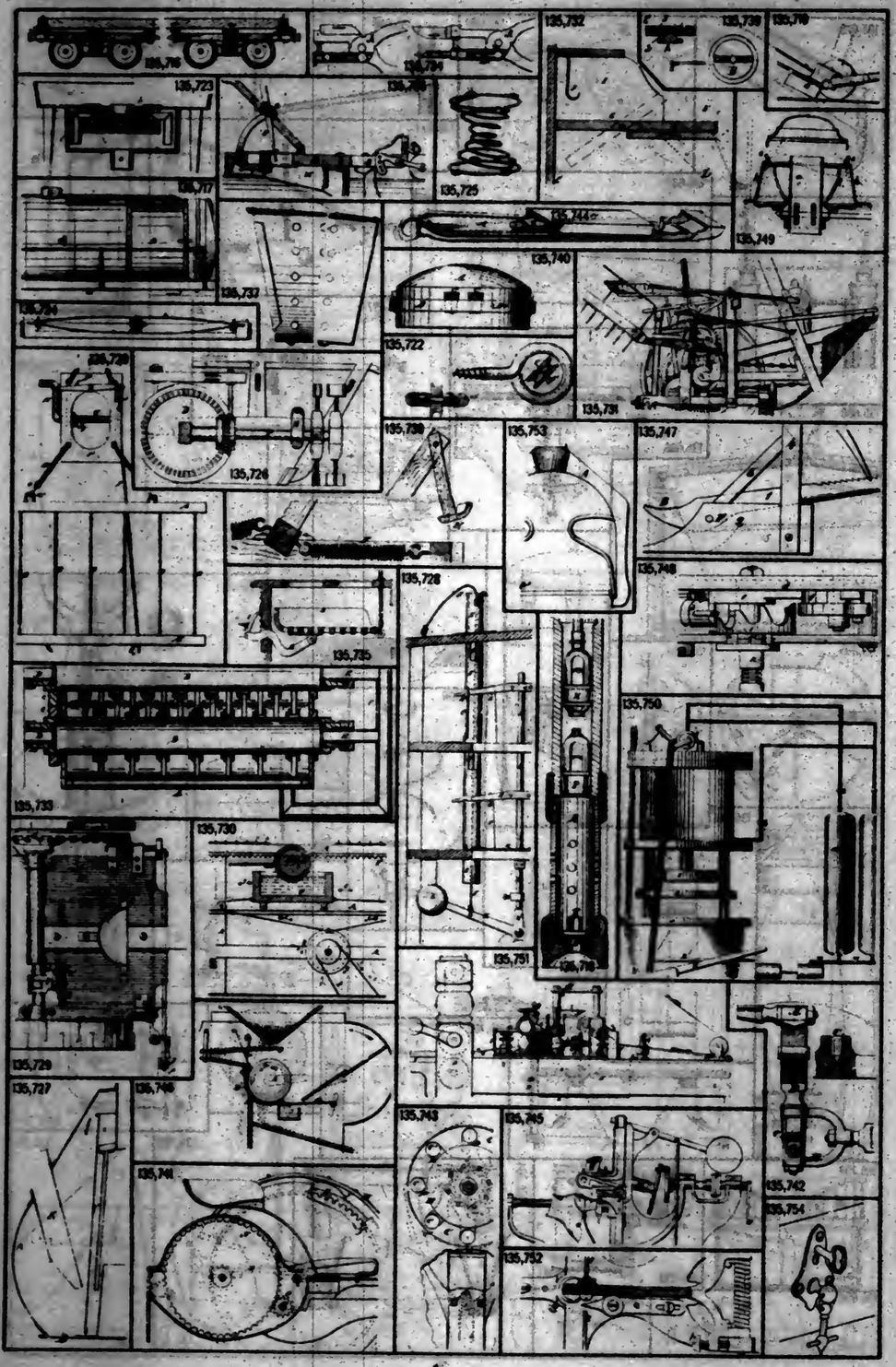
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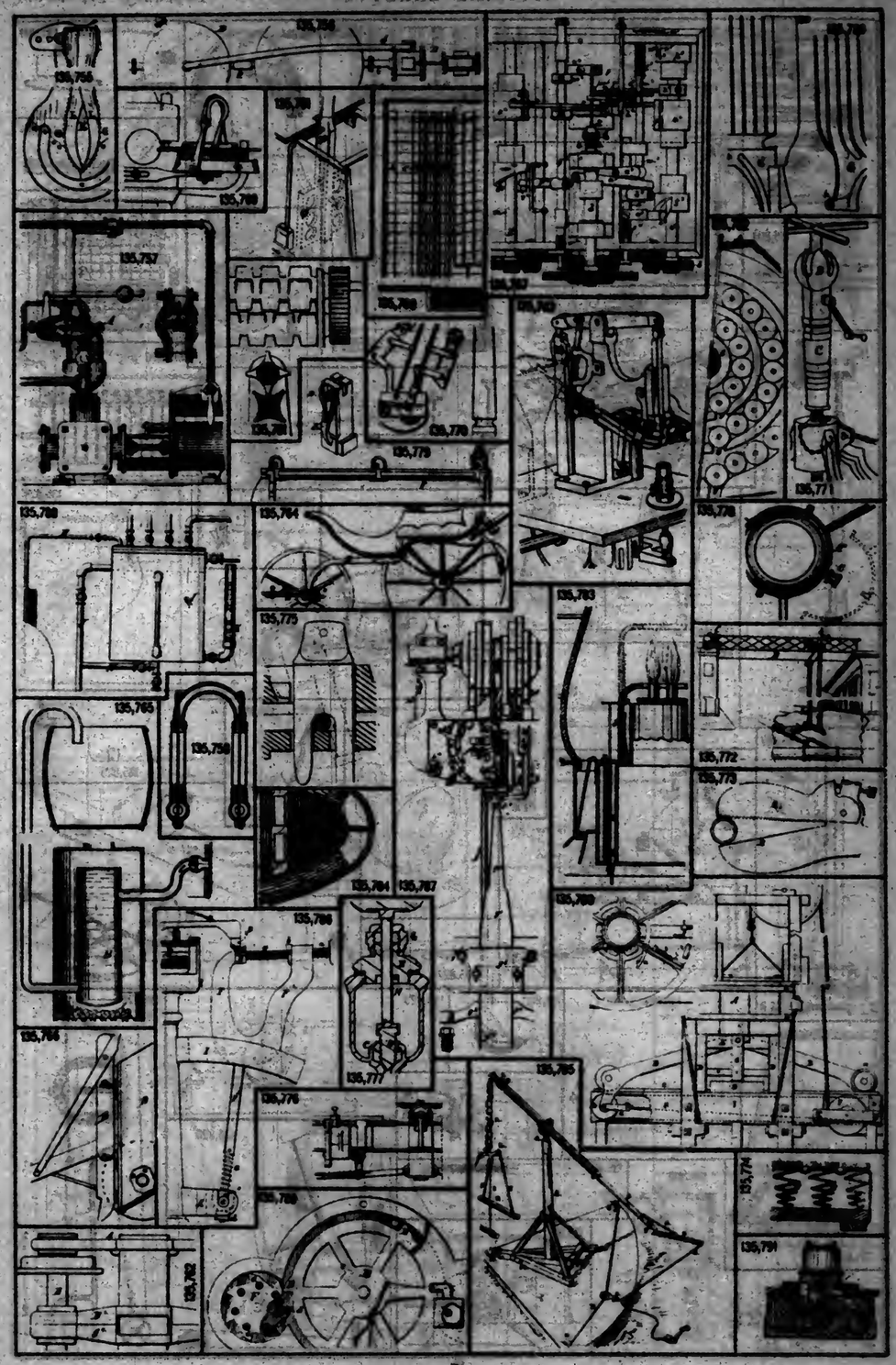
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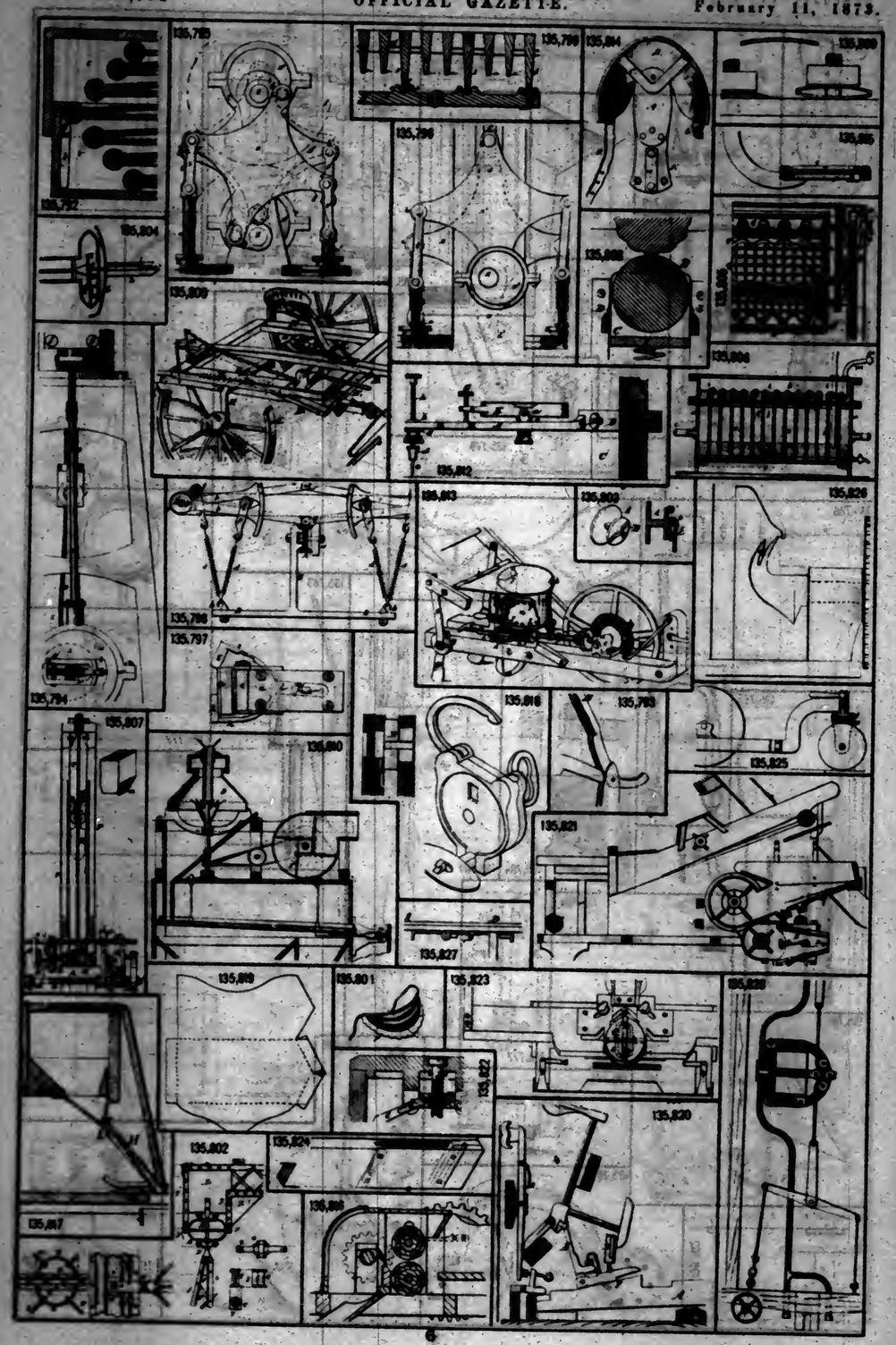
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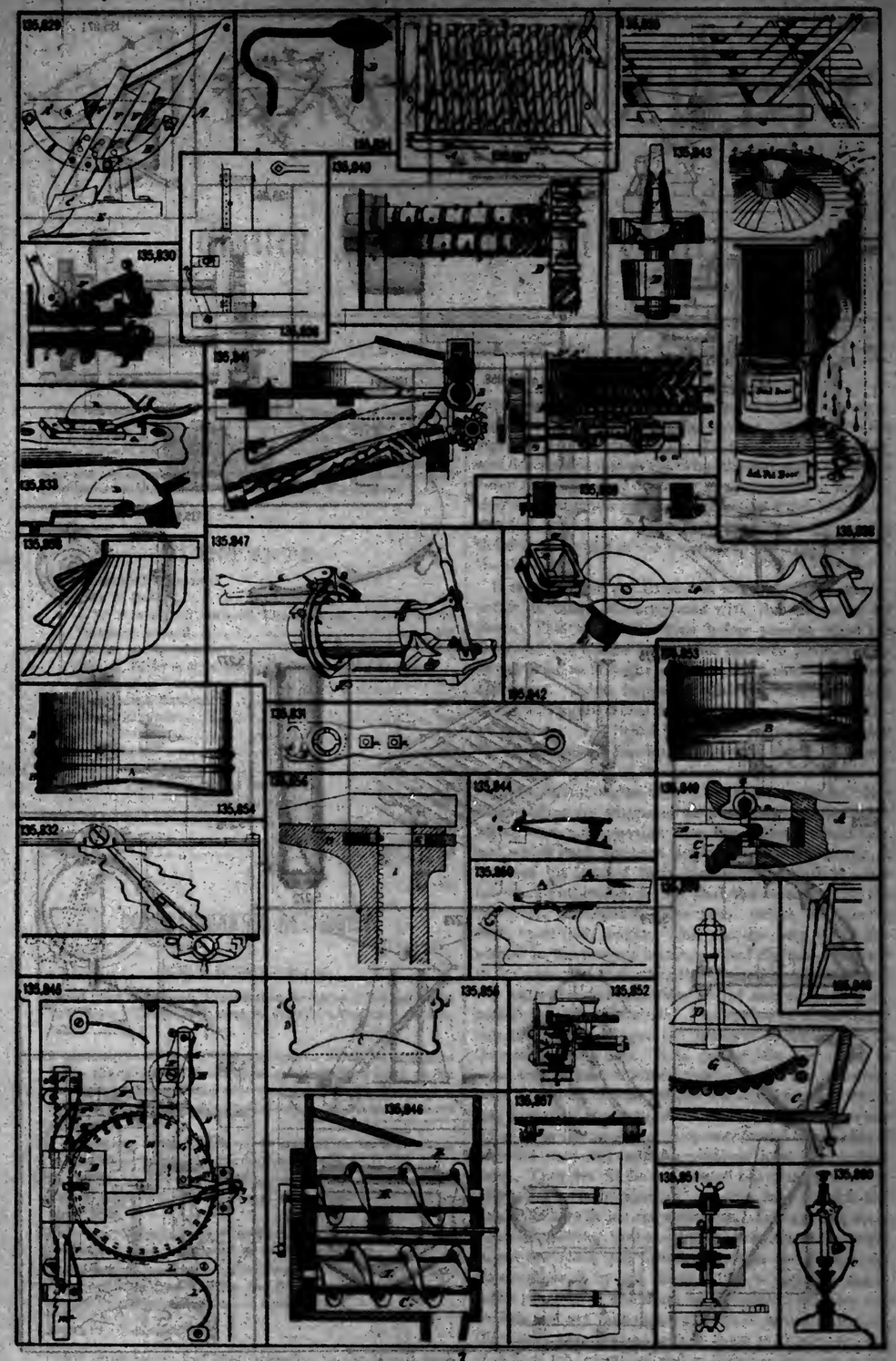
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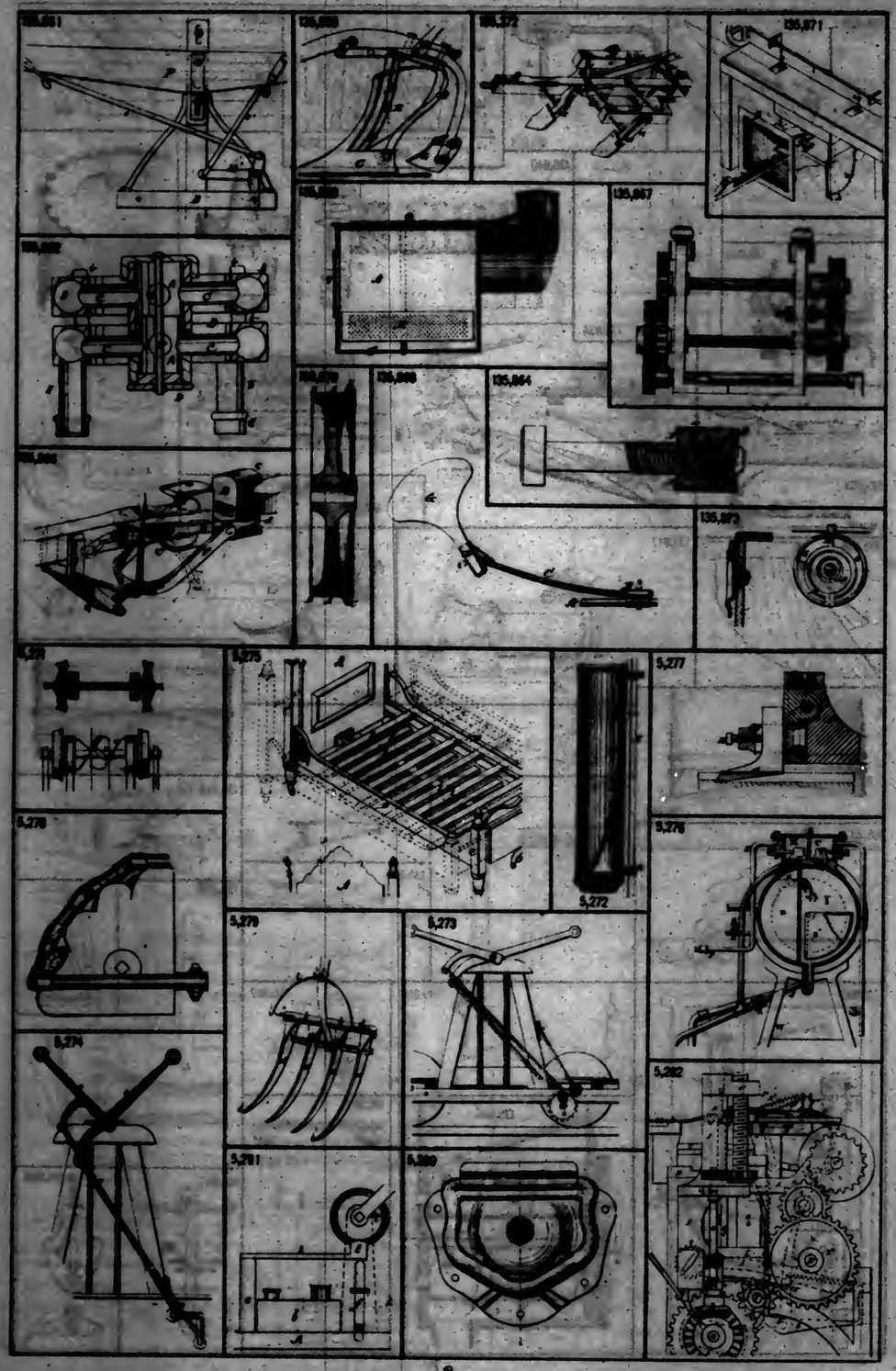
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COMMISSIONER'S DECISIONS.

WM. C. DODGE.—*Appeal.*

[*Appeal from the Primary Examiner in the matter of the application of William C. Dodge for patent for* HINGES.—*Decided August* 30, 1872.]

All necessary amendments of an application should be completed before the claims are passed upon, but if not then made, as, for instance, when new claims are recommended by the Examiners-in-Chief, they should be required whenever the occasion for them appears.

No amendments should be allowed in original applications which change the character of the invention essentially.

Amendments may be made although more than two years have elapsed after the application was filed; there is no limit as to the time.

Claims filed after an appeal to the Examiners-in-Chief can be considered only when sanctioned by the Commissioner.

It is the duty of the Examiners-in-Chief to call attention to whatever they deem important to the Office or the applicant, although their suggestions are not authoritative.

LEGGETT, *Commissioner:*

This application has been appealed to the Board, and the decision of the Examiner overruled and two amended claims allowed. The Examiner now requires the specification to be restricted so as to conform, according to his judgment, with the claims. He also makes objection to the introduction of a figure of the drawing, and descriptive matter referring thereto, more than two years after the date of filing the application, because they present "new matter," viz., *sets* of three hinges instead of pairs, which are all that were shown during the first two years of the pending of the application in the Office.

It is proper for the Examiner to see that the specification is made to correspond with the claims in all cases. This should be done before passing upon the merits of the claims in the first instance. But if neglected then, as it ought never to be, it should be done afterward. It has happened that the Board have had to remand applications for this purpose to an Examiner, and even, the Board having failed to do this, that the Commissioner has been obliged to do it. The general rule, however, is that where the jurisdiction of the higher tribunal begins, that of the Examiner ends. But when claims are suggested as allowable by the Board which were not appealed from the Primary Examiner, and which have not been submitted to his scrutiny, it becomes his duty, if their incorporation into the case has been authorized, to see that the statement of the invention corresponds with them before considering them upon their merits. This was the duty of the Examiner in the present instance. But the rule is always to be observed that only the Commissioner in person can authorize the consideration of any claim not appealed from the Examiner. The authority of the Board extends to passing upon the merits of claims merely as they come from him. It is proper also for them to make suggestions of alterations in either the specifications or claims, or with reference to other matters which may appear to them to be of importance, either to the Office or to the applicant, and they would be derelict if they did not; but such suggestions have no binding force. They are to be considered but not necessarily adopted by the Examiner. In this case I think the Examiner errs in his requirements. I do not see, upon a careful reading, that the lines he requires to be stricken out are really any broader in their scope than the claims allowed by the Board. It is a fact that applicant's pintles are and must be of unequal lengths, and he does not say that making them so is his invention. He merely says that he makes them so in securing the objects of his invention, and so they are specified in the claim.

As to the objection that "new matter cannot be in-

troduced two years, more or less, after a case is filed," I am unable to quite understand it as put or to see any force in it. The words "more or less" render it rather indefinite. But assuming it was meant to be said *more than two years* after an application is filed, I am not aware of any valid rule of practice of the nature indicated. The rule is that amendments should never be admitted in original applications to essentially change the character of the invention first presented for patent—that is, to make it another and a different thing—but there is no rule which excludes the filing of any amendment more than two years after the filing of an application that would ever be admissible at all. There is no limit of time restricting amendments except that provided in the statute defining abandonment, and that has no relation to the character of the amendment or other matter presented. There is no other restriction of "new matter" as to pending applications than that above stated. As to reissues where the question of new matter, as known in the practice of the Office, exclusively belongs, no new matter whatever should be admitted. They are *sui generis*, however, and form no rule for the treatment of original applications either directly or by analogy.

The objections of the Examiner are not sustained.

J. W. EVANS, E. T. BUSSELL, RICHARD VOSE.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the applications of J. W. Evans, E. T. Bussell, and Richard Vose for reissue of their respective patents for* IMPROVEMENT IN CAR-SPRINGS.—*Decided February* 24, 1873.]

A case in which, of three interfering parties, one having filed no preliminary statement and submitted no testimony, is virtually out of the case, his original application being subsequent to the dates of the other two.

A question as to what is *new matter* in an application for reissue must be determined from the original patent.

A mere reference in a specification to the possibility of making a column of rubber *hollow*, that construction being shown in neither the drawing nor model, will not justify a claim to the hollow feature in a reissue specification.

A claim being distinctly to an *exteriorly-grooved* column, a *plain ungrooved* construction being nowhere suggested, the latter feature cannot be properly introduced into a reissue specification so as to interfere with a claim by another party to a construction in which the ungrooved feature occurs.

Interference dissolved, as the collision is only owing to the unwarrantable breadth of statement of the two (remaining) parties, the cause of conflict disappearing when their statements are restricted to their legitimate proportions.

LEGGETT, *Commissioner:*

Evans filed his original application July 23, 1868, and a patent was granted him September 22, 1868. His application for reissue was filed December 20, 1871. He has filed no preliminary statement and submitted no testimony. He is therefore virtually out of the controversy, his original application having been filed subsequent to those of the other parties.

The original application of Bussell was filed February 7, 1868, and his patent issued November 24, 1868. It was reissued February 27, 1872, No. 4,767, and the present application is for a reissue of that reissued patent.

Vose's original application was filed March 24, 1865, and his patent, of which he now seeks a reissue, was granted December 5, 1865. Priority is *prima facie* with Vose, and the burden of proof is upon Bussell.

The alleged invention in controversy consists of a hollow rubber column surrounded by a metallic spiral spring. The circumstances under which it is claimed are unusual. In Vose's original patent he showed a peculiar combination of a solid spirally grooved column surrounded by a coiled spring, the two peculiarly united into one spring. The grooves of the column were between the coils of the spring to allow of suitable play of the latter, and a projecting rubber fin extended between the coils to prevent their contact by compression; or else the groove was to be formed large enough to receive the spring without embracing it closely, the threads defining the grooves projecting between the coils of the spring as a packing. This was a special construction of the column to which the subject-matter of this controversy is not limited. There is in Vose's original patent nowhere any suggestion of the combination of *a plain hollow rubber cylinder* and a surrounding coiled spring. The following words, however, referring to his grooved column, occur in the specification of his patent. "Although the central core or column of rubber may be used solid, I prefer to have a central aperture pierced longitudinally through the same." Unfortunately the central aperture is not shown in either his model or drawing, and therefore he is precluded by the 27th, 29th, and 53d sections of the patent act from claiming a hollow column, even of the peculiar grooved exterior construction he sets forth, in combination with an exterior metallic spring.

Whatever relates to the subject-matter of a plain ungrooved hollow column combined with an exterior spiral spring, should have been eliminated as new matter, and must be now. From the foregoing it is obvious that there is in fact no interference between these applications. The subject-matter claimed by Bussell is not a groove, but a plain hollow rubber column surrounded by a spiral spring. Vose does not hint at such a device at all. He is limited by his patent wholly to a grooved column peculiarly combined with a spring, and when he says, as above quoted, that he prefers to make the grooved column hollow, he is not to be understood as including also an ungrooved column. There is no ground in his patent anywhere to base a claim such as has been made and withdrawn by Vose, and such as is presented by Bussell. This interference will accordingly be dissolved. Bussell's application, however, requires some consideration. His claim is—

"The combination of a hollow vulcanized rubber cylinder or column with an external metallic spiral spring, substantially as herein shown and described."

It appears that the Examiner objected, very naturally, to this claim as covering new matter, and an appeal was taken to the Acting Commissioner, who permitted it to stand, without prejudice, to a motion for dissolution of interference, for the purpose, merely, of seeing what light the testimony elicited by the interference would throw upon it. I do not think it ought to stand, no matter what evidence might appear, because the question as to what is new matter is to be determined from an inspection of the original patent. I can find no warrant for this claim in the original patent. The first claim of the reissued patent is as wide a departure from the original subject-matter as can possibly be sanctioned. The original patent does not justify the claim now made, and the Examiner is commended to his original objection. In both these cases the remedy by reissue is palpably sought to be abused.

PATTEE *vs.* RUSSELL.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the reissue application of Lewis C. Pattee and the patent of Titus H. Russell for* IMPROVEMENT IN SAW-MILL CARRIAGES, *granted December* 5, 1871.—*Decided February* 20, 1873.]

An inventor who has fully shown his improvement in a model, but takes no further steps toward reducing it to practice for five years, and does not apply for a patent for more than a year after he learns that another has put it in practice before him, forfeits his right to a patent, and the latter will be held the prior inventor.

The title of the latter is not prejudiced because the other filed his application three weeks before him.

THACHER, *Acting Commissioner:*

The facts which I think may be considered in proof in this case, from a just balance of all the testimony, are as follows: Russell made a model in 1865 which illustrates the invention, and laid it aside until February, 1871, when he put the invention in practical operation in a mill, and he filed his application for patent August 21, 1871. He also made another model in 1867, but this constituted no advance toward giving the public the benefit of the invention, and may be regarded as an immaterial fact.

Pattee completed his invention in 1870, put it in practical operation during that year in a lumber-mill, (where it was examined by Russell,) and applied for his patent September 12, 1871, twenty-two days subsequent to Russell's application.

Upon these facts the Examiner of Interferences and the Board of Appeals have found that priority of invention is with Pattee, by authority of the law as laid down in *Ransom* vs. *The Mayor of New York*, 1 Fish, 272, and other cases in which a like doctrine has been announced.

"If the plaintiffs, after they had perfected their invention, unreasonably delayed their application for a patent, and other persons, before such application was made, actually perfected and applied the same invention to practical use, and gave the knowledge thereof to the public, and the plaintiffs, after the knowledge of such subsequent invention or discovery and its public use, failed to make objection and to apply without unreasonable delay for a patent for their invention, they cannot sustain their patent." (*Ransom* vs. *Mayor of New York.*)

There is no doubt but this is the law and that it governs the *grant* as well as the *validity* of patents. The only question is whether it applies to the state of facts in proof in this case. Here on the part of Russell, if the testimony he adduces is to be believed, is an invention completed and reduced to form in a working model, which clearly illustrates it, in 1865. He is engaged in business that affords every opportunity and offers every inducement to him to reduce it to practice and give the public the benefit of it; yet he suppresses it for a number of years, until finally he sees it constructed and put in public use by an independent inventor. He examines it carefully, inquires as to its efficiency, and for the first time appears to appreciate it, but still does not assert any right in it. During this period of delay it is shown that he was paid over seven thousand dollars in money, and no obstacle appears to have precluded him from seeking a patent or otherwise giving the public the benefit of his invention. To be sure, it appears that he ultimately preceded Pattee by a few days in his application for a patent, but it was more than a year after he was cognizant of the manufacture of the machinery for Pattee, and nearly a year after he had seen and examined it in public use in Pattee's mill. The fact that he was first in the Office by a few days should therefore have very little weight. In view of the preceding delay of several years, which is a circumstance of some importance, and his failure in fact "to give the public that consideration for the grant of exclusive privileges upon which all valid patents must be based," viz., knowledge of the invention, I think there was unreasonable delay after his knowledge of what Pattee had done.

Pattee, therefore, has been correctly held, upon the facts in proof, to be, in contemplation of law, the prior inventor. The decision of the Board is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—NORTHERN DISTRICT OF NEW YORK.

WILLIAM A. KIRBY *et al. vs.* THE DODGE AND STEPHENSON MANUFACTURING CO. *et al.*

[*In Equity.—Before Woodruff, Circuit Judge.*]

Byron Densmore's patent of February 10, 1852, described a harvester having but one wheel in a frame hinged to the frame which carried the cutter-bar, but rigidly attached to it by bolts, though capable of adjustment at different heights: *Held*, that a reissue of it with the following claim was void: "Hanging the driving-wheel in a supplemental frame which is hinged at one end to the main frame, while its opposite end may be adjusted and secured at various heights, or be left free, as desired, whereby the cutting apparatus may be held at any desired height for reaping, or be left free to accommodate itself to the undulations of the ground for mowing;" both because the original application contained no indication of the change which rendered the machine capable of mowing, although it consisted merely in removing the bolts by which the height of the wheel-frame was adjusted and secured, and also because the alteration was never devised till after the original patent was issued.

If the reissued claim is interpreted to embrace all means by which a cutter may be suspended for reaping, or allowed to follow the undulations of the ground for mowing, it is too broad, and therefore invalid.

If it is construed to embrace a frame carrying the cutter-bar and hinged to the wheel-frame, it is also void for want of novelty, a similar alteration for the same purpose having been practiced before in McCormick's reaper to as great an extent as in Densmore's.

If it embraces the specific arrangement of the two frames in the position and mode of operation described, the defendants' machine is no infringement, as it has no second or supplemental frame, but instead thereof, what is not its equivalent, a drag-bar by which the cutter-bar is sustained against the pressure of the crop, and its height is adjusted and secured by chains, by which it is suspended.

The decision of the United States Supreme Court upon a question of law arising upon the same facts, and sustaining a patent, is entitled to deference, but not where the facts appear different, as in this instance.

[*David Wright*, of Auburn, for complainants.
George Harding, for defendants.]

WOODRUFF, *Circuit Judge:*

The complainants herein complain that the defendants have infringed and are infringing their rights as assignees of a certain patent granted to Byron Dens-

more, on the 10th of February, 1852, for a new and useful improvement in grain-harvesters, surrendered and reissued to the complainants January 28, 1862, and thereafter, on the 30th of January, 1866, extended for the term of seven years from the expiration of the first term, viz, from the 10th of February, 1866.

The defendants deny that Byron Densmore was the first inventor of the improvement described in the reissued letters patent, and aver that such reissue was fraudulently and illegally granted, and was obtained in order to include, and does include, things not invented by Densmore, and not intended to be patented by him, and such reissued letters patent are for a different invention from that originally patented, and are invalid and void.

They also allege that the improvement described in the reissued patent had, prior to February 10, 1852, been invented, and was known and used by other persons who are named in the answer. That it was described in certain letters patent also mentioned.

They also deny that they have made or sold any machines whatever containing the said alleged invention of the said Densmore, as set forth in the specification and specified in either of the claims of said reissued patent, and deny that they have in any manner whatsoever infringed the said letters patent.

The infringement alleged relates solely to the first claim in the reissued patent granted to the complainants. "The nature and principle of the invention" included in that claim are declared in the specification to relate "to the construction and combination of two frames, the one for supporting the driving-wheel and the other for supporting the cutting apparatus, and hinging the said frames together in such a manner that the driving-wheel and cutting apparatus may each follow the inequalities of the ground independently of the other, and also that they may be bolted rigidly together for supporting the cutting apparatus at any desired height."

The claim with which the patentees conclude their description of the construction and mode of operation of the improved machine is as follows:

"Hanging the driving-wheel in a supplemental frame or its equivalent, which is hinged at one end to the main frame, while its opposite end may be adjusted and secured at various heights, or be left free as desired, whereby the cutting apparatus may be held at any desired height for reaping, or be left free to accommodate itself to the undulations of the ground for mowing, substantially as described."

Prior to Densmore's alleged invention reaping-machines had been made by McCormick, and others, consisting of a large wheel bearing on the ground, surrounded by a rectangular frame, in the sides of which the axle of the wheel turned, and at the end of which the platform and cutting apparatus were attached, the cutting apparatus extending sidewise from this frame to the distance or width of the swath of grain proposed to be cut. Gearing was connected with the ground-wheel and operated by its revolution, when drawn over the ground, upon arms, swivels, and rods, which moved the cutters and severed the grain, which, when severed, fell upon the platform and was raked off into gavels. As a machine so constructed was liable to tilt sidewise, and, under the weight of the platform and cutters projecting sidewise, must necessarily tilt sidewise, a small wheel was also placed at the outer end of the platform and cutter-bar, which sustained the cutters, and if the ground was level also sustained the frame, to the end of which the platform was attached, and in which frame the axle of the main wheel was placed, and so prevented the tilting or upsetting of the machine. This involved, also, another necessity in the construction, viz.: The platform and cutters must be rigidly attached to the frame, else the smaller wheel at the outer end could not operate to support the frame or the wheel moving therein, and prevent the tilting referred to. There were perhaps other reasons why the platform must, in such a machine, be attached with great firmness and strength, but it is sufficient for my present purpose to make the general construction of the machine intelligible. Densmore had seen one of McCormick's machines in which, in order to raise or lower the cutters, there were two or more holes in the side pieces of the frame, in either of which the axle of the main wheel could be placed, and, by the change, the height of the cutters from the ground would be varied. Densmore, instead of relying upon such holes for inserting the axle in the side pieces of the frame, which must, I think, have been inconvenient to change, made a model in which he inserted uprights with long curved tenons, in mortises in the sides of the frame at the place of the axle of the wheel, and inserted the axle of the wheel therein, and so by raising those uprights in the mortises and depressing them at pleasure, a similar effect to raise or lower the cutters was produced. In view of this change of construction, as well as other devices, Densmore, on the 3d of June, 1849, filed a caveat in the Patent Office.

Long prior to this McCormick made numerous machines wherein the cutters could be raised and lowered so as to cut at different heights, by another device, which will be hereafter noticed.

Densmore, however, took out no patent for the machine as described in his caveat. He made a model in which he placed a second rectangular frame upon the other, of somewhat less length; near the middle of this he placed the axle of the main wheel with the gearing connected therewith. Obviously such additional frame, when lying flat upon the upper surface of the other, amounted simply to giving the side pieces of the latter greater width, but for facility in raising or depressing the cutters by lowering the frame to which they were attached he attached one end of the upper frame to the lower frame by a hinge, so that (acting on the axle of the wheel as a fulcrum) by raising and lowering the other end of it he lowered and raised that other beneath the axle of the wheel, producing the precise effect before caused by raising and lowering the long-tenoned uprights into and from the mortises before mentioned; and at the forward end of the upper frame he set in the lower frame uprights to which that forward end was bolted at any desired elevation by bolts, easily removed and inserted in holes higher or lower in the uprights, at pleasure. It was this machine, imperfectly described, perhaps, but this in substance that was shown in the model and drawings when he took out his patent in 1852.

In these descriptions I of course omit notice of devices for raking and reeling and for adjusting the outer or platform wheel, because they are not material to any question now in issue.

McCormick had, as early as 1835, employed the other device (above alluded to) for raising and lowering the cutters so as to cut at different heights. He placed his main wheel, with the gearing connected therewith, in one frame, and the platform and cutters were fastened to another frame, the sides of which were not laid upon nor placed beneath the other, but ran along the sides parallel therewith so as to embrace the rear ends thereof. The sides of both of the frames were attached by a bolt passing through them as a pivot or hinge, so that the cutter-frame turning on that pivot could be raised or lowered at pleasure. At the forward ends of the arms of the cutter-frame three holes were made in the wheel-frame, at different heights, through which to bolt the cutter-frame and fix it in the several positions which raising or lowering the cutters required, and it was entirely practicable by withdrawing the last-mentioned bolt to permit the platform and cutter, or rather the ends of the supporting cutter-frame, to rest upon the ground. Whether, when so resting on the ground, the machine was a practical machine, useful for mowing, it may be material hereafter to consider; for the present I describe the machine.

Passing by what is claimed by the defendants to have been done by others, and omitting to further describe the state of the art, I have mentioned what had been done by McCormick before 1852, and what Densmore did prior to the granting of his original patent of February 10, of that year. He then received his patent, and it is of some significance that in his specification he in no wise claims that shifting the position of the axle of the main wheel relatively to the height of the cutter-frame is new, nor that placing the main wheel in one frame and the cutter or platform and cutter on another is new, or that hinging the cutter-frame and the wheel-frame together, so as by the action on the hinge to effect the raising or lowering of the cutter, is new. Obviously, with McCormick's machine before him, he could not broadly claim either of these. The utmost he could claim, if anything, on these several points, was the particular device by which these operations were performed, in so far as it differed substantially from McCormick's. Possibly the placing one frame above another to be operated in the manner I have attempted to describe, and as shown in his drawings and model, was patentable. But in fact he made no claim even to this; his claims were confined solely to other devices to assist in raking the grain and supporting the blades of the cutters. He does state that his *arrangement* for *raising* and *lowering* the machine, to vary the height of the cut, is new, and that is entirely consistent with what is above stated. McCormick's arrangement of the parts employed in this operation was not identical with his. In function and effect and mode of operation they did not differ, but in arrangement or relative position they were unlike.

I mention this omission to claim anything in respect to using two frames, or hinging one frame to the other, not because a patentee may not claim in a reissue what, through mistake or inadvertence, he did not claim in his original patent, but because it is evidence, when the novelty of the device is in dispute, that Densmore, when he took out his patent, was aware of what McCormick had done before him, and was conscious that he could not claim to be the first inventor, or certainly not of anything more than the special arrangement or relative position of the parts.

The foregoing explanations will, I think, make the consideration of the questions below stated intelligible. First, whether the reissued patent, if construed so as to embrace anything except the special and specific arrangement described and shown in the original patent, with its specification, drawings, and model, can be sustained? And, second, whether, if the reissued patent is valid for any purpose or to any extent, the defendants infringe any rights secured to the complainants thereby?

I. Upon the first question it is insisted by the complainants that the decision of the Supreme Court of the United States in *Kirby et al.* vs. *Whitely* (11 Wallace, 679) is conclusive in their favor, and that this Court should not assume to discuss the correctness of that decision. The decision in that case does not operate as an estoppel upon the defendants in this; nevertheless the decision of a question of law arising upon the same facts is an authority which I am not at liberty and have no disposition to disregard. But that case was a very different one from this in its facts, and if I were at liberty to do otherwise, I should unhesitatingly concur in the decision of the point which was actually decided upon the evidence which appears to have been before them.

Entertaining the views I do upon the question of infringement, it is not indispensable that I should consider this first question, but in the aspect of the case which is urged by the defendants there is no necessary inconsistency with that decision; and the observations I deem it proper to make upon this reissue seem to me conclusive against the construction of the reissue upon which the complainants rely, and in no conflict with the former case.

The machine of Densmore, described in the original patent and shown in the specification, drawings, and model, was a reaper and not a mower. It was a machine which not only was not shown to be a mower, but as described and shown it had not in fact capacity to mow, in any sense material to this case. By no means shown or suggested could the cutters be made to follow the undulations of the ground. The terms of the specification are explicit: "The front end of the frame is *fastened* to the upright pieces by *bolts*, and these bolts are shifted into different holes in these upright pieces to vary the height of the cut." No terms could have been employed to state more positively that, when in use, the front end of the frame must be bolted to the uprights; the drawings show the front ends of the frame thus bolted; the model shows the same; and there is no intimation or suggestion of the practicability of using the machine in any other condition. The patentee showed a reaper with its platform, rake, reel, &c. To any suggestion that it might nevertheless cut grass at or near the surface of the ground, the answer is, if it were so bolted as to cut grass near the ground, then it did not follow the inequalities of the surface, the vital thing to make a useful mower, and the very thing which the reissue sought to embrace.

It was not until after the granting of the original patent that any attempt is proved to use the machine as a mower. That rests upon the testimony of the patentee, who himself shows that it was an unsatisfactory

experiment, and was abandoned. Other testimony leaves even this experiment in great doubt. But let it be assumed for the moment that in the summer of 1852 Densmore did mow one acre of grass with it. When that experiment was made the machine was changed; changed in substance, changed in its capacity, and changed in its actual functions.

First, by removing the bolt which secured the ends of the wheel-frame the cutter-frame was allowed to drop to the ground. Before this the wheel-frame carried the cutters, and to that end the frames had been and, according to the description given in the patent, must be bolted together; and the conception of a machine which was not so bolted, or which did not carry the cutters at an elevation (greater or less) from the ground, had not been in any manner indicated.

Removing the bolt and relying upon the ground to sustain the frame of the cutters was a distinct and different device, involving a difference in mechanical construction, the performance of a different function, and a different mechanical operation. In principle, removing a bolt does not differ from adding a bolt; and in the machine described in the original patent that bolt was a mechanical device, performing a precise and defined mechanical office, and according to the terms of the specification, as it was in fact, indispensable to that office. Removing this to produce a different result was tantamount to adding another device to the same end. An entirely distinct and different function was also thereby introduced into the machine, viz., by the oscillation or vibration of the frame, to permit the cutter-frame to undulate as the unevenness of the ground might make desirable; and, finally, the mechanical operation of the machine in the work was different, in that, before, the cutters had a rigid connection with the wheel-frame, and now they were to be operated through a flexible attachment thereto; also in that, before, the cutting apparatus was sustained and borne by the joint action of the two frames, and now it was borne forward by the one frame alone to which it was attached. In short, it became a different mechanism in relation to the work to be performed, and in the manner of performing it.

It will not do to say that it was within the scope of the original patent, because the alteration was effected by the trifling change of removing a bolt. That is not the test. Many a useful and valuable invention has been made of a device so simple and so seemingly trifling that men wonder that it was not made long before. The inquiry is, was such a device before known, and in this case, also, was this device for suffering the frame of the cutter to follow the ground in any manner indicated in Densmore's patent or his specifications, drawings, or model. If not, then his patent does not and cannot legally be made to embrace it.

Again, this removing of the bolt and thereby letting the frame of the cutters to the ground and permitting them to be drawn along the surface, was not of itself a new device. It could be done, and had been done by McCormick in his machine. The proof shows this, and to an extent quite as great as the experiment of Densmore in mowing the single acre to which he testifies.

In this there was no doubt the dawn of a new conception which has since matured and has produced what is known as the floating finger-bar, of which there is not the slightest intimation in Densmore's record, and of which I am satisfied when his patent was granted he had no idea; and even when he tried his unsatisfactory experiment he had no more found or shadowed that important invention, which now gives utility and value to mowing-machines, than McCormick had when, years before, his machines were used in mowing by a similar change in their organization; in either, if a bolt was removed the cutter-frame was made to rest on the ground.

It is urged that the machine of McCormick, when such bolt was withdrawn, was useless, and not a practical machine, and in the face of the testimony to its actual use, some witnesses express that opinion. There is at least equal weight of evidence that the same is true of Densmore's machine as patented, and there is besides further and, to my mind, satisfactory evidence that from and after the experiment alluded to he did not regard it as a practical machine for use with the bolt withdrawn, and did not so treat it. It did, according to his testimony, mow one acre of grass, but his testimony also shows that the experiment was unsatisfactory, and at least as much is proved in favor of McCormick's machine in this respect as of Densmore's. Several witnesses speak upon this subject, and they give a most satisfactory reason why Densmore's machine would not operate successfully when the bolt was withdrawn, and the frame of the cutting apparatus rested on the ground. The machinery by which the cutting apparatus is operated is only moved as the main wheel revolves, and the motion is effected by gearing connected with that wheel. Unless the wheel bears heavily upon the ground, it will wholly or partially slide instead of turning. Its power to turn the gear-wheels is derived from its firm hold on the ground, and if it slide the machinery does not operate successfully. The witnesses say, and it seems quite obvious without proof, that removing the bolt and permitting the cutter-frame to fall to the ground, removes from the wheel all the weight of the cutter-frame and platform, and the greater part of the weight of the cutter-bar, and so renders the wheel liable to slide on the ground, instead of properly turning the gear-wheels and operating the cutters.

The suggestion of impracticability comes from the complainants and their witnesses. They allege that McCormick's machine, when the bolt by which it was held in a fixed position was removed, ceased to be a practicable machine. As a reaper and carrying the heavy platform cutter-bar and cutters, that may be so; but if it is, then, for the same reason, and to the like extent, Densmore's machine was impracticable also. Indeed, he so testifies. And it is, I think, clear that neither were or could be successfully used when constructed as they were constructed and described—viz., for reaping—if the bolt was removed and the frame of the cutting apparatus was suffered to rest on the ground. It is true of both that they were reapers, and not mowers. Both were adjustable, and both, when used, were firmly bolted so as to retain the cutters in a fixed position, whether higher or lower. Densmore's record of his original patent neither shows nor suggests anything else. When used, the frames were united so as to be, in substance, one frame, wholly incapable of the vibration sought to be claimed in the reissued patent; and it appears most conclusively that, until after the granting of the patent, Densmore never contemplated such removal at all. Adjustment to more than one fixed position was all that he had conceived; and if it had been proved that he afterward, by a change in his machine, succeeded in giving the cutter-frame a vibratory motion, accommodating it to the undulations of the ground, in a manner not before invented, it is immaterial to the present questions whether the change was great or small. Invention may be as necessary to reform or adapt an existing machine to the performance of work which it would not, as originally constructed, perform, as it is to make a new machine; and whether this is done by removing a device or by adding one, by removing a bolt or by inserting a bolt, by making an apparently great mechanical change or a small one, the principle governing the subject is the same. The change being a substantial one, and producing a different result, may, if it be new, be the subject of a new patent; but it is not to be covered by the reissue of an old one which in no wise disclosed or suggested it, and especially when, in truth, the patentee had no conception of it when his patent was granted. Many an inventor has come so near to a discovery and its application that an apparently very slight change completes it and gives it great value, and yet he never attained the result. A striking instance illustrates this, and is singularly apt to the present discussion: Japy Brothers, as early as 1835, invented a machine for smoothing brass pans, kettles, &c. It served only to make the surface smooth after the pan or kettle, &c., had been reduced by other slow, and what would now be deemed tedious, means, to the desired form. Subsequent ingenuity has shown that a very slight change, either in the form of the edge of the smoothing or burnishing tool, or even of the direction of its contact with the pan, &c., (the parts being appropriately strengthened for the purpose,) produced the machine for spinning metals to form, which has revolutionized the manufacture.

But I have not noticed the whole change which was necessary in order to bring the machine within the claim of the reissued patent. Something more than removing the bolt and suffering the frame of the cutters to fall to the ground was necessary, and on this point the witnesses for both parties agree. Even according to the testimony of Densmore himself, the other part of the machine must be modified by removing the platform, rake, reel, and cutters, and substituting a different cutter-bar. No such thing had been conceived by Densmore, or in anywise appears in his suggestions, until after the patent was granted; so that when that patent was granted to him the free vibration resulting from the removal of the bolt had not been devised, and was not intimated, and, if it had been, it would have been not only useless, but destructive of the machine, unless other changes were made which had not then been devised, and were not intimated.

My conclusions upon this branch of the case are, therefore,

1st. That if the claim of the patentee in the reissued patent in question be regarded as a broad claim to hinging the frame of the cutters to the wheel-frame, and making it adjustable by changing the relative elevation of the two frames, the patentee was anticipated by McCormick, and the utmost that the patentee could claim was the particular or special arrangement of the two frames which he used.

2d. That if the patentee had invented before, or when his patent was granted, a means or mode of bringing the cutters to the ground so as to follow the undulations of the surface, the same had, to the same extent, and with equal approach to usefulness and practicability, been long before invented by McCormick, and that in this view, also, if such patentee had any claim, it was at the utmost to the special arrangement or position of the parts.

3d. That in fact, the patentee, when the patent was granted, had made no invention which permitted the cutters to vibrate so as to follow the undulations of the ground when in use, and showed no such invention or device by his specification, drawings, or model.

And 4th. That in so far as the reissued patent claims or purports to secure such a device as is last named, it is for these reasons invalid.

The claim of the complainants, in their reissued patent, which the defendants are charged with infringing, has been above quoted; the second and only other claim therein is for a wheel, provided with a crank and lever at the outer end of the cutter-bar to adjust the height thereof, as described.

It is a remarkable fact, that whereas the original patent related to other devices and with great particularity described them, and contained, in all, four claims stating severally what the patentee claimed as his invention and wished to secure by patent, the reissue makes no claim whatever to those devices. It abandons all of them and sets up claims entirely new and relating entirely to other and distinct parts of the machine, which are for a totally different purpose, and possess wholly different functions. When to this is added that the new claims embrace what did not, in fact, appear at all in the specifications, drawings, or model of the original patent, and if construed broadly embraced what Densmore had not himself invented when that original patent was granted, and that if he had, in any sense made the discovery, it was not new, it is speaking mildly to say that great suspicion attaches to the case of the complainant in any of its features.

The reissued patent was obtained in 1862. Before that date the importance, if not the indispensible necessity, for the purpose of mowing, of what is now called the floating finger-bar, following the undulations of the ground, was fully known, and various devices had been invented and adopted to meet that necessity. For the complete attainment of the result two things were requisite, first: That the cutters should rise and fall in their forward motion to pass over and adapt themselves to the elevations and depressions lengthwise of the cutter-bar; and second, they must be capable of rising and falling at either end to accommodate elevations and depressions in their path, not in the path of the wheels. For this purpose the use of a short finger-bar, hinged at the inner end to the instrument which supported it was devised, and the supporting device was in turn hinged, so that that inner end could rise and fall as the inequalities in the surface of the ground might require. The complete result was thus attained which gave name to the "floating finger-bar;" the whole would rise or fall

when the elevation or depression of the ground required it, and either end would separately rise or fall when the elevation or depression of the ground required that, in order to conformity thereto.

In this state of progress in the construction of machines for mowing, it became obvious that any one who was entitled to an exclusive right to all devices which, by hinging the cutter to the machine, made it capable of rising and falling with the surface, would perhaps control the floating finger-bar, although the device of a short finger-bar itself hinged so that either end might rise or fall without the other, was the invention of another. Here was a great temptation, and in this is the secret of the reissue in question; an attempt to extend an original patent over a feature in harvesting-machines, which, in my opinion, it did not embrace, and which the patentee had in no wise conceived when he obtained that patent; and hence appear the sweeping terms of the claim of the reissue in question.

II. If the foregoing conclusions are correct there is no question of infringement to be considered. The question of infringement is, however, an important question; it has been discussed at great length, and if it be found that upon a just construction of the patent, or upon the proofs touching the construction and operation of the two machines, the defendants do not infringe any exclusive right which the reissued patent (if valid) secures to the complainants, then it is in turn immaterial to this case whether the reissued patent be held valid or not; I therefore consider briefly the second question abve stated. If the reissued patent is valid for any purpose or to any extent, do defendants infringe any rights secured to the complainants thereby.

To the intelligible consideration of that question, it may be advantageous to notice that the machine described in the Densmore patent is a one-wheeled machine. To the use of such a machine it is necessary that it should be sustained against its tendency to tilt by some support at the outer extremity of the cutters, and this involved the necessity of a rigid connection of the cutter-bar with some frame, which, by its connection with the axle of the wheel or with the wheel-frame, would support the wheel in an upright position; hence the necessity of the two frames described in the patent of Densmore, and herein is seen one of the important functions and office of his supplemental frame.

Again, in order to sustain itself against the pressure of the grain or grass to be cut, it is essential that the cutters or the cutter-bar should be held very firmly to prevent wrenching or separation from the machine by backward pressure or thrust acting through the entire length of the cutters, and with very considerable force on the outer end. For this reason, in Densmore's machine, the finger-bar was set in a frame extending the whole width across the machine, and by firm attachment receiving strength to resist the pressure acting forcibly at its outer end. As a reaper it was strengthened by the frame of the platform. If it could be used as a mower this capability to resist the pressure was obtained by its being firmly set in what are called in his patent the side pieces of his main frame.

The defendants' machine belongs to a distinct and separate organization, which assigns it to an entirely different class of machines, and has capacities which do not belong to the others, which are availed of by the defendants without infringing the devices shown in the complainant's patent.

His *machine* is supported and runs upon two principal wheels, which sustain the machine. There is, therefore, no liability to tilting, and no need of support from the end or any part of the finger-bar, and, therefore, no need of any auxiliary frame through which such support can be derived, and there is, in fact, no such frame; and by reason of this change there is no need of a finger-bar rigidly attached (as in complainant's machine) to any frame from which it obtains its strength or power to resist the backward thrust or pressure tending to wrench it from the machine.

These offices or functions of a frame and supplemental frame, are, therefore, dispensed with; not only so, it is material to add, that the short finger-bar, hinged at the inner end, could not be used at all in the complainant's machine even if its substitution were not a departure from the invention described in the patent. The defendant's machine, therefore, not only does not use the frames described in the patent, but the functions which they exhibit in the complainant's machine would not answer at all in the defendant's; those functions are inconsistent with the use of the short hinged cutter-bar.

True, there must be an attachment of the finger-bar to the wheel-frame, through which the gearing may operate the cutters; but no frame is necessary for that purpose; any attachment which will preserve their relative position is sufficient. This is accomplished in the defendant's machine by a cross-bar or brace from the inner end of the finger-bar to a projection from the wheel-frame pivoted at each end, so that the connection may be perfectly flexible, and that it may at the same time keep the distance of the finger-bar from the gearing uniformly the same.

True also, the finger-bar must be sustained against the backward pressure or thrust tending to wrench it from the machine. This is done by what is called a "drag-bar" linked to the forward end of the wheel-frame, and hinged to the shoe which carries the cutter-bar. It is, in fact, the instrument by which, through its attachment to the forward end of the wheel-frame, the finger-bar is drawn or dragged forward to its work of cutting. It is a distinct and peculiar device, necessarily made flexible, to admit of the use of a short finger-bar hinged at the inner end, and permit it to oscillate, so as to raise or lower the points of the cutters when that is desired. It was the introduction of two-wheeled machines which made the devices by which the defendants carry and control the cutting and mowing apparatus practicable.

One or more of the complainants' witnesses represent this drag-bar and the lateral brace as constituting a supplemental frame, and would seem to intend thereby to bring this part of the defendants' machine within the literal terms of the complainants' reissued patent. It seems to me to have been an obvious perversion of language to apply to these two devices the designation. Even those witnesses were compelled, in order to satisfy their own confessed idea of a frame, to include with these bars the side and forward end of the wheel-frame, the shoe to which the cutter is attached, and the projections from the wheel-frame to which the bars are linked. They call the frame in which the wheels are placed a frame, and then include that a second time with the bars referred to, and call it a supplemental frame. This seems to me evasion and a trifling with the subject. There is not in mechanical construction, or in office and function, a frame and a supplemental frame; but a distinct and different device, serving in part some like purposes, but in a different manner, and serving those purposes where the frame used by the complainants would not serve them without the aid of other and supplemental devices not found in the complainants' machine.

This is not all. When used as a reaper the cutter-bar must be suspended at some height greater or less from the ground. In the complainants' machine, as already shown, this is effected by using the frame as a lever, turning on the axle of the wheel as a pivot, and bolting the end of the lever (or frame) in the required position. And when thus prepared for reaping the two frames bolted together constitutes one rigid frame, holding the cutter-frame firmly in position. The defendants, when their machine is used as a reaper, suspend the cutter-bar by a flexible chain passing over pulleys or rollers, not holding it firmly in position, leaving it free to oscillate and to turn on its hinges, and only limiting its possible descent toward the ground. Surely this exhibits no likeness in mechanical construction nor in mode of operation to the complainants' supplemental frame, with its arrangement as a lever, and with its adjustment by bolting above described.

I cannot avoid a conclusion in conformity with the testimony of the witnesses for the defendants, that there is no supplemental frame in the defendants' machine, and that there are not in that machine two frames, in the sense in which those terms are employed in the complainant's reissued patent, nor in any proper mechanical sense; nor are devices employed by the defendants' equivalents of the frames described in that patent. And I think I ought to say that the testimony of the expert (Mr. Renwick) that there are two frames in the defendants' machine, must have been misapprehended by the complainant's counsel when he sought, in his argument, to show by that testimony, some literal correspondence of the defendants' machine with the words of the reissued patent. I cannot for a moment suppose that the learned and experienced counsel intended to pervert the testimony or promote a misconception of its meaning.

The witness was speaking of a specific model of the defendants' machine as a reaper, and having the platform and some other attachments pertaining to it as a reaper, and, being asked if it had two frames, answered that it had. But what he meant he afterward stated, viz: a frame, to which the wheels and their gearing and the devices for drawing and sustaining the cutters were attached, and another frame, on which the platform was laid, which latter frame was wholly detached when the machine was used for mowing. The same question answered in the same sense would have assigned to the complainants' machine three frames. The witness did not say that the defendants' machine had two frames, in the sense of the reissued patent, but the contrary. He did not say that the defendants' drag-bar and lateral brace, either by themselves or in their connection, constituted a second or supplemental frame, but he very clearly excluded that idea.

Finally, the language of the claim in the reissued patent is exceedingly broad; but it, in its very terms, involves hanging the driving-wheel in a supplementary frame, or its equivalent, which is hinged to a frame which carries the cutters, (there expressly denominated the main frame,) while its *opposite ends* may be adjusted and secured at various heights, or be left free as desired, whereby the cutting apparatus may be held at any desired height for reaping, or be left free to accommodate itself to the undulations of the ground for mowing, substantially as described.

This is not to be construed to embrace every possible means by which a cutter-bar may be suspended for reaping and permitted to follow the undulations of the ground for mowing. If it should be so construed, then another fatal objection to the complainants' case would be at once suggested. The claim is too broad, and is void on that ground.

If it be construed to embrace every machine in which a frame carries the cutter-bar and is hinged to the frame in which the wheel is placed, then complainants must fail, for the reason given under the first branch of the discussion, viz.: that this would include McCormick's machines, made and used long before, as well as for the reason, also, that the defendants have never used the hanging of the wheel in a supplemental frame, or its equivalent made adjustable in any manner. Their wheel is fixed unchangeably in the only frame properly so called which they use, which neither acts as a lever, vibrates, or is made adjustable at either end or in any manner.

And if, as suggested in the other branch of the discussion, the claim can be construed to secure to the complainant the specific arrangement of two frames in the position and mode of operation described in the specification, then the defendants have not infringed it.

This somewhat incoherent and needlessly diffuse discussion of the case necessarily leads to the conclusion, on both of the grounds considered, that the complainants cannot sustain the suit.

The bill must, therefore, be dismissed with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,152.—*Attachment to Ruling-Machines.*—Granted to JOHN B. BLAIR, March 8, 1859. Hearing February 19, 1873.

23,172.—*Machines for Printing Railroad and other Tickets.*—Granted to RICHARD M. HOE, March 8, 1859. Hearing February 19, 1873.

23,246.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

23,263.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BADIN, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,299.—*Envelopes.*—Granted to SIMON B. PETTES, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 29, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 29, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEHR, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,366.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,435.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 29, 1864, and May 14, 1867. Hearing March 12, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, JR., April 5, 1859. Hearing March 12, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 12, 1873.

23,451.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 12, 1873.

23,520.—*Burnishing Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 12, 1873.

23,525.—*Bolstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 12, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 12, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 12, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859. Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 22, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SMALTZER, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,894, 4,895, and 4,896, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, JR., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, JR., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,920, 1,921, 1,922, and 1,923, June 6, 1865; No. 1,920 having been ordered to again reissue, No. 5,229, January 26, 1875. Hearing April 9, 1873.

23,799.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

22,793.—*Cracker Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 16, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MENSHON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,880.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,893.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tire.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURRAY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.* Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,096.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,102.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOICHKISS, June 14, 1859. Hearing May 28, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

EXTENSIONS GRANTED.

22,991.—*Improvement in Water-Wheels*, granted to JOHN TEMPLE, February 8, 1859; reissued February 10, 1863, numbered 1,405.

Claim.—1. The construction and use of the scroll sluice-gate B C, applied to operate with a water-wheel, in the manner substantially as described.

2. In combination with the hinged sluice-gate B C, the guard A, as and for the purpose described.

3. The levers K and ring J, centrally arranged above the sluice-chest for simultaneously operating a series of gates, in combination with the gates, and actuated by mechanism, substantially as described.

Disclaimer filed February 20, 1873.

Disclaims third clause of claim, as above set forth.

23,085.—*Improvement in Lamps*, granted to ELIAS J. HALE and CHARLES H. CHANDLER, March 1, 1859.

Claim.—1. An improved rack wick-holder, as constructed and applied to the wick and the spur-wheel, so that the teeth of the latter may pass through the rack and act on both the rack and the wick at one and the same time.

2. The flange or collar J, for the purpose of equalising the aerial current as it strikes the flame of the wick.

23,105.—*Improvement in the Construction of Steam-Vessels*, granted to JAMES MONTGOMERY, March 1, 1859.

Claim.—1. Constructing the hulls of vessels with one or more cavities in the bottom, commencing at or near the stem, increasing in capacity sternward, substantially as and for the purposes set forth.

2. Constructing the bottoms of vessels with corrugations extending from stem to stern, as set forth, which give strength to the hull and a portion of which form the cavity or cavities above referred to.

3. The described combination of an inclined screw-propeller with a hull constructed as set forth.

4. Two or more rudders, operating as set forth, in combination with the described longitudinal cavities in a ship's bottom.

DISCLAIMER FILED.

22,991.—JOHN TEMPLE.—*Improvement in Water-Wheels.*—Granted February 8, 1859; reissued February 10, 1863, numbered 1,405. Disclaimer filed February 20, 1873. Disclaims:

"That clause of the claim in said reissued patent which is in the following words, to wit: 'Also, the levers K and ring J, centrally arranged above the sluice-chest for simultaneously operating a series of gates, in combination with the gates, and actuated by mechanism, substantially as described.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 18, 1873.]

6,412.—*Carpets.*—JOHN FISHER, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,413.—*Carpets.*—JOHN FISHER, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,414.—*Carpet.*—JOHN FISHER, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,415.—*Carpet.*—JOHN FISHER, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,416.—*Carpets.*—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,417.—*Carpets.*—OTTO HEINICKE, New York, N. Y., assignor to THE HARTFORD CARPET COMPANY, Hartford, Conn.

6,418.—*Carpets.*—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,419.—*Carpets.*—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

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6,424.—*Carpets.*—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,425.—*Carpets.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,426.—*Carpets.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,427.—*Carpets.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,428.—*Carpets.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,429.—*Carpets.*—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,430.—*Carpets.*—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,431.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,432.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,434.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,435.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,436.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,437.—*Carpets.*—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

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6,447.—*Carpets.*—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPAT COMPANY, Hartford, Conn.

6,448.—*Carpets.*—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,449.—*Carpets.*—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,450.—*Carpets.*—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,451.—*Sewing-Machine Frames.*—JOHN O'NEIL, New York, N. Y., assignor to himself and R. A. SCHOREMAN, same place.

6,452.—*Carpets.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,453.—*Carpets.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPAT COMPANY, Hartford, Conn.

6,454.—*Carpets.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,455.—*Ottoman.*—JOHN D. LADD, New York, N. Y., assignor to THE NEW YORK OTTOMAN AND HASSOCK COMPANY, same place.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date February 18, 1873.]

1,130.—*Clothes-Wringers.*—BAILEY WASHING AND WRINGING MACHINE COMPANY, Woonsocket, R. I.

1,131.—*Clothes-Wringers.*—BAILEY WASHING AND WRINGING MACHINE COMPANY, Woonsocket, R. I.

1,132.—*Plug Chewing-Tobacco.*—EARICKSON & HARRIS, St. Louis, Mo.

1,133.—*Coal-Oil.*—W. A. KOWALSKI, New Orleans, La.

1,134.—*Table-Sauce.*—JOHN K. MACGOWAN & CO., Philadelphia, Pa.

1,135.—*Metallic Paint.*—PRINCE'S METALLIC PAINT COMPANY, Weisport, Pa.

1,136.—*Fine-Cut Chewing-Tobacco.*—WALKER, MCGRAW & CO., Detroit, Mich.

1,137.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio.

1,138.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio.

1,139.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio.

1,140.—*Whistles.*—FLACK BROTHERS, Canton, Md.

1,141.—*Boots and Shoes.*—BURT & MEARS, New York, N. Y.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date February 18, 1873.]

ORIGINAL PATENTS.

135,874.—*Coal-Mining Machinery.*—JOHN ALEXANDER, Gartsherrie, Scotland.

The machine is drawn forward by the barrel, which takes up a rope attached to the machine and passed around some object in advance. The track may be taken up and relaid as the machine advances.

Claim.—1. The chain and barrel operated by a ratchet-wheel worked by an eccentric or crank on the vertical shaft which drives the endless chain for obtaining a progressive motion of the machine, substantially as and for the purposes herein set forth.

2. The plain or unflanged carrying-wheels, combined with the pins or lugs 4, which prevent the displacement of the machine from the rails, substantially as and for the purposes herein set forth.

3. The sleepers 31, arranged with their snugs 32, and the keys 33 and jaws 34, to firmly connect the ends of the rail-lengths 3 into sockets, in which last the snugs enter, substantially as and for the purposes herein set forth.

135,875.—*Reed-Organ.*—CHARLES AUSTIN, Concord, N. H.

The air tends to close the valves instead of opening them, and the tracker-pins run in air-tight tubes leading directly through the wind-chest.

Claim.—In reed instruments having either one reed-set or two or more reed-sets, placed one above the other, the valve-pins passing through the wind-chest, in combination with the blocks, tubes, or casings, substantially as described.

135,876.—*Steam-Tight Joint of Valve-Stems.*—GEORGE R. BABBITT, Providence, R. I., assignor, by mesne assignment, to himself and WILLIAM A. HARRIS, same place.

A recessed bracket, through which the valve-stem passes, and which is provided with a collar to prevent leakage of steam, obviates the use of a stuffing-box. Any steam that has leaked through is condensed in the recess of the bracket and is withdrawn by a drip-pipe.

Claim.—The combination of the recessed bracket E and flanged stem F D, substantially as described, for maintaining a tight joint for a rotating valve-stem in place of a packed stuffing-box, as set forth.

135,877.—*Sectional Steam-Boiler.*—GEORGE H. BABCOCK, Plainfield, N. J., and STEPHEN WILCOX, Brooklyn, N. Y.

Inclined tubes are secured in a single casting at each end and are joined to a separating vessel over them. The pipes or tubes are arranged in a sinuous manner, and opposite each tube is arranged a hand-hole to allow them to be removed or cleaned.

Claim.—1. A sectional boiler having inclined tubes in sections joined to a separating vessel, A, presenting a large surface for the separating of the steam from the water, and having the ends of the sections formed each of a single casting or connecting-piece with a hand-hole opposite to each tube, which will allow the insertion of a new tube when required, the tubes being connected and arranged substantially as herein set forth.

2. The sinuous pipes D^1 D^2, in combination with a series of tubes, B B, fixed therein, and with hand-holes d to allow of access to the interior of the tubes, and of the removal and insertion of the same, and adapted, when placed side by side, to produce a staggered position of the tubes B, all substantially as and for the purpose herein set forth.

135,878.—*Folding-Case.*—JOHN C. BARKER, Chicago, Ill., assignor of one-half his right to JAMES L. BRANSON, same place.

The top is formed in two parts, each part composed of two side pieces and a number of cross-pieces. The sides are formed of slats, with the bottom one rounded at the edge next to the bottom. The bottom is composed of side pieces with cross-slats, and the ends are formed of any number of slats and are fastened together by cross-stripe made long enough to project above the top slat, so as to serve as a stop to prevent the slats of the end pieces from passing between the slats of the sides. The several parts are hinged so as to fold compactly.

Claim.—The combination of the folding-case, having its sides, ends, and top hinged to fold, as herein described, with the pivoted cross-pieces G, when constructed and arranged to operate substantially as and for the purpose set forth.

135,879.—*Treating Asphalt.*—PETER BARTHEL, Frankfort-on-the-Main, Germany.

The asphalt is dissolved with sulphuret of carbon or benzine aided by steam-heat, and is then strained through a sieve to clear it of its mechanical impurities.

Claim.—1. The arrangement of a sieve, L, in the kettle A above the material to be dissolved, substantially as and for the purpose hereinbefore set forth.

2. The combination of the kettle A, boiler E, and worm U, connected together in the manner and for the purpose substantially as set forth.

3. The combination of asphalt, purified of its mineral impurities, with the sand of calcareous spar or marble in the proportions and for the purpose substantially as described.

135,880.—*Stove-Pipe-Elbow Machine.*—JOHN BECKMANN and JOHN GIBSON, Cincinnati, Ohio.

The sheet of metal is slitted on both side edges in such a manner that the surplus metal is taken up in bending by lapping the cut metal.

Claim.—1. The clamps S S, K K′, and E E, press-block M, operated substantially as described, in combination with cylinder C and proper supports therefor, whereby the metal is formed into an elbow ready to be riveted.

2. The slotted crank L, carrying roller *t* with mechanism causing it to travel around eccentric M′, substantially as and for the purpose described.

3. The connecting mechanism composed of levers I I′ and T, links H H′, punch J and set J′, either or both, and proper supports for the whole, substantially as shown and described.

4. A stove-pipe elbow made from sheet metal, slitted as shown and described, when the slitted pieces are formed and united substantially as set forth.

5. An elbow-machine, consisting of the elements embodied by the first, second, and third claims, when constructed and arranged substantially as herein described.

135,881.—*Folding-Table.*—JOHN F. BIRCHARD, Milwaukee, Wis.

The table top is supported on brackets at or near the outer edge of the same, and rocks or turns on pins passing through said brackets and into a permanent or fixed frame with four feet. Under the center of the fixed frame is pivoted a revolving frame that supports two sides of the table when in use, but when the table is folded the movable frame folds closely against the fixed frame.

Claim.—A folding-table, with top or leaf A supported by brackets at or near the outer edge of the same and rocking on pins passing in or through said brackets and into frame B, in combination with frames B and C, substantially as described.

135,882.—*Clamp.*—CHARLES S. BONNEY, Philadelphia, Pa.

The forked prongs can be adjusted on the corners of miter-joints as well as on flat surfaces.

Claim.—The combination of the notched bar A having the curved forked ends B B pointed with the hemispherical knobs C C with the sliding standard E and screw E′, substantially as and for the purpose described.

135,883.—*Saw-Filing Vise.*—CHARLES S. BONNEY, Philadelphia, Pa.

Claim.—The adjustable screws H H, in combination with the jaws A B for springing the saw to any desired amount to prevent the trembling of the same.

135,884.—*Carpet-Fastener.*—CHARLES B. BROUNE, Genesseo, Ill.

To the base-board are attached fasteners having slots, in which the toothed metallic plates slide and engage with the carpet.

Claim.—The combination of the fasteners *b c* and the toothed metal plates *d f*, all constructed and used substantially as and for the purposes set forth.

135,885.—*Spring Bed-Bottom.*—ISAAC BUSH, Indianola, Iowa, assignor of one-half his right to CHARLES MCKAY, same place.

In the center there is an adjustable longitudinal bar carrying coiled springs; at the head a graduated block, permanently fixed to side pieces, for elevating the head.

Claim.—In the construction of a spring-bed, the combination of the graduated blocks *a a* and the sliding piece G carrying a series of coil-springs, substantially as described, and for the purposes specified.

135,886.—*Manufacture of Iron.*—WILLIAM BUSHNELL, New York, N. Y.

When the ore in the upper chamber becomes partly roasted it is mixed with fine coal and transferred to the middle or closed chamber, where it is deoxidized, and is then removed to the puddling-hearth. The blast-pipes are situated in a couple of chambers formed in the flue, so that they can be heated at will by the escaping products.

Claim.—The peculiar construction and arrangement of the air-tight chamber B in connection or combination with the puddling-chamber C, the roasting and purifying chamber A, the boilers K K, and the hot-blast pipes L, all arranged substantially as and for the purposes set forth.

135,887.—*Bolt-Cutter.*—LEONARD J. CHAPMAN, Vallejo, Cal.

Claim.—1. The cutters B and C, with their operating-levers D and E, the nut F, and screw I, together with the adjusting-block G and the guiding-ways A A, substantially as and for the purpose described.

2. In combination with the operating-levers D and E and the nut F, the slide J and connecting-rod K for preserving the screw I in its vertical position in the nut, substantially as herein described.

135,888.—*Sky-Light.*—GEORGE B. CLARKE, Leonardsville, N. Y.

The sky-light frame is fitted over a water-tight rim or collar on the roof, and is inclosed by a movable hood above, which latter is raised and lowered by a central shaft passing through the sash and made adjustable in a tube sustained by brackets attached to the under side of the roof. A water guard or fender is placed around all upon the roof to ward off the rain from the vicinity of the sash and collar.

Claim.—1. The cap A, provided with rim *a* and tubular perforated center shaft B, substantially as and for the purposes herein set forth.

2. The combination of the cap A and window D, constructed and arranged substantially as and for the purposes herein set forth.

3. The combination of the cap A, window D, and collar E, constructed and arranged substantially as and for the purposes herein set forth.

4. The combination of the cap A, hollow shaft B, window D, collar E, and bracket G, constructed and arranged substantially as and for the purposes herein set forth.

5. The weather guard or fender H, arranged in combination with the cap A and window D, substantially as and for the purposes herein set forth.

135,889.—*Hand-Truck.*—JAMES J. COLLINGBOURNE, New York, N. Y.

Claim.—1. The rods *b b* sliding in the side bars A A of a truck, combined with and attached directly to axle-brakes C C, as described.

2. Sleeves *d d* sliding on the handles, combined with rods *b b* sliding in the side bars, as described.

3. The sleeves sliding on the handles, the rods *b b* sliding in the side bars, and the spring axle-brakes C C, all combined, located, and operated together, as described.

135,890.—*Car-Coupling.*—WILLIAM T. COLLINS, Winchester, Ill.

The coupling-pin is upheld by means of a slide, which is actuated by a spring, and the link upon entering the draw-head strikes a projection on the sliding plate, which is connected with the slide upon which the pin rests, forcing back the same until the hole in the slide and draw-bar are in line, when the pin falls and secures the link.

Claim.—The combination, with a buster having vertical grooves *x*, of the sliding catches *b*, the slide *f*, flange *e*, springs *k* and *w*, and the tilting-plate *a* pivoted in slot *y*, to have vertical as well as pivotal motions, substantially as specified.

135,891.—*Water-Wheel.*—NICHOLAS J. COLMAN, Railroad Flat, Cal.

A series of central buckets, having wedge or plow shaped points, are combined with two series of buckets, which are curved outwardly from the central ones and also upwardly toward the periphery of the wheel, where they discharge to the right and left. By this construction it is claimed that the water exerts its force upon the full length of the buckets, and the power is not lost by the centrifugal force caused by the high velocity of the wheel.

Claim.—1. The wedge or plow shaped buckets, dividing the water at *e*, and curving toward the sides at *f*, substantially as and for the purpose described.

2. In combination with the wedge-shaped buckets, as shown, the upwardly-curving buckets *g* discharging at the periphery, substantially as and for the purpose herein described.

135,892.—*Spring Bed and Frame.*—WILLIAM Z. COOKE, Hartford, Conn.

The wire mattress is hung at each end to C-shaped springs; a frame hinged near the center of the main frame and works automatically; the cross-bar of the pawl-frame having pins in the ends which engage with notches in the side frame, and the head-bar a hook, which engages with a catch located centrally in the head-bar of the bedstead.

Claim.—1. The spring or wire mattress *g*, in combination with the frames *a* and a^1, hook *b*, catch *c*, and cords *c′* and *d*, substantially as and for the purpose set forth.

2. The pawl-frame a^2, pins a^3, racks a^4, and notches a^5 a^6, combined with the frame *a* and mattress, substantially as and for the purpose herein specified.

3. The frames *a* a^1, combined with a spring-mattress and rack, so that the spring-mattress will automatically be raised to an inclined position, substantially as and for the purpose described.

4. The figures *g* hooked together, as described, the springs *e*, and frames *a* a^1 a^2, all constructed and arranged for operation, as and for the purpose herein specified.

135,893.—*Button-Hole Cutter.*—AUGUSTUS DAY, Detroit, Mich.

Claim.—The case A, having the slot *b*, in combination with knife B, having the opening *d*, as described.

135,894.—*Printer's Lead-Rack.*—OCTAVUS A. DEARING, San Francisco, Cal.

The rack is constructed to hold leads of different lengths and is provided with a gage by which they can be measured.

Claim.—As a new article of manufacture, a lead-rack for printers, having its top and bottom tapering, and constructed substantially as described.

135,895.—*Stop-Cock and Regulator for Gas-Burners.*—AMÉDÉE E. DELOUBET, Buffalo, N. Y., assignor of one-half his right to POH and RAICHLE, same place.

A double cock is provided with a key with two holes through it, and above this two regulating-cocks (one in each passage) are arranged to regulate the supply of each of the gases used.

Claim.—1. The combination of the double cock A, having two distinct and separate pipes, C C′, leading to it, and the regulating devices B B′, and the burners D D^1, all constructed and arranged substantially as and for the purpose specified.

2. The combination and arrangement of the double cock A, passages *a a′ b c e e′*, substantially as shown and described.

3. The peculiar arrangement of the passages *b*, *c*, *e*, *e′*, and *d*, as shown and described.

135,896.—*Sled-Fender.*—ALBERT L. DIRST, Seward, Ill.

The shoe or frame *a* is arranged with vertical longitudinal slots for the bars and lateral slots for the bolts securing the same, whereby the spaces between, or the angle of, the bars may be changed. The horizontal part of the shoe also has transverse slots to adjust the fender parallel to the beam or otherwise.

Claim.—The shoe *a* having the slots *s* and *t*, in combination with the bent adjustable bars S, arranged as shown, whereby the spaces between the bars and the distance and angle from the plows may be regulated at pleasure, as and for the purposes set forth.

135,897.—*Shaping and Arranging Tobacco for Packing.*—JOHN K. ERICKSON and JACOB R. HARRIS, St. Louis, Mo.

The tobacco is first formed into a pointed roll, then bent together and twisted, then pressed sufficiently to break the edges of the wrapper and expel the air and reduce it to proper form, and finally placed in the receptacle, the smaller ends toward the center and overlapping.

Claim.—1. As a new article of manufacture, the cake or plug of tobacco, Fig. 4, when pressed substantially as herein described.

2. The arrangement of the cakes, Figs. 5 and 6, in the drum, substantially as shown and described.

135,898.—*Screw Bolt and Nut.*—THOMAS ENGLISH, Dulwich, England.

The threaded portion of the bolt is slightly tapered, and the walls of the nut are correspondingly convergent, and the threads on both are made full and uniform at the extremities or smallest diameters, but those of either the bolt or nut, or both, gradually diminish in depth or prominence from said extremities back to the entering-surface of the nut.

Claim.—The use of bolts and nuts wherein the diameter of the bolt measured at the bottom of its thread increases toward the shank, substantially for the purpose, and in the manner above described.

135,899.—*Grain-Band, Bag-Tie, &c.*—ELISHA FOOTE, East Bloomfield, N. Y.

Holder for tie-rope, round at upper and wedge-shaped at lower end. Loose end of rope-band caught and held by wedge-shaped end.

Claim.—The holder A B B′ C, constructed substantially as described.

135,900.—*Fishing-Line.*—FERDINANDO E. FORSTER, New York, N. Y.

Three strands of floss silk are first twisted separately and then the three twisted together and covered spirally with twist silk. The whole is then thoroughly soaked with balsam of fir.

Claim.—As a new article of manufacture, a fishing-line made from silk, covered and saturated as described.

135,901.—*Window-Screen.*—CHARLES W. FOWLER, Chicago, Ill.

A hood upon the top of the frame A contains a spring-roller, which carries the screen. Said screen moves up and down in the groove of the frame, and is held down by a spring-catch.

Claim.—1. The grooved frame A provided with the covering or apron B, in combination with the roller C provided with a curtain or screen, E, and operated by means of the spring D, substantially as described.

2. In combination, the grooved frame A provided with the covering or apron B, the roller C provided with the curtain or screen E, and operated by means of the spring D, the spring-catch F, piece *c′*, and perforated clasp *c*, substantially as and for the purpose specified.

135,902.—*Scaffold.*—ABNER GATES, Barnside, Ill.

The scaffold is elevated against the building by the extensible shaft, and has three wheels to diminish friction, the upper two of which are placed widely apart. A bench is placed upon the upper portion.

Claim.—1. A builder's scaffold formed with the several parts of the platform, as shown, having parts F and F′ on different levels, the car with wheels resting against the side of the house, and the elevating-beam E, all combined as set forth.

2. A builder's elevating scaffold-car formed of an upright central part and a top cross-part extending to a considerable distance on each side, and having wheels on each end of the cross-part resting against the wall, substantially as set forth.

135,903.—*Machine for Jointing Staves.*—ROBERT W. GEORGE, Boston, Mass.

The stave is carried forward by an endless feed-chain under pressure-rollers, and is jointed by two revolving cutters, which operate simultaneously upon its opposite edges.

Claim.—1. The feeding-chain C, in combination with guide E, pressure-rolls, spur guide-wheel F^2, and cutter-heads H H, operating as specified.

2. The chain C provided with dogs *e* and spurs *d*, in combination with pressure-rolls F^1 F^2, cutter-heads H H mounted on sliding frames L on adjustable plates M, and operated by cams K, in the manner and for the purpose set forth.

135,904.—*Manufacture of Starch.*—COLGATE GILBERT, Buffalo, N. Y.

Claim.—The follower, packing, &c., of a starch-mill, adjusted, as herein described, by means of the elongated screw-rods *a a* passing through the follower C and entirely through the bushing B, so that the follower can be drawn down and the packing thereby tightened while the mill is in operation, as hereinbefore fully set forth.

135,905.—*Pump-Piston.*—CALVIN B. GILL, Rochester, N. Y.

A hollow pump-rod terminates below in a hollow arch leading into a chamber in the piston, which has an opening for a valve-seat above, and below for a single valve. On the descent, the valve closing the upper orifice, the water passes in below through the chamber and arch and out through the rod. On the ascent the lower orifice is closed, and the water passes through the upper opening.

Claim.—1. The construction of the piston of a double acting pump, with the arched water passage E, leaving a clear passage, *a*, for the entrance of the induction water beneath it to the piston, as herein shown and described.

2. The arrangement, with the parts A B of a double-acting piston, of the central disk-valve D, playing between the induction-ports *b d*, and the radial wings or ways *f f*, serving as guides to the valve, substantially as herein shown and described.

135,906.—*Condenser for Steam-Engines.*—SIMEON A. GOODWIN, Buffalo, N. Y., assignor to WILLIAM D. TABER, same place.

Claim.—1. A condenser for steam-engines, composed of the blow-through pipe B and condensing-chamber C, and operating substantially as described.

2. The heater G, when combined with the blow-through pipe B and condensing chamber C, when operating as described.

135,907.—*Rotary Cutter-Head for Matching Boards.*—GEORGE GREENWOOD, Lawrence, Mass.

A circular plate has curved grooves formed in one of its faces to receive correspondingly-shaped cutters, which are further secured by a screw-bolt passing through the plate.

Claim.—The improved cutter-head, made with circular curved grooves or cutter-sockets, and with deflecting notches *f* arranged in it, as set forth, and in combination with correspondingly-curved cutters fixed in such grooves by clamps *d*, all being as shown and described.

135,908.—*Steelyard Scale.*—THOMAS C. HARGRAVE, Boston, Mass.

The steelyard arm or beam is made detachable from the fulcrum portion, which latter, when freed from the former, allows the load shackle to rest upon the suspending stirrup, thereby relieving the knife-edges from their bearings when the instrument is used as a hoisting-tackle.

Claim.—1. The link A, in combination with the link B, with its slotted shanks *e* and *c*, and the lever *b* with its pivots *r* and *a'*, and hook *c'*, all constructed and operating as described.

2. The scale-beam K, composed of two parts, connected as shown at *i o*, capable of being disconnected, the part containing the knife-blades remaining in position for weighing, while the graduated bar is removed, as herein described.

135,909.—*Stove-Grate.*—ANN MARIA HARRIS, Columbus, Ga.

Claim.—A grate provided with a series of vertical bars, *b b b*, to form a rear grate to the flues, the same being supported on the legs *d* and the journals *a a*, to operate substantially as and for the purposes herein set forth.

135,910.—*Sectional Steam-Boiler.*—JOHN HARRIS, Baltimore, Md.

The front and back connections are combined with tapering tubes, arranged in an inclined manner. The front connection is connected at its upper end with one or more separating vessels of cylindrical form by a saddle-piece having a straight bottom, and embracing the vessels about one-half of their diameter. The object is to provide for the changes of bulk of fluid at the different points in the circuit to suit the different temperatures of fire.

Claim.—1. The wedge shaped front connections G and back connections D, in combination with suitable nearly horizontal tubes E and separating-chambers, and means for allowing a continuous current through the combined parts, the whole constituting a boiler providing for the changes of bulk of fluid at the different points in the circuit, as herein specified.

2. The saddle-formed connecting part H, in combination with the chamber A, front connection G, and suitable tubes and back-connecting parts, as herein set forth.

135,911.—*Heel Nailing and Shaving Machine.*—LORENZO P. HAWKINS, Lynn, Mass., assignor to NICHOLAS COOMBS, same place.

A guard-plate, which overlaps the spring, protects the spring and prevents the knife (in case of fracture of the spring) from cutting deep into the heel or sole edge.

Claim.—In combination with the clamp A and spring D, the guard or shield F, independent of the spring, and forming part of plate E, substantially as and for the purposes stated.

135,912.—*Cultivator.*—JACOB B. HINCKLEY, Nacogdoches county, Tex.

Claim.—1. The beam D, plows *c* and E with straps *b* and braces *a*, beams F, straps *d*, pivots *f*, and links *e*, sliding bars *g*, bar K, and wheel *i*, for the purposes specified.

2. Lever G, standard H, lever *m*, fulcrum-bar *n*, pin O, slot or groove *p*, and chain *r*, and notches *s*, in combination with the frame of a wagon or cart, for the purposes specified.

135,913.—*Cartridge-Loading Machine.*—ALFRED CHARLES HOBBS, Bridgeport, Conn.

Spring-jaws operated by suitable mechanism, and a feeding-tube for cartridges, whereby the cartridge next to the bottom one is raised away from contact therewith and automatically released after the first cartridge has been removed.

Claim.—1. A device for automatically feeding or presenting cartridge cases or equivalent articles, constructed and operating substantially as herein specified, so as to place the foremost one in position, and then lift the succeeding one away therefrom previous to placing it in position.

2. The combination of the reciprocating spring-jaws *f f* with the feeding-tube C and the plate or receiver D, substantially as and for the purpose herein specified.

3. The combination of the tube C, sleeve G, slide I, and cam M, substantially as and for the purpose herein set forth.

135,914.—*Door-Spring.*—AUSTIN D. HOFFMAN, Chicago, Ill., assignor of one-half his right to NATHAN FRIEDMAN, same place.

A metallic angle-bar or post is secured to the outside of the door, near the top, extending outward at right angles thereto, and a wheel is pivoted to the extremity of this bar, turning freely upon it. A flat metallic spring is firmly secured at one end in this wheel, coiling around the same, while the free end is securely fastened to the outside casing above the top of the door. The opening of the door uncoils the spring, and as the spring coils again the door is closed.

Claim.—The combination of the angle-bar B upon the door, wheel C, and spring D, as described, the spring secured above the door and acting to close the same by coiling around the wheel, substantially as specified.

135,915.—*Machine for Cutting Nails.*—SAMUEL P. HOLLIS and HARVEY B. CHESS, Pittsburg, Pa.

The bed-knives are constructed in such a manner that the ribs of the nail-plate will lie in depressions in the cutting-edge, and the whole, when ready to be cut, rests firmly on the bed. The lines of the cutters are arranged to cut the rib of the plate at right angles to the length and the tang at an obtuse angle.

Claim.—1. The cutting-knives B B', ground with their cutting lines, as described.

2. The knives A and A', ground, constructed, and arranged as described.

3. The knives B and B', in combination with the knives A and A', all constructed and arranged as set forth.

4. The gage C, when arranged to project slightly beyond the face of the knife B, and extending laterally far enough to take in the rib of the nail-plate, as described.

135,916.—*Flooring-Tongs.*—EDWARD J. HOUSTON, Nacoochee, Ga.

The joist is clamped by the teeth which form the fulcrums, the arms serving as levers to press up the boards.

Claim.—The flooring-tongs A herein shown and described, constructed with points *a* and clamping device *b b'*, and used in the manner substantially as set forth.

135,917.—*Mortising-Machine.*—EDWARD J. HOUSTON, Nacoochee, Ga., assignor of one half his right to E. F. STARR, same place.

The spring is supported in the frame and pivoted to the plank, making the machine portable.

Claim.—The combination of the plank C, spring *d d' e*, shackle *f*, and stirrup A *g*, and treadle D and its connecting parts, with the frame of the machine A, when all are arranged substantially as and for the purposes specified.

135,918.—*Tool-at-Comb.*—I. SMITH HYATT and JOHN W. HYATT, Albany, N. Y.

The back of the comb, between the teeth, comes to an edge, to be the easier cleaned.

Claim.—A toilet comb in which the base of the kerfs or slits between the teeth are formed by the two inclines or grooves *a a*, arranged in the manner herein shown and described.

135,919.—*Tuck-Creaser for Sewing-Machines.*—ALLEN JOHNSTON, Ottumwa, Iowa.

The vibratory lever is pivoted about the hollow journal, projecting from a standard from the bed-plate, and through this hollow journal-arm passes one bar of the rocking-frame, the other bar passing through the lever, which, operated from the needle-bar, rocks or vibrates the said frame, causing its notched end to impinge the fabric passing over the spur on the adjustable gage-plate.

Claim.—1. In combination with the base-plate and vibratory lever or arm E, the rocking or vibratory notch-carrying frame, constructed as herein described, and arranged to pass loosely through said lever at the axis of vibration of the latter, and also at a point between said axis and the free end of the lever, in the manner and for the purposes set forth.

2. In combination with said base-plate, vibratory lever or arm, and rocking or vibrating notch carrying frame, combined as above described, the gage-plate C mounted upon said base-plate and connected with said frame, so that it shall follow the sliding movement, but not the rocking or vibratory motion of the same, as set forth, and provided with an arm carrying the dressing edge or point *p* and a flexible strip, *j*, constituting the gage or scale, said parts being constructed and arranged together substantially as shown and set forth.

3. In combination with the parts specified in the clause last preceding, the guide-plate, constructed and arranged to operate in connection with said parts, as set forth.

135,920.—*Car-Starter.*—JOSEPH B. JONES, Philadelphia, Pa.

A clutch, which is connected by a band to the propelling mechanism on the axle, is so arranged with the brake-shaft that it may be thrown in or out of gear by means of a lever which is placed within reach of the driver.

Claim.—The combination of the brake-shaft *h*, clutched chain-barrel *n*, chain-gear *i i'* and *j*, gearing B C, pawls *c*, ratchet-wheel *d*, and axle A, substantially as hereinbefore set forth.

135,921.—*Water-Heater.*—JOHN KENFIELD, Jr., Elmira, N. Y.

The heater is designed for use upon an ordinary cook-stove or range, and is provided with a damper to regulate the extent of surface exposed to the heated products of combustion, and with a hood for carrying the waste heat to the chimney.

Claim.—A water-heater containing flues B and B', in combination with the damper C and hood D, substantially as specified.

135,922.—*Floating Fire-Engine.*—JOHN C. LANG Washington, D. C., assignor of three-fourths his right to PHILIP B. FOUKS, New Orleans, La.

Pipes or tubes and a pivoted platform are connected with a boat, the platform adapted to be used as a gangway and to carry and operate the tubes for conveying water from a fire-engine.

Claim.—The combination and arrangement, within a gangway or movable platform, of the pipe or pipes, substantially as described, adapted to be used in connection with suitable force-pumps, for the purposes set forth.

135,923.—*Safety-Hatch for Railroad Cars.*—ROBERT LISTON, Albany, N. Y.

On both sides of the hatchway are placed strips, each having reversed beveled sides, to receive the hatch-cover, which has lap-pieces to conform to the strips. The cover is secured in place by means of a compound bolt, consisting of a bed piece, and two slides on the top and one edge of each of which are racks, a segmental lever which operates one slide, a pinion which communicates the motion of the slide operated by the lever to the other slide and forces it in an opposite direction, bolts which work in guides in the cover, and cross-bars which connect the bolts to the slides.

Claim.—1. In combination with the hatchway B, the edges of which are provided with the strips C C and rubber strips F, the cover D provided with the lap-pieces E E and clasps N N, and the combination bolt G H H' I J K L M, arranged as described, for the purposes hereinbefore set forth.

2. The combination bolt G H H' I J K L M, in combination with the cover D, as and for the purpose hereinbefore set forth.

135,924.—*Dentist's Stool.*—ISRAEL W. LYON, New York, N. Y.

The lower end of the upright standard has a segmental cogged-wheel termination which engages with teeth upon a curved piece pivoted under the base. This curved piece or dog is operated by a pedal projecting from one side of the base, by means of which the stool can be held at the desired inclination.

Claim.—The cogged or toothed wheel-shaped termination B of the standard A, the dog C, the pedaled eccentric D, the lug or teat *i*, and the base S, all combined and arranged substantially as and for the purposes shown.

135,925.—*Construction of Metallic Sieves.*—ROBERT J. MANN, Burlington, Iowa.—Case A.

A means of securing the sieve-cloth to the bottom of the hoop or band, a separate hoop forming a bottom-rest for the sieve and protecting the sieve cloth from wear.

Claim.—The combination of the hoop or band A and the sieve-cloth B, secured together by the folds C and E, substantially as and for the purpose specified.

135,926.—*Construction of Metallic Sieves.*—ROBERT J. MANN, Burlington, Iowa.—Case B.

A mode of securing the sieve-cloth to the bottom of the metallic hoop by a double fold of the latter clasping a double fold of the cloth.

Claim.—1. The combination of the metallic hoop or band A and the sieve-cloth B, secured together by the outwardly-turned clasp or fold of their edges C, substantially as and for the purpose specified.

2. The combination of the outwardly-turned clasp or fold C and the hoop or band D, substantially as and for the purpose specified.

135,927.—*Canning Fruit.*—JAMES B. MATTHEWS, Cincinnati, Ohio.

The fruit is placed in cans and arranged in a tray, which is put on an endless chain and conveyed into a steam-heater. Afterward the cover of the can is soldered, and they are again carried through the heater.

Claim.—1. The apparatus for canning articles, composed of heater A with bed B, endless chain C, and sliding frame D, combined and arranged substantially as herein set forth.

2. The process of heating, sealing, and canning fruit and vegetables, in the manner and by the means substantially as herein set forth.

135,928.—*Breech-Loading Fire-Arm.*—EDWARD MAYNARD, New York, N. Y.

Special combination claimed for raising the hammer to half cock in the act of throwing up the rear end of the barrel to uncover the breech.

Claim.—The combination of the breech-lever E, elbow D, and lever *b* with the tumbler or lower part of the hammer, substantially as and for the purpose described.

135,929.—*Manufacture of Car-Springs.*—NATHAN MIDDLETON and ALLEN MIDDLETON, Jr., Philadelphia, Pa.

Claim.—The improvement described in car-springs and in the manufacture thereof—that is to say, a spring composed of a number of spirals of Bessemer or homogeneous steel wire, cold-drawn or cold-rolled, and coiled while cold, as herein set forth.

135,930.—*Sewing-Machine.*—JEHU C. MOORE, Madison, Ind.

Claim.—The feed-bar J, supported in a mortise in the piece K in front of the pulley F, and provided with a stud, *s*, of rawhide to prevent contact of said bar with the plate C, substantially as described, and for the purposes set forth.

135,931.—*Cushion and Sharpener for Sewing-Machine Needles.*—JOHN D. NESBITT, Foxborough, Mass.

Claim.—A needle-cushion, *a*, and whetstone or other suitable sharpener, *d*, arranged on an adjustable frame, *c*, so as to turn in and out under the top of a sewing-machine table or frame, substantially as specified.

135,932.—*Grain-Drill.*—SHERMAN R. NYE, Winchendon, Mass., assignor to himself and CHARLES J. RICE, same place.

Under the back of a hopper there is a lateral outlet for the seed. Behind this back, suspended to a rod, there is another piece which adjustably covers the outlet by means of a cam, with a pin thereon, on each end of the rod. These pins are clamped in slots, forming the top portion of plates affixed to the sides of the hopper, which are vertically adjustable by slots and clamp-screws.

Claim.—A hook or apron, *z*, turning on a rod, *p*, provided with eccentric cams *n n'* adjusted by a thumb-screw, *w'*, engaging in a curved slot, *m*, formed in one of two adjustable standards, *k k'*, connected with a hopper or body, *g*, of a sowing-machine, so as to raise and lower the apron or back *z*, substantially as and for the purpose specified.

135,933.—*Bed-Bottom.*—HARRISON OSBORN, Richmond, Ind., and ANDREW W. KENDRICK, Brooklyn, N. Y.

Wire strands are attached to the head-bar by springs and to the foot-bar by staples. A head-rest is formed by joining the strands with rings and links, and operated by a ratchet and pawl.

Claim.—1. A bed-bottom formed of single wire strands attached at the head to conical springs and to the adjustable foot-bar by staples, as described.

2. The head-rest formed by the jointed wire strands and the frame pivoted to the side rails and operated by the ratchet and cord, as described.

3. The wire strands, attached to the head bar by springs and to the foot-bar by staples, in combination with the head-rest and adjustable frame, constructed as described, and for the purposes set forth.

135,934.—*Machine for Cutting Saw-Teeth.*—JAMES H. W. ORION and WILLIAM H. H. LARDUSKEY, Baltimore, Md., assignors of one-third of their right to WILLIAM D. F. LARKIN, same place.

The frame or holder is cylindrical and has a revolving cutter, similar to a screw-cutting tap, passing through its center. The cutter is fed down by a screw made on its upper part, which turns in a nut fastened to the top of the frame, the pitch of the screw and of the cutting-teeth being the same. The blanks to be cut are fastened in clamps which are held in radial longitudinal slots in the cylinder by rings or bands passing around them.

Claim.—The combination, substantially as shown and described, of a revolving shaft provided with one or more series of cutting-teeth on its convex surface, and one or more clamps or equivalent devices, which hold the blanks against the cutters.

135,935.—*Siphon.*—NATHANIEL W. PAYNTER, Baltimore, Md.

A siphon composed of a cylinder, piston, inlet and outlet passages arranged without valves, and in combination with a float or buoy for sustaining the lower end of long tube near the surface of the liquid to be drawn off.

Claim.—1. A siphon composed of the cylinder A, piston B, and inlet and outlet passages *c d*, arranged and operating together as and for the purpose described and represented.

2. In combination with the tube *f*, which forms a continuation of the inlet-passage *c* of the siphon, a float or buoy, *g*, for sustaining the lower end of said tube near the surface of the liquid to be siphoned off, as and for the purpose described.

135,936.—*Bosom-Pad.*—CHARLES A. PHILLIPS, Chicago, Ill.

The bosom-pad is supported on a frame made of one continuous piece of wire bent into a form adapted to the breast, and leaving an open space at the center of the frame.

Claim.—1. A bosom-pad provided with a supporting-frame, constructed substantially as specified.

2. As a new article of manufacture, a supporting-frame constructed of a continuous wire bent into a form substantially as shown and described.

135,937.—*Slop-Jar.*—WILLIAM S. POTWIN, Chicago, Ill.

The top or cover of the jar is formed of a single piece of metal by a die and drop, by which it is fitted to the top of the jar.

Claim.—The cover and breast made in one piece of sheet metal, in combination with a slop-jar, substantially as described, and for the purposes set forth.

135,938.—*Bale-Tie.*—MICHAEL QUIN, Galveston, Tex.

A square piece of metal has the edges of two and opposite sides turned and slotted above the bend, the notched band being held between the bends.

Claim.—The buckle, as constructed, in combination with the notched band, substantially as described.

135,939.—*Spindle for Spinning-Machines.*—DAVID H. RICE, Lowell, Mass.

The studs and collar prevent the live-spindle being raised from the dead-spindle in doffing. The rubber-packing tube not only holds the dead-spindle firmly, but absorbs or takes up any jar imparted to its upper end by the live-spindle, thus causing the latter to run steadily.

Claim.—1 The combination of the live spindle, provided with studs *a a*, with the bolster, provided with the collar *n* and slots *m*, substantially as described.

2. The dead spindle secured to its bolster by elastic packing or support, substantially as described.

3 The combination of the dead-spindle, secured to its bolster by elastic packing or support, with the live-spindle, supported independently at its lower end by the bearing *d*, substantially as described.

135,940.—*Soda-Fountain.*—WILLIAM H. RUSSEL, Sedalia, Mo.

The portion of the pipe which is connected with the counter-stand is provided with a piston, by operating which the soda-water is forced through the exit-pipe.

Claim.—A soda apparatus, consisting of the soda-reservoir, the counter-stand, the jointed pipe connecting the said reservoir and stand, the piston, and the exit-pipe, all combined and operating together as described.

135,941.—*Planing-Machine.*—THOMAS SHAW, Philadelphia, Pa.

The tool is placed in the end of a long bar, which is pivoted at its back end to a cross-bar placed on centers in the upright frame of the planer. Near the center of the bar a yoke is pivoted, from which a pin projects. This pin is fastened in the tool-post. Thus connected the tool end of the planer-bar has the motion of the tool-carriage imparted to it.

Claim.—The combination, as herein described, of the planer-bar *c* with the planing-machine.

135,942.—*Corn-Planter.*—JOHN SHEER, Lincoln, Ill.

The furrows are opened by runners, which also bear the seed-boxes. A rope is attached to one side of the field and passes around a reel upon the machine and secured to the opposite side of the field. The forward movement of the machine turns the reel, the crank-shaft of which in turn works the seed-valves.

Claim.—1. The reel C, consisting of the hub c^1, arms c^2 c^3 c^4 and forks c^5 c^6 c^7 c^8, so as to increase or diminish the circumference of the reel, substantially as described, and for the purpose set forth.

2. The combination of the reel C, shaft *c*, crank c^4, pitman D, shaft E, crank E', arms *e e*, and rods e^1 e^1 with the cord F and pulleys *f f'*, substantially as described, and for the purpose set forth.

3. The cam G, lever *g*, cord or chain H, pulleys *h h h'*, marker K, and grooved pieces *k k*, substantially as described, and for the purpose set forth.

4. The shaft N with the seed-channels *n n n n*, in combination with the plates L, M, and O, seed-slide I, piece P, and rod e^1, as shown and described, and for the purpose set forth.

135,943.—*Wire-Basket.*—DANIEL SHERWOOD, Lowell, Mass., assignor to E. P. WOODS, DANIEL SHERWOOD, and CYRUS H. LATHAM, same place.

The body of the dish or basket is made of open wound wire and the base of twisted wire.

Claim.—As a new and improved article of manufacture, a basket made of open wound and twisted wire, substantially in the manner described and specified.

135,944.—*Ring Rail and Holder for Spinning.*—GEORGE W. SPAULDING and WILLIAM T. CARROLL, Woonsocket, R. I.

The holder is made square, and fits in grooves in the rail, affording greater range of adjustment than usual.

Claim.—1. The rail A, constructed substantially as described.

2. The combination of the adjustable holder D, with or without the slot F, with the ring-rail A, substantially as described.

3. The adjustable ring-holder D, constructed as described.

135,945.—*Stay-Log.*—JOHN A. SQUIERS, New York, N. Y.

The stay-log is composed of two bars arranged between spur-wheels and braced by diagonal braces, which are adjusted by screws through the double spindle at the axis of motion.

Claim.—1. The expanding stay-log, consisting of its axial portion A and its outer portion B, in combination with the carrier-wheels H H, substantially as described.

2. The adjusting-screws N N, tapped through the journals of the axial portion of the stay-rod, in combination with the diagonal braces, and by which the said braces are tightened at any degree of expansion, substantially as shown and described.

3. The expanding stay-log A B, in combination with diagonal braces M M for trussing the same, substantially as herein described.

4. The combination of the log-carrier B with the carrier-wheels H H, by means of the recesses J J, into which the feet or end flanges of the log-carrier are fitted and secured, substantially as described.

135,946.—*Dinner-Pail.*—ROWLIN S. SQUIERS, Cleveland, Ohio.

The pail is constructed in three sections: The lower or lamp-chamber, the boiler, and the heating-chamber above the boiler. The chimney passes through the center of the boiler and the heating-chamber and through the cover. The boiler is also provided with a perpendicular tube that reaches nearly to the top of the heating-chamber.

Claim.—The sections A B, boiler D, tube E, and chimney H, combined with the heating device F, G, and K, all arranged substantially as and for the purpose specified.

135,947.—*Magazine Fire-Arm.*—ALFRED SWINGLE and FRANK A. HUNTINGTON, San Francisco, Cal.

Claim.—1. The breech-piece C, with its arms or trunnions *d*, in combination with the oscillating bar or lever *j* and trigger-guard H, substantially as and for the purpose described.

2. The oscillating breech-piece C, in combination with the magazine-tube G, when arranged substantially as described, whereby the cartridges may be fed directly into the breech-block and at the same time the old cartridge forced out.

3. The oscillating breech-piece C, magazine-tube G, bar or lever *j*, and trigger-guard H with its lever-arm K, connecting-rod *n*, and slide *o* having the claw-bar *p*, all constructed and arranged to operate substantially as herein described.

4. The slide *o*, with its upper wedge-shaped end, in combination with the recess *s* in the breech-piece for locking the breech-piece in the firing position.

135,948.—*Car-Coupling.*—JAMES TEMPLE, Danville, Pa., assignor of one-half his right to ROBERT P. BARKER, Chicago, Ill.

When the yoke is raised for coupling it is supported by studs projecting from the top plate of the draw-head. When the cars come together the "lash-plate" is struck and forced back against the yoke, which in turn is driven back from the studs and falls with the pin.

Claim.—1. In combination with a draw-head of the form and construction now in common use on railroad cars, the stirrup B', attached to the coupling-pin, with its saw-tooth catches *c'*, the projecting studs *c c*, and the sliding backlash-plate F, all constructed and arranged to operate substantially as described.

2. In combination with the said stirrup B', backlash-plate F, and studs *c c*, the guide-stirrup D, substantially as described.

3. In combination with said stirrup B', backlash-plate F, and studs *c c*, the cross-bars *c c* to support the link, substantially as described.

135,949.—*Ink-Pad.*—HENRY R. TOWNE and WARREN H. TAYLOR, Stamford, Conn.; said TAYLOR assignor to said TOWNE.

A cylindrical body, filled with a stuffing and covered by a flexible fabric clamped into a recess on its exterior, has a plunger actuated by a screw-nut, by which the ink, introduced through a proper aperture, is diffused over the whole surface of the casing.

Claim.—1. The combination, in an inking-pad, of a case provided with a flexible cover, an adjustable piston, and an elastic stuffing.

2. The combination, in an inking-pad, of the case A, piston B, nut C, flexible cover H, and elastic stuffing filling the interior space J.

3. In an inking-pad, the combination of the flexible cover H, the angular groove I, and the clamping-wire E, arranged substantially as and for the purposes described.

4. In combination with the subject-matter of the first claim, the induction-orifice closed by plug K.

5. The combination, in an inking-pad, of the several parts hereinbefore described—viz., the case A, piston B, nut C, flexible cover H, clamping-wire E, and elastic stuffing filling the space J.

135,950.—*Curtain-Fixture.*—HENRY L. TRAPHAGEN, New York, N. Y., assignor to himself and RUFUS N. PRATT, same place.

The rack is provided with a series of fixed teeth on each side of the slot, and combined with a slide carrying the cord-pulley at one end and an endless screw at the other end.

Claim.—The combination of the slide B carrying the pulley C and endless screw E with the rack A, furnished with the series of fixed teeth *f*, arranged on either side of its slot *a*, substantially as herein set forth, for the purpose specified.

135,951.—*Trace-Carrier.*—REUBEN H. WARRINER, Toledo, Ohio.

A bar or cross-piece connects the upper portions of the lateral parts of a trace-carrier and prevents the reins from falling down and becoming entangled with the hooks.

Claim.—In a trace-carrier, the connection A uniting the lateral portions of said trace-carrier, and forming a continuous upper surface to the same, substantially as and for the purpose shown.

135,952.—*Middlings-Purifier.*—EDWARD P. WELCH, Georgetown, D. C., assignor to himself, JAMES H. WELCH, ROSIA W. WELCH, HERBERT P. WELCH, and JAMES A. MALONY, same place.

Centrifugal action of the bolt, tending to discharge the middlings too rapidly over the "tail end," is retarded by jets of air issuing from a coil of perforated pipe surrounding the bolt, the meshes of which are kept open by brushes on vertical axes, revolving in a parallel plane.

Claim.—1. In a middlings-purifier, the combination of the rotary screen with a clearing brush or brushes rotating parallel therewith, substantially as set forth.

2. The combination, in a middlings-purifier, of the rotary screen with the encircling jet-pipe to counteract the centrifugal action of the screen, substantially as before set forth.

135,953.—*Middlings-Purifier.*—EDWARD P. WELCH, Georgetown, D. C., assignor to himself, JAMES H. WELCH, ROSIA W. WELCH, HERBERT P. WELCH, and JAMES A. MALONY, same place.

Air blown through perforated pipes, arranged at the sides and ends of the reciprocating shaker, clear its under side and the brushes (revolving in a plane parallel to the shaker on vertical spindles) of the fine adhering farina, &c. The air issuing from the end pipes prevents the too rapid discharge of the middlings over the "tail-end" of the shaker.

Claim.—1. The combination, in a middlings-purifier, of a vibrating screen through which a blast passes in one direction while the flour passes in the other, with a brush rotating across the face of the screen on an axis substantially perpendicular thereto, substantially as hereinbefore set forth, to produce a drawing action of the brush across the screen diagonal to its line of vibration.

2. The combination, in a middlings-purifier, of a vibrating screen, brushes rotating across the face of the screen, and a perforated air-pipe to direct streams of air upon the screen and brush, substantially as set forth.

135,954.—*Shovel and Spade.*—WILLIAM T. WELLS and GEORGE E. MORRHOUSE, Decatur, Ill.

Claim.—The corrugations or beads *c d* on the plates or straps C D, by which the blade of a shovel or spade is secured to the handle to strengthen the same at the junction of the blade and handle, substantially as shown and described.

135,955.—*Washing-Machine.*—JOHN WILBUR, Chesterton, Ind.

The improvement consists in connecting the segments holding the upper rollers by the link, and having independent vertical grooves and tongues, that each set of rolls may have an independent upright movement.

Claim.—The combination of the link *b* with the segments D D, the latter having independent tongues adapted to slide in vertical grooves, as described.

135,956.—*Staff-Gage for Dressing Millstones.*—LESTER B. WOOLVER, Mechanicsville, Ohio.

Staff-gage for giving a uniform depth to the channels or grooves of millstones.

Claim.—The herein-described staff-gage for dressing millstones, consisting of the staff A, having one side thereof slanting from one edge to the other, thereby making one edge thicker than the other, as described, and ears C C', arranged in relation to the staff A substantially as set forth, and for the purpose specified.

135,957.—*Permutation Lock.*—THOMAS B. WORRELL, Philadelphia, Pa.

Two spindles, arranged one above the other, serve to operate the lock. Upon the lower one a pinion is arranged so as to turn with the spindle, and also to slide thereon; and upon the screw of the upper one is fitted a carrier that connects with a sleeve attached to the pinion, so that by turning the upper or screw-spindle the carrier and pinion are moved back and forth on their respective spindles; thus the pinion is moved out and in gear with the combination wheels or tumblers and the rack-bar which actuates the bolts. The tumblers are supported and turn upon a hub, which surrounds the upper spindle, one side of which spindle is flattened to correspond with a flattened surface of the bore of the hub. By this arrangement every turn of the screw-spindle advances or retracts the pinion and elevates the tumblers by reason of the rounded part of it acting against the flattened part of the hub; the tumblers being adjusted and the bolts operated by means of the lower spindle.

Claim.—1. The screw-spindle D, in combination with the hub K, spur-gear E E', notched wheels F F', tappets G, carrier P, spindle L, pinion N, and its elongated hub O, for the purpose shown and described.

2. The screw-spindle D, in combination with the carrier P, spindle L, pinion N and its elongated hub O, for the purpose shown and described.

3. The combination of the actuating rack-bar R and the yoke S, for the purpose shown.

4. The dovetail projection on the dog W arranged to slide in a corresponding dovetail recess in the lock-plate B, for the purpose shown and described.

5. The rack-arm U^4 arranged to pass over the combination C, and secured to the bolt-head T, in combination with the rack-arm U, also secured to the bolt-head T and the pinions V V', for the purpose shown and described.

6. The false or idle wheel Y arranged to turn with the spindle D, for the purpose shown and described.

135,958.—*Machine for Lifting and Carrying Barrels, Boxes, &c.*—JOHN W. BABCOCK, Chicopee, Mass.

A lever-bar terminating in a hook with serrated edge, to which is jointed an adjustable rod provided with a similar hook, said rod being adjusted by a set-screw.

Claim.—The combination of the horizontal bar A A' and the arm E F with the rod H J, either or both adjustable, substantially as and for the purpose hereinbefore set forth.

135,959.—*Bread-Worker.*—JOSEPH H. BALDERSTON, Colora, Md.

The kneading is performed by two balls, which are attached to arms or bars moving horizontally in the dough-box.

Claim.—An improved dough-worker, formed by the combination of the standards B, shaft C, arms D, bars E, balls F, and lever G, with each other and with the slotted partition *a'* and box A, substantially as herein shown and described.

135,960.—*Spindle-Bolster.*—JAMES BARNES, Holyoke, Mass., assignor to himself and JAMES WOODHOUSE, same place.

Claim.—In combination with the cup A, designed to revolve with the spindle, the cap E, provided with an oil-receiving cavity on its upper side, and with the outer tubular extension F fitting in the rail, and the inner extension H forming the bearing for the spindle, said parts having the collar and flange K L, as shown and described.

135,961.—*Fly-Catcher.*—LEAVITT BARTLETT, Yarmouth, Me.

To a handle are attached two curved arms, and to these two journal-bearings, in which the journals of a hoop revolve as a support for a cup. The cup contains soap-suds, and is to be placed against the ceiling of a room in the evening when the flies are at rest, and they will fall into the suds and be destroyed.

Claim.—The combination of the stock A, arms *b*, hoop *c*, and bearings *c* with a cup or glass, as and for the purposes herein set forth.

135,962.—*Saw-Gummer.*—HENRY BAUGHMAN, Dorn's Gold Mines, S. C.

The saw-blade is adjusted on a pair of flanged eccentrics fastened to a cross-piece, and an emery wheel journaled in a swinging frame is pressed down by a handle on the frame. An adjustable guide on the side of the frame regulates the depth of the cut.

Claim.—1. The frame A, pivoted frame B b^1 b^2, rod C, emery-wheel D, shaft E, pulley G, and loose pulleys H, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

2. The holder K, provided with flanged eccentrics L for holding the saw-plates while being operated upon by the emery wheel D, substantially as herein shown and described.

3. The combination of the adjustable guide or stop R with the frame A and pivoted frame B b^1, to limit the movement of the frame B and emery wheel E and make the teeth uniform, substantially as herein shown and described.

135,963.—*Sash-Fastener.*—RANSOM E. BECKWITH, Nashua, N. H.

The sash-lock heretofore patented to this party, (No. 133,916, December 17, 1872,) is additionally provided with a rotary latching-tumbler pivoted between the shanks of the two bolts, which project over it and have suitable locking notches. At its rear end this tumbler is notched to operate with a curved spring, which holds it in either of its positions. The tumbler has likewise a key-hole slot, and the insertion of a key, partially or more completely revolving the tumbler, serves as a means of locking either one or both bolts when either advanced or retracted.

Claim.—The combination of the rotary bolting-tumbler G, having its spring *g*, with the sash-fastener provided with the bolt-carrying projection B, (to extend into and make part of the parting-tongue of the two sash-grooves,) and with the two bolts D E having locking-notches *n e*, all arranged in the lock-case, and with respect to said projection B, substantially as specified.

135,964.—*Cultivator.*—JACOB BEHEL, Rockford, assignor to himself and GEORGE R. RICHARDSON, Earlville, Ill.

Claim.—1. The combination of the axle-tree B, the converging tongue-timbers C, the cross-brace D, the bracing-pendants E, and the brace-rods *d*, all these members being constructed and operating as set forth.

2. The combination of the perforated tongue, the elongated slot in the thimble *c*, the forked turning-shank A, the transverse locking-pins 1, and the neck-yoke H pivoted on one side of the axis of the shank, all these members being constructed and operating as set forth, to raise or lower the neck-yoke and tongue.

3. The combination of the pendants E, the sockets inclined downward and forward, the eyebolts *i* turning in the sockets, the drag-bar, and the plow-standards, all these members being constructed and operating as set forth, to cause the shovels to traverse a greater arc than the drag-bars, as set forth.

4. The combination of the drag-bar I, the long shovel-standard M swiveled thereto, the radius-yoke P swiveled to the standard, the radius-link P', and the detent-lever O and rack N, all these members being constructed and operating substantially as set forth.

5. The combination of the long standards M, their swivel-yokes R, and radius-links P' with the rod Q, all these members being constructed and operating substantially as set forth, to maintain the proper relation between the standards, while allowing them free adjustment in all directions.

6. The combination of the long standards M, the drag-bars I, the rigidly-connected shields T, the draft-chain *i*, the link-rods i^1, and the pivoted arms i^2 connecting the shield and drag-bars, all these members being constructed and operating substantially as set forth.

7. The combination of the socketed rings *l* on the standards with the rigid draw-rods l^2 inserted therein and secured by a frangible pin, these members being constructed and operating as set forth, to prevent bending or yielding of the draft-connections by back pressure on the standard.

135,965.—*Bed-Bottom.*—PETER BOESEN and MICHAEL BEDESEM, Kenosha, Wis.

The crossing braces connect the upper and lower frames, and are held at the ends by an inwardly-turned hook inserted in their notched ends.

Claim.—The inwardly-turned hooks and the notched braces combined with the spring bed-frame, as and for the purpose described.

135,966.—*Awning.*—JOHN BOYLE, New York, N. Y.

A rod is provided with sockets at its ends to which the brackets are attached. The rod is kept straight, and intermediate brackets dispensed with by the use of tension-rods, which pass through eyes on the sockets and are supported by a bridge or bridges on the main rod. The tension-rods are shortened or lengthened by means of nuts at one end.

Claim.—The application of tension-rods to awnings, substantially in the manner and for the purpose described.

135,967.—*Furnace for Melting Brass and other Metals.*—IRA D. BUSH, Detroit, Mich.

By turning the plate the grates are removed from the air-ports allowing the discharge of cinders and refuse.

Claim.—The rotary frame L, having grates with ports O P, arranged on a pivot, M, in furnace, as and for the purpose described.

135,968.—*Hat and Coat Hook.*—CHARLES G. COLE, Bennington, Vt.

A single piece of wire, or narrow ribbon of metal, is doubled near the middle and curved into suitable shape for a hat and coat hook. The free ends or prongs are sharpened to a point, bent angularly in the opposite direction, and forced into the wood, thus dispensing with other fastening devices.

Claim.—As a new article of manufacture, the hat and coat hook, made from a single piece of wire or strap metal, having at or near the middle a double, that is curved into a hook-form, and has the single ends turned in opposite directions, and provided with sharp prongs, as and for the purpose described.

135,969.—*Machine for Pricking Leather.*—GEORGE C. CONVERSE, Spencer, assignor to ABNER WHEELOCK, Charlton, Mass.

A series of awls attached to a head-piece are forced through the stock preparatory to being sided by hand. Suitable guides are provided for holding the stock in position; also a spring stripping-plate for freeing the leather from the awls after perforation.

Claim.—1. The combination, with head-plate G, of the perforating-awls A, stripping-plate J, and spring 5, substantially as and for the purposes set forth.

2. The combination, with the spring-arms C, of the perforated presser-plate *e*, substantially as and for the purpose set forth.

3. The combination, with table A, of the self-adjusting cross-

piece L, provided with holding-points 9, substantially as and for the purposes set forth.

4. The combination, with the levers K and end pieces E, of cams 7 and 8, substantially as and for the purposes set forth.

5. The combination, with the table A, head-plate G, and hinged end pieces E, of perforating-awls h, stripper-plate J, perforated presser-plate e, and gage-plates a, b, and f, substantially as and for the purposes set forth.

135,970.—*Iron Bridge.*—WILLIAM B. COOPER, Albany, N. Y.

The tubular sections of an iron bridge are united by a two-part shell, which is loosely inserted and afterward expanded by wedge-shaped keys. A firm union is thus produced without the expense of accurate turning and fitting, and the sections are made portable.

Claim.—1. The two-part shell B divided longitudinally and vertically, as and for the purpose described.

2. The key F combined with a shell, B, having the groove G and flanges E, as and for the purpose described.

135,971.—*Car-Ventilator.*—JOHN J. CROWLEY, Whistler, Ala.

A fan-blower driven by a belt from a pulley on one of the car-axles connects with two vertical funnel-mouthed pipes, which extend above the car into the open air. A horizontal pipe within the car connects these, and from its center a vertical pipe extends upward into a horizontal perforated pipe, which is placed in the highest part of the car and runs from end to end. Two valves, one in each funnel-mouthed pipe above the horizontal, are operated simultaneously by a connecting-bar in such manner that opening one will close the other, and will open a passage through the first from the open air to the blower, thence through the lower part of the other vertical pipe to the horizontal pipe, thence through the central vertical pipe to the perforated pipe, and out of this into the car. The object of the valves is that the fan may be operative when turned in either direction.

Claim.—The combination, in a railroad car, of the funnel-mouthed ventilating-pipes H I, conducting-pipes E F D C, distributing-pipe B, valves K, L, M, and N, and a fan-blower, substantially in the manner described.

135,972.—*Propulsion of Cars.*—RAPHAEL DE LEIDI, Brooklyn, N. Y.

The car is designed to be propelled forward upon the jointed track by alternately elevating and depressing one end thereof. The device may be useful as a toy.

Claim.—The sections A A^1 A^2, &c., pivoted to fixed, movable, or pendent supports B, and joined together to constitute a flexible track for the propulsion of vehicles, as set forth.

135,973.—*Seat for Chairs, &c.*—WILLIAM T. DOREMUS, New York, N. Y.

The seat is formed of several sectors, the angles of which nearly meet in the center of the seat. The sectors are hinged or pivoted to the seat-frame, and rubber springs are placed between the sectors and the frame, a little in front of the hinges.

Claim.—The combination, with frame A, of sectors B, provided with pivot-pins or hinges C and rubber springs D, near their outer ends, as and for the purpose set forth.

135,974.—*Oscillating Chair.*—WILLIAM T. DOREMUS, New York, N. Y.

The seat and the pedestal are connected by a bar at each side; said bars are pivoted to the seat and fastened to the pedestal by a nut screwed on their lower ends. Round rubber springs are placed upright between the seat and pedestals near the back part of the chair. The front part of the pedestals are provided with stops, and rubber stops are also placed between the seat and pedestals.

Claim.—The combination of the bars C, pivoted at their upper ends to the seat B, and connected at their lower ends with the pedestal A, the rubber springs D, the stops a', and the rubber stop-springs E, with the pedestal A and seat B, substantially as herein shown and described, and for the purpose set forth.

135,975.—*Fruit-Fork.*—ISABELLA C. DRAPER, New York, N. Y.

A cup is arranged just above the tines to catch the drippings when fruit is being served.

Claim.—The fruit-fork, provided with the bowl or cup B, substantially as herein shown and described.

135,976.—*Cut-Off for Fire-Plug Systems.*—FREDERICK W. EAMES, Grand Rapids, Mich.

A cut-off for service-pipes, closed at will by the engineer by increasing the pressure in the main and thus concentrating the force on the fire-plug, the cut-off apparatus having two pistons of different area controlling the induction and eduction ports.

Claim.—1. In combination with a street water-main, A, and the service-pipes B B' thereof, an automatic cut-off device, arranged to constitute a part of, and forming a through junction with, the service-pipe between the street main and the point of use for the water, essentially as and for the purpose described.

2. In an automatic water cut-off for street-mains, the combination thereof with a shell, C, having an upper and a lower chamber, D E, of unequal diameters, and an upper and a lower piston, F G, operating in connection with the induction and eduction pipes B B', arranged at different heights to cut off and open the connection of the service-pipe with the street-main.

3. In an automatic water cut-off for street-mains, the piston-shell C, open at both ends, and provided with a bow, L, to form a guide and stop to the ascent of the pistons, and also with an interior annular shoulder, M, to form a stop to limit the descent of the pistons, as described.

4. In an automatic water cut-off for street-mains, which operates by the pressure within the main, the combination of an upper and lower pressure-piston, F G, when the latter is made to serve also as a valve to open and close the service-pipe B', as described.

5. The solid piston-valve G, in combination with the induction and eduction pipes B B', arranged one above the other on opposite sides of the piston-shell C, the upper piston being of greater area and working above the upper pipe B, as and for the purpose described.

6. The lower-valve piston G of an automatic water cut-off, of a length to entirely cover the eduction-opening for the purpose of preventing the escape of the water already in the service-pipe when the latter is cut off from the street-main, as described.

7. The combination and arrangement of the open shell C, the pistons F G of different area, the weighted piston-stem H, the piston limit-stops L M, and the upper and lower branches B B' of the service-pipe of the street-main, the several parts being constructed, arranged, and operating substantially as described.

135,977.—*Car-Axle Box.*—CALEB T. FAY, San Francisco, Cal., assignor to THE JENSEN LUBRICATOR COMPANY, same place.

The oil-reservoir consists of a metallic box arranged to slide within the axle-box, and held in place by flanges upon the inside thereof. A gate, which is pressed down by the box-cover, enters within slots in the forward part of the reservoir, preventing the same from sliding forward.

Claim.—1. The lugs or points C C' for holding the box when in position, substantially as set forth.

2. The axle-box described, having the outside case with sliding cover F, removable reservoir A having slots D' D' and flange C', and gate or spring-bearer E, all constructed and arranged as described, for the purpose set forth.

135,978.—*Gas-Burner.*—THOMAS BURKE FOGARTY, New York, N. Y.

The flame is fed with an external supply of gas, the quantity of which is regulated by a tube movable within the burner and so situated that it can only be reached when the burner is detached from the supply-pipe.

Claim.—The construction of a burner, substantially as described, in which a supply of gas external to the flame is regulated around the base of the tip by means of an internal valve that can be operated only when the burner is detached from the pipe.

135,979.—*Gas-Burner.*—THOMAS BURKE FOGARTY, New York, N. Y.

The tip can be moved within the jacket by the pin. The revolution will open or close small apertures connecting the pipe with the chamber surrounding the tip.

Claim.—The interior movable tip d with perforated collar e resting upon the perforated ledge of the casing, when the parts are combined to operate in the manner set forth.

135,980.—*Gas-Machine.*—THOMAS B. FOGARTY, Warren, Mass.

The air-supply pipe communicates with the exterior of the gas-house, and is provided with a register, and a valve which is constructed with an independent stem and is arranged to regulate automatically the supply of air. The flow of gasoline is also regulated by means of a drip, which opens or closes a valve in the pipe leading from the gasoline-reservoir.

Claim.—1. The air-injector or back-pressure valve A of carbureters or gas-machines, constructed and operated substantially as set forth.

2. The air-register C of carbureters or gas-machines, constructed and operated substantially as set forth.

3. An air-pipe, D, communicating between the outside of the gas-house and the air-injector or back-pressure valve of a portable gas-machine, substantially as set forth.

4. The combination of a drip, N, cock K, and lever P, constructed and operated substantially as described.

135,981.—*Carbureter.*—THOMAS B. FOGARTY, Warren, Mass.

The valve is operated by means of a cam in such a manner that, by a slight movement in the same, the valve will be completely opened or closed.

Claim.—In automatic regulating carbureters or gas-machines, a gasoline-supply valve, constructed substantially as described.

135,982.—*Carbureter.*—THOMAS B. FOGARTY, Warren, Mass.

A rock-shaft is arranged to be operated by the gas-holder and by a float within the same, so that when the gas-holder is inflated to a certain point, or when the gas is withdrawn and the holder falls to a certain point, it operates the rock-shaft and causes it to disengage its hold upon the weighted valve-lever, which immediately drops, and thereby shuts off the flow of gasoline to the generator.

Claim.—1. The float L and rock-shaft J, suitably connected, in combination with the weighted lever N, as and for the purpose specified.

2. The gas-holder A and the rock-shaft J, suitably connected, in combination with the weighted lever N, as and for the purposes specified.

3. In combination with the gas-holder A, the rods I and O, the pipes E and K, the float L, and the weighted lever N, constructed and operated substantially as described.

135,983.—*Medical Compound or Rheumatic Ointment.*—JOSEPH GROMEN, New York, N. Y.

Prunes, oil of cedar, chloride of sodium, sal-niter, juniper berries, water.

Claim.—The ointment for the cure of rheumatism and similar diseases, substantially as above described.

135,984.—*Car-Coupling.*—JOHN W. GILLAM and JOHN W. GILLAM, Jr., Newton, N. J.

A flat-bottom coupling-bar having catch-shoulders on the upper side of its ends, with a mid-rib between them, which engages with a spring-pressed cross-bar working in slots in the draw-head, and having a notch in the middle thereof corresponding to the rib on the coupling-bar. This rib prevents the catch-shoulders from engaging with the rim of the draw-head when the cross-bar is raised.

Claim.—A flat-bottomed coupling-bar, E, having catch-shoulders on upper side of ends with mid-rib J between them, in combination with a spring-pressed cross-bar, B, having notch in the middle thereof, arranged to operate as and for the purpose described.

135,985.—*Grain-Binding Harvester.*—CHARLES F. GODDARD, St. Ansgar, Iowa.

The rake reciprocates from end to end of the grain-platform, sweeping the cut grain to the stubble-side of the machine, and in position to be bound by mechanism which is operated by the movement of the rake.

Claim.—1. The combination of the arm or frame D, rod F, wheel G, lever I, and connecting-rod J with the platform B, tongue E, and drive-wheel C, substantially as herein shown and described, and for the purpose set forth.

2. The arm H' h^1, cross-head O', and hook P^c combined with rake-head F' having hook B, and slide E having pin o', substantially as herein shown and described, and for the purpose set forth.

3. The combination of the pivoted spring-guide S' and incline U' with the lever K and cross-head O' to control the movement of said cross-head as it revolves, substantially as herein shown and described, and for the purpose set forth.

135,986.—*Barber's Chair.*—PHILIP HABERSTICH, Dayton, Ohio, assignor of one half his right to CHARLES MIKINAS, same place.

The seat and back are reversed by means of a combination of treadles, cords, and pulleys, and are fastened in position by a combination of levers and slides. The inclination of the back is regulated by a supporting-fork resting on a cog-rack, which slides in an upright beam and is locked by a foot-lever.

Claim.—1. A barber's chair with seat and back reversible by means of a combination of the treadles y y, cords A, fixed pulleys t and D, and movable pulleys E E, as described.

2. The fastenings of said reversible seat and back by a combination of the levers u u, slides w w, clutches z z, and the double slides G G, connected by pitmen to cranks F F and crank-shaft V, as described.

3. The back, whose inclination is regulated by supporting-fork T, resting on a cog-rack, K, which slides in beam P, and is locked by mortised foot-piece Q, as described.

135,987.—*Kite.*—CHRISTIAN J. HARDEKOPF, Philadelphia, Pa.

The kite is capable of being disjointed and folded into a small bundle. There is a central upright support in two pieces, joined by a socket-joint. Two curved cross-pieces are joined to the central support, their ends having grooves to fit the edge of upright support, and which ends lie in between blocks of wood attached to the upright support. A cord is placed around the frame in grooves made on the extremities of the central support and on the cross-pieces. The covering is made of linen, silk, &c., and rendered weather-proof by varnishing, and it is attached by pins to the cross-pieces.

Claim.—1. The combination joint *f f e n g* at the upper part of the upright supports.

2. The frame in its perfect construction.

135,988.—*Mechanism for Operating and Feeding Oil-Well Drills.*—GUSTAVUS A. HINCKLEY, Pit Hole, Pa.

The peculiar construction of the temper-bar enables the operator to turn either the feeding-screw alone or the whole apparatus, as occasion requires, by shifting-weights at the ends of lines run through sheaves and attached to the ends of the levers governing the pawls.

Claim.—1. The supporting rod or shaft D, the tubular screw A, its nut C C, and the ball B, arranged and applied lengthwise, substantially as shown and described.

2. The combination of the ratchets *g k*, double pawls *i m*, and pawl-carriers A *l* with the suspension-rod D, the tubular screw A and its nut C C, and the ball B, all being arranged and applied together substantially as specified and represented.

135,989.—*Bed-Bottom.*—BENJAMIN HOLMES, New York, N. Y.

The springs are double conical. An intermediate frame, with cross-slats, supports the springs centrally, the central coils being fastened above and below to the edge of the slats by a web-strap.

Claim.—1. The arrangement of the springs A in regard to the slats D, substantially as shown and described.

2. The straps or fastenings C, in combination with the spring A and slat D, as and for the purpose described.

135,990.—*Pocket-Book.*—WILLIAM HENRY KING, Westbury, England.

Claim.—As a new article of manufacture, a bill-case with two closing flaps, a a', double partitions c, plaited ends e, and spring-straps *f f'*, arranged as described.

135,991.—*Ratchet-Pinion.*—JOHN F. KINGWILL, Chicago, Ill.

Loose pinion-wheel having eccentric pawls operating on opposite sides to preserve the center and position of the wheel in operation, and permit the shaft to turn freely in the opposite direction.

Claim.—The combination of the stops or keys C, attached to and supported by the pinion, with the loose pinion A and angular shaft B, substantially as and for the purposes specified.

135,992.—*Combination Padlock.*—JOSEPH KITTLE, East Bend, N. C.

The index-rods have a rotary motion, and are held within the lock-case by a stationary rod which engages in annular grooves therein. The staple is held in the locked position by means of the index-rods, which fit into notches in the said staple. The index-rods are also provided with notches, which must be properly adjusted before the staple can be withdrawn.

Claim.—The combination, with rod F and notched staple C, of the index-rods E G, annularly grooved to receive the former, and transversely notched to allow the latter to operate therewith, as described, and for the purpose set forth.

135,993.—*Horseshoe-Nail Machine.*—JOSEPH M. LAUGHLIN, Boston, Mass.

This machine is an improvement on that patented to E. W. Kelley, May 23, 1871, and consists in constructing the feeding devices with two projecting arms, between which the clamping-jaws pass, and which, by means of an upper spring and four side springs, guides the nail centrally and retains it in that position until the jaws close. Two pieces are also fixed at the foot of the stationary jaw, between which the nail-head rests.

Claim.—1. In combination with the wheel A and dies B C, the employment and use of the guide-pieces *b b* on each side of the die B, in a manner and for the purpose set forth.

2. The construction and arrangement of the tube G, curved guides H H, with their springs *h h' i i' i' i''* or their equivalents, in combination with the rotating dies B C, as and for the purpose set forth.

135,994.—*Vibrating Propeller.*—CHARLES P. MACOWITSKY, Corpus Christi, Tex.

A sliding frame on the bottom or sides of a vessel, operated by a piston-rod, has pivoted to it vibrating floats. These floats have on their upper edges pinions, which mesh into a rack-plate which slides on top of the frame, and is limited in its horizontal motion by stops. This rack-plate is adjusted to regulate the inclination or feathering of the floats by a screw-bolt, which passes through studs on its top and through an upright bar connected to the sliding frame, and the relative position of the screw-bolt and piston-rod is maintained by gearing on each. Thus the floats can be operated to propel the vessel forward or backward.

Claim.—The combination of the arm B, block or plate C, plate or frame D, rack-bar E, pinion-wheels F, pivoted paddles G, stops H and I, and swiveled screw J with each other and with the screw piston-rod A of a steam-cylinder, substantially as herein shown and described, and for the purposes set forth.

135,995.—*Fertilizer.*—JOHN MCDOUGALL, London, England.

An acid phosphate of lime is formed by adding sulphuric acid to the phosphatic substance. This is mixed with a light porous material and ammoniacal gas passed through the mass, forming precipitates, phosphate of lime and sulphate of ammonia. Sulphuric acid is then added to render the matters soluble.

Claim.—1. The absorption of ammonia contained in gases or vapors arising from the destructive distillation of carbonaceous or ammoniacal substances, or from gas liquor or other ammoniacal liquors resulting from such destructive distillation, by the employment of an acid superphosphate of lime, for use as a manure.

2. The addition of sulphuric acid to the product, as above obtained, for the purpose of rendering the phosphate again soluble.

135,996.—*Steam-Generator.*—PATRICK J. MCMAHON, New Orleans, La.

A steam-generator having a water-reservoir attached by a pipe from the steam-chamber to the bottom and within the reservoir, perforated the entire length of said reservoir. Also, a pipe from the steam-dome of the reservoir to a superheater placed within the up-take of the generator, whereby the steam is superheated and an equability of pressure is maintained in the generator and reservoir.

Claim.—1. The combination of the boiler A, superheater B, and reservoir D, when constructed and arranged substantially as described.

2. The steam-pipe I, perforated at its lower end, when arranged with the boiler A and reservoir D, as shown, and substantially as described.

3. The combination of the boiler A, superheater B, reservoir D, and steam-cylinder G, arranged as described.

135,997.—*Cultivator.*—JAMES MILLS, Johnstown, Wis.

The bars which spread apart and contract the plows are pivoted at the axle and connected at the top by a pivoted bar. The lower ends of the levers work loosely in slotted plates on the plow-beams, so as to allow a free vertical independent movement of the same.

Claim.—The combination of the upright levers G G, the lower ends working in slotted plates attached to the shovel-bars E E, with fulcrum at the axle, and adjustable cross-bar L at the top to spread and contract the shovel-bars, substantially as described.

135,998.—*Engraving and Carving Machine.*—THOMAS W. MINTER, New York, N. Y.

The machine is an improvement upon the patent granted October 29, 1872, by connecting the tilting tables, tracing point, and cutters in a compact and simple manner.

Claim.—1. The tilting platform E applied to the longitudinal carriage B of an engraving-machine, substantially as and for the purpose herein shown and described.

2. The slotted segments h applied to the pivoted platform E

for connecting the same with the supporting-slide B, substantially as specified.

3. The nut *d d* on the carriage B, when applied substantially as specified.

4. The screw H for moving holders G in the tilting platform E, when hung in said tilting platform to adapt itself to the movements thereof, as set forth.

5. The combination of the longitudinal screws C and H with the carriage B, platform E, and disks G G, substantially as herein shown and described.

6. The beam J, made longitudinally and vertically adjustable, as set forth.

7. The swivel-frame I, arranged to receive and support the tool Z, as set forth.

8. The connecting-rod e^3, arranged between the swivel-frame I and swivel-pin N or N^1, as set forth.

9. The combination of the frame I directly with the beams J, as in Fig. 4, and as described.

135,999.—*Machine for Desiccating Tan.*—CHARLES H. MOSELEY, Winchester, Mass.

An endless apron feeds the tan upon a spreading-roller, which distributes it over an inclined perforated plate toward heated presser-rollers, passing through which it falls upon an inclined delivery-chute having a heating-chamber beneath it.

Claim.—1. The combination of a feed-roller, E, plain or grooved, and curved apron or strainer F, essentially as described, with the endless delivery-apron B, or its equivalent, and the expressing-cylinders G H, all being arranged and to operate substantially in manner as shown and set forth.

2. In the tan-desiccating machine, the chute L, as provided with the heating-chamber M, arranged under and against it, as and for the purpose explained.

136,000.—*Torpedo.*—CHARLES NELSON, East New York, N. Y.

The fulminate is inclosed in a small sack and deposited in a well formed in the bottom of the torpedo, beneath the powder-filling.

Claim.—1. A torpedo in which the fulminate is arranged in the center of the wrapper A, separate from the other filling, and either enclosed or not in one or more pieces, B, of strong paper having a hole, C, at the center, and all folded, twisted, and pasted together, substantially as described.

2. A torpedo, as described in the foregoing clause of the claim, having an outer covering of tissue or other colored paper, substantially as specified.

136,001.—*Machine for Cutting Stone.*—CHRISTOPHER E. ODGERS, Bloomfield, N. J.

An arrangement of bars and lifting-screws upon the carriage, to present the stone to the cutters at any desired angle.

Claim.—1. The combination, with carriage-frame and platform P, of bar M, screw N, nut in cross-bar L, and hinged bar O, arranged as and for the purpose described.

2. The plate Q, secured to side bar K and having a slot curved in the arc of a circle whose center is the axis of the hinge that connects bars O and M, as and for the purpose specified.

136,002.—*Pulp-Strainer.*—HENRY H. OLDS, New Haven, Conn.

A half-cylindrical wire strainer attached at its end and top to the frame, which is covered, and a hopper attached by hooks. A shaft is passed through the frame and through a cylinder, to which is connected elastic wings, arranged in spiral form on its surface.

Claim.—The elastic wings J, cylinder E, and strainer A, combined and arranged to operate substantially as shown and described.

136,003.—*Sulky-Plow.*—WILLIAM OUGH, Orion, Ill.

A plate is pivoted to the frame and carries the wheel-spindle. The side opposite the pivot moves in a circular slot in another plate, and is made fast thereto by a latch at any desired height to regulate the depth of the plow.

Claim.—The plate G, pivoted to plow-frame D, receiving-wheel on a pin, *g*, and provided with a lever, H, in combination with arc-slotted and notched plate *j*, and lock mechanism *i l m*, substantially as and for the purpose described.

136,004.—*Device for Cutting Pipe, &c.*—ANDREW J. PENNOCK and THOMAS A. CHANDLER, Rockford, Ill.

Claim.—1. A ratchet-wrench constructed substantially as set forth, with a rotating tubular body slotted longitudinally to permit of the insertion of a pipe sidewise.

2. The combination of a tubular body, an adjustable cutter, and a feed-screw or its equivalent acting upon the cutter, these members being constructed and operating in combination, substantially as set forth, to advance the cutter as the cut deepens.

3. The combination in a ratchet-wrench of a rotating body, carrying an adjustable cutter and a feed-screw, with a rotating handle, and a rack upon it, these parts being constructed and operating substantially as set forth, automatically to feed the cutter.

4. The combination in a ratchet-wrench of a longitudinally-slotted rotating tubular body with a die-plate movable transversely in a groove in the walls of the slot, substantially as set forth, securely to hold the die-plate, and yet admitting of its ready removal or replacement.

5. The combination in a ratchet-wrench of a rotating tubular head with clamp-plate adjustable transversely therein, substantially as set forth, to adapt the implement to nuts of varying sizes.

6. The combination in a ratchet-wrench of a rotating longitudinally-slotted tubular body with handles having longitudinally-slotted heads, these members being constructed and operating substantially as set forth, so that a pipe or similar article may be inserted sidewise and then encircled completely by the implement.

136,005.—*Hat and Coat Guard.*—SUMNER N. ROBBINS, New York, N. Y.

Two metallic hooks are bent in U-shape, to one of which is attached a small spring-bolt lock, while the other has a T-shaped extension engaging with the lock. One of these hooks is slipped over the inside lining of a hat, and when the device is locked an angle is formed corresponding somewhat to the shape of the body of the hat. There is also a short guard-chain connecting the two hooks for placing around an overcoat, umbrella, or the like articles, securing them, as well as the hat, in locked position.

Claim.—The U-shaped hooks B C, the latter having a T-shaped apertured extension, *d*, the spring-bolt lock D, and the guard-chain E, combined as and for the purpose described.

136,006.—*Gas-Lighting Torch.*—CHARLES H. ROBERTS, Troy, N. Y.

The perforated tube with a bell-mouth serves as an inlet for the gas. The gas passing through the tube is ignited at the lamp attached to the torch, the flame following the stream of gas back to the burner.

Claim.—The perforated tube B provided with a cup-shaped outer end and attached to a staff, A, to conduct a stream of gas from the burner to be lighted to the flame of a lamp or taper, C, also attached to said staff A, substantially as herein shown and described, and for the purpose set forth.

136,007.—*Valve for Gas-Regulators.*—JOHN C. SARSFIELD, New York, N. Y.

The inner tube, flanged at its upper end to form the valve-seat, has on the lower end two sets of notches of different depths, into either of which the cross-bar may fit. To this cross-bar the valve-stem is attached by means of a spiral spring.

Claim.—1. The tube C, notched at c^1 c^2, and the cross-bar G combined with the spring of valve-stem E and valve D, as described, so that the cross-bar may be changed in its position and thus change the tension of spring.

2. The tube C, provided with a valve held to the cross-bar by a spring combined with the parts A B, constructed and applied thereto, as and for the purpose set forth.

136,008.—*Oil-Still.*—EMIL SCHALK, New York, N. Y.

The still is provided with an opening through it from side to side for the passage of the flame, and with a series of vertical tubes connecting the upper and lower chambers of the still so that a circulation of the oil is obtained and any impurities are deposited in the lower chamber.

Claim.—1. A still for securing the distilled products of petroleum, consisting of the retort A, having the large passage B from side to side, the lower chamber C, the upper chamber D, vertical chambers E E, and the vertical tubes F, all arranged as set forth.

2. The vertical tubes F, arranged and applied to a still, as and for the purpose set forth.

136,009.—*Barber's Chair.*—ADAM SCHWAAB, New York, N. Y.

The arms are provided with elbows that incline downward toward the back legs, and have ratchets on their inner edges. Into the lower part of the back is introduced an arrangement of springs and levers controlled by a handle projecting at or near the bottom of the back. The ends of the levers engage with the ratchets on the arms of the chair.

Claim.—1. The construction of the arms C with elbows D, in connection with legs *b* and ratchets *g*, as set forth.

2. The combination of the pivoted back B with the elbows E and ratchets *g* by means of spring and lever arrangement *e*, substantially as described.

136,010.—*Process of Polishing Wood.*—CHRISTIAN SEEBACH, New York, N. Y.

The compound is applied with a brush, and is rubbed down so as to fill and close the pores of the wood to be polished and varnished.

Claim.—The application to wood surfaces, which are to be polished with shellac and varnish, of a preliminary coating formed of plaster, paint, and turpentine, prepared and applied as described.

136,011.—*Car-Coupling.*—JOHN R. SUCCOP, Birmingham, Pa., assignor of two-thirds his right to JOHN KERIN and WILLIAM SUCCOP, same place.

The boxes in which the links are pivoted are moved backward and forward in the draw-head by means of shafts extending to the sides of the car, and by these shafts the link is elevated or depressed to suit the height of the approaching car.

Claim.—1. In a car-coupling, the combination of an ordinary coupling-link and a sliding lifting-shaft, to which the inner end of the link is rigidly secured, substantially as specified.

2. The combination of the link D, lifting-shaft E, and sliding boxes F F', substantially as and for the purpose specified.

136,012.—*Knitting-Machine.*—EDOUARD TAILBOUIS and AMBROISE RENEVEY, St. Just-en-Chaussee, France, assignors to JOSEPH FREEMAN, Windsor Locks, Conn.

For knitting welts, fancy stitches and fabrics, tucked, striped, and plaid fabrics, &c.

Claim.—1. The combination, with the two sets of needles, of a thread-guide for the horizontal needles advanced beyond the position for feeding both sets, the cam *i* and the cam *w* having notch *n*, substantially as and for the purpose specified.

2. The combination, with the adjustable piece z^2, of a spring-actuated pusher, h^1, substantially as specified.

3. The combination, with the adjustable piece z^2, of a catch, l', substantially as specified.

4. A secondary cam or tappet, w^2, arranged with the cam-groove for the vertical needles, substantially as specified.

5. The combination of the needle-jacks N N', cams *w*, Y, Z, and *a*, and comb-disk P, substantially as specified.

6. The needle-jacks N N' having the differential projections *t u*, in combination with the cams *w x*, whether said projections are arranged alternately or otherwise, substantially as specified.

7. In a machine comprising the two systems of needles herein described, the combination, with the horizontal needles, of the cam *w* having the notched portion *n*, cams *i* and *a'*, and a feeder, *h*, arranged in such relation to the vertical needles as to deliver the yarn in advance of the vertical needles, substantially as specified.

8. In a machine comprising the two systems of vertical and horizontal needles, the combination with the said horizontal needles and the cam *w* having the notched part *n* of the cam *a'*, substantially as specified.

9. The arrangement of the slides Z^1 and levers Z^2 with the shaft Q and cams Y Z, substantially as specified.

136,013.—*Railway-Dust Preventer.*—JOHN WELLEY, Fredericktown, Canada.

A triangular frame is attached to the sides of the car, and extends downwardly outside of the wheels. A canvas screen is combined with the frame, and may be wound upon a roller, which is secured to the top of the frame.

Claim.—A triangular frame, F, provided with roller to receive flexible screen, and applied as and for the purpose described.

136,014.—*Nail for Attaching Soles to Boots and Shoes.*—WILLIAM WICKERSHAM, Boston, Mass.

Claim.—A wire for attaching soles of boots and shoes, having indentations and prominent portions around it, making a succession of larger and smaller diameters, having its larger diameters terminate in definite angles, as described, and its indentations either rounded or terminate in an angle, all substantially as described, and for the purpose set forth.

136,015.—*Screw-Propeller.*—MARTIN M. WILSON, Honey Grove, Tex.

Propeller wings or blades are pivoted on a shaft, and are connected by movable rods to a collar, which travels longitudinally on said shaft. The movement of this collar controls the expansion or contraction of the blades, according to the amount of resistance brought to bear upon them, and tension is maintained by a spiral spring around the shaft and located between the collar and the hub or boss, while a set-nut regulates the pressure of the spring.

Claim.—1. The blades I, pivoted to the radial shaft-arms, in combination with the sliding collar M, connected thereto by rods L, as and for the purpose described.

2. The combination, with slide M connected by rods L with pivoted blades I, of the spiral spring O, arranged upon propeller-shaft between said slide and the nut D, as and for the purpose described.

136,016.—*Horse Hay-Fork.*—GEORGE ATHERTON, Sparta township, Kent county, Mich.

One of two arms, crossed and pivoted, has its upper end slotted and terminated by hooks turned upward, between which a locking lever is pivoted having a hook turned downward, the opposite end of which lever is bifurcated and locked in position by a pin attached to a spring on the arm.

Claim.—The combination of the levers A A', locking devices B *g* Z, rope F, and tines K, when arranged to operate substantially as described.

136,017.—*Reverberatory Furnace.*—GEORGE ATKINS, Youngstown, Ohio.

A vertical closed feed-chamber extends above the crown of the furnace, and is so arranged relatively to the grate and fire-bridge that the feed will be continuous, and gases generated from the fresh fuel will be compelled to traverse the incandescent fuel, becoming highly heated before ignition.

Claim.—The closed fuel-chamber extending above the crown of the furnace, in combination with the grate B and fire-bridge E, substantially as described.

136,018.—*Type-Setting Machine.*—WILLIAM H. BALDWIN, New York, N. Y.

The lowermost type in a "stack," A, is delivered to a conveying mechanism by an ejector-plate on the end of the armature-lever of an electro-magnet. On depressing the proper key the circuit is broken and the armature released to vibrate the ejector.

Claim.—The combination, with the series of type-stacks, of the circuit-breaking keys, electro-magnets, armature-levers, ejector-plates, and connecting-wires, substantially as and for the purposes specified.

136,019.—*Railroad-Car Brakes.*—FRANCIS G. BATES, Springfield, Mass., assignor to THE AMERICAN CLUTCH COMPANY, Middletown, Conn.

A flanged disk is secured to the axle, into which is fitted a divided ring, which is opened by means of levers arranged about the axle and within the ring. A wedge-shaped rod, operated by a rod passing from car to car, engages between the levers and opens the divided ring so that it comes in contact with the inner surface of the flange upon the revolving disk.

Claim.—1. In combination with the flange A formed upon or revolving with the wheels, and the divided ring B and levers *d d* and bar F, the plate D, constructed with projecting lugs N, and the braces L L, whereby the said ring, levers, and plate are held stationary, substantially as described.

2. In combination with the subject-matter of the first clause of claim, the rod G, with its crank or cranks *f*, in connection with the said rod F, for the purpose of operating the same, substantially as set forth.

136,020.—*Hoe.*—NORVAL D. BENCROFT, Bangor, Me.

A thin narrow and horizontal blade, supported at both ends by upright cutting-arms, which are adjustably attached to a frame supported at the forward end by a single wheel, constitutes the implement.

Claim.—The combination of the wheel *a*, handles *b b*, and hoe-blade *c*, secured, substantially as described—to wit, by plates *f f* and A, pivot *g*, and bolt *e*—to a vertically-adjustable standard, *d*, all operating substantially as set forth, for the purposes specified.

136,021.—*Vapor-Burner.*—JOSEPH BENSON and ALBERT H. WATKINS, Boston, Mass.

The heating-flame issues from the aperture and passes through the perforated wing and surrounds it, thereby more effectually heating the wing and adjacent parts. The hood protects the flame from drafts.

Claim.—The perforated wing H, coupling-sleeve E, and feed-tube F, in combination with the hood J, sleeve K, opening *f*, burner-tube A, chamber *c*, and the tube *b* or chambered sleeve M, substantially as described.

136,022.—*Vapor-Burner.*—JOSEPH BENSON and ALBERT H. WATKINS, Boston, Mass.

Beneath the burner is placed a cup-shaped disk, which prevents extinguishment of the supplementary flame. This flame is fed with gas issuing through a small opening in the vaporizing-chamber, and serves to aid in the vaporization.

Claim.—The burner-tube, having the vertical chamber *c* communicating at its upper end with the tube A by the aperture *d*, and at its lower end with the double conical-shaped supplemental chamber F by the aperture *f*, as herein described, in combination with the jet-hole *b* and the cup-shaped disk D, having the inwardly-flaring edge *s* and sleeve E, the several parts constructed, arranged, and operating in respect to each other, as herein shown and set forth.

136,023.—*Lemon-Squeezer.*—ARTEMAS BIGELOW, Killingworth, Conn.

A cup-shaped body, formed with an opening to receive the half-lemon, with its handle, open at its sides for the passage of the juice, to which is fitted a corrugated follower with a handle, which, when brought together forcibly, the juice of the lemon is forced out.

Claim.—1. The cup *a* provided with a handle, *b*, substantially as set forth.

2. The cap, in combination with the screw *c*, substantially as described.

136,024.—*Water-Regulator.*—JAMES P. BOLIN, Orangeburg county, S. C.

Gates of different sizes are pivoted above the mill-breast. The small gate opens first, when, if the discharge is not sufficient and the water continues to rise, the gate next in size opens. As the water falls the gates close in the same order.

Claim.—The gates A A A, of different sizes, hinged or pivoted between the posts C above the mill-breast bottom H, all constructed and arranged to operate substantially as and for the purpose herein specified.

136,025.—*Metal-Coated Ware.*—GEORGE BOOTH, Philadelphia, Pa.

The object is to fill up the places where the metal is strained by deep stamping and prevent corrosion there, and to give a crystalline-surface finish to the article.

Claim.—The article of coated ware herein described, formed by stamping, and afterward zincing, substantially as herein set forth.

136,026.—*Broom-Bag.*—EDWARD D. BRONSON, Amsterdam, N.Y.

A paper-bag having a bottom composed of wings folded over and secured by means of hooks and eyes.

Claim.—The broom-head cover, consisting of the paper bag A having an open bottom, with wings *a b* folded over and secured by means of hooks and eyes, substantially as specified.

136,027.—*Harrow.*—WHITMAN BROWN, Butte Des Morts, Wis.

A rotary harrow suspended between two bearing-wheels by means of a standard which passes up through the axle. The harrow is rendered vertically adjustable by means of levers secured to a platform above the axle. To the lower ends of metallic bars, secured to the standards, are fastened friction-rollers. The one in the rear is to depress the harrow and prevent the forward end from dipping, while those at the sides are to cause the harrow to have a continuous rotary motion by depressing either side.

Claim.—1. The bars *f f*, as constructed, having friction-rollers *i i* upon their ends, when used in combination with a regulating-lever and the top plate of the harrow, as and for the purpose set forth.

2. The combination of the adjustable bar *f'*, provided with a friction-roller, with the plate G and standard J for regulating the rear of the harrow, as is herein fully set forth.

136,028.—*Potato-Digger.*—ADDISON G. BRUSH, Susquehanna Depot, Pa.

Constructing potato-diggers with teeth and handles, having eyes formed in one end, and rendered adjustable by means of wedges. The bar to which the teeth and handles are attached is curved at both ends to admit of its being rocked. It is also pro-

vided with chains, by means of which it is drawn. To the chains is attached a bar for clearing the vines away in front of the teeth.

Claim.—1. The improved potato-digger, having the head A with its ends bent forward, and holding the adjustable tines B, substantially as specified.

2. The adjustable tines B, in combination with the head A and wedges *d*, substantially as described.

3. In a potato-digger, the adjustable handles *a*, having the elongated depending arms *a'*, and applied to the head A, substantially as specified, and for the purpose set forth.

4. The vine-clearer L, connecting and supported by the chains K, substantially as specified.

136,029.—*Apparatus for Elevating and Unloading Hay.*—HENRY BUCK, Polo, Ill.

Claim.—The conveyer, constructed of the timbers E E U and the sheave-block N N, in combination with buffers and springs arranged upon the tracks A A, substantially as and for the purpose set forth.

136,030.—*Curtain-Fixture.*—CHAUNCEY BUCKLEY, West Meriden, Conn.

The bracket that supports the curtain-roller is constructed with an elongated bearing, within which the pivot works. The bracket is also provided with a stud, which, when the pivot is at one extreme of the elongated bearing, engages the ratchet-wheel; but the elongated bearing allows the drawing of the roll and ratchet-wheel so far from the said stud that the roll may revolve without the engagement between the stud and the ratchet. The cord-pulley is secured to a short wood roller, which is inserted in a sheet-metal tube that forms the body of the roller.

Claim.—1. The bracket A, constructed with an elongated bearing, *a*, and projection *n*, combined with the toothed wheel *b* attached to the roll, substantially as and for the purpose described.

2. In combination with a curtain-fixture adapted for rolls, the tube N and block L, substantially as and for the purpose specified.

136,031.—*Apparatus for Lowering and Sinking Shaft and Well Tubes.*—JOSEPH CHAUDRON, Brussels, Belgium.

The diaphragm is made of inverted form to better resist strains. It may be made smaller than the tube flange, and temporarily retained by the intermediate ring, which, when removed, allows it to be withdrawn.

Claim.—The equilibrium-tube I, attached to an inverted disk-shaped diaphragm, G, capable of being secured to and lowering the cylindrical casing for shafts, pits, &c., substantially as described, whereby a communication is obtained between the top and bottom of the shaft, for the purpose specified.

136,032.—*Hat-Rack.*—NICHOLAS CLARKE, Boston, Mass.

A main or center piece having extending from it a series of arms, each jointed to the main piece at its inner end and swinging upon its pivot-pin. From the front of each arm, near its outer end, extends a supporting peg or hook. The arms are retained in an extended position by suitable chains or stops.

Claim.—The hat-tree, made with the arms *c* pivoted to the head and center piece *a*, and arranged substantially as shown and described.

136,033.—*Car-Coupling.*—GEORGE W. COFFIN, Pittsburg, Pa.

To withdraw the pin from the draw-head for the purpose of uncoupling the cars, the fork is inserted under the head of the pin and its handle pressed down, so that the fork, operating as a lever, shall raise the pin from its hole.

Claim.—1. The swinging crane attached to the end of a railroad car, carrying the tongs A and fork n, so that they may be operative in coupling or uncoupling the cars.

2. The tongs A suspended to the crane *c*, for guiding the link *m* in the operation of coupling.

3. The fork *n* suspended to the crane *c*, substantially as and for the purposes described.

136,034.—*Wick-Raiser for Lamps.*—ABEL COMBS, Philadelphia, Pa.

The wick is moved by spring-pickers attached to a ring having a guide-piece with a helical slot, in which works a stud attached to the outer cone. The motion of this cone is limited by a pin projecting through an opening in the rim. The pickers are made to grasp the wick by finger-pressers operated from the exterior.

Claim.—1. The inner cone *c*, when constructed with grooves or recesses for the reception of the spring-catches d^3, as specified.

2. The sliding clamp D, constructed, substantially as specified, of the ring *d*, spring-catches d^3, and guide d^2.

3. In combination with the spring-catches d^3, the pressers E, as described.

4. In combination with the sliding clamp D, having the groove d^2, the outer cone c^1, provided with the stud d^1.

5. In combination with the stud c^2 upon the cam c^1, the flanch c^4, cut away as shown, to limit the rotation of said cone, for the purpose described.

136,035.—*Churn-Dasher.*—WILBUR M. COMBS, Auburn, N. Y.

The wooden pinions take hold of their donkey-cranks by means of slots in their upper ends, an enlargement at the base of each slot giving spring to the parts, and another fitting around the crank; a pivoted band at the top binding the divided parts together.

Claim.—1. The dasher-staffs, slotted at their upper ends, with a bore at the lower extremity of the slot and another bore to embrace the crank-shaft, and secured to the crank-shaft by a pivoted clasp, *b*, as and for the purpose set forth.

2. The combination of the slotted dasher-staffs D D with dashers C C, the crank-shaft G, pivoted clasps *b b*, and removable boxes H H, all constructed as described, and arranged to be used with the churn A, substantially as and for the purposes herein set forth.

136,036.—*Preparing Blood for Fertilizers.*—WILLIAM D. CRAVEN, Jersey City, N. J.

Treating blood in a vessel by the direct application of heat without the direct contact therewith of steam or boiling in water.

Claim.—1. The process, substantially as herein described, for treating blood for a fertilising agent, or other purposes, by the injection or introducing it directly upon the heated walls of a vessel or chamber.

2. The within-described method of treating blood by the employment of force or pressure to inject it into a heated vessel or chamber or upon heated walls.

3. As a new article of manufacture, blood treated and prepared for fertilising or other purposes, substantially as set forth.

136,037.—*Manner of Punching Bolt-Holes in Steel Railroad Rails.*—THOMAS CRITCHLOW, Baldwin, Pa.

The hole is punched while the rail is hot.

Claim.—In combination with a railway-rail, straightening-table or saw-carriage, a punching-machine located thereon, and stop-gages connected with said machine to regulate the relative positions of machine and rail, jointly with the method of applying said machine to the punching of rails while the same lie upon the table or saw-carriage, and while still retaining the heat previously imparted to the metal to effect the rolling of the same to the form of a rail, all substantially as set forth.

136,038.—*Clothes-Washer.*—HEMAN D. CROOKER, Chester, Pa.

The device is constructed in form of an inverted funnel, with an open end for the handle, which projects downward and serves as a brace for the horizontal partition, which is secured to the inside and supported by cross-bars, which divide it into quarter-sections.

Claim.—The washer-head described, consisting of the conical wall having the imperforate horizontal partition B, braced above by the socket E connecting it with the top of the cone, and below by the vertical diametric cross-plates D attached to the inside wall of the cone, as specified.

136,039.—*Car-Coupling.*—GEORGE D. CROSTHWAIT, Murfreesborough, Tenn.

To one of the side bars of the draw-head is pivoted a bar, and to this is pivoted, in slots, jaws, so that when the weighted end of the bar is raised one jaw is also raised and the other is correspondingly depressed. The mouth of the draw-head is flaring, and the coupling is automatic.

Claim.—The lever D pivoted at *a*, provided with slotted jaw B and slotted lever *d*, having jaw C, in combination with buffer A, when all are constructed, arranged, and operated as shown and described.

136,040.—*Trunk-Hinge.*—ARMISTEAD M. DARRELL, Washington, D. C., assignor of one-half his right to THOMAS NORFLEET, same place.

A hinge, adapted to turn back at about a right angle upon a stop on one leaf, is provided with a rubber pad or cushion upon the other leaf, inserted directly beneath the pintle, thus, by the use of this elastic cushion, dispensing with the ordinary straps of the trunk-lid, the hinge so constructed sustaining the lid when open, and holding it in proper position.

Claim.—In a hinge for trunks or the like uses, the stop B' upon one leaf, in combination with the rubber cushion A' upon the other leaf inserted directly beneath the pintle, substantially as and for the purpose specified.

136,041.—*Steam-Boiler.*—WILLIAM H. DAVIS and RICHARD V. DE GUINON, Jersey City, N. J.; said DE GUINON assignor to said DAVIS.

The lower tube-chamber is a direct flue and the upper one a return flue. The boiler is an improvement on Dundonald's and Montgomery's.

Claim.—1. A marine or stationary steam-boiler, when made in two or more sections and constructed substantially as described, having two tube-chambers with vertical tubes, and a water-space between said chambers of sufficient size to admit a man to expand the tubes entering the said water-space.

2. Having the tubes in the upper tube-chamber so large that the tubes in the lower tube-chamber will pass through them to their place, as set forth.

3. The openings C C C in the tube-chamber for cleaning and examining the tubes, arranged as herein set forth, and for the purpose specified.

136,042.—*Stove-Pipe Damper.*—EPHRAIM K. DEAN, Bangor, Me.

The draft is checked by closing the flue and admitting cold air to the flue at the same time.

Claim.—1. The within-described damper *d*, in combination with and hinged to a funnel, A, having an aperture, *b*, therein, substantially as and for the purposes set forth.

2. In combination with the above elements, the notched rod *e* or its equivalent, as set forth.

136,043.—*Railroad Rail.*—ANDREW B. DEAN and THOMAS C. COLEMAN, Louisville, Ky.

The rails may be laid upon stringers for street railroads, or immediately upon the cross-ties, the latter being properly notched for the reception of the vertical flange or stem of each rail.

Claim.—The railroad rail, consisting of the body A forming the tread, the inner vertical tapering flange C, and the outer horizontal flange E, all constructed and arranged as specified.

136,044.—*Automatic Fan.*—WILLIS DE LANCEY HALL, Memphis, Tenn.

Claim.—The automatic fan, combining the bases P or Q with tube I, set-screw H, standard G, the train of cog-wheels A B, and balance-wheel C, slotted lever L, holder M, set-screw N, leaf W, fulcrum U, slot and set-screw V, all arranged and constructed substantially as described.

136,045.—*Bottle-Stopper.*—ADRIEN DE MESTRE, Bordeaux, France.

From the central ring radiates a series of twists, each dividing into two branches to form loops, the ends of the wire passing through the loops to form the neck-band, the ends of which, after passing through the loops, are twisted together and united by means of a metallic seal.

Claim.—A bottle-stopper or cap, composed of the central ring *a*, radiating twists *b*, branches *c c'*, loops *d*, and releasing neck-band *e*, constructed and arranged in the manner herein shown, and adapted to the neck of a bottle and stopper, as set forth.

136,046.—*Uterine Supporter.*—GERRIET DIRKSEN, Freeport, Ill.

The attaching-arms are furnished with two jaws spread slightly apart, which are expanded at their lower ends. Upon the inner face of one of these circular expanded portions are recesses arranged near the periphery. The stem of the pessary proper has also an expanded circular portion which fits between the ends of the arms described above, and is furnished with small projections. A set-screw secures the parts together, and effects any required adjustment by setting the projections within their corresponding recesses.

Claim.—The arms A A with jaws *a a* at their ends, one of the jaws having small recesses *i i* on its inner face, when used in combination with the stem C having a disk, *b*, at its lower end provided with small projections *c c* on one face, the parts secured together by the lateral adjusting-screw *d*, all substantially as set forth.

136,047.—*Cultivator.*—DAVID EDWARDS, Melbourne, Victoria.

The vertical supporting-spindle is pivoted to the axle-tree, so that the wheels may accommodate themselves to the inequalities of the ground without disturbance to the working of the implement. The draft-clevis is attached to the axle-tree and vertical spindle by means of links.

Claim.—1. The spindle H, passing down through the longitudinal slot E in the axle C and pivoted therein, and having its free end guided in the semicircular slotted bar F, as and for the purpose set forth.

2. The inclined links K K, flap N, and link L, in combination with the spindle H, slotted axle C, and semicircular slotted bar F, all constructed and arranged as herein shown.

136,048.—*Game-Board.*—GILBERT R. ELLIOTT, Boston, Mass., assignor to himself and FREDERICK MORRILL, same place.

A disk and an arrow revolve upon a pin at the center of the board. The disk has questions printed upon radial lines from its center, marked by certain characters at the outer edge. The answers are upon the board, concealed under the disk, and are similarly arranged and designated by corresponding characters. The arrow is whirled, and the question to which it points is answered by moving the disk around until its slot comes over the answer on the board corresponding to the question.

Claim.—The board A having center-pin *a*, arrow G, and the divisions or spaces B, each division containing characters arranged and distinguishable from the others, as shown, in the described combination with the disk D having the series of spaces E, slot *b*, and point *g*, the whole constructed and arranged as herein shown, and operating as and for the purpose specified.

136,049.—*Door-Lock.*—HENRY H. ELWELL, South Norwalk, Conn., assignor to THE NORWALK LOCK COMPANY, same place.

Is operated by either a principal key or a pass key. The bolt is provided with a principal and an auxiliary set of tumblers, each set consisting of one or more. The principal set is pivoted to the lock-case and constructed with a slip. The auxiliary set is pivoted to the bolt and provided with a stud. One key operates the principal tumblers to turn the slip into the path of the stud, the other key to raise the auxiliary set to bring the stud into line with the slip, each set being operated independently of the other.

Claim.—A lock-bolt, provided with a principal and auxiliary set of tumblers, each set consisting of one or more, the principal set pivoted to the lock-case, and the auxiliary set to the lock-bolt, the principal set constructed with a slip and the auxiliary set with a stud, *n*; one key operating the principal tumblers to turn the slip into the path of the stud, the other key to raise the auxiliary set to bring the stud into line with the slip, each set operated independently of the other, substantially as set forth.

136,050.—*Washing-Machine.*—WILLIAM H. FREED, Sioux City, Iowa, assignor of one-half his right to DAVID M. MCKNIGHT, same place.

From circular grooves or slots attached to the sides is suspended the rubber, with its ends working in the grooves, by which circular motion is given to the rubber in its connection with the rubber on its bottom.

Claim.—The circular grooves or slots N, traveling-block G, springs *f*, hinged lever H, combined with the rubbers C and D, constructed and arranged as specified.

136,051.—*Process for Making Cheese.*—HENRY O. FREEMAN, Sherburne, N. Y., assignor to HENRY D. GARDNER, North Marshfield, Mass.

The cream is all skimmed from the milk. The milk is heated to 96° or 100°, when melted fat is added. This emulsion is constantly stirred till the temperature is reduced to 84°, when rennet is added in the usual manner.

Claim.—The improvement in the art of manufacturing cheese by treating an emulsion of skim-milk and fat with rennet, substantially as before set forth.

136,052.—*Endless Rolling-Gear for Railroads.*—JESSE FEYE, Brooklyn, N. Y.

Wheels having two bearings, the smaller bearing of which revolves on the endless track, while the larger bearings carry the endless platform, the sections of which are connected by universal or knuckle-joints. The endless platform is propelled by means of a driving-wheel, in connection with any reversible stationary engine, located below the road-bed.

Claim.—1. The double bearing-wheels 1 2 3 4 5 and 1' 2' 3' 4' 5', secured to steel axle-trees revolving in the transverse hollow arms *a a'*, which form a part of the several sections of the coupling-bars R R', in combination with similar transverse arms arranged and forming a part of the longitudinal connecting-bar throughout the entire line of the road.

2. The endless sectional coupling-bars R R', united by universal or knuckle joints, in combination with the driving-wheels N N', cog-gearing wheels G G', operated by any reversible stationary engine suitably located below the road-bed.

136,053.—*Wheel for Endless Railways.*—JESSE FEYE, Brooklyn, N. Y.

Wheels having two bearings which are either elastic or rigid. The hub is divided in the center and provided with adjustable flanged plates to receive the adjustable hub, which is secured by means of bolts.

Claim.—1. The wheels W, with two bearings, 1 1' and 2 2', either flexible or rigid, in combination with the sleeve or hub-chambers N N, with the dividing-partitions S S and adjustable flanged plates K K, to receive the adjustable hubs H H, all secured by means of the bolts O O, or otherwise, for railroads, turn-tables, draw-bridges, or analogous uses.

2. In combination with the wheel W, the elastic packing C and flexible or rigid bearing 1', all arranged and operating substantially as described.

3. The diverging ribs *r r*, to support the face-plates of the double-bearing wheels W W, all arranged and combined substantially in the manner and for the ostensible purpose set forth.

136,054.—*Platform-Carrier for Endless Railways.*—JESSE FEYE, Brooklyn, N. Y.

An endless platform, constructed in sections, is connected by universal joints, and has upon its lower side flanges to keep it upon the carrying-wheels. These wheels, to which motion is imparted by a stationary engine, are made double, the smaller periphery revolving on the rail, while the platform rests upon the larger wheels and is revolved thereby.

Claim.—1. The platforms E E', united by universal or knuckle joints to form an endless-platform carrier, operating upon the outer bearing or larger periphery of the wheels W W' by means of the transverse arms *a a'*, which pass through and form a part of the longitudinal guide-bar R, for the purpose, and in the manner as above set forth.

2. Angle or equivalent rails upon the under side of each section of the endless platform E E' to keep the same upon the top of the wheels W W', substantially as above described, and shown in the drawing.

136,055.—*Armor-Clad Vessel.*—LOUIS GODDU, Boston, Mass.

Claim.—In an armored vessel, constructed substantially as described, the revolving turret, constituting the apex of a cone, of which the frustum forms the highest part of the deck, and extends down to the guards of the vessel, so that the vessel may be partially submerged and thereby leave only the conical turret and a small part of the frustum, on which it is seated, exposed to the enemy's shot.

136,056.—*Ironing-Table.*—JOHN R. GROVES, Hightstown, assignor to ELIHU H. ROPES, Elizabeth, N. J.

A base and stand having a dovetailed groove in the top of the stand to receive a block, to which is attached the ironing-board.

Claim.—The stand A, having the tapering dovetailed recess C and button *d*, in combination with the ironing-board E, having the tapering dovetailed block D, notched at *d'*, substantially as specified.

136,057.—*Sewing-Machine.*—CHRISTOPH GULLMANN, Paterson, N. J.

A pin on a rod, connected with the rear of the needle-bar, enters a slot in the strap operated by the eccentric, and sliding on or guided at its outer end by a stationary pin. The adjacent slotted strap slides over the same pin, and is connected with the end of the shuttle-carrying lever.

Claim.—1. The combination of the slotted lever-strap *g*, operated by the eccentric *e* and sliding on pin *i*, with the rod F, connected with the needle-bar E, and with the strap, substantially as and for the purpose described.

2. The horizontal shuttle-driving lever H, operated substantially as described, so that the shuttle travels in an elliptical orbit, passing through the loop close up to the under side of the cloth-plate, and returning in a plane below that occupied by the point of the needle, thus holding the needle-thread taut, substantially as set forth.

3. The shuttle-carrier hinged to a shuttle-lever, H, which moves on a universal joint, said shuttle-carrier being subjected to the action of a spring, *l*, which enables the shuttle contained in the carrier to accommodate itself to the shuttle-race during the evolutions of the shuttle-lever, substantially as described.

136,058.—*Slate-Cleaner.*—FRANCIS HICKMAN, Reading, Pa.

An elastic water-holder with a small orifice in one end, and closed at its other end by a plug, to which is attached a wiper of sponge or other fibrous or cellular material.

Claim.—1. An elastic water-holder, *a*, constructed and operating as herein described, in combination with a dry-wiper, *c*, applied to the closed end thereof, for the purpose specified.

2. The improved slate-cleaner, composed of the water holder and ejector *a*, wiper *c*, and interposed stock *b*, constructed and combined, substantially as described, for the purpose set forth.

136,059.—*Sling for Raising Animals.*—FRIEDRICH HONORST, New York, N. Y.

Claim.—The combination, in a sling, A, of the side ropes *b b'*, extension *c*, and grommets or eyes *a a*, with or without the safety-strap *f*, substantially as and for the purpose herein specified.

136,060.—*Spittoon.*—JAMES L. HOWARD, Hartford, Conn.

Two parts fitted to form a close joint by a projection near its bottom, with a floating valve fitted to an aperture in its bottom, which, by the aid or weight of the wire suspended from it, is held upright to float when necessary for the discharge of its contents, and is supported by a coupling with a flange, by which it may be attached to the floor of a car.

Claim.—1. The two-part double-wall spittoon having a close joint formed at the short bearing *y*, forming and uniting the two parts in the manner substantially as described.

2. The self-acting floating valve D, applied to the tubular outlet *z* through the base of the spittoon, substantially as described.

3. The combination of the flanged screw-collar C, the tubular opening *z*, the valve D, and the spittoon-base B, substantially as described.

136,061.—*Blind-Hinge.*—ABRAHAM HUFFER, Rochester, N. Y., assignor to MAURICE H. MERRIMAN, same place.

A surface-hinge is provided with a bearing-plate, which extends from it at right angles. Upon this bearing-plate is secured a flat spring, which acts upon the cam-surfaces arranged around the pintle-socket, and this holds securely the blind in position. By securing the flat spring at right angles to the leaf, instead of in the same plane therewith, mortising is rendered unnecessary, and the hinge may be used upon brick walls.

Claim.—In a surface-hinge, the combination of the stationary part A with the bearing-plate C at right angles to it, in which is secured the flat spring D, substantially as and for the purpose set forth.

136,062.—*Gang-Plow.*—ALBERT N. HUMPHREY, Brodhead, Wis.

The plow-frame is pivoted to the outer frame by means of a transverse rod sliding in segmental slotted plates attached to said outer frame, the said rod being adjustable by means of the levers E. The draft-evener is attached to a cross-bar on the outer frame and to the axle.

Claim.—1. The combination and arrangement of the pivoted inner frame C carrying the plows L and transverse rod B^2, the outer draft-frame B having the slotted segmental plates B^1 and levers E, substantially as specified.

2. The plate S secured to the axle A, and plate S' secured to the frame B, in combination with the evener Q, double-tree O, and single-trees I^2 P R, substantially as described.

136,063.—*Lamp-Stove.*—FRANZ JANKE, Brünn, Austro-Hungarian Monarchy.

Claim.—1. The heating and cooking apparatus of a petroleum-lamp having a chimney, C, of a certain specified height, extending into the heating-chamber F, with a space between the bottom of the latter equal to the diameter of the chimney-top *c*, and also equal to the area of the openings I J K, by which arrangement and relation of these parts the gases and smoke from the lamp are consumed, as described.

2. The wire netting or basket N, located and arranged within the central chamber F and above the lamp-chimney, in the manner and for the purpose herein shown and specified.

3. The heating apparatus A B, provided with socket stems *a* for adjustment upon the branches *b*, braced by the frame M, as and for the purpose described.

136,064.—*Propelling Canal-Boats.*—ASA JOHNSON, Brooklyn, N. Y., assignor of one-half his right to WM. H. JOHNSON, New York city.

Shafts, ratchet-wheels, pawls, sliding catches, springs, and gear-wheels peculiarly adapted to rotate a paddle-shaft to propel a boat, which boat is provided with two or more tapering supporters made of metal and provided with flanges by which they are secured to the bottom of the boat by bolts.

Claim.—1. The combination of the shafts D D, ratchet-wheels E, pawls E^2, sliding catches E^3, springs E^4, and gear-wheels F F, substantially as and for the purposes herein set forth.

2. In combination with the arms C C', pawls E^2, sliding catches E^3, and springs E^4, the connections H^3, shafts H^2, wheels H^4, handle H^1, chains H^1 H^3, and spring H^4, all substantially as and for the purposes herein set forth.

3. The combination, with a canal-boat of usual form, of two or more metal floats or air-chambers, constructed substantially as shown, and provided with flanges, whereby said floats may be readily bolted to the bottom of the boat, for the purposes set forth.

136,065.—*Ripper and Rag-Looper.*—HARLEY M. JOHNSON, Marshall, Mich.

For a rag-looper, unscrew the ripper and fasten into a bench or table.

Claim.—The blade *b*, having the cutting-edges *d o*, projection *i*, and screw *e*, substantially as set forth.

136,066.—*Apparatus for Condensing and Purifying the Smoke of Metallurgic Furnaces.*—WILLIAM J. JOHNSON, Allendale, England.

The smoke is purified by passing through the spray and the water dripping from the partitions.

Claim.—1. The combination, with a flue for the passage of the products of combustion, of a series of slats or a screen, or its equivalent, from which water is caused to fall in a constant shower, substantially as described.

2. The combination, with the slats or screen, of a wheel, by which water is thrown upon the slats, as specified.

136,067.—*Railroad Bed.*—JOHN WILLIAM KERR, Portland, Oreg.

An angular metallic sheeting with platforms and flanges for uniting and supporting rails, secured by cleats and rods.

Claim.—1. The improved railroad bed having the angular ridge B located between the rails A, substantially as specified.

2. A railroad bed composed of sheets of metal joined together, raised in the middle to form the ridge B, and extended at the sides to produce rail-supporting platforms C, all substantially as and for the purpose described.

3. The sheets B, constituting the prismoid railroad bed, and joined together by overlapping and angularly corrugating the edges, substantially as specified.

4. The flanges *d* and cleats H, in combination with a metallic railroad bed having the prismoid metallic ridge B and the rails A, substantially as specified.

5. The iron ties J, in combination with the metallic angular bed B and platforms C, substantially as specified.

136,068.—*Car-Wheel.*—JOHN W. KERR, Portland, Oreg.

Hollow conical car-wheels, having the common bearing-surface, and also the surface from the flange to the inner end of the wheel is adapted to run on beveled tracks. A hardened metallic collar is placed between the inner surfaces of the wheels. One of the wheels is rigidly and the other is loosely attached to the axle to lessen the friction in turning curves.

Claim.—In a car-truck, the fixed wheel C and the loose wheel C, said wheels having conical bearing-surfaces facing each other, and rail-treads extending outward therefrom, substantially as specified.

136,069.—*Ink-Well.*—JAMES H. KIDDER, Lawrence, Mass., assignor to himself and GILBERT E. HOOD, same place.

The mercury displaced by the depression of the annular flange attached to ink-spout, through the medium of air, forces the ink upward into said spout.

Claim.—An ink-well provided with a chamber, I, for receiving a quantity of mercury or its equivalent liquid, in combination with an ink-spout and an ink-regulating mechanism, substantially as described, for the purpose specified.

136,070.—*Inkstand.*—JAMES H. KIDDER and GILBERT E. HOOD, Lawrence, Mass.

The ink-well has an obtuse-angled bottom and, swinging in its frame, is supported thereon when tilted forward to expose the ink or backward when not in use, a flap-valve closing the dipping-orifice.

Claim.—An ink-well having its base or bottom H made with the two inclined faces I J, and otherwise constructed substantially as described, for the purpose set forth.

136,071.—*Fastening for Halter-Rings, &c.*—ERASTUS M. KINNE, Cuba, N. Y.

The ring, being an improvement on applicant's former patent, is bent up to allow the strap to draw in a straight direction.

Claim.—1. The trimming for halters, bridles, &c., consisting of the plates A A, cast together at an angle and strengthened by the cross-band H, each plate being formed with an inclined recess, a rivet-hole, *l*, an ornamental convex cross-bar, C, and a transverse slot, B, having a rounded edge, *d*, substantially as described, for the purpose specified.

2. A harness-ring, runner, snap-hook, buckle, &c., cast with one or more plates, A, having a central rivet-hole, *l*, the inclined recess, the convex cross-bar C, and the transverse slot B, having the rounded edge *d*, as herein set forth.

136,072.—*Fruit-Gatherer.*—JOHN KISOR, Nevada, O.

A hopper or funnel-shaped frame, covered with canvas, is mounted upon a pair of wheels, the bolster upon which it immediately rests being adjustable in order to bring the receiver level on uneven ground. A discharge-spout is formed at the bottom, and provided with a flexible valve to prevent the fruit from being bruised when it rolls into the spout.

Claim.—1. The combination, with the apron A a^1 of a fruit-gatherer, of the valve a^2, substantially as specified.

2. The adjustable pivoted bolster D, in combination with the axle E and a frame for supporting the apron A, substantially as shown and described.

3. The combination of the adjustable pivoted bolster D, axle E, frame B B^1 B^2, apron A, and platform G, substantially as specified.

136,073.—*Harness-Mounting.*—JACOB F. KNORR, of New York, N. Y.

The ring and shank are made of one piece of half-round wire bent to shape.

Claim.—1. A terret, pad-hook, or other article of a similar nature, made of a semi-cylindrical bar of iron, bent to form a ring, *a*, and a stem, *b*, substantially as shown and described.

2. A terret, pad-hook, or other article of a similar nature, made of a grooved bar of iron, bent to form a ring, *a*, and a stem, *b*, and provided with a filling-piece, *f*, of any desirable material, substantially as specified.

3. The combination of a base, B, having concave flanges *d* with a terret, pad-hook, or other article of a similar nature, made of a semi-cylindrical or grooved bar of iron, substantially as set forth.

136,074.—*Nail Selecting and Delivering Machine.*—ALBION KNOWLTON, Boston, Mass., assignor to JAMES W. BROOKS, trustee, same place.

Two reciprocating slotted slides form the bottom of the hopper, so that when either of the slots are brought under the hopper a nail will fall through said slot. The nails are fed into the hopper some with their heads in one direction and others in the opposite direction. A sliding finger in the hopper automatically determines, by the position of the nail, which slot to draw under the hopper in order to let all the nails fall through head foremost, no matter how they lie in the hopper, or point foremost, as desired.

Claim.—1. The combination, with a hopper or chute, of the finger and the two slides, operating substantially as and for the purpose set forth.

2. The combination and arrangement of the nail-receiving socket and the two slides, operating to drop each nail in accordance with the position of its head, substantially as shown and described.

136,075.—*Horse-Power.*—ZACHARIAH P. LANDRUM, Columbus, Miss.

Claim.—One or more levers, D, wheel C having hanger F and fulcrum-frame E G G I, combined with shaft B, as and for the purpose described.

136,076.—*Molasses-Pitcher Top.*—GEORGE PHILLIP LANG, Jr., Allegheny, Pa., assignor to LANG & LAUSTER, same place.

A pitcher-top, constructed with its mouth or upper opening partially covered with a rigidly-attached cap, with a discharge-opening, over which is closely fitted a hinged cover, formed to fit the uneven surfaces of the inner one, for the exclusion of insects, &c.

136,077.—*Case for Heating Sad-Irons.*—GEORGE W. C. LOVELL, Clarksville, Tenn.

The case consists of two shells, which, when folded together, are designed to inclose the base or heater of an iron.

Claim.—The heating-case for sad-irons, constructed and adapted for use substantially as herein set forth.

136,078.—*Thill-Coupling.*—JOSHUA LOW, Steubenville, O.

One lug of the clip has a beveled slot. Upon the connecting-bolt is a beveled rib which enters the slot in the lug. When the thills are raised from a horizontal position the bolt is forced into the slot by means of a spring which is secured to the side of the lug, and presses upon the end of the bolt.

Claim.—The clip A having in one of its jaws the slot *a* with incline *a'*, and the thill-iron B with slot *b*, in combination with the bolt C, having rib D, having incline *d* and the spring *h*, all constructed and arranged to operate substantially as and for the purposes hereinin set forth.

136,079.—*India-Rubber Spring.*—ALLEN MAGOWAN, Trenton, N. J.

A core of India rubber of any desired length and diameter, cylindrical, and having preferably a central hole or bore. Around and concentric with this core, and in contact with its outer circumferential surface, are rings of India rubber. These rings are placed one upon another, and the whole is placed snugly in a suitable case to be acted upon by a plunger in the ordinary manner.

Claim.—The combination of the central cylindrical India-rubber core A and the concentric system of India-rubber rings B, circular in their cross or radial section, substantially as and for the purpose specified.

136,080.—*Machine for Trimming, &c., the Edges of Boot and Shoe Soles.*—JAMES W. MALOY, Boston, assignor to BENJAMIN F. LARRABEE and SAMUEL H. HODGES, Lynn, Mass.

Attached to the end of a shaft is a revolving plate, upon which the boot or shoe support is made to slide by means of a cam or disk, susceptible of horizontal adjustment. The platform upon which the shaft is supported, has both longitudinal and lateral motion, so as to carry the boot or shoe to or from a stationary cutter, and to describe any desired curve required in the trimming operation.

Claim.—1. A chuck bearing the last for the boot or shoe, in combination with an eccentric which causes the chuck to slide, reciprocating platforms which carry the chuck both laterally and longitudinally, and a shaft which causes said chuck to revolve and said platforms to reciprocate, all substantially as described.

2. In a machine for trimming and burnishing, &c., the edges of the soles of boots or shoes, the bed or platform *e*, supporting a shaft, *g*, and operated by cam B, stem and roller *g''*, beam *q*, arms *r s*, stem *x*, levers *y v*, all arranged as described, or equivalently, so as to travel and carry the chuck or jack *k* back and forth laterally, substantially as specified.

136,081.—*Apparatus for the Manufacture of Gases.*—WILLIAM MAYNARD, Salem, Mass.

Claim.—The condenser or generator C, provided with a water-supply pipe and a water-percolating medium, as herein specified, and arranged above and in communication with the air-tight chamber F, in combination with each other and with the vapor-pipe D, vaporized-water pipe L, oven B, and furnace A, with or without the pipe N and elevated condenser M, all arranged and operating substantially as described, for the object specified.

136,082.—*Process for Treating Hides and Skins.*—WILLIAM MAYNARD, Salem, Mass.

Sulphurous-acid gas and carbonic acid or carbureted hydrogen are incorporated with well-known ingredients in the process of tanning.

Claim.—1. The process of softening, plumping, and bleaching hides, or pieces of the same, skins, &c., by the means of sulphurous-acid gas, substantially as described.

2. The process of liming hides or skins, &c., in the manner and by the means of the materials, substantially as described.

3. The process of drenching or purifying limed hides, skins, &c., substantially as described.

4. The process of tanning hides by using, in combination with the tannin extract, sulphurous-acid gas, substantially as described.

136,083.—*Fettling for Puddling and Boiling Furnaces.*—JAMES C. MCANINCH and GEORGE ATKINS, Youngstown, Ohio.

Pulverized sand-stone with sufficient water or other liquid to form a mortar.

Claim.—An improved preparation formed by mixing pulverized sand-stone with sufficient water or other liquid or liquids to reduce it to the consistency of mortar, to be applied to the inside bridge, back, and jamb-chills of furnaces in the manufacture of iron and steel, substantially as herein described, and for the purpose set forth.

136,084.—*Gas-Lighter.*—EDWIN D. MCCRACKEN, New York, N. Y., assignor to LUCIUS A. BIGELOW, trustee, Boston, Mass.

Claim.—1. The arrangement within and in connection with the valve-box A of the fixed partitions R *a*, diaphragm D, valve S, spring K, and pipes E, G, M, H, and *e*, substantially as herein described, whereby the entire operation of letting on, lighting, and shutting off the gas is effected by the action of a single valve within the box.

2. The groove *x*, in the illuminating-burner, in combination with the igniting-burner, substantially as and for the purpose herein set forth.

136,085.—*Can for Paint, Liquids, &c.*—HERMANN MILLER, New York, N. Y.

Claim.—The lid B, constructed to fit as a conical valve over the mouth portion *c* of the can, in combination with the groove *e* in the cover, substantially as shown and described.

136,086.—*Rocking-Chair.*—WILLIAM MOHR, New York, N. Y.

A foot-rest attached to the rockers by slots, the arms of which have the same curve as the rockers.

Claim.—A rocking-chair, in combination with the extension C C, foot-board C', set-screw *a*, washer *b*, and metallic or wooden piece *e*, substantially as and for the purposes herein described and set forth.

136,087.—*Sole-Edge-Setting Tool.*—JONATHAN H. MORRISON, Marlborough, Mass.

Claim.—The sole-edge tool composed of a stock or bar, A, the sole-edge shaper or setter C, and the two handles D D', arranged as represented, the shank having the offset, all substantially as described.

136,088.—*Mechanical Power.*—EDWARD W. MORTON, Brooklyn, E. D., N. Y.

Hinged racks working cog-wheels alternately by means of a float, which rises and falls with the tide or artificial flow and subsidence of water.

Claim.—1. The combination of a float, A, tank B, racks E E', pinions *e e'*, cog-wheels *e e'*, and working-shaft *h*, substantially as and for the purpose herein shown and described.

2. The hinge-joints *i i'* at the bottom ends of the racks E E', in combination with a suitable fastening device at the upper ends of said racks when the racks are connected with a float, A, tank B, pinions *e e'*, cog-wheels *e e'*, and working-shaft *h*, substantially in the manner and for the purpose herein set forth.

136,089.—*Pipe-Wrench.*—ERI S. MOULTON, Chelsea, Mass.

Claim.—The jaw B pivoted to the block G, and each arranged and moving together in the slot E of the stationary jaw and adjusted by the screw L, substantially as set forth.

136,090.—*Raising Piano-Forte Lids.*—HERVEY N. OLIVER, Rahway, N. J.

Compensating springs take most of the weight of the lid, which is then readily controlled by a lifting-pedal.

Claim.—1. The combination, with the hinged lid of a piano or other case, of one or more balancing-springs, applied to operate substantially as specified.

2. The combination, with a spring-balance applied to the lid B, of a treadle, E, and lifter *g*, essentially as and for the purpose or purposes herein set forth.

3. The adjustable prop G, in combination with the treadle E, lifter *g*, and lid B, substantially as specified.

136,091.—*Type-Casting Machine.*—JOHN A. T. OVERKIND, San Francisco, Cal.

Devices for injecting the melted metal into the mold, for pressing the mold and type-carrier against the ejection-nozzle, and for breaking the type from its stem and at the same time pushing it through between the rubbers.

Claim.—1. In combination with the pump-cylinder D having the openings *b* and *d*, the chambered piston E having slot or opening *d'*, the whole constructed to throw the metal into the mold without the use of valves, and operating substantially as herein described.

2. The sliding plate N, arranged as described, so as to carry the type between the rubbers P P, in combination with the carrier I, clamp L, and table K, constructed and operated substantially as and for the purpose set forth.

3. The cam J and the arm D, constructed and operated substantially as described, for the purpose of giving the carrier I, the mold *g*, and the matrix *f*, a side movement and making a tight joint.

136,092.—*Game-Table.*—LUTHER A. POWERS, West Meriden, Conn.

Near the foot of the table vertical rods, approaching somewhat nearer than the diameter of the balls, are arranged, and connect with hammers, which sound bells when the balls pass under said rods.

Claim.—The combination of the table A, pins *a*, rods C, hammers E, and bell F, constructed and arranged relative to each other, substantially as set forth.

136,093.—*Spike-Extractor.*—GUSTAVUS A. PERKCOTT and JOSEPH RAMSALOUX, Sandy Hill, N. Y.

A rubber block is placed between the jaws, the distance between which is varied by means of a screw-bolt passing through them and the block, so as to enable the implement to grasp spike-heads of different sizes.

Claim.—1. The jaws A A, made separate and pinned loosely on the end of the lever B, in combination with the rubber spring C and bolt *b*, substantially as and for the purposes herein set forth.

2. The combination of the jaws A A, lever B, rubber spring C, wedge D, and swinging foot or standard E, all constructed and arranged to operate substantially as and for the purposes herein set forth.

136,094.—*Wire-Fence.*—JOSHUA W. RAPPLEYE, Farmer Village, N. Y.

Pickets being plaited into horizontal wires, the wires have bearings upon the fronts of posts. A wire secured to the first picket on each side of the post passes behind the post, embracing it lightly.

Claim.—In combination with the main twisted wires B and the pickets C C, the brace-wires H attached to the end pickets of each panel so as to pass to the rear of the posts A opposite the attachments or bearing of the main wires, in the manner, and for the purpose specified.

136,095.—*Bottle-Stopper.*—HERMANN F. REINER, Blairsville, assignor to himself and FRANK LOFINK, Pittsburg, Pa.

The stopper is composed of a metallic tapering tube, which is provided with a horizontal central flange, which, when the stopper is applied to the bottle, rests upon its upper end. It is also provided with a bayonet-slot for receiving and securing the vertical stem of a conical disk-valve, by the movement of which stem the valve is opened or closed to admit of the induction and discharge of liquids.

Claim.—The bottle-stopper herein described, consisting of the tube B provided with slots K M, valve F, and bent valve-stem I, as herein shown and described.

136,096.—*Sole-Edge-Trimming Tool.*—ICHABOD R. ROGERS, Lynn, Mass., assignor to himself, JOHN WOOLDRIDGE, and GEORGE E. BARTLETT, same place.

A hand-tool, with its cutter so arranged that the sole will be left with its finished edge lessened in thickness.

Claim.—The sole-edge-trimming tool, having the cutter and its cutting-edges arranged with respect to the gage-faces, substantially as shown and described.

136,097.—*Bed or Cradle Guard.*—JOHN JAMES ROLL, Newark, N. J.

The guard is made of textile or woven material, and is connected to the posts at one end by hooks and rings, and at the other end by buckles and straps.

Claim.—As an article of manufacture, the net-guard C, in combination with the hooks and rings *d d* and buckles and straps *e e*, substantially as and for the purposes specified.

136,098.—*Embroidering-Attachment for Sewing-Machines.*—ISRAEL M. ROSE, Brookhaven, N. Y.

The latch-needle on a rock-shaft carried in the vibrating plate, secured to the presser and actuated from the needle-carrier, takes a thread from the guide, draws it under the needle-thread, and forms it into a chain on the upper side of the fabric.

Claim.—1. The vibrating plate C carrying the latch-needle E for the purpose of laying an embroidering thread upon the surface of the fabric, as set forth.

2. The latch-needle E fastened to the rock-shaft D, which has an independent axial play on the vibrating plate C, as and for the purpose specified.

3. The guide h arranged in conjunction with the movable latch-needle E on the presser-foot of the sewing-machine, as set forth.

4. The embroidery-thread carrier E of a sewing-machine attachment, when arranged so as to perform a longitudinal and also a slight lateral motion to carry the embroidery-thread toward and by the sewing-needle, as specified.

5. The combination of the sewing-machine needle with the vibrating embroidery-thread carrier E, as set forth.

6. The mechanism herein described for applying an embroidery-thread upon the surface of the fabric and stitching the same down by the sewing-thread, as set forth.

136,099.—*Folding Rocking-Chair.*—ABEL RUSSELL, Brooklyn, N. Y., assignor to ABEL RUSSELL, Wilton, Me., and C. M. ALEXANDER, Washington, D. C.

The frame is creased and pivoted, and the limbs extending in the rear are pivoted to the rear end of rockers. The front ends of the rockers have several holes on their upper surfaces, and the limbs extending to the front are inserted in those holes for adjustability.

Claim.—The combination of rockers A, limbs B and C, when the rockers A are so arranged with slots *c c c* and pivots *a a* that limbs C may be adjusted to different positions, thus forming a convenient invalid rocking-chair or rocking-couch.

136,100.—*Riveting-Machine.*—WILLIAM SELLERS, Philadelphia, Pa.

An improvement upon the invention patented to applicant February 7, 1871. To prevent steam from following the piston-rod the rear end of the horizontal semi-cylindrical trough next to the cylinder is made cylindrical, and the rear end of the piston-rod is made to correspond and is provided with steam-tight packing.

Claim.—1. The combination of the cylinder N with the cylinder D and trough or guide E.

2. The combination of the piston O and cylinder N with the piston F and cylinder D.

3. The combination of the packed piston F with the packed piston-rod G and trough E.

136,101.—*Machine for Forming Cutters for Cutting the Teeth of Wheels.*—WILLIAM SELLERS, Philadelphia, Pa.

Claim.—1. As an improvement in the art of forming teeth for wheel-work, or of forming cutters which are the counterpart of the spaces between the teeth to be cut, describing the outline or contour of the tooth to be cut, and imparting to the cutting-tool a movement conformable to such outline or contour by adjustable automatic mechanism, substantially such as hereinbefore set forth, and without requiring the use of templets or patterns.

2. As an improvement in the aforesaid art, describing the outline or contour by adjustable automatic mechanism, substantially such as herein set forth, and imparting to the cutting-tool a movement describing the same outline or contour in symmetrically-reduced proportions, substantially as set forth.

3. The combination, with the adjustable radius-bars G and I, of their respective stops *m* and *y*, for the purposes described.

4. The combination, with the adjustable radius-bars G and I, of the adjustable piece H, for the purposes set forth.

5. The combination, with the saddle C or its equivalent, of the graduated extension K or its equivalent, for the purposes described.

6. The combination of the radius-bar E and the adjustable sliding saddles B and C, for the purposes described.

7. The combination, with the adjustable radius-bars E and G, of the center-pin F, for the purposes described.

8. The combination of the extension-piece K, the radius-bars I and G, the stops *m* and *y*, and the adjustable piece H, for the purposes set forth.

136,102.—*Treating Ores of Silver.*—JASPER HENRY SELWYN, Gloucester Crescent, Hyde Park, England.

The ore is roasted and then boiled in a solution containing salt, hydrochloric acid, and black oxide of manganese.

Claim.—The treating of refractory ores of silver by boiling the same in a solution of common salt and hydrochloric acid in presence of free chlorine gas, as described.

136,103.—*Measuring-Can for Oil, &c.*—WARDELL B. SHERMAN, Clinton, N. Y.

Two transparent measuring-scales are provided, one for indicating the quantity of oil or other liquid in the large receiving can or reservoir, and the other for showing the quantity to be drawn into a small attached chamber for retail supply.

Claim.—The combination of the device composed of the transparent tube *c*, with its communicating elbows *f* and *g*, for indicating the quantity of liquid in the receiving-vessel, with the measuring device *d d*², and the cock D for indicating the quantity desired to be drawn, substantially as described and set forth.

136,104.—*Portable Lamp Cooking Apparatus.*—ALBERT MARCUS SILBER and FREDERICK WHITE, London, England.

Upon an Argand lamp-burner is a boiler, centrally through which is a passage answering to a chimney. Upon its upper edge is adjusted a support to hold a second vessel immediately over the flue or chimney.

Claim.—The improved lamp for lighting or cooking, consisting of the wick-tube D, central air tube or tubes G, and outer jacket C, by which air is supplied to both sides of the flame through openings *h* in the base of the lamp, and the vessel L with its central flue *i* and cover *o o* supported by the burner, all constructed and arranged so that a cooking-utensil may be applied to the top thereof, substantially as described.

136,105.—*Ventilating Water-Closets and Urinals.*—ROBERT D. O'SMITH, Washington, D. C.

One end of an outlet-pipe is connected to the bowl of a water-closet, the other end communicating with a chimney-flue, which causes a constant flow of air downward through the bowl and conveys the foul air above the roof. Also, an air outlet-valve is connected to the side of the bowl in such a manner that by the action of the seat the valve may be opened or closed.

Claim.—1. A bowl A, provided with an enlargement or chamber, *d*, and an outlet, D, substantially as shown, and for the purpose set forth.

2. In combination with the bowl A and outlet D the opening V, with or without a valve, substantially for the purpose set forth.

136,106.—*Stalk-Chopper.*—CHARLES L. SPIELMAN, Blandinsville, Ill.

A set of tappets are fixed upon the axle-tree, and so adjusted that their releasing points are at equal distances. A set of spring-arms, which carry vertically-moving knives, are operated by these tappets, producing a rapid vibration in the cutters.

Claim.—1. The combination of the wheel-shafts *b* provided with tappets *b'*, and the adjustable spring-arms I carrying the vertical cutters G, substantially as and for the purpose specified.

2. The combination of the crank-lever P and lever R with shaft L, adjustable blocks J, crank M, connecting-rod *m*, and lever N, substantially as and for the purpose specified.

136,107.—*Seeding-Machine.*—JOHN W. STROWBRIDGE, Cortland, N. Y.

The pulley or belt attachment revolves a shaft and wheel, which, in turn, drives the upright shaft and the distributer. The plaster or other substance is turned into the hopper slides, the slide drawn, and the plaster drops upon the distributer, is received by the fans, and spread broadcast.

Claim.—A broadcast seed-distributer, consisting of the shaft *b* provided with the pulley Z and wheel *c*, the upright shaft E provided with the pinion E, radial grooved arms *g*, and agitator I, and the hopper N, all constructed and arranged substantially as described, whereby it can be attached to and detached from the rear end of a wagon or cart, as set forth.

136,108.—*Cultivator.*—JOHN W. SWICKARD, Galva, Ill., assignor of one-half his right to JOHN HOUGH, same place.

The plow-beams are pivoted to auxiliary beams, which are pivoted at their forward ends to the axle. By this means the plows always move forward in the same line of progression, while they may be moved freely to either side by the handles pivoted on the hinge-plates and connected to the plows by yokes.

Claim.—1. The combination of plates K, bars h h, and beams E E with the pivoted handles N, substantially as and for the purpose specified.

2. The handles N N and yokes M M, when combined and arranged to operate with the journals *b b*, plates K K, bars h h, and beams E, substantially as described, and for the purpose specified.

3. The guards P P, when combined and arranged to operate with the vertical parts *a' a'* of the axle A, substantially as described, and for the purpose specified.

136,109.—*Eaves-Trough Hanger.*—HENRY B. TODD, Plymouth, Conn.

Claim.—The cross-piece A having projections H at each end and ridges G and slot F, and provided with a clamp-screw, C, in combination with the notched band-iron D, forming an adjustable attachment for supporting eaves-troughs.

136,110.—*Saw-Gummer.*—WILLIAM TUCKER, Fiskedale, Mass.

The punch used has the cutting end larger than the shank, and is held in a guide or sleeve, and driven through the saw, falling out with the material gummed through an inclined passage in the die and stand. The sleeve is removed every time, to replace the punch, from the socket, the front end of which is divided, and has projecting ears that are drawn together by a screw-bolt and nut to firmly clasp the sleeve.

Claim.—1. The punch *p* constructed with a contracted shank, *e*³, in combination with a corresponding guide, *s*, and die *d*, and a passage, *e*³ *f*, for the discharge of punch and punchings, substantially as herein shown and described, to operate in the manner and for the purpose specified.

2. The perforated arm *g* with opening *i* and ears *k k*, in combination with the clamping-screw *n* for supporting the guide *s*, and the punch *p* therein, as set forth.

136,111.—*Boot and Shoe Fastening.*—GEORGE H. WARD, Middletown, Conn.

The buttons are secured to a sheet of elastic cloth between the upper and lining, and slits are made in the upper to allow the eyes of the buttons to move forward and bring the elastic into operation.

Claim.—The elastic material B inside the upper combined with its slits *a* through the upper, through which the buttons extend and are attached to the said elastic material, substantially as set forth.

136,112.—*Tool for Milling Carriage-Shaft Eyes.*—WILLIAM S. WARD, Plantsville, Conn., assignor to H. D. SMITH & Co., same place.

The purpose of the mill A is to bore the hole in the shaft eye, or the hole through the shackle, which is attached to the shaft or pole. The mill C cuts the ends of the eye down to the length desired by setting the gage accordingly.

Claim.—The herein-described milling-tool, consisting of the principal mill A, guide D, and the cylindrical mill C, combined and made adjustable relatively to each other in the manner described.

136,113.—*Lamp-Burner.*—WILLIAM N. WEEDEN, Waterbury, Conn., assignor to BENEDICT AND BURNHAM MANUFACTURING COMPANY, same place.

Improvement on patent of October 1, 1872. A loop in the wire forming the chimney-support and sustaining the burner-cone is pushed into a socket between the edges of the cap and the screw-piece, and fastened in by a press or drop.

Claim.—The loops *a* on the wires D, in combination with sockets formed between the upper and lower parts of the lamp-cap, and contracted over the said loops, substantially as herein described, for the purpose set forth.

136,114.—*Hook.*—RICHARD WEISS, Brooklyn, N. Y.

The shank of the hook is twisted to prevent the loop from spreading when exposed to strain.

Claim.—As a new article of manufacture, a wire-hook, A, provided with a single loop, *a*, which is locked by a twist, *b*, substantially as shown and described.

136,115.—*Glove.*—EDWIN V. WHITAKER, Gloversville, N. Y.

Claim.—1. A glove, with leather palm and cloth or fabric back, having the said palm, fingers, and forgets all in one piece, except the forgets for second or middle finger, as and for the purpose described.

2. A glove-forget cut with projection *a*², *b*², or *c*², for the purpose of taking the seam out of the intersection of the fingers and thumb, as set forth.

3. The forgets *d'* and *e*¹ *e*¹, joined as shown at *f*, and having the edges *f' f'*, as and for the purpose specified.

136,116.—*Carriage-Spring.*—JOHN B. WHITCOMB, Beloit, Wis., assignor of two-thirds of his right to JOSEPH BRITTAN and ARTHUR BRITTAN, same place.

Claim.—1. The combination of the springs a e, arranged above and below the spring-bar, so as to break the concussions, substantially as set forth.

2. The clip *a*, rods *b b*, cylinder *c*, springs *i n o*, and nut *e*, when all are combined and arranged as described.

136,117.—*Rice-Cleaning Machine.*—JOHN N. WHITE, New Orleans, La., assignor of one-fourth his right to GEORGE E. SEARS, same place.

The rice and hulls, after being loosened in the huller, are delivered into a chute where they are separated, the hulls driven out through a tube by an air-blast, while the grains of rice pass directly into an agitator or worker, from which they are conveyed, respectively, to a brusher and polisher by elevators, which completes the operation of cleaning and polishing the rice.

Claim.—In combination with the huller A and chute B, having tube D and fan E, the agitator or worker C, receptacles *d d'*, brusher G H, polisher I K, and elevators *e f*, the whole being constructed and arranged substantially as described, as and for the purpose specified.

136,118.—*Fare-Box.*—JAMES F. WINCHELL, Springfield, Ohio, assignor to ELIJAH C. MIDDLETON, same place.

Between the inspection and safe chambers are pivoted an arrest-apron and a chambered lock, the two being operated conjointly by a lever hung on the shaft of the former, and moving the latter by its cam-slot.

Claim.—1. The combination and arrangement of the inspection-chamber C, safe-chamber G, segmental partition *e*, and chambered lock E F *f*, said lock being interposed between the chambers C and G, and being constructed and operated as herein described to prevent direct communication between the said chambers while the fare is passed from one to the other.

2. In combination with the cam-lever J, partition F and hinged apron D, the said lever acting directly on the partition F, and opening and closing the apron D at or near the respective ends of the oscillating movements of the partition, substantially as described.

136,119.—*Elastic Material for Boot and Shoe Gores.*—CHARLES WINSLOW, Boston, Mass.

A strip of fabric, of any desired length, is coated upon its upper surface with any suitable gum, when a sheet of vulcanized rubber, the length in its natural state being less than that of the fabric, is stretched until it covers the fabric, and pressed down upon it. A strip of non-elastic material is then affixed to the edge, so as to be flush with or a little above it, when the upper surface of the whole is again coated, and another fabric placed upon it; when the whole is again pressed together, and the rubber allowed to contract, which takes with it the fabric, and imparts to it a corrugated appearance.

Claim.—The herein-described shirred or corrugated goring, consisting of the outer and inner fabric, with the vulcanized strands or sheets of rubber between them, and the stay A, of non-elastic material, inserted between the edges of the two fabrics, substantially as specified.

136,120.—*Plow.*—GILMAN D. WYMAN, Oshkosh, Wis.

The mold-board is made adjustable as regards the rear end of the beam by means of a swivel screw-bolt, one end thereof being secured to the mold-board and the other to the rear end of the plow-beam; and by the adjustment thus provided the plow can be caused to take more or less "land."

Claim.—The combination of the beam A and mold-board handle H, the screw-rod K, and the screw-swivel D D, as described.

136,121.—*Rod and Fluting Iron.*—DANIEL W. YOUNG, JOHN HEWITT, and LAWRENCE MOONEY, Pittsburg, Pa.; said YOUNG and MOONEY assignors to said HEWITT.

Fluted rolls occupy recesses which cross one face of the iron. The opposite face of the iron is finished to be used as an ordinary rod-iron. On its end is connected by a pivot a latch with forked ends, fitted to the end of the iron with a spring upon its upper end, to hold in position and to allow the face of the iron to be changed or turned.

Claim.—1. The rollers B B, when secured in a rod-iron or block so as to operate substantially as described.

2. The revolving plate A, having one face finished as a rod or polishing iron and the reversed side recessed to receive rollers B B, in combination with said rollers and a spring-latch, D, or an equivalent fastening, the whole being so constructed and arranged as to operate substantially as described.

136,122.—*Lead-Pencil.*—PHILIP HUPELAND, New York, N. Y.

Claim.—A lead-pencil having attached to one of its ends a tube of paper, leather, cloth, or other tough and flexible material, form-

ing a continuation of the pencil, and containing a piece of India rubber, which it incloses entirely, or nearly so, so that it must be cut away to expose the rubber for use, substantially in the manner herein shown and described.

REISSUE PATENTS.

5,283.—*Gasifying Fuel for Heating, &c.*—WILLIAM ELMER, New York, N. Y.—Patent No. 87,156, dated February 23, 1869; antedated February 13, 1869.

Claim.—1. The process or method herein described of gasifying crude fuel by subjecting it, out of contact with the atmosphere, to the process of distillation described, and by subjecting the distillate, in a second retort or series of retorts, to a temperature sufficiently high, not less than 2000° Fahrenheit, as specified, to convert the distilled products into permanent inflammable gases, substantially as above set forth.

2. A clay gas-retort divided into two chambers by a partition inserted directly in the retort without any intervening flues or pipes, constructed and arranged as and for the purpose herein specifically described.

5,284.—*Manufacture of Inflammable Gases for Fuel, &c.*—WILLIAM ELMER, New York, N. Y.—Patent No. 106,569, dated August 23, 1870; antedated August 12, 1870.

Claim.—The process herein described of manufacturing gas-fuel from bituminous coal or equivalent crude fuel, by subjecting its distillates to the action of high heat, not less than 2000° Fahrenheit in the manner and by the means herein specified, whereby such distillates are decomposed into hydrogen and carbonic oxide.

5,285.—*Machine for Drilling Rock.*—STILLMAN W. ROBINSON, Champaign, Ill., and DE VOLSON WOOD, Ann Arbor, Mich.—Patent No. 71,320, dated November 26, 1867.

Claim.—1. In a rock-drill, the construction and arrangement of a cylinder for driving a drill, one end of said cylinder serving as a tool-holder, and having suitable attachments for rotating the tool, or feeding it forward, or both combined, as herein described.

2. The click L L, rotating on an axis parallel to or somewhat inclined to the axis of the drill-bar, in combination with the ratchet M, as and for the purposes described.

3. In machines for working on stone in which the tool is reciprocated by an elastic motor in a cylinder, the combination of the cylinder, ways, and gripes O and Q, or other suitable devices for holding the machine to the ways, constructed and arranged essentially as set forth, that when the device O is freed from its hold at or near the end of the forward stroke by means of a projection on the drill-bar, the machine may be fed forward on the ways by the reaction of the motor in the cylinder during the back stroke of the drill-bar, and held in its advanced position by means of the device Q, substantially as described, and for the purposes set forth.

4. The combination of the gripe O, lever N, ways Y, and tappet *p*, as and for the purposes described.

5. The combination of the carriage Z, gripe Q, spring *d*, and ways Y, as and for the purposes described.

6. The tool-holder, as described, consisting of the hollow cone P and wedges G G, constructed and arranged as described.

5,286.—*Spring Bed-Bottom.*—HENRY DWIGHT WEIGHT BAILEY, Sterling, Ill.—Patent No. 107,213, dated September 13, 1870.

Claim.—1. A bed bottom composed of slats supported by springs and flexibly connected to each other, so that one or more may be reversed or removed from the springs and connection without unfastening or removing the remainder, substantially as described, for the purpose specified.

2. The combination of the rails B, slats E, elastic loops or springs C, loops D, and flexible strap F, substantially as described, for the purposes specified.

5,287.—*Ice-Machine.*—FERDINAND PHILLIPPE EDOUARD CARRÉ, St. Pierre Les Nemours, assignor of part interest to JEAN B. J. MIGNON and HENRI S. ROUART, Paris, France.—Patent No. 30,201, dated October 2, 1860.—Division A.

Slats are hung from the end rails of the bedstead by elastic loops, and by flexible straps in the center, so that slats may be turned or detached at pleasure.

Claim.—1. An apparatus for the practical production of ice and cold, consisting of two chambers, one for separating the gas from the absorbent containing it, and the other for condensing it, connected by a tube, E, or its equivalent, substantially as described.

2. In an apparatus for the practical production of ice and cold, chamber A, having internal disks B and flanges C, substantially as described.

5,288.—*Manufacture of Ice.*—FERDINAND PHILIPPE EDOUARD CARRÉ, St. Pierre Les Nemours, assignor of part interest to JEAN B. J. MIGNON and HENRI S. ROUART, Paris, France.—Patent No. 30,201, dated October 2, 1860.—Division B.

Claim.—1. The process of practically producing ice and cold by driving off a volatile gas from a solution or absorbent containing it into a closed chamber, where it is condensed by means of its own pressure and elasticity, assisted by the extraction of its heat, again volatilizing it to obtain cold, and returning it to the absorbent which has been properly cooled, substantially as described.

2. In a process for the practical production of ice and cold, promoting the evaporation of a liquefied gas by means of an absorbent or substance having a chemical affinity for the gas evaporated, instead of an exhausting-pump.

5,289.—*Machine and Process for Making Paste.*—GEORGE G. NOAR, Boston, Mass.—Patent No. 73,115, dated January 7, 1868; antedated December 28, 1867.

Steam is caused to permeate the contents of the tub, cooking the same, at the same time that the contents of the tub are being thoroughly mixed together by the revolving arms firmly attached to a revolving shaft, some of which are perforated and some are not, and through the perforated one of which the steam is inducted into the contents of the tub.

Claim.—1. The process herein described for making paste by the introduction of steam into the paste-tub to permeate the contents thereof, for the purpose of cooking and boiling the same at the same time that said contents are being thoroughly mixed together.

2. The hollow perforated arms C C, attached to the hollow revolving shaft B for the purpose of admitting the steam into the contents of the paste-tub at the same time as said contents are being mixed together, substantially as herein set forth.

3. The combination of the hollow revolving shaft B, hollow perforated arms C C, and the unperforated arms D D, all arranged within the paste-tub A, substantially as and for the purposes herein set forth.

5,290.—*Divider.*—O. E. WEATHERHEAD, Ashland, Mass., assignor to ALBERT A. COOKE, GEORGE L. COOKE, and S. W. COOKE. Patent No. 73,433, dated December 17, 1867.

One leg of the instrument is beat or offsetted and grooved for the reception of a pencil or extension piece, which is secured in position by a band and clamping-screw.

Claim.—1. The leg of a pair of dividers when grooved or made concave, as and for the purpose set forth.

2. A clamping device, when used in combination with the grooved or concave leg of a pair of dividers, for the purpose set forth.

5,291.—*Casting Stench-Traps.*—JAMES E. WHITE, New York, N. Y., assignor to LOUIS A. CAUVET.—Patent No. 100,786, dated November 29, 1870.

An external groove is formed on the line of union of the two sections, the edges of said sections being thickened to strengthen the joint. The collar *e* is cast with the other portion, and a threaded core is employed to form the thread on the interior of the collar.

Claim.—1. The trap or bend made with the groove *f* on the line of union of the sections or halves of the trap between the projections along the edges, substantially as set forth.

2. The collar *e* of lead cast with the other portion of the trap or bend, substantially as set forth.

3. A mold for casting soft-metal traps containing a threaded core around which the lead collar is cast, substantially as set forth.

5,292.—*Insect-Destroying and Disinfecting Compound.*—ALEXANDER MCDOUGALL, Manchester, England, assignor, by mesne assignments, to JAMES S. MILLAR, Montreal, Canada.—Patent No. 66,725, dated July 16, 1867.

For sheep-wash and vermin-destroyer, dead-oil of coal-tar, two parts; caustic soda of 50° Twaddel, one part; fat or tallow, one part. For disinfecting fecal matter, add to dead-oil three per cent. nitric acid. Mix with water containing lime, magnesia, and other alkali or alkaline earths.

Claim.—1. The oil obtained (after the naphtha or spirit has been removed) in the distillation of tar resulting from the destructive distillation of carbonaceous substances, or of any of the constituents of this oil, in combination with an alkali or alkaline earth and with fatty or other saponifiable substances, substantially as herein described, as a dressing for sheep or other animals, and for other purposes.

2. The oil herein specified, or any of its constituents, after treatment with an acid, as described, in combination with an alkali or alkaline earth, as a material for the disinfection of fecal, sewage, or other matters, and the destruction of entozoic parasites contained therein, or for the destruction of entozoic parasites or vermin in soils.

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I. The joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. A part of these copies are to be bound in volumes and placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

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Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

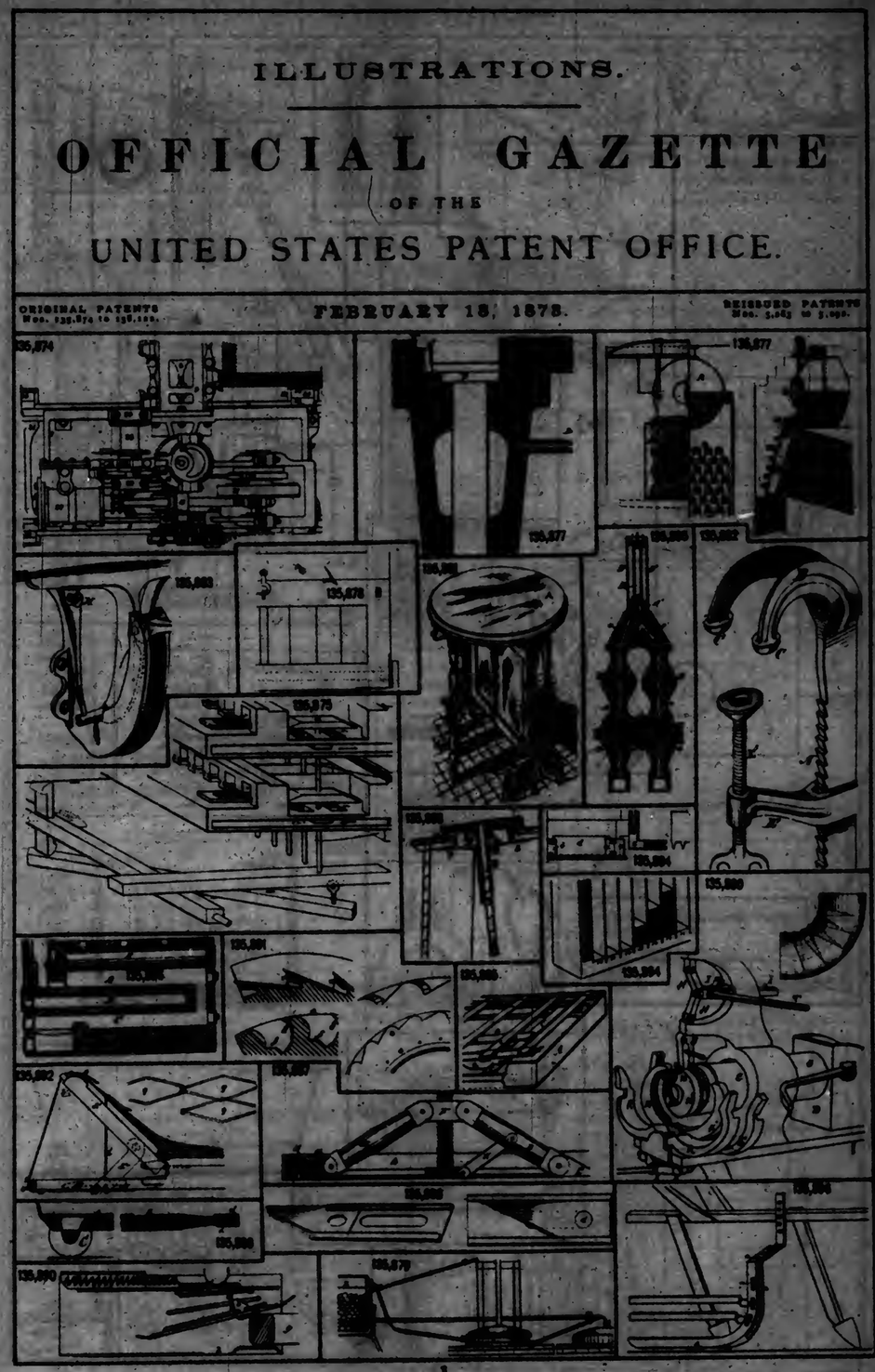
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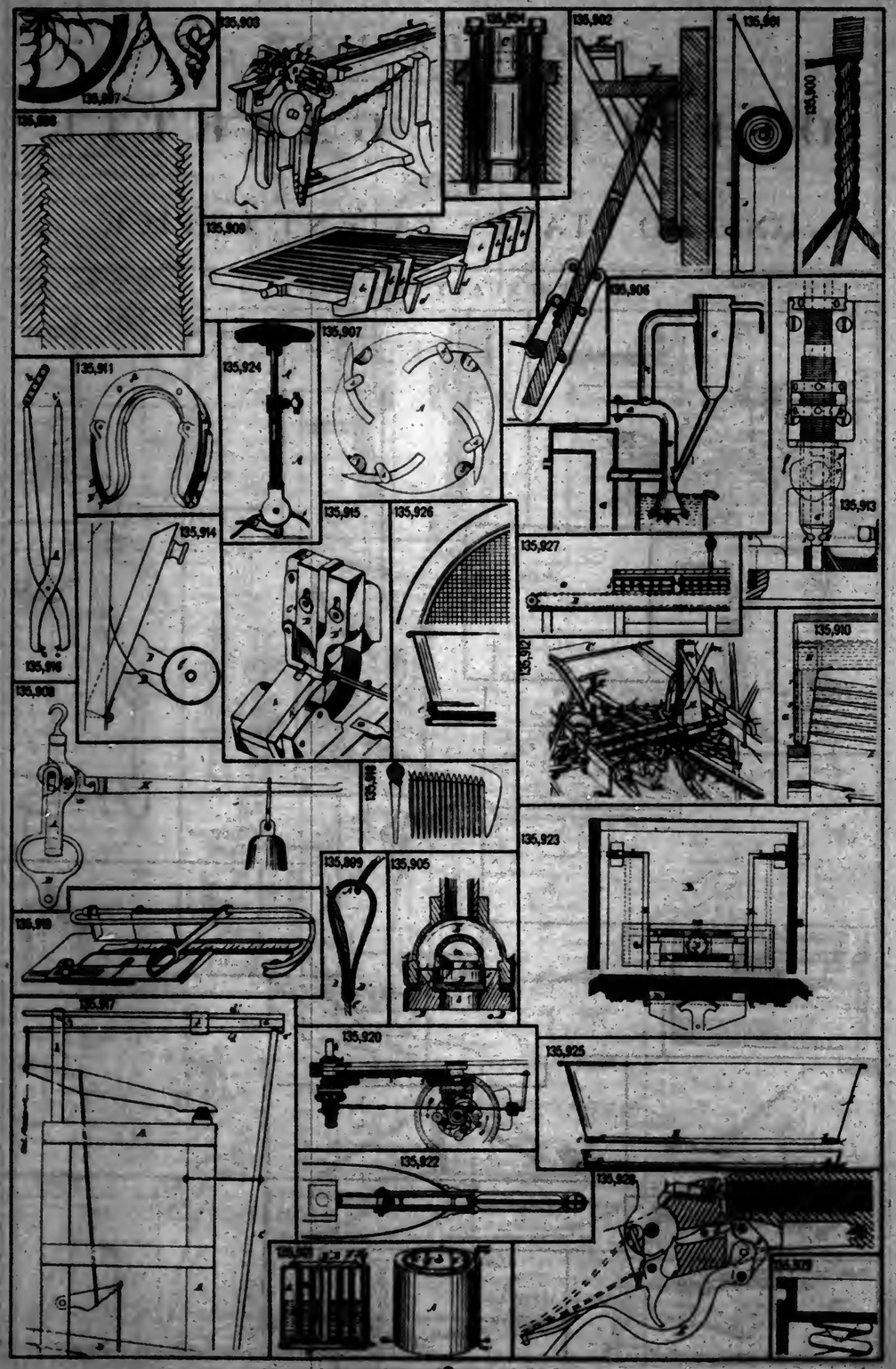
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The statement gives the approximate number of drawings of these classes.

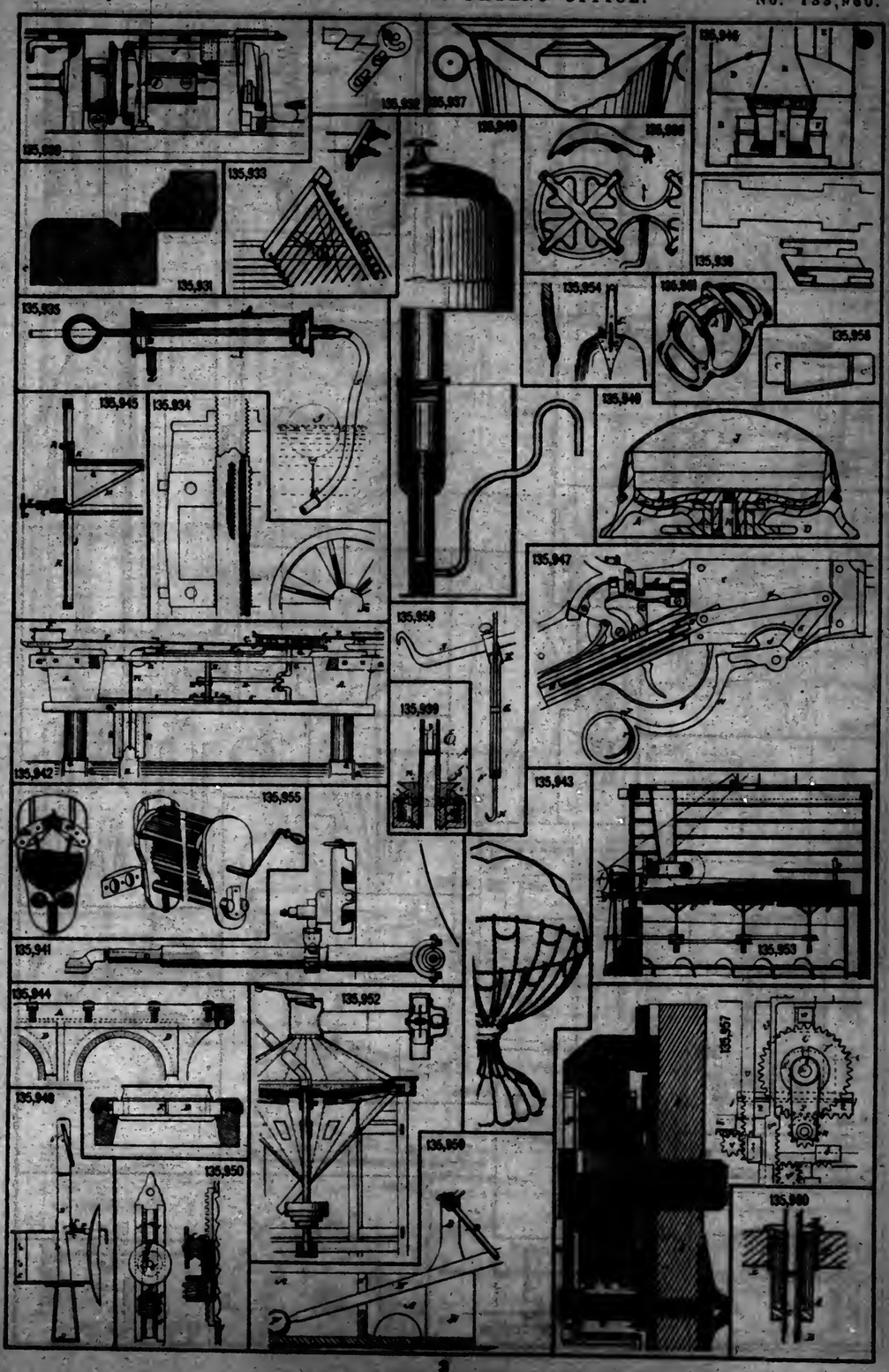
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PRINTING; including presses, type, and printers' furniture.	2,500
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FELTING and HATS; including caps, bonnets, flock, &c.....	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
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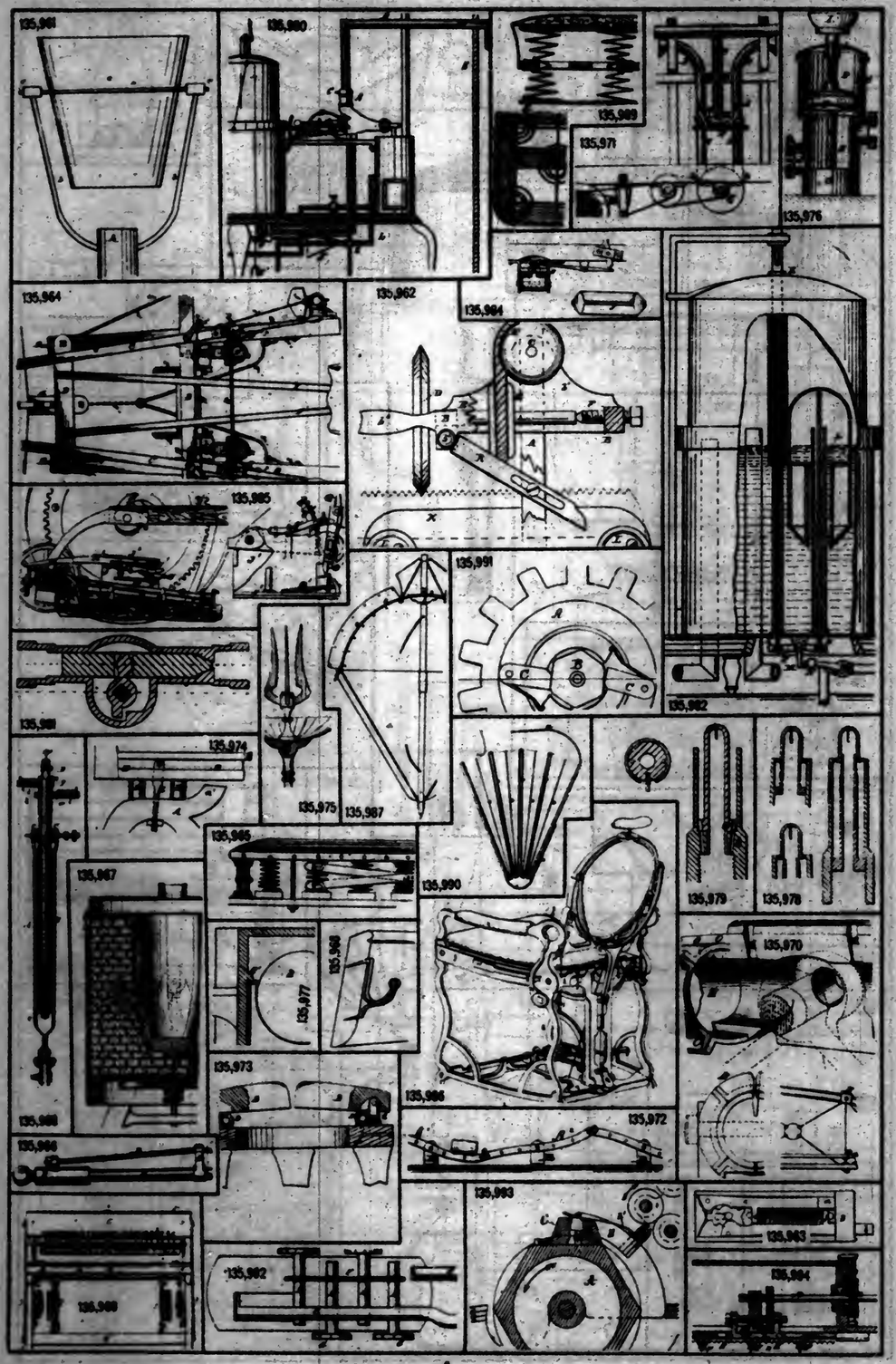




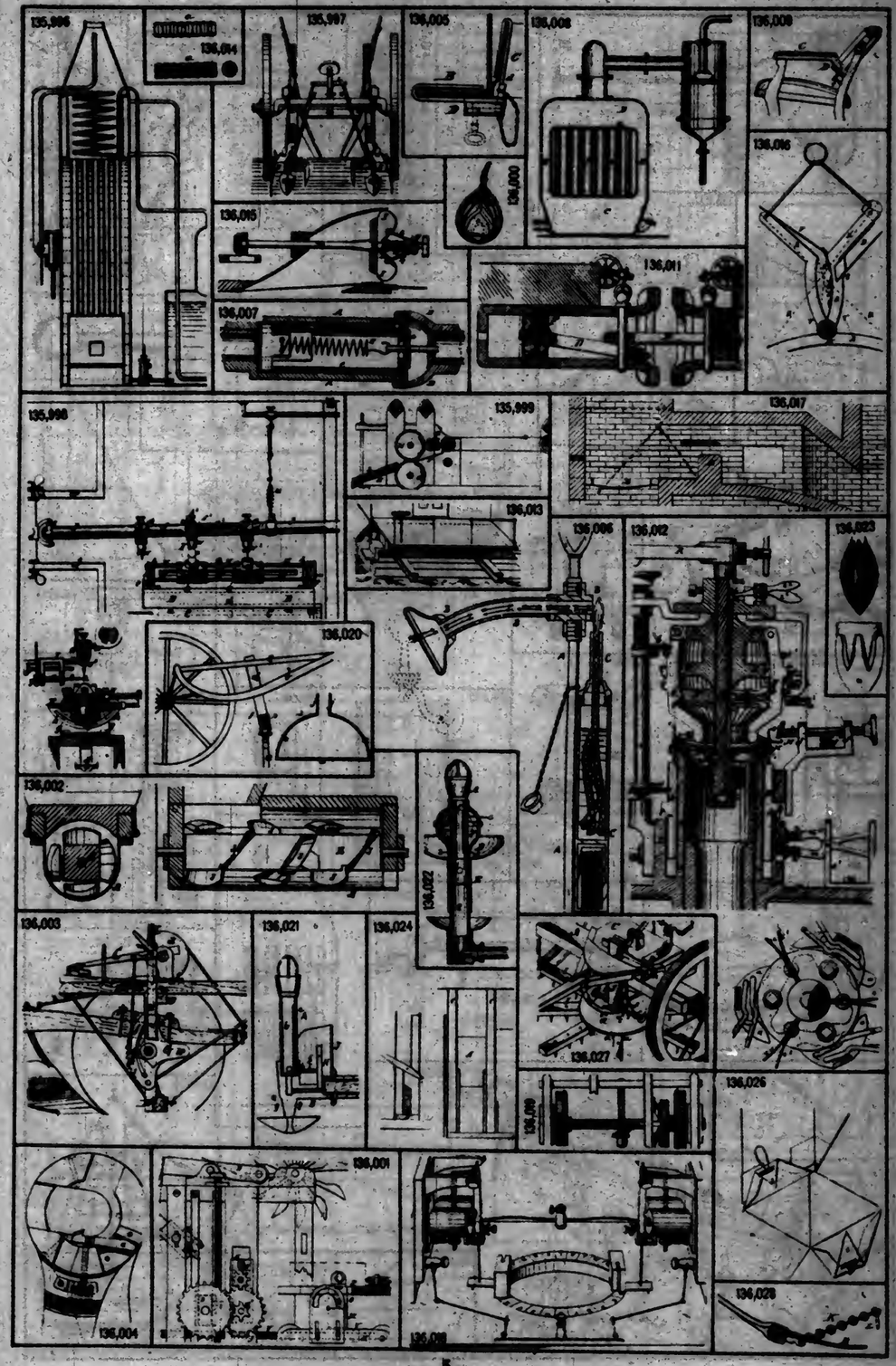
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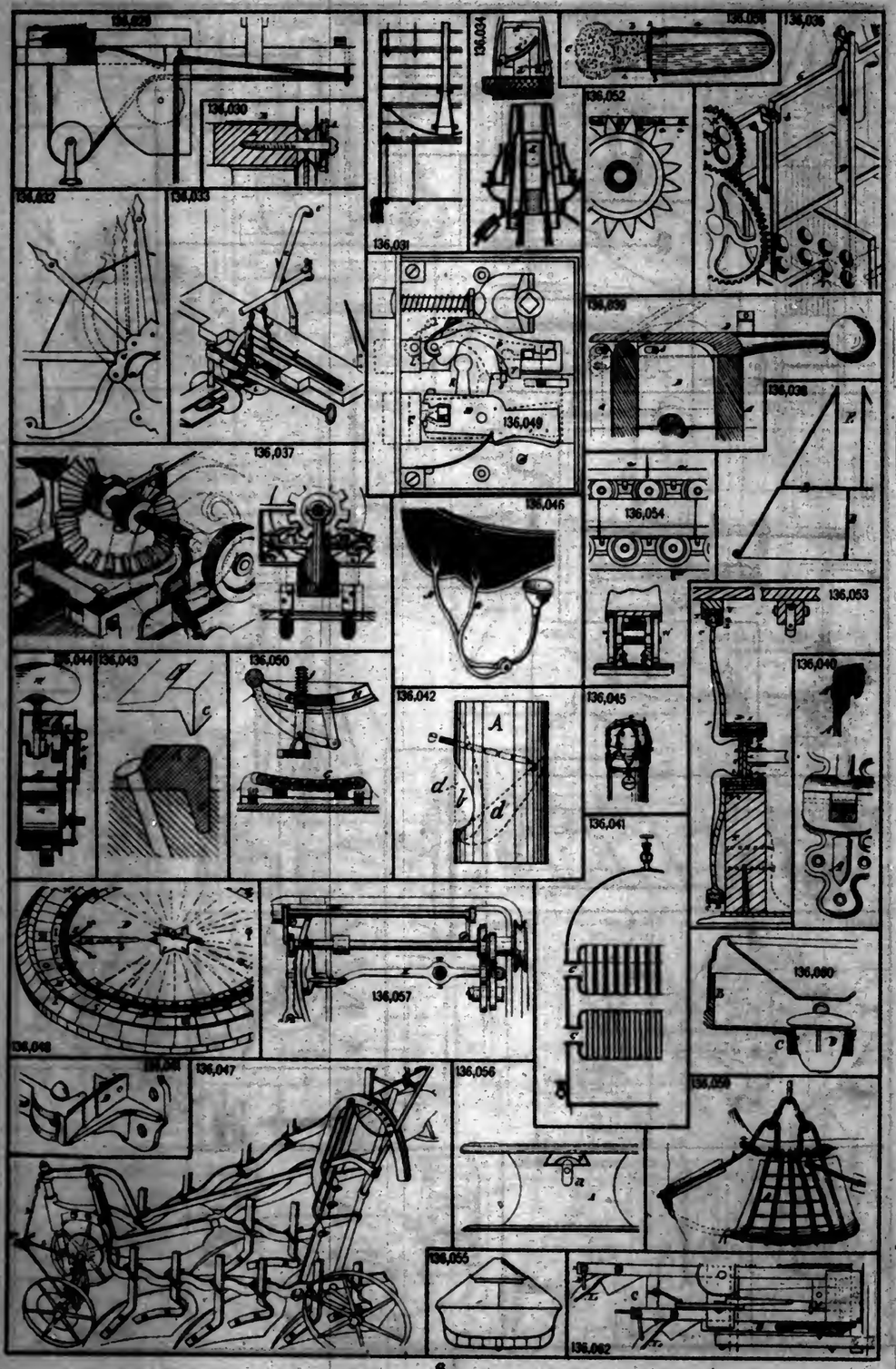
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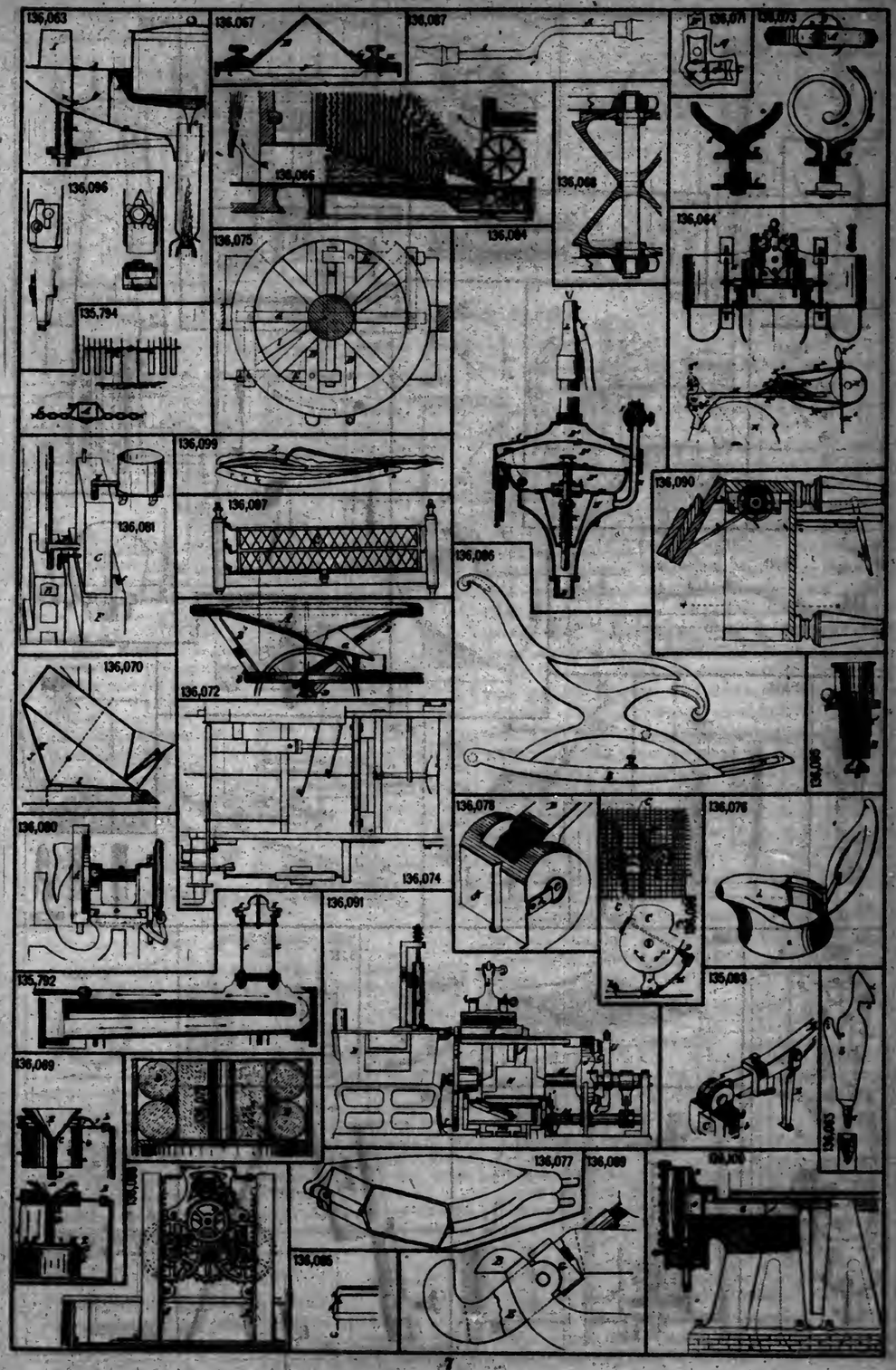
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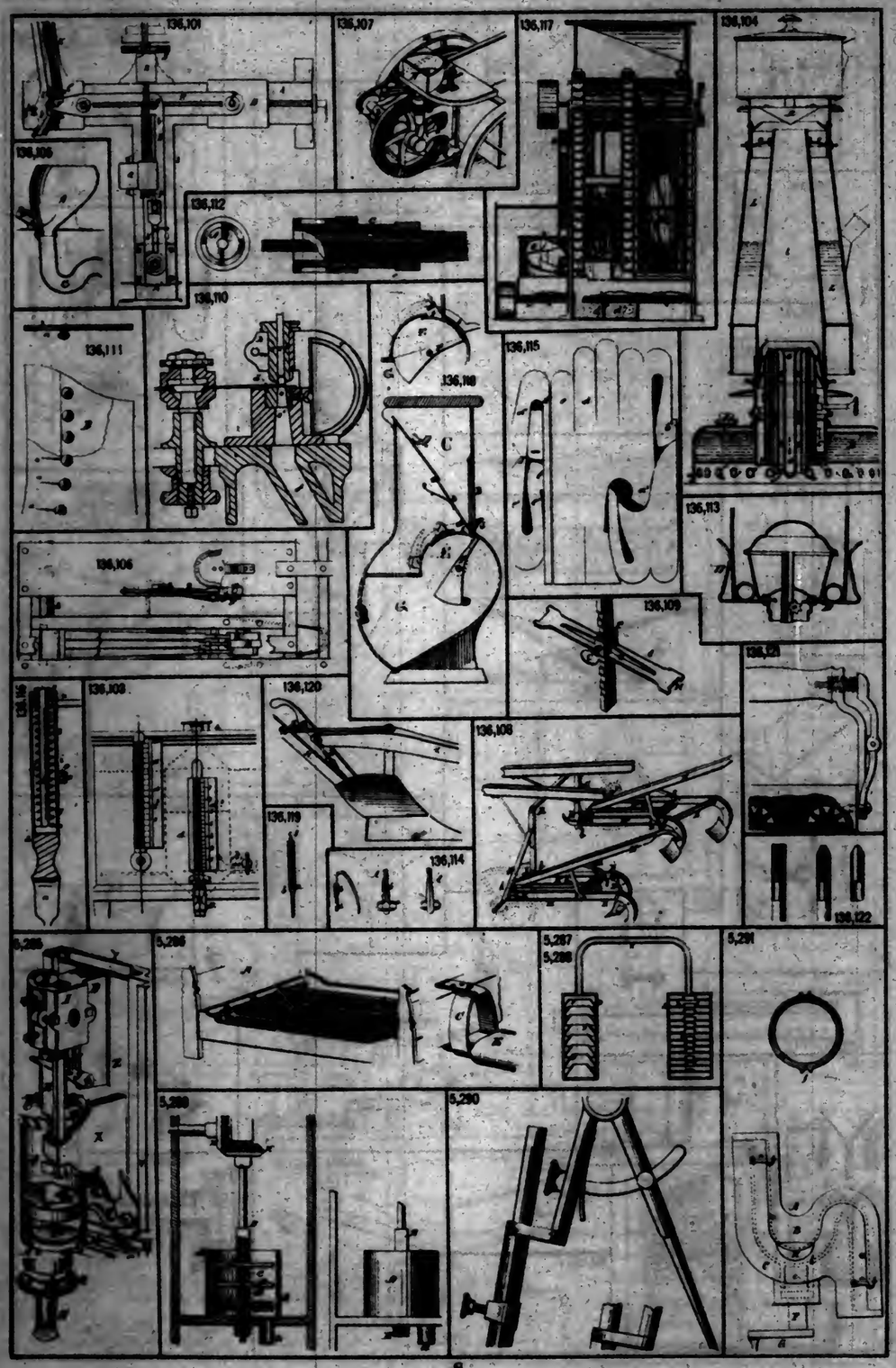
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COMMISSIONER'S DECISIONS.

FREEMAN GRAHAM.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Freeman Graham for a patent for alleged* IMPROVEMENT IN HARVESTERS.—*Decided February* 21, 1873.]

ABANDONMENT.

Where some proceeding of the Office is relied upon as having taken place within two years, in order to avoid a charge of abandonment under section 32 of the act of 1870, such proceeding must be interlocutory, or have had reference to the merits of the case, and be something more than a merely ministerial action.

If no steps are taken toward prosecuting an application for two years after notice of the last action of the Office upon it, except to enter a formal abandonment and request a return of the model, it must be considered as having been abandoned.

The objection is not removed because in the meantime the Office has filed the formal abandonment and permitted the applicant to withdraw his model.

THACHER, *Acting Commissioner:*

The facts in this case are as follows: Graham filed an application for patent in 1870, which was partly rejected and information sent him by official letter dated October 31, 1870. January 3, 1871, he filed a formal abandonment of this application, which action was indorsed on the file. December 3, 1872, filed a new application containing the subject-matter of the old, which he wishes to have considered as a continuation of the latter.

The Examiner refuses to consider the new application, holding that under section 32, act of 1870, the old application has been finally abandoned, unless it be shown that the delay to prosecute was unavoidable.

As the new application was not filed until more than two years after the date of official letter in the former case, the Examiner is undoubtedly correct, unless the official permission to withdraw the model, and indorsement of abandonment on the back of the file, can be regarded as an "action therein" in the sense in which these words are used in the 32d section.

The Commissioner is asked to take the latter view. I am satisfied, however, that this would not be correct practice. The law evidently contemplates official actions either preliminary or on the merits, taken in the regular course of examination of the case. The abandonment of an application or withdrawal of model requires no such action. It is an act of the applicant, not of the Office—the withdrawal of the model requiring the permission of the Commissioner, it is true, a mere ministerial act—but no part of the transaction requiring official action materially affecting the condition of the application before the Office.

As applicant has not shown that the delay to prosecute for more than two years after last action therein was unavoidable, the decision of the Examiner must be sustained.

T. B. OGLESBY.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of Thomas B. Oglesby for patent for* COTTON-GIN SAW.—*Decided February* 24, 1873.]

DESIGN PATENT—MECHANICAL PATENT—FORM—FUNCTION.

When an alteration in any article is calculated to give it a better appearance merely, it can be protected only by a design patent.

If the alteration is intended to change its functions or improve its operation, or effect a new result, it may be the subject of a mechanical patent.

LEGGETT, *Commissioner:*

Applicant claims a peculiarly-shaped saw-tooth for cotton-gins, on account of the construction or form of which several important advantages are alleged to be gained, referring both to the cost of making the tooth and to its use in ginning. No question is made by the

Examiner as to the novelty or utility of the tooth, but he maintains that as it exhibits merely a change of form it is therefore proper subject-matter for a design patent only. This position is not tenable in this case. Admitting that there is no more than a change of form in the tooth itself, it is necessary to go further and inquire what is the object and what are the results of the change of form. If the shape of the tooth has been altered for the purpose of improving its appearance merely, without changing its function or increasing its practical efficiency, then the modification is calculated to produce the novelty and utility requisite to warrant the grant of a design patent. But if the shape of the tooth has been altered for the purpose of improving its operation, and actually does, as alleged, greatly increase its efficiency, then there is clearly presented subject-matter for a mechanical patent. When the common screw was simply provided with a pointed instead of a blunt threaded end there was only a change of its form, and seemingly a very slight and obvious one. Yet the object of the change and the advantages resulting from it rendered it an important and patentable mechanical invention. This case is analogous, and the Examiner's decision must therefore be overruled.

W. D. LEAVITT.—*Motion.*

[*In the matter of the application of W. D. Leavitt, filed September 28, 1860, for patent for* CHECKS FOR COTTON-BALES, WOOL, &c.—*Decided February 14, 1873.*]

ABANDONMENT—PRACTICE IN INTERFERENCES.

If an applicant neglects to prosecute his application for two years after the Office have rejected it, it will be held to be abandoned under the 32d section of the act of 1870, unless he shows that the delay was unavoidable.

Although the Office afterward conclude that the invention was patentable, this will not alone prevent the operation of the statute.

An interference may be declared, however, between it and a subsequent application covering the same invention, in which it may be shown that the delay was unavoidable; but unless the applicant does this he cannot have a patent, although he prevails on the question of priority.

LEGGETT, *Commissioner:*

Leavitt filed his application for a patent September 28, 1860, and was rejected the second time on the ground that his application did not cover patentable subject-matter. January 11, 1870, April 22, 1870, another applicant presented the same subject-matter in the Office for patent, and was rejected by reference to the application of Leavitt. June 21, 1870, the subsequent applicant requested an interference with Leavitt, which was refused by the Examiner, and the applicant was rejected on the same grounds that Leavitt had been. Finally, on August 13, 1872, the Examiner changed his opinion as to the patentability of the subject-matter of the two applications, and advised both applicants of a probable interference. As more than two years had elapsed since Leavitt had been notified of the last rejection of his application, during which time he had made no effort to prosecute it, the Examiner suggested to him that under the circumstances he ask leave of the Commissioner to have his case treated as still pending. He did not act upon this suggestion, however, and in the meantime the cases passed into the hands of another Examiner, who twice rejected the second applicant, the last time citing additional references, and then, on November 11, 1872, placed the two applications in interference. Now Leavitt presents a statement of the facts of his case, and asks that it be regarded as pending, under authority of section 32 of the statute, which declares that upon failure of an applicant to prosecute an application within two years after any action therein, of which notice shall have been given him, his application shall be considered as abandoned, "unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable." There is no attempt to show that the delay has been unavoidable. On the other hand, it is virtually admitted in the statement presented that it has not been. But it is urged that, by the admission of the Office, it was the error of the Examiner that caused the delay. This is not the logic of the case. The law was made in contemplation of just such errors as this, and it provides a remedy for them. It limits that remedy as to time, however, and warns applicants that they cannot delay to avail themselves of it beyond two years without incurring the penalty of abandonment of their applications. It is therefore the fault of Leavitt, and precisely the fault the law specifies, that works abandonment of his application. It is clear that he cannot be allowed a patent as his case now stands. His application is abandoned and dead, unless he can show that his delay has been "unavoidable." It is still a pending application for that purpose. But is it a pending application for the purpose of an interference? The statute provides for an interference only with pending applications and unexpired patents. If priority is adjudged in Leavitt's favor, he cannot have a patent until he justifies his delay. All he can do is to defeat the grant of a patent to the subsequent applicant. It is possible he might show his delay to have been unavoidable after a decision of priority in his favor, should such a decision be made. At any rate it is in accordance with the spirit of the law that, under such circumstances as are here presented, the questions of priority of invention and abandonment be investigated before a patent is granted, and there is no way to do it except by means of an interference. Leavitt's application may therefore be treated as a pending application for the purposes of this interference, but a patent will not be granted him until he shows his delay to have been unavoidable.

WM. BROWNLIE.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Wm. Brownlie for patent for* MANUFACTURE OF SHOW-TABLETS, *filed April 26, 1871.—Decided September 6, 1872.*]

A claim for "the constructing of show-tablets in the manner described" is really for the method, and not for the act of constructing as the language indicates, and the true object should be presented in direct terms, without any such ambiguity.

The decision of the Examiners-in-Chief sustaining the action of the Examiner affirmed, although founded upon a reference not given by him, but described in an application which he had cited.

Strictures upon the practice of giving numerous references bearmore or less directly on the case, instead of citing those only which are pertinent to the claim.

LEGGETT, *Commissioner:*

Applicant claims "the constructing of show-tablets in the manner hereinbefore described, or any mere modification thereof." It would have been proper for the Examiner to have objected to this form of the claim. Its effect is to cover the method presented merely, and not the *act* of constructing in the manner, &c., as the language indicates. Therefore it should be required to accomplish that object directly and perspicuously, and not in the roundabout way adopted. It would be much better if it read, *the method of constructing show-tablets herein described.* Applicant's method is, however, fully met in the patent of A. O. Dayton, March 12, 1850, indirectly referred to by the Examiner. Dayton applies a photograph to glass by a proper adhesive substance, varnishes it to render it transparent, and then paints the back of the paper as does applicant. He describes soaking the paper previous to sticking it to the glass, and also rubbing it off before coloring with paint; but he adds, "If the paper be very thin, the soaking and rubbing may be dispensed with." So with that qualification his process is precisely applicant's. This case presents an irregularity of practice which should not occur, and it is altogether chargeable to the Examiner. None of the references he has cited are at all pertinent; but one of them—the application of Humphrey—contains a reference to the patent of Dayton in the body of the specification, and a partial description of his process of treating photographs, to which the Board have alluded and which cannot be ignored. This patent should have been expressly cited. In other words, a more careful examination should have been made, and such matter, and such only, as is in point should have been brought into the case. It is vexatious to all concerned to cite a number of random references, all different from each other, and for that reason impossible to apply to meet a specific claim.

The decision of the Board is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

J. L. SMITH *et al. vs.* ROBERT REYNOLDS *et al.*

[*In Equity.—Before Blatchford, Judge.—Decision June 30, 1872.*]

EVIDENCE OF THE PROPER REGISTRATION OF A TRADE-MARK.

The patent act of 1870 does not authorize the Commissioner to issue any letters patent for a trade-mark nor certificate containing a grant of one.

Copies certified by him of any trade-mark filed in the Patent Office, and of the date of the receipt thereof as recorded, and of the statement filed therewith in pursuance of section 77, are made evidence under section 80, and he has no authority under the act to issue any other certificate as to trade-marks.

If the copies certified by him do not include a declaration such as is required under the seventh clause in section 77, the defect is fatal.

An averment in the Commissioner's certificate that the parties have complied with the act, and that their trade-mark will remain in force thirty years, does not warrant the presumption that the declaration was filed, or remedy the defect.

It is for the Court alone to determine whether the required declaration has been duly filed and is in conformity with the law.

This was a motion for an injunction in a suit brought by J. Lee Smith & Co. against Robert Reynolds and Samuel Jacobs, doing business as Reynolds & Jacobs, to restrain the defendants from the further alleged infringement of a trade-mark, which the complainants claimed to have registered in accordance with the provisions of the act of Congress of July 8, 1870.

The only question that appears to have been considered upon the hearing of the motion was the sufficiency of the complainants' proofs as to the regularity of the registration upon which they relied. For proof upon this point they produced a certificate signed by the Commissioner of Patents, and under the seal of the Patent Office, said certificate being to this effect, viz., that "J. Lee Smith & Co., of New York, did, on the 30th day of December, 1870, deposit in the United States Patent Office, for registration, a certain trade-mark for paints, whereof a copy is hereto annexed; that they filed therewith the annexed statement; and having paid into the treasury of the United States the sum of twenty-five dollars, and otherwise complied with the act of Congress in such case made and provided, the said trade-mark has been duly registered and recorded in the said Patent Office, and will remain in force for thirty years from the twenty-first day of February, one thousand eight hundred and seventy-one."

The statement accompanying this certificate was as follows:

"To all to whom it may concern: Be it known that we, J. Lee Smith & Co., of the city of New York, of the county and State of New York, use a trade-mark for paints, of which the following, together with a fac-simile hereto attached, is a correct description. The said trade-mark consists of the illustration of a crown, as is clearly shown in the fac-simile. It is applied as a brand, by stencil-plate or die, to the casks, cases, or vessels containing the said paint, printed upon labels or wrappers which are applied to said cases or vessels, or upon the business cards, notices, or placards advertising the paints to the public."

[*John Hough*, for complainants.
Frederick Blount, for defendants.]

BLATCHFORD, *Judge:*

This bill is founded on a statutory right to a trade mark claimed under the provisions of sections 77 to 84 of the act of July 8, 1870, (16 U. S. Stat. at Large, 210 to 212.) Section 77 provides that any firm domiciled in the United States, "and who are entitled to the exclusive use of any lawful trade-mark, or who intend to adopt and use any trade-mark for exclusive use within the United States, may obtain protection for such lawful trade-mark by complying with the following requirements." One of those requirements is "the filing" in the Patent Office "of a declaration under the oath of * * some member of the firm, to the effect that the party claiming protection for the trade-mark has a right to the use of the same, and that no other person, firm, or corporation has the right to such use, either in the identical form or having such near resemblance thereto as might be calculated to deceive, and that the description and fac-similes presented for record are true copies of the trade-mark sought to be protected." On complying with these requirements the trade-mark is to remain in force for thirty years from the date of the registration.

The bill avers the filing of such declaration. The defendants, in their answer, put in issue this allegation,

among others, and require proof of the same. No proof is given that such declaration was filed. A certificate is produced, signed by the Commissioner of Patents and under the seal of the Patent Office, setting forth that "J. Lee Smith & Co.," of New York, (which is a firm composed of the plaintiffs,) did, on the 30th of December, 1870, deposit in the Patent Office for registration "a certain trade-mark for paints, of which a copy is hereto annexed; that they filed therewith the annexed statement, and having paid into the treasury of the United States the sum of twenty-five dollars, and otherwise complied with the act of Congress in such case made and provided, the said trade-mark has been duly registered and recorded in the said Patent Office, and will remain in force for thirty years from the 21st day of February, 1871."

The statement annexed to the certificate does not contain any such declaration as that referred to. The declaration is required to be "filed." The only thing certified to have been "filed" is the "annexed statement."

It is urged that the certificate that the parties have "otherwise complied with the act of Congress in such case made and provided," and that the trade-mark "will remain in force for thirty years" from the day named, covers the point; and that, in analogy to letters patent for an invention, the certificate is evidence of a compliance with the requisite preliminary steps. But I do not think this position is a sound one. A patent being authorized to be granted on evidence on which the Commissioner of Patents is to decide, the fact that he grants the patent is held to be *prima facie* evidence that the proper proofs were laid before him and were satisfactory, he being made by the statute the proper judge of the sufficiency and competency of the proofs. (*Phil. and Trenton R. R. Co.* vs. *Stimpson*, 14 Peters, 448, 458; *Seymour* vs. *Osborne*, 11 Wallace, 516, 540.) But in respect to a trade-mark the statute does not authorize the Commissioner of Patents to issue any letters patent therefor, or to issue any certificate containing a grant thereof. The only certificate he is authorized to issue in reference to the original registration of a trade-mark is that provided for by section 80, which enacts as follows: "The time of the receipt of any trade-mark at the Patent Office for registration shall be noted and recorded, and copies of the trade-mark and of the date of the receipt thereof, and of the statement filed therewith, under the seal of the Patent Office, certified by the Commissioner, shall be evidence in any suit in which such trade-mark shall be brought in controversy." A certified copy of the trade-mark, of the date of its receipt, and of the statement filed therewith—that is, a copy of everything filed and recorded, and of the memorandum of the date of the receipt thereof—is made evidence. But such copy is evidence only that what is shown by it to have been filed was filed. It is not evidence that anything required by the statute to be filed, and not shown by the certificate or by the statement annexed to it to have been filed, was filed. The certificate of the Commissioner, that the parties "otherwise complied" with the act, cannot be substituted for the judgment which a court must pass as to whether there was a declaration filed, and one under oath, and one complying, as to its contents, with the statute. The court is to judge from the "statement" whether the requirement of recording "the class of merchandise and the particular description of goods comprised in such class, by which the trade-mark has been or is intended to be appropriated," has been complied with, and whether the requirement of recording a description of the mode in which the trade-mark "has been or is intended to be applied and used" was complied with. So it is equally for the court to judge whether the requirement as to the filing of the proper declaration was complied with. The general certificate of the Commissioner cannot be taken as evidence on the subject.

The certificate that the trade-mark has been duly registered and recorded in the Patent Office, and will remain in force for thirty years from the day specified, adds no force to the effect of the certificate. The statute says that the thirty years shall run from the date of the *registration;* that the time of the receipt for registration shall be recorded, and that the certificate shall cover a copy of the date of the receipt. The date given in the certificate as the date from which the thirty years is to run is to be regarded as intended for the date of registration, and the date previously named in the certificate is the date of the receipt for registration. In this view the certificate intends to show when the trade-mark will expire, and the certificate that it has been registered and recorded, and will remain in force for thirty [years from the day named, is only equivalent to saying that such day is to be taken as the date of the registration. The date given in the certificate as the date of deposit for registration is not regarded by the certificate as the date of registration and recording.

On these grounds alone the motion for an injunction now made must be denied, without considering any of the other points raised.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

J. L. SMITH *et al. vs.* REYNOLDS & JACOBS.

[*In Equity.—Before Blatchford, Judge.—Decision July* 27, 1872.]

REQUISITES IN REGISTRATION OF TRADE-MARKS—NOVELTY IN TRADE-MARKS—WHAT MAY BE A TRADE-MARK.

Causing the name of the firm which claims a trade-mark, and its place of business, to be recorded in the Patent Office is a sufficient compliance with the first requirement of section 77 of the act of 1870, without specifying the names of those who compose the firm.

To designate "paints" as the goods for which a trade-mark is to be appropriated is sufficient, without a more particular description.

The figure of a crown used as a trade-mark for paints may indicate to buyers and dealers, by association, the origin and ownership of the same, and is of itself a lawful trade-mark.

The case of R. W. English, Com'rs Dec. 1870, p. 142, and that of the Dutcher Temple Company, ibid, 1871, p. 248, cited and approved.

Registering a figure as a trade-mark for paints in general, without any restriction as to the kind, gives no title to it if the same figure has been previously used, in connection with words or other figures, as a trade-mark for any particular kind of paint.

A trade-mark must stand or fall as a whole, and the registry of one cannot be sustained, like a patent, for a part of it, though void as to the rest.

This was a suit brought by the firm of J. Lee Smith & Co. against Robert Reynolds and Samuel Jacobs, doing business as Reynolds & Jacobs.

The facts are sufficiently stated in the opinion.

The case came up on a motion by complainants for an injunction.

[*J. Hough*, for complainants.
F. Blount, for defendants.]

BLATCHFORD, *Judge:*

The 77th section of the act of July 8, 1870, (16 U. S. Stat. at Large, 210,) provides, "that any person or firm domiciled in the United States * * * and who are entitled to the exclusive use of any lawful trade-mark, or who intended to adopt and use any trade-mark for exclusive use within the United States, may obtain protection for such lawful trade-mark by complying with the following requirements, to wit: First, by causing to be recorded in the Patent Office the names of the parties, and their residences, and place of business, who desire the protection of the trade-mark. Second, the class of merchandise, and the particular description of goods comprised in such class, by which the trade-mark has been or is intended to be appropriated. Third, a description of the trade-mark itself, with fac-similes thereof, and the mode in which it has been or is intended to be applied and used. Fourth, the length of time, if any, during which the trade-mark has been used. Fifth, the payment of a fee of twenty-five dollars, in the same manner and for the same purpose as the fee required for patents. Sixth, the compliance with such regulations as may be prescribed by the Commissioner of Patents. Seventh, the filing of a declaration, under the oath of the person or of some member of the firm, * * * to the effect that the party claiming protection for the trade-mark has a right to the use of the same, and that no other person, firm, or corporation has the right to such use, either in the identical form, or having such near resemblance thereto as might be calculated to deceive; and that the description and fac-similes presented for record are true copies of the trade-mark sought to be protected."

By section 78, such trade-mark is to remain in force for thirty years from the date of such registration, "and, during the period that it remains in force, it shall entitle the person, firm, or corporation registering the same to the exclusive use thereof, so far as regards the description of goods to which it is appropriated in the statement filed under oath, as aforesaid, and no other person shall lawfully use the same trade-mark, or substantially the same, or so nearly resembling it as to be calculated to deceive, upon substantially the same description of goods."

Section 79 provides, that if any person or corporation shall "reproduce, counterfeit, or imitate any such recorded trade-mark, and affix the same to goods of substantially the same descriptive properties and qualities as those referred to in the registration," the party aggrieved shall "have his remedy according to the course of equity, to enjoin the wrongful use of his trade-mark, and to recover compensation therefor, in any court having jurisdiction over the person guilty of such wrongful use;" and that "the Commissioner of Patents shall not receive and record any proposed trade-mark which is not and cannot become a lawful trade-mark, * * * or which is identical with a trade-mark appropriated to the same class of merchandise and belonging to a different owner, and already registered or received for registration, or which so nearly resembles such last-mentioned trade-mark as to be likely to deceive the public."

On the 30th of December, 1870, the firm of J. Lee Smith & Co. filed in the Patent Office a petition, signed by themselves, in which they are described, as "of No. 276 Pearl street, in the city of New York, county and State of New York, and engaged in the manufacture and sale of paints at said New York," and in which they represent "that they have used for fifteen months last past, are now using, and have the right to use a trade-mark for said paints, which is correctly represented and set forth in the annexed fac-simile and statement;" and pray "that said trade-mark may be registered and recorded in the Patent Office according to law." The "statement" thus referred to was in these words: "To all whom it may concern: Be it known that we, J. Lee Smith & Co, of the city of New York, of the county and State of New York, use a trade-mark for paints, of which the following, together with a fac-simile hereto attached, is a correct description. The said trade-mark consists of the illustration of a crown, as is clearly shown in the fac-simile. The crown may be of the shape and style shown, or of any other suitable form. It is applied as a brand, by stencil-plate or die, to the casks, cases, or vessels containing the said paint, printed upon labels or wrappers which are applied to said cases or vessels, or upon the business-cards, notices, or placards advertising the paints to the public." Accompanying these papers was an oath made by a person described therein as "a member of the firm of J Lee Smith & Co., and representing the firm of J. Lee Smith & Co., the above-named petitioner," and setting forth, "that, according to the best of his knowledge and belief, the description and fac-simile herewith presented for record are true copies of a trade-mark sought to be protected; that they have a right to the use of the said trade-mark; and that no other person, firm, or corporation has the right to such use, either in the identical form, or having such near resemblance thereto as might be calculated to deceive."

The Patent Office required the applicants to strike out from the "statement" these words: "The crown may be of the shape and style shown, or of any other suitable form," and they were stricken out by them. As thus amended, the trade-mark was registered on the 21st of February, 1871. Thereupon, under that date, the Patent Office issued a certificate, certifying that "J. Lee Smith & Co., of New York, New York, did, on the 30th day of December, 1870, deposit in the United States Patent Office, for registration, a certain trade-mark for paints, whereof a copy is hereto annexed; that they filed therewith the annexed statement; and having paid into the treasury of the United States the sum of twenty-five dollars, and otherwise complied with the act of Congress in such case made and provided, the said trade-mark has been duly registered and recorded in the said Patent Office, and will remain in force for thirty years from the twenty-first day of February, one thousand eight hundred and seventy-one." The "statement" and fac-simile are annexed to the certificate. The fac-simile shows one drawing of a crown.

The bill in the case is founded upon the statutory

right thus claimed to have been acquired to said trade-mark, and is filed by the members of the said firm of J. Lee Smith & Co., and alleges that the defendants are selling paint contained in casks, cases, or vessels, upon which said trade-mark, or imitation thereof bearing such near resemblance thereto as is calculated to deceive, is applied as a brand by stencil-plate or die, or by labels or wrappers, upon which said trade-mark, or said imitation thereof, has been printed, and have also used the said trade-mark, or said imitation thereof, upon the business-cards, notices, and placards advertising the defendants' paints to the public. The plaintiffs move for an injunction to restrain such use of such trade-mark.

Full proofs have been taken for final hearing on both sides, and on them the motion is made.

It is objected to the validity of the registration in this case that the names of the parties and their residences and place of business were not caused to be recorded in the Patent Office by the parties desiring the protection of the trade-mark. It is insisted that the name of each of the individual partners composing the firm and his place of residence should have been set forth. But, it is to be noted that this statute gives the privilege to any "firm domiciled in the United States," as well as to any person domiciled therein. In this view, in the case of a firm, it is sufficient if the name of the firm is given, provided the trade-mark is claimed by the firm as a firm. Giving the name of the firm is giving the name of the party desiring protection. The statute requires the declaration, under the oath of some member of the firm, to be to the effect that "the party claiming protection"—that is, the firm—has a right to the use of the same, &c. Also, setting forth that the firm is "of number 276 Pearl St., in the city of New York, county and State of New York, and engaged in the manufacture and sale of paints at said New York," is a sufficient statement of the residence and place of business of the firm, as the party desiring the protection.

It is also objected that, although the registration papers specify "paints" as the class of merchandise, yet there is no designation of the particular description of goods comprised in such class, to which the trade-mark is or is to be appropriated. But the parties describe themselves as engaged in the manufacture and sale of paints generally, which they state they use and have a right to use, and desire to have protected. They cover the whole class of merchandise called "paints," and every description of goods comprised in such class. That being clearly stated by them, any further specification was unnecessary.

It is insisted by the defendants that the illustration of a crown applied as set forth in the "statement" is not the subject of a lawful trade-mark, because it does not indicate the true origin or ownership of the paints. The statute protects only that which is or can become a lawful trade-mark. It declares that the mere name of a person, firm, or corporation cannot be a lawful trade-mark; but that such name, accompanied by a mark sufficient to distinguish it from the same name when used by other persons, may be a lawful trade-mark. *A fortiori*, a mark or device distinguishable from other marks, when used in connection with a particular article, may designate, by association in the minds of purchasers of and dealers in such article, the origin or ownership of such article, as being in a particular manufacturer, and thus be a lawful trade-mark. (*Delaware & Hudson Canal Co.*, vs. *Clark*, 13 Wallace, 311.) The practice of the Patent Office, in registering trade-marks, under the act of 1870 has been in accordance with this view, and is properly so. It has, on discussion, authorized as lawful trade-marks the letter X applied to brooms, and the letter D encompassed by the figure of a lozenge applied to loom-temples. (Commissioner's Decisions, 1870, p. 142; and 1871, p. 248.) In the case of *Morrison* vs. *Case*, (9 Blatchford, C. C. R., 548,) it was held that, under the act of 1870, the words, "The Star Shirt," and those words with the device of a six-pointed star used in connection therewith, and the device in words, "The * Shirt," used as a trade-mark in connection with the manufacture and sale of men's and boys' shirts, and taken by dealers as designating the shirts made by a particular manufacturer, are a lawful trade-mark. There can be no doubt that a simple illustration of a crown, to be applied in use as designated in this case, in connection with paints, to indicate their origin and ownership, is a lawful trade-mark under the statute.

The principal defense set up in the answer of the defendants is that, in October, 1868, the "Bridgewater Paint and Color Works Co.," then doing business in the city of New York, made a label, brand, or trade-mark, of a crown, which was used for white lead alone, of a particular quality and description, manufactured by said company for I. I. Vogt & Co., of Cleveland, Ohio, and the same being an imprint on paper, consisting of the words "Golden Crown," with the illustration of a crown underneath them, and underneath the crown an illustration of a heraldic coat of arms, and on the left of the coat of arms the words "Manufactured expressly for I. I. Vogt & Co.," and on the right of the coat of arms, "Number 32 Public Square, Cleveland, Ohio," and underneath the whole the words "White Lead;" that the said company, of which the defendant, Reynolds, was one of the corporators, having been dissolved, its business in the manufacture of paints was continued by the defendant Reynolds, and one Jacob Israel, under the name of Reynolds & Co., and the same quality of white-lead was continued to be manufactured by them, and was distinguished by a brand, label, or die, consisting of an inner circle, within which, at the top, was the illustration of a crown, and underneath that the letters "X X," and underneath those letters the words "Reynolds & Co.," and outside of such circle a second circle, and in the ring between the two circles the words, circumferentially, "Pure English White Lead;" that the copartnership of Reynolds & Co. having expired January 1st, 1872, the defendants, under the firm of Reynolds & Jacobs, continue the manufacture of the same quality of white lead, using the same brand, die, or label which had been used by Reynolds & Co. since February, 1870, as a trade-mark; and that, in February, 1870, the defendant, Reynolds, procured the brand to be made of such trade-mark for Reynolds & Co., which they and the defendants have ever since constantly and uninterruptedly used to designate a particular quality of white lead manufactured by them.

The defendants have used the illustration of a crown as a device, and as part of a brand or label, on packages containing white lead ground in oil, and on packages containing *blanc de zinc*, or zinc ground in oil. Although the device of a crown was adopted and used by the defendant, Reynolds, in the shape in which the defendants now use it, in February, 1870, and the plaintiffs did not file their first statutory papers in the Patent Office until December, 1870, yet the plaintiffs show that they adopted and used their device of a crown as early as December, 1869. In reply to this the defendants show the use by the Bridgewater Paint and Color Works Company in 1868, and from that time until its dissolution, of the device of a crown on three different forms of label, put upon packages containing paints made by them. One is the form hereinbefore referred to as set forth in the answer. Another contained the simple device of a crown and the words "Pure English White Lead. I. I. V. & Co." The other contained an illustration of a heraldic coat of arms, resembling very much the coat of arms of the Crown of Great Britain, embodying the device of a crown as an integral part of it, and the words "Pure English White Lead. Ground expressly for I. I. Vogt & Co., 32 Public Square, Cleveland, Ohio." They also show that in November, 1869, the defendant, Reynolds, purchased from the Bridgewater Paint and Color Works Company their paints, materials, and labels, and the right to use them, including the labels embodying the device of a crown. The defendant, Reynolds, has since that time continually, in his firms, used the device of a crown on some description of paints. The brand or label of the form used by the defendant, Reynolds, in his firms since February, 1870, is as near a resemblance to one at least of the three forms of label used by the Bridgewater Paint and Color Works Company as it is to the device shown in the plaintiffs' registration, and the latter is as near a resemblance to such Bridgewater label as it is to the brand or label of the defendants. It is manifest, therefore, that the plaintiffs had, at the time they registered the illustration of a crown as a trade-mark for paints generally, no right to the broad use of it for paints generally, the defendant, Reynolds, and his then firm having the right to the use of it, at least for the classes of paints for which it had been used as a label or trade-mark by the Bridgewater Paint and Color Works Company, and by the defendant Reynolds and his firm of Reynolds & Co., prior to the time of such registration. The plaintiffs registered it and claimed the right to use it as a trade-mark for paints generally, for all descriptions of paints, without reservation or exception. Whatever grant there is of it, by reason of the registration made by the plaintiffs, is of the right to use it for paints of all kinds, for the class of merchandise called "paints." The plaintiffs have not restricted themselves to any particular descriptions of goods comprised in such class. Their registration must stand or fall as a whole for that to which they declare in their registration they intend to appropriate it. There is no provision in regard to trade-marks, such as there has been and is in regard to patents for inventions, that a suit may be maintained where the grant is valid as to a part but not as to the whole. It follows, therefore, that the registration of this trade-mark in the form in which it was made conferred no right on the plaintiffs, in respect to anything purporting to be covered by it.

The motion for an injunction must for these reasons be denied.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

22,946.—*Meat-Mincer.*—Granted to ALBERT W. HALE, March 15, 1859. Hearing February 26, 1873.

22,963.—*Bottle-Stopper Fastenings.*—Granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864. Hearing February 26, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BADER, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON E. PEIRCE, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD REBH, March 22, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 28, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,580.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859 Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GERRER, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GERRER, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMONY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,685.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,824, 4,825, and 4,826, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GEREN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GEREN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,963, June 6, 1865; No. 1,960 having been ordered to again reissue, No. 5,259, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Oyster-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MERSHON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,889.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,893.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,930.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,937.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,976.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tires.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.* Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,096.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,102.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,132.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WERSON, May 24, 1859. Hearing May 7, 1873.

24,190.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to E. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

EXTENSIONS GRANTED.

23,060.—*Improved Electro-Magnetic Fire-Alarm Apparatus*, granted to MOSES G. FARMER, February 22, 1859.

Claim.—The combination of two or more key-boards of fire-alarm strikers, constructed and operating substantially as described, with one or more electro-telegraphic alarm-machines in the same closed electric circuit, or in dependent closed circuits, by means of a mechanism that will make and break a circuit, as herein shown and described.

23,027.—*Improved Machine for Crozing and Chamfering Barrels*, granted to HIRAM LITTLEJOHN, March 1, 1859. (WILLIAM GURLEY and ELISHA WATERS, executors.)

Claim.—Crozing and chamfering barrels, kegs, or casks by turning the bulging cylinders of staves in upon or against suitable rests or supports, and around rotating cutters which turn in opposite direction to and describe circles of less diameter than the inside of the ends of the cylinders of staves; the cutters and the rests being so arranged together, and one or both of them made movable, that the cylinders of staves can be conveniently applied to and removed from the rests and cutters, substantially as herein set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date February 25, 1873.]

6,456.—*Ottoman.*—CHRISTIAN J. CONRADT, Baltimore, Md., assignor to G. S. GRIFFITH & Co., same place.

6,457.—*Ottoman.*—JOHN D. LADD, New York, N. Y., assignor to THE NEW YORK OTTOMAN AND HASSOCK COMPANY, same place.

6,458.—*Chair-Frame.*—ELISHA SEYMOUR and CHARLES E. SHATTUCK, Clinton, Iowa.

6,459.—*Baptismal Font.*—ANNIE E. VAN WERT, Binghamton, N. Y.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date February 25, 1873.]

1,142.—*Eye-Salve.*—WILLIAM T. BLOW, St. Louis, Mo.

1,143.—*Pearl Wheat.*—JAMES B. CLOW, Allegheny City, Pa.

1,144.—*Compound for Cleaning and Dressing Harness.*—SAMUEL E. COX & Co., New York, N. Y.

1,145.—*Pickles and Sauces.*—CRANE & COMPANY, New York, N. Y.

1,146.—*Cutlery.*—NATHAN JOSEPH, San Francisco, Cal.

1,147.—*Salve.*—GABRIELLA LONG, Keytesville, Mo.

1,148.—*Baking-Powder.*—MOODY BROTHERS, Indianapolis, Ind.

1,149.—*Plows.*—E. REMINGTON & SONS, Ilion, N. Y.

1,150.—*Gin.*—WHITING P. SANGER, New York, N. Y.

1,151.—*Pile Remedy.*—M. H. STONER, Skaneateles, N. Y.

1,152.—*Printed Publications.*—DAVID WILLIAMS, New York, N. Y.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date February 25, 1873.]

ORIGINAL PATENTS.

136,123.—*Wagon-Seat.*—JOHN G. ARMSTRONG and JACOB S. ARMSTRONG, Reed township, Seneca county, Ohio.

The bearing-blocks are so constructed that the compensating-rods may have horizontal movement, as the seat is depressed.

Claim.—1. The compensating-rods E, the lock-piece H, and the recess K, constructed and operated substantially as described, and for the purpose set forth.

2. The seat A, the spiral springs J, the strip C, the compensating-rods E, the block D, the locked piece H, and the hooked plate I, constructed substantially as described, and for the purpose set forth.

136,124.—*Machine for Making Sheet-Lead.*—DAVID G. BATCHELDER, Salem, Mass.

In the end of a stationary tubular plunger is fastened a slotted carrier, in the face of which is a dovetailed groove to receive the band-forming plate. Lead is poured into the movable receiver and allowed to set, when it is forced up, and the plunger fitting tightly in the receiver, the lead is caused to escape through the slotted plate in the form of a sheet.

Claim.—1. The arrangement and combination of the sheet or band forming slit or slotted plate D, the movable metal-receiver B, and the stationary tubular plunger C.

2. The combination of the movable chambered and grooved carrier E (for receiving and supporting the sheet or band forming slot-plate D) with the movable metal-receiver B and the stationary tubular plunger C.

3. The chambered and grooved carrier E, the separate sheet or band forming slot-plate D, the movable metal-receiver B, and the stationary tubular plunger C, all constructed and arranged together and applied to a frame, A, in manner and to operate substantially as and for the purpose as hereinbefore explained.

136,125.—*Wash-Boiler.*—MATTHEW MCPHERSON BEARD, Canton, Miss.

A raised partition or bottom forms a steam-chamber, to which perforated tubes are attached, and by which the steam is introduced upon and into the clothes to be washed. The bottom of the boiler has an opening, with a neck or flange fitted to a smaller boiler, into which the water is introduced and the steam generated and conducted to the upper one through the perforated tubes.

Claim.—The vessel A, supplied with the neck a, passage or opening a^1, chamber a^2, and punctured tubes C C', substantially as and for the purpose set forth.

136,126.—*Railroad Switch.*—HENRY BLACK, Lewisburg, Ohio.

The switch is operated from an approaching car or locomotive carrying an arm which projects therefrom and comes in contact with the curved operating-levers, the lower ends of which are cam-shaped and set upon rollers carried in a yoke, said yoke also acting as a guide for the operating-levers. The yokes are connected by rods to a pivoted plate, which is connected to the switch-rails. The operating-levers are returned to their vertical position by means of a spring.

Claim.—1. The operating levers j j^2 j^3 j^4, constructed with cam-extensions j^1 and curved, as described, to engage properly with tappet-bars z on locomotives and cars of different heights, as herein set forth.

2. The cam-levers j j^2 j^3 j^4 and horizontal hinged plates m, constructed as described, in combination with the yokes k k^2 k^3 k^4, operating-rods l l^2 l^3 l^4, and connections i n for imparting motion to the switch-rails from tappets z on the locomotives and cars, in the manner herein specified.

3. The cam-levers j j^2 j^3 j^4, adapted to act on the yokes k k^2 k^3 k^4, in the manner described, and restored to their normal position by the spring c when released.

4. The yokes k k^2 k^3 k^4, connected adjustably to the operating-rods, and permitting independent movement of the latter.

5. The jacks J, constituting bearings for the spring-levers and guides for the yokes, and constructed substantially as described and shown.

136,127.—*Bustle.*—MOSES K. BONTHER, Jackson, Mich.

The bustle has ordinary horizontal bows or springs. Midway between the sides and back two other bows, attached vertically to the horizontal bows, are bent under the lowermost bow, then forward and up and crossing each other, are attached to the waistband. A spiral spring is placed between the middle bow at the back and the cross-bows where they intersect. There is an adjusting-strap at the back.

Claim.—1. The arrangement of the band A, springs B, adjusting-cords C, expander D, springs E, brace F, adjusting-strap G, when the parts are combined substantially as described, and for the purposes set forth.

2. In combination with the above-named parts, and in an adjustable bustle constructed as described, the spiral or coil spring H, for the purposes specified.

136,128.—*Swimming-Bath.*—PATRICK BRALLEY, Oakland, Cal.

A system of pipes are laid in the bottom of the basin beneath a floor formed of strips of wood, the pipes communicating with the boiler through which steam is forced. A pipe leading from the boiler to the bottom of the basin is designed to assist in cleaning the bottom by agitating the water and loosening up the sediment by the introduction of steam. A gate is used to allow the egress of the water, and a propeller to force pure water from the outside into the bath.

Claim.—1. The basin A, constructed with a slatted floor to admit the circulation of water up through the same, when underlaid with a steam-pipe, D, and operated by means of the boiler K and steam-pipe E, substantially as and for the purposes set forth.

2. The propeller N, and gates V and S, and the steam-pipe G, when operated substantially as and for the purpose set forth.

136,129.—*Rendering Apparatus for Fats, Offal, &c.*—AMOS BROADNAX, Mont Clair, N. J.

An arched or reverberatory furnace and a steam boiler or generator, arranged so that the fire is prevented from direct contact with said boiler, and in combination with a steam-rendering apparatus.

Claim.—1. An arched or reverberatory furnace and a steam-boiler or generator arranged so that the fire is prevented from direct contact with said boiler and in combination with a steam rendering apparatus, whereby sufficient heat to generate the steam of the desired temperature is obtained in the boiler-chamber, and a high heat for the consumption of the gases and vapors is obtained in the fire-chamber, substantially as set forth.

2. A reverberatory furnace, made to concentrate and retain the heat and prevent the direct contact of the fire, as aforesaid, in combination with a rendering pan, kettle, or digester fitted with a pipe arranged to deliver or draw the gas and vapor from the digester in said furnace by the draft of the chimney leading from said furnace, when said rendering-kettle is opened or closed, as the case may be, in the manner substantially as described, and as shown in Plate 2 of the drawing.

3. A rotating rendering apparatus, tank, or digester combined with an arched or reverberatory furnace made to retain and concentrate the heat to consume or destroy the gas or vapor set free in the process, and at the same time render or refine the lard or tallow, or crisp and dry the scrap or refuse, by the dry heat of the furnace, substantially as described, and as shown in Plates 3 and 4 of the drawing.

4. A rotating rendering apparatus, tank, or digester combined in a closed chamber in connection with an arched or reverberatory furnace so as to envelop the whole tank in the heat thereof for the more effectually and economically cooking and drying the material treated, substantially as described and shown in Plates 3 and 4.

5. A rotating rendering apparatus, tank, or digester set in a chamber connected with a furnace and fitted with a stationary pipe or pipes, by which the steam, gas, or vapor can be drawn out as fast as liberated while the said tank, digester, or apparatus is in motion or at rest, as the case may be, and consumed or destroyed in the furnace, substantially as shown in Plates 3 and 4 of the drawing.

6. A rotating rendering apparatus, tank, or digester fitted with a perforated diaphragm plate or plates, by which the grease and water can drain off the top of the scrap or refuse to the bottom of said apparatus without being compelled to percolate down through the scrap or refuse, as heretofore, in the manner set forth, and as shown in Plates 3 and 4 of the drawing.

7. A steam rendering apparatus, tank, or digester combined with or connected to a steam tight receiver, into which the refuse of the tank can be drawn, drained, deodorized, and dried without exposing the same to the atmosphere, so as to create a nuisance, as heretofore, as shown in Plate 5 of the drawing.

8. Treating the soup or refuse, or either of them, from a rendering tank, apparatus, or digester or other sour animal matter, while in a closed receiver, with superphosphate of lime, for the purpose of precipitating and fixing the ammonia contained therein, substantially as described, and as shown in Plate 5 of the drawing.

9. Treating the refuse and soup, or either of them, from a rendering tank, apparatus, or digester, while in a closed receiver, with chlorine or other deodorizing gas or vapor, for the purpose of decomposing and deodorizing the offensive gases set free in the decomposition or treatment thereof to avoid making a nuisance, as set forth, substantially as described, and as shown in Plate 5 of the drawing.

10. Treating the refuse from a rendering apparatus or digester, while confined in a closed receiver in combination with said digester, with superheated steam or air, for the purpose of drying the same before exposing it to the open atmosphere, as set forth, and as shown in Plate 5 of the drawing, substantially.

11. A closed receiver to receive the refuse from a rendering tank, apparatus, or digester, and connected thereto, or to receive any other sour animal matter, fitted with a valve at one end and an escape-pipe at the other, so arranged with reference to each other as to create a draft or current from the valve to the pipe, by which the gases, if any, will be drawn up the pipe where the valve is open, as set forth, and as shown in Plate 5 of the drawing.

12. A closed receiver to receive the refuse or animal matter, as aforesaid, fitted with an escape-pipe combined with a chlorine-gas pipe or a pipe to supply a jet of chlorine, or other deodorizing gas or vapor to deodorize the escaping gases while the refuse is under treatment, as shown and described, and as illustrated by Plate 5 of the drawing.

13. A closed receiver in connection with a rendering-tank to secure the refuse, &c., as aforesaid, fitted with a nozzle to supply the superphosphate of lime or other chemicals used in the treatment of said refuse, as aforesaid, substantially as described, and as shown in Plate 5 of the drawing.

14. A closed receiver to receive the refuse or animal matter, as aforesaid, combined with an apparatus to supply chlorine or other decomposing or deodorizing gas or gases to said receiver and its appurtenances to deodorize the water, refuse, or gas and vapor set free in the operation of said receiver.

136,130.—*Metallic Cartridge.*—BETHEL BURTON, Brooklyn, N. Y., assignor to W. G. BURTON, same place.

Claim.—The improved cartridge-case herein described, drawn from sheet metal having its fibers in a general longitudinal direction, gradually bent and rounded at the base, and having a cannelure and shoulder, substantially as and for the purposes set forth.

136,131.—*Sulky-Harrow.*—WILLIAM CORBAN BYE, Collette, Ind., assignor to himself and JACOB BOSWORTH BLAZER, same place.

The harrow is supported upon a pair of wheels by means of chains, which supply the means of draft. Behind the axletree is mounted a rock-shaft, having arms which are connected by chains to the harrow-frame. By partially rotating this rock-shaft the harrow is elevated from the ground.

Claim.—The harrow E, suspended from the truck by the chains F and G, in combination with the lifting-chains H, arms I, and rock-shaft J K, substantially as specified.

136,132.—*Water-Tank for Railway Stock-Cars.*—JAMES B. CALKINS, Pacific, Mo.

A tank is secured to the truck and connected with the tender of the engine by pipes, which allows of both tender and tank to be filled with water at the same time. A pump is placed on top of the tank, and connects, by means of pitman and crank, with a wheel, over which runs a belt, which also passes around a fixed pulley upon the axle of the truck, the belt passing through a tight compartment in the tank; a pipe descends nearly to the bottom of the tank from the pump; the water is forced through hose to the different cars of the train.

Claim.—The tank A, pump B operated by axle c, pulleys c^1 c^2, belting C, top shaft c^3, crank-disk d, pitman d^1, when arranged to operate as and for the purpose set forth.

136,133.—*Loom.*—AUGUSTUS CANIS and FREEMAN HIGGINS, Manchester, N. H.

The protector-rod extends across the loom, and carries at each end a finger, bearing against the shuttle-binder, and also a horizontal hook-arm, which operates the stop mechanism just before the lay completes its backward movement, in case a box opposite that from which a shuttle is about to be thrown is already occupied by a shuttle or the picking operation fails and the shuttle remains in the box. The weft-stop mechanism consists of two finger-arms, one on each side of the loom, pivoted to the front of the lay, and vibrating-forks, pivoted to the back of the lay, which are operated by a cam so as to feel for the weft-thread, pressing it, if present upon the grid and depressing the grid, by which means the finger is raised above a sliding catch in the breast-beam, which catch is connected with a rocker-shaft on the beam, and has a cranked end bearing against the shipper-lever. Each vibrating-fork is operated through an intermediate lever by a cam on the crank shaft. To prevent the action of the stop motion on the side of the loom, from which a shuttle has been picked, a short rocker-shaft is placed near each end of the lay, carrying at one end a finger operated by the shuttle-binder, and at the other end an arm, so arranged as to press up the finger of the grid above the sliding catch in the breast-beam. The friction driving-pulley is provided with a lubricating device, as set forth in the claim.

Claim.—1. The rocker-shaft n held in normal position by a suitable spring, and carrying at its opposite ends the arms o p, outward pressure of either of which by a shuttle-binder carries a hook, r, into position to actuate the lever u and knock off the shipper-lever x, the arrangement and operation being substantially as described.

2. The two pivoted finger-arms p^3 A^3, each located and pivoted as shown and described, and each having combined with it the lifting and falling prongs A^3 l^3, and there being in line with each a slide-catch, p^2, the arm, if down, striking the catch p^1, turning the shaft z^3, and knocking off the shipper-lever, and, if up, passing over such catch without moving it.

3. In combination with the arms p^3 A^3, arms or inclines m^3 n^3, which are thrown up to actuate the prongs A^3 l^3 when the lathe beats up, and which are thrown down before the lathe beats back, and arms p^3 and their inclines p^2, substantially as and for the purpose described.

4. The two independent rocker-shafts u^3 z^3, operated by the shuttle-binders, each having an arm, w^3 or x^3, operating to hold the finger arm p^3 or A^3 in position to pass over the catch p^2, when the shuttle has been thrown from a box on the same side with said shaft, and each releasing the finger-arm (so that it will strike the catch if not raised by the pressure of the yarn) when a shuttle is thrown into the adjacent box.

5. The clutch or friction-driving pulley y made with the socket d^2 and oil-hole e^2, a stationary pivot, f^2, extending into the socket, and said pivot, having an axial oil-passage, f^3, leading through it and into a vertical oil-passage, n^3, in the flange m^3 of the pin A^3, all substantially as shown and described.

136,134.—*Cartridge-Retractor for Revolving Fire-Arms.*—WILLIAM CLEWS, Ilion, N. Y.

Hooked-bar, sliding in the frame, operated by spring catch attached to the hammer, said catch being automatically released before the hammer reaches the half-cock, by riding over the incline or bevel on a projection of the hook-bar.

Claim.—1. The cartridge-shell retractor D, in combination with the hammer C, arranged, substantially as described, so as to automatically disengage itself from the hammer and return to position during the lifting of the hammer, for the purpose specified.

2. The automatic cartridge-shell retractor D, drawn back by the hammer and arranged, as herein described, so as to withdraw the cartridge-shell at or before the time the hammer reaches half-cock, and then be separated from the hammer, leaving the latter free in rising from half to full cock, substantially as herein specified.

3. The cartridge-shell retractor D, provided with the projection c having inclined surfaces g i, in combination with the spring coupling-pin or catch d in the hammer C, substantially as and for the purpose herein specified.

4. The combination of the cam-lever n and its pawl l with the cartridge-shell retractor D, so that the said retractor, while springing forward into position, moves the cylinder, substantially as and for the purpose herein specified.

5. The dog s, arranged substantially as described, or its equivalent, in combination with the hammer, and operating so that the turning movement of the cylinder is made or completed each time by the hammer just before it reaches full-cock, substantially as and for the purpose herein specified.

136,135.—*Washing Machine.*—THOMAS CLUCAS, Jr., St. Louis, Mo.

On a suitable frame a wash-box is hung on journals so that a swinging motion may be given to it; a weight is hung below as a counterpoise; the sides and bottom of the box are ribbed and the ends rounded. A close fitting door makes the box water tight.

Claim.—1. The receptacle A, when the same is provided with a flat bottom and vertical circular ends, in combination with the counterpoise B and frame C, as and for the purpose set forth.

2. The receptacle A, when the same is provided with a flat bottom and vertical circular end and ribs a a^1 a^2, in combination with the frame C and counterpoise B, as and for the purpose set forth.

136,136.—*Valve-Lubricator.*—JAMES COCHRANE, New York, N. Y.

Lubricating material is injected at intervals between the surface of the valve and valve-seat, the valve and valve-seat having channels and grooves for the purpose of spreading, retaining, and forming a passage for the lubricant.

Claim.—1. The combination of an injector or pump with the perforations a a, substantially as and for the purposes as herein-before set forth.

2. The combination of an injector or pump and perforations a a with the grooves or channels c c and the perforations b b terminating in a plug or stop-cock, substantially as and for the purposes as hereinbefore set forth.

3. The combination of an injector or pump and perforations, a a, and grooves or channels c c and perforations b b with the conduits J J, substantially as and for the purposes as hereinbefore set forth.

4. The combination of an injector or pump and perforations, a a, and grooves or channels c c and perforations b b and conduits J J with the cocks or safety-valves N N, substantially as and for the purposes as hereinbefore set forth.

136,137.—*Distilling Together Spirits of Turpentine and Alcoholic Liquids.*—WILLIAM CONFIELD, Chicago, Ill.

Claim.—The combination of grain or other similar substance in a fermenting state with spirits of turpentine, to form a chemical union, and then distilling the mixture by a continuous distillation to produce hydrated spirits of turpentine and camphene by one and the same process, as specified.

136,138.—*Hollow Auger.*—COLUMBUS W. CORE, Carlinville, Ill.

A series of separate disks, having cutting-blades formed therein, interchangeably used on the same shank.

Claim.—1. The combination of the body or chuck A with the cutter B, constructed substantially as described, for the purpose set forth.

2. The cutter B, formed in one solid piece, having the central opening d and cutting-blades, constructed and arranged substantially as described.

136,139.—*Blacksmith's Hammer.*—GARRET B. CUBBERLEY, Milwaukee, Wis.

The hammer and its operative parts can be moved in a line parallel with the anvil.

Claim.—1. Hammer B, pulleys C, shaft R, handle S, spring E, connecting-rods G G, straps D, and connection M, in combination with levers F and H, connecting-rod I, and frame A, substantially as described.

2. Rollers L and handle K, substantially as described, in combination with the above.

136,140.—*Bucket.*—JOHN V. DEUELL, Brooklyn, N. Y., assignor to himself, JOHN JENKINS, and PETER C. PROVOST, same place.

A piece of wood, thick enough to form the bottoms of two buckets, is turned to the desired form, and then divided diagonally, so as to form bottoms thicker upon one side than the other, so that a spigot placed upon the lower side shall completely drain the vessel.

Claim.—1. The within-described disk or closed wooden vessel A C D, adapted to be drawn from in an upright position, and having its bottom D inserted with an inclined upper face, so as to serve as and for the purposes herein set forth.

2. The hooped tapering vessel A, C, D, and E, with the upper face of the base D standing inclined to the axis, and provided with the bail H adapted to fold down within the chine, as and for the purposes herein specified.

136,141.—*Knob-Latch.*—JAMES M. A. DEW, Chicago, Ill.

The follower is provided with a long tubular bearing, which projects through a similar larger tube cast to the back plate of the lock. Through this first mentioned tube the knob-spindle passes, and to the outer extremity of the larger tube is attached the knob-rose.

Claim.—The combination and arrangement of the sleeve S, cast solid with the plate P, the hollow shank or follower support C and the escutcheon J, substantially as and for the purpose specified.

136,142.—*Magic Lantern.*—PHILIP DIEHL, Chicago, Ill.

A conical or cylindrical frame surrounding the lamp, and adapted to be rotated around it, carries a series of pictures or illustrations, so as, by a cord or otherwise, to have the views brought successively in front of the lens-tube for display. The instrument is designed for advertising purposes.

Claim.—The construction and arrangement, with relation to a magic lantern, of the revolving slide-frame F and cord G, substantially as and for the purpose set forth.

136,143.—*Die for Making Clips for King-Bolts.*—ARENDSE DILLENBECK, Fort Plain, N. Y.

A series of dies in a pair of blocks forge on the end of the bar the pillar and the pin. A blank containing these is then cut off on a line that shall give two horn-like projections to that end of the blank. The pillar is then clamped between other two blocks, and the two horns are then flattened and swaged in a recess in the surface of the blocks to form the plate.

Claim.—1. The dies A A with their several depressions, a, b, c, and d for producing the blank d^1, substantially as described.

2. The heading-dies B B, recessed, as described, for producing the head 4 on the pillar 3 from a forked blank, d^2, substantially as described.

136,144.—*Machine for Mixing and Kneading Dough.*—EDMUND EDWARDS, London, England.

A kneading-bar, which is the segment of a helix, an automatic locking device, and an adjustable crank or lever, all combined with the kneading-trough, mounted on standards by means of trunnions, one of which is hollow and receives through it the rotary driving-stem of the mixing-bar.

Claim.—1. The vessel or trough B mounted on standards A by means of trunnions a a, one of which is hollow and receives through it the rotary driving-stem g of the mixing and kneading bar D, in combination with the automatic locking device s s' for holding the vessel B either in an upright position or in an inclined or inverted position, substantially as described.

2. The mixing and kneading device consisting of arms D' D' and a bar, D, which is the segment of a helix, said arms D' D' being hung inside of the vessel B so as to rotate therein and operate as herein set forth.

3. The combination, with the removable stem g of the mixing and kneading device, of the adjustable crank or lever C, loop h, and set-screw i, substantially as described.

136,145.—*Device for Rolling Logs.*—TEMPLE EMERY, Peshtigo, Wis.

Jointed carriers are attached to the chains, which will allow the log to be rolled over them in one direction. They are then raised to a vertical position by springs and carry the log forward as they are moved by the chains.

Claim.—1. In a log-rolling and cant-sliding machine, the sliding, folding, and self-adjustable knees D D, one or more, in combination with a skidway, and arranged to engage and roll logs and slide cants arranged upon the skidway, substantially as specified.

2. In a log-rolling and cant-sliding machine, the sliding, folding, and self-adjustable knees D D, one or more, in combination with an endless chain, by means of which the said knees are actuated substantially as and for the purposes specified.

3. In combination in a log-rolling and cant-sliding machine, the beveled friction-wheel L, the sliding shaft M provided with the beveled friction-pinion m m and the clutch n and the pivoted lever N, substantially as and for the purposes specified.

136,146.—*Child's Table-Napkin Holder and Clasp.*—DAVID ESSEX, New York, N. Y.

A napkin is spread upon a table by strips of metal and a pivoted stretcher-bar, and held onto the table-leaf by two spring-clasps.

Claim.—The combination of the edge strips B B, pivoted stretcher-bars C C, and clasp D, for spreading and securing a napkin to the table, substantially as and for the purpose herein specified.

136,147.—*Revivifying Charcoal used in Rectifying Spirits.*—CHARLES LOUIS FLEISCHMANN, Washington, D. C.

Coal soaked with fusel-oil is charged with vinegar, and after the acidification of the fusel-oil has taken place the vinegar is forced from the coal by means of water.

Claim.—The process herein described for revivifying coal by treating it with diluted acetic acid with additions of mineral acids, for the purpose substantially as described.

136,148.—*Fruit-Jar.*—HENRY C. GASKILL, Mount Holly, N. J., assignor to HAY & CO., Philadelphia, Pa.

The outside shoulder of the neck of the jar and the shoulder of the cover which bears upon the gasket are ground in such a manner as to form a tight joint.

Claim.—The ground shoulder a of the fruit-jar, and the ground shoulder b' of the cover, in combination with the gum ring C, substantially as and for the purpose set forth.

136,149.—*Adjustably-Hinged Gate.*—EMANUEL M. GEORGE, Three Rivers, Mich.

Upper and lower pintles slide vertically upon slotted guide-bars. A bell-crank latch attached to the lower pintle secures the gate at different heights, as desired.

Claim.—1. A hinge provided with a bell-crank latch, E, substantially as and for the purposes set forth.

2. In combination with the bell-crank latch E and pintle C', the slotted guide-bar B', for the purposes set forth.

3. The combination of the guide-bars B B', pintles C C', hinges D D', bell-crank latch E, and cord F, when the parts are constructed and arranged to operate substantially as set forth.

136,150.—*Apparatus for Cooling and Transporting Milk.*—EDWARD D. GIRD, Syracuse, N. Y.

A wooden casing is constructed upon an ordinary platform-car with doors in its top, and has arranged, longitudinally, within it a cylindrical milk-tank, with an ice-box encircling its upper half. A short pipe is attached to the top of the tank, through which milk is introduced into the same, and in which is arranged a follower, which moves down by its own weight so as to rest continually upon the surface of the milk as it contracts.

Claim.—1. The combination of the tank A and the ice-box P, constructed substantially as described, and for the purpose specified.

2. The milk-tank A, ice-box P, and casing D, in combination with a suitable platform-car, the whole constructed and arranged substantially as specified.

136,151.—*Buckle-Fastening.*—FRANK H. GLADDING, Providence, R. I.

The fastening is composed of two circular plates. One plate is concave, and is cut at different points from its circumference toward its center, forming a spring. A stud and slotted cross-bar are secured to this plate, and the cross-bar has on its under side two rigid projections, which look in corresponding holes in the upper plate. The upper plate is slotted to receive the cross-bar, and has a knob near the end of the slot.

Claim.—The spring-plate B, in connection with the stud or cross-bar C, and in combination with plate A, when constructed to operate as herein described, and for the purpose specified.

136,152.—*Joiner's Clamp.*—WILLIAM H. GOODCHILD, Bayonne, N. J., and SAMUEL F. HAY, of Brooklyn, N. Y., assignors to WILLIAM H. GOODCHILD, of Bayonne, N. J.

The arms with adjustable shoes are connected to the clamp-plates by pivot-joints to admit of proper bearings upon the work to be clamped.

Claim.—1. The within-described compound clamp, having adjustable and self-adjusting arms I I, with swiveling bearing surfaces or shoes J J adapted to act on each side of a joint or mortise, in combination with compressing means C, when the arms and their connections are capable of rocking to allow for inequalities or rake in the material acted upon, substantially as and for the purpose described.

2. The spring s, arranged as shown, and serving, in combination with the arms I I and suitable engaging notches or stops, to allow of adjustment of the arms, as herein specified.

136,153.—*Die-Stock for Cutting Screws.*—JOHN J. GRANT, Greenfield, Mass.

The die-stock is a plate with two handles and a circular opening cut from the center. One side of the plate is cut through or slotted from the opening to the outside, allowing the stock to be sprung for the reception of the ring carrying the dies. The stock is caused to close on the ring and hold it securely, by a screw in the stock, at right angles to the slot, which draws its sides together.

Claim.—1. The elastic die-stock or plate, with a cylindrical receptacle or socket divided by a vertical aperture and provided with a set-screw, as and for the purposes described.

2. The combination of the die-stock, constructed as described, and the collet, constructed as described.

136,154.—*Labeling-Machine.*—CHARLES W. GREENE, Jackson, Tenn.

The package rests upon a spring-seated bed, and one from a strip of printed addresses, coated with paste from a roll, is pressed down thereon by a presser-foot, and torn off against its cutting-edge.

Claim.—1. A presser-foot, actuated by foot or hand, for pressing upon an address-label with so much force as is necessary to secure its adhesion, which presser-foot is provided with a cutting-edge by which the address is cut or torn from the strips or sheets prepared for the purpose.

2. In combination with the above presser-foot, a platen which shall be so adjustable as to secure a uniform pressure upon the label or address, though the packages to which they are applied may vary in thickness.

3. The labeling-machine, consisting of the presser-foot A with cutting-edge a, spring S, pedal-lever L, yielding platen P, and paste-roller R, all substantially as and for the purposes herein set forth.

136,155.—*Pad for Harness.*—JOHN D. GROFF and KENNARD H. WILSON, Oxford, Pa.

The pad is made of rubber and hollow on one side, and with pockets on the other. The action of the saddle on the horse forces air through orifices in the hollow side through channels in the pockets on the other side.

Claim.—An elastic pneumatic pad, when combined of a hollow chamber, A, and pocket C, and stuffed with chamois leather D, substantially as and for the purpose specified.

136,156.—*Trammel for Lifting-Jacks.*—ELIAS H. HAKE, Canfield, Ohio.

Claim.—A trammel for lifting-jacks having a main bar or upright, A, hooks B B', and a cross-bar, C, arranged and constructed substantially as and for the purpose described and set forth.

136,157.—*Hand Corn-Husker.*—HENRY L. HALL, Woodbridge, Iowa.

Thumb and forefinger of both the right and left hand glove or cot have each a claw to facilitate the operation of husking corn.

Claim.—The left-hand glove or cot having the claw F upon the forefinger and the claw G upon the thumb, when employed in combination with the right-hand glove or cot likewise provided with claws, substantially as described, for the purpose set forth.

136,158.—*Bed-Bottom.*—PULASKI C. HARD, Wadsworth, Ohio.

An inverted conical spring has the termination of the wire turned immediately under the center of the coil, and then downward, and is then bent upward and one side barbed. This is forced into a hole in the slat of the bed-bottom. A number are so arranged on slats, and the upper ends of the springs held in position by links.

Claim.—1. The barbed dowel or loop D, substantially as and for the purpose hereinbefore set forth.

2. The combination of the barbed dowel or loop D with the spring C, the slats A and B, and the link L, substantially as and for the purpose specified.

136,159.—*Gun-Sight.*—MUNSON W. HARRINGTON, Homestead, Iowa.

Gives an adjustable and convertible coarse and fine sight.

Claim.—1. The combination of the slotted standard A and slides B and C, as described.

2. The combination of the parts herein described, whereby an adjustable and convertible coarse and fine sight is produced, substantially as specified.

136,160.—*Composition for Artificial Stone.*—WILLIAM HEDLEY, Medina, N. Y.

The composition is composed of sand, sixty-four parts; Portland cement, thirty-five parts; litharge, one-half of one part; alum, one-fourth of one part; and sulphate of iron, one-fourth of one part.

Claim.—The composition for artificial stone, consisting of the parts and in the proportions specified, prepared by the process substantially as described, for the purposes specified.

136,161.—*Hatchway-Guard.*—MATHIAS J. HINDEN, Detroit, Mich., assignor to CORYDEN B. PALMER, same place.

The semicircular arms are acted upon by the rollers on the rising-and-falling frame, so as to elevate the guard while the hatch fills the opening. At other times the guard forms a railing around the hatchway to prevent accidents.

Claim.—A hatchway guard or gate, whose ends terminate in segments E of a true circle, and which is pivoted to the rails D, and which is operated by wheels H suitably journaled on the elevator, substantially as set forth.

136,162.—*Ruffler for Sewing-Machines.*—JAMES S. HUGO, Camden, N. J., and JAMES T. STEWART, Philadelphia, Pa., assignors to JAMES T. STEWART, Philadelphia, Pa.

The ruffling-finger is secured to one of the arms of the pivoted carrier. At the outer ends of these carriers are inclined bars adjustable with relation to each other, and between them the nut on the needle-bar works and operates the ruffling finger.

Claim.—1. The horizontal pivoted ruffler-carrier H H', composed of two arms having a common pivot, *f*, and terminating in parallel oblique bars J J to form a cam to engage with a driving projection on the needle-bar, as set forth.

2. The pivoted arms H H' carrying the oblique or diagonally-arranged bars J J, and adjustable, as described, to regulate the movement of the ruffling-finger.

3. A ruffling attachment composed of a fixed presser-foot, A B D, constituting also the frame and separator, an elastic holder, F, a ruffling-finger, G, a pivoted ruffler-carrier, H H', and adjustable parallel cam-bars J J, constructed, arranged, and operating substantially as herein specified.

136,163.—*Anti-Friction Metal.*—GEORGE S. HUNT, Sacramento, Cal.

Lead, five pounds; antimony, one pound; and plumbago, one ounce.

Claim.—An anti-friction metal compounded of the materials above mentioned, in the proportions specified.

136,164.—*Rotary Steam-Engine.*—CHARLES INMAN, Hope, Mich.

A rock-shaft is arranged in suitable bearings on the side of the engine, and is provided with three projecting arms, the middle one of which works in a cam-groove and operates the cut-offs. The sliding abutments or pistons receive a reciprocating motion by means of a cam-groove in the sides of the case, and are provided with friction-rollers.

Claim.—1. The rock-shaft *b*, provided with arms *a c e*, in combination with the cam-groove U, face-plate Q', cut offs X, steam-pipes F G H J I, and disk V, constructed and arranged as and for the purpose set forth.

2. The combination of the cut-offs *n n*, slides P provided with rollers T, cam-grooves B, braces *t* N, cut-offs *r t*, rim A, plates Q Q', and disk V, constructed and arranged to operate as set forth.

136,165.—*Article of Food.*—LEVI S. JOHNSON and MARVIN G. JOHNSON, Cortland, N. Y.

Raw lean beef is cut very fine, mixed with salt, saltpeter, and sugar, and packed tightly in narrow bags of cotton. The bag of compound is then subjected to the usual smoking process, and the article used as a substitute for dried beef.

Claim.—A beef compound, prepared substantially as and for the purpose above set forth, as an article of manufacture.

136,166.—*Safety-Stud, &c.*—ALEXANDER KENT, Baltimore, Md., assignor of one-half his right to JOHN FRIEDRICH, same place.

Two arms are hinged on separate pivots to the shank of a button or its equivalent, and are locked to the clothing by a movable piston and spiral spring operating inside of the shank. By withdrawing the piston the arms are closed and the button is easily detached.

Claim.—1. The combination of the spiral spring K and the movable piston H G with the arms D D hinged on separate pivots, substantially as and for the purpose hereinbefore set forth.

2. The arms D D when hinged on separate pivots in the single hollow stem or shank E, substantially as and for the purpose hereinbefore set forth.

136,167.—*Folding-Table, &c.*—THOMAS P. I. MAGOUN, Worcester, Mass.

The top piece is hinged to two pairs of legs, each pair of legs crossing each other and pivoted at their junction. One leg in each pair is jointed at about half the distance between where it is hinged to the table top and where it crosses the other leg.

Claim.—The combination, with the top piece C, of the bars A B *b*, hinges or pivot-joints D E F, and knuckle-joint G, all constructed and arranged for operation in relation to each other, substantially as shown and described, and for the purpose set forth.

136,168.—*Metallic Cartridge.*—ISAAC M. MILBANK, Greenfield Hill, Conn.

A flanged tube having overlapping edges made by rolling sheet-metal around a mandrel, and a cup-head secured therein by solder, which runs and simultaneously secures the edges of the metal near the base.

Claim.—The cartridge-case made of a sheet of metal rolled into a cylindrical form, with a flange projecting outwardly around its rear end, combined with a base inserted within said case, and secured permanently with solder or other material that simultaneously unites the lapping edges of the case at the rear end, as set forth.

136,169.—*Revolving Harrow.*—HENRY MITTENDORF, Stony Hill, Mo.

A rotary harrow constructed and pivoted to a cross-bar; the cross-bar is in turn connected to an arched bar, and the arched bar to a bar fastened on the front of the axle, with an arm passing up through a standard, which has a series of holes for adjustment. It is further provided with an adjustable arm fastened to the tongue. At the lower end of the arm is secured a wheel, on which the rim of the harrow revolves.

Claim.—The combination of a revolving harrow, E, rim e^3, swivel A^1, chain and standard A, guide-wheel H, adjusting-bar F, foot and hand levers f f^1 f^2 f^3, all said parts being constructed and arranged to operate as and for the purpose set forth.

136,170.—*Smoothing-Iron.*—LOUIS L. MIVELAR, Louisville, Ky.

A smoothing-iron of the ordinary form has a narrow flange and groove at its base and a flange projecting at the point in front of the iron. At the center of the iron, curved projecting arms are placed, to which a detachable handle is held by pivots and slots.

Claim.—1. The flange B, terminating in the point D, in combination with the groove *c* and body A of the iron, when arranged, constructed, and operated substantially as and for the purpose set forth.

2. The combination of the stationary and loose handles E and F, as above described, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

136,171.—*Machine for Grinding Harvester-Knives.*—JOHN MURPHY, New York, N. Y.

Claim.—The bar C with groove *c*, spiral spring *b*, adjustable collar D with set-screw *d*, collar E with set-screw *f*, segment F, bars G G, slot *i*, pin *j*, segment H, recess K, and guides I, in combination with the emery or grindstone-disk J, frame A, table B, friction-wheel L, driving-wheel M, crank N, and treadle O, substantially as and for the purpose hereinbefore set forth.

136,172.—*Punching-Machine.*—SAMUEL W. MURRAY, Milton, Pa., assignor to MURRAY, DOUGALL & CO., same place.

The tool-spindle is furnished with an elongated slot, in which is hung, on a wrist-pin, a wedge-shaped cam. The slot has on one side of its lower end a ledge or shoulder, notched to receive the point of the cam, and so arranged that when the cam is thrown on one side by a weighted arm it will engage with the ledge and cause the spindle to reciprocate, and when on the other it will disengage from said ledge and work in the elongated portion of the slot, the spindle being retained at its highest point by a weighted lever.

Claim.—1. The combination, with the vertically or horizontally reciprocating tool-spindle C provided with the opening I and ledge K, of the horizontal power-shaft D with an eccentric prolongation, F, and wedge-shaped cam G, when all the parts are constructed and operating as herein shown and described.

2. The weighted lever I', pivoted to the wedge G and adapted to be turned in reverse directions, for the purpose specified.

136,173.—*Feed Mechanism for Cotton-Openers, &c.*—WILLIAM NOTON, Oldham, England, assignor to RICHARD KITSON, Lowell, Mass.

For the purpose of moving a weighted lever and shifting a strap on cone-pulleys to vary the speed of the feed-roll if an inequality exists in the thickness of any portion of the fleece passing between the feed-roll and the flexible plate or blocks.

Claim.—1. The series of blocks *f* and saddles f^1 f^2 f^3 f^4, &c., for regulating the speed of the feed-roller to the average thickness of the fleece passing beneath it, substantially as described.

2. The flexible flat plate *c* or blocks *f*, in combination with the feed-roller, substantially as described.

3. The fixed bar d^1 over which the fibers are struck by the beater, in combination with the automatically-adjustable holder which presses the fleece to the feed-roller, substantially as described.

4. The combination of the fixed bar d^1, feed-roller *b*, weighted blocks *f f*, and saddles f^1 f^2 f^3 f^4, &c., substantially as described.

136,174.—*Broadcast-Seeder.*—HARRISON OSBORN, Richmond, Ind., and ANDREW W. KENDRICK, Brooklyn, N. Y.

A grain-sack, to be slung over the shoulder, is provided with a straight discharge-tube, and provided with a valve to govern the quantity of seed.

Claim.—1. The herein-described method of uniting the tube A and sack B by means of the ring L in a broadcast seed-sower, in the manner substantially specified.

2. In combination with the elements of the first claim, the delivery-tube A when provided with a regulating-valve, F, near its outer termination.

136,175.—*Re-winnowing Attachment for Thrashers.*—JOHN B. PADON, Troy, Ill.

Attached to rear of thrashing-machine, so that the straw may be delivered thereon by straw-carrier and re-winnowed.

Claim.—The frame A, perforated bed B, plates *a* and *w*, belts A A' having bars *b b'*, &c., fan D, worm E, and operating-pulleys, the several parts being combined, constructed, and arranged for joint operation, substantially as shown and specified.

136,176.—*Car-Coupling.*—THOMAS N. PENGELLY, Detroit, Mich.

The notch on the link is kept on the under side by a weight, and the link is held in the draw-bar by a catch, which bears against the piston. Rubber packing between a shoulder on the draw-bar and the end of the piston gives the desired elasticity to the coupling.

Claim.—The construction and arrangement of the hollow draft iron C C, hollow piston D provided with lugs *a c*, the cushion *d*, the cranked shaft E, the cam-latch F, and the harpoon G, provided with the notches *f f* and weight *g*, as and for the purpose set forth.

136,177.—*Bridge.*—HENRY PATTIT, Philadelphia, Pa., assignor of one-half his right to JOSEPH M. WILSON, same place.

The beveled block is designed to distribute the strain, under heavy rolling loads, over all the links of the chord, notwithstanding the deflection of the girder.

Claim.—The combination of the flanged cross-girder B and the beveled block C, substantially as shown and described.

136,178.—*Billiard-Table Cushion.*—GEORGE E. PHELAN, New York, N. Y.

Claim.—1. The U or V shaped metallic spring or cushion C for billiard tables, formed in one piece and applied directly to the bed of the cushion, in the manner and for the purpose herein set forth.

2. The combination of the metallic spring or cushion C, formed in one piece, with the India-rubber spring or bed surrounding the same, also formed in one piece, both being of U or V shape, and applied directly to the billiard-table, in the manner and for the purpose herein set forth.

136,179.—*Plow-Wheel.*—MORTON POTTLE, Mendon, Mich.

The wheel is held in position by a divided box inclosing a grooved axle or stud. Dirt is thus prevented from coming in contact with the bearing surfaces.

Claim.—The combination of the grooved axle, the independent boxes, and the hub with the plate D and standard E, as described, for the purpose set forth.

136,180.—*Woven-Wire Mattress-Frame.*—DAVID J. POWERS, Chicago, Ill.

The end pieces are pivoted to the side pieces, and the straining-bolts, attached to the end piece and screwing into brackets upon the side pieces, regulate the tension of the fabric.

Claim.—The straining-bolts *d d*, in combination with a yielding end piece, B, constructed and operating substantially as and for the purposes specified.

136,181.—*Swing.*—J. FREEMAN QUIGG, Chicago, Ill.

Claim.—1. A swing provided with the tray D, arranged substantially as described, and for the purposes specified.

2. A parlor-swing provided with the vertically adjustable tray D and with the hinged back E rendered adjustable in inclination by means of the pivoted, bent, and notched arms *e e*, pin *f'*, and latch *g*, all substantially as specified.

136,182.—*Lath-Machine.*—SILAS B. RITTENHOUSE, Larwill, Ind.

Cutters having beveled edges are placed upon the saw-arbor and upon an additional arbor placed below it, thus cutting a dovetailed groove in the edges of the laths.

Claim.—In lath-sawing machines, the combination of the saws E with the saws F L and arbors B C, substantially as and for the purposes set forth.

136,183.—*Latch for Gates and other purposes.*—CLARK ROBERTS, Winchester, Ill.

A gravitating segmental latch is furnished with a small opening near its central portion, and with a projecting arm beneath it, which arm hooks under a guide-bar raised upon the lower edge of the base-plate, to which the latch is secured. An operating angular lever is pivoted to the gate-post above the latch, and its depending arm works in the opening midway of the latch.

Claim.—The combination of the gravitating-latch and the thumb-piece, the former being constructed with an aperture, *b*, and arm B' underneath it, and one arm of the latter passing through said aperture to operate upon arm B', substantially as specified.

136,184.—*Adjustable Nut.*—JAMES RUSSELL, Springfield, Mass.

Claim.—1. A nut divided in two parts, each part operating in connection with the other upon a threaded shaft, one part being capable of being adjusted against one side of the thread upon the shaft, and the other part against the other side of the thread, substantially as and for the purpose described.

2. The nut *a*, divided longitudinally, and each part provided with the lip *a'*, against one of which are turned the screws *k*, operating through threaded holes in the plates D' to adjust the parts of the nut to the threaded shaft, in the manner substantially herein specified.

136,185.—*Compound for Destroying Insects, Vermin, &c.*—EDWIN B. SEARS, San Francisco, Cal.

Alcohol, wormword, gum camphor, Scotch snuff.

Claim.—The ingredients above enumerated, mixed and compounded in the manner and in about the proportions specified, substantially as and for the purposes herein described.

136,186.—*Inkstand-Filler.*—MILAN C. STEBBINS, Springfield, Mass.

In the stopper is inserted a flexible tube provided with a mouth-piece, through which the air in the jar is compressed, forcing the contents of the bottle through a bent tube into a reservoir attached to the outer arm of a discharge-tube and against a plug, the air in the tube being forced along by the liquid and caused to pass by the plug through the grooves therein, the liquid descending, and drawn off, as required, by a suitable valve.

Claim.—An inkstand-filler, consisting of the jar A, tubes C and D, the tube G having the check-valve *d* therein or its equivalent, and the nozzle I with its stop-cock *e*, all substantially as set forth.

136,187.—*Dredger.*—THOMAS SYMONDS, Portland, Me.

The buckets are hinged to the variable arms at their upper outer corners, and are attached to the rising and falling shaft at their upper inner corners, the shaft being operated by two chains, one of which is attached to the lower end of the stock. The buckets are opened by the bifurcated chain as they are lowered. The form of the buckets and the mode of obtaining leverage employed gives them a cutting instead of a scraping function.

Claim.—1. A dredger composed of two buckets, C C, which, when closed, formed more than a half cylinder, the said buckets being hung on variable arms B B and operated at the top center by a traveling rotating shaft, which unites the said buckets at that point, and has its bearings in them at their point of connection, as herein set forth.

2. The brace-plate A, in combination with the variable arms B, as herein set forth.

3. The combination of the stock *a*, the moving or variable arms B, and the buckets C, as herein set forth.

136,188.—*Knife-Polisher.*—FRANCIS W. TABBLE, Charlestown, and HORACE W. SAWYER, Chelsea, Mass.

The elastic rollers are held in position by the thumb-nuts, and when the nuts are loosened the rollers can be turned so as to present a new surface to the knife-blade. A spring allows the rollers to separate at the top and adjust themselves to the varying thickness of the blade.

Claim.—The elastic adjustable cylinders B B', coated with emery and attached to base-plate A by means of screw-bolts E E' connected together by spring S, said cylinders being adjusted by thumb-screws C C' bearing upon collars H H', when constructed and arranged substantially as and for the purpose set forth.

136,189.—*Revolving Rake-Shoe.*—ALMERIN J. TAYLOR, Rome, Pa.

Claim.—The rake-shoe herein described, composed of sections A B secured together detachably, as set forth, for the purpose specified.

136,190.—*Watch-Chain Catch.*—LOUIS C. THIERY, Newark, N. J.

A hollow wire ring hinged on one side is provided with a spring-snap taking into and fastening the other two ends.

Claim.—A hollow wire with a catch or snap for necklaces and chains, constructed, arranged, and operating as set forth.

136,191.—*Insulator for Battery-Cups.*—JAMES H. THOMAS, Baltimore, Md., assignor of one-half his right to A. G. TOMAY, same place.

The insulating-stand for holding battery-cups is provided with a removable receptacle for collecting and retaining any leakage that may occur of the liquids employed in the battery.

Claim.—As a new and improved article of manufacture, the insulated battery-cup holder, consisting of the concave part A provided with lugs and with the perforations *c*, the base E having the chamber D, for the cup F, and the shank G, all constructed as shown and described.

136,192.—*Automatic Manger.*—DANIEL A. TOWNSEND, Unionville, S. C.

An automatic manger upon a vertical shaft actuated by a spiral spring. The manger is turned back half round, filled with feed, and fastened to a catch upon a horizontal shaft, to be tripped at the desired hour by means of an alarm-clock.

Claim.—1. The combination of compartment-troughs and vertical shafts with actuating-springs, operating substantially as described.

2. The compartment-troughs with their shafts, actuating-springs, and chains or cords, in combination with the horizontal shaft and releasing mechanism, substantially as specified.

3. In an automatic manger, a horizontal roller adapted to be released by means of an alarm-clock, in combination with a spring-

actuated revolving trough arranged to be connected with said roller, all operating substantially as described.

136,193.—*Machine for Making Extension-Table Tops.*—ROBERT G. UTLEY, Boston, Mass., assignor to CHARLES H. PIERCE, CHARLES H. GILMAN, and GEORGE W. TUTTLE.

The boards for the table-top are placed between the parts A and A', which serve as gages, having the dowel-pins inserted into them. They are then sized and molded, thus forming all according to the same gage without the necessity of numbering them.

Claim.—The combination of the forms A and A' having pins *b b b* and holes *c c c* with guides *d d*, when operated in the manner and for the purpose specified.

136,194.—*Corn-Husking Implement.*—OLIVER J. WARREN, Des Moines, Iowa.

A husking-pin with a concave spoon-shaped jaw is used in connection with a thumb-stall having a corresponding convex jaw with a tooth at the point.

Claim.—A corn-husker, composed of the parts A, B, C, and *a*, substantially as described.

136,195.—*Curtain-Fixture.*—WILLIAM A. WHEELDON, Chicago, Ill., assignor of one-half his right to DIXON BEAN, same place.

The roller is attached to frames that slide up and down on guide-wires. The upper ends of said guide-wires are rigidly attached to the pulley-blocks at the top of the window-frame. Their lower ends are attached to levers for the purpose of straining said wires.

Claim.—The metal plates O, having the recesses P and the straining-levers G G, in combination with the guide-wires F attached at their upper ends to the pulleys or pulley-casings at the upper corners of the window frame, all constructed substantially as and for the purpose specified.

136,196.—*Barrel.*—HENDERSON WILLARD, Grand Rapids, Mich.

Formed of sections bent into cylinders and held together by cross-battens of wood, the joints being covered by cloth.

Claim.—A wooden cylinder for barrel or similar package, constructed of sections A B C, two or more, battened with cloth or other either flexible material *b b*, substantially as described.

136,197.—*Apparatus for Tempering Umbrella-Rib, Steel Strips, &c.*—ARTHUR WILSON, Birmingham, England, assignor to JAMES CONAWAY and JOHN LOCKEN, Philadelphia, Pa.

The steel strips, previously oiled, are placed in the rings together with heated wires. The rings, wires, &c., are placed beneath the griddle, to which a reciprocating motion is imparted, whereby the strips are tempered and straightened.

Claim.—1. The process of tempering and straightening steel strips, in the manner and for the purposes substantially as described.

2. The combination of the slab or table A, the rings B B, the wires C C, the griddle D, and the handle E, or their equivalents, arranged, constructed, and operating in the manner and for the purpose substantially as described.

136,198.—*Journal-Box.*—SAMUEL ALAND, Rome, N. Y.

A flange or collar on a tubular shaft-bearing, with a reservoir and outlet for the waste oil.

Claim.—1. The improved journal-box A provided with slots D, and the ball B cast or constructed in one piece and forming the chamber C between them, as shown and described.

2. The shaft having the enlarged collar N provided with the groove O, in combination with the socket L formed in the end of the journal-box A, as shown and described.

136,199.—*Water-Closet.*—JAMES ALBEE, Chelsea, Mass.

A hollow annulus is formed with a groove in its under side to rest upon the edge of the pan, and provided on its outer periphery with an educt to lead into a pipe or flue for the discharge of the vitiated air, and on its inner periphery provided with a series of holes to carry off any gases from deposits in the pan.

Claim.—The annular ventilator, substantially as described, and also as combined and arranged with the water-closet pan, or with such and the seat, essentially as specified.

136,200.—*Game-Board.*—JAMES C. ARMS, Northampton, Mass.

The usual leather-covered sides are finished separately and slide into place in the grooved frame.

Claim.—The folding game-board having its frames provided with grooves *b* into which the faces *c* are inserted, substantially as and for the purposes set forth.

136,201.—*Machine for Planing Clapboards.*—JAMES ATKINS, Augusta, Me.

Spur-rolls for feeding the boards are placed under the table to keep the thick edge of the board close to the guide to be dressed by the edging-cutter. The top surface is dressed by the horizontal cutter.

Claim.—In machines having rolls for feeding the clapboards, the spur-roll A, made adjustable to different inclinations so as to crowd the clapboard against the edging-cutters, substantially in the manner described.

136,202.—*Steam-Pressure Regulator.*—ANDREW J. BALLARD, Cohoes, N. Y., assignor to UNION WATER-METER COMPANY, Worcester, Mass.

A shipper-rod and actuating-lever are combined with an adjustable weighted lever of a pressure-regulator, and connected with a bell-crank having a curved arm and arranged on the stem of a valve in the steam-pipe, and attached to the weighted lever by a slotted rod and spring; the whole to automatically and uniformly regulate the pressure.

Claim.—1. The combination, substantially as described, of the slotted rod *i* and spring *x* with the levers *b* and *f*, for the purposes described.

2. The lever *p*, connecting-rod *o*, lever *r*, and arm *t*, in combination with lever *b* of valve *a*, as and for the purpose set forth.

3. The combination of the shipper-rod *o* and its actuating lever with the adjustable pressure lever *f* and valve-lever *b* of an automatic pressure regulator, the whole operating in the manner and by means of devices substantially as described, for the purpose set forth.

136,203.—*Compound for Expelling Flies from Rooms.*—JULES BAQUOL, Baltimore, Md.

Powdered laurel leaves and glycerine, or a decoction of laurel leaves, lime, and water.

Claim.—1. The compound of powdered laurel leaves and glycerine, herein described.

2. The compound of decoction of laurel leaves and lime, herein set forth.

136,204.—*Machine for Planing Stereotype-Plates.*—HENRY BARTH, Cincinnati, Ohio.

A broad shaving-cutter reciprocated over a horizontal table by racks, one at each end, operated by pinions on a winch-shaft; a plain section of table for the stereotype-plate to lie on, and a broad wedge operated by a screw to adjust said section as to height; and a stationary section of table for the plate to abut against.

Claim.—In combination with the frame B, the movable table T, quoin W, screw S, and cutter-head C, when arranged and acting substantially as above set forth, for the purpose specified.

136,205.—*Gig-Saddle Trees.*—JOHN BAUER, Newark, N. J., assignor to CHAS. M. THEBERATH and JACOB H. THEBERATH, same place.

The metallic stiffening extends entirely around the saddle and is secured to the tree by pins at an oblique angle.

Claim.—The one-piece plate C provided with rigidly-attached pins *a* placed at an oblique angle to the faces thereof and applicable to skirt B and plate A, in the manner and for the purpose described.

136,206.—*Apple Parer, Corer, &c.*—GEORGE W. BENNETT, Smithville, Ind.

A flanged guide-rail is attached to a table. On this rail slides a carriage, from which an arm extends forward and downward, its outer end grasping a bar running parallel with and connected to the guide-rail. On said carriage is pivoted a semicircular cog-wheel, provided with a lever for turning the same; this segment of a cog-wheel is connected by gearing with the pinion on the shaft of the fork for holding the apple. The corer and cutter is attached to the rail at the end opposite the fork. A catch on the guide-rail holds the carriage in position while the apple is being pared; then, by slightly raising the lever, the carriage slides forward and the apple is brought against the coring and cutting device.

Claim.—1. The combination of the segment cog-wheel E with lever G, paring-knife shaft J, spring E, and carriage B, with the notch *z*, substantially as and for the purposes herein set forth.

2. The combination of the segment cog-wheel E with lever G, gear-wheels a H *b*, and fork I, all as herein set forth.

3. The sliding carriage B, carrying the fork I and moving upon the rail A to and from the corer K, in combination with the arm C and bar D, for the purposes herein set forth.

4. The catch *y* formed on the rail A to hold the sliding carriage B, for the purposes herein set forth.

136,207.—*Scroll-Saw.*—HENRY BICKFORD, Cincinnati, Ohio, assignor to LEWIS FAGIN, trustee for MARY M. and CARRIE M. FAGIN.

The saw is strained by two rubber springs arranged at its extremities in such a manner that movement of the saw in either direction compresses one of the springs.

Claim.—1. The combination of way B, saw C, rolling arm D, link E, spring F, and connecting-bolt G, constructed and operating substantially as and for the purpose stated.

2. The pivoted way B *b b'*, in combination with the adjustable bolt b^3, operating substantially as and for the purpose specified.

3. The combination of saw C, belt or strap L, segmental pulley K *k*, cam M, and spring O, the parts being connected, and the whole operating substantially as and for the purpose specified.

4. The elements enumerated in the last preceding claim, in combination with the arm *g* having elongated recesses *c* for the bearings of the axis of the cam M, substantially as and for the purpose specified.

136,208.—*Apparatus for Rendering Lard, Treating Offal, &c.*—JOSEPH N. B. BOND, New York, N. Y.

The gas from the rendering-tank is, together with steam, conducted through a decomposing-retort filled with iron filings and placed in the fire-box under a boiler; from thence the gas passes to a condenser and washer, and finally to the fire-box, where it is consumed. A steam-jet is admitted into the pipe between the decomposing-chamber and condenser to act as an exhaust.

Claim.—1. The combination of a decomposing-chamber, A, and condensers E, with a gas-conductor, C, pipe D, and steam-generator, K, substantially as and for the purpose shown and described.

2. The process for deodorizing gas from rendering-tanks, viz., passing the gas, in connection with steam, through a highly-heated chamber containing iron filings or their equivalent, substantially as described.

136,209.—*Pruning-Shears.*—THOMAS BORDEN, Squancum, N. J., assignor to himself, DAVID P. KISNER, and THOMAS HULETT, same place.

Each lever of the ordinary pruning-shears is furnished with two cutting-blades. The levers are so pivoted that the two inner blades cut upon each other, and each one also upon an outer blade. Thus from the four blades three pairs of cutting-edges are formed, and these edges can have varying forms to suit the different uses to which the implement is to be put.

Claim.—As an article of manufacture, a pair of pruning-shears, consisting of the levers A A C provided with two double-edged blades in the middle that work against each other and respectively against a single-edged blade on each outside, as described.

136,210.—*Burglar-Alarm.*—HENRY L. BROWER, New York, N. Y.

The alarm-bell and operating mechanism are placed within the base of a portable case or figure, and are held in check when wound up by a detent arm or pin projecting downward so as to press upon the table or other surface on which the instrument stands. When the article is lifted, or a knob touched, the detent is released and the alarm rings.

Claim.—1. The detent D', spring E, inclined planes F F, arm G, spindle H, and knob K, combined and arranged with respect to the alarm mechanism in the case A, to operate substantially as and for the purpose described.

2. The combination, with spring E, of the spring L, lever M, and pin N, as and for the purpose described.

136,211.—*Tenoning-Machine.*—MARTIN BUCK, Lebanon, N. H.

The rotary cutters are made adjustable to and from each other, or they can be moved coincidently by a right-and-left screw-shaft operated by a jam-nut, having a set-screw with a threaded follower to prevent injury to the threads of the screw-shaft.

Claim.—1. The combination and arrangement, with the cutters F G and frames L M, of a right and left hand screw, gears N and O, constructed and operating for adjustment of the cutters to or from each other, substantially in the manner described and specified.

2. The gear-wheel O and lock-nut N, combined with the screw P, set-screw *e*, and follower *f*, whereby rotary and reciprocating motion can be imparted to the screw, constructed and operating substantially in the manner described and specified.

3. In combination with mechanism described in second claim for adjusting the cutters F G vertically, the mechanism for adjusting the cutters laterally, consisting of the sliding boxes *j k*, and screws *j k*, constructed and operating substantially in the manner described and specified.

4. The combination, with the mortising-cutter J, of the screw *x*, gear-wheels *g h*, and shaft *i* for adjusting the cutter J vertically, substantially as described and specified.

136,212.—*Hoisting Apparatus.*—CHARLES CLARK, Unadilla Forks, N. Y.

Claim.—1. In a hoisting or elevating apparatus having a movable car or carriage, an automatically-operating hook, or its equivalent, for keeping the load suspended, substantially as and for the purposes herein set forth.

2. The combination of the pivoted hook G, rod or frame H, and spring *b*, arranged as described, and for the purposes herein set forth.

3. The combination of the movable car A, latch D, plate E, pulley J, loop *h*, and hook G, all constructed and arranged to operate substantially as and for the purposes herein set forth.

136,213.—*Preventing Corrosion of Stay-Bolts in Steam-Boilers.*—JOHN COCHRANE, New York, N. Y.

The object is to form a non-corrodible crust on the bolt after the crust is destroyed in cutting screw-threads. This is accomplished by inclosing the bolts in an iron box with animal charcoal and heating for five hours. Other means of case hardening may be employed.

Claim.—A stay-bolt rendered impervious to the action of the acids and salts usually present in the water of steam-boilers, in the manner and for the purpose substantially as described.

136,214.—*Steam Boiler.*—EDWARD R. COLE, Pawtucket, R. I.

Prevents weakening of the smoke-flue by excessive heat and consequent collapse under steam-pressure. Intended especially for fire-engines.

Claim.—The combination, with the main flue or up-take in a steam-boiler, of a strengthening and protecting inclosed chamber or water-jacket surrounding the flue, located within the steam-space, and provided with communicating pipes, arranged substantially as described, whereby a full supply of water may be kept therein, and discharged therefrom outside of the boiler, as and for the purposes specified.

136,215.—*Milk-Cooler.*—SETH F. COWLES, Coventry, Vt.

Two stationary reservoirs for water are supported by a suitable frame, and are provided with induction and eduction pipes for water, and have arranged between them the milk-discharging spout running transversely of the frame. Within each reservoir is placed the milk-pan, the inner edge of which is curved or arched for the better discharge of milk into the discharging-spout, and is provided with flanges around its upper edge to support the same on the upper edge of the reservoirs, and with a lip upon the inner end, below the flange, to support the pan and prevent it from slipping while the contents of the same are being emptied, the pan being tipped upward for that purpose by means of a suitable windlass arranged in the frame above.

Claim.—1. The combination of the two cooling-reservoirs B B' and the spout C, arranged as described, and their combination with the two milk-pans D D', the receivers being provided with the induction and eduction pipes, as set forth.

2. The combination of the windlass or shaft E and its line *e'* with the reservoirs B B', spout C, and pans D D', all being arranged together and in the frame A, as set forth.

3. The milk-pan, made with the curved or arched end, as specified.

4. The milk-pan, as made with the main and auxiliary flanges or lips *b c*, arranged as set forth.

136,216.—*Sawing-Machine.*—HUGH A. CURRENT, Clarksville, Tenn.

Two circular saws are placed so as to run between endless belts, which carry the wood to the saws and deliver it, after being cut, upon an apron, which carries it to the pile or other place of deposit.

Claim.—The arrangement of saws B B, broad carrier C, narrow carriers D having clamp-fingers F on plates G, and the rails I, as and for the purpose described.

136,217.—*Portable Fence.*—HORACE M. DAKE, Nunda, N. Y.

Pointed posts connected with the panels are driven in the ground. One of the rails of the next panel is entered obliquely behind a hook in the post last planted until a notch in said rail falls under a fixed pin above the hook, when the additional panel is brought to a level with the preceding and its pointed post is driven into the ground.

Claim.—The stake-post G provided with hook A and pin *d*, mortised cross-piece B, and notched board A, all constructed and arranged to form a portable fence, as and for the purpose specified.

136,218.—*Lantern.*—THOMAS A. DAVIES, New York, N. Y.

The pin on the lamp is held in the right-angled slot of the lantern by a drop-bolt.

Claim.—The drop-bolt E, in combination with the lamp, provided with pin D, and the body of the lantern having a right angled slot, as specified, whereby the bolt is raised by the pin when the lamp is adjusted in place, and then falls by its own gravity.

136,219.—*Washing-Machine.*—GEORGE R. DAVIS, Nobleville, Ohio.

In a rectangular box is placed a frame of rollers; above these is a movable frame with a series of rubbers in a curved form. This frame is operated by an arm and a pivoted lever. Another lever is hooked at the back end of the box, and has attached to it a frame with two friction-rollers for the purpose of pressing upon the movable frame of rubbers.

Claim.—The combination, in a washing-machine, of the frame C having the revolving rollers B B, with the arched frame D having the stationary rubbers *d' d' d'*, the beam F, standard G, and anti-friction bearings *g g*, lever E and cross-bar E', all constructed and arranged substantially as and for the purpose above set forth.

136,220.—*Hand-Cultivator.*—LANSING J. DAWDY, Hamburg, Iowa.

A pair of handles, supported at one end upon a single wheel, constitutes the frame. A thin horizontal knife is attached to the under side of the handles, just in rear of the wheel, by means of curved adjustable rods, in such manner that the adjustment changes the angle of the cutting-blade.

Claim.—The within-described garden-implement, consisting of the frame A B, wheel C, knife G, and bows D D, pivoted at one end and perforated at the other end, by which means they are made adjustable, all substantially as set forth.

136,221.—*Cylinder-Cock.*—DAVID B. DENNISON, Ottumwa, Iowa.

The cylinder-cocks of a locomotive are operated simultaneously by a bar with beveled ends, and to the center of said bar the levers and rod leading to the engineer's cab are connected. When the rod is drawn upon the valves are raised by the beveled ends of the bar.

Claim.—The cocks A A, in combination with the beveled bar D, the valve-stems of said cocks being operated upon simultaneously by said bar at the will of the engineer, all arranged substantially as herein set forth.

136,222.—*Car-Coupling.*—MELVIN C. DOUBLEDAY, Sharon, Vt.

The coupling-box is pivoted in the draw-head, so that either the hooks or the pin may be presented to the approaching car.

Claim.—1. The spring-pressed coupling-bars F F and box H made reversible through the slots J, as and for the purpose described.

2. The combination, with spring-pressed bars F F, of the sliding spring-held jaw M and pin L, arranged as and for the purpose set forth.

136,223.—*Candlestick.*—CHARLES H. DOUGHTY, Newburg, N. Y.

Two plates, having a rectangular notch cut in each, are so slotted as to cross each other at right angles, the notches forming the candle-socket.

Claim.—1. A candlestick having an open socket, formed by the edges of vertical plates or the like, arranged to hold the candle and allow the drip to fall to the bottom plate, substantially as specified.

2. The standard and socket of notched plates B, constructed, arranged, and connected together as shown.

136,224.—*Privy-Indicator.*—WILLIAM C. DUFFIELD, Wheeling, W. Va., assignor to himself and JOSEPH A. FARIS, same place.

A board with the words "Vacant" and "Occupied" is mounted upon the upper end of a rod, which, by suitable mechanical connections with a depressible seat and floor, causes the word

"Vacant" to occupy an opening in the wall of the privy when the seat and floor are in an elevated c ndition, and the word "Occupied" to appear when the seat and floor are depressed.

Claim.—The combination and arrangement of the hinged seat A, floor A', slide F, and connections D B C C, constructed and operating as herein described, to cause the word "Vacant" or "Occupied," or their equivalent, to show through the aperture G, for the purpose explained.

136,225.—*Apparatus for Pressing and Packing Tobacco.*—JOHN K. KANICKSON and JACOB R. HARRIS, St. Louis, Mo.

The tobacco is first pressed in layers in a sectional tube composed of shouldered and beveled rims, division-plates being placed between the layers. The air having been expelled from the tobacco, the layers are removed, together with the plates, from the tube, and the tobacco then replaced in the tube and pressed or packed into the caddy.

Claim.—1. The rim B, provided with the bead C and flange D, forming part of an apparatus for pressing or packing tobacco, substantially as shown and described.

2. The rim B, provided with the bead C and flange D, in combination with the plates E, as and for the uses and purposes substantially as shown and described.

3. The rim B, provided with the bead C and flange D, in combination with plates E, arranged relatively to a caddy, A, substantially as shown and described.

4. The rim B, provided with the bead C and flange D, arranged relatively to the caddy A, substantially as shown and described.

5. The means herein described, consisting of the rim B, plates E, caddy A, and plunger G of a press, as a method of expelling the air from tobacco, substantially as shown and described.

136,226.—*Rotary Churn.*—BOLIVAR EASON, Easonville, Ala.

A bracket for holding the churn-dasher stem is secured removably to the upright post by a button. Inclined longitudinal beams bear a roller for tightening the belt. The churn may thus be removed easily.

Claim.—The churning-machine having the removable dasher-stem bracket C', arranged to be clamped and unclamped by the button between the frame-posts, and the upper inclined beams and tension-roller arranged to tighten and loosen the holding-band, as shown and described, and for the purpose set forth.

136,227.—*Railroad Crossing.*—GEORGE ELLIOT, St. Louis, Mo.

The crossing is supported by a rigid iron frame, which fits the webs of the several rails, the outer angles being re-enforced by angular fish-plates, all firmly united together by bolts.

Claim.—1. The frame C C', constructed to enter the recesses a between the base and cap of the rails A, so as to enable the attachment thereto of the rails by means of bolts or rivets B passing through the web of the rails.

2. The combination of the rail-sections A, bolts or rivets B, frame C C', and angle fish-plates, substantially as set forth.

136,228.—*Carburetor.*—WILLIAM B. ELSTON, Marshall, Mich.

Claim.—1. The sealed single cylinder A, revolving on suitable bearings and having transverse and longitudinal partitions, and the elbow-shaped inlet and outlet pipes m p, all arranged and operating in the manner and for the purpose set forth.

2. The inlet-openings between the chambers e^1, &c., and the space g provided with casings $e\ e$ and communicating tubes, substantially as described, and as shown in Fig. 5.

3. The outlet-openings from the central chambers e to the forcing-head f, provided with casings n having the openings o and elbow-pipes t, substantially as described, and as shown in Fig. 6.

4. The valve C in the carbureting-chamber, formed with a slitted edge, constituting wings and wedge-shaped openings, as shown in Fig. 7.

136,229.—*Rectifying Charcoal Used in Rectifying Spirits.*—ALBERT ERNST, Baltimore, Md.

Sulphuric acid, chloride of lime, cream of tartar, and water.

Claim.—The compound hereinbefore described, for restoring and purifying charcoal employed in the rectifying of spirits.

136,230.—*Combined Ruler and Pencil-Sharpener.*—WILLIAM H. FLANIGAN, Philadelphia, Pa.

One edge has a V-groove, coated with sand or emery, to provide a pencil-sharpener.

Claim.—The V-shaped groove a, coated with sand, emery, or other equivalent material, in an edge or side of a ruler, substantially as and for the purpose set forth.

136,231.—*Seed-Planter.*—REUBEN FRIDAY, Crockett, Tex.

A rectangular frame, having cultivating tools affixed to it, has pivoted in it, in a lateral position, a rolling seed-box, of cylindrical form at its ends, the remaining surface formed of large serrations extending from end to end, with a seed-orifice in the middle of the length of each.

Claim.—The combination in a seed-planter, with the dropper and furrow-opener, of the pulveriser C, arranged in front thereof and in line therewith, as and for the purpose described.

136,232.—*Sash Fastener and Tightener.*—THERON FROST, Piermont, N. Y.

The sides of each of the sash-receiving grooves is lined with rubber, making elastic cushions throughout for the sash to bear against. There are also movable flexible supporting-strips, held in place by staples in the window-frame, and a clamp-screw, having its head lapped upon one of the movable strips, and a screw-nut projecting through the window-frame, whereby the strips are drawn together and the cushions clamped in desired positions.

Claim.—As an article of manufacture, the combined sash fastener and tightener herein described, consisting essentially of the plates C D, constructed, respectively, with the slotted flange c and lugs F, the case D', and the tooth E, constructed with the shoulder e' and tooth e, all combined as described.

136,233.—*Boot-and-Shoe-Heeling Machine.*—CHARLES W. GLIDDEN, Lynn, Mass.

The nail-driving mechanism receives the peculiar elastic blow from the piston of an air-engine.

Claim.—The combination, in a heeling-machine, of a driving mechanism and a piston actuated by air, steam, or equivalent force, for the purpose of an elastic blow.

136,234.—*Chimney-Top.*—JAMES GORTON, New York, N. Y.

The bridges are sprung into place and retained in slots by keys or wedges, so that the parts can be readily united or detached for packing.

Claim.—The removable bridges $e\ e^1\ e^2$, secured, as described, in the position shown, in combination with the flue A, conical top B, spout b, and vertical arbor C, all constructed and arranged as herein shown and specified.

136,235.—*Mechanism for Feeding Nail-Plates.*—ROYAL C. GRANT, Middleport, Ohio.

A bell-crank lever is connected by one of its arms to an eccentric or other motion-giving device, and by the other to a slide, which carries a pawl that engages with a ratchet, by means of which the carrier is intermittingly turned half-way round, and the plate in its reciprocation actuates a lever and pawl, which latter, through the medium of a ratchet-wheel, rotates a shaft on which is a pinion that gears with a rack connected to the carrier, by which means the forward feed is effected. The holding jaws are connected to the carrier by a universal joint; a spring and stud on the die-block, between which the plate is fed, holds the plate in the right position laterally, and a detent, set by a weighted lever, is tripped by a stud on the carrier to allow a cord, with a weight attached, to draw the carrier back when the jaws have approached to within a certain distance from the cutters.

Claim.—1. The spring W combined with pin v, bed-die B, and a plate-holder provided with mechanism to turn it, as and for the purpose described.

2. The mechanism R e T V I J, arranged substantially as described, for revolving the tube E a half-revolution, as set forth.

3. The lever P combined with pawl p and ratchet G, as described, so that the end of said lever will serve as an elevator to the carrier-pawl and a detent to the ratchet, at the times and in the manner set forth.

4. The mechanism L M N O P, substantially as described, for throwing out the feeding-pawl A, as set forth.

5. The combination, with the mechanism for throwing out the feeding-pawl, of the spring-lever Q and stud a' on rock-bar, as and for the purpose set forth.

6. The bed-die B provided with guide-pin v and spring-guide W, combined with a plate-holder, C, and rotary carrier D, coupled by a union-joint, as described, so that the simple turning of the plate on the bed and against the said spring and guide will enable plate to clear the knife.

7. The slide I provided with stop i, the lever H, weighted pawl A, and the detent-pawl p, combined with the ratchet G, as described, so that the plate will be drawn back at the time and in the manner set forth.

136,236.—*Dovetailing-Machine.*—FRANCIS D. GREEN, Williamsport, Pa.

By this machine the various dovetailed joints, square tenons, and grooves for the glass are formed in sash, stiles, and rails.

Claim.—1. The carriage-frame adapted to be adjusted unequally at the ends, as and for the purpose set forth.

2. The combination of the adjusting-screws g g g' g' with the sword D of the spindle C and the adjusting-screw d', as and for the purpose described.

3. The vertically-adjustable sword K, provided below with arms k^2, pulley-shaft and pulleys k^3 and k^4, and above with the arbor K' carrying the cutter-head k^5, all constructed and arranged as and for the purpose set forth.

136,237.—*Car-Coupling.*—JEREMIAH GROWDON, New Enterprise, Pa.

To place the link in an inclined position for coupling the guide-plate is moved inward until the hook catches on the link; then, by moving the lever, the link can readily be placed and held in the proper position for coupling.

Claim.—The guide-plate I, provided with a hook, i, and placed under the coupling-link in a draw-head, and operated substantially in the manner and for the purposes herein set forth.

136,238.—*Thrashing-Machine.*—CHARLES S. HALL, Rochester, N. Y.

Grain-belts so arranged that large amount of belt-surface is secured without increase of length in frame of machine. Peculiar grate, as shown.

Claim.—1. The relative arrangement, in grain-thrashing separators, of the primary and secondary belts C and D, in combination with the thrashing-cylinder H, chute-grate G, beater E, and pickers F and F', and the ordinary open raddle a, as and for the purposes set forth.

2. The swinging or adjustable grate G, having the interstices i, open at the outer edge, substantially as shown and described, for the purpose set forth.

136,239.—*Safe-Door Hinge.*—JOSEPH L. HALL, Cincinnati, Ohio.

One leaf of the hinge has a recess in its upper edge, and placed thereon is a swinging or crank-shaped plate that connects the two leaves and permits the other leaf, with the door to which it is attached, to be moved out from its recess before any rotation takes place. This method of hanging the door is rendered necessary by means of the tongues and grooves in the body of the safe and the door, to prevent opening by wedges.

Claim.—1. A hinge consisting of a leaf, A, having its pintle arranged to swing laterally in a recess therein, in combination with a leaf, B, arranged to move with said pintle and rotate thereon, substantially as and for the purpose set forth.

2. The leaf A, provided with the shoulder G H, in combination with a leaf, B, provided with the projection I, substantially as set forth.

136,240.—*Fruit-Jar.*—ELIA G. HALLER, Carlisle, Pa.

The jar is constructed with lugs blown upon the inside of the neck, and with a plain ring around the top of the outside, which is formed from plastic glass, and the jar is provided with a hollow stopper, having an aperture in its bottom, and with inclined grooves upon its outside, arranged so as to engage with the lugs in the inside of the neck of the jar, so that the stopper may be forced into the jar by simply turning it, and a tight joint thereby effected.

Claim.—1. A blown-glass stopper with an inside chamber having a central opening at the bottom only, as and for the purpose set forth.

2. As an article of manufacture, a glass jar having its neck provided on the inside with blown lugs a^1, and on the outside with a plain ring, a^2, as and for the purpose set forth.

136,241.—*Vapor-Engine.*—JOHN F. HASKINS, Fitchburg, Mass.

A generator in which vapor is produced from an easily-volatilized fluid by the heat of exhaust steam is provided with water-pipes connected with a reservoir, by means of which water may be forced into the generator to condense the vapor and prevent the further production thereof in case of a break or leak in the apparatus, which would subject persons to the noxious qualities of the vapor.

Claim.—1. In combination with the steam chamber c and liquid and vapor chamber or vessel b and their respective inlet and outlet pipes, the water supply pipes i, for throwing water into the steam chamber to condense its steam and cool the vessel b, substantially as described.

2. The method of producing and stopping the supply of heat to volatilize the liquid from which the vapor is to be generated by subjecting the generator to the action of steam to heat the generator and volatilize its liquid, and the steam chamber and the generator to the action of water under pressure to condense the steam and cool the generator.

136,242.—*Railroad-Train Indicator.*—SAMUEL W. HEMKEWAY, Lansing, Iowa

An indicator representing the train is caused to travel in the slot of an indicator-board, upon which the various stations are marked by means of a screw-rod and suitable propelling mechanism.

Claim.—A revolving screw, C, provided with pointer-nut D F L, and geared to a shaft, E, driven by suitable mechanism, when combined with an indicator-board having guiding-ways and bearing the station, time, and distance scales, arranged as and for the purpose described.

136,243.—*Extension Table.*—AUGUST HERZOG, New York, N. Y.

The center leaf or top of the table is vertically adjustable by means of spiral springs that force it up when the outside or extension leaves are drawn out. Said extension leaves are attached to the end frames of the table, which are connected with the divided side frame. When the table is extended, hooks that are attached to the central frame are locked over the side rails of one of the extension frames, and thereby hold the central part of the table in position.

Claim.—1. The combination, with a vertically-adjustable leaf or leaves D, of the spring d, arranged about a pin pendent therefrom, and supported on a frame, f, as and for the purpose described.

2. The combination, with leaf or leaves D, of the hook g, arranged to look on the rail b, as and for the purpose set forth.

136,244.—*Stereotype Block Holder.*—MARSHALL J. HUGHES, New York, N. Y.

By means of blocks friction is applied to the rectangular projection from the under side of a stereotype-plate to keep the plate in place. The projection is rectangular or parallel-sided, and not dovetailed, so that by merely loosening the furniture the stereotype-plate may be withdrawn vertically.

Claim.—A stereotype-plate, provided with a vertical rib or flange having its sides parallel, as described.

136,245.—*Plow.*—JOHN T. HUNTER and DANIEL L. H. MITCHELL, Forest, Miss.

An adjustable beam, acted upon by a spring-follower to hold the subsoil point to its work, a set-screw, f, being provided to regulate the depth of penetration.

Claim.—1. The combination of the beam G with the collar H and its spring follower, as and for the purpose set forth.

2. The combination of the adjustable beam G, collar H, and the set-screw f for regulating the beam, all substantially as set forth.

3. The combination of the beam G, with diagonal dovetailed groove in one side, with the subsoiler I provided with a slotted shank, m, which is passed into said groove and held by a set-screw, all substantially as set forth.

136,246.—*Machine for Making Paper Boxes.*—GUSTAV L. JAEGER, New York, N. Y.

Pasteboard, printed between rolls, is cut and creased by a roll into blanks, the edge of which is pasted as it passes another roll. This blank is fed under a plate which covers it between lines upon which its sides are folded vertically, in which position it is fed between side-guides to and between the last folders, which, moving in successive order, lay the flap c^2 upon the pasted flap and complete a box tube, the ends of which are folded in by hand.

Claim.—1. A machine for making boxes, composed of printing-rollers E D, cutting rollers G H, pasting-rollers J K, and folding-wings g g' g g', all arranged and operating substantially in the manner herein shown and described.

2. The creasers b, each made of a series of detached punches or cutters, in combination with the knives a a', which serve to cut out and crease the box, substantially as set forth.

3. The segmental pasting-section K^6 of the roller K, in combination with a paste-fountain, L, and rollers M N, constructed and operating substantially in the manner shown and described.

4. The folding-wings g g' g g', mounted on shafts A A', in combination with tappet-rods $k\ k'$ acted on by cam m, substantially as set forth.

5. The stationary guide-plates c c', in combination with the folding-wings g g' g g' and the intermediate carrying rollers Q Q', all constructed and operating substantially as shown.

136,247.—*Bosom, Collar, and Similar Articles of Apparel.*—ASA JOHNSON, Brooklyn, N. Y.

Covers shirt bosoms, collars, and similar articles of wearing apparel with a coating of glass.

Claim.—1. A shirt bosom, collar, or other similar article of wearing apparel, formed of or enveloped with transparent glass, substantially as herein set forth.

2. A shirt bosom, collar, or other similar article of wearing apparel formed of a hollow glass case with wire-cloth or other suitable material inserted in the same, substantially as herein set forth.

3. A shirt bosom, collar, or other similar article of wearing apparel formed of a hollow glass case, and within the same wire-cloth with beads attached, substantially as herein set forth.

4. A shirt bosom, collar or other similar article of wearing apparel made of glass substantially in the manner herein set forth, and having designs or figures painted, printed, embossed, impressed, or otherwise formed on or affixed to either surface, as herein described.

5. The process of covering shirt bosoms, collars, or other similar articles of wearing apparel with glass by dipping the same into melted or liquid glass, substantially as herein set forth.

136,248.—*Railway-Car Truck.*—MATTHEW H. KOLLOCK, Philadelphia, Pa.

Claim.—The combination of the ball b of the axle C and the socket c in the front end of the connecting-rod H, the rear end of the rod being connected with the crank I', in the usual manner, substantially in the manner and for the purpose specified.

136,249.—*Cultivator.*—HOSEA K. KNEBLE, Landsdale, Pa.

A straddle-row cultivator, for a single horse. The inner triangular frame, having handles, is pivoted to the outer frame, so that it may be swung to either side. In operation, three hoes pass between two rows, while one hoe passes between the next two rows.

Claim.—1. The combination of the frames A and D, constructed and arranged as shown, the said frames being pivoted or hinged together in front so as to permit the inner frame to be swung from side to side, as and for the purpose set forth.

2. The cultivator consisting of the triangular main frame A holding the plates a, cross-guides a^1 with holes a^2 and standard a^3 and shovels C, and the pivoted frame D having shovels E^1 and handles E^2, substantially as specified.

136,250.—*Transmitter for Printing-Telegraph.*—LANDY TURNELL LINDSEY, Jackson, Tenn.

For open circuit printers whose type-wheels have a continuous motion, the printing being done by closing the circuit.

Claim.—One or more series of transmitting knobs, a, forming one end, and a shaft, S, with spring w, forming the other end of a broken line, in combination with anvils b, connecting-wires d and sectional ring H, all arranged substantially as herein described, so that the circuit will be closed when the spring is in contact with any one of the sections of the ring, and the corresponding knob depressed, for the purposes set forth.

136,251.—*Telegraph-Repeater.*—LANDY T. LINDSEY, Jackson, Tenn.

Circuit through a repeating or sounding magnet closed after its relay-circuit is broken by its own lever, again closing the same circuit. This circuit is broken by the action of the opposing relay, closing a shunt-circuit.

Claim.—1. The combination of the lever L of a sounder magnet, H, spring s, post n''', and electrical connecting-wires, for the purpose of keeping the circuit of the sounder-magnet closed through it beyond the time allowed by the contact of the armature-lever of the relay-magnet with its adjusting-screw, substantially as herein set forth.

2. The combination of the adjusting-screw t', lever D of the relay-magnet M, lever L' of the sounder-magnet H, post n', and electrical connecting-wires, for the purpose of forming a shunt-circuit to weaken the current in the sounder-magnet H, substantially as herein set forth.

3. The combination of the lever L' of the sounder-magnet H, post n, sounder-magnet H, lever D of the relay-magnet M, adjusting-screw t', and electrical connecting-wires, for the purpose of preventing both main-line circuits from remaining open or broken at the same time, substantially as herein set forth.

136,252.—*Box for Assorting Peaches.*—EDWARD W. LOCKWOOD, Middletown, Del.

An open box, provided with an inclined bottom formed of slats rounded on top to prevent injury to the peaches in their descent. The

peach-leaves fall through between the bars, and the soft ones are removed by an attendant.

Claim.—The open box A B, provided with inclined bottom, formed of slats rounded on top, so that the peaches will roll down and allow a picker to remove the faulty fruit, while the leaves will pass through, as described.

136,253.—*Power-Hammer.*—JOHN M. LOVE, Hamilton, Ohio, assignor to LOVE AND ALLSTATTER, same place.

Sliding frames, dovetailed to embrace the housings and raised by adjusting screws, carry the hammer and operating mechanism. The cam that operates the hammer has a dovetailed portion sliding in a head fixed to the driving-shaft, and held by screws projecting through slots in the face. Screws bearing against the shaft on two sides adjust the stroke of the hammer. A brake fastened to a shaft journaled in the sliding frame and held against the driving-wheel by a weighted arm, is provided with a belt-tightener and treadle, so arranged that when the treadle is depressed the brake is loosened and the belt tightened.

Claim.—1. In combination with the stationary frame A B B', the vertically-adjustable frames or slides F, carrying the swinging hammer and its driving mechanism, substantially as and for the purpose specified.

2. In combination of sleeve K *k k'*, yoke L *l*, springs N, and hammer-arm P connected to the frame A, and operating so as to permit the hammer to vibrate independent of the vibrating-yoke L, substantially as described.

3. The combination of pulley U, treadle Y, brake *t*, and belt-tightener *w v*, operating substantially as and for the purpose specified.

4. The combination of fixed head *e* having a groove, *f*, and slotted cam S *i* having a tongue, *g*, and being adjustably secured to the head *e*, substantially as and for the purpose specified.

136,254.—*Cultivator.*—KENNETH MCKENNON, Pleasant Hill, Ala.

A share for loosening the subsoil in combination with a wing or share for turning or loosening the surface. The turning-wing is attached to a grooved standard, and adjustable to different heights.

Claim.—1. In combination with the front and rear standards C and D, united to each other, as described, the adjustable grooved standard F with its foot *k* and cultivator-share, constructed and arranged substantially as described.

2. In combination with the adjustable standard F and cultivator-share, arranged as described, the notches *s* in the front standard C for securing and bracing the notched point of the share at any height corresponding with the adjustment of the supporting-standard F, substantially as described.

3. The cultivator-shares G H I, provided with notches *t u* at their upper and lower points of attachment to brace them laterally to the standard C F, to which they are secured.

4. The combination and arrangement of the standards C D and the adjustable standard F with their foot-branches *c*, *d*, and *k*, the subsoil-point E, and the cultivator-share made adjustable in the notched standard C, the several parts being constructed and arranged for use as described.

136,255.—*King-Bolt for Carriages.*—JOHN L. H. MOSIER, New York, N. Y., assignor to BREWSTER & COMPANY, same place.

The king-bolt has a curved cross-head which is inserted within a recessed top plate. The bottom plate is secured to the head of the king-bolt by bolts passing through the bed piece.

Claim.—The combination with the bed A of the curved cross-headed king-bolt D *d'*, recessed top plate B, bottom plate C, and bolts E E, as and for the purpose described.

136,256.—*Elastic Check-Rein.*—JAMES NEALEY, JR., and THOMAS P. KENT, Bangor, Me.

The rein is composed of flat elastic webbing rolled up and covered with braided thread, like whips.

Claim.—In an elastic check-rein, the cord *d*, constructed, as herein described, from flat elastic fabric *a*, rolled as at *b*, and covered with braided webbing *c*, substantially as herein set forth and shown.

136,257.—*Plow.*—JAMES R. NICHOLS, Bastrop, Tex.

Claim.—The plow-cutter E having bead *e'* at one end, sharpened at the other, and perforated at different points, as described, to adapt it to be used with a sweep or plow, in the manner described.

136,258.—*Pump.*—HENRY NORMAN and CHARLES F. DIETRICH, New Orleans, La.

The pump is provided with two independent valve-chests, each provided with a suction and a discharge valve, and each connected by pipes with the piston-cylinder, well, or reservoir and the discharge pipe. Thumb-screws are inserted through stuffing-boxes at the base of each valve-chest, the points of which approach the stems of the suction-valves, so that on turning the thumb-screws the valves may be lifted from their seats, thus enabling the operator to render the pump single-acting, double-acting, or non-acting, at pleasure.

Claim.—The valve-chests F F, having valves H H and H' H', when the former are provided with valve-stems h h and the set-screws K K, the whole being so combined and connected with a cylinder and piston and a suitable means of discharge as to operate either as a single or double acting pump, substantially as described.

136,259.—*Air-Engine.*—HENRY NORMAN and CHARLES F. DIETRICH, New Orleans, La.

An ordinary pump is connected by suitable pipes with two pressure-cylinders, having each a weighted suction-valve and an outlet-valve. The connecting-pipe of one of the pressure-cylinders enters the pump-cylinder at a point above the highest stroke of the piston, and the other correspondingly below. The apparatus being properly supplied with water, at each up-stroke of the piston the water in one pressure-cylinder follows the movement of the piston, thereby admitting air through the suction-valve of that cylinder, while at the same time the water, being forced into the other cylinder, compresses the air in that cylinder and forces it out of its discharge-valve. At each down-stroke the operation is reversed.

Claim.—The cylinder C, piston C', pressure-cylinders D D' having valves *d d* and *s s*, and pipes G G', the whole being so combined and arranged as to operate substantially as described.

136,260.—*Grain-Drill.*—CHARLES E. PATRIC, Springfield, Ohio.

A seed-box, placed laterally on a frame with running wheels. A seed-shaft beneath it, revolving in droppers, has on its end a series of cones actuated by an endless belt from another series on one of the running wheels. By sliding the shaft endwise and allowing a latch to drop into one of two circular recesses the position of the cones is changed, and with it the intervals of seed-dropping. The drag-bars are attached alternately to two laterally-pivoted bars, and are made to keep in line or otherwise by means of a right-and-left-hand screw-thread on a shaft extending to the rear operating-nuts, swiveled to the pivoted bars. Chains attached to the drill teeth become wound round a roller as the latter, by pinions, passes up racks at the rear. This movement actuates a device to throw the cones in and out of gear.

Claim.—1. In combination with the rocking-bars C C' and drag-bars D' of a grain-drill, a right-and-left-hand screw for shifting the position of the hoes, substantially as described.

2. In combination with the seeding devices of a grain drill, an adjustable cone of sprocket-wheels or pulleys for varying the delivery of the grain, substantially as described.

3. In combination with the gearing for driving the seeding devices of a grain-drill, the angular or curved sliding bar N and sliding bar O, substantially as described.

4. The combination of cone F, disk G, bar O, plate or fork O', bar N, plate M, and wheel A provided with pin *g*, substantially as described.

5. The combination of cones F F', chain I, shaft D provided with grooves *p p'*, and latch *h'*, substantially as described.

136,261.—*Furnace for Chloridizing Ores.*—IRA M. PHELPS, Chicago, Ill.

Claim.—1. The process of chloridizing sulphureted silver-bearing ores, so as to prevent the escape of the disengaged chlorine and uniting it with the silver, and at the same time preventing the escape of the silver by volatilization before the chloridization is effected, by forcing said ores through a heated pipe or pipes without bringing said ores in contact with the flame from the furnace, substantially as specified.

2. In the process of chloridizing sulphureted silver-bearing ores, the use of the horizontal heater-pipe D, and horizontal chloridizing pipes E, substantially as and for the purpose specified.

3. In a chloridizing-furnace, the combination and arrangement of the horizontal heater-pipe D, horizontal chloridizing pipes E, and chambers F, substantially as and for the purpose specified.

4. Chloridizing sulphureted silver-bearing ores within heated pipes, in connection with a hot-blast, substantially as specified.

136,262.—*Knitting-Machine Needle.*—CORWIN H. PLATT and GEORGE A. STARBUCK, Norwalk, Ohio.

The needle, which has only an endwise reciprocating motion, is made of the same width throughout its entire length, and its point is made at a right angle with its flat upper side and rounded at the under side, so as, in the forward motion of the needle, to surely push off the old loop from a stationary stripper to which it was removed in the backward motion of the needle. A longitudinal groove is preferably made in the upper side of the needle for the stripper to work in.

Claim.—1. As an improvement in knitting machines, a reciprocating needle, constructed substantially as described, operating in combination with a stationary or fixed comb tooth or stripper, substantially as and for the purpose specified.

2. The needle A, having its end or point *e* formed substantially as described, so as to remove the loop from the stripper and transfer it to the web, substantially as set forth.

136,263.—*Manufacture of Fuel.*—MARTIN RAE, Uphall, North Britain.

The tarry oil is distilled in a series of vessels, the last portion being reserved so as to moisten the coal-dust as it is fed into a mixing-mill, where it is combined with the tar from the stills. The mixed tar and dust is formed into blocks and passed through a kiln and baked.

Claim.—1. The preparation of bituminous mastic from shale-tar, and the use and application of the same in conjunction with either coal-dust, small coal, coal-dross, coal-slack, bituminous shale, spent shale, bituminous blue or cooly blue, peat, spent tan, sawdust, and coke-breeze, all by preference in a state of division, or with mixtures of two or more of the same, for the preparation of fuel, as herein set forth.

2. The combination and arrangement of machinery or apparatus for the manufacture of artificial fuel, substantially as hereinbefore described, and illustrated by my drawing.

136,264.—*Combined Atmospheric Exhaust Pump and Funnel.*—GEORGE H. RANDALL, Forestville, Md., assignor to himself and WILLIAM H. WOODS, same place.

A sleeve is closely joined to a funnel, and extends a sufficient distance down to enable its end to reach within a receptacle for the liquid. In this sleeve an air-exhaust pump is placed. The exhaustion of the air from the vessel to be filled removes the counter-pressure, thus utilizing the outside atmosphere to force the syrup rapidly into the receptacle.

Claim.—The combination of an air-exhaust pump with a funnel for liquids, as and for the purpose described.

136,265.—*Machine for Holding and Soldering Cans.*—JAMES REDHEFFER, Kansas City, Mo.

The wedge shaped sliding plate is clasped at each of its edges into cleats, and expands or contracts the cylinder to any desired diameter.

Claim.—In combination with the cylinder A the clasp or lock cleats D E, and the clasp or locked sliding plate F, arranged to operate as and for the purposes described.

136,266.—*Harvester-Cutter.*—SAMUEL H. REED and THOMAS THOMPSON, Fredericktown, Ohio.

Cutter-sections, with downwardly-projecting lips at their rear ends, are inserted through an opening at one end of the cutter-bar, and slipped laterally and retained by the lip and a retaining-bar in front of it. The last section has a set-screw penetrating one side, by which displacement is prevented.

Claim.—1. The bar A provided with the opening *b*, groove *c*, shoulder *d*, and set-screw C, as and for the purposes set forth.

2. In combination with the bar A with opening *b*, groove *c*, shoulder *d*, and set-screw C, the knife-sections B having ribs *e* on their inner edges, all substantially as shown and described.

136,267.—*Machine for Corrugating Sheet-Iron.*—ABRAM REESE and JACOB REESE, Pittsburg, Pa.

A series of pairs of corrugated rollers supported in a frame, so arranged that the sheet is corrugated progressively, and the corrugations increase in number as it passes from pair to pair of the rollers.

Claim.—1. A machine for corrugating iron, consisting of a supporting-frame, C, or its equivalent, and four—more or less—pairs of corrugating-rollers, constructed and arranged substantially as shown and described.

2. The gear-wheels H and I in combination with the corrugating-rollers A and B, substantially as and for the purpose described.

3. A corrugating-machine with the rollers so formed and arranged that the sheet is corrugated progressively, and the corrugations increased in number from one pair of rollers to another, substantially as described.

136,268.—*Wagon Body and Seat.*—PETER S. RICH, Avalanche, Wis.

The sides and corners of the body are formed of single pieces, and are secured by end pieces. The seat, having bent sides and straight back, has arm pieces extending from the back to the front end, which are supported by stay-irons.

Claim.—1. The side-pieces A A bent to form rounded corners B, combined with end-pieces C C, as shown and described, and for the purpose set forth.

2. The arms K K combined with top of side bent and straight-backed seat J, as and for the purpose described.

3. The sides A, end-pieces C, dash-board F, bow G, seat J M, and arms K, combined with angle-irons E H, stay-irons L, and ovals I I, to form an improved wagon-body, as described.

136,269.—*Screw-Cutting Machine.*—JOHN W. ROW, Lewisburg, Pa.

The bed is arranged to receive dies or clamping-jaws, and is raised and lowered by a rack depending from the bed and a pinion operated by a foot-wheel. The bed has a clutch-nut attached to it, by which it is engaged with or disengaged from a vertical feed-screw which is operated by a ratchet and pawl, the latter being actuated by a cam on the drill-shaft.

Claim.—1. The arrangement of the sliding frame or die-holder E *e* in the guide ways F, when provided with the clamping-screw bar *f*, hinged jaws *f g*, and cam-headed lever *e*, together with the rack C, by its connecting-arms D, operated by the pinion *b* on the shaft B, with its foot-wheel Q, the whole substantially combined and operated in the manner and for the purpose specified.

2. In combination with the drill-spindle J and its appliances, the arrangement of the cam R in its bearings with the spring S and rod U for operating the pawl W and ratchet T in combination with the feed-screw Z, all arranged and operated substantially as and for the purpose set forth.

136,270.—*Windlass for Hoisting-Machines.*—JOHN RUSHWORTH, New York, N. Y.

The drum-shaft carries the clutch mechanism and large gear-wheel, the latter connecting with the gear-wheel upon the lower shaft, to which the clutch-lever is attached.

Claim.—The shaft F and gear-wheels H and I, in combination with the shaft E, clutch C, lever K, and drum A, all arranged and operating in the manner and for the purpose described.

136,271.—*Wire-Mattress Frame.*—JOHN G. SMITH, St. Louis, Mo.

An adjustable piece is attached to the side and end rails. In the side of this piece is a slot and clamping-screw. A set-screw is inserted in the end of the piece which abuts against the end of the rail. By releasing the clamping-screw and inserting the set-screw the tension of the fabric is increased.

Claim.—The combination of the side rails A, end bar or rail E, and adjustable pieces C C', when the latter are provided with flanges *c'*, slot *c*, clamping-screw B, and set-screw D, all arranged substantially as and for the purpose set forth.

136,272.—*Railway Snow-Plow.*—PETER A. SMITH, New York, N. Y.

A double-walled plow, the outer wall perforated and the inner section divided into separate chambers, so that one or both sections may be used, according to the depth of the snow. Steam is admitted to each chamber by separate pipes, and is driven against the snow through the outer perforated wall.

Claim.—A snow-plow, double walled to form chambers *c' c''*, perforated in its outer shell to allow exit of steam, and provided with a distinct steam-inlet pipe for each chamber, as and for the purpose described.

136,273.—*Broom.*—STRAKUS STANDISH, Eureka, Nev.

The sheet-metal head is provided with a screw-threaded socket and has its wider sides inclined toward each other. The handle is also screw-threaded, and presses against a wedge that enters between the butts of the broom-corn, and thus secures the material firmly in the head.

Claim.—The screw-threaded handle B and the wedge C, in combination with the sheet-metal head A provided with the screw-threaded socket E, and having its wider sides inclined toward each other, all constructed and arranged in the manner and for the purpose herein set forth.

136,274.—*Duplex Telegraph-Instrument.*—JOSEPH B. STEARNS, Boston, Mass.

Key adapted to close simultaneously circuits from main battery through relay-magnet to main line, and from a local equalizing battery through a compensating relay-magnet.

Claim.—1. A key, consisting of the levers *a b c*, with their respective contact-stops, combined and arranged as and for the purpose set forth.

2. The combination of the key above described with a coil or magnet excited by the main-line battery, an opposing or neutralizing magnet or coil, local battery, and resistance, as and for the purpose as set forth.

136,275.—*Billiard-Light.*—WILLIAM ST. MARTIN, Cincinnati, Ohio.

The adjustable sleeve on the main stem has rubber friction-pads fastened in inclosing cases and provided with suitable tightening devices. The shades may be independently set at any desired angle by means of the jointed arms. These arms are attached to a sleeve adjustable on the main sleeve which carries the lights.

Claim.—1. The combination, with the sliding tube of the friction device composed of rubbers F F, the cases U C inclosing the rubbers, and the set-screws D D, as a means of regulating the position of the sliding tube upon the supporting-rod.

2. As a means of securing my friction-clutch to the sliding tube, the tightening device, consisting of the band *e*, screw *f*, and the straps or links E E, substantially as described.

3. The combination, with the sliding tube of a hanging lamp, of the jointed arms B B, and the two rectangular-shaped reflectors, substantially as described, for the purpose of concentrating the light of the two lamps upon any desired rectangular space beneath them.

136,276.—*Sofa-Bedstead.*—JAMES K. STOCKTON, New York, N. Y.

The detachable back is cushioned on both sides and is hinged to an intermediate connecting-cushion, which is in turn hinged to the sofa-seat. Said seat is pivoted at each end. When used as a bed the cushioned back forms the outer section of the extension, and is provided with a hinged foot-board and sliding legs.

Claim.—1. The cushion C hinged to the front edge of the sofa-seat B, to be folded away under the same and constituting the connection between said seat and the sofa-back, as specified.

2. The combination of the hinged foot-board K and sliding legs *f f* with the folding sofa-back D, substantially as described.

136,277.—*Fertilizer.*—JOHN W. STUBBS, Cheraw, S. C.

Attached beneath a plow-beam is a frame in which a seed-box, in form the frustum of a cone, revolves by means of a disk on its smaller base rolling on the ground. A hopper on the beam supplies the seed, which passes out between the larger base and a portion of the frame covering it, the outlet being adjusted by a screw on each side of the frame. There is a shovel in front, and also a coverer behind.

Claim.—1. The arrangement of the wheel I and distributing hopper or cylinder H M on the shaft J with relation to the apertured plate F, having the receiving-hopper G secured to its outer side, as shown and described, to operate as specified.

2. The combination of the two adjusting-screws O P with the plate F, the distributing-hopper H, wheel I, shaft J, and radial arms M, substantially as herein shown and described, and for the purpose set forth.

136,278.—*Lifting-Bridge.*—SAMUEL SWARTZ, Buffalo, N. Y.

The bridge rises on a horizontal shaft operated by a winch and toothed sector. It is counterpoised by a balance-beam and weight, the former being connected with the bridge, near the center of its length, by a link. The tension-rods underneath and the diagonal planking tend to stiffen the bridge and secure it against torsional strains.

Claim.—1. The horizontal pivot-shaft C with arms E E', the pivoted bridge D, the struts F F', the lifting mechanism K L M, and the balance-beam N with the counter-weight R, arranged, as described, to leave a clear tow-path, and combined and operating substantially as set forth.

2. The arrangement of pivot-shaft C, having arms E E', struts F *f* F' *f'*, and truss-pieces G G', substantially as described.

3. The provision, on the pivot-shaft of a draw-bridge, of the ratchet H *h* H', in the described combination with the catch-pawls I J J'.

136,279.—*Harvester.*—ZURIEL SWOPE, Lancaster, Pa.

The frame is arranged in front of and above the main axle, and is provided with a lead-wheel that is adjustable so that its direction may be changed to counteract the side draft.

Claim.—1. The frame A, bent and angular, as shown, with an upper and lower bar on each side, extending forward from and above the axle C, having wheel E, and connected together by the cross bars B B¹ B² B³, and provided with the shafts H d with wheels J, b, and G, all constructed and arranged substantially as and for the purposes herein set forth.

2 The combination of the guide-wheel N, shaft h with fork O, lever P with pin i lever R with jaw n and ratchet p, and the collar m, all substantially as and for the purposes herein set forth.

136,280.—*Crib Attachment for Bedsteads.*—MARY W. TARBELL and JOSEPH H. P. INSLEE, Jersey City, N. Y.

Framed to the uprights forming supports or legs, is the outside of the crib To the lower edge of it is hinged the bottom, and to the ends of the bottom the ends are hinged to fall on its bottom, which is constructed to drop down when not in use From the inner edge of the bottom hooks are appended, by which it may be attached to the bedstead, and all made to fold when not in use.

Claim.—The combination of the posts A, stationary side B, hinged bottom C, hooks D, hinged ends E e', and hooks F, with each other, in substantially the manner herein shown and described.

136,281.—*Lifting-Jack.*—SYLVESTER TAYLOR, Cold Water, Mich.

Claim.—The combination of the bars A, B B, and C C, notched bar D, and curved lever G, all constructed and arranged as described to form a lifting-jack, substantially as herein set forth.

136,282.—*Bobbin for Sewing-Machine Shuttles.*—WILLIAM H. THAYER, Somerville, assignor to ABNER J. TOWER, Boston, and OSBORNE M. SOUTHWICK, Somerville, Mass.

The auxiliary head is added to the main head, and a groove is left between them to receive the thread should it slip over the inner head, and thereby prevent the thread from being wound about the pivot.

Claim.—The sewing-machine shuttle bobbin, provided with the auxiliary heads, as described, arranged with the main heads, shank or body, and pivots, all substantially as specified.

136,283.—*Wash-Boiler.*—JOSEPH C. TILTON, Pittsburg, Pa.

A wash-boiler, constructed in ordinary form, with an adjusting false bottom, having openings for the passage of the water, over which is fitted a slide or valve covering the openings, and is held in position by staples arranged to give full play to the valve, and the bottom resting upon two projections connected with the sides with grooves, into which a projection attached to the bottom is fitted, and a close joint made by covering it with cloth that the water may be, by the aid of the steam, forced up and onto the clothes by side or end pipes with apertures on their top for the discharge of the water.

Claim.—The removable false bottom D having the turned-down edges covered with cloth rubber, or other suitable packing, secured substantially as described, in combination with the boiler G having the partial false bottom I I, grooves K K, and hot-water passages E E, when arranged and operating as described, and for the purpose specified.

136,284.—*Spring for Vehicles.*—THEODORE R. TIMBY, Tarrytown, N. Y.

Each end of the half-elliptic spring bears upon the surface of a triangular rocker, which is secured within a suitable case. Rubber cushions are interposed between the rocker and the side of the case, and a guiding-cap is secured to the top of the case, which keeps the spring in position laterally.

Claim.—1. The combination of the rocking blocks F and cushions or springs H, arranged to operate substantially as and for the purposes herein set forth.

2. The combined cap and guide G g, constructed and applied substantially as and for the purposes specified.

136,285.—*Cigar-Tip Cutter.*—FERDINAND TIMM and THEODOR FANTINI, Stapleton, N. Y.

A cutting-knife works between two plates, which have apertures of different sizes to suit various sizes of cigars.

Claim.—The arrangement of a cutting-knife, D, between two plates, a a, containing corresponding apertures b b of different diameters, placed above a suitable box or receptacle, A, for receiving or catching the cigar-cuttings, as and for the purpose described.

136,286.—*Motor.*—LUCIUS E. TRUESDELL, Warren, Mass.

The piston of the hydraulic engine is combined with a system of accelerating-gear, by means of which a portion of the power of the engine is converted into motion and made serviceable as a prime motor.

Claim.—1. The combination, substantially as described, of a series of accelerating-gears with the piston of a hydraulic engine, for the purpose set forth.

2. The combination of a piston carrying two rack-bars, a, with a driving-gear, b, operated in the manner and for the purpose set forth.

3. The combination, substantially as described, of a lever, K, and clasp connection L with the piston-rod D E of a pivoted hydraulic engine, B, for the purposes set forth.

4. The combination of the piston-rod studs M with the projection m of the lever K, for the purpose set forth.

136,287.—*Wagon for Hauling Stone or Heavy Bodies.*—LUCIUS E. TRUESDELL, Warren, Mass.

To facilitate the loading and unloading of large stone and other heavy bodies, and the moving of the same.

Claim.—1. The combination of the independent wagon-bed J with a wagon-frame, substantially as described, the whole operating in the manner and for the purposes set forth.

2. The combination of a movable or adjustable lifting-jack, Q, with a wagon frame, substantially as described, for the purposes set forth.

3. A wagon frame, consisting of a carriage-way, a, and a lower supporting-frame, A, and a system of standards, C, C¹, and C², substantially as described, and for the purpose set forth.

4 The combination of a pinion, A, and gear-wheel D with the main wheels F of a wagon, as arranged and operated, for the purpose specified.

136,288.—*Paint-Brush.*—PHILIP WAGNER, New York, N. Y.

The brush is fixed in a metallic cap with a suitable handle. Over this cap is an extension case to slide on the bristles, which is adjusted by a set-screw.

Claim.—The extension case D, held in place on case A by a screw, d, and applied to a brush, substantially as herein shown and described.

136,289.—*Shoe-Brush.*—GEORGE WALZ, Hoboken, N. Y.

A shoe-brush, constructed with a distributer on its back, connected with a lever and valve leading from a reservoir of liquid blacking, by which the operator, while using the brush by a pressure upon the lever, may furnish the distributer with blacking without the necessity of handling the box.

Claim.—The box F f', rubber tube G, valve C, lever D, plate E, springs I and I, and plate J, in combination with the polishing-brush A applying-brush B having its stock perforated, and handle K, substantially as herein shown and described.

136,290.—*Swinging Candlestick for Ships.*—JOSEPH J. WALTON and EDWARD A. BARRETT, New York, N. Y.

The curved part of the collar which holds the candle against the spring is divided by openings cut therein, thus allowing access of air to the base of the burning wick and removing a portion of the metal, which would communicate heat to the candle.

Claim.—The slots a a, in the curved part of the collar H, and used in connection with the tube C and spring and holder E G, all constructed substantially as and for the purpose specified.

136,291.—*Damper for Hot-Air Furnaces.*—AMOS C. WARREN, Concord, N. H.

By means of the slotted head of the actuating-rod, the adjustable pivot, and the rod which connects the lever with the damper-spindle, the damper within the air-conduit may be adjusted at any desired angle.

Claim.—1. The combination of the connecting-rod b, the lever D, the adjustable pivot r, the slotted head v, the screw w, and block s, such being for application to the diaphragm and the damper, in manner as shown and described.

2. The combination of the rod b, the lever D, adjustable pivot r, slotted head v, the screw w, and block s with the rod t, the diaphragm k, the case t, the pipe m, and the drum or cylinder F, all being constructed, arranged, and applied together, substantially as explained and shown.

136,292.—*Coffee-Roaster.*—ALFRED W. WETBURN, Minneapolis, Minn.

A plate, of diameter of ordinary pot-lids, having a longitudinal aperture in the center with standards at either end; the whole cast in one piece. The standards sustain a revolvable coffee-roaster in and over said aperture.

Claim.—A revolving coffee-roaster, in combination with a stove-lid having a central opening, in which the roaster can revolve, substantially as and for the purpose set forth.

136,293.—*Construction of Boots and Shoes.*—MORTIMER M. WHEELER, Galena, Ill., assignor of one-half his right to JAMES JONES, Dodgeville, Wis.

Claim.—1. The upper and a stiffening of a boot and shoe cut in one single piece, substantially as described, for the purpose specified.

2. The pattern for the upper of a boot or shoe, cut in the form shown in Fig. 2 of the drawing, with the piece cut from the opening B turned under to form a heel-stiffener, substantially as described, for the purpose specified.

136,294.—*Hand-Planter.*—GABRIEL WINDLE, New Cambria, Mo., assignor of one half his right to NORMAN N. DAVIS, same place.

The seed deposited in the main hopper is conveyed through an opening into a side chamber, thereby relieving the feeding-slide from the pressure of the grain. The working of the handle moves the short pivoted board and alternately opens the jaws which penetrate the earth, and the aperture in the slide, through which a regulated quantity of seed falls at each movement into the conducting-chamber and is deposited in the earth.

Claim.—1. The end b' of the short hinged board B, arranged to move beneath the feeding-slide E, and having the curved handle H A attached thereto below the feeding-slide E, as described, to obtain the advantages stated.

2. The short hinged side board B b', in combination with the curved handle H and steps G and A', as and for the purpose described.

136,295.—*Harvester.*—WILLIAM ARBON WOOD, Hoosick Falls, N. Y.

The lifting-lever is journaled on the main axle, and has attached to it a cam-arm to operate on the rear of the tongue, to vibrate the gear-frame. Said cam-arm also acts upon the lifting-chain, which is connected to a segment on the shoe, and at the opposite end to a fixed point on the frame, for the purpose of raising the finger-bar.

Claim.—1. The sheave or segment D² on the shoe D, in combination with the chain E extending horizontally or nearly so from said sheave, and attached to a fixed point on the frame, and operating substantially as described.

2. The lifting-lever H, provided with the cam-arm G² operating upon the rear extension of the tongue, for vibrating the frame and permitting the further movement of the lever independently of both frame and tongue, for raising the outer end of the cutting apparatus, substantially as described.

3. The cam G² applied to the lever H, in combination with the heel extension of the tongue and the lifting chain E, arranged and operating substantially as described

4. The seat support mounted loosely on the axle, and connected with the tongue by means of the link P, substantially as and for the purpose described.

136,296.—*Sink-Trap.*—NICHOLAS WRIGHT, New York, N. Y.

In a sink trap the inlet-pipe enters at a lower level than the mouth of the outlet-pipe. The water entering raises a lever-float hinged to the wall of the trap, the lever of which raises the flap-valve of the outlet-pipe, permitting the water to flow out. The falling of the float permits said valve to reclose the outlet, thus preventing the escape of offensive gases.

Claim.—The combination of the lever-float E F and valve D with the trap C, provided with a detachable cover, G, and with the inlet pipe A and outlet-pipe B, substantially as herein shown and described.

136,297.—*Cultivator.*—SINGLETON L. YOUNG, Scottsville, Ill.

The axle tree is in two parts; the inner ends of the upper sections are provided with a rack-segment, and the space between them is occupied by a pinion that gears into both racks. A lever, projecting rearward, is secured to the pinion, by means of which the machine is guided. The cultivator-beams are two in number, and are placed parallel to the lower section of the axle-tree and secured by adjustable drag-bars.

Claim.—1. The combination of the lever E having pinion D on the lower end, and the axle arms B B having racks on their inner ends, arranged on the axle-trees A of a wheel cultivator, as and for the purpose described.

2. The device B B D E, combined with the guide F pendent from the middle of the axle-tree, as and for the purpose set forth.

3. The draft-bars H and adjustable braces I, combined with axle pivoted to beam A, as and for the purpose specified.

136,298.—*Turbine Water-Wheel.*—JOSEPH N. ASBURY and LEONIDAS M. ASBURY, Rockland Mills, Ky.

Metallic flanges are secured to the offsets at the bottom of the blocks and above the wheel to prevent the escape of water between the blocks and wheel.

Claim.—The blocks B B holding the metallic flanges H H', in combination with the turbine wheel A, having the rim and hub grooved at a a', substantially as specified.

136,299.—*Deck Light.*—ISAAC M. BEARSE, Boston, Mass.

A hemispherical bull's-eye has upon its periphery a flange which fits in a a countersunk cavity in the deck, and is held in its place by a metallic ring above it, having ears or lugs by which said ring is secured—all for the purpose of compensating for the wearing away of the deck and the consequent chipping of the glass.

Claim.—The bull's-eye B with its flange C, in combination with the countersink m, seat e, and upper fastening-ring g, either with or without the washer f, all combined and arranged substantially as and for the purpose above described.

136,300.—*Lasting-Tool.*—LYMAN R. BLAKE, Brooklyn, N. Y.

A nail is severed from the blank at each downward movement of the plunger and drops into the tube in position to be driven. The nail-blank is fed forward by means of a lever and spur-wheels, which are actuated by the vertical movement of the holder.

Claim.—1. The combination, with the nail-socket e, head supporting and severing edge f and nail-tube g, of a driver, m, which, in conjunction with edge f, severs the nail-head, and then drives the nail.

2. In combination with the severing and driving mechanism, the straight arm b, with its T-shaped passage d for the blank, and the blank-feeding mechanism, all substantially as shown and described.

3. The spur-wheels o p, pawls q r, slide s, and lever u, operated and operating to intermittently move the blank forward, substantially as described.

4. The construction and arrangement of the mechanism, substantially as shown and described

136,301.—*Bolstead Fastening.*—LEWIS G. BRADFORD, Plymouth, Mass.

Upon the rail end of the joint-plate there are punched-out projections which fit in corresponding depressions in the rail.

Claim.—The joint-plate A, when the same is made with the projections B' C' D', substantially as described, and for the purpose set forth.

136,302.—*Food Compound.*—LEWIS S. CHICHESTER, Brooklyn, N. Y., assignor to CHARLES F. CHICHESTER, same place.

Desiccated maize and oats ground to suitable-sized granules.

Claim.—The new article composed of a mixture of desiccated and granulated maize and oats, as set forth.

136,303.—*Food Compound.*—LEWIS S. CHICHESTER, Brooklyn, N. Y., assignor to CHARLES F. CHICHESTER, same place.

Claim.—The new article of manufacture, consisting of barley and wheat granules mixed and desiccated, as set forth.

136,304.—*Food Compound.*—LEWIS S. CHICHESTER, Brooklyn, N. Y., assignor to CHARLES F. CHICHESTER, same place.

Oats and wheat are scoured and cleaned separately and desiccated. The oats are reduced to a fine meal. The wheat is reduced to a meal, preferably by revolving pulverizers.

Claim.—The food compound prepared of the materials and in substantially the manner specified.

136,305.—*Article of Food from Cereals.*—LEWIS S. CHICHESTER, Brooklyn, N. Y., assignor to CHARLES F. CHICHESTER, same place.

The cereal is cleaned, scoured, and reduced to a coarse flour; it is then mixed into a stiff dough and baked in a slow oven. The sheets or pieces of cooked cereals are broken or ground into a flour of the desired fineness.

Claim.—The meal or flour prepared by the process herein specified.

136,306.—*Preparing Corn-Meal for Shipment.*—LEWIS S. CHICHESTER, Brooklyn, N. Y., assignor to CHARLES F. CHICHESTER, same place.

Maize scoured, dried, ground, and packed into tin cans or other similar packages by a pressure that is sufficient to compress the mass to about one-half its bulk.

Claim.—The desiccated and ground maize, reduced in bulk by pressure sufficient to expel most of the atmosphere, and inclosed in a tin or other package, as set forth, as a new article of manufacture.

136,307.—*Railroad-Rail Joint.*—WILLIAM B. CLARK, Thellertown, Pa.

Claim.—The tapered square keys C C with heads d, threaded end e, washer D, nut E, and square holes c c, in combination with the rail parts A and B, substantially as and for the purpose hereinbefore set forth.

136,308.—*Medical Compound or Ointment.*—MARY ANN CURTIS, San Francisco, Cal.

Leaf-tobacco, lard, red wine, beth-root or *Trillium pendulum*, resin, niter, bees-wax.

Claim.—A medical compound or ointment, consisting of the ingredients above enumerated, in the proportions specified, for the purposes described.

136,309.—*Hose-Nozzle.*—EDMUND A. DAY, Oberlin, Ohio.

Pivoted clamps are attached to a metallic nozzle for controlling the passage of fluid through the hose.

Claim.—In combination with the metallic nozzle A, the ears E and E, lever-handles C and D, bearings J and J, and intermediate elastic tube L, constructed and operating substantially as and for the purpose set forth.

136,310.—*Car and Window Washer.*—PATRICK S. DEVLAN, Jersey City, assignor to himself and WALTON BROTHERS, Newark, N. J.

A head with a stationary and a movable jaw hinged together, and mounted upon a handle. A sponge is contained between the jaws, and a lever on the movable jaw ejects the water from the sponge.

Claim.—The window and car washing apparatus, composed of the jaws b and c, hinged together and combined with the lever A and handle, substantially as and for the purpose set forth.

136,311.—*Shuttle for Sewing-Machines.*—GEORGE ARSEL EDWARDS and GEORGE SCHNEDER, Syracuse, N. Y.

The bobbin-supporting spindle is hinged to the shuttle-case and the spring, the pressure of which is governed by the nut, which presses the head of the bobbin into the annular depression.

Claim.—1. The shuttle provided with the pivoted screw-threaded spindle, thumb nut, and spring, and with the depression F, into which the head of the bobbin may be pressed by the spring and nut, as described.

2. The principle of a bobbin long and hollow to receive an axle. (See Fig. 4.)

3. The principle of such a bobbin running on a movable and adjustable axle.

4. The principles for adjusting and confining said axle and bobbin in their proper positions in the shuttle for operation.

5. The principles of the burred nut and coiled-wire spring in their several positions and offices, for obtaining any desired tension to the thread being reeled off of said bobbin; all of which principles are herein detailed and explained.

136,312.—*Manufacture of Plug and Bunch Tobacco.*—ISAAC EPINGER, New York, N. Y.

A cylindrical bunch or sheaf of the required length is wound with a rope of twisted or spun tobacco and then subjected to pressure in a die or press.

Claim.—1. The method herein described of putting up tobacco into packages or lumps, by coiling a rope of twisted or spun tobacco around a core or bunch of tobacco, the whole being subjected to pressure, substantially as herein described, and for the purposes set forth.

2. As a new article of manufacture, tobacco prepared and put up in packages or lumps, substantially in the manner and for the purposes herein set forth.

136,313.—*Street Letter-Box.*—CHARLES L. EVERT, Washington, D. C., and AGA JOHNSON, New York, N. Y.

A series of levers attached to the cover operate a pawl and ratchet which rotate a time-indicating wheel as the cover is raised to empty the box.

Claim.—The combination with a street letter-box of a register or indicator, operated by the opening or closing of the lid or door of the box, for the purposes herein set forth.

136,314.—*Sewing-Machine.*—OSCAR FARRAR, Chicago, Ill.

A bobbin of usual form is supported by the bobbin-case having a loop-check and perforations for producing tension, and both are confined in operative position with relation to the rotating hook by means of the ring-slide. When the loop of upper thread is caught by the check the case has a slight movement, thus allowing the check to yield to the action of and not unduly strain the loop, and at such time the bobbin is moved sufficiently to let off enough thread for the next stitch, but when the loop is cast off by the further rotation of the revolving hook the case is drawn back and the tension on the lower thread is momentarily increased. The recess in the case is to facilitate the passage of the loop of upper thread. The tension of the lower thread may be varied at will by means of the small holes in the case.

Claim.—1. The bobbin-case D, provided with the hook or check *r*, arranged to operate substantially as described.

2. The bobbin-case D, provided with the recess *e*, to facilitate the passage of the thread, as shown and described.

3. The bobbin-case D, provided with the spring *k*, having the lip *n* projecting through the case, substantially as shown and described.

4. The rotating hook B, having its recess to receive the bobbin arranged eccentrically substantially as and for the purpose described.

5. In a sewing-machine, a bobbin-case which is turned backward by the bobbin-thread, while said case is held under the pressure of the needle-thread, substantially as herein described.

6. The bobbin-case D, provided with the recess *e*, and with the hole or holes *f* in its upper side, as shown and described, and for the purpose set forth.

136,315.—*Air Repeating-Gun.*—PAUL GIFFARD, Paris, France.

The gun is a breech-loader, the breech-piece being rotated by a lever. The passage by which the air-chamber communicates with the barrel is controlled by a valve in the end of the air-chamber. The valve stem or spindle, passing through suitable guides, is struck by the hammer to open the valve. The sweep of the hammer is increased or diminished by an adjustable stop, and thus regulates the amount of air admitted to the barrel at each discharge.

Claim.—1. In combination with the barrel C provided with the partially-rotating breech-piece *e*, the air-cylinder A constructed and arranged relatively to the barrel, and the passage *k* and spindle *p* by means of which the air within the cylinder is discharged into the barrel substantially as described.

2. In combination with the barrel C and air-chamber A and its connecting mechanism, the inclined stop *r* to adjust the stroke of the hammer, substantially as described.

136,316.—*Compressed-Air Defense-Stick.*—PAUL GIFFARD, Paris, France.

A cane is formed of two parts, the air-reservoir and the barrel. In the air-reservoir is placed the pump. The valve communicating between the air-reservoir and barrel is controlled by a bolt operated by a small lever on the outside of the barrel.

Claim.—The herein-described defense-stick, consisting of the air-chamber A, with the air-pump B arranged therein to charge the said chamber, the barrel S with the opening *n* between the air-chamber and barrel provided with the valve I, and combined with the bolt L and lever L′, the whole constructed and arranged to operate substantially as set forth.

136,317.—*Machine for Lasting Boots and Shoes.*—CHARLES W. GLIDDEN, Lynn, Mass.

A rubber or flexible bag is secured to a rigid frame or receiver, constructed in form to receive a lasted boot or shoe. The bag is charged with water, and as the pressure increases the upper is forced firmly against the last, and the projecting edges are pressed over upon the inner sole, where they are held by a series of radially or laterally moving slides until secured by lasting-tacks.

Claim.—In combination with the flexible and elastic bag or bags, to be filled and expanded as described, a series of slide-plates, bars, or jaws for crimping and holding the edges of the upper, substantially as described.

136,318.—*Lasting-Tool.*—CHARLES W. G. IDDEN, Lynn, Mass.

The nails are arranged in a removable chute, provided with inclined ways, down which the nail-heads slide, and between which the nail-shanks pass, and from which they are transferred automatically to the nail-tube by means of a fork attached to an adjustable lever.

Claim.—1. In combination with the tack and driver tube, the inclined chute *g*, with its ways *f* and prongs *f*, substantially as described.

2. In combination with the tube *a* and chute *g*, the lever *r*, with its prongs *n*, the lever being operated to remove the tack from the chute and drop it into the tube *d*, substantially as described.

3. In combination with the tube *a*, a tack-chute, *g*, made removable, substantially as described.

136,319.—*Lead-Pencil.*—JOSHUA GRAY, Medford, Mass., assignor, by mesne assignments to GOODYEAR RUBBER-HEAD PENCIL COMPANY, New York City.

A piece of India rubber is attached to the pencil by means of a holder or cap.

Claim.—Combining with a pencil, by means substantially as specified, a piece of India rubber, or like material, whereby marks made by the pencil may be effaced, as set forth.

136,320.—*Corset.*—THOMAS F. HAMILTON, New Haven, Conn.

In addition to the packet in the fabric for receiving the main-spring there is a second packet to receive the auxiliary spring.

Claim.—In combination with the pocket of each steel proper, a second pocket formed within the pocket of each steel to receive an auxiliary steel or stay, substantially as specified.

136,321.—*Grinding-Mill.*—JAMES T. HARVEY, Murtysville, Pa.

An arrangement of unequal-sized grinding-rollers, running at different degrees of speed, covered with indented soft wrought-iron bands, easily redressed when required, in connection with a concave composed of suitable grinding-bars.

Claim.—1. The combination of the unequal-sized cylinders C^2 C^3 arranged to run at different degrees of speed, and the large indented revolving cylinder E and concave grinding-bars K, all constructed and arranged to operate substantially as specified.

2. In a grinding-mill, the improved grinding-cylinder, encircled by a band of soft wrought-iron indented, substantially as and for the purpose specified.

136,322.—*Machine for Burnishing the Soles of Boots and Shoes.*—GARDNER C. HAWKINS, Boston, Mass.

The operating-lever C′ is provided with a slot in which the pivoted end of the fulcrum-adjusting lever moves, controlling the length of stroke given to the burnishing-tool.

Claim.—1. The operating-lever C′, with its fulcrum-slot *e e* and sliding box G, in combination with the adjustable fulcrum *f* and the fulcrum-adjusting lever E E′, substantially as described, and for the purpose set forth.

2. In a burnishing-machine, the reciprocating burnisher D, when arranged in combination with the fork C and operating-lever C′, so that the length of its stroke may be adjusted by moving the fulcrum *f*, operating substantially as described, and for the purpose set forth.

136,323.—*Addressing-Machine.*—SIMEON HOLTON, Middlebury, Vt.

A printed strip is intermittingly fed forward by rollers, under a reservoir which descends to paste its surface. At the next feed it is moved over a fixed blade, and a label is severed by the descent of a vibrating blade.

Claim.—1. The pasting mechanism consisting of the cam E on the driving-shaft *a*, lever K, and paste-reservoir M with strainer *i*, all constructed and operating substantially as and for the purposes herein set forth.

2. The combination of the feeding device, consisting of crank G, shaft *a*, rob *b*, lever H, pawl *d*, spring *e*, wheel J, and rollers I I, the pasting mechanism consisting of cam E, lever *h*, reservoir *m*, and strainer *i*, and the cutting mechanism consisting of cam D, lever N, rod *m*, shaft O, lever P, spring *p*, and cutters *n s*, as and for the purpose herein set forth.

136,324.—*Sewing-Machine.*—JOHN T. JONES, Ilion, N. Y.

The spring-fingers project laterally from the pins on which the thread-guiding rollers turn, and prevent the thread from getting out of place, yet allow it to pass between them to the rollers and the controlling-lever, actuated by a cam on the upper shaft. The nut of the tension device is composed of two pieces held together by a split steel ring, thus enabling the nut to hold itself in any position on the screw.

Claim.—1. The spring-fingers *u v* of the rollers or guides *l n*, in combination with the controlling-lever *m*, operating as and for the purposes specified.

2. The arrangement of the stationary eye *o′*, tension device *h*, eye or groove *i*, guides or rollers *l n*, and take-up lever *m*, operated substantially as set forth, for controlling the tension and the slack thread, substantially as set forth.

3. The two-part nut *b′*, made with a neck that receives the contractile band 10, as and for the purposes set forth.

136,325.—*Harvester.*—JOHN F. KINGWILL, Chicago, Ill.

A stationary rack is placed over the tongue, into which the arm of the sliding fulcrum-rod engages for the purpose of obtaining any desired relation between the frame and tongue; said fulcrum-rod is operated by a hand-lever in reach of the driver.

Claim.—The combination of the rack *a*, rigidly-attached arm *c*, sliding rod *b*, spring *e*, and lever *g*, when applied substantially as and for the purposes specified.

136,326.—*Bottle-Stopper.*—FREDERICK KUTSCHER, New Haven, Conn.

An elastic bottle-stopper is attached to a covering-plate by a central hollow projection, which is expanded by inserting a ball, or equivalent. The stopper is expanded while being forced into the bottle by reason of the concavity of its upper extremity and the concavity of its lower part.

Claim.—1. In combination with the plate B, the plug E, constructed with the projection F to extend through the plate, and with a cavity in the said projection filled to expand the said projection, substantially as described.

2. The plug E, constructed of a convex form upon its upper surface, combined with the plate B, having a downward conical projection, substantially as and for the purpose specified.

3. In combination with the plate B, constructed with a downward conical projection, the plug E, constructed with a concavity upon its lower surface, substantially as and for the purpose set forth.

136,327.—*Oil-Cup Support for Sewing-Machines.*—LA ROGE N. LESLIE, Leominster, Mass.

A cast-metal bracket with a shelf, to be screwed under the machine-top, and a spring to hold the cup in place on the shelf.

Claim.—The oil-cup supporter consisting of the parts C B D, in combination with the spring E, arranged substantially as described, and for the purpose set forth.

136,328.—*Hose-Coupling.*—HOMER LEWIS, Bennington, Vt.

Employs, in connection with the tapering end of the coupling, an elastic ring with a central opening slightly smaller than the largest part of the tapering end, so that the pressure of water acts to drive the flexible ring upon the tapering end, and expand the same to tighten both the inner and outer edges of the ring. The flat side of the ring takes a bearing against a nearly-flat surface, in which is the joint between the two parts of the coupling. The two ferrules of the coupling are locked together by segmental lugs, and a spring lock is employed to keep the parts from turning and separating.

Claim.—1. The coupling cylinder *b*, with the tapering end *i* and bearing-surface 3, in combination with the elastic ring *d*, coupling-socket *c*, and bearing-surface 2, substantially as and for the purposes set forth.

2. The spring-catch *r*, in combination with the interlocking lugs of the respective parts of the coupling, the lugs *k* having notches *s* for such spring-catch *r*, as and for the purposes set forth.

136,329.—*Electro-Magnetic Motor for Printing-Telegraphs, &c.*—LANDY TUBSTALL LINDSEY, Jackson, Tenn.

Synchronism obtained in the operations of a series of electro-motors by making a gap in the circuit making and breaking wheel, stopping all the motors by breaking their circuits, which are restored by corrector-wheels closing the gap whenever such corrector-wheel of the slowest motor shall have arrived at the unison-point.

Claim.—1. In combination with the propelling set and the governor set of an electric motor, the wheel a^9, springs *a* a^1, and electrical connecting-wires therewith for controlling the motion of the governor set, substantially as herein set forth.

2. The combination of the springs *a u*, wheels *s e*, magnet M, lever L, adjusting-screws *i*, and electrical connecting-wires, all constructed and arranged as described, for the purpose of successively stopping the motors as they complete their revolutions, and starting them all at the same time by giving an additional impulse to the wheel a^9, substantially as herein set forth.

3. In combination with the devices claimed in foregoing clause, a type-wheel constructed to correspond in shape with the wheel *e*, for the purposes herein set forth.

4. The arrangement of the ratchet movement, as described, or an escape movement in lieu thereof, in combination with the shaft S and governing mechanism, for the purposes set forth.

136,330.—*Animal-Trap.*—ROBERT B. MAY, Murfreesborough, Tenn.

The bait-platform consists of a four wing fan having an auxiliary drop in its floor operated by the bait-latch and a pivoted drop opening toward and with said fan. The box underneath has a safe also provided with a pivoted drop-roof.

Claim.—1. The pivoted bait-hook E, connecting-rod *e*, pivoted board D, and sliding bolt C, combined and arranged substantially as specified.

2. The weighted pivoted platform F in combination with trap-door B, having the lugs *g*, the cord G^2, and rod G^1, substantially as specified.

3. The weighted tilting platform H, covering the compartment A in a trap having the radial-winged trap-door B and tilting platform F, substantially as specified.

136,331.—*Running-Gear for Vehicles.*—ISAAC O. MADDOWS, Bonham, Tex.

Claim.—1. The head block, provided with a central eye or opening for the passage of the axle tree, a groove for the reception of the king-bolt, with a loop or bracket in front and rear, as and for the purpose specified.

2. The friction-boxes, constructed in two parts and provided with a friction-wheel, F, metal bearing-surfaces or keys *d d′*, and secured by a metallic band or other suitable clamping devices, substantially as specified.

3. The head-block having brackets B B′, and the friction-boxes having loops *s s*, in combination with the tongue G and guide-braces *g g*, substantially as and for the purpose set forth.

4. The head-block with its bracket or loop B′, in combination with the coupling I, stay or brace *l*, and sand-bolster C, substantially as specified.

136,332.—*Prepared Lumber for Joiners' Use.*—JOHN MULLAY, Somerville, Mass.

Claim.—As a new article of manufacture, a strip or strips of lumber dressed to the proper width, thickness, and shape, in cross-section, for house finish and various other purposes, having their face, sides, and edges covered with paper, cloth, or other suitable thin flexible material secured thereto by means of paste, glue, or other adhesive material, with or without a coating of size, varnish, paint, or other protective substances impervious to moisture, substantially as described.

136,333.—*Stereoscope.*—PETER MURPHY, New York, N. Y.

The staff of a hand-stereoscope is divided and pivoted so as to allow of being folded up under the eye-piece when the handle is unscrewed and the guard or partition removed.

Claim.—The bar *a* and link *l*, hinged together and to the body *b*, in combination with the removable partition *n* and handle *n*, as and for the purposes set forth.

136,334.—*Mechanism for Transmitting Power.*—DAVID E. MYERS, Logansport, Ind.

The folding and expanding frames are connected with a rotating crank-shaft, which imparts motion to said frames, whereby the accumulated force is transmitted to some particular object.

Claim.—1. The improved machine for transmitting power, consisting of the jointed frame C D E F, connecting-bars G H, levers A^3 A^4, bar M, links *m* m^1 m^2 m^3 *n n′*, crank-shaft A, and connecting-rod *b*, constructed and combined substantially as specified.

2. The combination of the two power-frames, constructed and arranged as described, with the crank-shaft A, ways J, brace L or equivalent, and lifting-bar M, substantially as specified.

136,335.—*Washing-Machine.*—DENNIS J. OWEN and JAMES G. BRYDGES, Springville, Pa.

A washing-machine with a pounder in form of a bell attached to a center cylinder, to which are attached cross-sections with pipe, which are perforated on the bottom. The center pipe extending to the top has an enlarged addition, into which is fitted a valve for the free passage of air. On its bottom or near it is a receptacle for soap with openings for its discharge. To the working-bar a handle is connected, by which the pounder is moved to all parts of the tub.

Claim.—1. The bell-shaped vessel A with valve B, arranged as described, to form an air-pump washing-machine, substantially as herein set forth.

2. The central tube C, perforated at its lower end, forming the soap-cup, and provided with the perforated tubes E E, for the purposes herein set forth.

3. The combination of the bell-shaped vessel A with valve B, central tube C, and tubes E E, all constructed and arranged as and for the purposes herein set forth.

4. The post or brace G, provided with hook *b* and fastened to the tub by means of the griped link *d* and key *e*, substantially as herein set forth.

5. The rod A with ring *i*, arranged with the vessel A and handle I, substantially as and for the purposes herein set forth.

136,336.—*Shot-Cartridge.*—SETH W. PAINE, Rochester, N. Y.

Combinations claimed for confining and centering shot for a limited time and then releasing them, to obtain good results in shooting at long range.

Claim.—1. In combination with the shell of a longitudinally-divided cartridge case, a confining-cord wound spirally upon or around the periphery of the same, substantially as and for the purpose herein specified.

2. The sections A and A′, when constructed as shown and provided with the notches *a* and projections *a′*, substantially as and for the purpose set forth.

3. The apex B, constructed as shown, provided with the recesses *b*, and combined with the sections A and A′ provided with the lips *a″*, substantially as and for the purpose described.

136,337.—*Corn-Planter.*—DAVID PIERSON, JASON W. MACY, and JAMES D. MOORE, Grinnell, Iowa.

Connected by cross-framing and supporting the machine are, on each side, a furrower or runner, a double-shovel for covering, and a roller, as also a seed-box of two compartments formed by the runner passing into it. A slide reciprocates into both boxes by a lever, operated by the driver seated behind it.

Claim.—In a corn-planter frame, the scrapers C attached to the sides of the runner A, and forming the bottoms of compartments into which the seed-box is divided by said runner, all said parts being constructed and arranged as specified.

136,338.—*Machine for Dressing Brasses of Journal-Boxes.*—GELSTON SAFFORD, Stroudsburg, Pa.

The drift or cutting-tool is composed of a number of beveled disks clamped together on a rod, which, at one end, is screw-threaded and embraced by a nut, to which rotation is imparted by gearing. Adjustable clamping-jaws hold the brasses while being operated on, and a spool-like milling-tool, to which they are afterward presented, mills the corners of the brasses.

Claim.—1. The partially-tapering circular cutter, composed of a finishing-cutter, *c*, and bevel edged cutting-disks *d*, of successively diminishing diameter in immediate proximity to the finishing cutter, in combination with the longitudinally-sliding screw-threaded cutter-holder D, and the revolving nut or wheel H, substantially as specified.

2. The reversely-beveled finishing-cutter *c*, in combination with the reversely-beveled disks *d* on opposite sides of said cutter, and the longitudinally-sliding cutter-holder D, essentially as described.

3. The clamp K and brasses-holder J, in combination with the longitudinally-sliding tapering disk-built cutter, substantially as specified.

4. The combination of the brass-holding lever O with the reel-cutter P, having concave cutting extremities within its heads at either end, essentially as and for the purpose herein set forth.

136,339.—*Carpet Stretcher.*—NATHANIEL K. SHELTON, Wabash, Ind.

A wooden stretcher having a bifurcated beam-lever and a beam, both perforated to receive the fulcrum-pin, and having at their ends toothed heads provided with diagonal braces, mortised into said heads and said beams on each side thereof.

Claim.—The wooden carpet-stretcher described, consisting of the bifurcated beam-lever A and the beam A′, both perforated for the fulcrum-pin *b*, and having at their ends the toothed heads B′, provided with diagonal braces A, mortised into said heads and said beams on each side thereof, constructed and arranged as set forth.

136,340.—*Machine for Forming Staple-Seams in Leather.*—SAMUEL W. SHORET, Boston, assignor to AZRA B. KEITH, Braintree, Mass.

Mechanism is provided for feeding the wire the length required for a staple, and for severing, a movable anvil or former for bending it over, a plan or or driver for inserting the staple, and rotating nippers for twisting and turning the ends of the driven staple.

Claim.—1. The combination with the work-supporting plate, the mechanism for intermittently feeding the wire, the mechanism for cutting the wire into staple-forming lengths, the mechanism for bending each length into staple form, and the mechanism for driving the staples, as combined and arranged, and operating substantially as shown and described.

2. In combination with the wire feeding and presenting mechanism, the bifurcated foot *q* and rest or anvil *n* for bending the wire, substantially as described.

3. In combination with the bender-foot *q* and driver *s*, the inclined and retreating anvil *n*, operating substantially as described.

4. In combination with the work-plate *c* and the mechanism for driving the staple, the rotating nippers q^2, as arranged to twist the staple-points, substantially as described.

5. In combination with the twisting-nippers, the mechanism for actuating the nippers to trim off the points of the staples, substantially as shown and described.

6. In combination with the mechanism for feeding the work, driving the staple, and twisting the staple-points, the work plate having a downward movement previous to back movement of the swinging head, substantially as and for the purpose described.

136,341.—*Corn-Planter.*—JOSEPH D. SMITH, Muskegon, Mich.

The frame is in two parts. The forward part is made up of the runners, seed-box, and tongue; the rear part of the wheels, axle tree, and handle. The two parts are joined by a swivel-joint attached to the middle of the yoke that connects the runners, allowing a rocking motion between the parts. The tongue extends to the axle-tree, and is secured from lateral movement by guides. The seat is elongated fore and aft, and hinged at its middle to a standard upon the axle-tree, the forward end being coupled to the tongue. The driver, by shifting his position on the seat, can elevate the runners.

Claim.—In combination with a ball and socket or universal joint, for the purposes described, vertical guides attached to the axle, or some attachment of the axle of the wheel frame, between which the rear end of the tongue will work, and a movable pin passing through said guides to support that end of the tongue, all substantially as herein set forth.

136,342.—*Cotton-Seed Planter.*—LEWIS B. SUTTON, Windsor, N. C.

A cotton-seed planter, the rear end of which is supported by a strap passing around the operator's neck, the forward one being attached to a wheel. The seed pass down the trough into the furrow made by the opener and are covered by the roller.

Claim.—The receptacle A, trough B, bars C C, wheel D, opener E, coverer F $f f^1$, and hand H, all combined and arranged substantially as and for the purpose set forth.

136,343.—*Towing Canal-Boats.*—ISAAC P. TICE, New York, N. Y.

A traction-locomotive on a tow-path has a flexible steam-connection with the steam-boiler on the canal-boat, which connection or tube is made strong enough to be used as a tow-line. Weight of traction-engine is adjustable by means of water in tank under it.

Claim.—1. The combination of a traction-engine on shore or outside of the boat or vessel to be towed, a steam-boiler or its equivalent arranged on or in the boat, and a flexible pipe or tube operating as a tow-line, and connecting the boiler with the engine, and serving to convey the propelling medium or gases from the boiler to the engine, substantially as specified.

2. A traction engine adapted to receive ballast for insuring adequate traction according to variable loads, and discharging the same to insure lightness and portability, substantially as described.

3. The combination of an auxiliary tow-line, I, with the hollow tow-line H, substantially as and for the purpose described.

136,344.—*Steam Vacuum-Pump.*—ISAAC P. TICE, New York, N. Y.

A hollow cylindrical valve of a steam vacuum-pump admits steam to the water-chamber, being opened by the steam from the boiler and its own weight, and closed by atmospheric pressure. A perforated coil in the top of chamber connects by a branch pipe to the main-outlet pipe, and a cut-off pipe, with a scroll outlet near the bottom of the chamber, condenses the steam.

Claim.—1. In an apparatus of the character herein described, a valve constructed and arranged relatively to the chamber and connected substantially as herein described, whereby, on the completion of the discharge of the chamber, the valve is closed by the pressure of the atmosphere, and reopened by its own weight and the pressure of steam.

2. The combination of the vertically-sliding valve I, its cylinder F, perforated at one end for the admission of the atmosphere, steam-pipe J, and pipes H and G, substantially as and for the purpose herein set forth.

3. The cut-off pipe M, in combination with the vessel B, and the main-outlet pipe E, and the perforated coil or condensing-pipe L, substantially as described, for operation as set forth.

4. The combination of the scroll N with the cut-off pipe M, as shown and described.

136,345.—*Soda-Water Apparatus.*—JAMES W. TUFTS, Medford, Mass.

The surface in the cooling-chamber, between the two charged cylinders, is utilized by making in the connecting-pipe a series of vertical bends, thus obtaining a greater length of pipe, and consequently a larger cooling-surface.

Claim.—In combination with the syrup-cans, ice-chamber, and cylinders, all arranged substantially as described, the connecting-pipe, made in the form of a series of vertical bends, *l*, located between the cylinders, substantially as shown and described.

136,346.—*Revolving Snow-Plow.*—WILLIAM H. VAN GIESON, Whitewater, Wis.

An inclosed inclined plane, its cubical capacity increasing from the mouth to the side-openings, through which the snow is ejected upon the sides of the track; double-flanged shoes support its forward part, and prevent the plow from being forced from the track by lateral pressure; an adjustable guard-plate is provided that the downward pressure may be equalized by the snow striking the plate, and tending to hold the plow in a horizontal position.

Claim.—1. The inclosed inclined planes A A, gradually enlarging in every direction from front to rear, with the rearwardly and outwardly curving pieces B B, substantially as and for the purposes herein set forth and described.

2. The horizontally inclined and curved plate D, adjustable on top of the inclined tubes A A, acting as an equalising-pressure plate, and projecting any desired distance beyond the said inclined tubes.

3. The mouths H H of the inclined tubes A A, shaped substantially as shown and described.

4. The outwardly and upwardly curving supporting-shoes or guards E E with or without rollers, substantially as and for the purposes herein described and shown.

5. So constructing the inclosed inclined planes A A that the lower lines of the discharging-orifices thereof will be higher than the upper lines of the receiving-orifices.

6. The combination of the inclosed inclined planes A A, the curving pieces B B, the front portion F, the curved pressure-plate D, the mouths H H, and the supporting-shoes E E, each and all constructed as shown, and operating in the manner and for the purposes set forth and described.

136,347.—*Fork and Grain-Rake.*—MARCUS M. WALLS, Hartwick, N. Y.

The tines are strongly curved and attached to two bars which form the head. The handle is also strongly curved, and secured to the head in either position, as regards the curves, in one forming a rake and in the other a fork.

Claim.—The reversible handle C, having attached to its convex side the bent lug D, secured in reversed positions to the bars A A', substantially in the manner as specified, and for the purpose set forth.

136,348.—*Revolving Fire-Arm.*—DANIEL B. WESSON, Springfield, Mass.

The combination, in a revolving fire-arm, of the frame and brush or recoil-plate, when made in two parts and pivoted together, a hinged barrel, and an extractor, operated through the medium of the hinge-joint.

Claim.—The two parts A and A', hinged or jointed together, whereby the recoil-plate o may be turned away from the rear of the cylinder, in combination with the joint C, provided with the toothed piece *l* and the extractor *m*, substantially as set forth.

136,349.—*Chuck.*—JOHN H. WESTCOTT, Oneida, N. Y.

The back of each dog is screw-threaded to fit over a screw having its bearings in radial slides or boxes, beneath which a scroll-plate is situated. The dogs and boxes are guided and retained by means of side ribs or grooves. By means of this construction an independent adjustment of each dog can be made by turning the screw beneath it; and a universal movement of all the dogs by turning the scroll-plate, which, acting on the boxes, carries both dogs and boxes toward the center.

Claim.—The combination of the screws F, the radial sliding boxes E, and dogs B with the face-plate A and scroll-ring C, or its equivalent, substantially as and for the purposes herein set forth.

136,350.—*Pipe-Wrench.*—TURNER WILLIAMS, Providence, R. I.

A loose sliding jaw is operated by a pawl attached to one of the handles, and engaging in notches on the back of said jaw.

Claim.—The combination, in a pipe-wrench, of the jaw G and the pawl F, operating substantially as described, and for the purpose set forth.

136,351.—*Self-Adjusting Pipe-Wrench.*—TURNER WILLIAMS, Providence, R. I.

One stationary jaw is attached to the handle, and one jaw pivoted eccentrically and operated and controlled by a tumbler and spring.

Claim.—The combination of the jaw D, the block or tumbler E, and spring F with the fixed jaw B, operating substantially as described, and for the purpose set forth.

136,352.—*Machine for Patching Bullets.*—STEPHEN W. WOOD, Cornwall, N. Y.

A machine consisting of combinations claimed, by which a paper patch is wound around a bullet, folded over the rear end thereof, and then moistened; also, the combination, with such machine, of means for applying glutinous substances to either the strip of paper or the bullet.

Claim.—1. Combined with rollers for wrapping a patch around a bullet, substantially in the manner herein set forth, folding-jaws for automatically folding, gathering, or closing the patch over or around the end of the bullet, in the manner described.

2. The method, substantially as shown and described, of first patching or wrapping a patch around a bullet by mechanism, as herein set forth, and subsequently moistening the same, substantially as and for the purpose herein specified.

3. The combination of parts herein shown and described for patching a bullet, with mechanism for moistening or partially moistening with water or any glutinous substance the patch or bullet, substantially as and for the purpose herein specified.

4. A series of rollers for patching bullets, which are movable and adjustable, constructed and combined for operation substantially as herein set forth.

5. A series of sectional rollers, adapted for receiving the additional devices shown for patching bullets, substantially as and for the purpose herein specified.

6. A guide, in combination with a series of rollers for directing the patch around the bullet, constructed and arranged substantially as herein described.

136,353.—*Securing Lock-Spindles in Safe-Doors.*—RICHARD YOUNG, San Francisco, Cal.

The lock-spindle is secured in the safe door by means of one or more sliding bolts arranged within the body of the door which engage in an annular groove in the spindle.

Claim.—The sliding bolt or bolts *d*, in combination with the set-screws *g* and annular groove *f* in the spindle, when applied in the body of the safe-door, substantially as and for the purpose specified.

REISSUE PATENTS.

5,293.—*Egg-Carrier.*—ANNER H. BRYANT, New York, N. Y.—Patent No. 120,313, dated July 16, 1872.

Strips of pasteboard or other suitable material are cut and fitted together, producing tapering pockets, having elastic walls, adapted to hold and keep apart eggs during transportation.

Claim.—1. In an egg carrier or tray, the stripe A having the slits *a* cut in pairs in their upper edges, in combination with the stripe B having the slits *c* cut in pairs in their lower edges, the slits of each pair in each strip being separated by tongues *b* and *d*, respectively, substantially as specified.

2. The longitudinal and transverse interlacing stripe having the pairs of intersection slits extending from their upper and lower edges, respectively, downward and upward to about the same line, substantially as specified.

5,294.—*Wrench.*—THE COLLINS COMPANY, Collinsville, Conn., assignee of LUCIUS JORDAN and LEANDER E. SMITH.—Patent No. 50,364, dated October 10, 1865; reissue No. 3,652, dated February 22, 1870.

The end-thrust or back-pressure is transmitted by the step to the wrench-bar. A nut supports the step in close contact, thereby effectually relieving the handle from the end-thrust.

Claim.—1. The step, combined with the wrench-bar and supported by the nut F, or its equivalent, at the place where the step is connected with the bar, in such manner that the step can be removed from the bar without cutting or abrasion of parts.

2. The nut F, combined with the wrench-bar, and interiorly recessed at *d*, for the purpose set forth.

3. The nut F, combined with the threaded bar, and performing the office of supporting the step, and also of rigidly fastening it to the bar, for the purpose set forth.

5,295.—*Flier for Roving and Spinning Frames.*—THOMAS MAYOR, Providence, R. I.—Patent No. 110,260, dated December 20, 1870.

By locating the friction-point in the position claimed the roving between it and the delivery-rolls is maintained more nearly in a line coincident with the axis of the flier-neck, its wabbling prevented, and a smoother and more even product obtained.

Claim.—That improvement in the construction of fliers which consists in the combination of the hollow tube A, or its equivalent, formed through the whole length of the axis of the neck of the flier, a friction-surface, *a*, located at or near the junction of the bows B B with the flier's neck, and the side-delivery tube *b* in one of the bows, substantially as described.

5,296.—*Hydraulic Telescopic Platform-Elevator.*—JUDAH PARKER and ISAAC COOK, San Francisco, Cal.; said PARKER assignor of one-half of his interest to SAMUEL P. TAYLOR.—Patent No. 129,421, dated July 16, 1872; antedated July 11, 1872.

A series of cylindrical sections, fitting one within the other so that when water is introduced at its lower end an air-chamber is formed, which acts on the top of the column of water concurrent with the pressure from the point of introduction, which forces the water through a pipe at the top of the tower, and to which is connected a hose so that water can be carried into or upon a building.

Claim.—1. A hydraulic sectional elevator adapted to discharge water at the top, substantially as described.

2. In combination with the air-chamber in the section D', the pipe J', as and for the purpose set forth and shown.

3. The described elevator, having the sections D, hollow upper section D', and discharge-tube J', as described.

4. In combination with the sectional tower, as shown, the locking devices L L, substantially as herein described.

5. In combination with the sectional tower, as described, the adjustable platform F and the extension-bridge I, substantially as herein described.

5,297.—*Riveting-Tool.*—BENJAMIN F. COBB, West Troy, N. Y., assignor to EBENEZER PRESCOTT.—Patent No. 115,821, dated June 13, 1871.

The end of an arbor or rotatable stock is slotted, and within this slot are two equal-sized disks supported loosely but close together on a transverse axle, and having jointly a concave periphery. Constant pressure of the double disk, edgewise against the end of a bolt and simultaneous rotation of the stock forces the metal outward gradually and equally in all directions laterally.

Claim.—1. Two equal-sized contiguous rollers, B C, hung upon the same pin, and arranged to be applied against the ends of the pins or bolts under a twofold rotation, for the purpose and in the manner specified.

2. The two rollers B C, having their contiguous faces notched to give room for the escape of particles that may be rubbed off the pins or bolts.

5,298.—*Manufacture of Car-Wheels.*—WILLIAM G. HAMILTON, Ramapo, N. Y., assignor to THE HAMILTON STEELED-WHEEL COMPANY.—Patent No. 85,069, dated December 22, 1868.

Claim.—As an improvement in the art of manufacturing cast chilled wheels for railroads, making such wheels from a compound of iron and steel or steely metals, substantially as described.

5,299.—*Traveling-Bag.*—ALBERT SONNEKALB and JOHN W. LIEB, Newark, N. J.; said SONNEKALB assignor to said LIEB.—Patent No. 52,902, dated February 27, 1866.

The body of the traveling-bag is attached to a box-frame by inserting a wire in the hem of the body and then clasping this wired edge in grooves or lips on the frame.

Claim.—1. A jaw or frame for carpet-bags having a groove or lips formed therein or attached thereto for receiving and holding the cloth or other material which constitutes the body of the bag, substantially as described.

2. The clips attached to the jaws for the purpose of securing the body of the bag thereto, substantially as described.

3. A carpet bag body with a fold or loop along the edge of the fabric or material where it is to be attached to the frame or jaws, substantially as described.

4. The combination of the jaws provided with a groove or lips, the looped cloth or other material, and the rod *a*, or its equivalent, substantially as described.

5,300.—*Egg-Carrier.*—WILLIAM D. TABER, Buffalo, N. Y., assignor of one-half interest to PHILIP P. JOSEY and EDWARD STRIEBER.—Patent No. 132,937, dated November 12, 1872; antedated November 9, 1872.

The egg-pockets are hexagonal in form, the side stripe being so interwoven as to leave a space unoccupied between the pockets. Half-pockets are formed above and below a diaphragm, so that each tray contains the upper half of one series and the lower half of the next series above.

Claim.—1. Pockets for egg-carriers of a hexagonal form, when made by means of cross-stripe, as described.

2. The diaphragm D, when combined with the series of half-pockets forming a tray with upper and under pockets, substantially as described.

3. A tray, composed of a series of upper and under half-pockets separated by the diaphragm D or its equivalent.

5,301.—*Manufacture of Leather.*—CHARLES J. TIMMERHOLM, Quincy, Ill., assignor to JOHN C. WHITE.—Patent No. 123,748, dated February 13, 1872.

Lime, sal soda, chloride of ammonium, and water in the depilating process; brimstone, potash, sal soda, chloride of ammonium, and water in the baiting process; gas-ammonia or gas-water when used in the manufacture of leather.

Claim.—1. The process of liming hides or skins by means of the combination and use of lime, sal soda, chloride of ammonium, and water, in the manner substantially as herein specified.

2. The process of baiting hides or skins by means of the combination and use of brimstone, potash, water, sal soda, and chloride of ammonium, in the manner substantially as herein set forth.

3. The manufacture of leather by means of the several successive processes of liming, baiting, tanning, and whiting, employing the ingredients and used in the relations substantially as described and stated.

4. Gas-ammonia or gas-water, when used in the manufacture of leather.

5. Chloride of ammonia, when used in the process of liming hides.

6. Combination of brimstone and potash in process of baiting hides.

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Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

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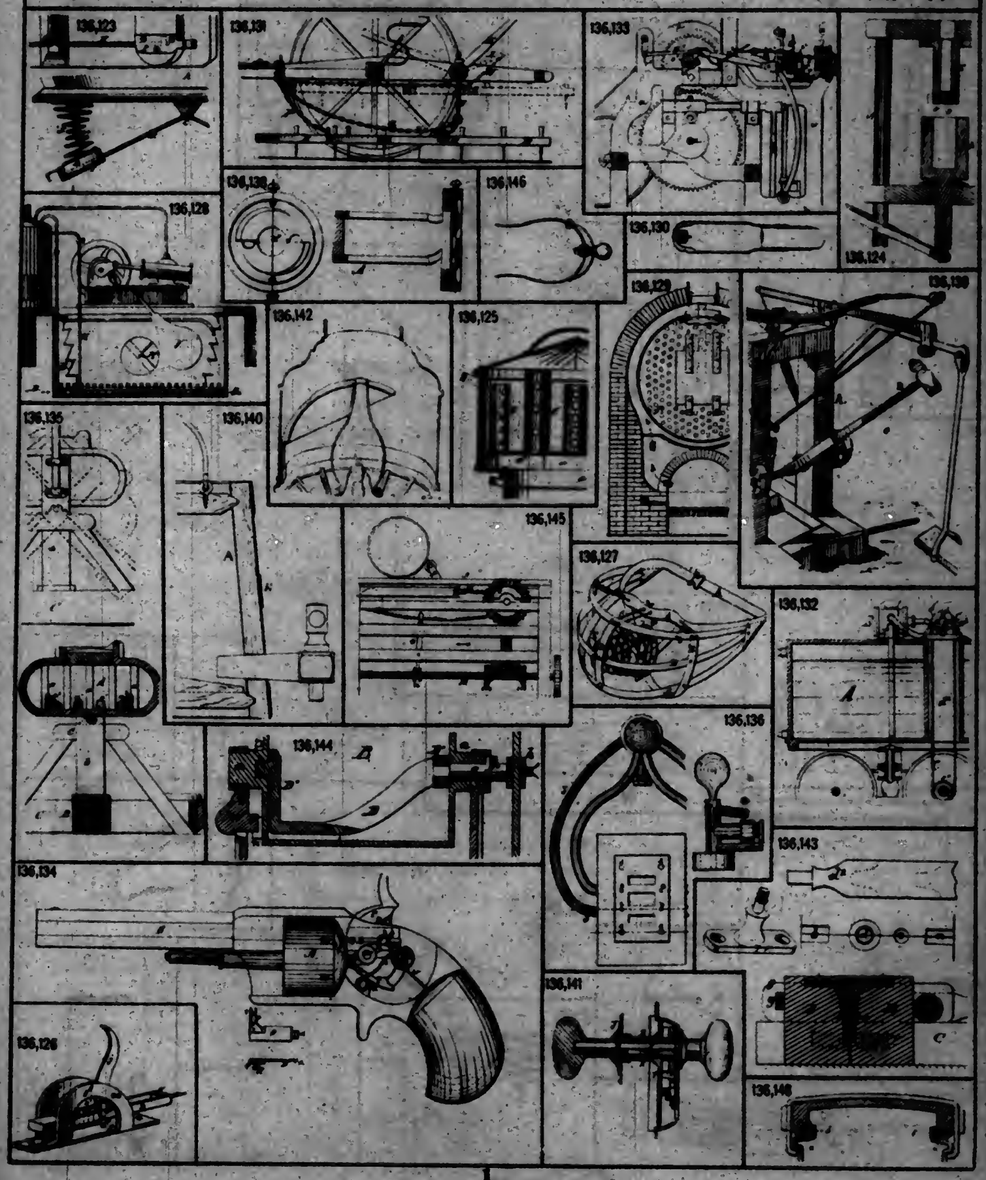
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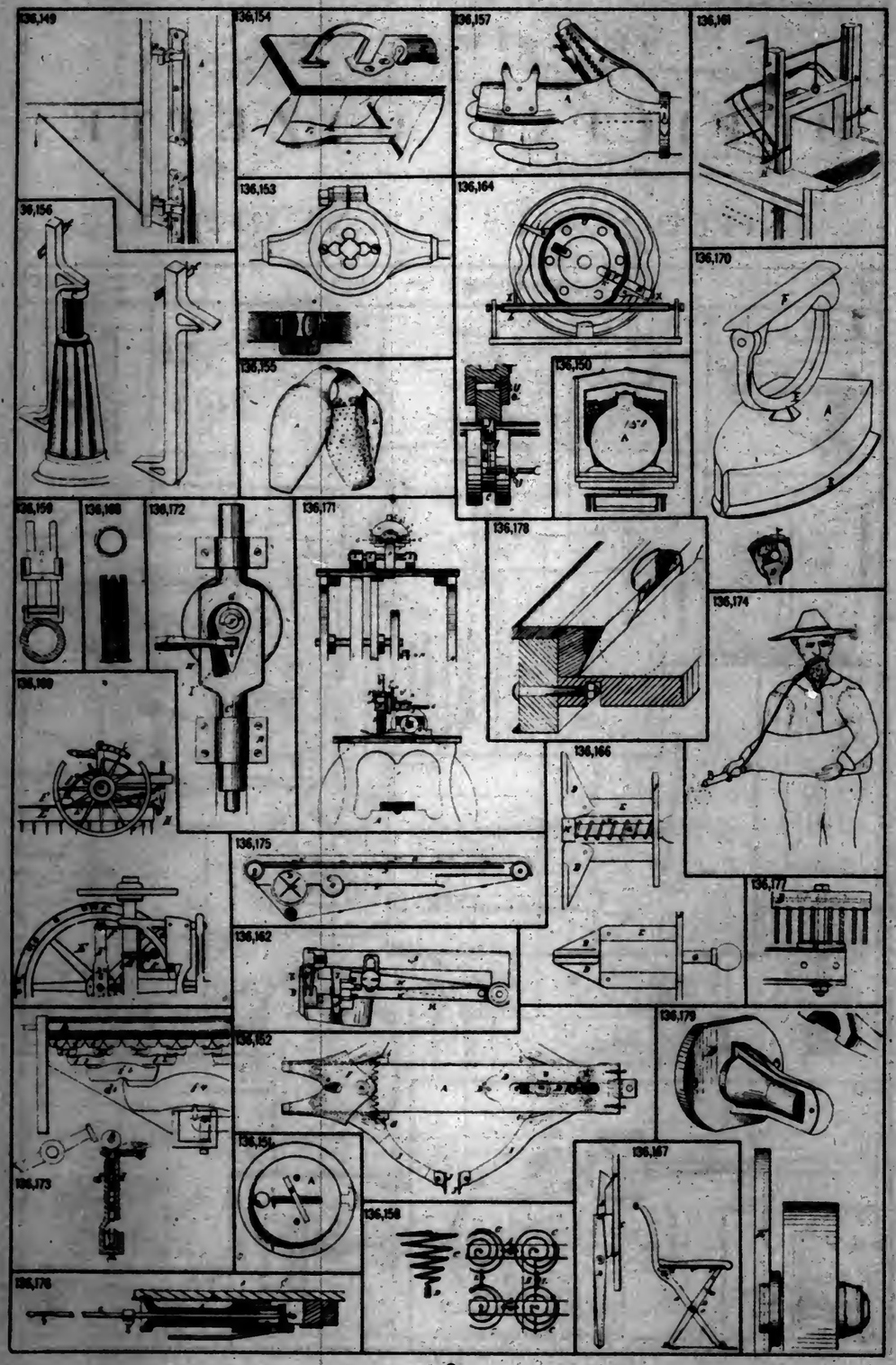
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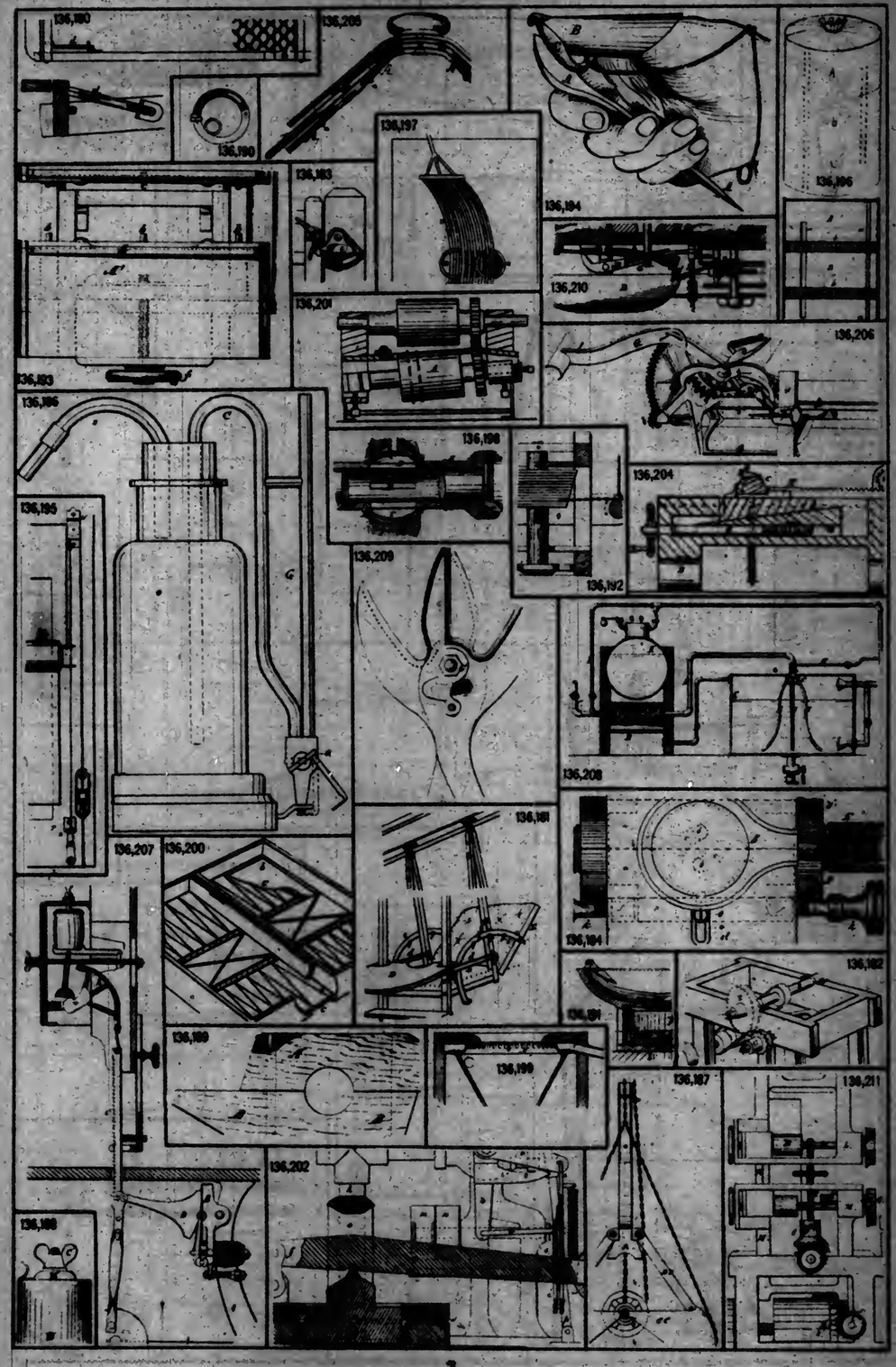
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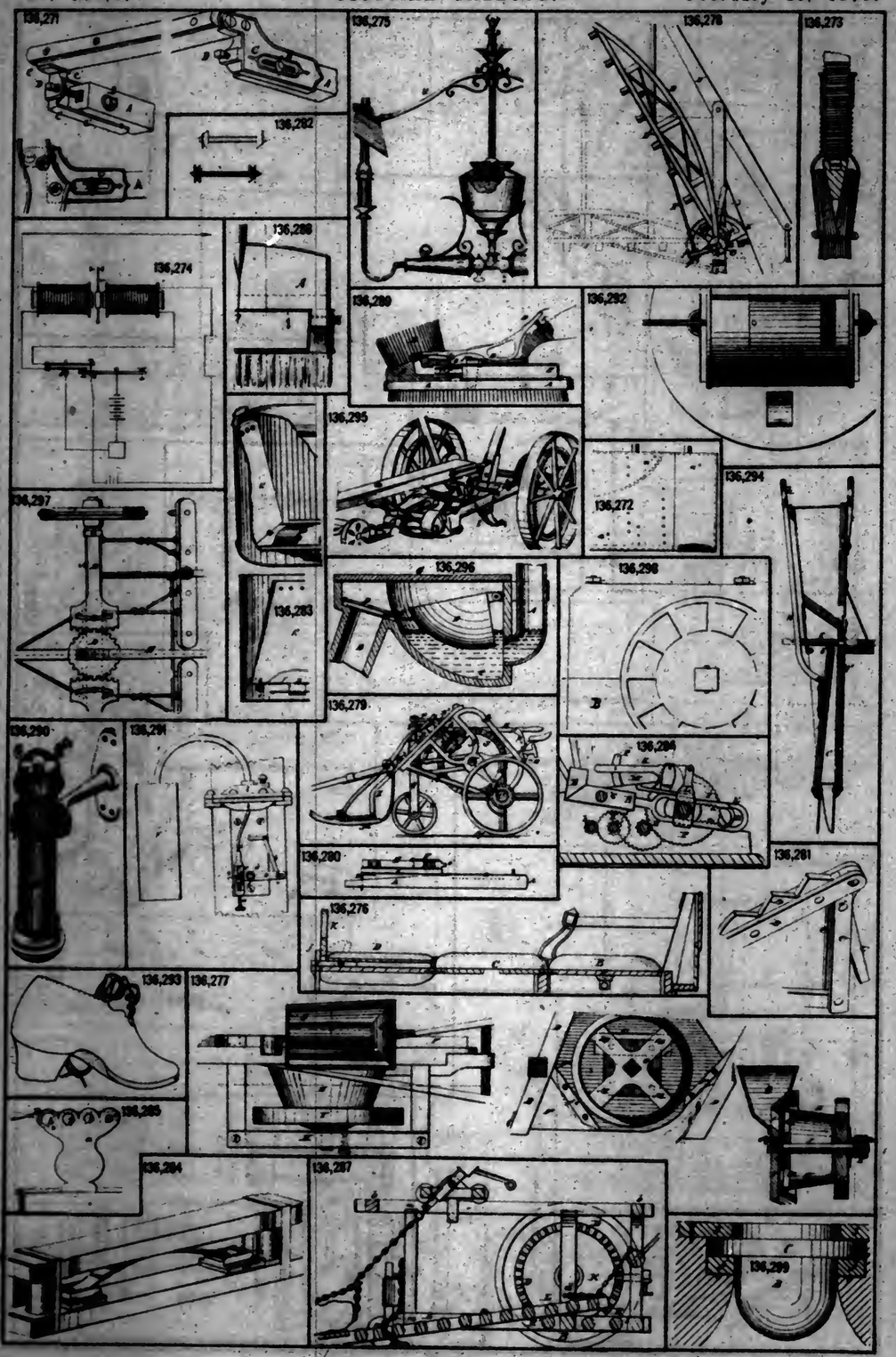
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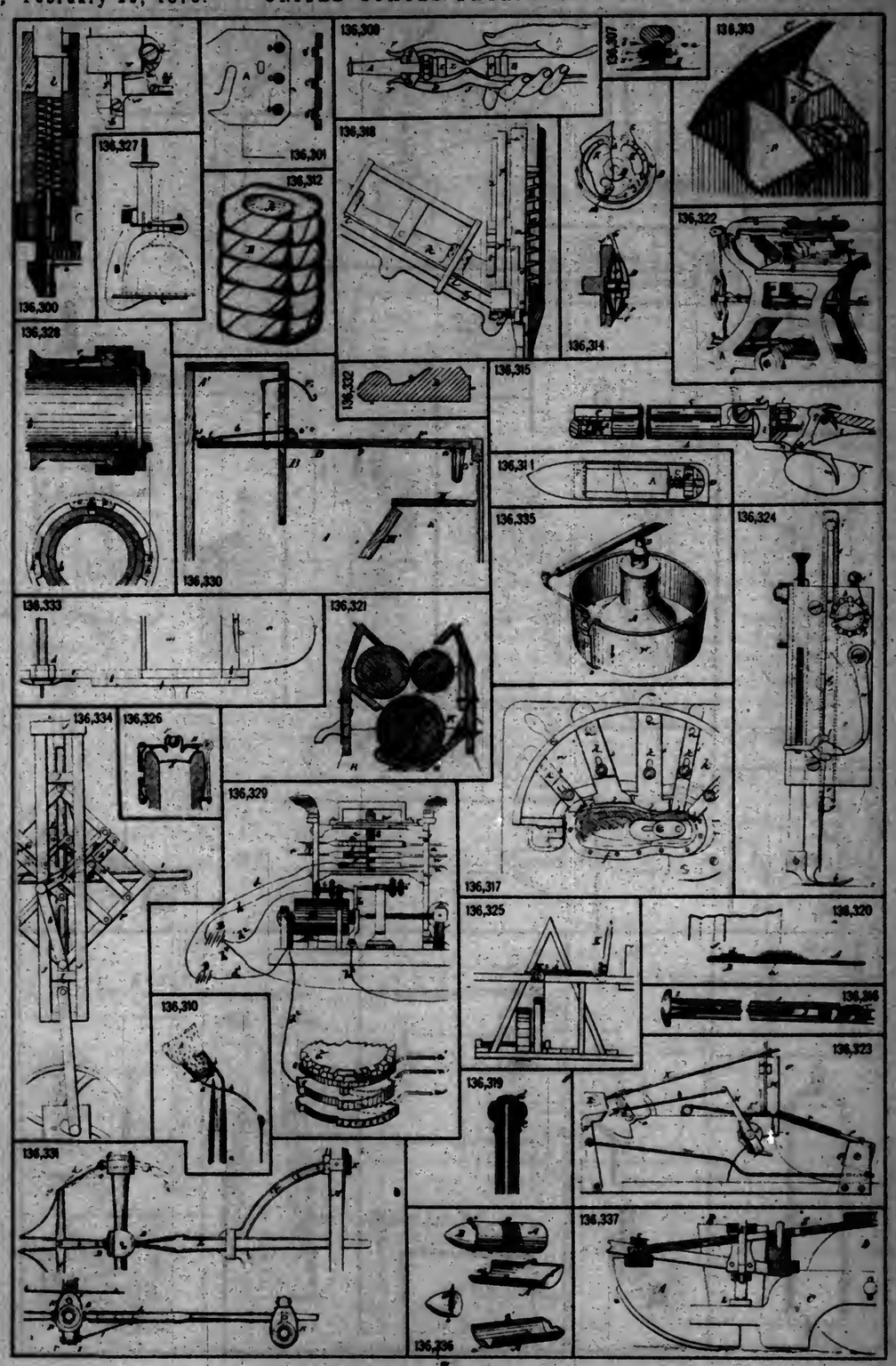
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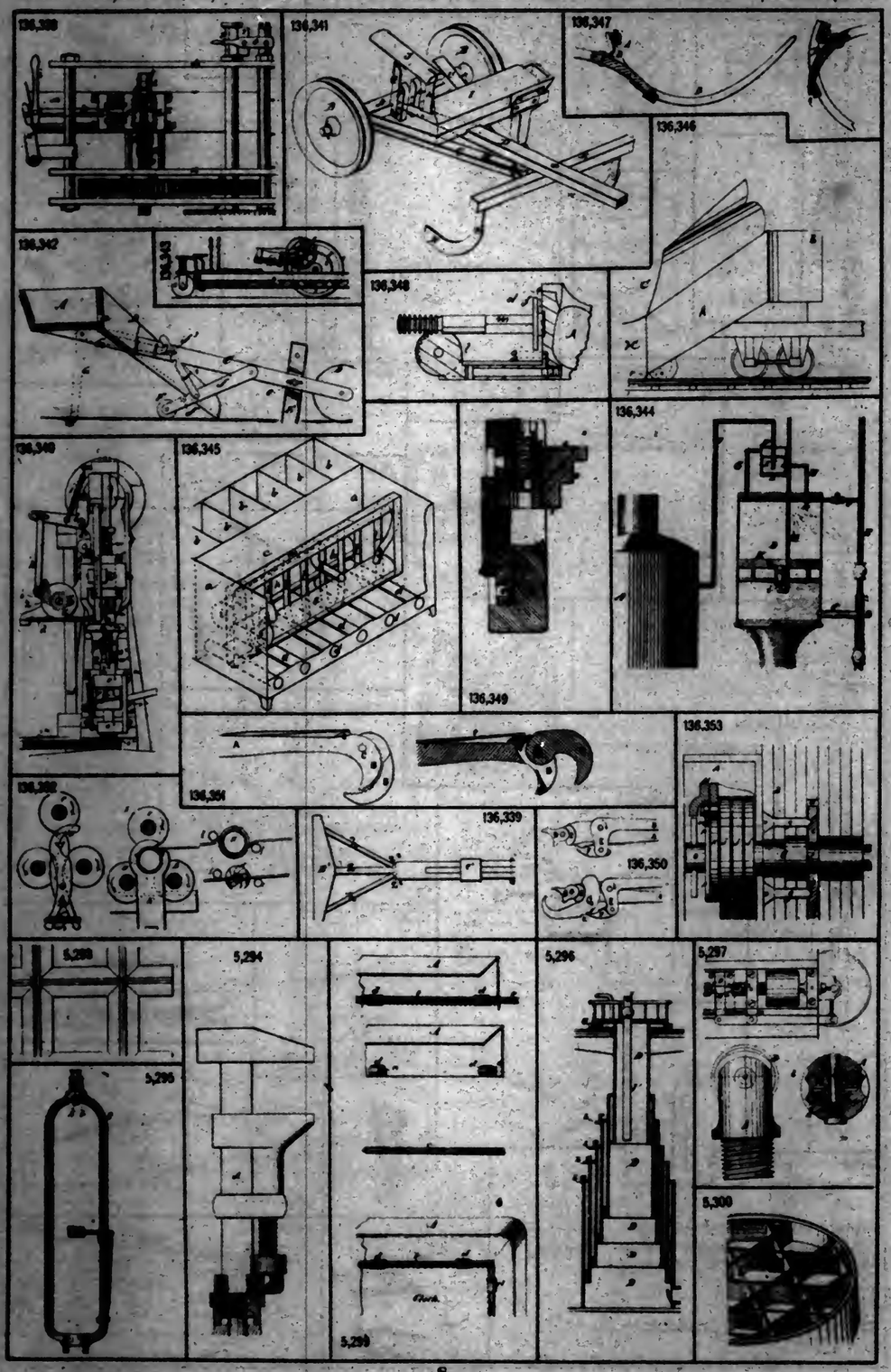
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EXTENSIONS.

Hereafter, unless the final fees in extension cases are paid in time to admit of the certificates of extension being signed and attached to the original patents before expiration, the extensions will be refused.

M. D. LEGGETT,
March 18, 1873. *Commissioner.*

COMMISSIONER'S DECISIONS.

L. C. CLARK.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Lucas C. Clark for patent for* SCREW-DRIVER, *filed March* 11, 1872.—*Decided March* 6, 1873.]

ARTICLE OF MANUFACTURE—NOVELTY.

To cast the handle of a screw-driver upon the tang of the blade does not possess the merit of novelty, since it is common to attach the handles of knives and other implements in the same way.

It is also common to cast the handle in such cases hollow, and a screw-driver so constructed is not new as "an article of manufacture."

LEGGETT, *Commissioner:*

Applicant claims as a new article of manufacture a screw-driver provided with an oval hollow metallic handle cast upon the tang of the blade. It has long been the practice of manufacturers to cast handles of suitable forms upon the tangs of knives, forks, &c. A patent was granted to Geo. Ropes in 1838 covering this method. The reference cited by the Examiner shows a knife with an oval-slotted handle cast upon the tang of the blade. Applicant dwells upon the fact that he casts his handle hollow or concave. In view of the state of the art of casting, this cannot be regarded as constituting invention and conferring patentable novelty upon the screw driver as an article of manufacture. As the Board observe, "the casting of handles hollow to save metal and secure lightness is not original with applicant. It is an old and common device." It does not render the handle a substantial improvement, involving invention upon that shown in the patent of Lewis Hart, cited by the Examiner. The device presented is, in view of the references, deficient in novelty, and therefore is not "*so* different in essential points" as to be patentable as an article of manufacture.

WOOD *vs.* MORRIS.—*Interference.*

[*Appeal from the Examiner of Interferences in the matter of the interference between the application of Joseph Wood, for patent for* IMPROVEMENT IN RAILWAY-FROGS, *and the patent of Wm. Morris, granted January* 9, 1872.—*Decided March* 8, 1873.]

PRACTICE IN ISSUES AS TO NOVELTY OCCURRING DURING THE PENDENCY OF AN INTERFERENCE.

The question of the novelty of the invention should be settled before an interference is declared, but if it is subsequently made a distinct issue the Office is bound to consider it.

After the time first appointed for taking testimony in an interference has expired, the case will be opened for taking further testimony upon the affidavit of one of the parties that he has newly-discovered evidence such as shows that the invention had been in previous use.

Although the new testimony is cumulative merely, evidence to the same effect having been given before, yet upon the question of novelty the case will be reopened, but will not be on the question of priority.

LEGGETT, *Commissioner:*

This is a motion on the part of the patentee to reopen this case for the purpose of taking further testimony as to the public use of the invention in contro-

versy. The testimony closed on the 17th ultimo, and no hearing has yet been had. Motion is based upon the affidavit of the patentee setting forth his recent discovery of the evidence he seeks to introduce, and the reasons why it could not be put in before the expiration of the time allotted for taking testimony. If the proposed evidence were of a different character, and rested upon the affidavit of the patentee alone, the motion would unhesitatingly be denied. But it is calculated to show that the subject-matter in issue is not new, and therefore not patentable to either party. The question of novelty is always a proper one for consideration in the Office at any time prior to the grant of a patent. Although it is intended to be and should, as far as possible, be settled in all cases before an interference is declared, if it is made an issue subsequently it cannot be ignored. In the record in this case it appears that one of the witnesses, James Neafie, testifies to the use by himself of wood in railway-frogs substantially as claimed by the applicant, and names several persons whom he alleges are cognizant of such use. It is objected that further testimony upon this point is merely cumulative, and should not therefore be admitted. No doubt it is cumulative in its character, but that is a reason, in a case of this kind, why it should be admitted. This is not in the nature of a motion for a new trial. If the proposed testimony bore upon the issue of priority between the parties, the objection would hold, and the testimony would be excluded. But it goes to a different issue—the question of the novelty of the invention—and therefore the objection fails. The question of novelty is not an issue between the parties to this interference as such, but between the parties and the public. For the protection of the public it is the province of the Commissioner to see that patents are granted for new inventions only. The testimony of the witnesses named will therefore be allowed to be taken upon the question of the public use of the alleged invention, and an opportunity will be afforded the applicant for taking testimony in rebuttal, if he desires to do so. If this course were not adopted now, in view of Neafie's testimony, an interference would have to be declared at the termination of this one (if priority should be adjudged in favor of the applicant) before a patent could be issued. It is better for the Office and the parties that the whole matter be disposed of at once. The Examiner of Interferences will assign suitable time for the parties to take testimony, respectively, as above indicated.

H. W. PUTNAM.—*Extension.*

[*In the matter of the application of Henry W. Putnam for extension of reissued patent No. 1,606, granted January 19, 1864, original patent No. 23,263, granted March 4, 1859, for* BOTTLE-STOPPER FASTENING.—*Decided March 10, 1873.*]

A claim which has been sustained by a United States Court on full consideration of the same references as are before the Commissioner will not be questioned by him, though he may doubt its validity.

Points which did not engage the particular attention of the Court, though they were before it and were embraced in the decision, may be considered anew by the Commissioner if good reasons are shown.

Where a much larger sum had been saved to the public, $21,000 will not be considered an adequate remuneration, and the patent will be extended although that sum has been realized from it in net profits.

A patent will be extended although there may be doubt whether the extended term is in the patentee or his wife.

LEGGETT, *Commissioner:*

This invention consists of a fastening for bottle-stoppers composed of two pieces of wire peculiarly bent and combined. The first piece, the central part of which is to rest on the stopper and hold it in place, is bent horizontally in the middle in the form of a U, the end portions returning a short distance and then being bent perpendicularly, so as to straddle the cork and nozzle and hinge at their extremities, which are turned outward, into loops of a specific formation in the second wire, that surrounds the neck of the bottle. It is intended that the first or bail-like wire shall swing over the cork from only one side of the bottle-neck, and that its motion shall be automatically arrested when it has arrived in position on the top of the cork. To secure this result the loops in the second or neck wire are formed so that both will bind the ends of the first and obstruct it as soon as it is swung up to the perpendicular. When the cork is pressed outward by aerated liquids within the bottle these loops prevent the bail-wire from being swung further over and off the cork, while the peculiar horizontal U-formed top causes the cork itself, in its efforts to escape, to partially double and bind against the inner surface of the nozzle, thus securing itself more firmly and preventing the bail-wire from swinging back off the cork in its free direction. The device is admirably adapted for its purpose, and, considered as a whole, its novelty and utility are unquestionable. In the reissued patent now under consideration, however, there are four claims covering the specific construction of its principal parts. The novelty of each of these separate elements must be established before other matters affecting the propriety of granting an extension of the patent with its present scope can be considered. The claims are as follows:

"1. Forming the fastener at the part that comes over the cork of a piece of wire of a U form, with the ends returned and connected to the bottle, in order that the pressure on the cork or stopper may cause the fastener to hold more securely, as specified.

"2. A wire fastener for a cork or stopper in which the ends of the wire are bent nearly at right angles to form the joint or hinge on which the fastener is turned, substantially as specified.

"3. Forming the eyes for the reception of the fastener by means of a wire bent as set forth.

"4. A wire fastener for the stoppers of bottles, fitted so that it can be pressed aside from over the stopper, as set forth, in combination with a band or fastening attaching the same to the neck of the bottle, as specified."

It appears that the reissued patent has been repeatedly litigated and sustained. This, however, is not conclusive of the question of novelty. It is competent for the Commissioner to consider this question so far as it may be affected by matters not before the court, and I think also with reference to points that were before the court generally, but as to which there appears to have been no specific consideration and adjudication.

Upon a critical examination of all the references cited by the remonstrants and referred to by the Examiner, I find no ground for doubt as to the validity of the first and fourth claims. The English patent of Masters, No. 12,330, of 1848, which seems to be chiefly relied upon, does not present the subject-matter covered by the first claim. The ends of the wire (if wire is shown) bent to form the U are not "returned" at all, but are bent at right angles from the ends of the U and connected to the bottle. The construction and operation of the bail-like portion of this fastening are manifestly unlike Putnam's in the U part, and are as manifestly inferior. The second claim I should certainly reject if it did not appear that the court has particularly considered it, and the references by which it appears to me to be met, and expressly and unequivocally pronounced it good and valid. With regard to the English patent of Chalus, No. 2,088, of 1856, to which I refer, Justice Miller said: "In Chalus' patent the eyes formed upon the neck-wire have their planes radial with the bottle, instead of parallel with the sides of the bottle; and the hinges in the bail are formed by the loops of the wire bent around in a plane parallel to the sides of the bottle, instead of having merely short gudgeons standing radially to the bottle." This is not the opinion to which I have been led from an inspection of the English drawings, which, however, are somewhat imperfect. It is true there are important differences between the construction and operation of the hinge connection of Putnam as a whole and that shown by Chalus; but as to the precise point expressed in the second claim I should have little doubt of their practical identity. The third claim, upon cursory examination, would appear to be exactly met by this patent; but upon a careful consideration of the specific construction and office of the eyes or loops it covers, I have no hesitation in declaring the opinion that it is valid, even if the correctness of Justice Miller's criticism above quoted be denied. The loop in Chalus' device is not formed so as to bind the bail-wire and prevent it from turning except in one direction. Such a use of the loop evidently was not contemplated, and, in fact, is not possible without a modification of the loop and bail-piece as shown by Chalus. The illustrative model used by the remonstrants to show the Chalus fastening is not a true representation of it, so far as the hinge connection is concerned. As to the parts specially intended to be illustrated it is calculated to mislead, unless it be taken to designate and establish, as in fact it does, Putnam's improvements.

It was decreed by Justice Miller, with the state of the art fully before him, so far as the record shows, that Putnam was the original and first inventor of his fastening as patented and reissued, "*and of each and every part thereof claimed in said reissued letters patent as new, and that the said reissued letters patent and the several claims thereof are good and valid.*" I shall defer to the opinion of the court as to the second claim, and as to the novelty of the subject-matter of the others I have no doubt.

The utility of the fastening and its importance in the bottler's art are apparent from inspection, and are abundantly proved. It is one of those simple, complete devices in the use of which no conflict is developed between theory and practice. Of its kind it is just such an actual improvement as it is the purpose of the patent law to develop and reward. It is contended, on the part of the several remonstrants, that an erroneous basis of calculation of value has been adopted, but no proof is offered to sustain this point. On the other hand, it is pretty fully shown that no metallic fastening had proved a success before Putnam's invention, and that none but his has since. It appears to be proper, then, to consider the superiority of this device over the twine fastening, which, upon the proof, was the only one in actual use by bottlers at the date of this invention. The diligence of the inventor has been commendable and his remuneration considerable. He admits a net profit of over $21,000, but this is demonstrated to be only a fraction of the saving to the public effected by the invention, which has gone into almost universal and exclusive use in certain branches of bottling. The point has been made that the title in the extension, if granted, will be in Putnam's wife, under an assignment to her, appearing of record; and reference is made to the construction placed upon a contract of assignment by the Supreme Court in the case of the *Nicholson Pavement Co.* vs. *Jenkins*. The cases are somewhat different. But whatever may be the scope of that decision, I do not see that it can affect this case. The object the Office has in inquiring into title is to determine whether there is a sufficient interest in the patentee to warrant the presumption that the extension is for his benefit. The question as to title in this case is as to whether the extended term is in the patentee or his wife. However this may be, the patentee's interest is sufficient to warrant the extension.

The extension will be granted upon payment of the proper fees.

DECISIONS OF THE COURTS.

SUPREME COURT OF THE UNITED STATES.

MITCHELL *et al. vs.* HAWLEY.

[*Appeal from the Circuit Court of the United States for the District of Massachusetts.—Decision March*, 1873.]

CHARACTER OF THE OWNERSHIP ACQUIRED BY THE VENDEE OF A PATENTED ARTICLE.—THE RIGHT TO USE AS COMPARED WITH THE RIGHT TO MAKE AND VEND.

The rule is well established that when a patentee has himself constructed a machine and sold it without any conditions, or authorized another to construct, sell, and deliver it, or to construct and use and operate it without any conditions, and the consideration has been paid to him for the thing patented, the patentee must be understood to have parted to that extent with all his exclusive right, and that he ceases to have any interest whatever in the patented machine so sold and delivered, or authorized to be constructed and operated.

If the owner of a patented machine, whether he built it or purchased it, has also acquired the right to use and operate it during the lifetime of the patent, he may continue to use it until it is worn out, in spite of any and every extension subsequently obtained by the patentee or his assigns.

Purchasers of an exclusive privilege of making or vending a patented machine acquire an interest in the franchise which the patent secures; such interest terminates at the time limited for its continuance by the law which created the franchise, unless it is expressly stipulated to the contrary.

Where the sale of a patented implement or machine is absolute, and without any conditions, it becomes the private individual property of the purchaser, and he may continue to use it until it is worn out, or he may repair it or improve upon it as he pleases.

Where the patentee sold the exclusive right for specified territory to make and use, "and to license to others the right to use said machine" during the remainder of the original term, it being stipulated in the instrument of conveyance that the licensee "shall not in any way or form dispose of, sell, or grant any license to use the said machines beyond the expiration" of the original term: *Held*, that the sale of machines by such licensee, "with the right to run" the same, did not convey the right to use them beyond the term of the original patent.

Notice to the purchaser in such a case is not required, as the law imposes the risk, as to whether the title of the seller is such that he can make a valid conveyance, upon the purchaser as against the real owner.

This was an appeal taken by the defendants, Eben Mitchell, Charles Butters, and Henry Rust, from the decision rendered against them in the Circuit Court of the United States for the District of Massachusetts, in a suit in equity brought against them by Robert B. Hawley for an infringement of certain letters patent granted James F. Taylor, May 3, 1853, for new and useful improvements in machinery for felting hats.

The opinion of the Circuit Court is reported in Vol. 1 of the OFFICIAL GAZETTE, page 306.

[*F. H. Brooks*, of Boston, for appellants.
J. E. Maynadier, of Boston, for appellee.]

Mr. Justice CLIFFORD delivered the opinion of the Court.

Patentees acquire by their letters patent the exclusive right to make and use their patented inventions and to vend the same to others to be used for the period of time specified in the patent; but when they have made one or more of the things patented and have vended the same to others to be used, they have parted to that extent with their exclusive right, as they are never entitled to but one royalty for a patented machine, and consequently a patentee, when he has himself constructed a machine and sold it without any conditions, or authorized another to construct, sell, and deliver it, or to construct and use and operate it without any conditions, and the consideration has been paid to him for the thing patented, the rule is well established that the patentee must be understood to have parted to that extent with all his exclusive right, and that he ceases to have any interest whatever in the patented machine so sold and delivered or authorized to be constructed and operated.

Where such circumstances appear, the owner of the machine, whether he built it or purchased it, if he has also acquired the right to use and operate it during the lifetime of the patent, may continue to use it until it is worn out, in spite of any and every extension subsequently obtained by the patentee or his assigns. *Bloomer* vs. *Millenger*, 1 Wall., 350.

Patents were granted, under the prior patent act, for the term of fourteen years; but the provision was that a patentee in certain cases might have the term extended for seven years from and after the expiration of the first term, and the same section provided that the benefit of such renewal shall extend to assignees and grantees of the right to use the thing patented to the extent of their respective interests therein, which last provision has frequently been misunderstood. Such misapprehension has usually arisen from a failure to keep in view the well-founded distinction between the grant of the right to make and vend the patented machine and the grant of the right to use it, as was first satisfactorily pointed out by the late chief justice, with his accustomed clearness and precision. *Bloomer* vs. *McQuewan*, 14 How., 549; *Chaffee* vs. *Boston Belting Co.*, 22 How., 223.

Purchasers of the exclusive privilege of making or vending the patented machine hold the whole or a portion of the franchise which the patent secures, depending upon the nature of the conveyance, and of course the interest which the purchaser acquires terminates at the time limited for its continuance by the law which created the franchise, unless it is expressly stipulated to the contrary. But the purchaser of the implement or machine for the purpose of using it in the ordinary pursuits of life stands on different grounds, as he does not acquire any right to construct another machine either for his own use or to be vended to another for any purpose. Complete title to the implement or machine purchased becomes vested in the vendee by the sale and purchase; but he acquires no portion of the franchise, as the machine, when it rightfully passes from the patentee to the purchaser, ceases to be within the limits of the monopoly.

Patented implements or machines sold to be used in the ordinary pursuits of life become the private individual property of the purchasers, and are no longer specifically protected by the patent laws of the State where the implements or machines are owned and used. Sales of the kind may be made by the patentee with or without conditions, as in other cases; but where the sale is absolute, and without any conditions, the rule is well settled that the purchaser may continue to use the implement or machine purchased until it is worn out, or he may repair it or improve upon it as he pleases, in the same manner as if dealing with property of any other kind.

Letters patent were granted to James F. Taylor for new and useful improvements in machinery for felting hats, bearing date the 3d of May, 1853, securing to him the exclusive right to make and use, and to vend to others the right to make and use, the said machines for the term of fourteen years from the date of the letters patent.

Due conveyance or license, subject to certain restrictions and limitations, was made by the patentee of the exclusive right to make and use, "*and to license to others the right to use, the said machines*" in the States of Massachusetts and New Hampshire *during* the remainder of the original term of said letters patent, it being expressly stipulated in the instrument of conveyance that the licensee "*shall not, in any way or form, dispose of, sell, or grant* and license to use the said machines beyond the expiration" of the original term. Apart from that the patentee also stipulated that the said licensee, if the patent should be extended, should have the right to control the same in those two States, he paying to the grantors in his license, or their heirs and assigns, a fair and reasonable compensation for the same, on terms as favorable as may be offered to any other person or party.

Bayley, as such licensee, on the 18th of March, 1861, constructed four machines, being two sets, and sold the machines, "with the right to run" the same, to the grantors of the respondents for the sum of $1,200, executing to the purchasers at the same time a license under his hand and seal, authorizing the purchasers, as such licensees, "to run and use two sets (four machines) for felting hats, in said town of Haverhill, under Taylor's patent, bearing date as specified in the original letters patent," showing conclusively that the purchasers were referred to the original letters patent as the source of his authority.

Of course said letters patent expired on the 3d of May, 1867, and the record shows that the Commissioner, before the term expired, renewed the letters patent and extended the same for the further term of seven years from the expiration of the original term, and that the complainants, having become by certain mesne conveyances, duly recorded, the exclusive assignees of the right, title, and interest in the renewed letters patent for those two States, instituted the present suit to restrain the respondents from using the four machines which they or their grantors purchased of the licensee under the original letters patent.

They appeared to the suit and filed an answer, setting up as a defense to the charge of infringement that they are by law authorized to continue to use the four machines just the same under the extended letters patent as they had the right to do under the original patent, when the purchase was made by those under whom they claim, which is the only question in the case.

No one in general can sell personal property and convey a valid title to it unless he is the owner or lawfully represents the owner. *Nemo dat quod non habet.* Persons, therefore, who buy goods from one not the owner, and who does not lawfully represent the owner, however innocent they may be, obtain no property whatever in the goods, as no one can convey in such a case any better title than he owns, unless the sale is made in market overt, or under circumstances which show that the seller lawfully represented the owner. *Foxley's case*, 5 Coke, 109 a., 2 Bl. Com., 449, 2 Kent Com., 11th ed., 224; *Williams* vs. *Merle*, 11 Wend., 80; *Stone* vs. *Marsh*, 6 B. & C., 551; *Marsh* vs. *Keating*, 1 Bing., N. C., 198; *Marsh* vs. *Keating*, 2 Cl. & Fin., 250; Benjamin on Sales, p. 4; *White* vs. *Spettigue*, 13 M. & W., 603; 1 Smith Lead. Cas., 7th ed., 1195; 1 Para. Con., 5th ed., 520.

Argument to show that the grantor under whom the respondents claim never acquired the right to sell the machines and give their purchasers the right to use the same in the ordinary pursuits of life beyond the term of the original patent is certainly unnecessary, as the instrument of conveyance from the patentee to him, which describes all the title he ever had, expressly stipulates that he shall not in any way or form dispose of, sell, or grant any license to use the said machines beyond the expiration of that term of the patent, and the form of the license which he gave to the purchasers shows conclusively that he understood that he was not empowered to give a license which should extend beyond that limitation.

Notice to the purchaser in such a case is not required, as the law imposes the risk upon the purchaser, as against the real owner, whether the title of the seller is such that he can make a valid conveyance. Certain exceptions undoubtedly exist to that rule, but none of them have any application to this case. Suppose the rule was otherwise, and that the real owner, in order to defeat the title of the purchaser, must show that the latter knew what the facts were, the Court would still be of the opinion that the decree ought to be affirmed, as the terms of the license which the seller gave to the purchasers were sufficient to put them upon the inquiry, and it is quite obvious that the means of knowledge were at hand, and that, if they had made the least inquiry, they would have ascertained that their grantor could not give them any title to use the machines beyond the period of fourteen years from the date of the original letters patent, as he was only a licensee and never had any power to sell a machine so as to withdraw it indefinitely from the operation of the franchise secured by the patent.

Decree affirmed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

23,283.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,291.—*Metallic Bands for Boiling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Envelopes.*—Granted to SIMON E. PETTIS, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Balancing Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD EBER, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 28, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PUTNAM and WILLIAM C. BOOME, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,596.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859 Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibres from Waste Felted Fabrics.*—Granted to JOHN F. GREENER, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENER, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 12, 1859; reissued, No. 2,057, August 20, 1865. Hearing April 2, 1873.

23,685.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD B. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 20, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,634, 4,635, and 4,636, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 2, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,973, June 6, 1865; No. 1,960 having been ordered to again reissue, No. 5,239, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Oyster-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MERRIMON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,830.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,903.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tires.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,023.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 6, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,064.—*Apparatus for Heating the Feed-Water of Steam-Boilers.*—Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,066.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,103.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,190.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MERITON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMENT, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,152.—*Attachment to Ruling-Machines*, granted to JOHN B. BLAIR, March 8, 1859.

Claim.—The application of one or more magnets (electro-magnets) to any ruling-machine for ruling paper, in such manner that the magnets shall, either directly or indirectly, be made to control the operations of the pens, through the agency of the paper, in breaking, closing, or changing the circuit of electricity.

23,172.—*Machine for Printing Railroad and other Tickets*, granted to RICHARD M. HOE, March 8, 1859.

Claim.—1. The peculiar mechanism, or its equivalent, for moving the registering-disks on their axes at the proper times, by which means the tickets are numbered consecutively, substantially as described.

2. Giving such a movement to the registering-disks as will cause said disks to approach, press against, and travel with the impression-cylinder, thus giving an impression to the roll of paper, then recede to change the figures of the disks and allow the inking-roller *c31* to perform and then again to approach the impression-cylinder, and so on as before, substantially as before described.

3. The adjustment of any derangement of the registering-disks caused by slip, jar of the machine, or other cause, by means of the plates *c32* and *c33*, or any other means substantially the same.

4. Inking in a different color the registering figures by means of a separate inking apparatus, substantially as described.

5. The printing the numbers on the tickets while the said tickets are continuously advancing, in the manner substantially as above described.

6. The guide *c39*, placed between the impression-cylinder and the cutter Y, or its equivalent, for retaining the strip of continually-advancing paper in its proper direction, while its lower end is stopped by the action of the cutter when separating a ticket from the roll.

7. The combination of the parts by which the tickets are deposited (after being cut) in a vertical position in contradistinction to flatwise in the trough *c43* destined to receive them.

8. The combination of the slide *c46*, the spring-catches *c44 c44*, and the sliding block *c45*, by which the accumulating tickets are kept in a vertical position.

23,246.—*Meat-Mincer*, granted to ALBERT W. HALE, March 15, 1859; reissued December 28, 1865, numbered 2,136.

Claim.—1. The use and application of a flanged cylinder or cylinders, having the grooves between each flanges tapering and diminishing in depth, substantially as set forth.

2. The use and application of a cylinder or cylinders having spiral flanges with grooves between them diminishing or tapering in depth, substantially as set forth.

3. The combination of two cylinders with spiral flanges, so arranged that the flanges of one cylinder overlap those of the other, so that the cylinder operated by the power or crank will give motion to and rotate the other without the interposition of other gearing.

4. The combination of a cylinder or cylinders, having spiral flanges or tapering grooves, with a shearing-knife and a case having spiral ribs on its inner surface, substantially as set forth.

5. The combination of two cylinders or conic frustums, having straight or spiral flanges or tapering grooves, with a knife or case with or without spiral ribs.

6. The combination of two cylinders, having spiral flanges and tapering grooves, with a shearing-knife and a case having spiral flanges.

23,263.—*Improved Bottle-Stopper Fastening*, granted to HENRY W. PUTNAM, March 15, 1859; reissued January 19, 1864, numbered 1,606.

Claim.—1. Forming the fastener at the part that comes over the cork of a piece of wire of a U form, with the ends returned and connected to the bottle, in order that the pressure on the cork or stopper may cause the fastener to hold more securely, as specified.

2. A wire fastener for a cork or stopper in which the ends of the wire are bent nearly at right angles to form the joint or hinge on which the fastener is turned, substantially as specified.

3. Forming the eyes for the reception of the fastener by means of a wire bent as set forth.

4. A wire fastener for the stoppers of bottles, fitted so that it can be pressed aside from over the stopper, as set forth, in combination with a band or fastening attaching the same to the neck of the bottle, as specified.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 4, 1873.]

6,460.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,461.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,462.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,463.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,464.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,465.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,466.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,467.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

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6,470.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,471.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,472.—*Carpets.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,473.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,474.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,475.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,476.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,477.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,478.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,479.—*Carpets.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass.

6,480.—*Carpets.*—HEINRICH F. GROTZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place.

6,481.—*Carpets.*—HEINRICH F. GROTZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place.

6,482.—*Carpets.*—JOHN HAMER, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,483.—*Carpets.*—JOHN HAMER, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,484.—*Carpets.*—CHARLES S. LILLEY, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,485.—*Carpets.*—CHARLES S. LILLEY, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,486.—*Carpets.*—DAVID MCNAIR, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.

6,487.—*Carpets.*—THOMAS J. STEARNS, Natick, assignor to THE ROXBURY CARPET COMPANY, Boston, Mass.

6,488.—*Ornamentation.*—GEORGE ROGERS FAGAN, Philadelphia, Pa.

6,489.—*Bottle.*—HENRY SAWYER, Chelsea, Mass.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date March 4, 1873.]

1,153.—*Coffee, Spices, &c.*—WM. H. CRAWFORD & CO., Baltimore, Md.

1,154.—*Shirts, Shirt-Fronts, &c.*—LEOPOLD STERNBERGER, Philadelphia, Pa.

1,155.—*Manufactured Tobacco.*—JOHN W. STONE, Lynchburg, Va.

1,156.—*Medicinal Compound.*—HENRY A. TILDEN, New Lebanon, N. Y.

1,157.—*Chemical Compound.*—JAMES W. CHISHOLM, New York, N. Y.

1,158.—*Bread.*—MAC WILLIAMS & PIPER, Baltimore, Md.

1,159.—*Smoking-Tobacco.*—JOHN W. STONE, Lynchburg, Va.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date March 4, 1873.]

ORIGINAL PATENTS.

136,354.—*Braider for Sewing-Machines.*—ELIZA H. ALEXANDER, New York, N. Y.

The conical tube, flattened at one end, and adapted to the size of the braid, is slipped into the holder of the bracket attached to a quilting or other guide, and this tube may be turned as desired to turn the braid for fancy patterns.

Claim.—The conical and adjustable tube A, constructed substantially as described, and combined with the bracket D and a quilting or other guide, as and for the purposes set forth.

136,355.—*Braiding Attachment for Sewing-Machines.*—ELIZA H. ALEXANDER, New York, N. Y.

The braid-guide has a passage for the braid, is fitted loosely in an opening in the presser, may be withdrawn and turned over when a corner is being turned, and the projection on the guide retain it in proper position.

Claim.—The braiding-guide, constructed substantially as described, and secured to the presser-foot or quilting-gage of a sewing-machine, so as to be turned over at the pleasure of the operator during the operation of braiding, or without removing the braid from the guide.

136,356.—*Smut-Mill.*—AMOS D. ASH, Swayne county, N. C., assignor of one-half his right to JOSIAH CURTIS, Knoxville, Tenn.

Outer case constructed with longitudinal dust-exits. Cockle-sieve in bottom around grain-exit. Grain fed in top is carried against smooth perforated case by arms, which act also as fan to furnish blast for carrying off dust, &c.

Claim.—1. In a smut machine or mill, the case or shield S, provided with a vertical opening or mouth, M, substantially as and for the purposes set forth.

2. In a smut machine or mill, the perforated bottom K, concaved or troughed from the central opening to the circumference, substantially as and for the purposes set forth.

3. The vertical edges N N of the parts of the cylinder in a smut-mill inverted so as to form the obstructions, substantially as and for the purposes set forth.

4. The combination, in a smut machine or mill, of the shield S and the bottom M and the inverted vertical edges N, as described, with the fan beaters or wings G G and perforated cylinder C, substantially as described, and for the purposes set forth.

136,357.—*Head-Rest.*—IRVIN BELFORD, Caldwell, Ohio.

The plate can be raised or lowered, as desired, to accommodate it to the height of the writer's hand.

Claim.—The combination of the plate A with the journals B B, the right-and-left-hand screw-rod C, the arms D D, and the legs E E, substantially as and for the purpose set forth.

136,358.—*Band-Comb.*—ELIAS BROWN, Wappinger's Falls, N. Y.

Ornaments may be attached to the arch or rib surmounting the comb.

Claim.—The combination, with a band-comb, A, of an ornamental arch or displayed crown, B, placed over the central portion

of the band and at right angles to the plane of said band, substantially as described.

136,359.—*Railway Car.*—HENRY BUCK, Polo, Ill.

When a down-grade is reached the front end of the horse-power is raised, thereby depressing the rear end and loosening the pulley-band E so as to render the horse-power inoperative. The same is done when the wind-wheel is used.

Claim.—1. The frame D, which contains the wheels and endless chains of the horse-power, pivoted at G, and operated by the cranks I and suitable cords or chains, substantially as described, and for the purpose set forth.

2. As a means for propelling railway cars, the combination of the horse-power and wind-wheel, when both are constructed and arranged to operate as described.

136,360.—*Bolster-Spring for Vehicles.*—HENRY BUCK, Polo, Ill.

A simple and efficient form of spring is constructed of strips of gum.

Claim.—The combination of the stands B B, rollers C C, gum E E, and bar D, substantially as and for the purpose hereinbefore set forth.

136,361.—*Plow.*—NICHOLAS BURCH, North Fairfield, Ohio.

The standard is provided with a flange, which embraces the beam and affords a support for the colter.

Claim.—In the construction of plows, the wood beam A and iron standard B provided with the colter-holder F, and having a shoulder, C, and flange D, in combination with screw-bolts, or their equivalents, for securing the said beam and standard together, substantially as and for the purpose set forth.

136,362.—*Box-Plaiting Machine.*—ORANGE M. CHAMBERLAIN, New York, N. Y., assignor of one-half his right to WM. B. CARRINGTON, same place.

Two intermittingly-reciprocating blades or plait-formers are situated in front of a pair of rollers, where the fabric passes between them, one blade being above and the other underneath the fabric. A pair of reverse plaits are formed together, making the box-plait. The formers are operated by means of pitmen, crank-levers, and a double crank on a driving-wheel.

Claim.—1. The double cranks *a a* and pitmen *s s*, for operating the formers.

2. The crank-levers *g g* and spindles *t t*, in combination with the formers G G.

3. The friction-cones K K and springs *l l*, in combination with the guides J J.

4. The combination of the shafts H and K, for the purpose described.

5. The combination of the cranks *a a*, pitmen *s s*, with the intermittent action of the delivering-rollers B.

136,363.—*Water-Meter.*—EMILE EUGENE PIERRE CLATSOLLES, Barcelona, Spain.

Upon a rod that unites two pistons are arranged adjustable collars, between which bears a forked lever that oscillates upon a shaft, which has at its end a counter-weight fixed upon it. The oscillating movement of the counter-weight communicates motion to a lever connected with a slide-valve, which, every time it changes position, allows the water measured by one of the cylinders to be discharged.

Claim.—1. The two cylinders A A', open at their inner ends, arranged on the same axis, and so situated within an outer casing as to be surrounded by water, in combination with the two connected pistons F F', and with the devices described, or their equivalents.

2. The combination, with the cylinders and pistons, and with the inlet and outlet pipes and casing of the apparatus, of a distributing slide-valve, *a*, operating substantially as specified, and receiving its movement from the pistons through the medium of the devices described, or their equivalents.

3. The combination of the shaft O, carrying the counter-weight T for operating the valve, its lugs *c* and *c'*, the arm N with its lug *b*, and the collars M M' on the piston-rod, all substantially as specified.

4. The combination of the rack Q secured to and moving with the pistons, the shaft Q with its pinion and ratchet-wheel, and a train of registering-wheels, all substantially as and for the purpose specified.

5. A water-meter in which the operating and indicating devices are arranged entirely within a hermetically-sealed water-chamber, as and for the purpose set forth.

136,364.—*Water-Filter.*—WALTER M. CONGER, Newark, N. J., assignor to himself, JAMES NOON, and JOHN NOON, same place.

The hollow cylinder is provided with a metallic casing divided by perforated metallic partitions into a number of chambers to receive filtering material. Drain-cocks are set in the under side of the cylinder to communicate with grooves formed in the base of each of the several chambers. At each end of the cylinder are pipes, secured by screw-couplings, communicating with a supply-pipe. Cocks are arranged at each end of the pipes and in the supply-pipe, so that the closing of the cocks at each end of the filter-leg case will admit of the case being entirely removed without turning off the supply-water.

Claim.—1. In a water-filter, the stop-cock N, arranged as shown relatively to the independent connecting-pipe D, filter-case A A^1 A^2, and fixed pipe C^1 C^2, so that the filter-case may be removed at will without stopping off the water from the consumer.

2. In combination with the connecting-pipe D and proper controlling means *d*, the series of separately-removable filtering means E^1 F, &c., mounted in a tightly-inclosing case, A, with channels c^1 c^2 and cocks G^1 G^2 arranged to allow a reversion of the current through the whole or any part of the same at will, and to provide for a separate cleansing of each filter-chamber and each drain-channel, as herein specified.

136,365.—*Pipe-Coupling.*—JOSEPH CONNER, Philadelphia, Pa., assignor to himself and ISAAC P. WENDELL, same place.

The socket is slotted to admit of its yielding, as it advances over the smooth surface of the pipe, to any inequalities. The slots are made in the enlargements at the ends of the coupling or socket.

Claim.—The slots *b* in the ends of the couplings B to accommodate the enlargements *a* to inequalities of the surfaces of the pipes, in the manner above set forth.

136,366.—*Sash-Balance.*—JOHN J. COWELL, Newark, N. J.

The two-part case inclosing the usual pulley-wheel is grooved at its edge, and into the grooves are driven tapering plugs to force the case more tightly into the frame. Upon the sides of the frame are projecting spurs formed in the casting, which take into the wood to aid in securing the case in its mortise. Behind these projecting spurs are holes, so that the frame may draw from the mold, notwithstanding the spurs project forward from their bases.

Claim.—1. The spurs *c*, with holes O in the rear, so that they may project forward and still draw from the mold.

2. The wedge *b'* and corresponding openings *b b*, and nipples *c'*, or their equivalents, when used as and for the purposes herein set forth and described.

136,367.—*Soldering-Tool.*—LEWIS CUTTING, San Francisco, Cal.

The soldering-block is made in two pieces, in order to allow the working part to be cheaply renewed when burned out. A ferrule surrounds the lower block, having a groove in one side, and its flange enters the groove in the can to melt the solder.

Claim.—1. The block or cylinder, when constructed with the two parts A and B, substantially as and for the purpose described.

2. The adjustable ferrule C, when constructed and operated substantially as and for the purpose described.

3. The block or ferrule, when provided with the slit H for equalizing the flow of solder, substantially as herein described.

136,368.—*Water-Elevator.*—JAMES B. ERWIN and GEORGE H. SHOULTERS, Batavia, N. Y.

The upper series of pivoted levers are secured to two segmental gears. By moving up or down the handle attached to one of the gears the bucket is lowered or raised.

Claim.—1. The combination of the gears C C with the series of levers F, substantially as and for the purpose specified.

2. The combination of the gears C C, series of levers F, and the balance-weight P, operating in the manner substantially as and for the purpose specified.

136,369.—*Printing-Telegraph.*—MERRITT GALLY, Rochester, N. Y.

Pulsator, using revolving pendulum, sends the impulses controlling the unison of a series of instruments. Type-wheel hung in slotted bearings; printing effected by its own stroke against the paper. Two or more cylinders of paper used automatically brought into position for printing. Other features explained by claims.

Claim.—1. The combination, with a telegraphic instrument, of a revolving pendulum and its motor, so that the pendulum acts as a unison device, substantially as set forth.

2. The combination, with the transmitting device, of one or more single keys, each representing a number of separate types to be brought into use by a single stroke of the key, substantially as set forth.

3. The combination of conducting piles G and H^1 and connector A^2, or equivalents, forming a repeating circuit-closer, substantially as set forth.

4. Two or more instruments connected with a single telegraphic line, the relative positions of their type-wheels, in respect to the material impressed, being made to differ, so that the electric impulse causing the impression of a letter in one of the instruments will not cause the other to print, but that the printing may be carried on in the different instruments by different impulses, substantially as specified.

5. The combination, with a telegraphic line, of a pulsating instrument for controlling a number of transmitting or receiving instruments, the impulses of the transmitters or receivers occupying the intervals between the impulses of the pulsator of the line, substantially as specified.

6. The combination, with a single telegraphic line, of more than two working instruments, transmitting by different impulses and simultaneously employed, so that all may print or sound without confliction of their messages, substantially as set forth.

7. The combination, with a printing-telegraph instrument, of a sounding device, which may be operated simultaneously with the printing device, substantially as specified.

8. The combination, with a type-wheel, of a reciprocating journal-bearing, so that the printing may be effected by the movement of the type-wheel itself, substantially as specified.

9. The paper-holding cylinder, constructed and revolved so that the line of printing will be around its circumference, and having a longitudinal movement for placing the positions of the lines, substantially as set forth.

10. The paper-holding cylinder, containing internally the paper to be furnished to the outside, substantially as set forth.

11. The combination of a number of paper-holders and a motor which brings each into printing position one after the other so that the printing of the instrument may be continued upon one while the message is being removed from another, substantially as specified.

12. The form-wheel *m*, or equivalent, attached to a telegraphic instrument or type-writer, substantially as specified.

13. The paper creaser or marker *g g*, or equivalent, attached to a telegraphic instrument or type-writer, substantially as and for the purpose specified.

14. The repeating circuit-closer D G, or equivalent, when made adjustable, substantially as set forth.

15. In a telegraphic instrument or type-writer, a number of operating-keys representing different letters, such keys being struck simultaneously, when combined with a device for preventing the necessity of holding the keys until the entire number of letters is produced, substantially as set forth.

136,370.—*Harvester-Dropper.*—JOSIAH B. GATHRIGHT, Louisville, Ky.

Two shafts, provided with transverse slats, have their lower ends pivoted to the rear of the finger-bar, and, inclining upward and backward, are pivoted at their upper ends in a frame supported on the finger-bar. To drop the gavel, the shafts are rotated inwardly, and the lower slats are hinged to the shafts and deflected by guides to prevent contact with the ground.

Claim.—1. A platform for harvesting-machines, composed of the reversible gates C C, having their lower arms flexibly connected with the shaft, substantially as and for the purpose herein shown and described.

2. In combination with the gates C C, the guides E E, operating substantially as herein shown and described.

3. The gates C C, guides E E, pinions A A, cogs H H, shaft *g*, wheels K and L, and lever N, arranged and operating substantially as herein shown and described.

136,371.—*Door-Spring.*—GEORGE GEER, Plainville, Conn.

An upright pivot, incased in two spools or sleeves, surrounded by and making a complete spiral spring, is arranged, as in a frame, between two toggle-arms, the outer ends of which are pivoted to standards projecting, respectively, from the door and the top of the door-frame or casing, while their inner ends are forked and pivoted to each other. The arrangement of two spools between the spiral spring and the pivot enables the upper spool to turn with the upper part of the spring in one direction, while the lower spool turns with the lower portion of the spring, through the toggle-joint arrangement, in the opposite direction, securing free action of the spring. There is also an adjustability of the standards projecting from the top of the door-frame by means of a bolt and series of holes for the purpose of regulating tension.

Claim.—1. The spiral spring M, arranged to operate with the toggle-arms J J' and the standards G and I, substantially as and for the purpose specified.

2. The sleeves or spools L L', interposed between the pivot K and spring M, and arranged to turn in opposite directions, one with the upper and the other with the lower portions of the spring, substantially as and for the purpose specified.

3. The adjustable arm H, when arranged to operate with the standard G, toggle-arms J J', spring M, standard I, and door A, substantially as described, and for the purpose specified.

136,372.—*Turbine Water-Wheel.*—JOEL HARRIS, New Carlisle, Ind.

A water-wheel constructed with two separate and distinct sets of buckets, and two separate sets of gates and chutes, so that the water can be used upon either or both sets of buckets at once, and the wheel can be driven either from the center or from the periphery, or both at once.

Claim.—1. A water-wheel so constructed that it may be driven either from the center or from the periphery, or both at once, substantially as described.

2. The wheel *a* provided with the two sets of buckets *b c*, and two sets of chutes and gates, relatively arranged substantially as specified.

136,373.—*Street-Lamp.*—FREDERECK HARTMANN, Chicago, Ill.

The corner-rods are extended down and riveted to the socket, which fits over the end of the lamp-post. Inside the frame and around these rods are bent metallic clips, which serve to hold the glass in place.

Claim.—The lamp described, having the socket A, rods *b* with clips *d* and corner-plates *a*, the rods *b* being so placed in the angle of the corner-plates as to hold the glass against the lateral movement, as described.

136,374.—*Dovetailing-Machine.*—JOSEPH E. HASKELL, Baltimore, Md.

The four corners of bureau and other drawers are dovetailed at the same time.

Claim.—1. The combination of the upper and lower platforms L and L' with the clamps *c c c c* to hold the four sides of a drawer in a rectangular position while being dovetailed, substantially as described.

2. The combination of the long nut *n*, screw S, pin *i*, and cam F, and their operative mechanism with the tables L L', or their equivalents, to give the forward and side motion thereto, substantially as described, and for the purpose specified.

136,375.—*Manufacture of Fuel from Coal-Waste.*—JOSHUA R. HAYES, Washington, D. C., assignor of two-thirds of his right to FRANCIS C. HOOTON and JOHN RUTTER, West Chester, Pa.

Claim.—1. The process, as described, of combining calcareous clay and coal-waste with boiling water, and mixed under high heat in order to obtain the minimum of clay, ranging from eight to twelve per cent., for the purpose set forth.

2. The process, as described, of combining said mixture, under high heat, with the minimum of bitumen, ranging from one to four per cent., said bitumen forming with the calcareous clay, automatically, artificial asphalt, in the manner and for the purpose set forth.

136,376.—*Wheel for Vehicles.*—SAMUEL B. HENDMAN, Richmond, Ind., assignor of one-half his right to MATTHEWS BROS., same place.

The core is grooved for the reception of the spoke-tenons, which are scalloped and rest on the upper rounded edges of the band-partitions, leaving a space between the ends of the tenons and the bottom of the groove. The flanges are firmly connected by the partitions, and support the spokes laterally. The collars on the band are rolled down upon a slanting surface on the core. The spokes form arches above the band-partitions.

Claim.—1. A mortised metallic band, applied to a carriage-wheel in such manner as to present an arched form in its longitudinal section, and bearing upon a wooden arch of the hub, substantially as described.

2. The scalloped spoke-tenons fitted to and resting upon the rounded metallic ribs or connections O of the mortised band B, and inserted in a groove in the core A, and forming an arch below the ribs, substantially as set forth.

3. The spoke-tenons made shorter than the depth of the channel H, in combination with the channel H, whereby the core around the axle-box is relieved from strain, and the strain sustained by the ribs O and the arch above and below the ribs, substantially as set forth.

136,377.—*Treadle for Sewing-Machines.*—CHARLES J. F. KRAFT, Cleveland, Ohio.

Claim.—The sandals D, when pivoted at their backs or heels to the swinging rods C, and connected directly to the crank-shaft B, situated below the drive-wheel, all constructed, arranged, and operating substantially as herein shown and described.

136,378.—*Animal-Trap.*—JOHN KRUMMENAUER, New York, N. Y.

Compact and improved construction of self-setter, where the animal first cages itself and in escaping to the next compartment resets the trap.

Claim.—1. The combination, substantially as described, of the spring-retainer G with the vibrating yoke F and door or doors D.

2. The combination of the vibrating platform H carrying the bait, its arm *e*, and the spring-retainer G, constructed and arranged to operate substantially as described.

3. The combination, substantially as described, of the trap-doors, the yoke F, and the arm *i* of the door, arranged to bear against the said yoke.

4. The trap-frame, consisting of a flat bottom plate, *w*, strengthening-partition *v*, and curved walls X, formed of a single strip of sheet metal.

136,379.—*Calk for Horseshoes.*—JOHN J. MERVINE, New York, N. Y.

The calk rests in a recess in the shoe, and extends around on each side of the toe; has a pin at the middle, which enters a hole in the shoe, and on each side a nail-hole, through which, as also through the shoe, nails are driven into the hoof.

Claim.—1. The calk B, constructed and fitted to the shoe, as specified, jointly with the mode of attaching said calk to the shoe and to the hoof of the animal, hereinbefore specified.

2. The groove *b* across the face of the shoe, underneath the calk, in which to insert a tool for removing said calk, as described.

136,380.—*Mowing-Machine.*—HIPPOLYTE MICHAUX, Hockanum, Conn.

The finger-bar is rigidly attached to a frame which has a vibratory motion, said frame forming a way for a reciprocating block, which is provided with a cam-groove to operate a lever, which gives motion to the cutters.

Claim.—The swinging block to which the finger-bar is rigidly attached, pivoted, as described, to the vibrating frame *m*, in combination with the reciprocating cam-block moving in ways therein, the lever e^3, link *k*, and cutter-bar *l*, the whole constructed and operating as described, for the purpose set forth.

136,381.—*Dining-Table.*—GEORGE L. MOTTER, Bloomington, Ill.

The swinging arm has on its vertical part two lugs, which are pivoted to two legs projecting from one of the legs of the main table. The lower lug on the table-leg has a groove on its upper side, into which engages a lip or ridge on the under side of the lug attached to the swinging arm. The horizontal part of the arm has on its outer end two prongs, one of which is longer than the other. These prongs enter holes in the projection on the lower side of the auxiliary table, and hold it upright. When it is desired to fold it only the longer prong enters the hole, the other prong passing on one side of the projection.

Claim.—1. The combination of the stand C, swinging arm E, ribbed lug G, grooved lug I, and a table, substantially as and for the purpose specified.

2. The combination of the stand C, lug D, arm E, and prongs J K, one serving as a pivot and the other as a stop for the folding table, substantially as and for the purpose specified.

136,382.—*Bed-Bottom.*—HARRISON OSBORN, Richmond, Ind., and ANDREW W. KENDRICK, Brooklyn, N. Y.

The lever-springs have a projection upon the stirrup end, forming on each side a seat for the slats. The coils of the springs are behind the cross-bar and clinched upon the upper side. The slat-clasp has two buttons upon the ends of the square bar. The head-rest is detachable, and is operated by a slotted ratchet.

Claim.—1. Constructing the lever-spring with a projection upon the end of the stirrup, on either side of which seats are formed for the double slats, as described.

2. The springs with the coils behind and on a level with the cross-bar, and passing the end of the wire up through the bottom of the bar and clinching it on top of the bar, as described.

3. The spring-clasp, formed by a button upon each end of a bar, as described, and for the purposes set forth.

4. The head-rest, pivoted and keyed to the side rails, the short slats at the lower end having hooked wires clasped through slots in the main slats, and resting in gains inclosed in staples at the upper end, as described.

5. The ratchet and pawl, constructed with a guard and operating as described.

6. The combination of the slats, the lever-springs, the slat-clasp, the head-rest, and the slotted pawl, all constructed as described, and for the purposes set forth.

136,383.—*Gas-Heater.*—CHARLES H. PRENTISS, Cleveland, Ohio.

Claim.—The chambers B and E, outlet C, jet-point G, and screw-valve H, combined with the funnel I, burner J, and cup K, the several parts being constructed and arranged as and for the purpose specified.

136,384.—*Shuttle-Binder.*—FRANCIS REA, Gloucester, N. J.

In the place of the ordinary swell on the binder a spring swivel-plate is used, having a straight inner edge or side, and this inner face has a longitudinal groove for the passage of the filling-thread when the corresponding groove in the side of the shuttle becomes worn away. As the shuttle passes to the end of the box the resistance of the swivel-plate is increased. The plate is provided with flanges, which overlap the edges of the lever to which it is pivoted, and gives steadiness of movement.

Claim.—The swivel plate or stop G, provided with flanges *a' a'* and a longitudinal groove, X, in combination with the lever C, substantially in the manner and for the purpose set forth.

136,385.—*Wash-Boiler Attachment.*—CONRAD D. REINKING, Des Moines, Iowa.

The device is an ordinary framed rack, pivoted so that it can be reduced in width and increased in length, that it may be used in boilers of various sizes to sustain the clothing being washed.

Claim.—A wooden attachment for wash-boilers composed of the longitudinal pieces *a a* and the series of cross-slats 1 2 3 4, in the manner described, and for the purposes specified.

136,386.—*Device for Agitating Salt in Cruets.*—FRANCIS B. RICHARDSON, Boston, Mass.

A bar of nearly a prismatic form, the corners or angles of which are notched to form teeth or other proper-shaped points. The bar terminates at one or both ends in a cylindrical turreted head, whose outer end is concave, with the exception of a central cone or point.

Claim.—The herein-described tumbling rod or bar, composed of the barred toothed prism *a* and serrated or toothed head or heads *d*, substantially as and for the purposes stated.

136,387.—*Truss-Spring.*—JOHN W. RIGGS, Brooklyn, N. Y.

The metallic spring for a truss is coated with some substance impermeable to moisture before it is covered with rubber, which is to be vulcanized upon it. An eyelet of non-corrosive material is inserted in the screw-holes or other apertures, and clamped down upon the metal upon both sides. In this way the perspiration from the body is prevented from reaching the metal of the spring, either through cracks in the rubber or at the perforations of the metal.

Claim.—1. A metallic spring for hernial trusses, supporters, and other surgical appliances, having an eyelet, or its equivalent, of non-corrosive material, inserted into the screw-holes or other apertures and clamped down upon the bare metal on both sides, substantially as shown and described.

2. A metallic spring for trusses, &c., covered with a coating of tin or other metal not liable to rust, or of linseed-oil, varnish, japan, or other suitable substance impermeable to moisture, and inclosed in an outer covering of hard rubber, substantially as shown and described.

136,388.—*Croquet-Mallet.*—EDWARD A. ROSS, Albany, N. Y.

To the roughened and elastic handle is added a head with one-half tapered and elongated.

Claim.—1. As a new article of manufacture, a croquet-mallet in which the part B of the mallet-head is made longer than the part A, to facilitate the striking of a ball in certain difficult positions, said elongated portion being reduced in size or bulk, substantially as and for the purposes set forth.

2. As a new article of manufacture, a croquet-mallet having a handle, C, which is reduced in diameter, or made flat or thin at *c*, or thereabout, and made rough at its upper end, substantially as and for the purpose specified.

3. The herein-described croquet-mallet, consisting of a head, the parts A and B of which are unequal in length and diameter, and an elastic handle, C *c*, roughened at its upper end, substantially as specified.

136,389.—*Iron Bridge.*—WILLIAM SELLERS, Philadelphia, Pa.

The ends of the tubular bridge sections are joined without the interposition of the usual "voussoir," by forming them as cylinders whose axes are tangential to the curve at the point of juncture, the end surfaces being planed perpendicular thereto. The two end portions thus bear normally upon each other and form a continuous cylinder with a common axis, both being embraced by a two-part coupling accurately fitting them. The parts are annularly grooved for better security against strains. The trunnions serve as attaching-points for the ties, struts, and braces of the compound arch.

Claim.—1. A tubular section of a bridge-arch, constructed with the planes of its end surfaces radial to the center of the arch and with its ends formed as cylinders, the axes of which are perpendicular to the planes of the end surfaces, substantially as described.

2. The combination of two tubular sections and their coupling, substantially as set forth, so that the portion of each section embraced by the coupling and the coupling itself shall have a common axis.

3. The combination of the grooved cylindrical ends of tubular sections of a bridge-arch with the grooved clamping coupling, substantially as set forth.

4. The combination, with the coupling B B, of the trunnions or their equivalent the pin D, for the purposes described.

136,390.—*Combined Ironing-Table, Lap-Board, and Step-Ladder.*—HENRY C. SMITH, Cleveland, Ohio.

A step-ladder constructed to be reversed or laid down, to which is attached, by slides and cleats, the adjustable table, supported by a lap-board, which can be detached for use, standing upright, and held in place by upright slides and braces.

Claim.—The ironing-table D, the lap-board C, and the step-ladder A, when constructed, combined, and arranged substantially as shown and described, and for the purpose set forth.

136,391.—*Die for Manufacturing Augers.*—SAMUEL A. SMITH, Essex, Conn.

The extremity of the die is inclosed by a sharp wall, which serves to separate superfluous metal from the point, and a surrounding depression or recess is intended to receive the surplus metal thus cut off.

Claim.—In such dies, the sharp cutting projections E, for cutting the metal entirely from around the screw-point, together with the recess F, all as and for the purposes set forth.

136,392.—*Car-Wheel.*—GEORGE W. SNYDER, Port Carbon, and LEWIS W. SNYDER, Lykens, Pa.

Claim.—1. A car-wheel composed of the cast-iron rim A, the cast-iron hub B constructed with one or more channels D, and the wrought-iron tubular spokes C C, operating as receptacles of oil for lubricating the axle.

2. The combination, substantially as shown and described, of tubular spokes C, hub B constructed with channels, D, and bushing E constructed with channels F, and countersink to receive the collar G.

136,393.—*Construction of Ships.*—AMBROSE W. THOMPSON, New York, N. Y.

Hollow metallic beams run longitudinally and transversely through the vessel, and are supported at their sides and ends by hollow braces, which take the place of ordinary angle-irons. The beams and braces are connected by orifices with each other, and with the outer air by a proper outlet above deck. Double fan-wheels drive out the foul air from the tubes, and at the same time draw in a fresh current from outside, and thus ventilate the ship.

Claim.—1. The channel-boxes V H, constructed as described, and applied to the inner walls of a ship, in immediate contact with the upper and under surfaces of the decks or deck-beams, for the purposes of strengthening the walls of the vessel, supporting the decks, and ventilating the ship, substantially as described.

2. The combination of the channel-boxes V H, having air-openings, with the double system of lateral pipes B C and the exhaust and induction blowers, substantially as and for the purposes described.

3. The longitudinal boxes M N, combined with the blowers, the pipes B C, and the boxes V H, substantially as and for the purposes described.

4. The two fan-boxes K K, each containing two fan-wheels, E E', applied to the ventilation of ships, substantially as described.

136,394.—*Frame for Making Straw Envelopes for Bottles.*—WILLIAM F. TILLINGHAST, Burlington, N. J.

A hinged metallic frame with adjusting holes and pins, and a bar and hooks to hold the envelope in position.

Claim.—The hinged frames A A with bars *a a*, holes *b b*, and pins *c c*, in combination with the bar D and buckles F, as and for the purpose specified.

136,395.—*Head-Rest for Beds.*—BENJAMIN F. WALTON, Jersey City, N. J.

Two frames are hinged together at one side, and at the other sides are connected by spiral springs placed between them, forming an elastic inclined rest. Lugs are attached to the lower frame to hold the upper frame in an elevated position on one side, under a mattress.

Claim.—The combination, in a head-rest, of the hinged frames A A', springs B, and movable logs *i i*, for the purpose specified.

136,396.—*Steam Power-Brake Coupling.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa.

A packing-ring is arranged in the socket part of a coupling, with one end compressed between the conical tapering faces of two bushes to make at that point a tight joint. The other end of the ring extends over the conical end of the male pipe. An open space is left around and outside of the rear end of the ring. The air passing through the pipes under pressure will exert its full force on the outside of the rear end of the ring and press it down tightly upon the joint formed by the male pipe and one of the bushes, thereby securing a tight packing.

Claim.—1. A packing-ring, *o*, arranged in the female part of a coupling, and with one end compressed between the conical tapering faces of the bushes *c'* and *i*, substantially as set forth.

2. The packing-ring *o*, not only covering but also resting upon the joint formed by the union of the male and female parts, in combination with an opening, port, or ports, *i*, leading from the main through passage-way to the outer face of the packing-ring, substantially as and for the purposes set forth.

3. A male tube or pipe, *f*, made separate from the male base-piece D, and packed at its base end by a gasket, *e*, in combination with the female part, and with the interposed packing, substantially as set forth.

4. The subject matter of the last preceding claim, in combination with valves *m m*, substantially as set forth.

136,397.—*Hose-Coupling.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa.

In the shell of the coupling is a valve-box, so arranged as to form an annular space between them. In the valve-box works a sliding piston-valve having a double annular seat at its forward end, so when the couplings are disconnected the valve will fall to its seat and cover the ports leading from the passage-way near one end of the valve-case, and re-entering through passage-way back of the outer end. A packing-ring is arranged in the face of the coupling, with an air-space in the rear for the application of external pressure for seating the same.

Claim.—1. A butt-coupling for vacuum-pipes, having a valve, H, which shall, when the couplings are disconnected, fall to its seat and cover a port, ports, or openings leading from the through passage-way at or near one end of the valve-case, and re-entering the through passage-way at or back of the other end, substantially as set forth.

2. A packing-ring, *s*, arranged in the face of a butt-coupling, with an air-space in the rear thereof, for the application of external pressure in seating the same, substantially as set forth.

136,398.—*Car-Starter.*—NELSON J. WILKINSON, Kalamazoo, Mich.

Claim.—The lever E, pivoted at one end upon the pendent arms D D, secured upon the front of the car-frame, and provided with the draft and bearing chains M M, as shown, in combination with the connecting-rod H, sleeve I, pawls K K, and ratchet-wheels L L, with or without the winding-chain N, substantially as herein shown and described.

136,399.—*Clamp for Cigar-Molds.*—SAMUEL WILMOT, Detroit, Mich.

The clamp receives several molds, pressing them firmly together by means of an eccentric and lever journaled in the sides of the clamp, which is provided with a series of holes opposite each for that purpose. By pressing a large number of molds at one time and by one clamp the work is facilitated.

Claim.—The clamp A provided with a series of coincident holes, *a*, shaft B, and lever-cam C, constructed to operate substantially as and for the purposes set forth.

136,400.—*Duplex Telegraph.*—JOHN C. WILSON, Buffalo, N. Y.

Resistance in main-line circuit between main-line relay-magnet and battery. Circuit to ground always closed through resistance, signals being given by cutting it in and out of circuit by means of a shunt-circuit from main battery to line operated by transmitter M, which simultaneously closes equalizing circuit from local battery.

Claim.—1. The herein-described arrangement of circuits and resistances in a duplex telegraph, so that the signals are given by cutting the resistance in and out of the main line, substantially as and for the purpose described.

2. The resistance G, combined with the main-line magnet and circuit and main line circuit, substantially as and for the purpose described.

3. The combination, with the duplex sets of magnet T, of the main battery, resistance, transmitter-key, and the circuits F F and R R, so that the circuit R R shunts the main-battery current around the resistance, substantially as and for the purpose described.

4. The transmitter-key M, having the points *f f g g* arranged to simultaneously close the main and local equating-circuits, substantially as and for the purpose described.

136,401.—*Smoothing-Iron.*—ABEL BUCKLEY WIMPENNY, Hayfield, Great Britain.

Into the chambers within the smoothing-iron steam is conducted, through a flexible tube, from a tea-kettle or other boiling-vessel. A lower tube conducts away the water of condensation, the flow of which is regulated by a clip and set-screw. The iron has a cover of non-conducting material.

Claim.—1. The cover *d*, of non-conducting material, applied as and for the purpose described.

2. The clip *j*, hung to the upper tube and arranged to embrace and compress the lower tube, as set forth.

3. The combination, with the case *a* and its pipes *e f*, of the lid *i*, having an opening communicating through a pipe, *m*, with the pipe *e*.

4. The combination, with the case *a* and pipe *e*, of the cover *i*, having a screw, *k*, arranged as specified.

136,402.—*Splice for Railroad Rails.*—HENRY P. ADAMS, Cleveland, Ohio.

The use of a splice-piece is avoided by constructing the rail with a rectangular offset and continuation, C, which embraces the contiguous rail and follows its exact outline.

Claim.—The rails A B meeting at right angles, the rail B being provided with the arm C, constructed to closely fit the rail A from top to bottom and having the shoulder *a*, the several parts being constructed and arranged to form the splice, as described, and for the purpose set forth.

136,403.—*Guard for Harness-Hames.*—COTTON H. ALLEN, St. Louis, Mo.

A hinged guard secured to the hames protects the collar from wear.

Claim.—The hinged guard C, in combination with the hame-bar A, substantially as described.

136,404.—*Composition for Burial-Caskets.*—ALFRED N. ATWOOD, Philadelphia, Pa.

Claim.—A compound composed of asphaltum and asbestos, with or without the use of brimstone, substantially in the proportions and for the purpose set forth.

136,405.—*Piston-Packing.*—GEORGE R. BARRETT and WILLIAM A. HARRIS, Providence, R. I.

Lap-joints are employed, instead of the usual scarf-joints, in connecting the sections.

Claim.—The metallic sectional rings A, overlapping at the ends of the sections in the plane of lines radiating from the center of the piston, and with abutting ends at right angles to the overlapping surfaces, and also in the plane of radial lines, in combination with the setting-out plates C D, and so arranged as to break joints with the abutting ends and coincident overlapping surfaces of the sections, in the manner described.

136,406.—*Fence-Post.*—JAMES M. BEEBE, Canandaigua, N. Y., assignor to himself and CHARLES V. BEEBE, same place.

The lower end of a wooden post has a single slot, into which is inserted one end of a sheet-metal base, having its vertical edges bent at right angles in opposite directions, to clamp the sides of the post.

Claim.—A fence-post composed of the wooden portion A, provided with the slot *a* and the metallic base-piece B inserted therein, and provided with the fastening-flanges *b b*, resting against the front and back of the wooden post, substantially as shown and described.

136,407.—*Construction of Buildings.*—WILLIAM BESCHKE, Philadelphia, Pa., assignor of one-half his right to SAMUEL SELLERS, same place.

The continuous joints in this structure are all vertical, instead of horizontal, as in masonry courses, and the joining of each sheet-metal section is covered by the unbroken side of the section adjacent.

Claim.—1. In a structure composed of hollow sections of metal or similar fire-proof material, if used in sheet form, the equalization of the strength of the connection of the sections by covering with full surfaces joints made by the meeting ends of sheets shaped as sections, substantially as described.

2. In a building or structure composed of a series of hollow sections, the arrangement of these series so that the continuous joints are vertical and the short broken joints are horizontal, substantially as described.

136,408.—*Drill-Teeth.*—SAMUEL BLACK, West Alexandria, Ohio.

The tooth yields to obstructions by an attachment to a spring bent backward on the beam. To the spring are linked two rods, having their lower ends pivoted to studs on the upper and lower ends of a plate, which projects from the tooth and works in a slot in the beam.

Claim.—The combination and arrangement of the slotted beam A, tooth B, plate C, spring E, studs H and I, and stirrups F and G, all arranged substantially as described, for the purpose specified.

136,409.—*Cultivator.*—BALTIS F. BEATS, New Scotland, N. Y.

Claim.—1. The pickers *m m*, arranged to revolve between the wings H H, substantially as and for the purpose set forth.

2. The combination of the wheels C C, pole B, frame A with the suspended beams F F carrying the double mold-boards G G and hooping-wings H H, when all are constructed and arranged substantially as and for the purpose set forth.

136,410.—*Attachment for Sewing-Machine Tables.*—MARY A. BROWNE, Chicago, Ill.

An apron to be attached by screw-bolts and staples to a sewing-machine, extending from the machine to or near its feet and driving-shaft, constructed with means of connection and an opening for the fly-wheel, the use and object of which are to protect the operator's dress from oil and litter.

Claim.—As a new article of manufacture, a sewing-machine attachment consisting of the slotted apron B, substantially as specified, and for the purposes set forth.

136,411.—*Cigar-Bunching Machine.*—HENRY B. BUNSTER, New York, N. Y.

A reciprocating table contains the bunching recess and carries the rolling apron, and is provided with a slot in each side of its frame, through which works a stationary bunching-roller. The bunching-recess and receiving-hooks are cast solid upon the main platform. A rod and spring at one end of the apron and rod with adjusting-nuts at the other end serve to vary the tension.

Claim.—1. In a cigar-bunching machine, a reciprocating table containing the bunching-recess b^4 and carrying the apron, combined with a stationary bunching-roller, substantially in the manner described.

2. The arrangement of the grooved projection a^3, tongue or guide-bar b^1, roller D, and slots b^2, in connection with each other and with the base-frame A and main frame B, substantially as herein shown and described, and for the purpose set forth.

3. The recess b^4 and receiving-hooks b^5, formed in casting with the platform b^3 of the main frame B, substantially as herein shown and described, and for the purpose set forth.

4. The arrangement of the rod F, spring G, and adjusting-rod H with its clamping-nuts I, in connection with the frame B and slotted forward end of the platform b^3, substantially as herein shown and described, and for the purpose set forth.

136,412.—*Adjustable Valve for Bored or Driven Wells.*—MATTHEW T. CHAPMAN and MARK C. CHAPMAN, Aurora, Ill.

A valve-socket for bored or driven wells is arranged in a tube and provided with a tapering or conical base so as to be

easily moved upward or downward. Said socket has a cylindrical aperture, through which the water rises, and is closed by a spherical valve. The coupling upon which said socket is seated has a screw-thread at its lower end for attaching the strainer.

Claim.—The combination of the tube A, valve-seat B, coupling D, and packing *m*, all constructed and arranged for operation, as shown, and for the purposes described.

136,413.—*Furnaces for Reheating Metals, &c.*—HENRY CHISHOLM, Cleveland, Ohio.

The auxiliary furnace is built at one side of the hearth and connects therewith by means of a flue, forming a kind of bridge-wall, over which the products of combustion from the first hearth pass, and are supplied with additional air by means of openings in the crown of the furnace.

Claim.—1. In combination with the heating-chamber B, the auxiliary furnace A', flue J, and furnace-chamber B', substantially as and for the purpose set forth.

2. In reheating-furnaces, one or more heating-chambers or ovens, B, in combination with one or more auxiliary heating-chambers, B', and one or more furnaces, A', provided with a blast, substantially as and for the purpose set forth.

136,414.—*Means of Operating Steamboat-Chimneys.*—JOHN CHENEY, Cincinnati, Ohio.

The chimney may be raised or lowered and held at any desired angle.

Claim.—The combination of screw-threaded tube E, hinged or pivoted to the movable chimney-section B, and containing a screw, F, secured in a rocking frame, H, attached to the deck or other stationary object upon the boat or vessel.

136,415.—*Vent-Bung.*—WILLIAM F. CLASS, Cleveland, Ohio, assignor of one-fourth his right to THOS. D. COTTRELL and WM. L. B. HUGHES, same place.

The bung is provided with a removable cup for holding water over the vent during the process of fermentation. When fermentation is over the cup is removed and the bung reversed in the bung-hole, when it serves as a venting-bung.

Claim.—The bung A, rubber strip C, and thimble or cup D, when constructed, arranged, and operating substantially as described, and for the purpose set forth.

136,416.—*Barrel-Support.*—FREDERICK W. CLAUSSEN, Mars Bluff, S. C.

An upright piece of wood pivoted horisontally to transverse ears, with a cross-piece and a vertical support to rest upon, constitutes this device. The pieces are so fitted that the bottom of a barrel may be placed on them and tilted as they are moved.

Claim.—The combination of upright piece C pivoted to ears B, with cross-piece D and support E, arranged as and for the purpose described.

136,417.—*Whip-Socket.*—JOHN W. COE and DANIEL MERRITT, Williamsburg, N. Y.

Claim.—The nut E and the ribbon-spring D, applied to the disks *b' c'* of the jaws B and C, the former of which is stationary on the shaft A, and forms a stop for the latter when turned thereon, all as shown and described, and operating as specified.

136,418.—*Device for Emptying Stoves.*—BERNARD CONNELLY, Williamsburg, N. Y.

Upon the outside of the stove, near its base, are flanges serving as supports for the bent edges of a plate which slides beneath and wholly covers the ash-pit. An ash-pan is fitted beneath the stove-base in a similar manner. When the first plate is withdrawn the ashes are dumped into the ash-pan.

Claim.—A stove having a recessed bottom, with the flanges a^2 a^3 a^4, combined with the handled edge-lapped slide E, and the slotted handled pan D, resting upon the shoulders of flanges C, as and for the purpose described.

136,419.—*Police-Nippers.*—JOHN B. CRAIG and MICHAEL HAUGHEY, St. Louis, Mo.

The nippers have jaws, which may be released by a trigger, and by which the policeman can capture and secure the prisoner.

Claim.—1. Nipper-jaws provided on their pivoted ends with a series of teeth gearing with each other, as and for the purpose specified.

2. The spring-catch *s* on one jaw, C, combined with the notched other jaw on a nipper, as described.

3. The means of holding open the jaws, consisting of the spring-hook E locking with teeth *d*, as described.

4. The cap E, connected by neck *e* with handle and applied to the jaws, as and for the purpose described.

136,420.—*Apparatus for Rendering Tallow, &c.*—PETER W. DALTON, Jersey City, N. J.

The gases from the rendering-tank are conducted into the steam-jacket surrounding the tank and there condensed by water-jets.

Claim.—In an apparatus for rendering tallow, &c., the combination of a steam-pipe, K, and water-pipe L with an inner tank, A, and a surrounding chamber or space, F, substantially as shown and described, for the purpose specified.

136,421.—*Lining Rotary Puddling-Furnaces.*—SAMUEL DANKS, Cincinnati, Ohio.

The furnace is first lined with a mortar composed of lime-water and pulverized iron ore, to which soda or potash may be added. When this lining has dried a vitreous coating is formed by melting iron ore and allowing it to set while the cylinder is revolving. Successive quantities of ore are then melted in the cylinder, and lumps of refractory material introduced, which, when the bath sets, become embedded, forming projections within the cylinder.

Claim.—1. A lining or fettling consisting of the above-described compound, applied to the interior of the cylinder of a rotary puddling-furnace, and coated or covered with iron ore or other oxide or silicate of iron, as herein set forth.

2. The aforesaid lining or fettling of the cylinder of a rotary furnace, when there is fixed within said lining projecting pieces of iron ore or other suitable refractory material, as herein set forth, for the purpose specified.

136,422.—*Cotton-Press.*—JAMES P. DERDEN, Bastrop, La.

The connecting-bar is inclined to angle, and the follower is raised. The screw is revolved so as to move the truck-frame outward and bring the bar to a right angle with the lever, and the follower is forced downward with inward power. The truck-frame and the bar form a toggle-joint to operate upon the lever, while the toggle-joint is actuated by the screw.

Claim.—A cotton-press consisting of the frames A, D, and I, lever L, connecting-bar N, screw G, truck-wheels J J, and follower and bar O P, when the same are constructed, combined, and arranged to operate substantially as shown and described.

136,423.—*Bottle-Washer.*—WILLIAM DICK, New York, N. Y.

The device is operated by means of the handle on the pan T, the piston being attached to the pan. When the latter is raised water is admitted to the cylinder through the valves C; on pushing the pan down the valves close and the water is forced up through the tube G into the vessel being washed, the action of the screw giving the brush a rotary motion.

Claim.—The combination of the cylinder A, heavy base B, valves C, piston D, tube E, pan F, tube G provided with a screw-thread, *g'*, and brush H I with each other, substantially as herein shown and described.

136,424.—*Car-Axle Box.*—JAMES M. DODGE, Newark, N. J.

The journal is lubricated by means of a chain, which passes around the journal, and around a roller which rotates in the oil.

Claim.—The combination of the chain and roller with a journal, substantially in the manner and for the purpose described.

136,425.—*Wheel for Vehicles.*—JOHN L. DOM, Hamilton County, Ohio.

An ordinary wooden hub, with wooden spokes of any suitable kind, set into the hub in two rows or staggered, the rows so related to each other as to allow the ring C to be confined between them.

Claim.—1. The ring or band C C', driven or forced upon the hub between the two rows of spokes, substantially as shown and described, and for the purposes set forth.

2. The construction and use of the ring C C', of any section, placed between two rows of spokes in such a manner as to form a mutual support to the spokes, and at the same time constitute the band for the hub, substantially as set forth and described.

136,426.—*Railroad-Rail Chair.*—DANIEL D. ELDRIDGE, La Fayette, Ind.

The fastening-plate is made wedge-shaped in plan, so as to drive in and be securely held by the vertical bolt, to accommodate which notches are formed on the edge of the plate.

Claim.—A compound chair for the joints of rails, consisting of the bed-plate C and fastening-plate D, arranged in reference to each other and to the rail substantially as shown and described.

136,427.—*Lamp.*—FRANK A. FLANEGIN, Fagnadus City, Pa.

The burner is secured to the lamp-body by means of springs secured to a tubular screw passing through the central portion of the burner.

Claim.—The inner tubular screw C and springs D D, in combination with the lamp A and collar B F, provided with the groove I, all constructed and arranged as shown and described.

136,428.—*Floor-Clamp.*—JOHN J. FOSTER, Belmont, Tex.

The clamp-frame is fastened to the joist by hooks, the clamping effected by the pinion operating on the rack-bar.

Claim.—A flooring-clamp, consisting of plate A, standards B B, bolts C D, hooks D K, pinion G, slotted rack-plate E I, and clamp-screw F, arranged as and for the purpose described.

136,429.—*Gear-Cutting Machine.*—JOHN W. FOSTER, Pawtucket, R. I., assignor of one-half his right to EDWARD A. GREENE, same place.

To the base, by which the device is attached to any ordinary lathe, is swiveled a second base, carrying a slide movable by a screw; and a standard projecting upward from the slide supports, by means of a pin, the operating parts, free to be turned and set to any position in a vertical plane, while the swiveled base and slide admit of various adjustments in a horizontal plane.

Claim.—1. The combination of the base and sub-base with the operating parts, substantially as herein described.

2. The combination of the slide J and screw J' with the operating parts and the bases K and K', substantially as described.

136,430.—*Machine for Grooving Sewing-Machine Needles.*—HEINRICH FREIMUTH and AUGUST BÜTTNER, Aachen, Prussia.

The blanks are fed automatically from a series of hoppers onto adjustable and independent supports under a series of rotating saws, which cut a groove on one side of each needle. The needle-supports carry the needles in contact with and under the saws, and as it returns the needles are all turned over automatically to have grooves cut in their opposite sides. The varying depth of the grooves is determined by an adjustable pattern mechanism. Each needle is, by means of three springs, automatically clamped and released at the proper time when being operated upon, and forced from the machine when finished.

Claim.—1. The combination, as described, of the friction-disks 28, 29, and 30 with the slide 14, in the manner and for the purpose set forth.

2. The arrangement of the three bearings 2, 3, and 7 for the main spindle 1, for the purpose of preventing irregular movement of the same, in the manner described.

3. The saddles *h h* and keys *i i* and *h k* in the case 11, arranged for adjusting the needles separately, in the manner described.

4. The double cranks *u'*, arranged on the rod 68 to operate on the pins *v*, as set forth.

5. The combination of the parts 81, 82, 83, 84, 85, and 86 with each other, substantially as and for the purpose set forth.

136,431.—*Lever for Presses.*—JOSEPH P. GATES, Red River County, Tex.

A lever having a pivoted arm for holding the doors of presses.

Claim.—1. In combination with the door of a press-box, the jointed locking device, constructed as described, for the purpose specified.

2. In a locking device, the combination of lever I with its stop-flange and curved head E, and the lever G with curved head C, when pivoted together at B, said parts being arranged with relation to each other as and for the purpose set forth.

136,432.—*Machine for Turning Stone.*—ALONZO S. GEAR, Boston, Mass.

The stone, while being revolved in an engine-lathe, is operated upon by a revolving cutter-head moving parallel to the axis of the stone.

Claim.—In combination with an engine-lathe, a rotary cutter-head, studded with diamonds, for turning stone, substantially in the manner described, as and for the purpose set forth.

136,433.—*Scroll-Sawing Machine.*—GEORGE S. GRIGG, Pottsville, Pa.

An arm carrying the saw-guide is adjustably secured to the bar which supports the vibrating levers at the rear of the saw-table.

Claim.—The arm E S U, constructed and attached to the bracket or arm K, substantially as herein shown and described, and for the purposes set forth.

136,434.—*Hoop and Train Skirt.*—LOUIS GUELLE, Hoboken, N. J.

A supporting and train skirt having an open front, stayed at top and bottom, and kept from the person by an elastic cross-band.

Claim.—1. The arrangement upon the vertical edges of the open-front skirt A, and upon the opposite sides thereof, of rigid whalebone or metallic ribs or branches B B, as and for the purpose described.

2. The transverse elastic band H, in combination with the vertical ribs or branches B B and with the skirt A, substantially as and for the purpose described.

3. The horizontal hoops D D and F, placed, respectively, upon the lower and upper part of the skirt A, substantially as and for the purpose herein specified.

4. The arrangement, upon the horizontal hoop D, of the skirt A and of the transverse rigid rib G, in combination with the supplemental skirt I, as described.

5. The combination, with the skirt A, of the adjustable supplemental or train skirt I, substantially as described.

6. The hoops J J, placed upon the lower part only of the supplemental skirt I, and for the purpose described.

136,435.—*Metronomes.*—JOHN A. HECKENBACH, Mayville, Wis.

The escapement-wheel of the metronome-clock is provided with several concentric series of pins, differing in number, for tripping a bell-hammer. An index-hand is connected with a slide-piece which controls the position of the hammer-tail, so as to bring it in line with either set of tripping-pins, as desired.

Claim.—1. The escapement-wheel C provided with the pins *d* on one side and with the circles of pins *g* on the other side, as specified.

2. The combination of the pivot *a* and cams *b* with the escapement-wheel C and pins *d* thereon, to operate substantially as herein described.

3. The slide H, clapper G, and bell F connected with each other, as set forth.

4. The index-hand I having the forked arm *n* and connected with the slide H to move the same up and down, as set forth.

5. The combination of the clapper G and crank *m* with the escapement-wheel C and pins *g* thereon, substantially as specified.

6. A musical indicator provided with a bell whose strokes differ from the vibrations of the pendulum in the desired ratio, as set forth.

136,436.—*Life-Preserving Float.*—THEODORE HOSMER, Sandusky, Ohio.

A life-preserver or float, provided with propeller-blades and their operative mechanisms, consisting of ratchet-wheels, pawls, spur-wheels, and levers, the said propelling mechanism occupying no additional room when packed, and being easily transportable.

Claim.—The propeller mechanism I J, the ratchet-wheels L, pawls *m*, spur-wheels N, and levers K, combined and applied in connection with a life-preserver as and for the purpose described.

136,437.—*Apparatus for Protecting Grain and Seed.*—JEAN METHODIOS JOANNIDES, Mark Lane, London, England.

The apparatus consists of a perpendicular cylinder with eight, more or less, horizontal cylinders connected thereto, all the cylinders being perforated for the circulation of the air. A series of small tubes are placed inside of the large cylinders for the return of the confined air. The apparatus is placed in the compartment of a ship or place where the grain may be stored, with the perpendicular cylinder projecting into the open air. A funnel-mouthed cap, fitted with sponges saturated with a solution of carbolic acid for purifying the air, is attached to the top of the perpendicular cylinder.

Claim.—The combination, with the ventilator A and perforated tubes C, of chemically-prepared sponges, substantially as specified.

136,438.—*Street-Sweeper.*—ORSON W. KELLOGG, Fond Du Lac, Wis.

The frame carrying the revolving brush is swung to the hind axle of the machine, and is supported by small bearing-wheels made adjustable to afford more or less contact of the brush with the street. Pawl and ratchet wheels are provided upon the brush-axle so that the brush may always be driven by the advancing wheel in case of turning. A similar arrangement is provided for the elevator. The brush-frame can be raised or lowered from the driver's seat by chains passing over pulleys and a lever properly placed. The dust-pan can also be raised and lowered.

Claim.—1. The brush-frame D, mounted on the axle A, and gage-wheels E, and the brush geared with the truck-wheels, substantially as specified.

2. The arrangement of the lever N, cord M, pulleys L K, and chains I with the brush-supporting frame and the dust-pan, the latter being connected to the brush-frame, substantially as specified.

3. The brush and the elevator-shafts, geared at each end with the independent truck-wheels by wheels having a ratchet-and-pawl connection, *d e*, substantially as specified.

136,439.—*Photographic Negative.*—JOSEPH KIRK, Newark, N. J.

The collodion or other chemical film is applied to both sides of a glass plate, whereby (such plate being exposed to the subject to be photographed) a faint image is produced on the back in addition to the one on the front of the plate, which has the effect of blending the highest points of light gradually with the shadows in the printed photograph.

Claim.—A photographic negative, consisting of one or two glass plates, having the collodion or other chemical film applied to both sides of a plate when used singly, or to one side of each of the two plates when used together, substantially in the manner and for the purpose specified.

136,440.—*Saw-Set.*—JOHN W. LESLIE, Cairo, Ill.

A short narrow plate of metal, having a slot in the end at right angles to the handle, is firmly attached to the ferrule of a file-handle.

Claim.—The application of a saw-set, C D, constructed as shown in the drawing, to the ferrule A and handle B, as and for the purpose described.

136,441.—*Steam Vacuum-Pump.*—JAMES R. LITTLE, Monmouth, Ill., assignor of one-half his right to CLAUDIUS A. DUNN, same place.

A horizontal cylinder is divided into two chambers, each provided with a jet-pipe and a small vertical chamber for retaining part of the water when it is depressed, and this assists in condensing the steam. The steam is admitted by a slide-valve moved by a crank on a short horizontal shaft, which is operated by a tappet on a vertical shaft that is attached to the water-inlet gate and operated by it.

Claim.—1. The cylinder A, in combination with the chamber G and bottom C, when constructed and arranged for operation as and for the purposes specified.

2. The arrangement and combination with each other of the water-passages c c^2 c^3 c^4, valves *b b'*, and jet-pipes *n n'*, all constructed and operating as shown and set forth.

3. The chambers D D', in combination with pipes *n n'* provided with valves *b*, all arranged in the chambers B B', substantially as and for the purposes set forth.

4. The combination and arrangement of the gate *e*, seats *k k'* with rods *s* and operative mechanism, substantially as and for the purposes specified.

5. The combination of the spring *i*, bar *w*, rods *s* and *i*, arms *z* and *t*, and crank *r*, when arranged as described, and for the purposes set forth.

6. The combination of the valve I and gate *e* with crank *r* and rods *i* and *s*, when constructed to operate substantially as described, and for the purposes shown.

136,442.—*Machine for Making Matrices for Stereotype-Plates.*—JOSÉ ARNALDO MARQUEZ, New York, N. Y.

A revolving plate carrying spring-seated plunger-dies is mounted so as to travel in one direction over the matrix-bed, which travels in the opposite direction on rails. A die is thus brought over the proper point of the matrix, which position is shown by indicators.

Claim.—1. The type-disk E, carrying a series of type-plungers, and suspended from the spider D which travels on the guide-rods *i i*, in combination with each other and with the matrix-supporting platform and the driving mechanism.

2. In combination with the rotating and suspended type-disk carrying a series of type-plungers, and the movable matrix B, the spring-stop *r* for engaging with the pockets *p* of the type-disk, substantially as described.

3. The index *s* and traverse *u*, in combination with the hand-wheels *g m* and their indicators, as set forth, for operation in respect to the movable matrix-bed and the suspended and rotating type-disk E, as and for the purpose specified.

136,443.—*Bureau or Wardrobe Bedstead.*—CHRISTIAN MAY, Cincinnati, Ohio.

The top of the bureau is hinged to the back, being held to the proper position by a prop. From the left hand of the bureau a shelf is drawn out, which forms, with the permanent shelf in the

bureau, a receptacle or frame for the open mattress. The false drawer-front at the top can be let down in front of the bed. A hinged bracket swings out under the bed-shelf to support the same when extended.

Claim.—1. The described arrangement of shell A, hinged top E, prop F, extension G, and hinged bracket H, for the purpose set forth.

2. In combination with the elements of preceding clause, the flap D *d*, hook K, and eye L.

136,444.—*Machine for Making Plow-Irons.*—JAMES M. MCGINTY and THOMAS NOLAN, Moulton, Tex.

The plow-iron is cut from a sheet of metal by punching-dies. As one blank is cut off the plate it leaves another partly formed, which is cut off by the ends of the dies when the upper die descends to punch another iron from the plate. The blank which is punched into the lower die is raised by spring-levers to a level with the plate, which pushes it away as it is fed along.

Claim.—1. The combination of the driving-shaft B, driving-wheel C, segmental gear-wheel D, gear-wheel E, feed-roller gear-wheels G I, feed-rollers H J, crank or crank-wheel Q, and connecting-rod P, with each other and with the dies M N, substantially as herein shown and described, for the purpose of operating said dies and feeding the bar or plate to them, as set forth.

2. The dies M N, provided with punches R, spring-bars S T, and stops U V, substantially as herein shown and described, and for the purpose set forth.

3. The method of cutting the plow-bars from the bar or plate to avoid waste of steel and enable one set of dies to cut two plow-bars at each operation, as set forth.

136,445.—*Apparatus for Cooling Liquids, &c.*—HEINRICH MEIDINGER, Carlsruhe, Germany.

The vessel which holds the substances to be cooled is surrounded by a double-wall ring having perforations in its inner wall, and constructed with a projecting flange at its upper edge, so arranged as to rest upon the top of the vessel, holding the ice or other cooling agent.

Claim.—1. The double ring and sieve C, arranged substantially in the manner and for the purpose set forth.

2. The vessels A, B, and C, combined with each other, substantially as herein shown and described.

136,446.—*Process for the Manufacture of White Lead.*—ASA P. MEYLERT, New Britain, Conn.

Passes the carbonic-acid gas directly through the acetic acid so as to compel a partial vaporization of the acid, and to carry over into the corroding-chamber only so much as can be economically used, preventing the loss which occurs when the acid is vaporized by direct heat.

Claim.—1. The method of vaporizing acetic acid or its equivalent by passing carbonic-acid gas in contact with the same, substantially as above described.

2. The combination of the pipe *y*, conveying carbonic-acid gas into, and terminating in, the receptacle B, the acid-receptacle B, the corroding-chamber A, and their connections, substantially as and for the purpose set forth.

3. The combination of the purifier C, the acetic-acid receptacle B, the corroding-chamber A, and their connections, substantially as and for the purpose set forth.

4. The combination of the pump or blower D, the purifier C, the acid-receptacle B, the corroding-chamber A, and their connections, substantially as and for the purpose set forth.

5. The combination of the furnace for generating the carbonic-acid gas, the washer E, the acid-receptacle B, the corroding-chamber A, and their connections, substantially as and for the purpose set forth.

6. The combination of the furnace for generating the carbonic-acid gas, the washer E, the pump or blower D, the acid-receptacle B, the corroding-chamber A, and their connections, all arranged substantially as and for the purpose set forth.

7. The combination of the furnace for generating the carbonic-acid gas, the washer E, the pump or blower D, the purifier C, the acid-receptacle B, the corroding-chamber A, and their connections, arranged substantially as and for the purpose set forth.

136,447.—*Artificial Food.*—HARRY CROSWELL MORRIS, Richmond, Va., assignor to THOMAS H. HAZARD, same place.

Lean meat, together with the digestive organs of an animal, is macerated till reduced to a pulp, and then there is added muriatic acid, glycerine, and water, and the mass is subjected to heat of 120° Fahrenheit. After this all liquid is extracted, and any free acid is neutralized by carbonate of soda.

Claim.—1. The article of artificial food, substantially as herein described.

2. The application of the digestive organs of an animal in the production of artificial food, substantially as described.

3. The process for the production of artificial food, substantially as described.

136,448.—*Combined Latch and Lock.*—GAORG MÜLLER, New York, N. Y.

The bolt is connected to the knob-spindle, and operated as a latch by means of a slotted link pivoted to the bolt and a pin on the arm of the hub or collar through which the spindle passes. The slot in the link allows the bolt to be thrown forward by the action of the key, and there held by the tumblers when it is desired to lock the bolt. By this arrangement the same bolt is used as a latch or lock, as may be desired.

Claim.—1. The sliding bolt M, spindle L *l*, collar P, slotted link N, stops I, spiral springs K, tumblers Q, and post V, combined, arranged, and operating as set forth.

2. The rose W, escutcheon X, and pipe Y, cast in one piece, either with or without the spline Z and groove Z′ in the key T, substantially as and for the purposes described.

136,449.—*Pessary-Adjuster.*—OTHO M. MUNCASTER, Washington, D. C.

A rod, with a ball or ring attached, is joined to another rod by slots and a set-screw, so that the former is adjustable upon the latter both vertically and laterally. Parallel with the main rod, and hinged to it at one end, is a strip of lead or zinc, which, when forced against the external genitals, retains the configuration of the parts. The rods give the length of vagina and exact curve, so that after this adjuster is removed a pessary may be at once bent to the exact shape required in any case.

Claim.—1. The combination of the rod D for insertion into the vagina, and part B upon which it adjusts both vertically and laterally, all arranged as for the purpose described.

2. In combination with the parts B and D, the flexible piece H, hinged or fastened thereto for taking and retaining an impression of the external genitals, arranged as shown.

136,450.—*Tool-Holder.*—IRA F. MURCH, Sumner, assignor of one-half his right to DAVID TORREY, Deering, Me.

Various tools are fitted in sockets in the disk, which, by its shank, is rotated in an ordinary brace.

Claim.—The improved tool-holder, as shown, consisting of the shaft *a*, pivot *d*, disk *e*, recesses *e e e*, chambers *h h*, catch or detent *f*, thumb-latch *g*, and spring *m*, or their equivalents, when constructed and arranged substantially in the manner and for the purposes as set forth.

136,451.—*Fire-Kindler.*—CHARLES A. NISBETT, Pontiac, Mich.

Claim.—1. The end-curved plate A, provided with spring *a* at one end, the spring *g* at the other, and the intermediate post *b*, as and for the purpose described.

2. The pendent plate *d*, arranged in the post *b* to operate in combination with the lever C and spring *g*, substantially as specified.

136,452.—*Water-Wheel Attachment for Sewing-Machines.*—CHARLES H. PALMER, New York, N. Y., assignor to A. M. LORYEA, Portland City, Oregon.

The water-wheel is inclosed in ordinary casing, and made with two metallic disks struck up by a die and united in any convenient manner. The casing as shown is made to fit close to the wheel, both in front and rear of the point at which the water strikes, for the purpose of preventing the escape of water backward. There is a feed-water pipe; also a place of exit. A lever is affixed to the axis of an ordinary water-faucet, by which the water is let in or shut off, and a dial with degrees marked thereon, representing the comparative quantity of water required, is also connected with the wheel.

Claim.—1. The wheel *a*, constructed substantially as described.

2. The index-dial *g* and water-faucet, in combination (or equivalent devices) with the wheel *a* and casing *b*, substantially as described.

3. The casing *b*, made to fit close to wheel *a* in front and rear of the point at which the water strikes the wheel, as set forth.

4. The circular disk *m* to prevent leakage, as set forth.

5. The brake A, in combination with the water-wheel shaft, operated substantially as and for the purpose described.

136,453.—*Sectional Steam-Boiler.*—HENRY B. PANCOAST and FRANCIS I. MAULE, Philadelphia, Pa.

By fitting one end of the large and small pipes into distinct return bends, and the other end into rings, the sections can be readily bolted together to increase or decrease the size of the boiler.

Claim.—1. The arrangement and combination of the tubes H A′, the return bends K, and the rings N P, bolted together, as and for the purpose herein described.

2. The arrangement and combination of the tubes H A′, the return bends K, the manifolds composed of the rings N P bolted together, and the circulating pipes R, operating so as to form a sectional steam-boiler, as herein described.

136,454.—*Check-Loop for Harness.*—WILLIAM PARSONS, Palmyra, N. Y., assignor of one-half his right to WILLIAM B. BROWN, same place.

A metallic frame with open sides secures the strape by a pin, which forces the straps through the openings.

Claim.—The check-loop, consisting of the skeleton block C and the pin D, constructed, arranged, and operating as herein described.

136,455.—*Machine for Upsetting Tires.*—CHARLES J. PETERSON, Brevard Station, N. C.

The bed is made solid with the vertical stands, and the serrated jaws are made with a vertical lip to keep them in place. The wedges over them not only clamp them upon the tire, but serve to prevent their lateral movement when the tire is being hammered.

Claim.—The combination of the serrated movable jaws F F having the vertical lips G, with the transverse wedge bars or keys C C inserted through the vertical slots of the stands B B, and the jaws E E formed on the bed-plate A, all as shown and described, for the purpose specified.

136,456.—*Mosquito-Net Frame.*—NICOLAI PETERSEN and ROSA ROESCHER, Memphis, Tenn.

A frame connected at its center by a hinged holder in two parts, having on its under side a bolt to sustain it when extended, and from which the top of the frame is connected, and from it extends to the corner bracket or elbow, constructed with one branch extending downward, from which is connected the slide which enters the upper end of the upright, and is held in position by a spring-bolt, by which its height can be adjusted, and all the parts supported by a cord passing through the elbow or bracket and around the frame. By the arrangement of the hinged center the entire frame can be folded into a small space for transportation.

Claim.—1. The top center-piece A, provided with hinges *b*, bolt *p*, and connecting-pieces *a*, as set forth.

2. The corner-piece *f*, in connection with arms *e*, string *k*, and legs *l*, as described.

3. The notched legs *l*, in connection with springs *i* and tubes *m*, as set forth.

4. The combination of the parts of the former clauses, forming the portable mosquito-net frame, substantially as and for the purposes described.

136,457.—*Tobacco-Pouch.*—DANIEL READ, New York, N. Y.

An inner pouch of water-proof material is provided with a metallic frame, and arranged between the pockets of a wallet.

Claim.—The combined tobacco-pouch and wallet, composed of the pouch A, made of rubber or other suitable water-proof material, and provided with a metallic frame, B, and the pockets C of a wallet arranged upon one or both sides of said pouch, substantially as herein shown and described.

136,458.—*Hand-Stamp.*—GEORGE H. ROUNTREE, Milwaukee, Wis.

The stamp is hung in a lever which is oscillated to alternately ink the type and print its impression. During the latter movement the ink-pad is partially rotated by a pawl-and-ratchet movement.

Claim.—The combination of the swinging stamp revolving ink-pad, stamping-pad, and the pawl and ratchet, substantially as specified.

136,459.—*Hub for Vehicles.*—THEODORE ROYER and GEORGE L. ROUSS, Cincinnati, Ohio.

Claim.—1. The combination of metallic flanges slightly beveled at the angle E with wedges formed with a projecting lip at each end of the lower edge, substantially as and for the purposes specified.

2. The combination of metallic flanges beveled on the side next the spoke and toward the hub with wooden wedges whose edges are beveled as described, substantially as and for the purposes set forth.

136,460.—*Manufacture of Carriage-Axles.*—ALEXANDER SCHIECK, JOSEPH SCHIECK, and JOSEPH SMITH, Rochester, N. Y.

Claim.—The method herein described of applying and forming the collars of carriage-axles—that is to say, nicking the corners of the square bar A, bending the strap B around it at the point nicked, and then welding said strap to the bar, and drawing out and forming of said strap the extended or double collar *n o* by means of dies, as set forth.

136,461.—*Sash-Balance.*—JOSIAH M. SIMPSON, Oshkosh, Wis.

An automatic spring-clamp is formed by arranging a bent-wire spring on each side of a dog, journaled in suitable bearings, the spring curving around the heel of the dog so as to leave a small space for the cord to pass between the heel of the dog and the inside of the curve in the spring. The ends of the spring are secured in the base-plate. There are also projections, one on each side of the dog, to prevent the spring from slipping over it; and a groove is formed between the nose of the dog and that part of the base on which it rests, through which the cord passes, is held automatically by the spring, and released only by pressure on the thumb-piece.

Claim.—The spring-clamp composed of the dog D journaled in bearings F F, and held and operated by the spring G, which curves around the heel of the dog D, and terminates in the base H, substantially as and for the purposes hereinbefore set forth.

136,462.—*Steam and Air Brake.*—BENJAMIN W. SMITH and ERASTUS O. FRINK, Indianapolis, Ind.

Claim.—1. The combination of the two cylinders C^1 and C with suitable valves and pipes, when one cylinder is larger than the other and used as an air-compressor, substantially as and for the purpose set forth.

2. The combination of the two cylinders C^1 and C, with their several valves and connections, with the reservoir B, substantially as and for the purpose set forth.

3. The combination of the several working parts, as specified, with the two cylinders C^1 and C, substantially as and for the purpose hereinbefore set forth.

4. The combination of the steam-pipe A^1, provided with a four-way cock, B^2, and connected with the air or steam pipe 7, with the brake-cylinder K^2 and exhaust-pipes J^2 and J^3, substantially as and for the purpose set forth.

5. The four-way cock C^2 or B^2, when constructed and operated substantially as and for the purpose set forth.

6. The brake-cylinder K^2, provided with one or more grooves, N, at the bottom of the cylinder, substantially as and for the purpose set forth.

7. The combination of the trip Y^2 of the coupling, provided with a projection on each side of the lower end, and the hinged joint Y^3 on the sockets E^2, with the sleeve D^2 and disk-valves O O′, substantially as and for the purpose set forth.

8. The cock-coupling K^3, provided with a key, K^4, and handle K^5 that is hollow, in combination with either of the pipes 7 or J^2, substantially as and for the purpose set forth.

136,463.—*Process and Apparatus for the Manufacture of Carbonate of Soda.*—ERNEST SOLVAY, Brussels, Belgium.

The absorber is a vertical cylinder from thirty-five to fifty feet in height, divided by perforated plates. The liquid is supplied to the absorber at mid-height from a reservoir situated ten feet below the top of the absorber. An equalizing-pipe connects the top of absorber and reservoir. The carbonic-acid gas is forced in at the bottom of the absorber at a pressure exceeding that of the liquid column.

Claim.—1. Forcing carbonic-acid gas obtained from any convenient source through a high column of a solution of salt and ammonia, the height of which always exceeds and is generally several times as large as its greatest width, and so make the liquor descend and the gas ascend mainly in a vertical direction, by which means a very active reaction is obtained, and a complete prevention of the heating of the liquid.

2. The use of a single vessel of considerable height in proportion to its width, hereinbefore called "absorber," for treating the solution of salt and ammonia by carbonic acid.

3. The use of plates perforated with small holes and provided with teeth round their circumference in the said absorber, in order to divide the gas as often as practicable.

4. The peculiar form of calotte or globular segment given to these plates.

5. The use of plates provided with one or a few large holes in the said absorber to prevent the mixing of the liquor at the bottom and top of the said absorber.

6. Feeding the liquor into the absorber at about half of its height, for obtaining the liquor in the upper half of the absorber in a fit state to retain the ammonia carried off by the gas from the lower half of the absorber.

7. The use of a vacuum-filter for separating the bicarbonate from the liquid.

8. The drying of the bicarbonate and its conversion into monocarbonate of soda with the same filter by passing a current of air or other gas through it.

9. The drying apparatus, consisting of a cylinder in which are placed circular shelves with proper openings, and which is provided with shaft-arms and scrapers, which cause the drying substance to move from the top to the bottom of the cylinder, for the purposes herein before set forth.

10. The use of hollow shelves heated internally in the said drying apparatus.

11. The drying apparatus, consisting of a hood provided with a central shaft, arms, and scrapers, for the purposes hereinbefore set forth.

12. The regeneration of the ammonia from the liquid from which the bicarbonate has been separated by magnesia or a basic chloride of magnesium, and the subsequent treatment of the liquid thus obtained, by which muriatic acid or chlorine is obtained, and the magnesia, as well as all the salt which has not been converted into bicarbonate, are recovered.

136,464.—*Steering Apparatus.*—JOHN F. SHARE, Rochester, N. Y.

A balanced rudder is pivoted at its lower end in a step, as usual, but its upper bearing consists of a hollow spindle, through which the driving-shaft of the propeller is connected by mechanism with the motive power, so that while the bearing of the propeller-shaft is in the rudder itself the rudder may be operated independently of the propeller while in motion.

Claim.—A balanced rudder, B, suspended on hollow upper pivot *a* and lower step-pivot *b*, and receiving shaft D of propeller, as and for the purpose described.

136,465.—*Electro-Magnetic Annunciator.*—GEORGE W. SHAWK and ALBERT STORER, Cleveland, Ohio.

The steel disks or plates bearing the indicating-numbers are permanently magnetized, and thus attach themselves normally to the soft-iron cores of passive electro-magnets. When the signal-key is touched, completing the electric circuit through the electro-magnets, exciting their poles to similar states with their contact plate-magnet, the latter is repelled, and thus drops into view at the same time that a bell is sounded by another electro-magnet.

Claim.—1. The polarized magnets D D, when arranged with the electro-magnets C C, or their equivalents, for indicating numbers, substantially as described, and for the purpose set forth.

2. The said polarized magnets D and electro-magnets C, in combination with the electro-magnets G G, lever H, hammer K, and gong L, arranged for sounding a signal, substantially as shown and described, and for the purpose set forth.

136,466.—*Medicated Towel.*—LYDIA STEWART, San Francisco, Cal.

Beef's gall, saltpeter, Cayenne pepper, common salt, arnica blossoms, water.

Claim.—1. A medicated towel, for the purpose above described.

2. The combination of ingredients above mentioned, substantially as and for the purpose above described.

136,467.—*Cooking-Vessel.*—WILLIAM Y. THOMSON, Oyster Bay, N. Y.

The cover will be held securely in place while the water is being poured from the solid contents of said boiler, and the contents of said boiler may be "tried" to see if they are fully cooked, without its being necessary to remove the cover for that purpose.

Claim.—1. The cover B made with the perforations b^1, the notches b^2, and the hole b^3, and provided with the handle D and flaps C and E, substantially as herein shown and described, to adapt it to be applied to a vessel provided with the shoulder or flange a^1 and stops a^2, as and for the purpose set forth.

2. The bail H and inclined lugs G, constructed and applied to a vessel provided with an ordinary bail, F, substantially as herein shown and described, and for the purpose set forth.

136,468.—*Cartridge Made of Fusible Metals, &c.*—WILLIAM HENRY TOOTH, Brixton, England.

The object is to form cartridges of easily-fusible metals, either alone or combined with other combustible matters, so that the shell will melt or burn up and be blown from the gun.

Claim.—1. Constructing cartridge-shells of fusible metals, whether formed in one piece with the projectile or separately attached thereto, as herein set forth.

2. Ignitible or inflammable cartridge-shells formed of the ingredients specified, or their chemical equivalents, substantially as set forth.

3. Explosive cartridges formed of the ingredients and in the manner herein described.

136,469.—*Carpenter's Plane.*—JUSTUS A. TRAUT, New Britain, Conn.

Combined plow, dado, and rabbet-plane, made adjustable by a removable and reversible guide-bar.

Claim.—1. The combination of the stationary stock *a* with the adjustable stock *a'*, when the latter is provided with the boss *b*, substantially as and for the purpose specified.

2. The detachable and reversible guard-plate *n*, when used in combination with the stock *a* and adjustable stock *a'*, substantially as and for the purposes specified.

136,470.—*Apparatus for Treating Alcoholic Liquids in Spray with Ozone for Aging and the Production of Vinegar.*—REUBEN D. TURNER, New York N. Y.

Claim.—The combination, with the tank A, of the separate ozone-receptacle C, the vessel G containing the liquid to be treated, the pumps D F, the closed trough or receiver E, into which both the liquid and ozonized air are pumped, and the spraying tubes or devices H for distribution of the liquid by pressure of the ozone and in common with it within the tank, substantially as specified.

136,471.—*Ironing Apparatus.*—ROLLA A. TYLER, Haverhill, Mass.

A post is attached to a table, and to the post is hinged a standard having a horizontal arm and an upright standard. At the upper end of this is an arm having a metallic rod; one end of this rod is bent, and one end fits in a socket in a smoothing-iron. A spring extends from the standard to the arm, which causes a pressure upon the smoothing-iron when moved by the operator over the ironing-board.

Claim.—1. A spring, in combination with the hinged arms G and D, when employed to press the flat or smoothing iron on the material, as specified.

2. The device for ironing or smoothing materials, consisting of the post B, the hinged standard C, the horizontal arm D, the upright standard E, the pressure-arm G, the spring H, and the rod I, operating as herein before described.

136,472.—*Car-Axle Box.*—STEPHEN USTICK, Philadelphia, Pa.

A close oil-chamber is formed below the journal in the axle-box by means of a division-plate, which is adapted to receive packing around its edge. Oil is conveyed to pads, which are inserted at the sides of the journal by wicks which pass down by the sides of the division-plate.

Claim.—The detachable division-plate D, provided with packing *b*, in combination with the journal-box A, substantially in the manner and for the purpose set forth.

136,473.—*Manufacture of Coil-Springs.*—WILLIAM HENRY WARD, Auburn, N. Y.

A single spring-wire having its two ends coiled in the same direction and in such a manner as to balance each other throughout.

Claim.—The coil spring *a b c d*, having its coils *a b* and its ends *c d* so arranged as to perfectly balance each other and allow of formation into right-and-left springs, as described.

136,474.—*Washing-Machine.*—CYRUS WATSON, White Cloud, Kans.

A washing-machine constructed with inclined bottom from the center, with a smooth roller with cross-bars in close connection with it, with a fluted roll attached to hooks, which extend from the journal to a spring, and attached to and across the bottom, by which the rolls are held in connection, through which the clothing to be washed is passed.

Claim.—The combination of tub A having bottom inclining downward from the center, the smooth roller U arranged between overlapping cross-bars E E and journaled in notched blocks D D, the fluted roll F having crank G and arranged in open slots of blocks D, and the spring-connected rods I H, all applied together as and for the purpose described.

136,475.—*Propelling Mechanism for Vessels.*—JOHN WELCH, New York, N. Y.

Vibrating paddles are pivoted in an oscillating frame, and curved or bent rods extend down on each face of the paddles to limit them in the direction of their motion to act as stops.

Claim.—In combination with the paddles I, pivoted in a vibrating frame, the rods L L, bent or curved, as specified, whereby they are adapted to act as stops, alternately, for said paddles.

136,476.—*Lasting Boots and Shoes.*—JOSEPH C. WIGHTMAN, Boston, Mass.

After securing the projecting edges of the vamp to the inner sole by the application of glue or other adhesive composition, a binder of thin suitable material is spread over the entire sole surface and secured by the same process.

Claim.—In the process of lasting a boot or shoe, the combination of the inner sole D with the vamp B and the binder A, when said binder A is used as a part of the shoe distinct from the outer sole, for the purpose set forth, substantially as described.

136,477.—*Cultivator.*—WILLIAM WILLERTON, Jacksonville, Ill.

Devices for raising and lowering the plows.

Claim.—The combination of rack-bar U, bibranched chain P S, pulley T, laterally-sliding pulleys Q Q, and keeper V, all arranged as and for the purpose described.

136,478.—*Pump-Nozzle.*—CHARLES O. WILSON, Columbia, Ohio.

The nozzle is made in two parts, which are connected by a pivot. A spring connected at one end to the pump-stand and at the other to the pivoted part of the nozzle or spout throws up the latter when it is not in use, and the drip is conveyed from the chamber in which it falls through a pipe back into the reservoir.

Claim.—The adjustable pump spout or nozzle in two sections or parts, connected at and working on a pivot, in combination with the cavity, slot or opening, shield, drip-pipe, and spring.

136,479.—*Die for Shaping Hatchet-Blanks.*—JONATHAN YERKES, Frankford, (Philadelphia,) Pa., assignor to YERKES AND PLUMB, same place.

The portion of the die that strikes the side of the eye is formed slightly convex, and the part that operates on the back or hammer end of the hatchet has projecting lips that embrace the edges of the blank and form it octagonal in cross-section.

Claim.—The dies A B, each provided with a convex portion, *c c*, and lips *b*, constructed substantially as described.

136,480.—*Knitting-Machine.*—JOHN M. ARMOUR, Syracuse, N. Y.

The cams, in the order in which they are marked, operate to bring the hooks in position to be entered by the needle, to recede to allow the needle to pass down between the hooks, to move the frame forward so that the loop shall be caught by one of the hooks, and to move the hook-carrier so that the needle shall come out behind the hook on which it left a loop and then be fed forward for another stitch. The feeder draws down the loops as formed.

Claim.—1. The cam-wheel, provided with the cams Nos. 4 and 5, operating in connection with cams Nos. 1, 2, and 3, substantially in the manner and for the purpose specified.

2. The cam-wheel having the cams herein described and the fixed or adjustable gate *g* between cams Nos. 1 and 5, substantially as and for the purposes set forth.

3. The feeder G, when operated in connection with the needle or needles and stitch-hooks, substantially as described.

136,481.—*Brick and Tile Machine.*—GOODRICH BALDWIN, Monroe, Mich.

The clay is fed in by a belt, and manipulated and worked forward by hoes or knives (operated by pitman and cranks) to the plunger, which drives it through the die.

Claim.—1. The pitman E, carrying the hoes G G and plunger I, and operated by means of the two cranks D D, substantially as and for the purposes herein set forth.

2. The flange *a*, attached to or formed on the plunger I, and operating, in connection with the die H, substantially as and for the purposes herein set forth.

3. The cleaner J, consisting of the bottom pieces *b b* and side pieces *d d*, and operating, in connection with the hoes G G and the friction-rollers described, substantially as and for the purposes herein set forth.

4. The combination of the cranks D D, pitman E, hoes G G, plunger I with flange *a*, die H, cleaner J, belt *f*, and stop-chain *e*, all substantially as and for the purposes herein set forth.

136,482.—*Door and Gate Spring.*—SILAS L. BEAN and LUCIEN MILLS, Galesburg, Ill., assignors to BROWN, HARRIS & HOPKINS, New York, N. Y.

The plug which is used to retain the coil-spring and adjust the same in its bracket is furnished with a prismatic end, which is inserted in a mandrel. The end of the wire can thus be permanently secured in the plug where it is intended to remain, the mandrel inserted, and the spring coiled in the lathe. It is only necessary to remove the mandrel, when the spring is ready for use. A nut on the lug below the bracket, and above a collar or ridge, affords a secure hold for a wrench in tightening the spring for use.

Claim.—1. A coiled door or gate spring with its plug constructed with a prismatic terminus, *t*, which permits it (the plug) to be attached to a movable mandrel during the coiling of the wire into a spring, substantially as described.

2. The collar *c*, in combination with the nut *s* and the shoulder formed by the bracket B, whereby the spring described can be adjusted by a wrench without any liability of the wrench slipping off the nut by an upward or downward movement.

3. The plug C, inserted into the upper end of the spring, and made with a prismatic terminus, *t*, with a collar, *c*, a nut, *s*, and a channeled stem, *d*, all substantially as and for the purpose herein described.

136,483.—*Shipping Mechanism for Machinery.*—FREDERICK N. BIXBY, West Meriden, Conn.

Under the movable journal and supporting-frame is fitted the tumbling-block, which, when the box is moved out of gear, is carried from an inclined to a vertical position, causing the journal to be raised off the supporting-frame.

Claim.—1. The tumbling plate or block A, fitted under the movable box *f* of the shipping mechanism for elevating said box during the shipping movement, as set forth.

2. The combination of the set-screws *f f* with the movable box *f* and tumbling-plate A, substantially as specified.

136,484.—*Refrigerating Apparatus for Vessels, Railway Cars, &c.*—WILSON BRAY, Lambertville, N. J.

A series of refrigerating chambers are arranged with one or more ice-boxes above, which are provided with passages and doors, so that a constant circulation of air may be kept up through a part or through the whole of the refrigerating-chambers, as may be desired.

Claim.—1. The combination with a vessel or other structure of refrigerating apparatus, consisting of a series of refrigerating-chambers, one or more ice-boxes, and passages, all arranged and communicating substantially as described, so as to create and maintain a circulation of air through any or all of said chambers, passages, and boxes.

2. The combination of the said refrigerating apparatus with a fan-blower or other equivalent pneumatic apparatus, for maintaining a forcible circulation of air through the ice-box, passage, and chamber, in the manner described.

3. The combination, with the trough F, of a rope or chain, G, having disks *m m*, or their equivalents.

4. The combination of the refrigerating-chamber, ice-box communicating with the chamber at the top, and the passages H, all as set forth.

5. The combination, with the ice-box, chamber, and passages H, of the passage I, as specified.

6. The combination of the drip E, its shoulders, and flanges with the sides of the ice-box.

136,485.—*Centrifugal Machine.*—CARL T. BURCHARDT, New York, N. Y.

A feed-screw is arranged centrally within the bottomless basket, and is fitted closely to the inside of the same. This screw revolves with a speed sufficiently different from the basket as to cause a screwing or scraping motion relatively to it in a downward direction, so that the substance to be drained is fed in at the top of the basket, and is forced downward through the same by the action of the screw, and is delivered at the bottom of the machine from whence it is removed by a suitable elevator.

Claim.—1. The revolving screw or spiral-shaped scraper inside of a conical or cylindrical basket of a centrifugal machine for the continuous working of the same, substantially as described.

2. The combination of a bottomless basket and screw or spiral shaped revolving scraper within it with a hopper and conveyer, substantially as described.

3. The sleeve like body L fitting loosely on shaft C with a spiral or screw shaped scraper, substantially as described.

136,486.—*Apparatus for Moving and Rolling Hogsheads and Heavy Barrels.*—FRANCIS O. J. BURR, Brewer, Me.

A lever provided at its inner end with a cross-head to rest upon the barrel. To this lever, at a suitable distance from the cross-head, two arms are jointed, each of them at its outer end being hooked, and each hook being provided with a projection or bearing. To these hooks claws are pivoted to grasp the barrel at the end of the staves.

Claim.—1. The lever A, its hooked arms C C, and claws *d d*, combined and arranged as and for the purpose substantially as described.

2. The lever A, its cross-head *a*, hooked arms C C, and claws *d d*, combined and arranged as explained and shown.

3. The trig or chock, composed of the bar E and the yoke F, whether the latter be made of one entire rod or of two applied together, substantially as explained.

4. The arrangement and combination of the projection *e* with the lever A, the hooked arms C C, and the claws *d d* thereof.

136,487.—*Cigar-Shaped Pipe.*—STEPHEN N. BUTMITSKY, Washington, D. C.

A tube or case is provided with a mouth-piece capable of rotation, and a suction-tube perforated at its front end, extending from the mouth-piece nearly to the front end of the case, the suction-tube being provided with a spiral flange to feed fresh tobacco forward, and with an enlargement or cooling-chambered barrel near the mouth, which can be partially or wholly removed when in use for contact with the air.

Claim.—1. In combination with the tube A and rotating mouth-piece B, the tube D provided with a spiral flange, F, substantially as and for the purpose set forth.

2. In combination with the tube A, suction-tube D, and mouth-piece B, the hollow boss C, wholly or partially removable from the case A while in use, to form a cooling-chamber, as described, within which may be placed suitable filtering or fragrant substance, as set forth.

3. The mouth-piece B, hollow boss C, tube D with spiral flange F, and ring E, constructed and connected as set forth, so as to be easily revolved and removed from the tube A, for the purpose described.

136,488.—*Tanning.*—JOEL CARTER and ALANSON KEITH, Jersey City, N. J., assignors of one-half their right to JAS. L. BALDWIN and LEVI DEDERICK, same place.

Sal soda, carbonate of potash or common lye, prussiate of potash or nitrate of potash, or nitrate of soda, sugar of lead, sulphate of iron, common salt, and lime for a depilating solution. Common salt, sulphuric acid, spirits of turpentine, japonica, soft soap, for a tanning solution.

Claim.—1. A depilating solution composed of the ingredients set forth, or their equivalents, with or without common salt, in substantially the proportions named.

2. A tanning solution composed of the ingredients, with or without soap, in substantially the proportions herein set forth.

136,489.—*Hydraulic Valve.*—THOMAS CRITCHLOW, Baldwin, Pa.

Water enters right-hand cylinder, and passing through apertures in hollow piston is forced through the upper pipe to machine. By depressing the plunger until its apertures are coincident with stuffing-boxes cast within the cylinder the operation of the machine is suspended with the cutting off the water, which enters the inclosing-chamber.

Claim.—1. The hollow piston K, closed at both ends and provided with perforations *d* and *e*, substantially as and for the purposes herein set forth.

2. The cylinders A A', connected by pipe B C, and each provided with stuffing or packing boxes G G, to form interior compartments H, H^1, and H^2 in each cylinder, substantially as and for the purposes herein set forth.

3. The combination of the cylinders A A' with connecting-pipes E C, inlet D, outlet E, and interior boxes G G, and the hollow pistons K K, closed at both ends, and provided with perforations *d e*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

136,490.—*Process of Treating and Drying Cigars.*—JAMES CUDDY, Pittsburg, assignor to himself, EDWARD A. KITZMILLER, same place, and JOHN J. MCDERMOTT, Allegheny, Pa.

Places the formed cigar upon racks in a close chamber or box, and puts a layer of chloride of calcium either above or below the racks.

Claim.—The process herein described for drying the manufactured cigar—viz., abstracting the moisture from the cigar by chloride of calcium or its equivalent placed in a closed chamber together with the cigars.

136,491.—*Banjo.*—HENRY C. DOBSON, New York, assignor to HERMAN SONNTAG, Stapleton, N. Y.

To draw the head up tight a series of small grooved blocks are held upon a presser-hoop by screws passing through them and taking into the edge of the main body of the instrument.

Claim.—The combination of the grooved clamp D and screw E with the head B, ring or hoop C, and frame or rim of a banjo, the latter being provided with an outwardly-projecting shoulder or shoulders, *g*, substantially as and for the purposes herein specified.

136,492.—*Jelly-Tumbler.*—WILLIAM DOYLE, Birmingham, Pa.

A sheet-metal cap is applied to a glass tumbler.

Claim.—1. A jelly-glass adapted for the reception of a cover of sheet metal or other equivalent material, substantially as described.

2. As an article of manufacture, the combination of a jelly-jar and a cover of sheet metal or other equivalent material.

3. The combination of a jelly-jar and a flanged cover fitting over the mouth of the jar, substantially as described.

136,493.—*Apparatus for Steering Vessels by Steam.*—WILLIAM W. DUNCAN, Baltimore, Md., assignor to MARY D. DUNCAN, same place.

The cylinder reciprocates on a stationary piston, and steam is admitted through a central port in the valve, and the steam is exhausted from the steam-chest through a port therein. The cylinder is connected direct to the tiller of a rudder.

Claim.—The combination of the shaft B, stationary piston C, movable cylinder D with steam-channels *b b*, chest E with inlet *d* and outlet *e*, and the valve G with the port *a*, all constructed and arranged substantially as and for the purposes herein set forth.

136,494.—*Spring Bed-Bottom.*—SAMUEL DUNLAP, Rome, Ga.

India-rubber straps are attached to the head and foot by clasps held by hooks. In the center are notched slats, and upon the inner end of the elastic straps there are clasps that hook over the notches.

Claim.—The combination, with a bedstead, of India rubber straps E, wood slats S, clasps C C', and hooks A, all substantially as specified.

136,495.—*Hemmer for Sewing-Machines.*—HENRY A. ELLIS, Springfield, Mass.

The turner for the edge of the goods has a horizontal tongue that supports the goods directly at the turned edge, and the feeder engages this portion of the hem and moves it to the needle, while the main portion of the hem and fabric is moved by the usual feeding device, and this upper feeder moves the turned edge, often stretched by tearing, &c., and gathers in any fullness. The gage allows hems of different widths to be turned.

Claim.—1. The hem turner, provided with a flat tongue, g^2, extending forward to the needle-hole in the presser, and supporting the turned edge of the material, in combination with the reciprocating upper feeder *g*, which engages and moves only the material lying on the said tongue, as and for the purpose described.

2. The gage A and the stationary tongue g^2, in combination with the feeder *g* and operating-lever *e*, substantially as and for the purpose set forth.

3. The guide B, pivoted to the gage A and provided with means, substantially as described, for holding it in operative position.

4. The combination of the operating-lever *e e f*, set-screw *i*, and the devices *g* g^1 g^2, constructed, arranged, and operating as described.

136,496.—*Ice-Cream Freezer.*—SAMUEL S. FITCH, New York, N. Y.

The cream-holder is arranged within the refrigerating-case between the metallic ice-boxes.

Claim.—The box A, the refrigerating-vessels C C, the auxiliary cover *c*, the cream-holder E, and its agitator F, combined and arranged as set forth.

136,497.—*Steam-Boiler Furnace.*—MICHAEL A. FOSTER, St. Louis, Mo.

A perforated air-supply pipe is placed crosswise in the bridge-wall, and communicates with the front by pipes placed in the side walls, and the air-supply through these to the smoke-pit is regulated by a damper and deflecting-plate. Over the smoke-pit is arranged an elliptical separator, suspended by water-pipes, and by said separator part of the flames pass above and part below to mingle with the air and assist in the combustion.

Claim.—1. The elliptical separating-deflector A, arranged in combination with the smoke-pit B and air-supply pipe C, as and for the purpose set forth.

2. The air-supply pipe C, arranged as described, in combination with the deflecting-plate D, as and for the purpose set forth.

3. The elevated rear bridge-wall F, in combination with the smoke-pit B, elliptical separator A, and air-supply pipe C, as and for the purpose set forth.

4. The combination and arrangement of the separator A, water-pipes *a*, smoke-pit B, bridge-wall B′, air-supply pipe C, damper C′, deflecting-plate D, air-pipe E, and bridge-wall F, as and for the purpose set forth.

136,498.—*Crusher and Press for Culinary Purposes.*—GEORGE B. FOWLER, Brooklyn, assignor of one-half his right to EDWARD S. TORREY and JOSEPH TORREY, New York, N. Y.

The bed and platten are corrugated. A slotted or forked lever engages with a serrated standard, which furnishes an adjustable fulcrum. Between the platen and lever are springs, by which the latter is thrown up when freed from its weight or power.

Claim.—A combined crusher and press, consisting of the bed A and follower B, with their faces diversely corrugated, in combination with the adjusting-standard D and lever C, jointed to the follower, but detached and removable from the fulcrum-standard, and provided with the springs *b b*, with or without the ratchet-holder E, substantially as and for the purposes set forth.

136,499.—*Combined Putty-Knife and Sprig-Box.*—JOHN H. GACHES, Atlanta, Ga.

The handle of the putty-knife is made hollow, and furnished with a screw-cap at the end. This box is to contain sprigs used for retaining the glass in the sash before the putty is applied.

Claim.—A putty-knife, provided with a hollow handle with a suitable cover or lid to form a sprig-box, substantially as herein set forth.

136,500.—*Cultivator.*—LUTHER M. GANONG, Friar's Point, Miss.

An ordinary hand-plow beam, having bolted beneath a lateral frame, in which the standards are slid for lateral adjustment, the latter having slots for the vertical adjustment of the blades, the whole forming a cotton-scraper.

Claim.—The combination of the plate E provided with grooves *e e* and the frames C C provided with beads d^1 d^1, as and for the purpose described.

136,501.—*Loom-Shuttle Motion.*—ANTON GAERTNMANN, New York, N. Y.

Thin transverse guide-plates are attached to and project down from the upper cross-piece of the batten, and are so hollowed out and grooved on the opposite inner faces of the opening as to receive, support, and guide the shuttle, which is provided with shoulders corresponding to the groove in the guide-plates, by which means the shuttle is carried above and does not come in contact with the lower warp-threads of the shed, and is also prevented from flying out of the loom.

Claim.—The transverse guide-plates J, secured to the upper cross piece of the batten, and provided with grooves on their inner edges, corresponding with shoulders or ribs on the sides of the shuttle, to guide and support the shuttle while the same passes through the shed, substantially as described,

136,502.—*Car-Ventilator.*—CHARLES C. GERHARDT, Wyandotte, Kans.

The air-chamber surrounds the hot-air pipe, the air being admitted through openings in either side of the pipe, the openings having guards to conduct the fresh air into the pipe and wire-gauze upon the inside to exclude the dust.

Claim.—The ventilator as herein described, consisting of the combination of the air-receivers D D, the hot-air pipe A, within which is placed the stove-pipe when required, the corrugated or cold-air pipe C, and the air-chamber B, all constructed and arranged to operate substantially as herein set forth.

136,503.—*Machine for Pricking and Nail-Loading Boot and Shoe Heels.*—CHARLES W. GLIDDEN, Lynn, assignor to JAMES W. BROOKS, trustee, Boston, Mass.

The jack with its adjusting mechanism is supported upon arms attached to the frame of the machine, and is capable of vertical adjustment by means of a lever and link, which may be locked in position while rigidly holding the heel-blank; a reciprocating pawl, carrying an inclined pin which engages the teeth upon the outer edge of the nail-plate, feeding it forward as required.

Claim.—1. For feeding the jack, the reciprocating pawl, substantially as shown and described, having a lateral movement and a vertical movement, and carrying an inclined pin, p^3, operated upon by a pin, h^3, to retract the pawl.

2. In a machine for driving or inserting nails, and in combination with mechanism for feeding the jack, the nail-cutting mechanism, substantially as described, for forming the nails to be driven or inserted.

3. A heel-clamping jack having a clamp-plate, p^3, connected to and operated by the lever e^3 and link f^3, the lever and link, when both brought into a vertical position, operating to lock the clamp, substantially as described.

4. In combination with the nail-hole plate and clamp-plate, the arm v^2 for releasing the nails from the nail-hole plate, substantially as described.

136,504.—*Lubricating Spindles.*—JOHN GOULDING, Worcester, Mass.

Claim.—The arrangement, within an oil-chamber or recess surrounding the spindle A, of an absorbent disk or layer, C, which shall not be in contact with the spindle, in combination with a disk or layer, E, which shall slightly touch the spindle, all substantially as and for the purpose set forth.

136,505.—*Machine for Polishing Doors, &c.*—FRANCIS D. GREEN, Williamsport, Pa.

The piece, after having a tenon formed in the ordinary manner, is placed upon a saw-table, where the sides of the tenons are cut. It is then removed to another table, where the shoulders are formed by the action of reciprocating chisels.

Claim.—1. The combination of the adjustable chisel-holder G, with chisel A arranged upon the bridge E, and the movable chisel A′ on the vertical bar H, the latter operated by the foot-lever J, substantially as and for the purposes herein set forth.

2. In combination with the chisels A A′, arranged to operate as described, the table D′, with stops *i′* and adjustable gages *f′*, substantially as and for the purposes herein set forth.

136,506.—*Sewing-Machine Cover.*—CHESTER B. GROVER, Cambridge, Mass.

A sewing-machine cover constructed in two parts and hinged to a stationary back piece, by which each part can be turned to form a table on the side of the machine, and when closed to form a cover for the machine, for its protection when not in use.

Claim.—The improved sewing-machine cover, consisting of the two halves *b c*, hinged to the stationary rear piece *f*, as seen at *g*, so that the halves can be swung to the rear, substantially as shown and described.

136,507.—*Spiral Spring for Furniture.*—HANSON HARD, Akron, Ohio.

The spring is formed with the largest portion conical and the smaller portion cylindrical, with a shoulder-coil between them and a bent end, so that the cylindrical end can be forced into the hole in the base or slat.

Claim.—In combination with coiled springs made partially conical and partially cylindrical, and with a shoulder-coil between them, and with a base or body having round mortises or seats therein, the bent ends C of said springs, for the purpose of easily introducing the dowel or tenon portions of such springs into their seats, as described and represented.

136,508.—*Flour-Bolt.*—CHARLES A. HARPER, Burlington, N. J.

Used in connection with a grinding-mill intended for family use, for separating the flour, bran, and middlings.

Claim.—1. The combination, with the drawer or receptable F and bolting-reel E overhanging its rear end, of the sieve H and drawer I, substantially as and for the purpose specified.

2. The elements enumerated in the preceding claim, in combination with the guard G, substantially as and for the purpose specified.

136,509.—*Furnace and Furnace-Door.*—BENJAMIN R. HAWLEY, Normal, Ill.

A large annular smoke-chamber connects with the fire-chamber by elongated openings, through which the heavy gases pass. An auxiliary grate, instead of the dead-plate, is employed with the main grate, to obviate necessity of extinguishing fire. Cones with partitions are inserted into the door instead of the perforated plates.

Claim.—1. The furnace herein described, with one large annular smoke-chamber, B, surrounding the whole fire-box, substantially as shown, and for the purpose set forth.

2. The arrangement of the main grate E and auxiliary grate F, as and for the purpose herein described.

3. The cone L, placed either vertical or horizontal, when arranged substantially as shown and specified.

4. The double air-chamber around the fire-chamber D and smoke-chamber B, when arranged substantially as and for the purpose described.

5. The furnace D, provided with annular vertical cones K, substantially as and for the purpose described.

6. The combination of the frame and plate with a furnace-door provided with dovetailed grooves *i* and cones L, arranged substantially as and for the purpose described.

7. The combination and arrangement of the shell A, annular smoke-chamber B, flues I, fire-chamber D, grates E F, and feed-passage, all arranged substantially as and for the purpose specified.

136,510.—*Furnace and Steam-Generator for Heating, &c.*—BENJAMIN R. HAWLEY, Normal, Ill.

The furnace projects into and is arranged in an interior cylinder surrounded by a water-space on its sides, bottom, and top, connected by a series of annular arranged tubes, tapered toward the bottom. The heat and products of combustion ascend toward the arched top, and then descend in a stratum toward the bottom, from where the smoke, &c., escapes.

Claim.—1. A boiler or heater in which a fire-box is so arranged that the products of combustion are discharged into the entire chamber, rising to the crown-sheet and spreading out to the walls, and descending in a stratum over the whole chamber to the bottom and escaping thereat, substantially in the manner herein described.

2. The arrangement of the shell B, furnace E, tubes D, and crown-sheet G, water space C, and escape-passage F T V, substantially as respresented in Sheet 1 of the drawing.

136,511.—*Ozone-Generator.*—ROBERT HENRAGE, Buffalo, N. Y.

Claim.—1. The method, herein described, of conducting air and water into the generating-chamber A by means of the series of upright tubes *a a*, whereby the necessary amount of air is simultaneously produced for generating and the water for separating, as herein before specified.

2. In the separating-chamber E, the division-plates *d f*, whereby the compartments *e* F G are formed, for the purposes hereinbefore fully set forth.

3. The use of sponge or its equivalent, placed in the compartments *e* F J or their equivalents, for the purpose hereinbefore fully explained.

4. The general construction of the ozone generator and seperator, consisting of the series of upright air and water tubes *a a*, the generating-chamber A, the separating-chamber E, with the division-plates *d f* forming the compartments *e* F G, with the water-eduction pipe *i* and ozone-eduction pipe *h*, all arranged and operating in the manner and for the purpose specified.

5. The auxiliary separating-chamber H, with the compartments J formed by the division-plates *k*, with the sponge packing *n*, and with the induction-pipe *s* and eduction-pipe *t*, all arranged in the manner and for the purpose substantially as specified.

6. Introducing water into the top of the auxiliary chamber H by means of the pipe *s* or its equivalent, whereby the ozone that is generated in the chamber A beneath is separated in its passage up and through the compartments J and sponge packing *n*, as hereinbefore fully set forth.

136,512.—*Ozone-Generator.*—ROBERT HENRAGE, Buffalo, N. Y.

Claim.—1. In ozone-generating machines, utilizing the water used for washing and purifying, to operate the pump or pumps, and thereby produce the air necessary to generate ozone in the retort, as herein before fully explained.

2. The generating vessel or retort constructed with two walls—the outer, K, of metal and the inner, *r*, of glass—the space *s* between backed or "luted" with plaster of Paris or its equivalent, as and for the purpose herein before specified.

3. The construction of the purifying-vessels, consisting of the lower metallic chamber *w* having the perforated plate R and the upper glass chamber P, separated by the division-plate J with the connecting opening *v*, all arranged and operating in the manner and for the purpose herein before specified.

4. In the purifying-chambers, the plate R for breaking the globules, and having the perforations for the escape of the gas, constructed as and for the purpose specified.

5. In the discharge-chamber S, the gas-discharge pipe *x*, constructed with the flaring mouth and perforated sides, and arranged over the pipe S, in the manner and for the purpose specified.

6. The method of supplying water to the tank by means of the self-acting double-barreled pump C C′, the rods connected and working over a pulley, *d*, the automatic vibrating feed-pipe *f*, and supply-pipe F, operated by the forked bar *g* and lugs A A′, all arranged and operating as herein before specified.

7. The method of supplying air to the tank by means of the pumps C C′, the air-valve pipe H, the water-packed plungers *a a* and pipes D E, all arranged and operating in the manner and for the purpose specified.

136,513.—*Fruit-Jar.*—HENRY HERING, Philadelphia, Pa.

A wire ring is affixed to an ordinary jar, and has projections arranged thereon to engage in the slots constructed in the lugs that are attached to the cover.

Claim.—The combination of the jar A, ring B and cap C, the said ring B being formed of wire with bent loops *b*, and the cap C having ears *c* with beveled recesses *c′*, substantially as and for the purpose specified.

136,514.—*Cigar-Tip.*—WILLIAM M. HERRON, Allegheny, Pa., assignor to himself and JOHN J. MCDERMOTT, same place.

At the tip two cuts are made at right angles with each other, forming V-shaped valves, which open at each draft and close at each puff or discharge of the smoke, and prevent saliva entering the end of the cigar.

Claim.—A new article of manufacture—the elastic tip provided with the V-shaped valves *c*, *d*, *e*, and *f*, as herein described, and for the purpose set forth.

136,515.—*Fire-Proof Building.*—ANDREAS K. HOLTE, Chicago, Ill.

Claim.—A building constructed with an arched roof of brick, and having the exterior of its brick or stone walls and such roof covered with a layer of clay, which is, in turn, coated with hydraulic cement or its equivalent, substantially as and for the purpose specified.

136,516.—*Roofing.*—JOHN H. HOOD, Dansville, N. Y.

The roof-covering is built up of layers of felt overlapping and breaking joints, with layers of cement interposed. The joints are battened with wooden strips.

Claim.—The combination of a roofing made up of two or more coverings of felt embedded in cement, as described, and a series of wooden or equivalent strips, *c*, covering the joints of the felt, as and for the purpose specified.

136,517.—*Machine for Dressing Millstones.*—FRANCIS A. HOYT, La Crosse, Wis., assignor of two-thirds of his right to GEORGE A. LITTLE and DEAN, SMITH & Co., same place.

The tubular post braces the shaft locked to the mill-spindle and turning the pinion when the lower stone is to be dressed, and when the upper stone is to be operated upon receives a shaft carrying a pulley, while the shaft remaining attached to the mill-spindle is also provided with a pulley, and operates the mechanism by belting.

Claim.—1. The herein-described method of dressing and furrowing millstones—that is to say, by means of a rapidly-revolving wheel of emery.

2. The central tubular post provided with the pinion S, in combination with the frame of the machine pivoted thereon, and provided with the pinion U and screw R or its equivalent, as shown and described, whereby the machine may be driven by the mill-spindle.

3. The adjustable shoe K′ or its equivalent, arranged to support the outer end of way C, whereby the way may be inclined and the cutter caused to rise as it approaches the edge of the stone, as and for the purpose set forth.

4. The support K″ or its equivalent, provided with a shaft arranged to be connected to the mill-spindle, whereby the machine, when placed on the upper stone, may be operated directly from the mill-spindle, as set forth.

136,518.—*Electro-Magnetic Annunciator.*—WILLIAM HUMANS, Cambridge, Mass.

By means of two alternating reversing electric switches, operated at two adjacent rooms or signal-stations, an oscillating magnetic armature of a single electro-magnet is made to act upon either of two adjacent numbers or indicators, as desired, according to the direction of the current, whereby one main circuit and one magnet are enabled to perform double duty.

Claim.—1. An electric annunciator in which, with a single armature and a single straight coil or spool, drops for two adjacent rooms of the building are operated, thus making for any number of rooms but half the number of straight coils and armatures, substantially as shown and described.

2. The combination of each swinging armature with two drops by means of the pair of catches, either of which is operated to release a drop by the swinging of the armature against the arm *e* of the catch.

3. In an electric annunciator for hotels and other buildings, the combination of two switches, *s t*, with the single spool and armature mechanism, substantially as shown, and for the purpose described.

4. In an electric annunciator for hotels and other buildings, the combination of the switches for two rooms with a single armature and the same main circuit, the switch for each room acting to send a current in a direction opposite that sent by the other, substantially as shown and described.

136,519.—*Vault-Cover.*—THADDEUS HYATT, New York, N. Y.

The object of the porous coating is to absorb the moisture which condenses upon the under side of a metallic vault-cover, and thus prevent the unpleasant drip.

Claim.—In a vault-cover, floor-light, &c., composed wholly or in part of metal, a coating of felt or other fibrous or porous material, secured to or upon the lower side of the metal, substantially as and for the purpose specified.

136,520.—*Brick-Machine.*—DONALD J. IRWIN, Noble, Ill.

The clay is cut in the mud-mill between alternate revolving and stationary plates, from whence it passes into the feeder, through it out into the molds, which are intermittingly fed forward by the loading mechanism onto the revolving mold-bearer, which carries them round to the feeder and between guides, and under the revolving cutter and planer, then onward, and flirts them off onto the revolving table, from whence they are removed by hand.

Claim.—1. The revolving mold-bearer G, provided with a series of arms, H, pivoted at regular intervals to its outer edge, and each arm having a carrier, I, pivoted to its outer end, substantially as and for the purposes herein set forth.

2. The carrier I, pivoted to the outer end of the pivoted arm H and provided with the flange *i* and the stop *k*, substantially as and for the purposes herein set forth.

3. The combination of the crank *m* on the pivot of the arm H and the rollers *n* and *n′*, for the purposes herein set forth.

4. The combination of the flange *i* on the carrier I and the rollers *p* and *p′*, for the purposes herein set forth.

5. The combination of the arm H with crank *m* on its pivot, the carrier I with flange *i*, and the rollers *n n′* and *p p′*, all substantially as and for the purposes herein set forth.

6. The loading mechanism, consisting of the stationary frame L with stop-bars *t t* and springs *v v*, the movable plate M, and the movable frame N with stop-bars *t′ t′*, substantially as and for the purposes herein set forth,

7. The combination, with the loader, of the lever O, links *w w′*, rods *x x′*, levers P P′, and pin or projection *y* on the mold-carrier G, substantially as and for the purposes herein set forth.

136,521.—*Portable Stove.*—GEORGE B. ISHAM, Burlington, Vt.

Improvement on his patent of January 19, 1869. The removable fire-pot is serrated at its upper edge. The draft may be upward through the apertures thus made, or it may be downward through the grate and the dampered openings at the lower edge of the pot.

Claim.—The fire-pot D, open at its bottom, and provided near its top with slots or openings *a a*, when disconnected from and used in combination with a suitable stove-body and a removable cap, G, constructed in the manner and for the purpose set forth.

136,522.—*Furniture-Caster.*—JOB JOHNSON, Brooklyn, N. Y.—Case A.

A locking-cap for the ordinary furniture-caster is provided with a lug or pin upon the inside of the cap, which engages with an inclined locking-groove formed on the opposite side, and a screw or pin is inserted from the outside through both portions of the

cap to prevent the cap from turning or being accidentally disconnected.

Claim.—The cap *l*, secured to the socket containing the caster-ball by a pin entering the groove 3, and a screw or pin, 4, to prevent the cap turning, as set forth.

136,518.—*Car-Coupling.*—JOHN W. JONES, (of P. De Catesby,) Towerstown, Md.

The link entering drives the lower ends of the pins until its shouldered head has passed beyond them, when they are returned to their vertical position by a spring. Uncoupling is effected by means of a chain attached to the lower end of a crank-arm on the axle-bar of the pins or by a series of rods extending throughout the length of the train.

Claim.—1. In combination with the draw-heads A A, having the axle-shafts B, pins *b*, spiral springs *c*, and lever C, the anchor-bar E, gum block G, and coupling-pin F, substantially as herein set forth.

2. The combination of the pin *f* of the lever C, sliding bar I, slides I', and spiral spring *g*, with the sliding horizontal bar H, lever G', and circular guiding-stand K, substantially as herein described, for the purposes set forth.

136,524.—*Oil-Burning Steam-Generator.*—OLIVER W. KETCHUM, Toronto, Canada.

The air forced into a tank containing oil, &c., drives the hydrocarbon through a pipe in jets into the combustion-chamber, where it meets a supply of air forced in through another pipe. The hydrocarbon burns as fast as supplied, and the heat and other products of combustion are carried through a curved pipe extending into the steam space, and discharged through perforations in the pipe into the water of the boiler.

Claim.—The air-tight hydrocarbon-chamber C, connected with air-pump by a pipe, C^1, and with the air-tight flame-chamber C^2 by a pipe, D, having jet-pipes F F^1 F^2, as and for the purpose described.

136,525.—*Tray for Sewing-Machines.*—GUSTAVUS A. KIRCHNER, Philadelphia, Pa.

A series of trays are jointed to each other on one corner and adapted to slide in and out of the case. The case is provided with a door hinged at the bottom. To the inside upper end of the door a spring is attached, the other end of the spring being attached to the lower tray, so that when the door is fully opened the spring draws the trays out. Cords and pulleys are arranged under the trays to aid in the returning of the trays to the case.

Claim.—1. The series of jointed trays B, adapted to slide as one in and out of the casing A, in combination with mechanism for imparting the sliding movements to said series of trays, substantially as and for the purpose set forth.

2. The combination, with the casing A and sliding trays B, of the door B', arranged on the side of the casing, whereby the trays are permitted to slide on the door, and be supported thereon when withdrawn from the casing, as set forth.

3. The combination, with the casing A, door B', and sliding trays B, of the spring F, operating to withdraw the trays and close the door, in the manner set forth.

4. The combination, with the casing A and sliding trays B, of the cords E E', applied and operating as set forth.

136,526.—*End-Iron.*—GEORGE W. C. LOVELL, Clarksville, Tenn.

Holding-lugs on the handle-plate and base, respectively. Said plate and base are secured together by a locking device consisting of a cam-lever and a suitable catch.

Claim.—A end-iron constructed substantially as described, with holding-lugs *a* and *b* on the handle plate and base, respectively, and the locking device, consisting of a cam-lever, C, held by a suitable catch to prevent their accidental separation.

136,527.—*Mill for Grinding Barley.*—JOHN MACKAY, Dundas, Canada.

The barley is fed automatically through two hoppers to the grinding apparatus by two valves having passages for the grain to pass through, and so arranged upon a rotating shaft that the passages are opened and closed alternately; also, valves arranged on outside of casing for discharging the ground material.

Claim.—1. In a barley-mill, an automatic feeding-valve, *b*, having a passage, *b'*, arranged upon a rotating shaft, C, operating in connection with a hopper, B, having a passage, B', for the purpose described.

2. The discharging-valve *a*, constructed and arranged on the casing *a*, and operating substantially as described.

3. The combination of the discharging-valve *a*, shoe W, crank-pin V, lever W^2, cam-plate U, bevel-pinion U^2, and bevel-wheel T on the upright shaft C, substantially as and for the purposes described and set forth.

4. In a barley-mill, the combination of the pinion O, large spur-wheel M, pinion L, and spur-ring N, arranged for the purpose of driving the casing *a*, substantially as shown and described.

5. In a barley-mill, the combination of the valves *a* and *b* having passages *a' b'*, and arranged on and rotating with the shaft C, in combination with hoppers A and B having passages A' and B', substantially as and for the purposes described and set forth.

136,528.—*Apparatus for Stretching Wire Fences.*—JOSIAH T. MANGHAM, Gatesville, Tex.

A lever provided with a windlass at one end for winding up the wire to a bearing, after which the lever is carried around the post, thus bringing the wire to the required tension.

Claim.—1. An improved implement for stretching wire in the construction of fences, consisting of a lever provided with a windlass at one of its ends, when these parts are combined to operate substantially as described.

2. The combination of the frame, the arbor, and the open bearings that hold the arbor in position when operated as a windlass, but permit it to be removed from the frame for wrapping and securing the end of the wire after it has been stretched, substantially as described.

136,529.—*Excelsior-Machine.*—WILLIAM H. MATO, Orono, Me.

The cutting-knives are fixed in a rotary frame; the stock is fixed in stationary standards and fed down automatically, while the frame carries the cutters under the stock. A trough in the frame receives the excelsior and a sweep removes it to one discharging place. A brush clears the knives.

Claim.—1. The trough or box *i*, for the reception of the excelsior, or a portion of it, in combination with a removing device attached to the wheel *a*, substantially as described.

2. A revolving brush, as described, operated by a friction wheel, *l*, bearing against the rim of the driving-wheel *c*, for clearing the knives or cutters.

136,530.—*Railroad-Rail Joint.*—MALCOLM F. MCINTYRE, Girard, Pa.

Claim.—1. The bolt A, formed with the ratchet-teeth a^1 and depression a^2, substantially as shown and described.

2. The combination of the bolts A A, rail B, and fish-plates C C, substantially as shown and described.

136,531.—*Head-Rest.*—OTIS M. MITCHELL, Marathon, assignor to ABRAHAM NELLIS, Fort Plain, N. Y.

To a shank placed in the back of a chair is attached a ratchet bar, which slides up and down within it. A spring-pawl holds the bar in different positions. A cross-head is located at the top of the ratchet-bar, and has sockets at its ends, to which is attached a strap for the head to rest in.

Claim.—A portable head-rest for car seats, chairs, &c., consisting of the base A, ratchet-bar B, cross-head C, loops D, strap E, and hooks or clamps G, when arranged, combined, and operating as herein described.

136,532.—*Treating Tinners' Clippings.*—FREDERICK G. MORTON, Bermondsey, Great Britain.

Tinners' clippings are immersed in hydrochloric acid, full strength, and the tin being removed the iron plates are washed, dried in lime, and heated to 700° Fahrenheit in a reverberatory furnace to remove the lead and other impurities. The acid solution is saturated by the addition of grain-tin. The solution is then diluted with water and plates of zinc immersed to precipitate the tin, which is used in making paper-foil.

Claim.—1. The process of treating tin-plate waste scraps or clippings by the employment, as herein explained, of muriatic or hydrochloric acid of the strength specified, for the separation of the tin from the iron and the utilization of the tin product, substantially as described.

2. The process of treating tin-plate waste scraps or clippings containing lead or other impurities by dissolving the tin in muriatic or hydrochloric acid and subsequently heating the plates in a suitable furnace so as to effectually remove the lead or other impurities from the iron, substantially as described.

136,533.—*Lifting-Jack.*—THOMAS W. H. MOSELEY, Hyde Park, Mass.

Lifting jack with extensible standard to form the prop, and a pair of opposing toggles, through which to apply power to the movable section; the near toggle operated by pressure on a foot-rest, and the further toggle moved by a handle, notched to engage with pins on the near toggle, so as to serve as a lock to support the standard at any height.

Claim.—1. The combination, in a lifting-jack, of the extensible standard composed of base A, head B, guide-rod *z*, and hollow stem *y*, and the opposing toggles C D, substantially as herein shown and described, for the purpose specified.

2. The combination of the extensible standard A B, toggles C D, foot-rest E, handle F, and locking-pins G with or without the extension-block H, substantially as and for the purpose herein set forth.

136,534.—*Bottle and Bottle-Stopper.*—HENRY NAYLOR, Oil City, Pa.

The stopper is made with a central duct and lateral opening, and the bottle with a concavity. A suitable fastening secures the stopper to the bottle, yet permits the rotation of the former to open or close it. In the above construction the stopper need not be removed for filling the bottle or pouring therefrom, and when closed it will retain liquors or gases under pressure.

Claim.—The concavity *c*, central duct *d*, and lateral opening *e*, constructed and arranged as herein shown and described, in combination with suitable fastenings for retaining and permitting the rotation of the stopper, substantially as set forth.

136,535.—*Billiard-Cue.*—LEOPOLD NEMZ, New York, N. Y.

The cue-tip is fastened to a wooden slider working with slight play against a rubber cushion within the ferrule. A slot in the slider holds it in place upon a rivet passing through the ferrule.

Claim.—The sliding slotted block B, in combination with a ferrule, E, India-rubber or elastic pad D, and billiard-cue A, arranged substantially as and for the purpose hereinbefore set forth.

136,536.—*Potato-Digger.*—HENRY B. NORTON, Rochester, N. Y.

An endless belt receives the potatoes from the digging-share and separates them from the soil. The digging-share is held in place by tension-rods between the jaws, and circular cutters divide the vines.

Claim.—1. The endless belt J, constructed to swing up at the rear end, as shown, and supported by rods *j j* to seat-rest I.

2. The sliding bearings *i i i i*, in combination with frame H H, operating as shown in Figs. 1 and 2.

3. The special construction of sliding bearings *i i*, as shown in Figs. 15 and 16.

4. The combination of vine-cutters F F, brace-rods *m m*, and points *n n* of standards E E, as shown, for the purpose set forth.

5. The arrangement of rocking levers *o o*, as shown, to strike alternately, as shown and described.

6. The shaft I, supporting the pulleys *q q*, constructed with an offset, direct or gradual, in combination with the endless belt J, as shown and described, for the purpose set forth.

7. The pulleys *q q*, constructed as shown in Figs. 11 and 12, for the purpose set forth.

8. The scoop K, attached to standards E E by means of jaws and rod, as shown in Fig. 13.

9. The arrangement of oiling-wheels *t t*, for the purpose of oiling the joints of the endless belt J, as shown and described, for the purpose set forth.

136,537.—*Stationary Fire-Pipe for Buildings.*—HENRY PALMIERI, Philadelphia, Pa.

The vertical stationary pipe has inclined offsets at each story, closed by a screw-cap, and above each juncture is placed a self-closing "Ludlow" valve, ordinarily held open by a chain, but closing immediately on release, thus allowing the whole stream to be sent at once to the required point.

Claim.—The combination, with a vertical conducting water-pipe, of the series of connections or branches and screw-caps at different altitudes and the automatically-operating shut-off valves, arranged immediately above each branch, the whole constructed in all its details substantially as and for the purposes set forth.

136,538.—*Neck-Tie Supporter.*—EMIL PELTZ, New York, N. Y.

Claim.—The wire frame A, provided with loops *a a*, and with a hook or other retaining device, *b*, in combination with a neck-tie shield, B, the wings of which are secured in the loops of the frame A, substantially in the manner herein shown and described.

136,539.—*Combined Rake and Tedder.*—STUART PERRY, Newport, N. Y.

The tedding-reel is mounted in rear of a through-axle, in a T-shaped frame, and between the supporting-wheels. The tedder-shafts have cranks rigidly attached to one end, and on the cranks are friction-rollers which work in cam-ways to control the motion of the tedding-forks. The machine is converted into a rake by detaching the tedder-shafts and replacing them in a reversed position, the cranks fitting in notches in a circular plate or hood.

Claim.—1. The combination of the supporting and driving wheels, turning independently of each other on a continuous axle-tree, the T-shaped main frame D D'', the rotating reel hung upon the said main frame in rear of the axle-tree and within the wheels, and carrying tine-bearing shafts having rigid arms, which connect them with a cam-way, and the cam-way fastened upon the said main frame, all constructed and arranged substantially in the manner and for the purpose described.

2. In a rotary tedder, the combination of a reel having rocking tine-shafts, each connected by its single rigid arm and friction-roll or slide to a cam-way, *g*, which controls its rocking movement, and the cam-way *g* having that part of its track which controls the tines, while acting on the grass in the form of a true circle, concentric with the axis of the reel, for preventing either acceleration or retardation of the tines while acting on the grass, and the other part formed so as to cause the tines to dip backward after lifting and be restored again before entering the grass, substantially as and for the purpose described.

3. The wrought-iron tubular tine-shafts F, in combination with a series of grass-spreading tines coiled around each of said tubular shafts, and fastened thereto by bolts which pass directly through them, substantially as described.

4. In combination with the main frame, hinged to the axle-tree, the branched lever which spans or straddles the axle-tree, and serves as brace and lever, substantially as described.

5. In combination with a reel for tedding hay, the reversible tine-bearing shafts or bar for converting the machine from a tedder to a rake, and devices *n p*, serving as a stop to prevent said shafts or bars from turning in their bearings when in the rake form, substantially as described.

6. In combination with a reel that is convertible to a rake, the rake-lever M and its appliances for controlling the reel when working as a rake, substantially as described.

136,540.—*Car-Coupling.*—CHARLES PORTER, Nunda, N. Y.

Claim.—The latch D with hook *f* upon the inside, and provided with slot *e* and notch *i*, in combination with the pins *d* and B, link C, and draw-head A, all constructed and arranged for operation so that when the cars are coupled the latch will fall below the link, as and for the purpose specified.

136,541.—*Saw-Mill.*—D. CLINT. PRESCOTT, Marinette, Wis.

The arrangement of the gearing which connects the crank-shaft with the feed-rolls enables the feed to be changed as desired, through the medium of a pair of brush-wheels, one of which is longitudinally adjustable upon its shaft.

Claim.—The bevel-gears C and E, upright shaft D, friction-plate I, friction-wheel J provided with groove *k*, keyed shaft L, bevel-gears M and N, shaft P, bevel-gears Q and R, and shaft S, all combined and operating together as and for the purposes described.

136,542.—*Apparatus for Cooling Milk and Cream.*—JOHN PRINCE and NORRIS D. MARTIN, North Craftsbury, Vt.

The cream-chamber is constructed within a water-tight vessel, having suitable induction and eduction pipes so arranged as to keep up a current of water around the cream-chamber when in use.

Claim.—The apparatus as described, consisting of the vessel A, the tight water-space *d*, (encompassing and extending underneath such,) the chambered covers B B', the tunnel D, the discharge-pipe E, and the educt F, and faucet G, arranged and combined in manner and to operate as and for the purposes as specified.

136,543.—*Sewing-Machine Table.*—SAMUEL J. PURDY, Philadelphia, Pa., assignor to WILLIAM HENRY GROVE, same place.

A case of drawers pivoted at one end in an upright case, with an opening or space between the back and the drawers into which the extension slide is passed when not in use. The cap or cover is hinged near its center, and the front part of it furnishes a support, when turned down, for the extension top of the table. Over the drawers is an opening covered by a circular hinged cover, which can be opened and used as a receptacle for work, &c.

Claim.—1. The combination, substantially as described, of a set of drawers or other receptacles, D, and a sliding extension leaf, F, with a case, A, adapted for attachment to the end of a sewing-machine table.

2. The sliding extension leaf F, adapted to the space within the case A, at the rear of the drawers, and to the top of the said case and end of the sewing-machine table, substantially as specified.

3. The combination, with the said sliding extension leaf and case, of a hinged flap, H, for the purpose specified.

4. The case A, constructed substantially as described, and having a receptacle, J, and lid *a*, as set forth.

136,544.—*Oil-Can.*—AARON P. QUINBY, Newark, N. J., assignor of one-half his right to WILLIAM A. FREEMAN, same place.

Claim.—The combination, with the elastic bottom and nozzle of the can, of the tubular stud *d* and tubular sleeve *b*, arranged and operating substantially as and for the purpose herein described.

136,545.—*Hydrant.*—THOMAS RAGAN, Philadelphia, Pa.

The water is admitted to the hydrant by a ball-valve. The ball rests in a seat, where it is held down by a piston provided with cars moving in guides in the valve-box, said cars being notched so as to communicate with a waste-port in the side of the pipe, to permit the escape of water from the hydrant after the valve is closed.

Claim.—The combination of the pipe C, valve-box D, valve *d*, heads G and H, and nut h' *l'*, constructed and arranged substantially as shown, with the screw-rod F and piston F', the said piston having cars or flanges, which move in guides in the valve-box D, said flanges being notched to communicate with the waste-port *e*, as set forth.

136,546.—*Baker's Oven.*—JOHN RAYNEY, Brooklyn, N. Y., and WILLIAM CAIRNS, Jersey City, N. J., assignors to JOHN RAYNEY, Brooklyn, N. Y.

The arms carrying the journaled baking-shelves are fixed upon the shaft which gives motion to the apparatus. This shaft passes through a fixed bevel-wheel whose pinions mesh into those of the inside wheels on the arms. The outer bar wheels mesh into the wheels on the ends of the arms. Thus the shelves will not be tilted out of horizontal position when the oven is in operation.

Claim.—The combination of the shaft H, fixed wheel K, pinions *e* and *f*, shafts L, wheels M, and shelves J, substantially as hereinbefore set forth.

136,547.—*Car-Coupling.*—SAMUEL B. REPLOGLE, Roaring Springs, Pa.

After the hook has been thrown slightly forward by the draw-head being forced under the platform, its toe is caught by the spring, and its fall is accelerated until it passes over the catch on the approaching draw-head.

Claim.—The coupling-hook C having the projecting arm *e* and toe *l*, in combination with the hook D, constructed and operating substantially as described.

136,548.—*School Furniture.*—JOHN L. EITER, Brownsville, Ind.

The standards and seat-arms have T-shaped flanges that fit in T-shaped grooves in the lid and seat. The back has a detachable rib secured to it formed in the same way. The seat-arm is hinged by a bolt, with flanges and cushion to prevent noise.

Claim.—1. The removable ribs *c*, with the side flanges *a*, in combination with the grooves *d* in the slats of the back C, substantially as shown and described.

2. The combination, with the ears A, of the hinge-arm E having the projections *v* on each side of the bolt-hole, and the bolt-head *k* having parallel sides, substantially as specified.

3. In a hinge-arm, the combination of the cushion *z*, the stop *i*, cast in front of the cushion-seat, and the ears A A, substantially as shown and described.

4. The combination, with the slotted boards of the desk, seat, and back, of the standards having the flanged desk-ribs, the removable back-ribs, and the hinged seat-arms having flanged ribs, all arranged substantially as specified.

5. The combination, with the ear of the hinge-arm having the projections on each side of the bolt hole of the bolt-head having parallel sides, substantially as specified.

136,549.—*Clasp for Leather Belts.*—LOUIS SANDERS, Brooklyn, E. D., N. Y.

Claim.—The ornamental clasp for uniting the contiguous ends of pieces of belt-leather, made with the teeth 2 at the edges of the central portion 1 to pass through the leather and be clinched, and the shields 3 to cover such clinched teeth at the back, as set forth.

136,550.—*Link.*—ROBERT C. SCHENCK, Jr., Dayton, Ohio.

A link made of a twisted bar of metal.

Claim.—1. A link, the metal of whose sides is twisted, irrespective of the shape of the link or the configuration of its surface.

2. A link having its surface fluted for the purpose of giving greater elasticity to the link when twisted, substantially as described.

136,551.—*Peg-Float.*—PHILIP A. ECHOELLHOEN, Buffalo, N. Y.

The pivoted float may be adjusted at any angle required, and held in position by means of a spring-buckle.

Claim.—The combination of the float E, adjustable standard B, and a pivoted fastening device, C, actuated by a spring, and having a pin which enters holes in the adjustable standard, for the purpose and substantially as described.

136,552.—*Folding Knife and Fork.*—HENRY SCHUMACHER, Philadelphia, Pa.

The knife-blade shuts into and is entirely concealed in the fork-handle, and the fork-tines are in like manner concealed in the knife-handle, the whole presenting when closed only a continuous double handle.

Claim.—The knife A and fork B, each provided with a hollow handle, the handles being closed at their outer ends and open at their inner ends, whereby, when the knife and fork are folded, the blade is in the handle of the fork and the prongs are in the handle of the knife, with the open ends in contact, and the two handles form a single closed casing, the parts being arranged and operating substantially as described.

136,553.—*Lamp.*—GEORGE H. SIMMONS, Bennington, Vt.

The feed-tube has at its lower extremity springs which catch into recesses in the funnel-tube, and at its middle ports for the flow of oil in filling. When the burner is in place for using, an expansion on the feed-tube rests upon a seat in the funnel. In the upper end of the feed-tube are openings through which the overplus oil may drop to the catch-funnel, and from thence into the fount.

Claim.—1. The sliding feed-tube G, having the expansion R, in combination with the funnel-tube, having a suitable seat, S, for said expansion, substantially as specified.

2. The vertically-sliding feed-tube G, having at its upper end and middle the apertures J and K, and its lower end slitted to form expanding springs N and bead M, substantially as shown, and for the purposes set forth.

3. The catch-funnel tube T, constructed as described, and shown in Fig. 4, consisting of the collar O, tube U, and screw-threaded collar H, with openings.

4. The combination of the sliding feed-tube G, provided with the apertures J and K and expanding springs N, and catch-funnel tube T, provided near its lower end with the annular groove L, substantially as specified.

5. The funnel-tube U, having an annular groove, L, substantially as specified, and for the purpose described.

136,554.—*Medical Compound for Skin Diseases.*—AARON B. SIMPSON, Camden, Ohio.

Poke root, one and one-half ounce; May apple root, one and one-half ounce; stillingia root, one and one-half ounce; blue-flag root, one and one-half ounce; burdock root, one and one-half ounce; dandelion root, one and one-half ounce; sarsaparilla root, one and one-half ounce; iodide of potassa, one and one-half ounce; alcohol, one pint; sugar, one pound.

Claim.—The combination of the ingredients herein specified, in the proportions named, substantially as and for the purpose described.

136,555.—*Earth-Auger.*—BARBARA SMITH, Memphis, Tenn., administratrix of JOHN SMITH, deceased, assignor to HANDLE & HEATH, same place.

An earth-auger of the "basket" class, arranged to include the pebbles and ordinary impediments within itself, so that they can be lifted out by the instrument.

Claim.—1. A tapering spiral coil forming a basket, terminating at its upper end in a stem for attachment to a boring-shaft, and at its lower end in a central penetrating-point, substantially as and for the purpose described.

2. The arrangement of the spiral coil in such manner that its spiral intervices increase in width as they proceed from the lower toward the upper portion of the basket, substantially as described, for the purpose specified.

136,556.—*Button-Fastening.*—NELSON B. SMITH, New York, N. Y., assignor to himself and EDWARD SMITH, New London, Conn.

A metallic disk has an attached hook which is stamped facially out of it. The button is attached at one end of the hook, which is cut open for that purpose.

Claim.—The metal disk or plate A, having an attached hook, B, cut, punched, or stamped facially out of it, for reception of the eye or shank of the button over the open end *b* of the hook, substantially as shown and described.

136,557.—*Oil-Still.*—JOHN L. STEWART and JOHN B. DUBLER, Philadelphia, Pa.

A series of carriers and radial trusses are arranged to support the still, and counteract the buckling of the bottom and thrusting out of the side walls due to expansion.

Claim.—1. The still-carriers C, so arranged as to support the still by its exterior circumference, as and for the purpose herein described.

2. The radial trusses *g'*, arranged within and upon the bottom of the still, as herein described.

3. The combination of the still-carriers C, the radial trusses *g'*, and the central stationary support A, operating in conjunction to support the still, substantially as herein described.

4. The annular grate H, arranged as herein shown beneath the bottom of the still G, in combination with suitable firing-doors E, arranged at intervals around it.

5. The shelf *e*, arranged in combination with the outside shell of the still, for collecting and conducting off the condensed vapor as herein shown and described.

6. The expansion joint formed by the flange T, the lower edge of which dips into a circular groove, *t'*, as herein shown and described.

7. The trussed columns W, connecting the top and bottom of the still, arranged vertically over the circular wall of the central pier, as and for the purpose herein described.

136,558.—*Shears for Counters.*—NELSON STOW, Binghamton, N. Y.

A knife-blade pivoted in the counter cuts against a stationary blade. Two levers are placed within a recess in the counter for operating the knife-blade, one of which, for closing, is placed upon the same rock-shaft with the knife-blade, and the other, for opening the blade, works with its short arm against the first-mentioned lever and raises it.

Claim.—The combination, with pivoted blade and stationary bar C, of the pivoted thumb-piece D and lever E, constructed and arranged in connection with plate, substantially as and for the purpose described.

136,559.—*Machine for Sawing Staves.*—NICHOLAS J. TEMPLETON, Cincinnati, Ohio, assignor to himself and HENRY C. EZEKIEL.

Provided with reversible and adjustable boxes, for varying the radius of the arc in which the staves are cut.

Claim.—In a stave-sawing machine, the combination of the swinging work-table and frame F F', sliding blocks G, and reversible sliding blocks M, to which the table is hung eccentrically at *f*, substantially as and for the purposes specified.

136,560.—*Building-Dock.*—AMBROSE W. THOMPSON and JUAN PATTISON, New York, N. Y.; said PATTISON assignor to said THOMPSON.

Piles, grillage, masonry, and rubble combined, covered with concrete to support transverse iron floor and side beams covered with planking.

Claim.—The building-dock herein described, constructed with the courses of rubble-stones or dry masonry immediately on the ground, the surface of concrete on the rubble-stones, the iron floor and side beams above the concrete to sustain the planking, and the wooden planking thereon, suitable spaces being left between the planking and the concrete for the water to drain off into the wells R R, substantially as and for the purposes herein set forth.

136,561.—*Mode of Cutting Out Uppers for Shoes.*—EDWARD H. THURSTON, Montreal, Canada, assignor to himself and ROGER BOYD, Marlborough, Mass.

By piercing the quarter the uppers may be cut from a skin without waste.

Claim.—The within-described method of cutting and making quarters for boots and shoes, in which a part of the counter or heel portion of the quarter is omitted, and the piece required to complete the quarter afterward secured thereto, substantially as and for the purpose set forth.

136,562.—*Invalid-Bed Bottom.*—CHARLES A. TOWSLEY, Battle Creek, Mich.

A plate is fastened to the side rail, having a curved toothed rack. A pinion, while attached to each end of the shaft, works in the rack, and on one side there is a lever and pawl.

Claim.—The hinged bed-bottom having the plate C provided with the curved toothed rack D, and shaft E having at one end the pinion E' and lever G, substantially as specified.

136,563.—*Ventilating Under-Ground and Subsurface Railways.*—OLGEN VANDENBURGH, New York, N. Y.

The railway is constructed with a double track and with a separate and distinct tunnel for each track, each tunnel being no larger in its transverse sectional area than is necessary for the free movement of the train, by the transit of which the air is expelled before it from the tunnel, through suitably-located lateral passages, while fresh air is caused to enter behind it by reason of the vacuum produced by such transit. The locomotive or any one of the cars is provided with a surrounding and projecting disk, the edges of which conform to the transverse sectional area of the tunnel. Lateral or connecting openings furnished with registers are made to allow a portion of the air expelled from or entering either subway to pass into the adjacent subway. A removable curtain is arranged between the station and each lateral escape-passage to avoid the draft through the station and to exclude dust and gases therefrom.

Claim.—1. The combination, with the lateral ventilating ducts or passages G and stations in a double-track under-ground railway, having a separate subway for each track, of curtains H, arranged in relation with the ducts and stations, substantially as herein described, for the purpose set forth.

2. The openings I between the subways, provided with shutters or registers J, essentially as and for the purpose herein described.

3. In combination with the subway of a locomotive line or lines of railway, the disk L, surrounding the locomotive, tender, or car, substantially as and for the purpose herein specified.

136,564.—*Sulky-Harrow.*—GEORGE W. VAN GORDER, Warren, Ohio.

The harrow is composed of a double V-shaped frame, provided with teeth and land-markers. The harrow is swung below the axle-tree of bearing-wheels. The axle-tree has an offset at each wheel, forming what is termed a crank axle tree, by which the harrow is raised and lowered by a lever and keeper.

Claim.—The frame B and wheels A, axial offset D, and lever F, as constructed and arranged in combination with the harrow E having markers H I, in the manner as and for the purpose set forth.

136,565.—*Gas-Illuminator.*—JOHN B. VAN PATTEN, Newark, N. J.

Claim.—The combined shield and liquid-cup B C, formed in one piece, with an intermediate and horizontal shoulder for bearing on a horizontal bracket or frame, A, and an opening, *a*, for the passage of a horizontal burner, D, so as to project the flame over the liquid in the cup C, substantially as and for the purpose specified.

136,566.—*Picture-Nail.*—GUSTAV VINTSCHGER, New York, N. Y.

The upper end of the shank is screw-threaded, and is thereby attached to a slotted plate which bears upon the inner side of the metallic cap that contains the porcelain head.

Claim.—The retaining-disk *b*, provided with a series of radial slots, *d*, in combination with the supporting-plate *a*, head A, and screw-headed nail B, all the parts being constructed substantially in the manner herein shown and described.

136,567.—*Wheel for Vehicles.*—SIMON VREELAND, of Pot'stown, Pa., assignor to METALLIC SUSPENSION-WHEEL COMPANY, same place.

Claim.—1. The combination of the inner ends of the spokes with the hollow cylinder C, which is rigidly connected to the spokes by and between permanent collars and nuts on the spokes, as set forth.

2. The combination of the washers G G', box B and nut H.

3. The combination of the severed ring A adapted to the axle, the box B, and screw-ring *m*.

136,568.—*Brick-Kiln.*—PATRICK J. WALSH and WILLIAM J. TAYLOR, Oil City, Pa.

As the bricks contract when the kiln is burning the plating sinks bodily with them without cracking. The chimneys are placed at an angle with the sides so as to be easily operated without exposure to the sulphur, &c., from the coal.

Claim.—1. The plating A, consisting of a layer of brick daubed down tightly with a layer of clay or mud, so that it will maintain its form intact, sinking bodily inside of the outer wall as the mass of bricks contracts from the effect of heat, substantially as set forth.

2. The chimneys *c*, provided with valves and valve-rests, placed in an angular position, so as to enable them to be operated from the side, and the smoke and fumes of sulphur avoided, substantially as set forth and shown.

136,569.—*Car-Roof.*—JOHN C. WANDS, Nashville, Tenn.

Sheets of zinc are fastened to the top of the car-frame, and roof-boards are then laid over the zinc and secured in position by longitudinal bands.

Claim.—The car-roof herein described, having the wooden frame consisting of the parts A B C W, the bands E and K, the zinc sheets D, and grooved roof-boards G, the several parts being constructed and arranged substantially as and for the purpose specified.

136,570.—*Carriage Running-Gear.*—JOSEPH L. WARE, Mantorville, Minn., assignor to SILAS E. WARE, Waupun, Wis.

Claim.—A coupling for carriages, consisting of the ring D, provided at opposite ends with the bolts *a b*, and having the axle passing through and pivoted in said ring, the whole being constructed and arranged to operate substantially as described.

136,571.—*Mortar-Mixer.*—CHARLES W. WASSON, Friendship, N. Y.

Mixes and grinds mortar by passing it between rollers revolving at unequal speeds, one being adapted to yield for passage of non-pulverable substances, such yielding bringing a pan automatically under the rollers, catching and retaining the non-pulverable substance.

Claim.—1. A machine for grinding and mixing mortar, cement, &c., composed of two rollers revolving at unequal velocities, one of which is made adjustable, and adapted to yield for the passage of non-pulverable substances, substantially as described, for the purpose specified.

2. A machine for grinding and mixing mortar, cement, &c., adapted to automatically separate non-pulverable substances from the compound, by means substantially as described.

3. In a machine for grinding and mixing mortar, cement, &c., a separating-pan, operated automatically by the adjustable yielding pressure-roller, substantially as described, for the purpose specified.

4. The combination of the roller B, yielding adjustable roller C, and the separating-pan V, substantially as described, for the purpose specified.

5. The combination of the adjustable arms Q, connecting-rods S, yielding roller C, and spring rock-shaft M with the separating-pan V, substantially as described, for the purpose specified.

6. In combination with the sliding separating-pan V and rock-shaft M, the stop W, spring X, and latch Y, substantially as described, for the purpose specified.

7. In combination with the rods, shaft M and its attachments, the springs U, substantially as described, for the purpose specified.

8. The combination of the roller B, yielding pressure-roller C, adjustable arms Q, connecting-rods S, spring rock shaft M, latch Y, and spring separating-pan V, substantially as described, for the purposes specified.

136,572.—*Wood Pavement.*—CYRENUS WHEELER, Jr., Auburn, N. Y.

The upper flange of the iron wedge forms a wearing-surface, and the lips at the sides serve to lock the blocks together.

Claim.—1. In combination with a wooden pavement, an iron wedge provided upon the upper side or end with a lip or flange resting upon the blocks, said lip or flange forming a wearing-surface, as described.

2. In combination with a wooden pavement, an iron wedge, made in form substantially as described, for locking the blocks crosswise and wedging them lengthwise, as set forth.

136,573.—*Lamp.*—THOMAS H. WHITE and EDGAR KNIGHT, Cleveland, Ohio.

A tube rising from the bottom of the air-chamber has at its upper end a hollow screw adapted to receive the burner-screw. Depending from the burner is a larger tube. When the parts are in place the air passes from the bottom of the chamber out between the tubes.

Claim.—The skirt G, made of one entire piece of imperforated metal, chamber B, oil-tube C, provided with a screw-thread to support and hold the burner and skirt in place, in combination with the wick-tube D and fount A, constructed and arranged substantially as and for the purpose set forth.

136,574.—*Cultivator.*—EDWARD WIARD, Louisville, Ky., assignor to BENJAMIN F. AVERY, same place.

A cultivator with means of adjustment to carry one, two, or three shovels, and to change their relative positions upon the beam, and their distance therefrom by means of posts of different lengths, through which pass screw-bolts, as shown.

Claim.—The cultivator, with the described means for adjustment to carry one two, or three shovels, and to change the same to different positions, as shown in the drawing.

136,575.—*Can for Oil and Paint.*—JOB T. WILLIAMS, Philadelphia, Pa.

Claim.—A solid seamless breast for cans, constructed and applied as shown, and made either with or without an annular groove, as described.

136,576.—*Tea-Kettle.*—CHAUNCEY D. WOODRUFF, Toledo, Ohio.

Claim.—1. In a tea-kettle, an inclosing-strip of non-corrosive metal applied to and embracing the edge of the cover-opening or of the cover, substantially as and for the purpose specified.

2. In a tea-kettle, a cover having its rim constructed of or from non-corrosive metal, substantially as and for the purpose shown.

3. The ears E, constructed as shown, and capable of being combined with a kettle, substantially as and for the purpose set forth.

136,577.—*Swing-Joint for Pipes.*—JAMES R. WORSWICK and EDWARD LEWIS, Cleveland, Ohio.

Upon one side of each section of the joint the wall is depressed so as to form a right-angled recess, and up n the faces of the recesses are formed circular bearings. An opening is provided in and through the wall of each section, and within the line of the bearings. The sections are united by means of a bolt. The object of this construction is to produce a swing-joint that, while flexible in one direction, shall not render necessary a change of the lines of the pipes at their points of attachment.

Claim.—1. The sections A and A, constructed as shown, and connected together so that when placed in a line with each other their open ends *a'* shall have a common center, substantially as and for the purpose specified.

2. The swing or expansion joint shown, consisting of the sections A and A, provided each with a recessed side, B, a bearing, *b*, and an opening, C, and combined by means of the bolt D, substantially as and for the purpose set forth.

REISSUE PATENTS.

5,302.—*Rod and Fluting Iron.*—JOHN HEWITT, Pittsburg, Pa.—Patent No. 135,116, dated January 21, 1873.

The body of the iron is reversible, being pivoted to the handle, and held by a forked lever and a spring. A fluting-plate is attached to one face of the iron by a lug and thumb-screw.

Claim.—The reversible iron A, having holes *a' a'* arranged as shown, handle B, corrugated plate F, and spring thumb-latch D having forked arms *d d* provided with bearing-pins *d' d'*, when the whole is so combined and arranged as to operate substantially as described.

5,303.—*Circular-Saw Mill.*—LEWIS C. PATTEE, Lebanon, N. H.—Patent No. 121,466, dated December 5, 1871.

An adjustable gage-roll is placed outside of the saw, against which the lumber rests during the operating of sawing, thus securing accuracy in its thickness. The setting-blocks are operated, through a system of gearing, by the contact of a friction pulley with an incline plane.

Claim.—1. The friction driving-roller G, movable rail F, actuated by treadle N through lever *n*, and arm *f*, in combination with the carriage C, set-blocks E, and intermediate means for setting the log to the saw, substantially as described.

2. The combination of the device above claimed with the adjustable gage-roller M, to determine the thickness of the stuff to be sawed, substantially in the manner shown and described.

3. The combination, in a circular-saw mill, of the friction-d

mechanism to set the log to the saw, the adjustable gage-roller to determine the thickness of the lumber to be sawed, with the circular saw, substantially in the manner described and shown.

5,304.—*Method of Operating Windlasses.*—PETER PHILIP, Ghent, N. Y.—Patent No. 24,755, dated July 12, 1859.

The sweep, arranged loosely upon the shaft, and serving, when necessary, as a friction-lever against the circle C, is thrown in and out of gear by moving a rod to engage with or clear the arm.

Claim.—1. The sweep or horse lever B, when loosely attached in its bearing to the shaft or drum, for the purpose set forth

2. The loose sweep B as combined horse and friction-lever.

3. The combination of the loose sweep B, shaft A, cram A', arm *a*, and lever D, or equivalent adjusting attachments, substantially for the purpose set forth.

5,305.—*Sewing-Machine.*—WILLIAM CLEVELAND HICKS, Summit, N. J.—Patent No. 23,357, dated April 12, 1859.

The table may be lengthened out to any required distance, and the needle, feed apparatus, and shuttle be moved accordingly to the distant end of said table, while the driving-shaft remains at the opposite end, without requiring any new adjustment other than lengthening of the bracket-arm and links.

Claim.—1. The combination, substantially as herein set forth, of a flat-shuttle sewing-machine table, provided with a shuttle-driver or race-way running substantially parallel with its upper surface; a bracket-arm, attached by its foot to one end of said table, and extending substantially parallel with said shuttle-race to support the needle-stock and mechanism, substantially as set forth, for giving said needle-stock a vertical reciprocating motion by means of a cam or crank on the driving-shaft; a shaft arranged at right angles to said shuttle-race, in a bearing or bearings attached to the platform of the table, provided with a cam or crank which operates the feed, and with a crank which reciprocates the shuttle once forward and back at each revolution, by a continuous and positive crank motion, both located under the table and under the foot of the bracket-arm; a wheel feed or other feeding mechanism under the table; and a shuttle-driver, all arranged in such manner that the direction in which the materials to be sewed shall be fed and sewed shall be in a line parallel with said bracket-arm, and toward and into the bight formed by the said arm and the table.

2. The arrangement, substantially as herein set forth, of a partially revolving thread-controlling crank or lever, on a stud set at right angles to the bracket-arm, above and parallel with the table, and connected, substantially as described, with a cam or crank on the main shaft under the table, in such manner that the needle-thread is entirely controlled and drawn up between the tension apparatus and the needle by said lever, actuated by the movements of said cam or crank without the intervention of the needle-stock.

3. The combination, substantially as herein set forth, of the needle-stock, bracket-arm, pinion, connecting rod and lever, with the driving-shaft, in such manner that the motions of the cam or crank on said shaft may be transmitted to the pinion and needle-stock, substantially as herein set forth.

4. The combination, substantially as set forth, in a shuttle sewing-machine, of a table provided with a shuttle race or way running parallel to its upper surface, and with a bracket-arm, fastened by its foot at one end of said table, lying substantially parallel with said shuttle race or way, to support a vertically-reciprocating needle-stock; and a shaft located (in a bearing or bearings attached to the platform of a table) at right angles to the shuttle race or way, and bracket-arm provided with cams or cranks under the table, and under the foot of the bracket-arm, for actuating the shuttle and feed, by means of connecting-rods, reciprocating in the direction of their length, substantially as set forth; and connected, through the foot of the bracket-arm, to a rod or bar running longitudinally through the bracket-arm, to actuate the mechanism which reciprocates the needle-stock, substantially as set forth, so that the table, the bracket-arm, and the connecting rods or bars, may be lengthened in the same direction, without changing the cams or cranks which actuate the needle-stock and shuttle, or their combined motions in reference to each other, substantially as set forth.

5,306.—*Sewing-Machine for Working Button-Holes.*—EDMUND HOWARD, Flushing, and WILLIAM H. JACKSON, Brooklyn, N. Y., assignors, by mesne assignments, to BENET E. TOWNSEND, CHARLES P. BRIGHAM, and GEORGE W. SIMMONS, Boston, Mass. Patent No. 69,671, dated October 8, 1867.

The hooked arm rests immediately under the throat-plate when the needle descends, and when the needle rises its loop having been caught by the under thread, the arm is drawn from the throat, the lower thread is drawn to the slit needle, and the latter then is moved forward and up through the button-hole slit, and a loop of under thread is laid over the edge and in the path of the upper needle.

Claim.—1. The arrangement of the device for catching the under thread in a button-hole sewing-machine, substantially as above described, so that it will form a portion of the throat of the machine, as and for the purpose specified.

2. The combination of the hooked arm E and slit needle K, or their respective equivalents, when arranged to operate together and with reference to the ordinary sewing mechanism, substantially as described, and for the purpose specified.

3. The combination of the hooked arm, slit needle, under thread-carrier, and connect'ng mechanism, substantially as described.

5,307.—*Railroad Rail.*—ALMERON MCKENNEY, Maumee City, Ohio.—Patent No. 116,975, dated July 11, 1871.—Division A.

Claim.—A compound rail for railroads, consisting of the hollow arched base-rail B, provided with an outward flange on each side, grooved the entire length of each flange at the lower sides of the arch-walls *f f*, in combination with the exterior cap-rail A, overlapping the top and the entire sides of the base-rail, with its extremities fitting into the grooves in the same and secured by lateral bolts, all substantially as and for the purpose set forth.

5,308.—*Nut-Locking Device for Railroad-Rail Joints.*—ALMERON MCKENNEY, Maumee City, Ohio.—Patent No. 116,975, dated July 11, 1871.—Division B.

Claim.—The within-described locking-plate, consisting of the flat-bar A, provided with one or more recesses, *a*, cut into its upper edge, as shown, the bar being placed on its edge on the flange of a railroad rail and held contiguous to the rail by a spike, D, driven from the outside, all as and for the purposes set forth.

5,309.—*Slide-Valve.*—JOHN NESBITT, East Boston, Mass., assignor to WILLIAM G. ULERY.—Patent No. 110,490, dated December 27, 1870.—Division A.

Air is admitted through exhaust-port into valve-chest, and thence into cylinder, to prevent vacuum being formed when steam is shut off and engine continues in motion.

Claim.—The combination of the slide-valve and its inclosing-case with one or more puppet-valves, arranged to have constant communication with the exhaust-cavity of the valve, substantially as described, and operating automatically to admit air therefrom into the steam-chest at the time and in the manner set forth.

5,310.—*Slide-Valve for Steam-Engine.*—JOHN NESBITT, East Boston, Mass., assignor to WILLIAM G. ULERY.—Patent No. 110,490, dated December 27, 1870.—Division B.

To prevent a vacuum being formed in the cylinder and valve-chest by the continuing motion of the piston after the steam is shut off, as when a locomotive is running down a grade, air is admitted into the valve-chest at a point outside of the exhaust-port and valve.

Claim.—In combination with the valve-chest, the air-admission valve, operating automatically at the time and in the manner set forth, to admit air into said chest through a passage or opening leading from the exterior atmosphere, and entering the valve-chest at a point outside of the steam-valve and the exhaust, substantially as described.

5,311.—*Bracelet.*—FRANCIS M. SWEET, Newark, N. J., assignor to DAVID D. CODDING, ARTHUR E. CODDING, and THERON I. SMITH.—Patent No. 21,381, dated August 31, 1858; extended seven years.

The elastic connection or metallic spring admits of the enlargement of the bracelet to pass over the hand, and close the same thereafter.

Claim.—A bracelet composed of two parts, F and G, made hollow and shaped to the contour of the wrist, and held together by an elastic rubber or spring connection, as described, the whole article being substantially as described.

5,312.—*Bed-Bottom.*—ANDREW TURNBULL and RODOLPHUS L. WEBB, New Britain, Conn., assignors, by mesne assignments, to the NATIONAL WIRE-MATTRESS COMPANY, same place.—Patent No. 125 421, dated April 9, 1872; reissue No. 5,185, dated December 10, 1872.

The side rails are attached to transverse bars, one at each end, which are held in place by sockets. To these end bars are attached a series of spiral springs, to the springs rings, and between the rings are longitudinal and transverse links, also triangular links and auxiliary springs.

Claim.—1. A bed-bottom composed of jointed links D D F F disconnected from the side rails of the frame, but made elastic longitudinally by springs C C, substantially as described, for the purpose specified.

2. In combination with the subject-matter of the first clause of claim, the auxiliary springs S and their triangular draw-bars T T, substantially as specified.

3. In a frame for bed-bottom, consisting of the transverse bars A B and longitudinal bars L L, the seat or socket *a d*, by which the said transverse bars are attached to the longitudinal bars, substantially as described.

5,313.—*Machine for Arranging Nails.*—ALBION KNOWLTON, Boston, Mass., assignor to JOHN HILL, trustee of the MCKAY HEELING-MACHINE ASSOCIATION.—Patent No. 118,250, dated August 22, 1871.

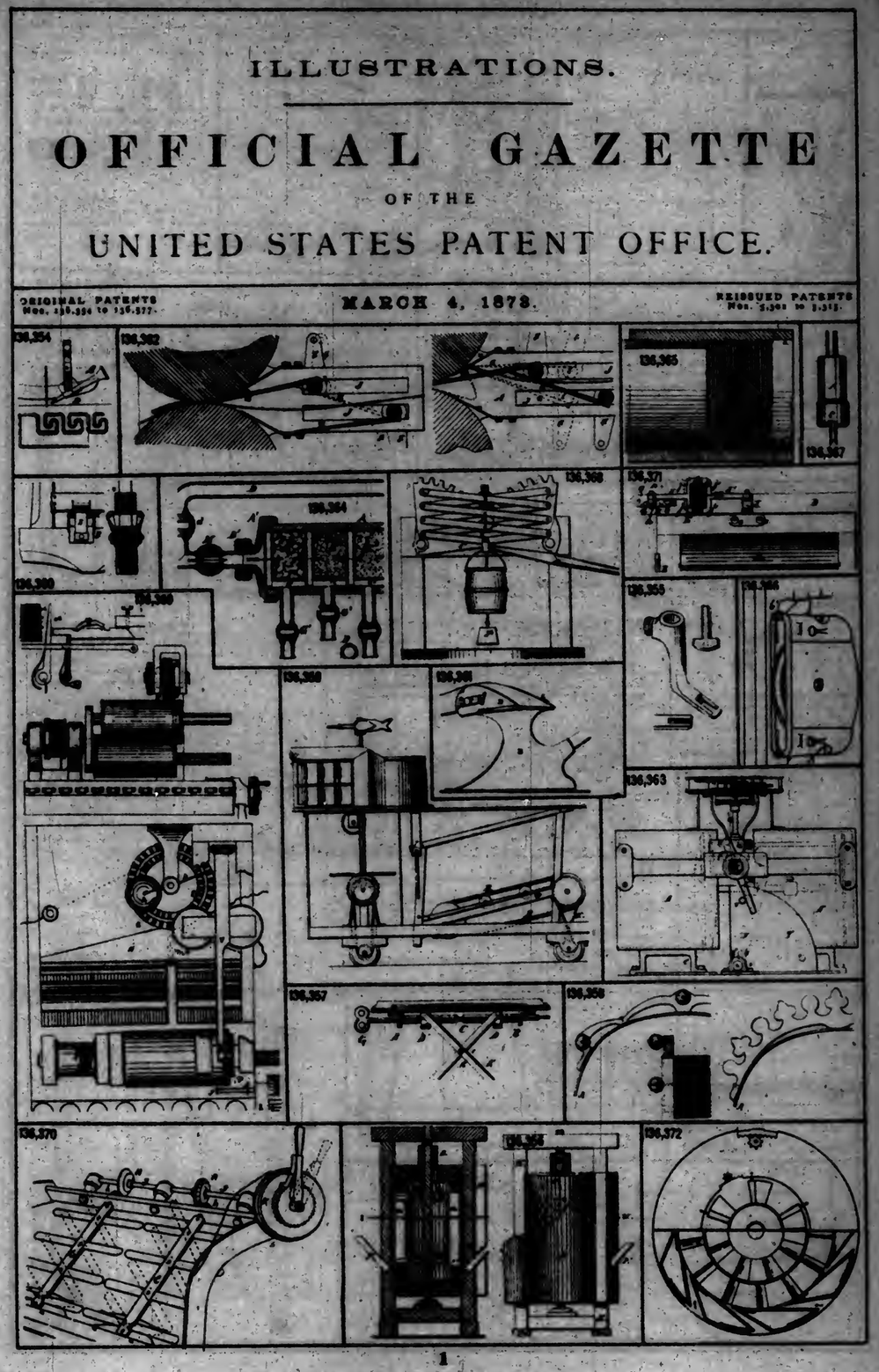
A reciprocating hopper deposits the nails in the chamber, whence they descend into the pocket of a reciprocating frame. A pocket full of nails moves over a stationary pocket, in doing which a plunger separates from the superposed pile the lowermost nail, which falls through the stationary pocket onto a knife-edged bar that extends across a conductor, where it is partially arrested, and caused to turn head downward.

Claim.—1. In combination with the vertical nail-chamber B, the sliding nail pocket or passage *d*, plunger J, and the nail-conducting chute *z*, so arranged that by relative sliding movement the nails pass singly from the chamber to the pocket, and from the pocket to the conductor, substantially as described.

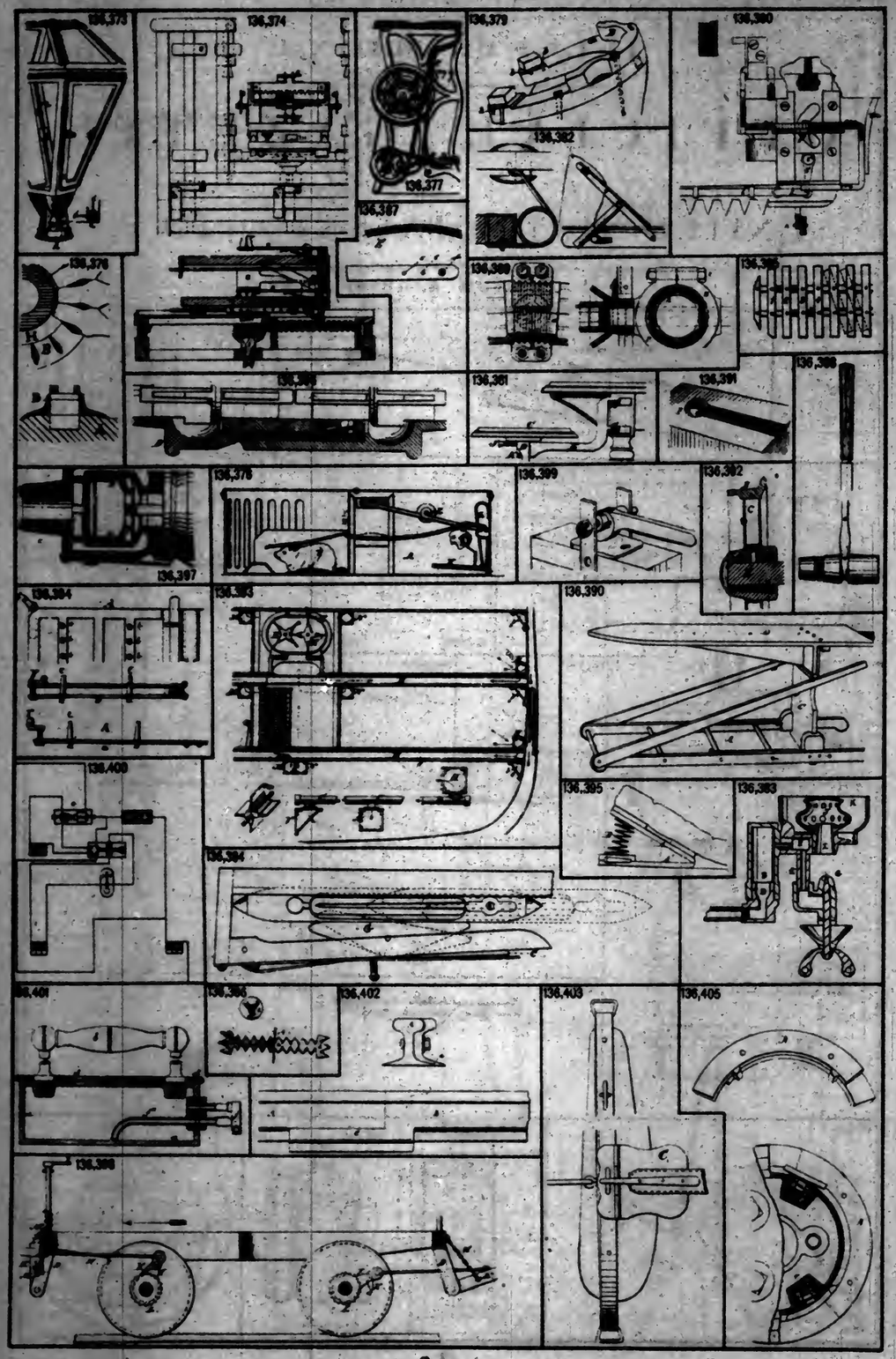
2. The combination of the vertical nail-chamber B, nail-pocket *d*, plunger J, nail-pocket *z*, plate E, and chute or conductor H, the chamber B, pocket *z*, and chute H being stationary, and the pocket *d* and plate E movable, the whole operating to select and deliver one by one the nails, substantially as described.

3. The combination, with the pin *i*, of the stationary plate F and its pocket *z*, and the movable plate E and pocket *d*, substantially as shown and described.

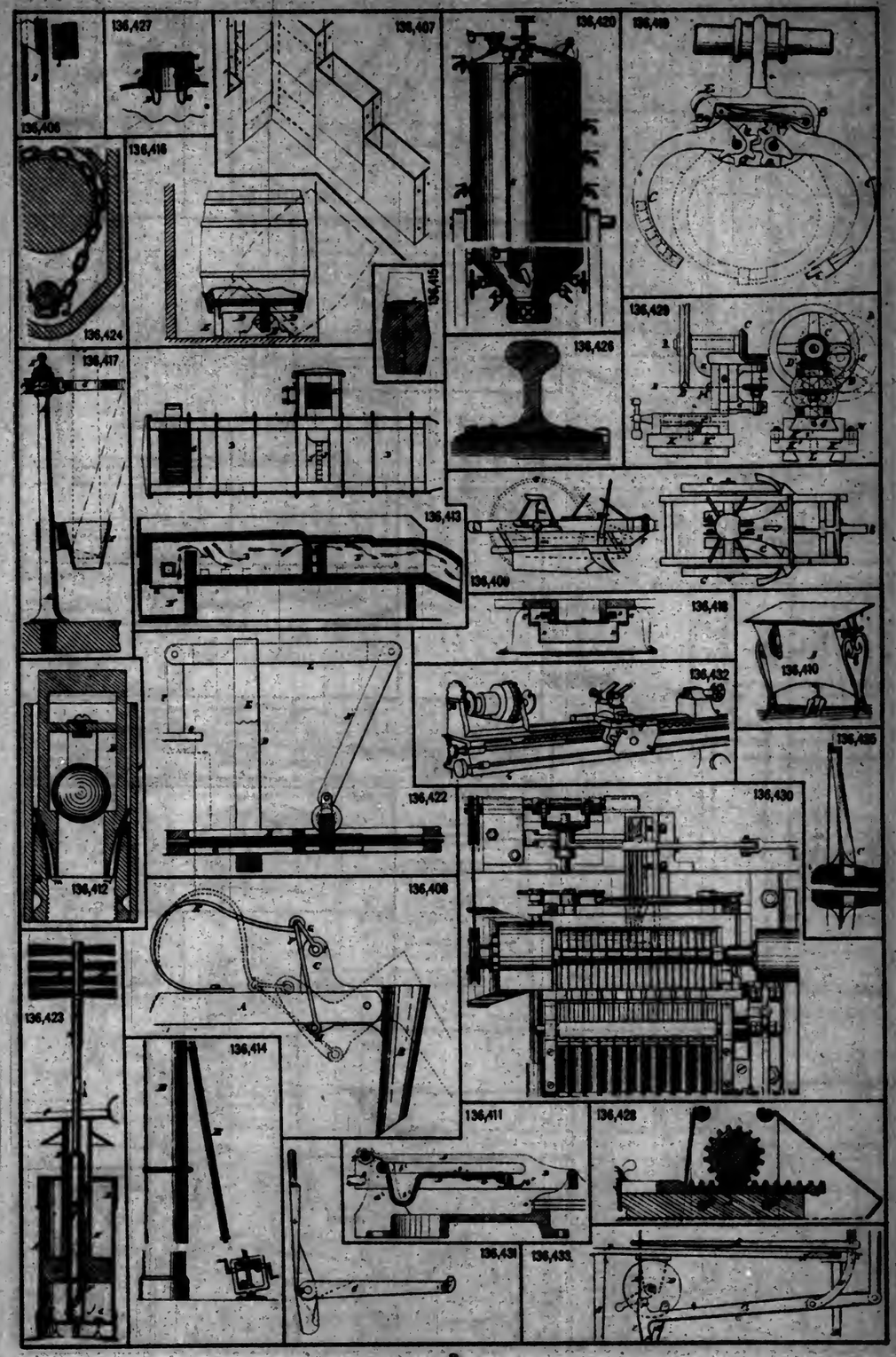
4. The combination of the nail-chamber, the reciprocating frame D having the pocket *d*, and the reciprocating chamber-



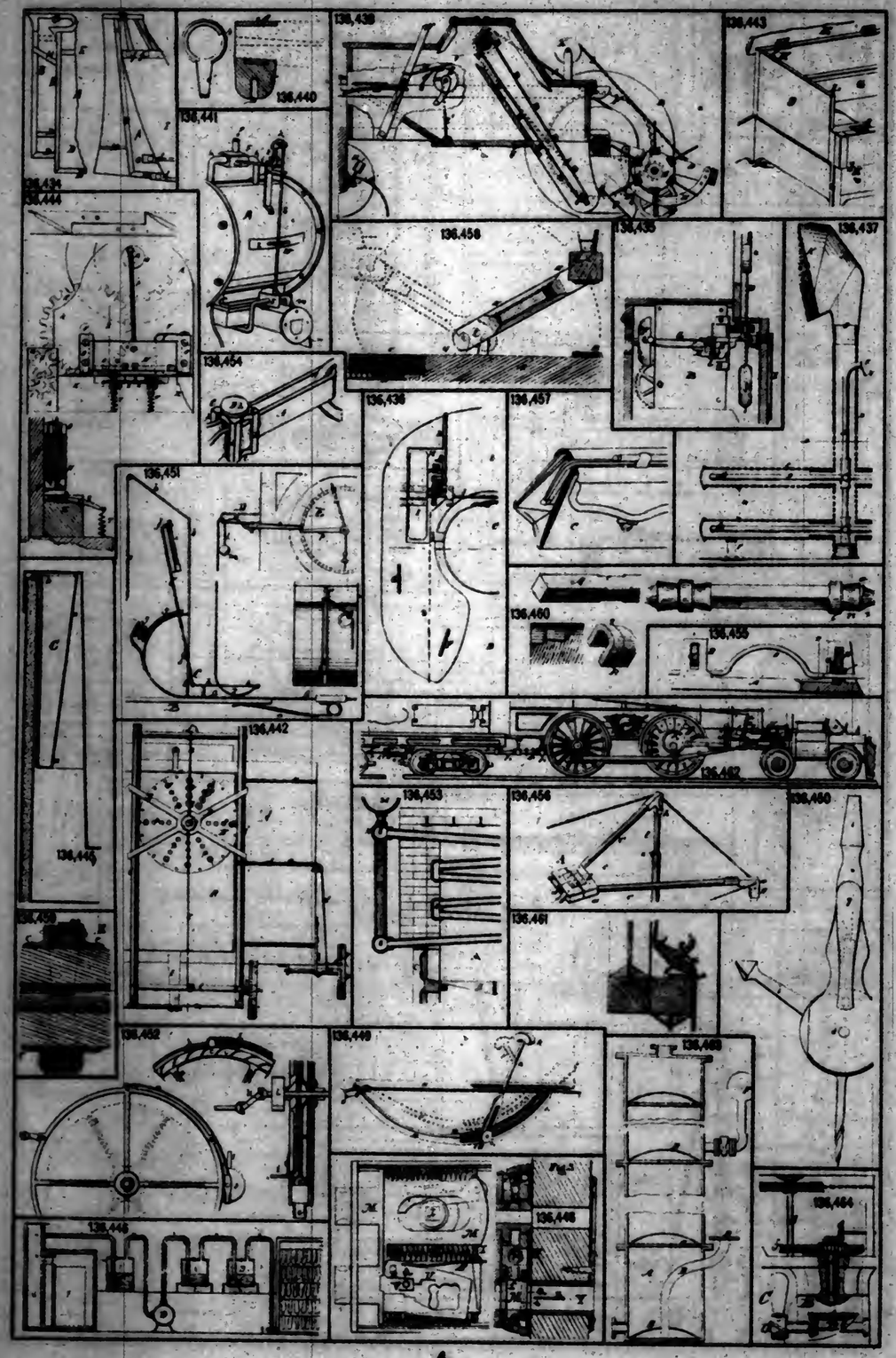
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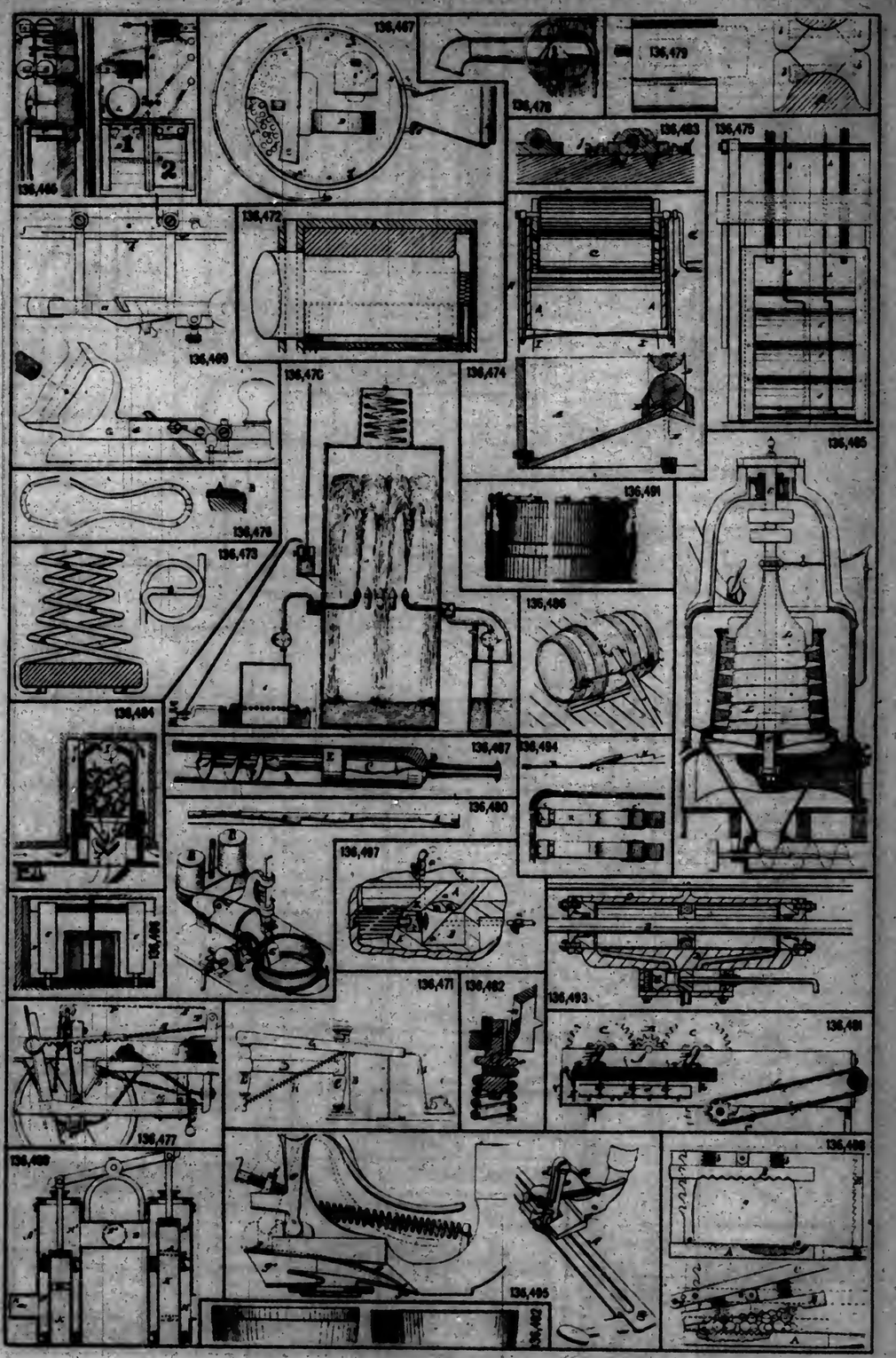


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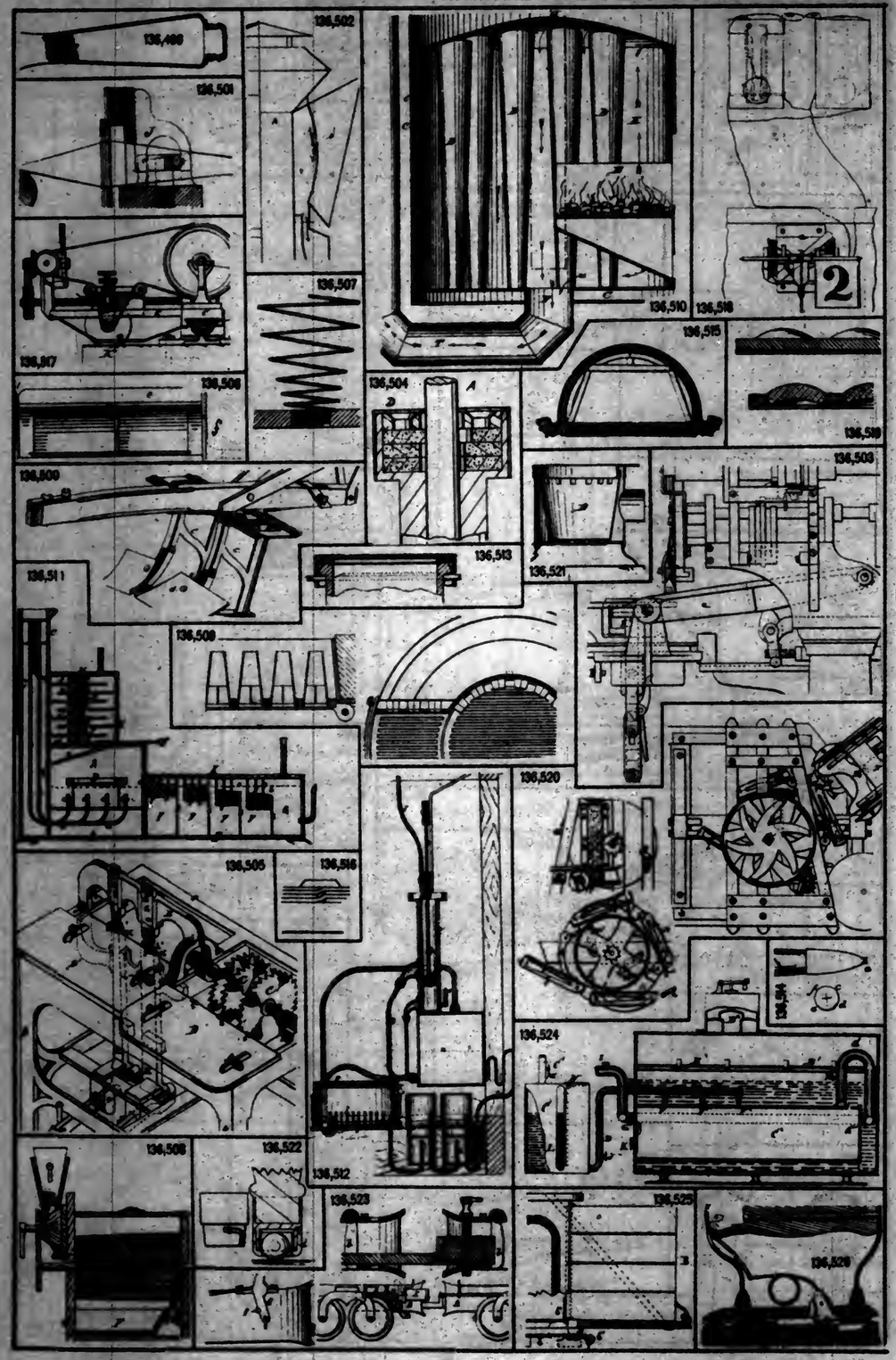
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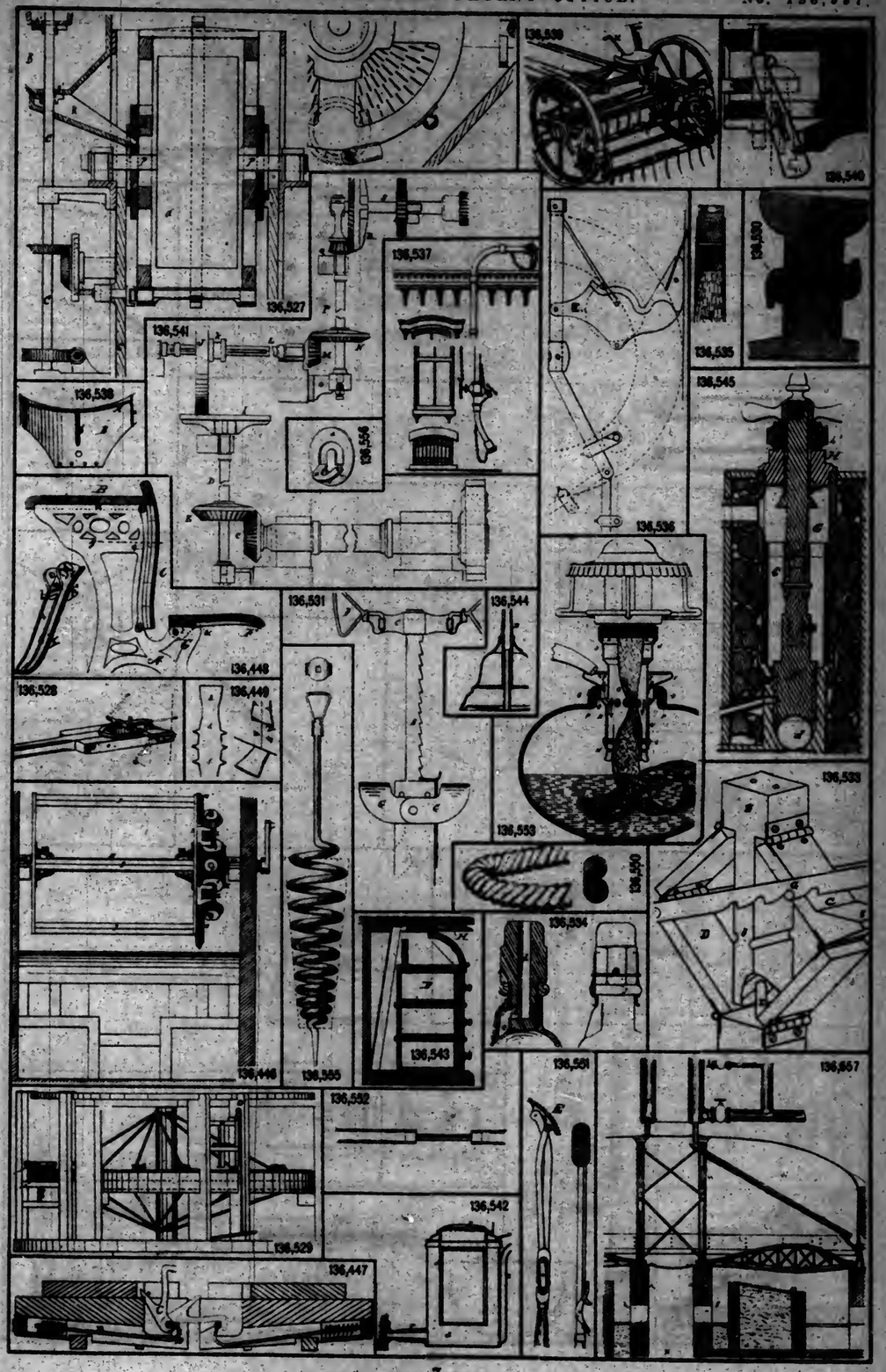


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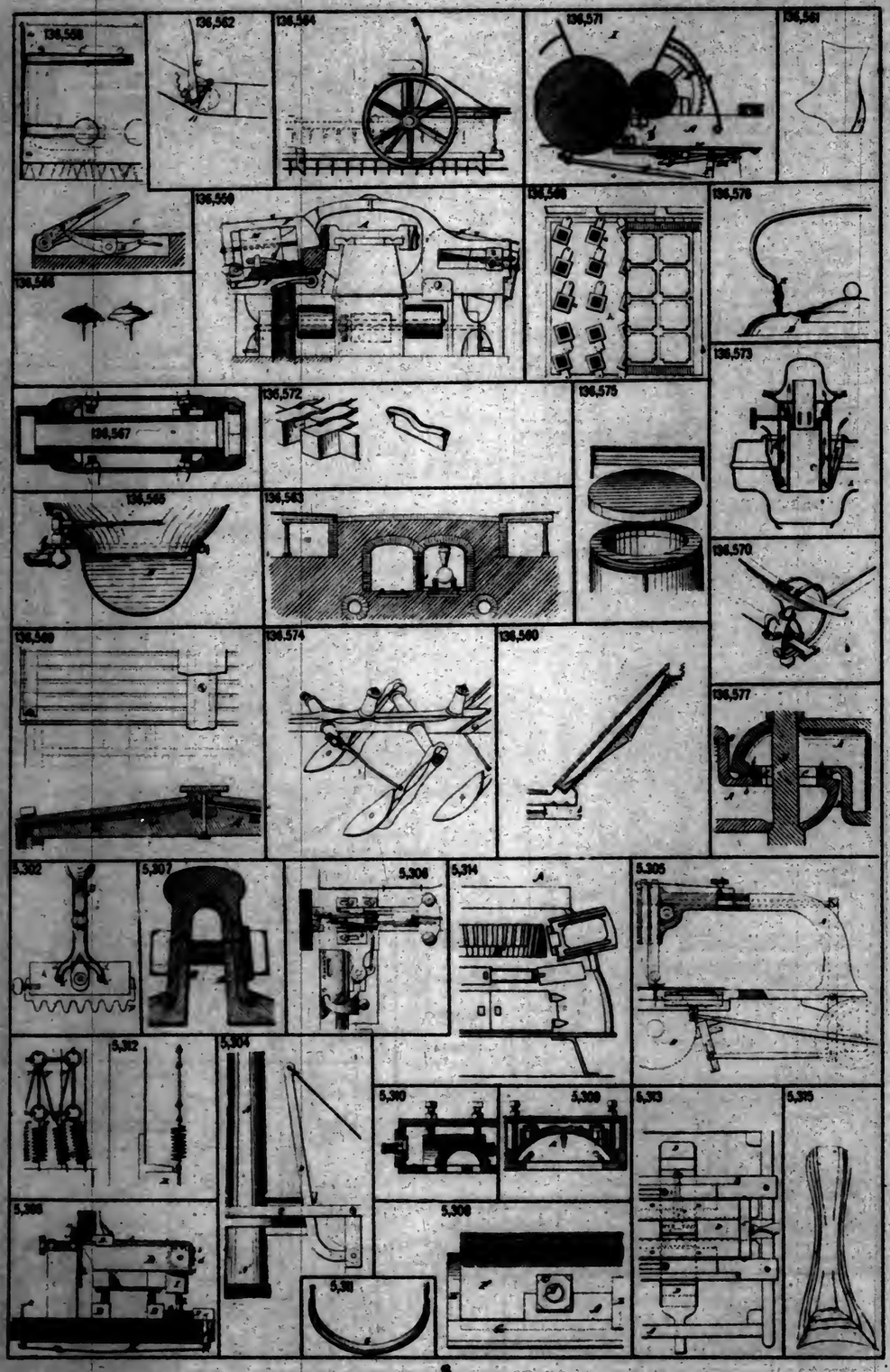
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

charging hopper C, operating to keep the chamber supplied with nails, substantially as described.

5,314.—*Heating-Stove.*—James Spear, Philadelphia, Pa.—Patent No. 102,328, dated April 26, 1870.

A grated fire-pot, having an opening in front, and a hearth-plate in front of such opening and on a level with the grate proper, is suspended within the conical base of a stove. Opposite the opening in the grated fire-pot are doors, which are provided with mica windows.

Claim.—1. The grate G, with opening K′ and hearth-plate M arranged within the base A, substantially as herein described.

2. The arrangement of the grate and lower part of the grated fire-pot within and in combination with the cone-shaped base A, as described.

3. The arrangement of the grate and lower part of the fire-pot within and in combination with the conical base A, when such base is provided with doors or windows *e*′, for the purpose herein described.

5,315.—*Wooden Shank for Boots and Shoes.*—Jeremiah M. Watson, Sharon, Mass., assignor to himself and Horace A. Lothrop.—Patent No. 112,754, dated March 14, 1871.

The stiffener is made of separate layers of wood secured together at their rear end, and left free to slide upon each other at their toe end.

Claim.—1. A wooden shank-stiffener formed of separate strips or layers of wood, substantially as herein described.

2. A wooden shank-stiffener formed of separate strips or layers united at one end, substantially as herein described.

3. A wooden shank-stiffener having its toe end consisting of several strips or leaves, arranged as herein described, for the purpose of allowing them to move freely upon one another, as set forth.

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The following statement is furnished by way of answer to the frequent inquiries made at the Patent Office as to the conditions under which the bound volumes of the drawings and printed specifications of patents are being furnished to public libraries:

I. The joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. A part of these copies are to be bound in volumes and placed for free public inspection in the capitol of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

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The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

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In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
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CARRIAGE-WHEELS; including hubs, spokes, tires, and axles	1,200
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)	

The specifications of patents have been reprinted back to November 20, 1866; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

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NOTICE.

In the revised edition of the Rules of Practice of the United States Patent Office, published March 24, 1873, the following rules have been amended, to which attention is specially called:

Rule 2, 3, 9, 10, 12, 15, 19, 24, 26, 27, 28, 29, 31, 33, 34, 35, 36, 39, 43, 44, 45, 49, 51, 52, 53, 57, 58, 59, 63, 67, 70, 72, 73, 78, 84, 85, 86, 87, 93, 96, 97, 98, 99, 103, 105, 112, 113, 116, 118, 119, 120, 121, 133, 136.

COMMISSIONER'S DECISIONS.

COLLENDER *vs.* GRIFFITH.—*Interference.*

[*Appeal from the decision of the Primary Examiner in the matter of the interference between the application of H. W. Collender and the design patent of W. H. Griffith, granted October 24, 1871, for* IMPROVEMENT IN BILLIARD-TABLES.—*Decided March* 11, 1873.]

DESIGN PATENTS—MECHANICAL PATENTS—PRACTICE IN INTERFERENCES.

An interference should be declared between an application for a mechanical patent and a design patent which shows the alleged invention, although the applicant holds a prior design patent showing the same.

If the designs embraced in the two patents are so dissimilar as not to be in conflict, it is unnecessary to include the earlier patent in the interference.

The burden of proof is on the applicant for the mechanical patent, notwithstanding his design patent first shows the invention; but he may have the benefit of it by introducing it in evidence.

LEGGETT, *Commissioner:*

This is a motion to dissolve the interference. The case is somewhat anomalous. Collender obtained a patent for a design for an ornamental billiard-table frame June 6, 1871. On October 6, 1871, a design patent was granted to Griffith, also for an ornamental billiard-table frame. The two designs, as such, are distinctly dissimilar. There was no interference between them as designs, and they were properly patented. January 16, 1872, Collender filed his present application for a patent, claiming to be the inventor of a beveled frame for billiard-tables, which is alleged to be a material practical improvement upon the square vertical-sided frame in common use. The beveled frame was shown in his design patent and in that of Griffith. Having in itself, however, a practical, useful function, without regard to any particular ornamental configuration or design, it was held—following the practice adopted in the Bartholomew case, Commissioner's Decisions, 1871, p. 298—to be proper subject-matter for a mechanical patent. An interference became necessary to determine which of the parties, Collender or Griffith, was the inventor of the beveled frame. In it Collender's design patent was not embraced, and the question now is whether or not it should have been. The invention now claimed can never be secured to Collender or his representatives by reissue of that design patent. This is true also as to Griffith's design patent. The question is which of the parties is entitled to a mechanical patent upon separate application therefor, or, more immediately, whether or not Collender is upon his application. It is his application that raises this issue, and not his design patent. To be sure, he is alleged to be the inventor of both the design and the mechanical construction he shows, which are substantially identical in both his cases. But inasmuch as he cannot secure protection for the latter in his design patent by reissue, it is not necessary to place that patent in interference with his own application. That would be allowed without an interference were it not that *another inventor* shows the subject-matter claimed. Neither is it necessary to place it in interference with Griffith's design patent, because the two designs, as such,

do not interfere. The case is not altered by assuming that Collender's design patent may be in the hands of assignees whose interests might be affected. They could never have an interference either with Griffith's design or Collender's mechanical patent, should he obtain one. Questions which might arise between them and Collender, growing out of the grant to him of the patent he now seeks, would be of a different nature and come before another tribunal. If Griffith should be awarded priority he may file a new application and obtain a patent without obstruction from Collender's design patent. The fact that the burden of proof is upon Collender in this instance arises, under the rules, from the record, and I see no reason why the rules should be modified in his favor. He can put in his design patent as evidence, and thus avail himself of it. But there is no reason why it should be embraced in this interference, and therefore there is none for relieving him of the burden of proof which he sustains upon the records in the cases which are actually and necessarily in interference.

The Examiner's decision is sustained.

GEO. W. NESMITH.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Geo. W. Nesmith for patent for* GRAIN-REGISTERS, *filed February* 7, 1872.—*Decided March* 21, 1873.]

ARRANGEMENTS OF DEVICES: GENERAL SIMILARITY—SPECIFIC DIFFERENCES.

A claim for the specific construction and arrangement of the devices by which the registration is effected in a grain-register, should not be rejected on reference to a register for stills constructed on the same general principle, and accomplishing essentially the same result, but by devices materially different in the construction and arrangement of their parts.

LEGGETT, *Commissioner:*

This device consists of a spring-lever carrying a pawl which engages with the first of a series of numbered ratchet-wheels geared so that one revolution of the first wheel advances the second one notch, and one revolution of the second advances the third one notch. The wheels are numbered to exhibit units, tens, and hundreds, and are so arranged that the numbers are exhibited and indicate the quantity of grain that has passed the apparatus. The spring-lever projects into the path of the buckets or measures which are passing and conveying grain from one receptacle to another, and is tripped by each bucket, advances the unit-ratchet one notch, and returns again to place. The special arrangement of springs, lever, and pawl to move these registering-wheels constitutes the alleged invention.

The reference cited by the Examiner presents a register for stilts constructed upon the same principle and accomplishing essentially the same results so far as mere registration is concerned. The specific construction and arrangement of the parts of the respective devices for moving the registering-wheels are, however, materially different. They accomplish the same result in the same general way, just as the different sewing-machines forming the same stitch do; but in their details they are as different as are the details of such machines for performing the same minor functions in the operation of sewing.

The claim covers a specific construction and arrangement of parts which operate together to cause the registration. Although the same general result is accomplished by the mechanism shown in the reference, that mechanism is not the same, and, I think, not the mechanical equivalent of what is claimed. It may be better or worse, but at any rate it is materially different, and I think the applicant is entitled to a claim for it.

Had he embraced in his claim the spring that retracts the lever, which is really essential to the operation of the combination he specifies, there would be no doubt but that his claim should be allowed. With this suggestion of amendment the decision of the Board is overruled.

B. B. KEYES.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of B. B. Keyes for patent for* MODE OF TESTING PRESSURE-GAGES.—*Decided March* 21, 1873.]

NOVELTY.

Bourdon's pressure-gages have usually been tested by applying weights to them while under steam-pressure; and there is no novelty in testing them by weights while they are not under such pressure.

LEGGETT, *Commissioner:*

The only difference between applicant's method and that shown in the reference cited by the Examiner is, that applicant proposes to test the pressure of the well-known Bourdon pressure-gage by means of weights when no steam pressure is being exerted, while the old method is to apply the weights while the steam pressure is being exerted. The method in each case is precisely the same, but the condition of the gage to be tested is different, as it is effected in one case or the other by the presence or absence of the steam pressure. It is asserted that by the old method the results of measurements or tests are inaccurate; but I am unable to understand upon what principle applicant's method is calculated to remedy such inaccuracy.

If the steam pressure is counterbalanced or taken into account in connection with the weights, as indicated upon the dial-plate, the result, it would seem, must be substantially the same as if there were no steam pressure. The test in either case, I presume, could only be approximately accurate; but I see no reason why it would not be as accurate in one case as the other, as the two methods are substantially the same. I concur with the opinion of the Board that the reference anticipates the claim.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

GEORGE C. ROBERTS *vs.* JOSEPH BLAKE, JR.

[*In Equity.—Before Shepley, J.—Decision March* 11, 1873.]

EVIDENCE: NOTICE UNDER THE STATUTE.

Where evidence that the invention was not new was taken under objection because no notice was given of it in the answer, it will not be received, although the answer is afterward amended so as to include such a notice.

The parties having agreed that if the amendment were allowed the testimony might be received as if taken under the amended answer, it was admitted upon terms that the defendant should tax no costs up to the hearing.

Roberts vs. Herndon, 2 Cliff., 503, and *Roberts vs. Dodge*, U. S. Cir. Ct., So. D. N. Y., cited and approved.

The patent of D. W. C. Sanford, November 13, 1855, reissued April 21, 1857, and extended for seven years, held void for want of novelty.

[*Thomas A. Jenckes* and *Richard Stone*, for complainant.
Causten Browne and *Jabez S. Holmes* for defendant.]

SHEPLEY, *J.:*

This is a bill in equity to recover profits and damages for alleged infringement of letters patent granted to D. W. C. Sanford, November 13, 1855, reissued April 21, 1857, and extended October 21, 1869, for an improvement in refrigerators, the interest in the letters patent being now owned by the complainant.

The principal question in the case is as to the novelty of Sanford's invention. A preliminary question arises, and must first be determined, on the motion to amend the answer. Evidence had been taken in the case of the caveat of A. S. Lyman in 1852, of the grant of a patent to him in 1856, and as to the use of the Lyman patent before the date of the invention by Sanford. The answer was defective in not naming the caveat or the grant of letters patent to Lyman, or in stating, as required by the act of 1870, section 61, *by whom* the alleged invention of Lyman had been used. A motion was made to amend the answer to let in this evidence. The Court ruled, correctly, that such amendment would not make that testimony admissible which was taken under objection before the answer was amended. When the evidence was taken, which was inadmissible under the answer as it originally stood, the adverse party had a right to rely upon his objections and elect not to cross-examine or offer rebutting proofs. Parties agree, however, in this case, if the Court decides to grant the amendment, that the testimony taken before the allowance of the amendment may be considered as in the case to the same extent as if taken under the amended answer. Considering that the omission in the answer was evidently by inadvertence of the counsel in New York, and that the complainant is not taken by surprise, under all the circumstances of the case, the amendment is allowed upon terms, but as it was offered at so late a stage of the proceedings in the cause, the defendant is not in any case to recover costs up to the time of the hearing in the case.

The claims in the Sanford patent have been fully and clearly construed by the Court in the case of *Roberts* vs. *Herndon*, 2 Clifford, p. 503. Upon a careful examination of the evidence in this case, I am of opinion that the conclusion of Judge Blatchford in the case of *Roberts* vs. *Dodge*, in the Second Circuit and Southern District of New York, is correct; that the inventions of Sanford and the claims of his patent are fully anticipated, on the point of novelty, by the refrigerators constructed under Lyman's direction, at the Novelty Works in New York, in 1854.

These refrigerators, including also Exhibit Hedden No. 1, contain the same combination of elements named in Sanford's first claim. There are some slight structural differences. The elements of the combination are somewhat modified in their form, but the combination of the same elements produces in substance all the results and the same results claimed by Sanford.

Bill dismissed without costs.

U. S. CIRCUIT COURT—EASTERN DISTRICT OF NEW YORK.

WM. H. BLISS *vs.* THE CITY OF BROOKLYN.

[*In Equity.—Before Benedict, Judge.—Decision March* 13, 1873.].

COMBINATIONS NON-EFFECTIVE.—EFFECTIVE.

A patent for a combination of devices which proves to be inoperative and worthless is void.

The addition to a combination which is inoperative and worthless in itself, of an element which renders it practicable and valuable, constitutes a new combination, and is something more than a mere improvement upon the old one.

The use of a patented combination which is in itself inoperative and worthless, in connection with a new element which renders it practical and useful, cannot be punished as an infringement.

[*George Gifford*, for complainant.
B. F. Valentine, for defendant.]

BENEDICT, *Judge:*

This action, which has been before me on a former occasion upon other pleadings and proofs having been reopened, now comes up for determination upon new pleadings and different proofs. It is an action to recover damages of the city of Brooklyn for using certain hose-couplings, which are claimed to be an infringement upon a certain patent for hose-couplings originally issued to Robert B. Lawton and William H. Bliss, on the 22d day of February, 1859; reissued December 21, 1869; and now owned by the plaintiff.

The object of the invention is stated in the original patent, as follows:

"The object of this invention is to connect hose together in such a manner that a swivel-joint will be attained, and at the same time certain provision made for compensating for the wear attending such connection, so that the coupling may always be kept water-tight by the mere act of adjusting or connecting the parts together."

The claim of the original patent is as follows:

"The two thimbles C D, attached to the end of the hose A B, the thimble C being provided with the shoulder *b* and ground seat or packing *c*, and the thimble D provided with the groove *e* with inclined sides and fitted within thimble C, the above parts being used in connection with the conical roller or rollers *g* fitted in the screw-cap *f*, and the whole arranged to operate as and for the purposes set forth."

In the reissue, upon which this suit is based, the object of the invention is stated as follows:

"The object of this invention is to connect hose together in such a manner as to secure a tight joint, and admit of their being connected with greater facility than was previously done."

The claim in this reissue, which is the object of this controversy, is as follows:

"The combination of the two thimbles C and D, by means of a pin operating longitudinally through the outer thimble C and against the inclined side of the groove in the thimble D, so that the two thimbles will be forced together by the inward movement of the pin and be liberated by its outward movement, substantially as described."

It will be observed that the idea which is put forth in the original patent as the new idea embodied as there described—namely, the formation of a hose-joint which, by means of a revolving pin, could swivel and at the

same time remain tight—is omitted from the reissued patent.

In the reissue the only object of the invention as there stated, is the formation of a tight hose-joint, by means of the combination of certain old and well-known devices, in the manner described.

In opposition to the patent as thus reissued, several grounds of defense have been here taken. One of them is that the invention which the reissued patent describes is worthless and the patent invalid; and this defense appears to me to be supported by the proof. The law upon the subject of utility is not in doubt. No particular amount of utility is required to render an invention patentable, but there must be some. When the invention is shown to be worthless the patent must fail. Such appears to be the case in the present instance. The evidence fails to disclose any instance where the combination described in the reissued patent of 1869 has been successfully used. The plaintiff himself testifies that he does not know of any such coupling having been found to be of practical use. Although he sells couplings, he never sold *any such*, and only recollects three instances where their use has been attempted. His testimony satisfies me that the combination described in the patent here relied on proved inoperative and worthless.

It is true that couplings containing all the elements in combination which are described in the plaintiff's reissue of 1869 are in use, and such are those used by the defendant, but in these couplings another essential element is present in the combination, which additional element is not to be found in the plaintiff's reissue of 1869.

This additional feature is a lug, which is placed upon the inside of the outer thimble opposite to the pin in such a manner that when the pin is forced inward upon the inner thimble the inclined side of the groove of that thimble is pressed upon the lug, and that part of the inner thimble thus forced up to the shoulder of the outer thimble, at the same time that the pin itself, by pressing the inclined groove when it is touched by the pin, forces that side of the inner thimble up to the shoulder of the outer thimble, thus making a tight joint which cannot tilt, although the inner thimble be smaller than the inside of the outer thimble, and which cannot swivel or turn and be tight.

The introduction of this element makes the combination a different combination from that described in the plaintiff's patent of 1869. This combination, in which the lug enters as an element, is the subject of another patent obtained by the plaintiff in 1862, which he has not proved here, and in which he states that the lug is "*very essential.*"

This latter patent of 1862 has been put in evidence by the defense, and it affords strong support to the position that the combination described in the reissue of 1869 proved worthless.

But it is said the introduction of the lug is simply an improvement. I cannot so consider it. The two combinations are distinct, because they have different elements and attain a different result. In the one combination no lug appears, and no practical result is attained. The introduction of the lug for the first time produced a combination which accomplished any useful result. An added element which increases the efficiency of a combination, of itself effective, is of the nature of an improvement; but when the added element is essential to the production of any useful result such an addition is not an improvement, but its use gives birth to the only patentable (because the first useful) combination. Notwithstanding, then, the conceded fact that the combination which includes the lug, with other elements, which are described in the reissue of 1869, is useful, it is nevertheless necessary, in order to sustain the reissue, that it should appear that the device there described, which does not contain the lug, is of some utility. As before stated, the contrary here appears, and for this reason the patent must be declared invalid.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,291.—*Metallic Bands for Baling.*—Granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869. Hearing March 5, 1873.

23,309.—*Bredopes.*—Granted to SIMON E. PETTES, March 22, 1859. Hearing March 5, 1873.

23,316.—*Instruments for Enlarging Photographs.*—Granted to DAVID SHIVE, March 22, 1859. Hearing March 5, 1873.

23,320.—*Apparatus for Skimming the Surface of the Water in Steam-Boilers.*—Granted to A. M. SPRAGUE, March 22, 1859. Hearing March 5, 1873.

23,344.—*Mode of Fastening Skates.*—Granted to EDWARD BEHR, March 29, 1859. Hearing March 12, 1873.

23,361.—*Machines for Pegging Boots and Shoes.*—Granted to ALPHEUS C. GALLAHUE, March 29, 1859; reissued June 22, 1869. Hearing March 12, 1873.

23,364.—*Tools for Cutting Metal.*—Granted to L. F. GOODYEAR, March 29, 1859. Hearing March 12, 1873.

23,396.—*Stoves.*—Granted to HENRY R. ROBBINS, March 29, 1859. Hearing March 12, 1873.

23,399.—*Harvesters.*—Granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859. Hearing March 12, 1873.

23,416.—*Sausage-Stuffers.*—Granted to JOHN WAGNER, March 29, 1859. Hearing March 12, 1873.

23,425.—*Machine for Rolling Iron.*—Granted to HENRY B. COMER, March 29, 1859. Hearing March 12, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859. Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 29, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTUCK, April 19, 1859; reissued April 17, 1866, again in three divisions, Nos. 4,894, 4,895, and 4,896, March 26, 1872. Hearing April 2, 1873.

23,716.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,631 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,735.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,736.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 2, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,980, 1,981, 1,982, and 1,983, June 6, 1865; No. 1,980 having been ordered to again reissue, No. 5,250, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MERSHON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,860.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,893.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tire.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,029.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS R. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.*—Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,098.—*Sawing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,169.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 21, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABATON, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMENT, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

8,589.—*Improvement in Machines for Making Kettles*, granted to HIRAM W. HAYDEN, December 16, 1851; extended seven years; reissued February 13, 1866, numbered 2,171; reissued May 24, 1870, numbered 3,995; extended by act of Congress, approved March 3, 1873.—Division A.

Claim.—1. The application of a rotary metallic form or mold, or successive forms or molds, in combination with a proper tool or tools, roller or rollers, sustained, moved, and directed, in a proper path, by competent mechanical means, for the purpose of operating on a disk, blank, or plate of metal, so as to reduce it gradually

from the center to the edge, at the same time forming it with straight sides, by successive stages, into a complete kettle, or into any similar articles to the forming of which this apparatus can be applied, substantially as described and shown.

2. The construction of the mandrel f^3, part of which is cylindrical and part fitted with a short screw, 13, to take the screw of the hand-wheel f^4, so that great pressure may be made at the point desired, while, at the same time, the mandrel can be easily and quickly moved through a long distance, for the purposes, and as described and shown.

8,589.—*Improvement in Brass Kettles*, granted to HIRAM W. HAYDEN, December 16, 1851; extended seven years; reissued February 13, 1866, numbered 2,171; reissued May 24, 1870, numbered 3,996; extended by act of Congress, approved March 3, 1873.—Division B.

Claim.—1. A kettle or other similar metallic article or vessel made from a single sheet or flat disk or blank of metal, stretched and compressed so as to extend the sheet into its ultimate form, by the process, substantially as herein set forth.

2. A kettle, or other similar metallic article or vessel, having its greatest thickness at the bottom, and thinned or gradually reduced in thickness toward the top by the process, substantially as set forth.

23,320.—*Improved Apparatus for Skimming the Surface of the Water in Steam-Boilers*, granted to A. M. STRAGUE, March 22, 1859. (CHARLOTTE SPRAGUE, administratrix.)

Claim.—The surface-skimmer B, constructed, arranged, and operating substantially as and for the purpose of removing the sedimentary water from the upper water surface of steam-boilers.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 11, 1873.]

6,490.—*Lamp-Stand.*—DAVID MOSMAN, West Meriden, Conn.

6,491.—*Work-Holder.*—RUSSELL W. PERKINS, West Meriden, assignor to himself and JAMES H. HOLMES, Wallingford, Conn.

6,492.—*Lounge.*—JOHN B. ROHRER, Philadelphia, Pa., assignor to SAMUEL COOPER and JOHN HALL, same place.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date March 11, 1873.]

1,160.—*Soap.*—JOSEPH S. & THOMAS ELKINTON, Philadelphia, Pa.

1,161.—*Linen and Muslin Shirts.*—T. J. IRVING & Co., Baltimore, Md.

1,162.—*Rubber Hose and Belting.*—NATIONAL RUBBER COMPANY, Bristol, R. I.

1,163.—*Printed Publications.*—F. and J. RIVES and GEORGE A. BAILEY, Washington, D. C.

1,164.—*Boots and Shoes.*—THOMAS W. SEAVERNS, Jr., West Roxbury, Mass.

1,165.—*Meizola, a Product of Corn.*—WARDER & COOPER, Valley Junction, Ohio.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date March 11, 1873.]

ORIGINAL PATENTS.

136,578.—*Dumping-Scow.*—JOSEPH E. BARTLETT, Boston, Mass.

The discharge-gates are free to swing out farther than to a perpendicular position when fully open, so as to allow the contents to spread out and discharge itself evenly, and on less depth of water than usual.

Claim.—A mud-scow with air-chambers *f f* on each side of the mud-room *a*, and having its gate-space *d* made wider at the bottom than at the top, in combination with doors *b b*, not projecting below the bottom of the scow, for the purpose of allowing the mud to spread out and discharge itself to a level as soon as the doors *b b* are opened, as herein set forth.

136,579.—*Lathe Rest.*—CHARLES A. BAUER, Hamilton, Ohio.

The ordinary flange on the bottom of the tool-post has situated between it and the ledges above, a square washer in which is an annular groove. The flange fits in the groove and forms a wide bearing for steadying the post when the tool is clamped in the same. The square washer can be moved along with the tool laterally.

Claim.—In combination with the tool-post B *b* and grooved rest A G *g* of a lathe, I claim the loose ring or washer H, constructed and operating substantially as and for the purpose specified.

136,580.—*Elevator.*—JAMES M. BEAN, Watertown, Mass.

Two endless chains running upon grooved wheels, and carrying a series of revolving platforms and intervening seats for passengers for the various landings of a building.

Claim.—1. A revolving platform, as C, constructed and arranged upon a rod or hinge, as I, in combination with the endless chains, as E E, and stays, as G G, &c., substantially as and for the purpose described.

2. A revolving seat, as D, constructed and arranged upon a rod or hinge, as I, in combination with the endless chains, as E E, stays, as G G, &c., substantially as and for the purposes described.

3. The hooks H H, &c., as combined and arranged with the chain-links F F, &c., and for the purposes substantially as described.

4. The rollers M M, &c., combined and in arrangement with the endless chains E E, the stays G G, &c., the guides L L, and the hooks H H, &c., substantially as and for the purposes described.

5. A passenger-elevator provided with a series of revolving and self-adjusting platforms, as C C, &c., and a series of revolving and self-adjusting seats, as D D, &c., in combination and arranged with an endless belt whose edges run in continuous grooves, as K K, or other suitable guides, said belt being composed of chains, as E E, stays, as G G, &c., and operated by two or more sprocket-wheels, as B B, substantially as described.

6. Operating two or more gates or doors, as N N, &c., by one movement, the same being operated by pulleys, as R R P P, &c., cords, as X X X' X' Z Z Z' Z', rollers, as S S, lever, as T, the whole being combined and arranged substantially as and for the purposes described.

136,581.—*Car-Brake.*—WILLIAM HAND BROWNE and WILLIAM M. PEGRAM, Baltimore, Md.

A cam or snail is attached to the brake-rod, by means of which the slack-chain of the brakes is quickly taken up.

Claim.—The use, upon a car-brake shaft or rod, or its equivalent, of a disk of any required dimensions, having a snail, or helix, or cam, as described, substantially as and for the purpose set forth.

136,582.—*Foot-Warming Attachment for Sewing-Machine Treadles.*—ANNIE R. BUSS, Chicago, Ill.

The treadle has a chamber provided with a hinged cover. A warming-iron fits into this chamber.

Claim.—A hollow or box treadle for sewing-machines, provided with a receptacle for a heated iron, substantially as and for the purpose set forth.

136,583.—*Construction of Houses.*—OLIVER C. CAMPBELL, Omaha, Neb.

The facing-tiles are formed with a dovetailed recess for the reception of the prismoidal attaching block. The beveled flange overlaps on two sides, thus covering both the joint and the attaching block. An appearance of cut stone is given to a wooden house.

Claim.—1. The block or tile A for facing the walls of buildings, formed with the beveled covering-flange *c* and the dovetailed recess *a* for the purpose of attachment, all substantially as shown and described.

2. The prismoidal block B and screw *b*, in combination with the tile A having the dovetailed recess *a*, substantially as specified.

136,584.—*Milk-Cooler.*—WARREN O. CAMPBELL, Montgomery Centre, Vt.

The milk-pan is constructed with a movable partition, and it is arranged in a suitable frame with a water-reservoir below which may be raised, by means of suitable mechanism, so that the same may be brought up against the bottom of the milk-pan when it is desired to cool the milk.

Claim.—1. The milk pan A, provided with one or more movable transverse partitions, *a*, and one or more tubes, *b*, each tube having washers *d* and *e*, all substantially as and for the purposes herein set forth.

2. The combination of the movable frame D, bars E E, levers G G, cords or chains *p p*, roller *s*, and wheel H, all arranged in the main frame C, and used with the pan A and cooler B, substantially as and for the purposes herein set forth.

136,585.—*Machine for Re-rolling Metallic Bands.*—CHARLES WALLACE CHAPMAN, Liverpool, England.

The strips of metal are fed to the rolls between guides, which can be adjusted to suit any width of strip, and in the rear of the rolls is a receiving table. Under the ordinary screws that raise and lower the boxes of the rolls are placed elastic buffers, which cause the upper roll to conform to any inequality in the metal.

Claim.—The machine herein described, consisting of the steering or directing guide *k*, the elastic buffer *d*, and delivery-table *e*, combined with the horizontal rollers *b* and *b'* and frame *a a'* to roll and re-form the banding, substantially as described, for the purpose specified.

136,586.—*Lamp-Burner.*—BENJAMIN F. CHAPPELL, Hartford, Conn., assignor to himself and NORMAN SMITH, same place.

Opposite the ratchet-spindle is secured a tube having an enlarged hollow head, a portion of which is cut away. In this tube moves a rod having on its head a narrow projection, and on its inner end a clutch adapted to engage with the clutch on the end of the ratchet-spindle. The two clutches being engaged, the motion of the spur-wheel is limited; when out of gear the wheel is free.

Claim.—1. The mechanism, constructed substantially in the manner described, which, when clutched with the ordinary spindle for operating the wick, limits its motion, and when unclutched allows it to move freely, as herein specified.

2. The devices *f g A i j k*, for regulating the motion of the wick, substantially in the manner described.

3. The combination of the regulating mechanism for limiting the motion of the wick with the ordinary spindle and spur-wheel for operating a lamp-wick, substantially as herein specified.

136,587.—*Hat and Parcel Holder.*—ALFRED CLARKE, Philadelphia, Pa.

The free ends of the straps are provided with hooks, so that after the straps are brought around a parcel the hooks may be locked together to hold it securely; or the hooks may be used for holding the article and suspending it.

Claim.—1. The spring-clasp A, made of a single strip of metal, bent into a circular form, and provided with a hook, D, substantially in the manner and for the purpose above described.

2. The combination of the elastic straps E E with the spring-clasp A, the straps having hooks *b b*, substantially as and for the purpose set forth.

136,588.—*Vessel for Steaming Oysters.*—CHARLES S. COLLINS, Baltimore, Md., assignor of one-half his right to JOHN T. FLEEHEARTY, same place.

A greater perforated surface is given to the vessel wherein the articles to be steamed are placed, and it is so arranged as to be kept steadily in proper position.

Claim.—In combination with the cylindrical perforated dish B supported within the steamer, as described, the flange *b*, bracing-pieces *c*, and handles *d'*, substantially as herein set forth.

136,589.—*Stove-Platform.*—WALTER M. CONGER, Newark, N. J.

Under the central dome a shield (or two) is suitably supported on lugs, or by a screw-bolt passing through the center.

Claim.—The continuous sheet A *a* formed with a dome where the heat is received, in combination with the shield or shields B held between the dome and floor, with a space above and below, and adapted to serve as herein set forth.

136,590.—*Pencil-Sharpener.*—EDWARD M. CRANDALL, Chicago, Ill.

The end of the pencil, being introduced into the socket and turned, is acted upon simultaneously by all the teeth of the different file-blades. The particles removed escape through the openings.

Claim.—The herein-described device for sharpening slate-pencils, consisting of the conical body A having the file-blades B and the openings C, constructed and arranged to operate as herein set forth.

136,591.—*Slate.*—CHARLES DRASSER, Chicago, Ill.

Claim.—1. The metallic plate P, covered with any suitable composition to form a penciling-surface, and provided with a hollow frame, A, as set forth.

2. The combination of the plate P, coated as set forth, and provided with a hollow frame, A, and pencil-receptacle, substantially as set forth.

136,592.—*Process for Making Coke from Lignites.*—HENRY ENGELMAN, Salt Lake City, Utah Ter.

To the lignite add coal-tar, bitumen, or analogous substances, and subject to an initial heat above a "cherry-red," laterally applied, so as to volatilize and decompose the hydrocarbons and to cement the particles or fragments of lignite, producing a compact coke.

Claim.—1. The process of coking brown coal, lignite, and analogous coal-like material incapable of effective coking by the usual practice with ordinary coking-ovens by mingling the same with coal-tar, asphaltum, or analogous substances, or with bituminous coking coal, or with coal-tar and coking coal together, and subjecting the whole to an initial and sustained heat above a "cherry-red," so termed, and applied laterally throughout the mass, substantially as herein set forth.

2. The process herein described of solidifying by pressure the coked product formed by mingling coal tar or equivalent material and subjecting the same to a heat above a cherry-red, for the purpose specified.

136,593.—*Ice-Tongs.*—WILLIAM THEODAR FARRE, Montreal, Canada.

A handle provided with two hooks pivoted near its ends, and arranged so as to cross each other in such a manner as to increase their gripe.

Claim.—The ice-tongs consisting of the handle A and hooks B B, substantially as described and shown.

136,594.—*Link for Ornamental Chains.*—JOSEPH J. FREEMAN, Attleborough, Mass., assignor to FREEMAN & CO., same place.

A chain-link, formed of wire, bent around a suitable form and then having the ends turned inwardly, forming two loops and an eye, by which any desired number of such links may be readily grouped into a chain for jewelry.

Claim.—The chain-link A, formed of wire, bent around as shown, and having its ends turned inwardly so as to form the two loops *a a* and the eye *a'*, substantially as described.

136,595.—*Mechanism for Heading Barrels.*—JAMES GRIFFING, Ipswich, Mass., assignor to himself and BENJAMIN H. SMITH, same place.

By pressing the lever downward the barrel head is forced down to the crease of the staves. The cooper next puts one foot through the stirrup and holds the parts in position, or he effects such by driving the spur into the head of the barrel.

Claim.—The lever A, the bearer B, the hooked arm C, the hanger D, and the spur E or the stirrup F, or both, all combined and arranged together substantially as and for use as specified.

136,596.—*Stew-Pan.*—GEORGE W. GRISWOLD, Factoryville, Pa.

The pan being permanently attached to the cylindrical vessel, a continuous circulation of water is kept up through the passages.

Claim.—In combination with a stew-pan or culinary vessel composed of an inner and outer jacket or vessel with water or steam space between them, and with a lip, the upper and under openings *c d* extending from such lip into the water and steam chamber, for the several purposes of filling and emptying said chamber, allowing the steam to escape into said lip, and its water of condensation to flow back into said chamber through the lower opening, permitting circulation of the water, greater uniformity of temperature, and more rapid heat, as described and represented.

136,597.—*Drip-Collecting Device.*—WILLIAM A. HARRIS, Providence, R. I.

Claim.—The combination of the pedestal or standard C, constructed with lip A, to serve as a drip collector and conductor, as described, with tubes *a* and drip-box B, or other receptacle for the drippings, as specified.

136,598.—*Knife-Scourer.*—EZRA W. HAVEN, Brandon, Vt.

In the shallow pan an inclined bar, with the ends bent at right angles, is permanently fixed. It is supported in the middle by an upright piece.

Claim.—The arrangement and combination of the disk D, bar B, and support *a*, substantially as and for the purposes set forth.

136,599.—*Garter.*—HENRY A. HOUSE, Bridgeport, Conn.

Two metallic bands pass through a flat helical spring, and have their inner ends secured to opposite ends of the spring, so that when their outer ends are drawn outward the spring is contracted.

Claim.—1. The garter-spring A, having its ends connected to internal strips B B, substantially as described.

2. The strips B B, perforated as described, and having T-shaped fastenings *b* on one or both ends, in combination with the spring A, substantially as described.

136,600.—*Water and Beer Cooler.*—CHARLES HUBBIG, Philadelphia, Pa.

When liquid is drawn from the cask, which is connected with the cold-air pipe of the water-cooler, the cold air immediately passes through said pipe to supply its place, and thereby cools the liquid within the cask.

Claim.—1. The water-cooler A, so constructed that, by the withdrawal of beer or other liquid from a separate receptacle communicating therewith, air entering the cooler will permit cold air in the cooler to pass into the said receptacle, substantially in the manner and for the purpose set forth.

2. The water-cooler A, cold-air exit 5, overflow 4, and partition or perforated ice-supporter *a'*, combined and operating substantially as described.

136,601.—*Compound Implement.*—ANTHONY ISKE, Lancaster, Pa.

Claim.—A compound implement consisting of a hand corn-sheller, boot-jack, hammer, and its appendages, formed by the combination of the parts A B C and pivot D, all constructed substantially in the manner and for the purposes specified and shown.

136,602.—*Cloth-Cutting Machine.*—JOHN KENT, New York, N. Y.

To regulate the length of material cut off at each stroke of the knife a graduated sliding wedge or abutment is so arranged as to determine the movement of the pawl-lever of the take-up mechanism; and to adapt the stroke of the knife to the quality of the material the connection with the actuating-crank is made adjustable.

Claim.—1. The combination of the adjustable graduated abutment *g*, lever D, springs G and *h*, pawl F, ratchet wheel H, cam E and rollers I and I', as and for the purposes herein set forth.

2. The combination of the lever D, springs G and *h*, ratchet-wheel H, pawl F, cam E, and abutment *g*, with the knife M and crank P, substantially as herein shown and described, and for the purposes set forth.

136,603.—*Treadle.*—GEORGE B. KIRKHAM, New York, N. Y.

Foot-power to turn a fly-wheel constantly in the same direction, with noiseless and positive motion. The fly-wheel kept in motion by the alternate pressure of two bearing arms, one above and one below. The bearing-arms attached to a pitman, operated in turn by the treadle. The pitman steadied by friction-clutches hinged to the treadle, which act as a shifting apparatus, and, by pressure against the pitman, increase the traction of the bearing-arms against the fly-wheel. Applicable to sewing-machines, jig-saws, hand-lathes, and the like.

Claim.—1. The arrangement of the bearing-arms B B' with the pitman C and the set-screws *a a*, substantially as and for the purpose hereinbefore set forth.

2. The combination of friction clutches F F G and H I J K with the pitman and treadle, substantially as and for the purpose hereinbefore set forth.

3. The arrangement of the curved arms B B', set-screws *b b* and double pitman C C', substantially as and for the purpose hereinbefore set forth.

4. The arrangement of the two halves of the wheel A A', disks *c c*, screws *d d*, with grooves, bevels, curved or flat surfaces to the arms B B' and wheel A A', substantially as and for the purpose hereinbefore set forth.

136,604.—*Artificial Stone.*—RICHARD LEMARE, New York, N. Y.

Claim.—A composition of the above-mentioned materials, to wit, hydraulic cement and gas-retort breeze or dust.

136,605.—*Brush-Ferrule.*—WILLIAM F. LOREY, Mendon, N. Y.

The ferrule has an opening in the top for the handle. The sides are in two parts, the edges lapping each other, and have a flaring band to slip over them.

Claim.—The metallic cup-ferrule B with two or more slip-joints *a a*, in combination with the metal band C, as and for the purposes herein described and specified.

136,606.—*Combination Lock.*—WILLIAM C. MCGILL, Cincinnati, Ohio.

The outer ends of the tubes or sleeves are provided with hands or pointers, and the inner ends with cranks or disks having pins, which, when properly adjusted, enter corresponding holes in the gear-disk which operates the bolt.

Claim.—The arrangement of the shaft C with the tubes or sleeves D and E, provided with their respective pins c^1, d^2, and e^3, in combination with gear-disk G, as and for the purpose herein described.

136,607.—*Baby-Carriage.*—SAMUEL MCINTIRE, Brooklyn, N. Y.

Claim.—1. The castings E, receiving and connecting the axle B, perch C, and spring *m*, as herein specified.

2. In combination with the body A and axles B, the spiral springs *m*, connected to castings above and below by screw-threads corresponding therewith, substantially as herein specified.

3. The bent supports *p*, in combination with the parasol T and two sockets, P, fixed in the opposite sides of the body A, as herein specified.

4. The casting R, connecting the shank *t* of the parasol with the side supports *p*, the connections being formed by screw-threads arranged to serve as herein specified.

136,608.—*Sediment-Drain.*—GEORGE R. MOORE, Lyons, Iowa.

The sediment receptacle and container is provided with a perforated top, and is placed above the bottom of the inlet-pipe so as to intercept any floating substances passing upward. Near the bottom of the receptacle is provided means for clearing out the same.

Claim.—1. The strainer C, or its equivalent, placed above the bottom of the inlet-pipe, substantially as and for the purpose herein set forth.

2. The arrangement of the several parts A, B, C, E, F, and G, as herein shown.

136,609.—*Ash-Screener and Commode.*—JAMES C. MORRELL, Manchester, England.

Within a box attached to the commode is arranged an ash-screen and cinder-sifter. By the depression of the seat or the movement of a handle motion is given to the screener and its attachments, by which the cinders are carried down the inclined screen and the ash-dust onto the inclined planes forming the hopper below, and thence into the measure. Upon the seat being released the screener and hopper resume their original position, and in the act of doing so a notch upon the hopper-funnel sends before it the dust collected in the trough and distributes it.

Claim.—1. The ash screener *c* hung at rear of a closet for receiving motion, as described, the same with inclined planes forming hopper c^1 and funnel *f* and notch *h* attached thereto, as described.

2. The combination of the above with pent-house *a* and commode-seat *b*, forming a combined ash-screener and commode, substantially as hereinbefore described and set forth.

136,610.—*Car-Coupling.*—JOHN MOULTON, Moultonville, N. H., assignor to himself and WILLIAM P. B. BROOKS, Chelsea, Mass.

The jaws are opened by levers, which are pivoted at each side of the draw-head, and which are retained, when depressed, to hold the jaw up, by catches. The springs guide the link into the approaching draw-head.

Claim.—1. The combination and arrangement of the two levers D D with the chambered parts *a b*, hinged together, and provided with a closing-spring, as set forth.

2. The combination and arrangement of the two catches E E with the levers D D and the chambered parts *a b*, hinged together, and provided with a closing-spring, as explained.

3. The combination and arrangement of the series *o o* of springs with the parts *a b*, chambered, hinged together, and provided with the closing-spring, substantially as explained.

4. The draw-bar as constructed of the two parts *a b*, hinged and provided with the closing-spring, and chambered, and furnished with a conical mouth to such chamber and with the set of levers D D, and as having the link-pin hole *m'* arranged in such parts *a b* and with respect to the mouth *e* of the chamber, all substantially as shown and described.

136,611.—*Bird-Cage.*—GEORGE J. MUNSCHAUER, Buffalo, N. Y.

The detachable bottom is provided with a sliding self-locking device, which prevents the catch from becoming accidentally unclasped and detached.

Claim.—The plate E formed with the end *c c'* for attachment to the clasp D, and with the point *d* for working between the wires *e e'* of the clasp, as set forth, the several parts operating in respect to each other and to the cage A and the bottom B, as herein shown and described.

136,612.—*Sad-Iron.*—FREDERICK MYERS, New York, N. Y.

A sad-iron of the common form has a vertical standard at the front end. To this a long handle is riveted. At the heel of the sad-iron are two legs, which extend far enough to meet the length of the prolonged handle, so that the iron can rest upon them when raised from the flat surface.

Claim.—The combination of the sad-iron A, standard B, handle D, and legs E, the handle being extended to form a leg, substantially as specified.

136,613.—*Sad and Embossing Iron Combined.*—FREDERICK MYERS, New York, N. Y.

In a sad-iron constructed of a lower polishing-plate and an upper detachable handle-plate, embossing-surfaces are arranged on the inner faces of the upper and lower plates, respectively.

Claim.—The combination of the base-plate A, handle-plate B, embossing-surface L of plate A, and embossing-surface M of plate B, the said plates being pivoted together as at G, and provided with locking devices F H, substantially as specified.

136,614.—*Reed-Organ.*—EDWARD OAKES, Danville, Ill.

The reed-board is suspended upon wires and connected with the wind-chest by flexible tubing for alleged freedom of vibration. The flexible tubes contain springs to prevent collapse, and the reed-blocks are made angle-shaped to carry two reeds to each block.

Claim.—1. The vibrating reed-case D, separate and apart from the keys and the body of the instrument, and suspended by means of cords or wires and springs, substantially as specified.

2. The adjustable springs *f f f f*, in combination with the wires *e e e e* and the vibrating reed-case D, substantially as specified.

3. The flexible tubes I I, with the ribs *i i*, or with a spiral spring, i^2, as described, and in combination with the nipples J J, substantially as specified, and for the purpose set forth.

4. The combination of the swell-box B and cover C, said cover operated with the toggle-lever *c*, lever c^1, and rod c^2, or other equivalent devices, with the vibrating reed-case D, substantially as described, and for the purpose set forth.

5. The arched reed-block K, as shown in Fig. 3, substantially as described, and for the purpose set forth.

136,615.—*Cigar-Mold.*—CHARLES H. PALMER, New York, N. Y.

The two hollow jaws of the mold are hinged together at one end, and at the other end have clasps fitting into each other, and at the sides logs for guiding the jaws while shutting and for holding them in place.

Claim.—A sheet-metal mold for drying cigars, consisting of two hollow jaws hinged together at one end, and provided with male and female clasps at their tips, and lips at their sides for guiding and holding the jaws in place, as set forth.

136,616.—*Sewing-Machine.*—WILLIAM C. PICKERSGILL, Providence, R. I., assignor to PROVIDENCE TOOL COMPANY, same place.

The feeding device is moved horizontally through the rocking-shaft, on which is the "presser arm," and which is adjustable with reference to the inclined vibrating cam-face to vary the length of feeding movement. The feed is raised by the vibrating cam or toe on the shaft that carries the vibrating shuttle-lever actuating bell-crank.

Claim.—1. The combination of devices for giving to the shuttle-lever a horizontally vibrating movement, and also for giving vertical movement to the feed-bar, the same consisting of the eccentric on the main shaft, its pitman or link D, and the vertically-vibrating bell-crank lever, connected with the shuttle-lever by means of a spheroidal tip embraced within a bifurcation, and operating a toe-cam below and adjacent to the feed-bar, substantially as described.

2. The combination of the vibrating cam-face I, adjustable presser-arm K, rocker shaft L, and feed-bar O, substantially as described.

3. The combination, with the feed-bar, of the vibrating toe T, the vibrating cam-face I, both of which are respectively operated by the eccentrics B and C, and the presser-arm K, made adjustable with relation to the cam-face, substantially as and for the purposes specified.

136,617.—*Hydraulic Railway Brake.*—GEORGE PEARSON RENSHAW, Park Valley, England.

By means of water admitted to cylinders or chambers with flexible diaphragms the brakes are actuated and set against the wheels. Raises the water so applied by fans or arms secured upon the axles, whereby the water, after having actuated the brakes, can be returned to the reservoir. Also arranges suitable valves which operate the brakes, so that by means of cords or other flexible connections they shall be under the control of the engineer.

Claim.—1. The chambers E provided with the disks G and diaphragms *d*, operated by the pressure of a head of water through the medium of the cistern A and pipe F, in combination with the brake-block I, substantially as herein shown and described.

2. The fans Q clamped on the axle O, and operating within the casing N by the motion of the carriage, in combination with the inclined aprons R R, cistern A, receiver C, and pipe D, substantially as and for the purposes set forth.

3. The combination of the cords *g*, spring or weight *f*, and valves K and L with the chambers E and brake-block I, all being arranged and operated substantially as and for the purposes herein set forth.

136,618.—*Relief-Valve for Locomotives.*—GEORGE W. RICHARDSON, Troy, N. Y.

Provides the valves with spiral wings to keep the seat from wearing uneven; also heats the air before entering the cylinder to prevent condensation.

Claim.—1. A relief-valve constructed with spiral wings in the bush or seat or on the valve-stem, substantially as and for the purpose hereinbefore set forth.

2. The combination of a relief-valve with the steam-pipe, or with the dry-pipe and steam-pipe of a locomotive, substantially as and for the purpose hereinbefore set forth.

3. A relief-valve connected to the steam-chest or cylinder of a locomotive-engine by a pipe, arranged substantially as described, so that atmospheric air introduced therein by means of said relief-valve may be heated while passing through said pipe before entering the steam-chest or cylinder, for the purpose hereinbefore set forth.

136,619.—*Exhaust-Nozzle for Locomotives.*—GEORGE W. RICHARDSON, Troy, N. Y.

Arranges small tips inside of the common exhaust-nozzles to prevent cinders from falling back into nozzles.

Claim.—The tip or tips of a blower-pipe within the exhaust pipe or pipes of a locomotive-engine, substantially as and for the purpose hereinbefore set forth.

136,620.—*Machine for Rolling Carriage-Axles.*—JULIUS C. RICHARDSON, New Haven, Conn.

The walls of the grooves, at the parting of the rolls, are chamfered, in order that the fins, which are inevitable, may, by being greatly thickened, be the more readily rolled back into the bar at the next pass. The ends of the rolls are plain, but possess, nevertheless, the same varied eccentricities as the grooves.

Claim.—1. The upper roll made with two diameters, one smaller than the other, such roll presenting a concentric-grooved rolling surface, *d'*, and a plain concentric surface, *d*, and also having shoulders *g g*, in combination with the lower roller D', which has an eccentric-grooved rolling-surface and a shoulder, g^2, the groove *a a'* commencing at the highest point of the shoulder and terminating at the base of the same, substantially in the manner and for the purpose described.

2. Elongated or beveled grooves *r' r'* formed in the rolls, for the purpose of forming fins *e' e'* on the bars and rolling down these fins, substantially as described.

136,621.—*Machine for Tapping Pipe Fittings.*—ETHAN ROGERS, Cleveland, Ohio.

An intermittingly-revolving wheel, provided with clamping-jaws, presents the fittings to the action of a double system of taps, geared together. The taps are fed forward by screws attached to the ends of the mandrel, working in stationary nuts. The motion of the taps is automatically reversed by means of two pulleys and clutches, revolving in opposite directions, alternately connected by a centrally-pivoted lever, oscillated by adjustable collars on a screw, fed to and fro by a revolving nut.

Claim.—1. The upper system of taps D E F and the lower system G H I, as arranged to co-operate in relation to each other and in combination with the clamp-wheel I'', substantially in the manner and for the purpose set forth.

2. The screw F' and lever D', in combination with the clutch U and pulley V and clutch X and pulley W, substantially in the manner as and for the purpose specified.

3. The spring Q', arm M', and roller O', as arranged in combination with the lever D', in the manner as and for the purpose set forth.

4. The adjusting-collars L', as arranged in combination with the screw F' and lever D', for the purpose specified.

5. The slide R', as arranged in combination with the lever D', wheel T', and clamp-wheel I'', substantially in the manner as and for the purpose set forth.

6. The shaft B'', clutch A'', collar *m*, spring Y, slide R', lug *n*, and pinion V', as arranged to operate in combination with the wheel T' and clamp-wheel I'', in the manner as and for the purpose set forth.

7. The spring D'', shoulder *a*, pawl H'', and arm E'', as arranged to operate in combination with the clutch A'' and shaft B'', substantially in the manner as and for the purpose set forth.

8. The clamping-wheel I'', consisting of the series of rigid jaws J'' and movable jaws K'', and operated in relation thereto by means of the links L'', cams *c*, handles M'', and trip O'', substantially in the manner as described, and for the purpose specified.

9. The bolt *f*, sleeve *g*, and jam-nuts *h*, as arranged in combination with the movable jaw K'' and box *d*, in the manner as and for the purpose set forth.

136,622.—*Rotary Balanced Cut-Off Valve.*—PATER SHELLENBACK and FERDINAND EHLMAYER, Hamilton, Ohio.

A hollow rotary balanced cut-off valve having suitable induction and eduction ports is arranged longitudinally with the cylinder, and is operated by bevel-wheels, one keyed on the end of the valve-stem and the other on the crank-shaft of the engine. By a hand-wheel on the valve-stem the engine is reversed.

Claim.—The hollow rotary balanced cut-off valve *d* having induct-ports *y y* and exhaust ports *z z*, in combination with valve-shaft 10, bevel-wheels *f f*, and hand-wheel 8, all constructed and arranged for operation, substantially as and for the purposes set forth.

136,623.—*Preparing Camphor.*—WILLIAM F. SIMES, Philadelphia, Pa.

For preserving furs, medicinal uses, &c.

Claim.—As a new article of manufacture, cakes, blocks, or tablets of distilled or refined camphor, formed by pressure, for medicinal and other uses as set forth.

136,624.—*Meat-Chopping Machine.*—GEORGE SPIEHLMAN, Strasburg, Pa.

A series of coiled springs are hinged to the top of the shafts which carry the cutting-blades, and are adjusted as to tension by a cross-bar, lever, and curved rack, the cutting-blades and shafts being operated by curved lifters arranged spirally on a power-shaft, which also carries an eccentric feeding device. On the revolving chopping-block and cylinder is arranged an inclined plane, which operates a bell mechanism for timing the revolutions.

Claim.—1. The coiled springs P, made adjustable by the cross-bar Q, lever R, and curved rack S, and catch A, in combination with the cross-heads *p*, hinged to the top of the vertical shafts of the cutting-blades or choppers U, arranged and operating substantially in the manner and for the purpose specified.

2. The attachment of the bell *r*, hammer *z*, and appliances, when actuated by means of an inclined plane on the upper and outer portion of the rim or cylinder C on the revolving block B, arranged substantially in the manner and for the purpose mentioned.

136,625.—*Car-Chock for Railroad Rails.*—WILLIAM O. STEPHENSON, Marion county, Ind., assignor to himself, HENRY C. LORD, and DILLARD RICKETS.

The device is clamped upon a railroad rail to prevent cars from being blown or maliciously run off the siding.

Claim.—A chock for rails composed of hinged jaws A A' *a* B and locking-pin C *c c'*, connected and operating substantially in the manner and for the purpose specified.

136,626.—*Tension-Indicator for Sewing-Machines.*—DAVID B. TIFFANY, Xenia, Ohio.

The normal position of the spring is at that end of the graduated slot furthest from the ratchet teeth. The knotted end of the thread is slipped into one of the notches in the end of the spring, and when moving the frame away from the spool the spring will move a certain distance before the spool will turn on its support, and the mark on the frame opposite the spring, when the spool turns, designates its tension. The tension required may, by the usual nuts, &c., and this device, be adjusted to any required degree.

Claim.—The combination of the frame A, constructed as described, with slot *b* and teeth *i i*, the spring C and pawl D, all substantially as and for the purpose herein set forth.

136,627.—*Car-Coupler.*—WAYLAND D. TISDALE, Cortland, N. Y., assignor to himself and CHESTER BABCOCK, same place.

A bail for lifting and guiding the link turning in ears depending from the buffers. This bail is capable of being drawn toward either side of the car, and is held in the center by springs coiled around it and bearing against the ears.

Claim.—The combination of the rod *b* when bent as described, and having the loop or projection *a* thereon, with the coiled springs *c c* and eyes *d d*, substantially as and for the purposes set forth.

136,628.—*Harvester.*—JOHN S. TRUXELL, Greensburg, Pa.

The finger bar is connected to the main frame by jointed bars, which admit of a ready removal of the cutting apparatus and its transfer from front to rear for the purpose of admitting the machine to be used either as a front or rear cut.

Claim.—The jointed bars A combined with a harvester-frame and cutter-bar in the manner described, so as to allow the cutter-bar to be placed either at the front or rear end of the frame.

136,629.—*Door for Refrigerators.*—PETER A. VOOT, Buffalo, N. Y.

A strip of India rubber is arranged between the main portion of the door and the metallic lining of the same in such a manner as to form a packing for the door when the same is closed.

Claim.—In combination with a refrigerator-door, the rubber packing-tongue C, arranged between the door and its lining in the manner described, so that the closing of the door will cause the tongue to turn at the hinge-side in a reverse direction to that taken at the other three sides, thus relieving the hinges from unnecessary strain.

136,630.—*Portable Fence.*—DAVID S. WATTS, Canton, Miss.

Uprights and braces meet and are secured by a cap. They are let into the ground-sill, as shown, forming a portable fence-post.

Claim.—The portable fence-post herein described, wherein the uprights B and diagonal braces D abut against and are secured to and covered by the cap-sill C, the whole being founded on the ground-sill A, provided with the mortises *a* and recesses *d d*, constructed, arranged, and operating in the manner substantially as set forth.

136,631.—*Steam-Power-Brake Coupling.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa.

Each half of the coupling has a nozzle and socket at its inner end to fit on and in a corresponding socket and nozzle of the next coupling, so that the half coupling on either end of either car will couple onto any other half-coupling on the train. Spring-hooks and hand-levers are used on the coupling to hold the two halves together, and are duplicated in each half and arranged opposite each other in each half of the coupling.

Claim.—1. A pipe-coupling for air, steam, or other fluid brakes, in which each half is supplied with, first, a male and female part; second, a spring-hook, *m*, on one side of the outer face to engage a catch on the corresponding side of the other half; and third, a catch, *n*, opposite the spring-hook, on which to engage the spring-hook of the other half, substantially as set forth.

2. In combination with the male and female parts of a coupling, the metallic spring *t* and packing-ring *s* arranged with reference to securing an air-tight joint between the contiguous walls of the two, substantially as set forth.

136,632.—*Cooler for Wine.*—JOSEPH REED WHIPPLE, Boston, Mass.

The bottle is supported and held in a tub of ice and rapidly rotated.

Claim.—1. The combination and arrangement of the tub A A, the slab F, the shaft Q, and the devices for its rotation and securing the bottle to it, with the holder-shaft U, all substantially as described.

2. The combination and arrangement, with the above-named

devices, of the holder-shaft collar N with its set-screw P, the spikes T T or their equivalent, whether with or without the cone S², all substantially as described.

2. The combination and arrangement of the devices mentioned in the first claim with the standard-shaft D and the standard-projection C, all substantially as described.

136,633.—*Combined Carpet-Rag Looper, Button-Hole Cutter, and Press-Board.*—SETH M. WHITTEN, Algansee, Mich.

The looping-post may be turned down out of the way when not in use. The knife is adjustable for different sized button-holes, and it also may be turned down or removed when the board alone is to be used.

Claim.—The combination of the press board, button hole cutter, and carpet-rag looper, having all the parts constructed as described.

136,634.—*Nickel-Plating.*—ISAAC ADAMS, JR., Boston, Mass.

Claim.—The electro-deposition of nickel, or the electro-plating with nickel, by means of a solution of either of the soluble salts of nickel, such solution being prepared and being used, substantially, free from the presence of potash, soda, lime, alumina, and nitric acid, or either of them, and free from acid and alkaline reaction, or from either.

136,635.—*Rotating Hook for Sewing-Machines.*—ANDREW AIRD and JOHN AIRD, Troy, N. Y.

The reciprocating hook carried by the rotating hook, projects through a slit in its rim, and is moved in the arc of a circle by means of the link having a roller projecting into a cam-groove in a plate behind the hook. The reciprocating hook holds the loop of needle-thread from the time it passes over the bobbin until the new loop is taken, and this hook enables the "brush check" to be dispensed with.

Claim.—1. The reciprocating hook B attached to and working in connection with the rotating hook A, for straightening and holding the loop, substantially as described.

2. The cam C, in connection with pin *d*, link *e*, and friction-roller *f*, for the purpose of imparting the requisite motion to reciprocating hook B, substantially as set forth.

3. The combination of the hook B, rotating hook A, cam C, pin *d*, link *e*, and friction-roller *f*, substantially as specified.

136,636.—*Water-Proof Purse Fabric.*—SULLIVAN H. ATKINS, Melrose, Mass.

Claim.—1. As a new article of manufacture, felt formed with a meshed fabric backing and teaseled, as described, or so made and covered on the back with India rubber or a water-proof coating, all being essentially as set forth.

2. Felt teaseled on one side and backed on the other by rubber or a water-proof backing, as explained.

136,637.—*Bag-Tie.*—JOHN BANNISH, Hempstead, and DANIEL N. RHODES, Baldwinsville, N. Y.

One end of the cord is passed through a hole in each of two parallel plates and wedged securely between said plates by a lever, which is pressed down over the cord and secured by a hook.

Claim.—A bag-tie, consisting of the plates A B, lever C, hook E, and a string, combined substantially as specified.

136,638.—*Window-Sash Ventilator.*—JOHN C. BATES, Cold Spring, N. Y.

The cross-bar of the window is provided with holes, and attached to this cross bar is a slide moving upon headed pins. Upon this slide is also an outer slide, the inner slide having holes extending up through its upper edge in the form of transverse slots, and the outer slide provided with holes corresponding to those in the sash-bar, so that the slides may be so adjusted to admit the air directly or indirectly to the room, or the inner slide may be adjusted to cover the holes in the sash-bar and exclude the air.

Claim.—The application to a cross-bar of the window-sash A, having holes *a'*, of the slides E F, relatively slotted as shown in Fig. 3 of drawing and described, to admit the air directly or indirectly, in the manner set forth.

136,639.—*Knit Fabrics and Method of Knitting them.*—DANA BECKFORD, New York, N. Y.

Work is set up on enough needles to extend from the center of the circular part to the edge of the vertical part. The segments are produced by narrowing from the center to the circumference by raising the needles without dropping the stitches. They are then all depressed and another segment knit, and so on. By raveling the unwidened part a circular mat, fringed all around, will be produced.

Claim.—1. The process herein described of knitting by machinery a flat circular mat.

2. The process herein described of knitting by machinery a flat, circular, or square piece or mat continuously with and integral with a portion to form with such piece the sides of a hat, sack, or bag.

3. The described machine-knitted mat or tidy, whether fringed or not, made as and by the process herein set forth.

4. The described machine-knitted hat, sack, or bag, made as and by the process herein set forth.

136,640.—*Device for Coupling Cars.*—LESTER L. BOND, Chicago, Ill.

Extensions to the fingers and thumb for manipulating the link in coupling.

Claim.—1. A device for grasping and holding coupling-links extending from the head or arm and manipulated by the fingers so as to enable the operator to stand at a safe distance from the cars, substantially as specified.

2. The combination of a thumb-extension, *a*, and one or more finger-extensions, *b* or *c*, with a glove or other device for connecting them together at the hand, substantially as described.

136,641.—*Clothes-Line Pole.*—CHARLES B. BROWN, New Rochelle, N. Y.

To an upright or pole is attached, near its top by side clamps or connections, an arm operated by a coiled spring. The upper ends of both the pole and clamp are provided with half-round notches on their opposite faces to receive the cord, and by the aid of the spring is firmly held for its support.

Claim.—An improved clothes-line pole, formed by the combination of the hinged arm B and coiled spring C with the upper part of the pole A, said parts being provided with half-round notches a^1 b^1 and bevels a^2 b^2, substantially as herein shown and described, and for the purpose set forth.

136,642.—*Bee-Hive.*—ALMUS M. BRUBAKER and BENJAMIN R. WITMER, Millersville, Pa.

An attached bee-box has two or more ports registering with like ports in the side of the hive, a transparent tube conducting from the hive at the upper port far into said box, the box having a glass cover.

Claim.—A detachable swarming-cage, W, when the same is provided with a glass tube, Q, and sliding glass top *t*, so as to be applied to a bee box or hive, adapted to communicate at two or more points with said cage W and tube Q, in the manner and for the purpose specified.

136,643.—*Grain Measure and Register.*—ROYAL B. CLARK, Lyle, Minn.

A revolving measure receives through a suitable opening its supply of grain from a hopper fitting closely to its circumference. When filled, it is revolved by a hand-lever and engaging-dog until the opening is at its lowest position, and the grain discharged, while an opposite similar chamber is being filled. A suitable register and index geared to the revolving measure indicates the quantity discharged through the apparatus.

Claim.—The combination, with a partitioned cylinder, D d^1 d^2, pivoted on shaft E and within a cylinder, A, of the pinion I gear-wheel J, shaft K, lever L, and spring-pawl M, arranged as and for the purpose described.

136,644.—*Loom-Temple.*—FRANK J. DUTCHER, Hopedale, Mass., assignor to DUTCHER TEMPLE COMPANY, same place.

Claim.—A toothed temple-roller provided with a wooden body and a horn or anti-friction cap or disk applied to its end, substantially as specified.

136,645.—*Toy-Puzzle.*—BENJAMIN F. ELLIS, Newton, Pa.

A wire ring jointed upon two sides is to be worked through swinging half hoops, one or more, each having a cross-bar top-piece, and back again.

Claim.—The combination of two or more bows and cross-bars and a ring, E, the bows and cross-bars having rings in the ends and connected together, as described, and the large ring E being made in two parts jointed together, substantially as specified.

136,646.—*Indicator and Low-Water Alarm for Boilers.*—MARK ELLWOOD, Girard, Ohio.

Upon the falling of the water the float, by means of a rack and segment, opens a valve and permits the steam through a side pipe to blow the whistle; at the same time through a rod connecting with said valve an index-hand is moved over a dial, denoting the height of the water.

Claim.—1. A water-indicator and low-water alarm, consisting of the float D, sector-lever G I, rack J with arms P and X, tube M, rod O, dial R, steam-pipe S, and whistle T, the apparatus being partly within and partly without the boiler, all constructed and arranged substantially as described.

2. The combination of the sector I, rack J, rod O, and the tube S, as and for the purposes described.

136,647.—*Colter.*—RALPH EMERSON, Rockford, Ill.

A revolving colter is swiveled to a reversible standard, thus giving more or less land to the furrow.

Claim.—1. The standard D, constructed as described, in combination with the yoke C, wheel B, and key *e*, substantially as and for the purpose herein specified.

2. The yoke *C*, constructed as described, and section *b*, forming the back, in combination with a standard, D, and wheel B, substantially as and for the purpose described.

136,648.—*Clasp-Button.*—ANDREW FLATLEY, Brooklyn, N. Y.

The clasp is made in two parts. One of the parts has a spring-catch which engages in the other part. Both parts are attachable to clothing and other articles by spiral fastenings.

Claim.—A clasp-button, A B C, provided with spiral-wire fasteners D upon the inner side of its two parts A B, to adapt it to be conveniently attached and detached, substantially as herein shown and described.

136,649.—*Shoe-Fastening.*—CHARLES GOLDTHWAIT, South Weymouth, Mass.

A tape or band is secured to the inside of one of the quarters, passed through a loop attached to the lining of the shoe at the heel, brought around the heel of the foot and across the instep, and is secured to the other quarter by a button or otherwise.

Claim.—The shoe as provided with the loop *a* at the heel, and with the band A fixed to one of the quarters and extended through the said loop *a*, as set forth, and having means of fastening it to the other quarter, whether such means be a button, B, and button-hole *c*, arranged with the band and quarter as explained, or any other suitable device or devices, all being essentially as and for the purpose or objects as specified.

136,650.—*Wrought-Iron Blind-Hinge.*—WILLIAM R. GOODRICH, Utica, N. Y.

The ordinary rising-and-falling lock-hinge for blinds is usually constructed of cast metal. The present invention makes the leaves and locking parts entirely of wrought metal, and rivets to one leaf a conical pintle. This hinge is, of course, much less liable to be broken in a high wind than the cast-iron one.

Claim.—A wrought-metal hinge, formed of parts C D, the former having the notch c^1 and the flange c^2, with hole c^3 and stop c^4 in rear, while the latter has the catch d^1 and the flange d^2, with conically-enlarged pintle d^3 riveted thereto, and a catch, d^4, as and for the purpose described.

136,651.—*Attachment for Sewing-Machines.*—JOHN M. GRIEST, Plainfield, Ind.

Designed for turning hems of different widths, and turning both edges of a strip of cloth to be used for trimming, sewing one edge on the cloth and turning and creasing the other at the same time, so that it may be easily sewn by hand or otherwise. The gage mentioned in the last clause bears on the fabric being trimmed, and forms a mark to designate the proper position for a new line of trimming.

Claim.—1. The scroll B, plates A, C, D, and E, and the adjustable scroll G, constructed and arranged and attached to the presser-foot, substantially as specified.

2. The combination, with the subject-matter of the foregoing claim, of the adjustable and detachable plates C', D', and E', substantially as specified.

3. The combination, with a hemming and trimming device, substantially as herein described, of a presser, Q R T, attached to the presser-foot, and relatively arranged therewith and with the said hemming and trimming device substantially as specified.

4. The combination, with the trimming and hemming device herein described, of the gage U V, substantially as specified.

136,652.—*Hand-Car.*—DANIEL M. HUNT, Southampton Mills, Pa.

A hand-lever is jointed to the end of the crank-axle, so the same may be thrown either in or out of action with the car-axle.

Claim.—The crank-shaft F of a hand-car, connected by a joint, *g*, with a hand-lever, A, so that it may be laterally moved by a lever, *i*, in the manner described.

136,653.—*Attachment to Carpenter's Square.*—JOHN HYMAN, Belvidere, N. J., assignor to himself and SAMUEL SHERRERD, same place.

A slotted scale or rule is attached to an ordinary carpenter's metallic square by an intermediate slotted link, which is secured in any desired position by a clamp or thumb-screw passing through a hole in the angle of the square, another thumb-screw serving to hold the slotted pieces together.

Claim.—The combination of the square, the slotted rule, and the slotted adjusting-arm, substantially as set forth.

136,654.—*Die for Forming Tubes.*—JOSEPH KINTZ, Meriden, assignor to himself and P. J. CLARK, West Meriden, Conn.

A die-block with two dies, which, in conjunction with a follower and a concave die, and at three successive operations, bends the skelp to the form of a tube with overlapping edges, which edges are afterward locked together by being forced into a groove in the mandrel.

Claim.—1. The dies A, B, and C, with the removable cleats F F and H, substantially as and for the purposes described.

2. The guides G G and I I, in combination with the dies A, B, and C, as and for the purposes described.

3. The mandrel D, with the groove J, in combination with the dies A and C, as and for the purposes described.

136,655.—*Car-Coupling.*—AARON K. KLINE, Readington, N. J.

The cars can be uncoupled without being separated, and the connecting-rods are adjusted automatically when separated.

Claim.—A draw-head having rear piece K backwardly-inclined on its top surface to receive and hold the coupling-rod when not in use.

136,656.—*Head-Block for Saw-Mills.*—DENNIS LANE, Montpelier, Vt., assignor to himself, PERLY P. PITKIN, and JAMES W. BROCK, same place.

The dog, after being driven into the log, is secured in that position by a cam.

Claim.—In combination with the log-rests P of a saw-mill carriage, a dog, H, having combined therewith an eccentric cam-lever, N, for locking the dog upon the rest P, constructed and operated substantially as shown and described.

136,657.—*Head-Block for Saw-Mills.*—DENNIS LANE, Montpelier, Vt., assignor to himself, PERLY P. PITKIN, and JAMES W. BROCK, same place.

A variety of holding-dogs are placed upon the setting-bar, so as to secure the timber to be operated upon under the many different shapes in which it is presented.

Claim.—1. In combination with the setting-up bar of a saw-mill carriage, the slide B, lever D, pawls E and F, ratchets A^2 and B^4, and dog *c*, substantially as and for the purpose specified.

2. The combination of the sliding dog P^4 on the post O with the upright N and setting-up bar A, substantially in the manner shown and described.

3. The combination and arrangement, with the upright support H, of the slide I^2, ratchet *z*, and locking devices, substantially in the manner shown and described.

136,658.—*Composition for Molding Plastic Articles.*—CHARLES LEGG, Malcom, assignor of one-half his right to HARRISON W. WIGTON, De Soto, Iowa.

Alum, sulphate of copper, and plaster of Paris.

Claim.—A composition for stove-pipe safes and other non-conductors of heat, prepared of the materials and proportions named, and in the manner set forth.

136,659.—*Step-Ladder.*—MELVIN N. LOVELL, Erie, Pa., assignor of one-half his right to FRANK F. ADAMS, same place.

The leg of the ladder when extended moves upward into a recess, and becomes there locked. The device is made in a single bracket-casting.

Claim.—1. A device for hinging the props or legs of step-ladders, whereby the said props are automatically locked when extended by changing the position of the center of motion of the said props, substantially as shown and described.

2. A device for hinging the props of step-ladders and automatically locking the same, substantially as herein shown, the same forming a part of the attaching-bracket, as set forth.

136,660.—*Magazine Fire-Arm.*—GEORGE D. LUCE, New Orleans, La.

Claim.—1. The spring-stud *m*, pivoted to the side of the carrier G, and having a point, *n*, projecting through a slot in the same, as shown and described, whereby it is adapted to swing with the carrier and exert a yielding pressure on the incoming cartridge, tending to arrest it against the action of the spring in the magazine, as specified.

2. The carrier G, arranged to swing on an arm, *g*, between the barrel and the magazine, and provided with a spring, *h*, for throwing it back, substantially as specified.

3. The combination of the guard-lever S, link V, and notched slide P with the pivoted carrier G, substantially as specified, whereby the cartridge may be withdrawn and the carrier swung down, as described.

4. The arrangement of a sliding retractor, P, provided with notches *e f*, with a pivoted carrier, G, whereby the flange of the cartridge is caused to drop into the notch *e* of the retractor as the cartridge is carried to the barrel by the carrier, and the flange of the shell is caused to escape from the said notch as the shell is carried down to the discharging tube, substantially as specified.

5. The retractor provided with the notch *q*, and the carrier with the stud *r*, in such manner as to retain the retractor during a portion of the return movement of the carrier, substantially as specified.

6. The combination of the breech-plate L, lever R provided with notch *s*, stud-pin Z and guard-lever for actuating said plate, substantially as specified.

7. The combination of retractor P, slotted link V, and guard-lever S, pivoted and arranged as shown and described, whereby the extremity of the inner or shorter arm of the lever may be brought nearer the retractor before the movement of the latter is commenced, and the rear or notched end of the retractor be thrown down to swing the carrier, as specified.

136,661.—*Swivel Hoisting Apparatus for Mines.*—THOMAS M. MARTIN, San Francisco, Cal., assignor to himself and ANDREW S. HALLIDIE, same place.

A revolving disk or drum has a pulley attached for the hoisting-rope to pass over.

Claim.—The frame A, with its shaft or drum B, in combination with the turn-table D, with its pulley *f*, substantially as and for the purpose above described.

136,662.—*Sample-Fastener.*—CHARLES MASON, New York, N. Y.

The wire is so bent as to form a spring-supporting frame with holding-pins projecting from each side, one to secure the device to the card, and the other to retain the goods to be displayed.

Claim.—The wire sample-fastener, consisting of spring *a*, base *b*, sides *b'*, and extensions *f*, placed on card-paper B, and applicable as and for the purpose described.

136,663.—*Arrangement of Couch.*—ELIZA LAVINIA MOORE, San Francisco, Cal.

To the middle portion of the chair is hinged the back, having hinged legs or supports, and held in any desired position by a circular rack-bar. The leg-rest is hinged to an upright standard at the side farthest from the chair, and the other side of the rest is connected to the chair-body by hooks. Over the middle portion of the chair is a frame composed of two uprights and a cross-bar, and rendered adjustable in inclination by two inclined supports, which are connected to the uprights by pins passing through holes in both the uprights and inclined supports. A suitable sling is attached to the cross-bar of the frame.

Claim.—1. The table or middle portion B of the couch, with its hinged extension C having the hinged legs *d d*, and arranged to be supported at any desired angle by the circular rack E and staple *f*, in combination with the end board G, with its angular braces *j j* and hinged leaf *k*, substantially as and for the purpose above described.

2. The frame, consisting of the upright timbers *n* and cross-timber *o* with its sling *t*, in combination with the couch B C *k*, substantially as and for the purpose above described.

3. The adjustable frame, consisting of the upright timbers *n* and cross-timber *o* secured in sockets *m* by pins *z*, in combination with the braces *p* provided with pin-holes so as to permit of the frame being braced at the desired angle for the purpose described, all combined with the couch B C *k*, as and for the purpose set forth.

136,664.—*Operating the Stops of Organs.*—HARTWELL R. MOORE, Erie, Pa.

The stop-handle being drawn, a toggle-lever attached is arrested by a stop-pin placed just beyond the axial line of the arms of said toggle; it returns at a touch, owing to the spring of the swell-valve against which it operates.

Claim.—The combination of the connecting-link B' with the

actuating-levers B and b, and the stop-pin H or its equivalent, for the purposes shown and described.

136,665.—*Spring for Bed-Bottoms.*—HARRISON OSBORN, Richmond, Ind., and ANDREW W. KENDRICK, Brooklyn, N. Y.

The top and bottom coils of the springs are made with a shoulder or indentation, into which the end of the coil is wound. The clasp is oval, forming a concave tube, into which the convex portion of the coil fits, so that the clasp operates as a flexible hinge.

Claim.—1. A metallic spiral spring, constructed with an indentation in one or both of its outer coils to receive the wrapped ends thereof, as described.

2. A connecting-clasp, D, bent so as to form an oval tube at each side thereof, for the purposes and uses, and in the manner described.

3. A mattress constructed of the springs A and clasps D, in the manner described, with a head or bolster elevation formed by graduating the length of the springs.

4. The springs A, constructed as described, in combination with the clasp D, when made and used in the manner and for the purposes set forth.

136,666.—*Combined Letter Sheet and Envelope.*—THOMAS ORTON, Chicago, Ill.

The end of a rectangular sheet is provided with side-sealing flaps and a printed head, which, when folded upon the body portion, presents an address form and a pendent sheet for the letter, which latter is folded within the lap of the former and sealed.

Claim.—A letter sheet and envelope combined, consisting of a rectangular sheet provided with side-sealing flaps at its extreme end, whereby it is adapted to be folded and sealed, as herein set forth.

136,667.—*Furnaces for Heating Iron Bars, &c.*—JOSEPH PARDOE, Worcester, Mass.

The fires are fed alternately, so that the gas from the fresh coal of one fire is consumed on the hearth by the heat of the incandescent coal on the opposite grate.

Claim.—The combination of the furnaces B B with the hearth A, arranged substantially as shown and described, for the purposes set forth.

136,668.—*Paper-Feeding Machine.*—MIGUEL PIEDRA, Williamsburg, N. Y.

As the cylinder is moved toward the right the plunger therein travels in an opposite direction, through means of suitable lever, until the orifice in the pipe attached to the cylinder is over the paper table, when the latter and a slide which opens a valve in the pipe are simultaneously operated through cam-shaft, slide, bearing-foot, and shaft. The atmosphere then presses the sheet against pipe, during movement of cylinder toward the left, until a pivoted lever closes the valve; pins which have held the plunger in its outward position during this movement being raised, and plunger forced back into cylinder by springs.

Claim.—1. The cylinder G, provided with pipe *g*, plunger H, and valve A, combined with the table J, all arranged to operate substantially as and for the purpose described.

2. The combination, with plunger H and notched rods *t*, of the spring-pins *s s*, arranged as and for the purpose set forth.

3. The spring *m*, arranged in combination with the yoke F, and spring-pins *s s*, and slides *t*, for forcing the plunger into the cylinder as soon as the latter has reached its forward position, as set forth.

4. The crank-shaft L, provided with projections a^1 i^3, and d^3, in combination with the table J and slide *m*, to raise the two latter simultaneously, as set forth.

5. The oscillating frame E and uprights *f*, arranged in conjunction with the yoke F, cylinder G, rock-shaft *e*, and connecting-rod D, to operate substantially as described.

6. The combination, with slide g^2 arranged in upright *f* and provided with a bearing-foot f^3, of the shaft I, and crank d^3, and shaft L, in the manner described.

7. The combination of the lever N, the plunger H, the lever P, and the valve A, to move the latter at the end of the forward motion of the cylinder G, as set forth.

136,669.—*Wheel for Vehicles.*—HIRAM PITCHER, Fond du Lac, Wis.

Claim.—The end-squared axle A provided with nut K and collar I, the sleeve C fast thereto and having the wearing-surfaces E F with intermediate oil-chamber Q, and the hub B having collar J and nut L, all constructed, arranged, and put together as and for the purpose described.

136,670.—*Fruit-Drier.*—JOHN L. POST, Ashley, Ill.

Several distinct drying-chambers are arranged around a central compartment, which is heated by steam-pipes, and in which a vertical fan revolves. Each chamber has shelves and an outer and inner door, the latter sliding in vertical grooves.

Claim.—1. A fan, or its equivalent, arranged in the central compartment so as to drive the air through the chambers, substantially as described.

2. The combination of the chambers a, compartments *b d*, pipes *c*, and fan *f*, when arranged as specified.

3. The chambers a, provided with inner doors communicating with the compartment *b*, so that when the doors are opened the heated air will pass up through the whole mass from the bottom, substantially as shown and described.

136,671.—*Treating Pine Leaves for Use in the Arts.*—CHARLES E. RAMUS, Lawrence, Kans.

Treating pine leaves and other similar articles by the use of chemical ingredients.

Claim.—1. The process herein described, or its equivalent, for treating pine leaves and other similar articles to render them fit for use in the arts.

2. Pine leaves and other similar articles treated by the chemical ingredients herein described, or their equivalent, for the purpose described.

3. The new material herein described.

136,672.—*Die for Forging Hoe-Plates.*—LOVELL T. RICHARDSON, Auburn, N. Y.

The back end of the bottom die is a flat surface, and the rest of the face is rounded off. The whole surface of the upper die is flat, but the edge is beveled on each side, the bevel increasing from the back to the front so as to taper the face of the die.

Claim.—The dies E and F, constructed and arranged, substantially as shown and described, for plating planters' hoes, as specified.

136,673.—*Grate for Furnaces.*—HENRY RYDER, Somerville, Mass.

A combination of a series of stationary grate-bars, and a series of movable grate-bars alternating with the stationary bars, with inclined guard at each end of the grates and mechanism for operating the said movable bars, all arranged to form a furnace for steam-generator.

Claim.—The combination of the series of stationary grate-bars *a*, the series of movable grate-bars *b*, the fire-place A, the inclined guards B, and the mechanism for operating the movable bars, all being constructed and arranged substantially in manner as explained and represented.

136,674.—*Wheel-Plow.*—LOUIS SACHSE, Monmouth, Oregon.

The spur-wheel revolves freely on the end of the axle, but when held fast by a lever, while the machine is in motion, causes the short arm to revolve around the said spur-wheel, thereby causing the axle to revolve. An arm on the axle is connected to an arm on rock-shaft, which, by means of connections and levers, raises the plows by the forward movement of the machine.

Claim.—The wheels O R, having axles N Q, connected by crank arm P, and provided with spur-wheels S T and lever U, in combination with the plow-frame A, as and for the purpose described.

136,675.—*Converting Rotary Motion of a Shaft into Reciprocating Motion.*—JAMES B. SINER, Lawrence, Mass., assignor to PARKER C. KIRK and MICHAEL PENDERGRAST, same place.

The shaft in its revolution revolves the screw and the gear-wheel, which, by means of the pin and the slotted lever, produces reciprocating motion of the shaft.

Claim.—The combination of the screw D, the gear C, the crank-pin E, the slotted lever G, the stud I, and groove K, all applied to the shaft A and its supporting-standard B, or the equivalent thereof, substantially in the manner and to operate as and for the purpose as specified.

136,676.—*Ruffling Attachment for Sewing-Machines.*—EDWARD STEWART, Fort Madison, Iowa.

By this device the gathers may be laid regularly, or when desired the strip may be left ungathered for a distance, according to the levers and projections on the ratchet-wheel. The feed-regulator is pivoted to the plate, is rocked in its bearings by the projections on the levers, and it carries a hinged pawl which may or may not project below the plate in the path of the actuating-lever. When the pawl is down a gather is formed, but when up the cloth is not gathered.

Claim.—1. The combination and arrangement of the levers *n*, provided with lateral projections *x*, with the feed-regulator *t*, substantially as shown and described.

2. The combination of the pawl *v* with the feed-regulator *t* and actuating-lever H, for operation as set forth.

136,677.—*Traction-Wheel.*—JOEL V. STRAIT, Litchfield, Ohio.

Between the outer peripheries of two wheels of the same diameter are arranged wrist-pins, which have projecting blades, which serve to exert traction when the wheels are revolved.

Claim.—1. The wrist-pins E E^1, rigidly connected to and in the wheels A and B, substantially as shown and set forth.

2. The connecting bars or blades F F, in combination with the wrist-pins E E^1 on wheels A and B, substantially as shown and set forth.

3. The construction of the wheels A B, by which the feet F F may be lifted up and set down on a vertical line, substantially in the manner and for the purpose set forth.

136,678.—*Medical Compound and Medicated Food.*—JEAN M. O. TAMIN, New York, N. Y.

Treats powdered peas, one part, with water at the ordinary temperature, two parts; decants or filters the mixture to a viscid consistency and adds gastric juice or finely-cut pieces of calf's stomach; dries by exposing to the air. Allows phosphoric vapors to slowly enter vegetable extracts until they are fully saturated with it.

Claim.—1. A medical compound formed of phosphorous united with gastric juice or comminuted portions of calf-stomach, dried and applicable in the manner and for the purpose described.

2. A liquid compound formed of phosphorous applied in a vaporous form to solutions of vegetable extracts, as and for the purpose described.

136,679.—*Wood Fence.*—DANIEL G. TEMPLE, Farmersville, La.

An upper and a lower horizontal rail are attached to the posts. Perpendicular pickets or boards are then fixed in place, wires secured to the far sides of the posts are extended outside of the pickets or boards in front and along the rails in the rear; in the center of each board and rail, or in each space between, enters a bolt, through the head of which the wire passes; and the wire is held by the clinched ends of the bolts in the rear, turned alternately up and down to make a zigzag line to keep the wire taut.

Claim.—The combination of the two wires D E and the clinched bolts or spikes F with the posts A, horizontal bars B, and pickets, boards, or planks C, in substantially the manner herein shown and described.

136,680.—*Medical Compound.*—HERMAN TREMEL, Escanaba, Mich.

Indian rhubarb, gentian, galangal root, wormwood, saffron.

Claim.—A compound formed of the proportions specified, of the five ingredients named, macerated in alcohol, and applied as set forth.

136,681.—*Sash-Holder.*—HENRY THOMAS, San Francisco, Cal.

Two or more loosely-fitting cams are arranged on a shaft running transverse the window-frames, and operated by a crank-handle lever.

Claim.—The combined sash stop and lock, consisting of the shaft *b*, with its loosely-fitting single cam or cams *d* and double cam *d'*, and the crank *f*, with or without a weighted handle, substantially as and for the purpose described.

136,682.—*Hot-Air Register.*—EDWARD A. TUTTLE, Brooklyn, N. Y.

Claim.—1. A top-valve hot-air extension pipe, A, passing through and a considerable distance above the floor, as and for the purpose described.

2. The screen-guard E, arranged with respect to a hot-air pipe, A, as and for the purpose set forth.

136,683.—*Fastening for Railroad-Rail Joints.*—SAMUEL VANSTONE, North Providence, assignor to HENRY LIPPITT, CHARLES H. MERRIMAN, and JAMES T. RHODES, trustees, Providence, R. I.

A device by which the joints of rails can be firmly fastened and easily tightened when worn by use, adapted to the fish-plates ordinarily used for this purpose, and avoids use of nuts on the bolts which hold the same.

Claim.—The fastening of joints of rails or other similar joints by means of slotted bolts with wedges extending through two or more bolts, the outer edges of which wedges shall form, when driven up, parallel, or nearly parallel, lines, producing a uniform bearing on the fish-plate, or either of the equivalent devices above referred to, the whole fastened substantially as described.

136,684.—*Fire-Proof Building-Block.*—WILLIAM T. VAN ZANDT and LUCIEN A. TABTIERE, New York, N. Y.

Claim.—The combination of asbestus and plaster of Paris with sawdust, coke-dust, cinders, sand, or other suitable material, to form fire-proof bricks or building-blocks.

136,685.—*Waist-Belt.*—JOHN H. VOGT and GEORGE DIETZEL, New York, N. Y.

A lady's waist-belt woven of fancy cord and gimp.

Claim.—As an improved article of manufacture, a waist-belt formed by a combination of fancy cord, B, for the warp and gimp C for the weft, with a binding-warp, E, and borders of fine warp, substantially as specified.

136,686.—*Wash-Boiler Attachment.*—NELSON C. WARNER, Hopewell Furnace, Mo.

An attachment for a wash-boiler, constructed concave in form with apertures, over which are cross-bars or supports for the clothing, with the apertures covered on its under side with valves to regulate the pressure of water, and an upright conductor in its center, with openings under a cap for the passage of the water and steam.

Claim.—The plate A, concave upon its lower side, convex upon its upper side, and having holes *a'* formed in it, the slightly-tapering central pipe B, having notches *b'* formed in its upper end and covered with a cap-plate, C, the guards D, and the valves E, constructed and operating in connection with each other, substantially as herein shown and described.

136,687.—*Hose Port-Hole for Partition-Walls.*—HENRY WOODMAN, Boston, Mass.

A boxed opening through a partition-wall, closed at ordinary times, to afford a means of inserting a hose-hoisle into a closed room in case of fire.

Claim.—The combination of the box A, the perforated partition B, the hinged doors C provided with locks D *d'*, hinged doors E, and springs F with each other, to adapt the device for use, substantially as herein shown and described, and for the purpose set forth.

136,688.—*Hand-Planter.*—RICHARD ARNY, Rock Falls, Ill., assignor to ALBERT M. PHELPS and FAYETTE DYER.

Forming the front of an oblong box is a vertical plunger, having pivoted to its back a segmental piece with a seed-cup on it, which deposits its contents into a cup on the outer face of a side of the box. The seed on the rise of the plunger is free to drop through the jaws at the bottom to the ground.

Claim.—The quadrantal-shaped slide C provided with opening *c* and extension A, and secured to the pivoted plate D, in combination with a seed-box, A, substantially as set forth.

136,689.—*Hoof-Spreader.*—THOMAS ARMSTRONG, Hamilton, Canada.

The spreader-arms and connecting-links are slotted and capable of fixed adjustment, so that the instrument can be used in various positions.

Claim.—The combination and arrangement of the levers *b' b'*, middle bar *c'*, tightening-screw *d*, spiral spring *e*, grooved washer *f*, handle nut *g*, and thumb-screws *h h*, substantially as described, and for the purposes set forth.

136,690.—*Pitman.*—HENRY AUFDEMBRINKE, Cincinnati, Ohio.

The pitman will, when any part of the mechanism it drives is suddenly checked by the displacement of a shuttle or other accidental obstruction, lengthen and shorten in such a way as to permit the machine to continue its motion without any corresponding movement of the mechanism the pitman drives.

Claim.—A pitman, composed of two sections, A A', secured together by a spring-clamp, and constructed, substantially as specified, so as to permit it either to shorten or lengthen in consequence of undue resistance to its endwise movement in one direction or the other.

136,691.—*Steam-Generator.*—GEORGE H. BABCOCK, Plainfield, N. J., and STEPHEN WILCOX, Brooklyn, N. Y.

Having a cylindrical shell between the outer shell of the boiler and a cluster of tubes within and a baffle-plate, whereby a circulation of water is kept up and the boiler prevented from foaming.

Claim.—1. The baffle-plate M, arranged relatively to the upright tubes D and boiler-shell A, as and for the purpose herein set forth.

2. The circulator G and baffle-plate M, in combination with the boiler-shell A, furnace B, and tubes D, all arranged for joint operation, as and for the purposes herein set forth.

136,692.—*Bed-Spring.*—JAMES H. BAKER and ASA DONEY, Saratoga Springs, N. Y.

A lower casting with flanges and a sleeve is secured to the bedstead-rail. An upper casting furnishes a rest for the slat, and a coiled spring works upon the pin.

Claim.—1. The casting A, provided with the flanges *a a* and sleeve *b*, in combination with the bushing *i*, wooden pin C, constructed and arranged as and for the purpose set forth.

2. The casting A, provided with the flanges *a a* and sleeve *b*, in combination with the leather bushing *i*, pin C, spring D, and casting B, all constructed and arranged as and for the purpose herein specified.

136,693.—*Combined Tool.*—WILLIAM BARTLE, Franklin, Pa.

Various small tools are arranged in a knife handle, with a spirit-level on one edge of the handle, the other edge being straight and parallel thereto.

Claim.—The pocket-tool described, consisting of the straight-backed case-handle, having a spirit-level in its front edge, and try-square, calipers, dividers, and cutting-blades pivoted to its ends, as specified.

136,694.—*Broom.*—CHARLES BOECKH, Toronto, Canada.

The brush or broom is made of slips of rattan, willow, or wire, collected in bunches and passed through tapering holes in a suitable block, the holes being widest at the upper ends. Each bunch is then twisted, and a tapering plug is driven into the center of the slips at their upper ends. The butt ends are then cut off, and a protecting-plate put on to prevent the plugs from working loose.

Claim.—The combination of bunches B of rattan or other suitable material with the back A, tapering plugs C, and a protecting-plate, D, said back being provided with tapering holes *a*, through the narrow ends of which the butt ends of the bunches are pressed, then twisted to admit the tapering plugs, while said plugs, after being driven home, are retained by the protecting-plate, substantially as set forth.

136,695.—*Smoking-Tube.*—ABEL BREAR, Saugatuck, Conn.

To prevent the loosening of the joint between the main tube and mouth-piece an elastic joint is introduced, into the front end of which a taper perforated smoke-tube is inserted, whereby the size of the joint may be slightly varied by forcing the taper tube in or out as desired.

Claim.—The combination, with the tube A and its mouth-piece D, of the elastic taper connecting-piece C and perforated stem S, substantially as and for the purpose set forth.

136,696.—*Bung-Bush.*—ORLANDO P. BRIGGS and LEWIS W. BRIGGS, Chicago, Ill., assignors of one-half their right to GEORGE W. GILLETT, same place.

The bush is provided with a circumferential flange to fit a corresponding recess formed in the stave around the bung-hole, and is threaded on its outer periphery about half way up, so as the bush is screwed down the unthreaded portion will crowd the wood outward, forming a tight joint. The bore of the bush is provided with an inwardly-projecting lug to enter a recess of a suitable wrench used in inserting the bush.

Claim.—1. A tapering bung-bush having a circumferential flange, D', with a downwardly-projecting annular bead, B, which, together with the tapering body D of the bush, set upon a raised seat, a, of the stave, substantially as and for the purpose specified.

2. The herein-described bung-bush, composed of the tapering body D, inwardly-projecting lug C, circumferential flange D', and downwardly-projecting annular bead B, substantially as specified.

136,697.—*Cotton-Press.*—JAMES M. BROOKS, Jr., Griffin, Ga.

Iron bands surround the press-box and pass over braces in such manner that when the press is ready for loading the openings are at right angles to the follower. The press also has a folding and portable frame and a foot-piece for the support of the spindle of the press-frame.

Claim.—1. The frame for holding the bale-box constructed as described, each side formed of the bars H H and I I, surrounded by a metal strap, G, and the two sides connected by the bars E and E', all substantially as herein set forth.

2. The exterior frame or support, consisting of the beam A with tenons *b b*, the legs B B with staples *a a*, and the brace-rods C C, all substantially as herein set forth.

136,698.—*Apparatus for Hoisting and Dumping Loaded Wagons.*—WILLIAM JAMES BROWN, Momence, Ill.

The differential hoisting-winch and the wagon are connected by two chains, the one for hoisting and the other for tilting it while it is suspended from the first chain.

Claim.—1. The winch-shaft D of varying diameters, connected by a cone, for operating successively the lifting and tilting chains O and R, substantially as described and shown.

2. The bail S, cord T, and pulley *g*, as and for the purpose set forth.

3. The construction and arrangement of the platform A, posts B B', beams G G', guide-pulleys *f f' d d'*, differential winch-shaft D, gears E K L M, counter-shaft J, crank-shaft N, ratchet I, pawl *b*, chains O R Q, pulley *c*, and bar P, substantially as and for the purposes set forth.

136,699.—*Lubrication of Clutch-Pulleys.*—AUGUSTUS CANIS and FREEMAN HIGGINS, Manchester, N. H.

The outer surfaces of the pulley are always free from oil, and no oil can be thrown in contact with the work upon the loom.

Claim.—The axial pin *k* with its pivot *i* and oil-passage *n*, and the clutch-pulley *a* with its oil-chamber A, oil-hole *f*, and tapering socket *g*, the form and arrangement of the parts being substantially as shown and described.

136,700.—*Apparatus for Comminuting Various Substances.*—GEORGE B. CARNING, Brooklyn N. Y.

The pestles are operated by means of tappets constructed upon the chains, one of which is arranged opposite each pestle respectively. These tappets while passing from the lower to the upper pulley engage with studs projecting from the shanks of the pestles, and thereby raise them until the tappets commence to pass over the upper pulley, when they disengage, and the pestles fall. A lifting-bar is so arranged that it will engage with a series of studs affixed to the pestle-shanks to raise them simultaneously when it is desired to remove the substance from the mortar. A series of steam-pipes is also arranged around the mortar to heat the same when desired.

Claim.—1. The combination, with the series of pestles B, of a series of chains and chain-pulleys arranged upon a common shaft, as shown, the chains being provided with tappets H, which act on the pestles by means of spurs I, which project therefrom, as described.

2. The combination, with the series of pestles, of a lifting-bar, K, arranged so as to raise the whole series out of the mortar simultaneously, substantially as described.

3. The combination, with a mortar, of steam-pipes J to heat the same and its contents, substantially as described.

136,701.—*Sewing-Machine Table.*—JAMES W. CHENEY, Detroit, Mich.

A sewing-machine table extension connected with the table by curved hooks and eyes, attached to the machine and extension, and by the form of the hook detached at will. The extension or box extends down, and is held in an upright position by a frame attached to the machine with an arm, which, when not in use, is held up by a spring-jaw.

Claim.—1. The plates D B, provided, respectively, with a pendent curved hook and a receiving-slot, when applied to the cover and table of a sewing-machine, for the purpose and in the manner specified.

2. In combination with the cover and table of a sewing-machine arranged as described, the hinged supporting-arm H, bracket G, spring-jaws K or equivalent device, as and for the purpose specified.

136,702.—*Clamp for Button-Hole Sewing-Machines.*—WILLIAM CHICKEN, Boston, Mass., assignor to AMOS L. WOOD, trustee, same place.

The "clamp-levers" are secured to a hinged block, and are moved to or from each other by means of a slotted lever that receives pins projecting from the levers. The levers are raised by means of an eccentric block pivoted to a standard and connected by link with a cross-head that receives the levers.

Claim.—1. In combination with the clamp-levers and the eccentric for depressing them, the link *p*, or its equivalent, for raising the levers, substantially as described.

2. In combination with the levers *b c*, the lever *e*, having the eccentric slots *q r* through which the lever-pins A extend, the lever *e* operating to spread the levers *b c*, or to draw them inward and to look them in position, all substantially as described.

3. In a clamp for button-hole stitching-machines, clamp-jaws combined with mechanism, substantially as described, whereby the jaws are positively moved laterally to any required extent, however slight, and are positively held in any position to which they are brought.

136,703.—*Coffee-Pot.*—HENRY J. CHILDS, New York, N. Y.

The coffee is introduced within a cylinder with a movable convex strainer and retaining perforated diaphragm at the bottom, by means of which the hot water is retained in contact with the coffee, and passes gradually into the pot, and the grounds and deleterious substances are retained in the cylinder.

Claim.—The cylinder *c*, hanging within the coffee-pot from the flange at its upper end, in combination with the convex diaphragm *h*, rim *i*, and strainers *l* and *n*, as and for the purposes set forth.

136,704.—*Lamp-Chimney Cleaner.*—BYRON E. CHOLLAR and JOHN G. JOHANNES, Leavenworth, Kan.

Near the end of the rod two disks are secured, at a little distance from each other. Each of these disks is serrated around its circumference in such a manner as to form a series of teeth, which are bent alternately forward and backward, forming hooks, which retain their hold on the cloth-wiper, whether the device be moved backward or forward or revolved in the chimney.

Claim.—The wiper-rod, provided with the double annular series of points *a*, alternately bent forward and backward to form hooks whereby the cloth will be held against any movements of the wiper, substantially as specified.

136,705.—*Extension Table.*—MATTHEW COLEMAN, Ionia, Mich.

The extension slides are provided with grooves and tongues; also central grooves containing horizontally-revolving rollers; and said slides are combined and secured together by means of cross-bars extending from the slides on one side of the table to the slides on the opposite side.

Claim.—The slides A and A, provided with the grooves *a* and *a''* and with the tongues *a'* and *a'''*, containing within their central grooves the horizontally-revolving rollers B, and combined by means of the cross-bars D, substantially as and for the purpose specified.

136,706.—*Machine for Pressing Soles.*—FREDERICK W. COY, East Cambridge, assignor to WILLIAM BUTTERFIELD, Boston, and CHARLES KENISTON, Somerville, Mass.

The mold-plate, resting upon an adjustable platen, receives vertical movement from an eccentric or cam gear. An arm, attached to the platen and actuated by the cam-gear, moves the platen forward as it descends, that the work may be readily removed.

Claim.—1. In combination with the movable platen *c*, the eccentric gear-wheel *i* and gear-pinion *k* having roller-rims *l m*, substantially as shown and described.

2. In combination with the movable platen *c*, the platen-slide *r*, automatically moved to the front, and vice versa, substantially as described.

136,707.—*Combined Rocking-Horse and Swing.*—BENJAMIN P. UMANDALL, Jr., and WILLIAM TWIDDY, Williamsburg, N. Y.

From the detachable seat of the hobby-horse project forward two arms surmounted by horses' heads, to which, and to the rear of the seat, are fastened eyes, by which to connect swing-ropes when the said seat is detached.

Claim.—1. A rocking horse or chair provided with a seat-board, F, formed with forwardly-projecting arms G for securing the same to the base or rocker frame D, as herein set forth.

2. In a rocking-horse, the detachable seat or upper portion F, formed as shown, secured to the base or rocker portion, substantially as described.

3. The combination with the detachable seat portion F, constructed as described, of suspension ropes or rods Q Q, as described, for converting the same into a swing, as herein set forth.

136,708.—*Cultivator.*—WILLIAM P. DALE, Agricultural College, Pa.

The forward part of the machine is mounted on guiding caster-wheels, which are controlled in their movement by the hand-lever b^3.

Claim.—1. In a cultivator, the caster-wheels B^2, brackets B^4, friction-rollers *a* and fifth-wheel B^1, substantially as specified.

2. The draw-hinges J, as described, connecting the laterally and vertically adjustable shovel-beams I to the transverse bars I', substantially as specified.

3. The perforated flanged cross-piece F', in combination with the perforated longitudinally-adjustable beam-braces K and adjustable shovel-beams I, substantially as and for the purpose set forth.

4. The bar *d*, arms d^1 *e*, bar *e'*, lever H, and rack H', in combination with the frame D and hounds B, substantially as specified.

136,709.—*Railway Snow-Plow.*—THOMAS A. DAVIES, New York, N. Y.

Claim.—The tubular snow-plow herein described, having the inclined bottom A made straight transversely and increasing in width from front to rear, the top or cover D of corresponding form, but placed at a less horizontal angle, the sides E inclining outward or from each other, from bottom to top and front to rear, and a discharging-section, F, all as shown and described, whereby the cubical capacity of the plow is greatest at the mouth and least at the rear end, and the same adapted for tunneling through or removing snow from a track, in the manner hereinbefore set forth.

136,710.—*Branding-Stamp.*—J. WESLEY DODGE, Malden, Mass., assignor to "THE SHOE-MACHINERY MANUFACTURING COMPANY OF CONNECTICUT."

The auxiliary type, representing fractional numbers, has a notched stem which fits into the recessed flange of the type-wheel, where it is sustained, when at the impression point, between the jaws of the holder.

Claim.—In combination with the recessed wheel *s*, the movable fraction or auxiliary type *r*, applied to the wheel, and locked and confined in place substantially as described.

136,711.—*Roller-Skates.*—OLIVER H. DODGE, Jackson, Tenn.

The truck is connected to the skate without springs.

Claim.—The combination, with the foot-pad A, of the rocking bolster B, pin *a*, swinging bolster C, screw *b*, rollers E E, and truck D, with projecting tongue *d* hinged by the pin *c* in the bifurcated and beveled end of the post G, all substantially as and for the purposes set forth.

136,712.—*Machine for Mining Coal.*—CHARLES L. DRIESSLEIN, Chicago, Ill.

The current discharged from the pipes impinges directly against the buckets upon the saw.

Claim.—In a machine for mining coal or for quarrying or channeling rock, fire-clay, or other similar substances, the combination of a directly-attached saw and driving-wheel, with the inlet and exit passages or pipes for the water or compressed air that drives them, and the bearings for sustaining them, substantially as and for the purpose described and represented.

136,713.—*Butter-Bucket.*—JOHN F. DUMONT, Kansas City, Mo.

A bucket with its body constructed of one piece bent to form, with an enlarged bottom having on its surface a projecting flange to which the body is closely fitted, with a cover having a flange projecting downward fitted to the upper end of the body of the bucket, and the parts held in position by wire braces passing over it and connected with the bottom, and serving to confine the top by passing over bent ends of the handle.

Claim.—1. A bucket composed of the detachable flanged disks B B and cylinder A, constructed to fit together as and for the purpose described.

2. The wires C C passing through and fastened to bottom B', and having parts *c c* movable over the top B, as and for the purpose set forth.

3. The handle D passing through staples *d d* in top and having two bends, one at right angles to the other, so as to form the ends *d' d'*, in combination with the bucket, as and for the purpose specified.

136,714.—*Carpenter's Bevel.*—HENRY FAIRBANKS and ISAIAH J. ROBINSON, St. Johnsbury, Vt.

Two slotted blades set on the same pivot in the stock are provided with separate clamps, by which, while one of the blades is held at a right angle, the other may be fixed at any desired angle.

Claim.—1. The two bladeq B C, arranged in the same slit in the handle, and provided with means for clamping both, combined with the plate D acting as an independent clamp for one blade, the whole constructed and operating substantially as specified.

2. In a bevel-square, the arrangement of the elastic plate D in the handle, the said plate rigidly attached to the handle at its lower end, its upper end so as to be set down to hold the blade of the square at the angle defined by the end of the said plate, or returned into the handle to leave the blade free for adjustment to other angles, substantially in the manner described.

3. In combination with the subject-matter of the second clause of claim, the slide F or equivalent for setting the plate D in a position to hold the blade B, substantially as set forth.

136,715.—*Loom-Shuttle.*—DAVID C. G. FIELD, Lowell, Mass.

The spring friction-brake is composed of a single piece of wire having two coils so arranged that the plate or pad pushes in a direct line toward the eye of the shuttle, or perpendicularly to the axis of the quill.

Claim.—1. The brake upon the quill B, composed of the spring C acting upon the plate G, said spring being constructed as herein shown and described.

2. The combination of the slotted stud H, spiral spring E, compression-nut F, with the spring C acting upon the plate G, constructed and arranged substantially as described.

136,716.—*Oil-Press.*—WILLIAM M. FORCE, Newark, N. J.

Claim.—An apparatus consisting of rack C, or its described equivalent, plates E, provided with ears or projections D, constructed in the manner, and in combination with any suitable motor or press, as and for the purpose substantially as described.

136,717.—*Harrow.*—LEANDER C. GIFFORD, Monticello, Ill.

Connecting harrow-frames by means of compound clevis-joints, by the use of which the harrow may be folded or laid one section on the other; also to allow either section to yield to obstructions.

Claim.—The compound clevis, consisting of the plates *a*, *b*, *c*, and *d*, constructed as described, in combination with the harrows A and B, substantially as and for the purpose set forth.

136,718.—*Sewing-Machine.*—EBENEZER A. GOODNE, Philadelphia, Pa.

The needle-bar is provided with two or more needles, and may be rotated or set, as required, to produce ornamental stitching of various kinds. The needle-bar is rotated by means of a cam-cylinder and sleeve thereon, operated by a fixed but adjustable pin, J. The feed-bar is provided with devices whereby the cloth is moved forward in a straight line or laterally either way from the needle, and for any number of stitches, this action being controlled by a cam, U, which in turn is moved slowly or rapidly by means of the toothed shell, which has teeth of different lengths, and may be adjusted on its shaft so that more or less teeth engage the wheel S at each revolution of the main shaft.

Claim.—1. The needle-bar, rotating by means of the cam-cylinder G and engaging-pin J, substantially as described.

2. The mechanism for causing the reverse rotation of the needle-bar, consisting of the sliding sleeve K, in combination with the cam-cylinder G and pin J, substantially as set forth.

3. The swivel-collar L and its set-screw, as described, in combination with the removable pin J and cam-cylinder G, for controlling the needle-bar as to rotation.

4. The take-up mechanism, consisting of arms M N, constructed as described, in combination with the pin *j* of the needle-arm, substantially as and for the purpose described.

5. Mechanism, substantially as herein described, for automatically controlling the feed movement for forming the ornamental stitches.

6. The slide W, cam U, and oscillating guide X, in combination with the feed-bar, substantially as and for the purpose described.

7. The adjustable toothed shell P, substantially as described, in connection with the feed-bar and intermediate mechanism, for imparting variable motion to the feed-bar.

8. The shell P, having differential teeth R, substantially as and for the purpose described.

9. The lever Z, in combination with the slide W, cam U, guide X, and the feed-bar, substantially as described, for controlling the feed movement by hand.

10. The lever V, in combination with the slide W, guide X, and laterally-yielding feed-bar, as described, for adjusting said slide to vary the extent of lateral inclination imparted through the guide X to the feed-bar.

136,719.—*Traveler for Spinning-Rings.*—JOHN GOULDING, Worcester, Mass.

For keeping the yarn, which is passing to the spindle or bobbin, always at the same angle therewith, whether the bobbin be nearly empty or whether it be nearly or quite filled. The tension is thereby made uniform and an even yarn produced.

Claim.—A traveler, consisting of the bar *f* secured loosely at its opposite ends to the rings *e*, substantially as and for the purpose set forth.

136,720.—*Artificial Curl.*—JOHN GRAHAM, New York, N. Y.

The method of weaving causes even a single curl to hang without twist or exposure of the woven portion.

Claim.—An artificial curl of a single coil united by the warps and interwoven in the manner and for the purposes set forth.

136,721.—*Apparatus for Crushing, Grinding, and Mixing Molding-Sand, &c.*—JEAN OCTAVE HANCIN, Paris, France.

The furrows made by one crusher are divided by the second. Two conical-toothed scrapers, mounted on the shaft carrying the crushers, clear the sand and prevent the clogging of the grooves.

Claim.—1. In an ordinary crushing-mill, the combination of a plain bed with the conical grooved and multiple crushers A A, arranged to operate substantially as set forth.

2. The combination, with the crushers A A, of the conical-toothed scrapers M M, substantially as and for the purposes hereinbefore set forth.

136,722.—*Composite Roofing.*—SAMUEL C. HOGUE, Oskaloosa Iowa.

The roof is formed of the two compositions named in the claims, laid in layers, the latter above the former, preparations being first made by a covering of felt over the roof-boards, upon which an adhesive paste of flour and water and plaster of Paris is spread.

Claim.—1. The combination of coal-tar or crude benzine, linseed-oil, gum-parra, gypsum or soft stone, and crude glycerine to form a roofing-cement, substantially as specified.

2. The combination of gypsum or plaster of Paris, flour, gum-arabic, substantially as and for the purpose specified.

3. The compound roofing composed of the layers formed in the manner and applied to a roof substantially as described.

136,723.—*Combined Latch and Lock.*—ANDREW J. HOLLENBACK, North Bangor, N. Y.

This invention consists in giving such shape to the common pivoted and balanced tumbler and to the weighted latch that both may be used together in the same case. The tumblers are inclosed between the three sides of the weighted latch.

Claim.—The pivoted and weighted latch B occupying three sides of the chamber, as shown, and provided with the arm A, the balanced pivoted tumbler E, constructed as described, and arranged within the space inclosed by the latch, and the elevator C acting under and against the upper arm of the latch, all constructed, arranged, and operating substantially as and for the purposes set forth.

136,724.—*Cylinder-Cock for Locomotives, &c.*—CHARLES H. HOPKINS, Lyndonville, Vt.

Claim.—An improved steam-cylinder cock, consisting of the reservoir B, provided with the guide C and internal longitudinal ribs *a*, the spring A, plunger *f* provided with its stem or rod E, the finger *n*, and the longitudinally-sliding rod *g*, all constructed, arranged, and operating substantially as described.

136,725.—*Cotton-Press.*—CHARTER CAMPBELL HOWARD, Lowndesborough, Ala.

Two rack-bars fixed to the top of the press, that when the follower-head is on a level with the top of the press an additional lever or levers may be used to press the follower-bar further down.

Claim.—1. In combination with the follower-rod or bar D, the toothed bars A A and the levers H H operating on the end of the follower-bar, substantially as and for the purposes herein set forth.

2. The combination of the frame A with bale-box B, follower C, bar D with toothed bars *b*, rollers *c c*, stirrups G, pawls *f*, toothed bars A, and levers E H, all constructed and arranged substantially as and for the purposes herein set forth.

136,726.—*Subsoil-Plow.*—JOHN W. HOWARD, Greenville, Ala.

A wing is attached to the lower rear part of the plow-colter at an oblique angle and extending behind it, so that in its operation a small portion only of the subsoil is raised and mixed with the surface-soil.

Claim.—1. The wing G, constructed as shown and described, and attached to the blade C so that the point of the wing will be nearly in rear of the cutting-edge of the blade, substantially as and for the purposes herein set forth.

2. The combination of the plate C, strip D, rest E, and wing G, all constructed and arranged substantially as and for the purposes herein set forth.

136,727.—*Cylinder for Sole-Buffing Machines.*—JARVIS HOWE, Milford, Mass., assignor to THE SHOE-MACHINERY MANUFACTURING COMPANY, Connecticut.

The cylinder is constructed in halves and encompasses a shaft, its outer surface of sand-paper, which is secured to the inner faces of the cylinder by means of wire springs. The ends where the halves are united are cone-shaped, one end slipping into a conical socket, while the other, provided with a screw-thread, is rigidly held by means of a nut.

Claim.—1. The cylinder or rolls formed of the halves *b c*, and having the sand-paper or abrasive cover *e*, the halves being held together and upon the roll by the socket *n* and nut-ring *o* that encompass and clamp the cones *l m*, all substantially as shown and described.

2. The springs *s*, holding the sand-paper *r* by their stress, and pressing into the surfaces beyond the working-surface of the cylinder, substantially as shown and described.

136,728.—*Snap-Hook.*—GEORGE M. HUBBARD, New Haven, Conn., assignor to W. & E. T. FITCH, same place.

A hook is combined with an elastic or spring tongue to automatically close the mouth of the hook.

Claim.—The hook A, constructed with the opening *b* through the shank and between the cheeks for the insertion of the tongue C, and with a seat, *f*, upon each side of said opening for the trunnions *n* of the tongue, and provided with a spring to hold said trunnions in said seats and act to close the tongue, all substantially as set forth.

136,729.—*Locomotive.*—WILLIAM S. HUDSON, Paterson, N. J.

The steam from the high pressure cylinder passes through the smoke-box to be superheated before entering the expansion-cylinder: has, also, diaphragms in the smoke-box to guide the steam. The high-pressure cylinder is on one side, and the expansion-cylinder on the other side, of the locomotive.

Claim.—1. The superheating-vessel H, in the form of a broadly-extended diaphragm, perforated by tubes h and provided with one or more partial partitions, h', arranged as herein specified.

2. The arrangement, in the smoke-box of a locomotive, of a drying and superheating vessel, with connections to the two cylinders, the whole so operated that the live steam shall be received from the boiler into one cylinder and exhausted therefrom into the other cylinder through the said superheater, as herein specified.

3. A locomotive having a secondary live steam pipe, E, leading to the second cylinder D^2 and controlling-valve *e*, with means for operating from the foot-board, in combination with the main steam-pipe C leading to the other cylinder D^1, and arranged for joint operation relatively to the boiler A, and the means for exhausting from the one cylinder into the other and superheating, as herein specified.

136,730.—*Reservoir Cooking-Stove.*—JAMES R. HYDE, Troy, N. Y.

Air is admitted into the chamber behind the fire-pot through apertures in the sides of the stove. The heated air is thence conducted to the sub-flue in the base and passes up the rear of the stove and between the boiler and hot closet upward to the exit-pipe.

Claim.—1. The slot *a* in the side of the stove-body, in combination with the back fire-plate H and front plate I of the oven, with a hot-air chamber between, substantially as and for the purposes herein set forth.

2. The combination of the vertical flue *b* with the hot-air chamber between the oven-plate I and back fire plate H, and the slot *a* in the stove-body, substantially as and for the purposes herein set forth.

3. The flue G in the bottom plate of the stove, substantially as and for the purposes herein set forth.

4. The combination of the flue G, flue *b*, the hot-air chamber between the plates H and I, and the slot *a* in the stove-body, all substantially as and for the purposes herein set forth.

5. In combination with the long flue G, the vertical flue *g* and the slot *r* in the back-plate of the stove, all substantially as and for the purposes herein set forth.

6. In combination with the flue *g* and the slot *r* in the back-plate, the sliding damper *m*, provided with the slot *s*, and bent at its top to close the flue, all substantially as and for the purposes herein set forth.

7. The combination of the flue G flue *g*, slot *r* in the back-plate, slotted damper *m*, flue *g'* and flue *g''*, with a water-reservoir, I, all substantially as and for the purposes herein set forth.

8. In combination with the flues *g' g''*, the flue *g'''* with slot *s* and sliding damper O, all substantially as and for the purposes herein set forth.

9. The combination of the warming-chamber P with the flues G *g*, slotted and bent damper *m*, and flues *g' g''*, all substantially as and for the purposes herein set forth.

10. The flue *g'*, spread outward at its center and arranged on the bottom of the reservoir I, as and for the purposes set forth.

136,731.—*Door-Check.*—G. CHRISTIAN IDLY, Burlingame, Kans.

A metallic block, flanged and recessed, is screwed to the floor near the point where the open door swings back against the wall. In this block is fitted a latch having its beveled hook turned upward; a spring beneath the latch; a lever with foot-piece above the latch; and surmounting the lever a rubber cushion or bumper. There is also secured to the inside of the door a metallic box-catch, into which the beveled catch works automatically, thus holding the door wide open until the latch is released by pressure on the foot-piece of the lever.

Claim.—The latch-holder A, having the beveled latch B, spring E, pivoted foot-lever D, and India-rubber cushion G, in combination with a catch-box, C, all constructed and arranged substantially as specified.

136,732.—*Whip-Socket.*—GEORGE H. JEWETT, Saline, Mich., assignor of one-half his right to JACOB HORTON, same place.

The whip-socket is secured to the dash-board by means of a brace with two curved arms or prongs, upon the outer ends of which are projections or enlargements. These arms or prongs are passed through the dash-board, and a plate or disk is placed on their ends, which plate has in it two slots, and upon its outer surface and along the inner edge of each slot is an incline, against which the projections bear when the plate is put on the arms, so that when the plate is turned the socket will be firmly wedged to the dash-board.

Claim.—The combination, with a skeleton whip-socket, constructed substantially as described, of the whip-socket fastening, consisting of the arms *b b* having projections *c c*, and the plate G having slots *d d* and inclines *e e*, all substantially as and for the purposes herein set forth.

136,733.—*Hoe.*—MOSES JOHNSON, Three Rivers, Mich., assignor of one-half his right to ABRAHAM FEAS, same place.

The body of the hoe is made from a flat plate slitted on one side near the middle, and one wing turned to the right and the other to the left. The goose-neck handle is attached to the upper edge.

Claim.—The improved hand implement or hoe, having the side wings *b b'* arranged one in front of the other, and the upright cutter D, substantially as specified.

136,734.—*Foot-Rest for Chairs.*—THEODORE A. JOHNSON, Portland, Me.

About the center of the rest, on each side, is pivoted an arm, and these arms at their other ends are pivoted to the front of a chair. When the rest is to be used hooks on the rear of the rest engage with lugs or eyes attached to the front of the chair. When the rest is swung under the chair it is held in position by a hook secured to a cross-bar near the rear of the chair.

Claim.—The detachable foot-rest herein described, consisting of the arms *a*, piece *b*, (with or without the piece *d*,) hooks *c*, and catches and the hook *a* or its equivalents, constructed and applied substantially as herein set forth.

136,735.—*Truss-Pad.*—NATHANIEL JONES, Syracuse, N. Y.

The pad is made of pyroxyline or solid collodion, which may be softened and molded to any desired form, and which avoids the unpleasant effect of the sulphur in the hard rubber heretofore used.

Claim.—The truss plate or pad made of pyroxyline as a new article of manufacture.

136,736.—*Expanding Boring-Tool.*—JOSEPH K. KACHEROVSKY, Bridgeport, Conn.

The cutters are placed in radial slots in the cylindrical holder with the back of each resting against cams formed on an internal arbor. Two collars on the arbor, with grooved cams into which lugs on the cutters are placed, hold the cutters and draw them back. The arbor is turned to throw the cutters out and in by a pin projecting from it through a slot in the stock or holder.

Claim.—The male or cam-body portion *f* of the arbor D, in combination with the female or inner grooved cams E, the radial sliding cutters B B, the cutter-carrier C and main body A, substantially as specified.

136,737.—*Oyster-Winder.*—WILLIAM H. KANNE, Baltimore, Md.

Combination of the upright locking and unlocking lever with the oval frame, pins operating in the groove of the shifting-pulley, and curved rack gearing into the teeth of the loose and reversible windlass, and the locking-blocks, when constructed, arranged, and operating.

Claim.—The combination of the upright locking and unlocking lever D with its oval frame G, pins H it operating in the groove of the shifting-pulley K, and curved rack P gearing into the teeth N of the loose and reversible windlass M, and the locking-blocks R R and S S, when constructed, arranged, and operating as herein described, and for the purpose of dredging oysters, as set forth.

136,738.—*Combined Oil-Can and Torch.*—WILLIAM KELLEY, Baltimore, Md.

An oil-can, to the handle of which is attached, by means of a sliding spring, the oil-reservoir for the torch, which can be regulated with regard to its length by means of said spring.

Claim.—1. In combination with an oiler, A B C, a torch slipping over the oiler, and capable of being raised or lowered on the same, substantially as and for the purposes herein set forth.

2. The spring-band *a a*, constructed as described, and attached to the torch-wick reservoir *d*, substantially as and for the purposes herein set forth.

3. The knob or heel *b* on the reservoir D, for the purposes herein set forth.

4. The oil-reservoir G for the torch, constructed as shown, so as to rest upon the oil-can A and handle B, as set forth.

5. In combination with the torch-wick reservoir D and torch oil-reservoir G, the extension pipe E, for the purposes herein set forth.

6. The spring catch H attached to the reservoir G, and catching in the handle *h*, substantially as and for the purposes herein set forth.

136,739.—*Automatic Gas-Lighting Apparatus.*—FRANZ KORWAN, Manheim, Germany, assignor to himself and MICHAEL FLUSCHEIM, New York city.

A flexible diaphragm, operated by the illuminating-gas, is connected with a rotary valve having two ways for conducting gas to the main and auxiliary burners. The connections with the diaphragms and the adjustment of the ways are such that when gas is being turned on through main burner the auxiliary flame shoots up and ignites it. When the illuminating flame is at full head, the auxiliary flame is at its minimum, as it also is when main flame is extinguished. Any number of burners may be operated by this one device.

Claim.—1. One or more cocks, valves, or their equivalents, actuated by a flexible or movable diaphragm, C, operated by the pressure of the illuminating-gas supply, which can be regulated by weights J, or their equivalent, for the purpose of igniting and regulating one or more gas-jets.

2. The combination, with the tube L of the auxiliary burner, of the screw *l* for regulating the influx, and the screw *k* for regulating the efflux, of the gas, as set forth.

3. In combination with the described gas-lighting apparatus, a screw-cock, *e*, for regulating the flame at H under increased pressure, substantially as set forth.

4. In combination with the diaphragm C, actuating the stop-cock of a gas-lighting apparatus, the pivot-bearings *o p* for overcoming the friction on the plug, substantially as set forth.

136,740.—*Window-Screen.*—SHEPHERD T. LIPPINCOTT, Elizabeth, N. J.

The combination of parts claimed forms an improvement in that class of window-screens which retract into a case at the bottom of the window by means of a spring, when not in use. When used the edge-plate is drawn up and hooked upon the lower edge of the raised sash.

Claim.—1. The combination of caps E and E', bearing-pieces F and G, spring-roll C, attachment A, and case D, substantially as herein described.

2. The combination of the caps E and E', bearing-pieces F and G, washer H, spring-roller C, case D, screen A, and metallic strip B, as and for the purpose herein set forth.

136,741.—*Aging Wines and Liquors.*—ADOLPH LUQUET, San Francisco, Cal.

The wine is forced through pipe *a* into the larger inclosing-pipe *b*, and from this into the pipe C, then into a chamber, after which it circulates through the coil of pipe, where it is heated and then passed into the smaller inclosed pipe where it is cooled, and finally is passed through a pipe to the receiving-cask.

Claim.—1. The process herein described of treating wines by forcing it through coils or pipes surrounded by heated water, and through a cooling-pipe, A, surrounded or inclosed by a pipe, *b*, containing cold wine, as set forth and described.

2. In combination with the apparatus, consisting of coils *c e* and water-spaces *f f*, the double outer coil *b* and A, as set forth and specified.

136,742.—*Safety Pocket-Hook.*—PETER E. MALMSTRÖM and PAUL E. DUMMER, New York, N. Y.

A safety pocket-hook formed at the end of a piece of wire that is bent in the form of the letter L and provided with two eyes in such a manner that the wire can be readily secured to the inner surface of the lining of a pocket, while the hook is passed through a hole in said lining.

Claim.—The safety pocket hook B, formed with eyes *a* and *b* for securing it to the lining of a pocket, as described, and with a hook, A, at its end, for extending through the lining into the pocket for receiving the article to be secured therein, as set forth, all constructed and arranged substantially as described.

136,743.—*Pegging-Machine.*—GEORGE W. MANSON, Auburn, Me., assignor of one-half his right to ADDISON A. MILLER, same place.

The spring serves to check further movement of the driving-shaft after shifting the belt from the fast to the loose pulley.

Claim.—In a pegging-machine, the combination with the awl-carrier and its driving-shaft of a spring or springs connected to said shaft and operating in the manner described, for gaining the advantages specified.

136,744.—*Sign.*—EDGAR M. MAY, Fond Du Lac, Wis.

A current disk, to which a many-colored hollow cylinder is so attached as to surround the light, is made to revolve within a show-lantern by the rising of the air heated by the lamp-flame.

Claim.—In a show-lantern a hollow revolving cylinder suspended inside the lantern and caused to revolve by the current from the lamp, substantially as shown and described.

136,745.—*Hose-Bridge.*—JOHN E. MCCAULLAY, Philadelphia, Pa.

The hose is protected from injury by being carried over the cars upon the frame described, instead of by the usual manner of carrying the car over the hose.

Claim.—1. The hose-bridge, composed of the upright sections A and braces *a* holding the forked devices *b* b^3, substantially as and for the purpose specified.

2. The uprights A, having hinged or stationary feet or base supports, and provided with the hose-holders *b*, substantially as and for the purpose specified.

136,746.—*Combined Globe-Valve and Trap.*—HUGH J. MCMAHON, Philadelphia, Pa.

Having a graduated slotted tapered screw-plug in the valve, so that when said valve is closed the screw-plug may be used for a trap or waste-cock.

Claim.—The combination, with the waste cock, of a passage between the inlet and outlet chambers and a grooved screw, *b*, or its equivalent, for regulating the area of the said passage.

136,747.—*Stone Pavement.*—ADOLPHE MACKERT, Guttenberg, N. J.

A pavement similar to the "Belgian" is made of ordinary cobble-stones by squaring the sides and top, leaving the bottom convex. The whole is rammed into a sand foundation.

Claim.—A pavement composed of blocks A of stone, being flat on their sides and upper surfaces, while their lower surfaces are convex or hemispherical, said blocks being set in a bed of sand and rammed down so as to cause the sand to wedge itself in between the adjoining blocks, substantially as shown and described.

136,748.—*Soldering-Machine.*—EDMUND MORRIS and WILLIAM H. KIMBALL, Burlington, N. J.; said KIMBALL assignor to said MORRIS.

The annular soldering-iron, adjusted to suit the size of the can-top, is provided with a disk, upon which is brought to bear the jet of gas and air.

Claim.—1. The annular soldering-iron V, in combination with a blow-pipe, substantially in the manner and for the purpose above described.

2. The combination of the collar H with the soldering-iron V and pipe S, when detachable from the pipe and soldering-iron, substantially as and for the purpose set forth.

136,749.—*Life-Preserving Mattress.*—HANNAH B. MOUNTAIN, New York, N. Y.

Claim.—The sack or receiving attachment B, united to the sections centrally, substantially as described, whereby the sections will assume and maintain horizontal positions by the weight of the occupant, and be reversible with the sack pendent therefrom, as described.

136,750.—*Sled.*—WILLIAM NEVERS, Bridgeton, Me.

Claim.—1. The spiked propelling-wheel C, with its operating-levers E, in combination with the frame or body A of the sled, substantially as described, whereby the forward end of the frame rests upon and is supported by the shaft of the wheel, for the purpose specified.

2. In combination with the sled-frame A the pivoted runners F, connected with the lever G by means of the links *f*, substantially as and for the purpose described.

136,751.—*Drain-Tile-Laying Apparatus.*—GEORGE W. NEVILL, Richmond, Va.

The tubes, connected by the pivoted straps, are entered into a row of tiles, and expanded by means of the screw, thereby expeditiously ranging them in line for laying and covering.

Claim.—A tool for placing tiles in a prepared ditch or excavation, consisting of tubes A B, connected by screw and pivoted straps as described.

136,752.—*Ditching-Machine.*—GEORGE W. NEVILL, Richmond, Va.

The swivel-caster and its connections facilitate turning the machine in a small space. The frame, pivoted at both ends, gives lateral and vertical adjustment; and the pivoted bar, working in a slot in the swiveled post, guards against torsional strains, while permitting free movement in other directions.

Claim.—1. The rear wheel D, placed in a swiveled and lock lever frame E, in combination with the rods F F pivoted to the axle and made to lock to the frame B or bracket f^4, as and for the purpose set forth.

2. The frame G pivoted at one end to the axis of the ditching-wheel C and at the other to the axle A, as and for the purpose described.

3. The bar H pivoted to the frame B and working in the slot of the swiveled post I, as and for the purpose described.

136,753.—*Apparatus for Cooling Air.*—PLACIDE NÉZEREAUX, Paris France.

A smooth copper plate, perforated with a number of small holes, is placed beneath the ice-chamber and receives the drip therefrom. Over this plate the drip-water spreads, forming a thin film, through which the air entering the ice-chamber is forced by bellows or other suitable means.

Claim.—The combination, in a refrigerating or cooling apparatus, of a horizontal perforated plate, a tube or passage for conducting air beneath the plate, and the devices described, or their equivalents, whereby a thin film of water is maintained on the plate, for the purpose specified.

136,754.—*Horse-Power.*—JOHN NICHOLS and EDMUND D. BROWN, Battle Creek, Mich.; said BROWN assignor to said NICHOLS.

Adjustable bearings for the spur wheel shafts, so that the meshes of the gears can be regulated at will.

Claim.—1. The bed-plate and top rim, (either or both,) provided with adjustable bearings or socket-plates for the spur-wheel shafts, substantially as and for the purpose set forth.

2. The adjustable bearing or socket plates for the spur-wheel shafts, in combination with slots in the rim and top plates, (either or both,) for permitting the adjustment of the spur-wheel shafts in radial lines, substantially as and for the purpose set forth.

3. The socket-plate B, provided with slotted bolt-holes in combination with the slotted bed-plate and bolts *b*, for adjusting the lower ends of the spur-wheel shafts, as described.

4. The flanged socket-pieces B' and set-screws b^3, for adjusting the upper ends of shafts C, as described.

5. The bed-rim and top-plate A A', provided with the ribs *d d*, in combination with the adjustable socket-plates, substantially as described.

136,755.—*Stove-Pipe.*—HENRY L. PALMER, New York, N. Y.

The pipe consists of two longitudinal sections. Each edge of one section is bent over outwardly, so as to form a bead. The

edges of the other section are bent first outwardly and then inwardly, thus forming a groove within which the bead on the edge of the other section is made to slide when the parts are brought together.

Claim.—A joint of stove-pipe constructed in sections *c* and *d*, and having beads or locks *a a* and *b b* fitted to slide into each other, for the purpose herein shown and described.

136,756.—*Railroad-Car Ventilator.*—DAVID W. NOYES, Bennington, Vt.

A hinged glazed sash projects from the window-casing. The sash is slotted above, below, and at each side to admit air.

Claim.—The hinged projecting window-sash D, having the ventilation-apertures *d'* at the sides, bottom, and top, substantially as specified.

136,757.—*Blank for Draw-Bolt.*—DAVID H. OLIVER, McClure township, Allegheny county, Pa.

The flat portion of the blank is wider than the shank, and forms the inside of the eye.

Claim.—A rolled blank for a draw-bolt having a flattened end, such flat being formed wholly or chiefly upon one side of and parallel to the axial line of the draw-bolt, substantially as described.

136,758.—*Car-Coupling.*—JOHN M. PERLEY, Cogan Station, Pa., assignor of one-half his right to JOSIAH BARTLETT, same place.

The stop falls over the head of the pin, which serves as a pivot for one of the hooks, and retains it (the pin) in place.

Claim.—The combination of the draw-head A, wings B B, p'ate C, pin *b*, button *d*, and hook D, all constructed and arranged substantially as and for the purposes herein set forth.

136,759.—*Car-Coupling.*—EDWIN F. PLANT, Burr Oak, Mich.

The link is attached to a pin in one bumper with its opposite end protruding outward, with the pin in position in the opposite bumper. When the cars are brought together, the bell-shaped mouth guides the link to the pin, and the sharp front side or edge of the pin enters between and separates the hooks of the link. As the points of the hooks pass the pin the spring-bar closes them together.

Claim.—1. The car-coupling link B, constructed of one piece of timber or metal, or of two pieces, rigidly united at their centers, and having spring-arms C and arrow-heads, substantially as specified.

2. In combination with the coupling-link B, the bell-mouthed bumper A and sword shaped pin *y*, constructed and arranged substantially as specified.

136,760.—*Cuff.*—ISAAC M. POST, Philadelphia, Pa.

A cuff made of wire-gauze, to be worn under ordinary cuffs as a support.

Claim.—The herein-described wire-gauze cuff, as a separate and distinct article of manufacture.

136,761.—*Wheel for Vehicles.*—JOHN J. RALYA, Cleveland, Ohio.

Claim.—1. The bearing-collars D, provided with the openings d and having their contiguous faces made concave, the spokes E provided with the grooves *e''* and made flaring at their edges and inner ends, and the keys F fitted into said openings *d* and grooves *e''*, when said parts are combined with each other, the thimble A, and suitable compressing devices, substantially as and for the purpose specified.

2. In combination with the bearing-collars D and spokes F provided with tenons *e'*, the lugs *d'* secured to or upon the inner portion and inner face of one of said collars and forming the mortises *d''*, substantially as and for the purpose shown.

3. In combination with the bearing-collars D and thimble A, the supporting-collars G fitted over said thimble, and the binding-nuts H fitted upon the same and having relatively right and left hand screw-threads, substantially as and for the purpose set forth.

4. The hereinbefore-described device as a whole, when constructed as shown and combined with the axle-arm, in the manner and for the purpose substantially as described.

136,762.—*Sewing-Machine Cover.*—CULLIN W. REED, Chagrin Falls, Ohio.

The folding cover formed by hinging its ends to the platform or bottom and the sides to the ends, which are separated at their center and fold down to form the table. The top of the sides project above the ends, and are constructed to fit the circular cap or cover, which, when closed, form a close cover for the machine. The circular cover when thrown back serves to reflect the light from a lamp by the aid of a reflector within the circle.

Claim.—1. A sewing-machine cover possessing two hinged end panels adapted to be turned upon the surface of the table in opposite directions, and provided with hinged or sectional side panels capable of being folded inwardly upon the end panels, as shown and described.

2. A sewing-machine cover comprising a hinged end section provided with rigid sides and cover, and a hinged end panel possessing folding side sections, as herein shown and described.

3. A sewing-machine cover provided with a reflector applied to its inner surface, as and for the purpose set forth.

136,763.—*Head-Lining for Barrels.*—GEORGE A. REED, New York, N. Y.

Short sections of hoops are put up in bundles, to be sold for the purpose of securing the heads in barrels.

Claim.—As a new article of manufacture, barrel-head linings, prepared in the manner specified, when bundled as shown and described.

136,764.—*Engine.*—THOMAS C. ROBINSON and CHARLES W. CLIFT, Mystic Bridge, Conn.

The reciprocation of the double-headed piston gives the initial movement to toggle-levers, one attached to oscillating valve provided with induction and eduction ports, the other to a piston forced down to complete their movement by pressure of water or steam admitted through suitable channel.

Claim.—1. The combination of the valve E, connecting-rod F, with the knuckle-joint *i* and piston D, substantially as shown and described.

2. The double piston-heads B B, main cylinder A, having the induction and eduction ports *f g*, with the valves *e e*, constructed to operate with valve E and piston D, substantially as and for the purposes set forth.

136,765.—*Process of Obtaining Gum Resembling India Rubber.*—ELBERT H. ROGERS, Tuscaloosa, assignor to himself and C. M. A. ROGERS, Gainesville, Ala.

The juice of the berries is expressed and separated from the hull by pressing, rolling, or pounding the fruit, which is subsequently washed and dried. It is then passed through a grinding-mill, which effectually destroys the cohesion of the hull, pulp, and seed, and allows them to be easily separated by means of a fan. The dry pulp being of less specific gravity than either the stones or skins, is blown out into a sheet or other receptacle prepared to receive it.

Claim.—The process of obtaining rubber-pulp from bamboo and other berries by first expressing the juice; secondly, drying the hull, pulp, and seed in a mass; thirdly, disintegrating said pulp, hull, and seed by trituration; and, finally, separating the pulp therefrom by a fan; all substantially as described.

136,766.—*Buckle for Harness.*—JEROME W. ROFF and RANSOM C. KIBBY, Elyria, Ohio.

A buckle device having side loops to which the breeching-stays are secured, and a holding-guide for the hip-straps.

Claim.—The breeching-stay fastening, having the side-projecting loops *g g* for the stays *h h*, and the continuous curved side plates *b e*, cap *a*, cross-bars *d d*, and projecting pin *c*, for fastening the short stays and the hip-strap, and to obtain the advantages herein set forth.

136,767.—*Bridle-Bit.*—BURDETT L. ROWLEY, New Britain, Conn.

The portion of the bit within the horse's mouth is composed of leather rings strung upon the metallic connection.

Claim.—A bridle-bit having the portion which is contained within the mouth of a horse covered with leather that is arranged with the edge of its grain to the wear upon said part, substantially as and for the purpose specified.

136,768.—*Device for Fastening Clothes-Lines, &c.*—ADAM E. SCHATZ, New York, N. Y.

A body in curved form, with two curves on one end with openings, one over the other, through which the line is passed and one end secured by a knot; the other passing through the upper opening, and through a slot in its other end, is held by a serrated cam pivoted to it.

Claim.—A line-holder composed of a body, A, of the construction herein described, and a serrated dog or cam-holder, B, combined and arranged substantially as and for the purpose herein set forth.

136,769.—*Stereotype-Plate Holder.*—WILLIAM SCHNAUFFER, Baltimore, Md.

A double block, each section provided with legs and one flange, so that a plate of unusual width may be supported thereon, and the space between them filled with leads.

Claim.—The two-part bed-block A' A', divided longitudinally through the middle, and each part having a dovetailed flange, *a*, and two legs, *a' a'' a' a''*, on each section, for the purpose set forth.

136,770.—*Preparation of Indigo for Dyeing and Printing.*—PAUL SCHUTZENBERGER and FELIX DE LALANDE, Paris, France.

The vessel is filled with zinc grains, shavings, or scraps so as to present a large surface, and a solution of bisulphite of soda added, after which the vessel is closed. The whole is kept at a medium temperature for about one hour, when the reaction is complete, giving "hydrosulphite of soda."

Claim.—1. The employment of the hydrosulphite of soda or its chemical equivalent in the reduction of the coloring matter of indigo, substantially as described.

2. The mode of treating or reducing indigo by means of the hydrosulphite of soda, or its chemical equivalent, in the presence of an alkali, substantially as described.

136,771.—*Shirt-Front.*—JEREMIAH A. SCRIVEN, New York, N. Y.

A stiffening is interposed between the bosom and lining, and is narrowed toward the waist to allow the bosom to freely bend at that part.

Claim.—As a new article of manufacture, the hereinbefore-described shirt-bosom A provided with a stiffening, C, reduced in width near its lower end, substantially as and for the purpose specified.

136,772.—*Base-Burning Stove.*—JOHN Q. C. SEARLE, Topeka, Kans.

The arrangement of the gas and air discharge exits around and above the mouth of the fuel-reservoir.

Claim.—1. A stove in which the gases generated in the magazine are discharged from a passage, *a'*, independent of the magazine, among the unignited mass of coal above the surface of the fire.

2. The combination, in a base-burning stove, of the air-chamber D, and an intervening independent gas-chamber, B, all arranged as described.

3. The combination, in a base-burning stove, of a flue or flues, H, connecting chambers at the top and base of the stove, and flues E communicating with the lower chamber and with the combustion-chamber, substantially as described.

4. The deflectors K, interposed between the descending draft-flues E and the walls of the air-chamber D, substantially as and for the purpose specified.

136,773.—*Railroad-Car Stove and Heater.*—JOHN Q. C. SEARLE, Topeka, Kans.

The products of combustion pass down one set of flues, around the fire-pot, and up another. The water is kept in motion by a rotary pump actuated by the car-wheel or suitable mechanism.

Claim.—1. The combination, with a water-reservoir surrounding a fire-pot, of flues D E extending through the said reservoir, and so arranged that the products of combustion shall pass down through one flue or set of flues and up through the other, substantially as described.

2. The combination, with a water-heating reservoir, and with a pipe or pipes communicating therewith, of a pump, or its equivalent, for creating and maintaining a determined circulation through the said reservoir and pipes.

3. The combination of the said pump, or its equivalent, with a railroad-car stove and a water-reservoir, and with devices for operating the pump.

136,774.—*Feed-Roller for Straw-Cutters.*—JOHN H. SHARP, Doylestown, Pa.

The upper of two rollers is held down by rods bent over its journals, these rods attached to horizontal arms having a segmental cogged connection centrally. A spring beneath this segmental connection preserves these arms horizontally, except when substances get between the rollers, when the upper is lifted an equal distance throughout its length.

Claim.—The combination, with rollers B and C, of the cogged arms or levers D D, spring E, and rods G G, connecting the arms with the journals of the upper roller, all substantially as and for the purposes herein set forth.

136,775.—*Grate Fire-Place and Hot-Air Furnace.*—JOHN H. SHERWOOD, New York, N. Y.

A flue from the hot-air furnace opens into a chamber behind and at the sides of the fire-place, and hence the twice-heated air is delivered into the apartment through registers in the chimney-front at the sides of the fire-place. Either furnace or fire-place can be used separately.

Claim.—The air-chamber C, forming a hot-air casing to the back sides and top of the grate fire-place A, in combination with the hot-air flue G of the furnace, the register or damper A, and the perforated distributers *g*, the whole constructed and arranged substantially as herein described, for the purpose set forth.

136,776.—*Railroad Switch.*—CHARLES S. SHUTE and LUCIEN R. SHUTE, Springfield, Mass.

The stops which protrude through the bed-plate are for locking the switch-rails in position, and are operated either by a foot-lever or by the wheels of the train through rods and levers. In the latter case the train approaching upon the main track would discharge the stop when holding the switch set for the siding, thereby permitting the switch-rails to jump into line through the agency of a spring. The switch is ordinarily operated by a hand-wheel, vertical rod, and cam.

Claim.—1. The bolt *c*, whereby the switch-rail is held secure in its position in connection with the main track, in combination with the pivoted lever M, rod M^1, and pivoted foot-piece *b*, whereby said bolt is operated, substantially as described.

2. The lever O, rod M^2, and foot-piece *a'*, in combination with the bolt *n*, whereby the switch-rails are released from their position in connection with the siding, substantially as described.

3. The piece *r*, rod P', pivoted lever P, and bolt *n* provided with a spring, C'', in combination with a spring, E, or its equivalent, whereby the switch-rails may be placed in connection with the main track automatically by an approaching train, substantially as herein set forth.

4. The combination of the shaft H' provided with the cam N, the switch-rod D provided with the projection *a*, and the spring E, or its equivalent, as a means of moving the switch-rails in both directions, substantially as herein described.

136,777.—*Saw-Set.*—AUGUSTUS B. SMITH, Chambersburg, Pa., and SAMUEL OSBORN, Trenton, N. J.

The anvil-block, slightly beveled toward the rear, is fixed in a frame between two projecting arms, connected by a cross-piece, that act, by raising or lowering them, as guides for the saw. A plunger, beveled to conform to the anvil and raised by a spring, bends the teeth.

Claim.—The construction and combination, jointly, of the stand A, die B, gage C, and plunger D, substantially as described.

136,778.—*Axle-Box for Vehicles.*—JAMES P. SMITH, Terre Haute, Ind.

Claim.—In combination with the axle-arm A and axle-skein D, the sleeve E provided with the slots *e* and containing the rollers F, substantially as and for the purpose specified.

136,779.—*Air-Ejector.*—JOHN Y. SMITH, Pittsburg, Pa.

To a disk at the rear end of the case is attached a series of tubes so arranged that as the disk is revolved they will successively register with an aperture in the cap of the case. Each of the tubes is filled with a slow-burning powder, and is supplied near its inner end with an ordinary cap-nipple for holding a fulminate. Within the case is arranged a gas-discharge nozzle, the outer end of which being smaller than the case leaves a chamber between the two, into which the air to be exhausted is drawn through a pipe. Upon exploding the cap the material in the tube will be ignited, the gas from which will pass through the aperture into the nozzle, and out through its contracted end with such rapidity as to exhaust the air from the chamber, and from any vessel to which the pipe leading from the chamber is connected.

Claim.—1. An air-ejector, combining in its construction a case for holding the parts in position, and for forming the outer shell of a vacuum-chamber, a nozzle for the passage of the gas, and one for the passage of the mingled currents of air and gas, a chamber or chambers for containing the material to be burned, and suitable mechanism for exploding a cap or fulminate, the parts being arranged substantially as and for the purpose set forth.

2. The disk E and tubes F, when combined with the case of an air-ejector, substantially as and for the purpose set forth.

136,780.—*Steam Air-Ejector.*—JOHN Y. SMITH, Pittsburg, Pa.

The angular portion of the case, against which the steam impinges when passing the end of the air-nozzle, is made of thin metal in order that the steam may be condensed, and aid in the production of a vacuum. In the chamber near the end where the air enters a valve is arranged to open inward, so that as steam is admitted to the instrument, and a vacuum is formed therein, the valve will open and permit the air to pass out of the pipes, but will close the instant the steam is shut off, and thus prevent the air from rushing in and destroying the vacuum.

Claim.—1. An air-ejector having the angular portion of its case against which the steam impinges when passing the end of the air-eduction nozzle made of thinner metal than its other portions, substantially as and for the purpose set forth.

2. The combination of the adjustable section A^3 of the outer case of the ejector with the stationary section A thereof and with the air-discharge nozzle A^1, the parts being arranged substantially as and for the purpose set forth.

3. The combination of a vacuum-valve with the air-eduction nozzle of an ejector, substantially as and for the purpose set forth.

4. An air-ejector combining in its construction an outer adjustable case, an interior air-discharge nozzle, a vacuum-valve, and a drip-valve for allowing the water of condensation to pass from the instrument, substantially as and for the purpose set forth.

136,781.—*Steam and Air Brake.*—JOHN Y. SMITH, Pittsburg, Pa.

The brakes are operated by adjustable levers and a vacuum-chamber, composed of a series of flexible diaphragms, to which the rods and levers are attached. By exhausting the air from the vacuum-chamber the atmosphere sets the brakes against the wheels.

Claim.—1. In an apparatus for connecting the brake-levers of cars, the flexible or expansible and contractible portion A and the rigid or non-expansible portions A^4 A^5, the parts being constructed and arranged substantially as and for the purpose specified.

2. The stops G and the adjustable levers B, in combination with the brake-levers D and rod F, whereby the relation of the brake-shoes with reference to the wheels may be adjusted, substantially as and for the purpose set forth.

3. The combination of a flexible vacuum-chamber with the brake-lever or levers of a car, when one end of such lever or levers is made adjustable, substantially as and for the purpose set forth.

4. The combination and arrangement of the adjustable levers B B and their connecting-rods with the mechanism for applying the brakes by hand, whereby additional leverage is obtained upon one end of the car, substantially as specified.

136,782.—*Lantern-Guard.*—THOMAS SMITH, Cleveland, Ohio.

Each upright consists of a half-round wire having eyes or indentations at suitable distances, bent and doubled to embrace the horizontal round wires of the guards.

Claim.—The ribs A, formed of half-round wire, and bent to form the eye B C, and used in connection with the circular braces D E, as and for the purpose set forth.

136,783.—*Summer Furnace.*—WILLIAM P. SPRINGER, Oswego, N. Y.

This device is set in the pot-hole of an ordinary cook-stove. The draft comes through the usual passages of the stove. The lower edge of the fire-pot curves inward so that the grate, which is supported thereon, may be tilted or turned, but cannot fall through the bottom.

Claim.—1. In combination with the lower end of the furnace H provided with the curved ledge A, the grate P having its lower edge rounded, substantially as and for the purpose shown.

2. The furnace H provided with the top plate I, the flue K, the exit-flue M and N, the grate P, and the boiler-holes Q and Q', when said parts are constructed and combined substantially as and for the purpose set forth.

136,784.—*Turbine Water-Wheel.*—STEPHEN M. STEVENS, Lancaster, Iowa, assignor of one-half his right to SAMUEL W. BEUAT, same place.

The buckets are made of steel, bent to the proper shape and clipped to form lugs, by which they are attached to the plate. The gates lie in a groove formed in the top plate and have an inclined beveled edge at the end, near the chutes, to keep mouths of the chutes clear of wood, sticks, &c., and to remove any ice that may form.

Claim.—1. The arrangement of the buckets having the clipped and bent lugs for securing them to the board and plate, and the

relation of the buckets to the board and to the plate *g*, as herein recited.

2. The inclined and beveled end gates, as described.

136,785.—*Horse Hay-Rake.*—STEPHEN STEVENSON, Dansville, N. Y.

Teeth, pivoted to and in rear of the axle, are dumped by means of brakes brought in contact with the tread of the supporting-wheels by a system of levers, the hand-lever of which is vertical to the plane of the others. Brake kept from contact by coiled springs.

Claim.—The levers H A^1, rack A, and connecting link and bar A^2 A^3, in combination with the revolving axle A', holding the arms D with brake-bar E' and brake-plate F, substantially as and for the purpose specified.

136,786.—*Loom-Picking Mechanism.*—ALBERT STOCKWELL, Woonsocket, R. I.

The actuating-lever of the picking mechanism is connected with the picking-sticks by means of straps and a segment lever upon a rock-shaft, and is actuated by a bumper on the end of the crank-arm on the upper shaft. The fulcrum is placed on a vertical slide, so reciprocated by a cam on the lower shaft as to bring a roller on the end of its short and curved arm within the path of the bumper at every alternate revolution of the shaft. To prevent the operative from introducing a shuttle into the box at the wrong time the picking-stick is held at the inner end of the box until the return of the shuttle by means of a second cam, so arranged on the lower shaft as to lift the lower and long arm of the actuating-lever at and for the time required.

Claim.—1. The combination, with the bunter *z* and bent lever F, of the slide *g* and cam *v*, substantially as specified.

2. The combination, with the bunter *z* and picking-lever F, of the holding-cam G, substantially as specified.

136,787.—*Washing-Machine.*—HENRY STUCKMAN, Bourbon township, Marshall county, Ind.

A tub lined with corrugated zinc, with timbers framed to form a cross suspended from a short shaft, to which is attached the driving-pinion. From the cross are framed timbers projecting downward, which may be adjusted to a smaller diameter by extra mortises. Attached to the rigid portion of the cover by pivot is a segmental driver, which connects with the pinion, to give motion to the machine by a lever extending from it.

Claim.—The tub A provided with the wringer-board *w* and corrugated wash-board M, in combination with the rack I operated by the pinion H, segmental cog E, and lever D, and provided with the dependent standards L and auxiliary adjusting-apertures *x'*, substantially as shown and described.

136,788.—*Wash-Bench for Wringing-Machines.*—JEROME B. SWEETLAND, Pontiac, Mich.

On the standard of a wash-bench is a bed-plate having flanges and guides, and above said bed-plate is a revolving plate, so that the wringer may be reversed in position. The revolving plate is held in position by spring-catches that engage in depressions in the bed-plate.

Claim.—1. The combination of the bed-plate H, having flanges *a a*, guides *b b*, and circle *d*, and the plate I with rim J, and apron K with flanges *e e*, all substantially as and for the purposes herein set forth.

2. The combination of the bed-plate H, revolving plate I, rim J, apron K, levers L L with pins *f f*, and the springs h h, constructed and arranged upon the standard of a wash-bench, all substantially as and for the purposes herein set forth.

136,789.—*Sash for Hot-Beds, &c.*—JOSIAH TAYLOR, Lock No. 4, Monongahela river, Pa.

Strips of rubber are inserted in grooves at the sides of the frame so that the edges of the glass press against them when constricted by the winding-rods and thumb nuts.

Claim.—In a sash for hot-beds or skylights, the combination and arrangement of the rails A B C, ends D, caps K, rods *g*, hook *i*, gum strips *e*, and glass *i*, all constructed and arranged with relation to each other as hereinbefore described, and for the purpose set forth.

136,790.—*Machine for Trimming Soles of Boots and Shoes.*—BENJAMIN J. TAYMAN, Philadelphia, Pa.

A combination of circular cutters for trimming the soles and welts of boots and shoes.

Claim.—1. In combination with the revolving shaft E, the cutters F and F^1 having the front edges of their teeth *i* inclined forward to the outer faces of the cutters to produce drawing cuts toward the middle of the edge of the sole, substantially as and for the purpose described.

2. The cutter F^2, in combination with the cutters F F^1, substantially as specified.

3. The gage O, in combination with the cutter F and loose guide N, substantially as and for the purpose set forth.

4. The rest P arranged and operating in relation to the cutters F, F^1, and F^2, substantially as and for the purpose specified.

136,791.—*Car-Axle.*—THEODORE R. TIMBY, Tarrytown, N. Y.

Claim.—A car-axle formed with one or more chambers within the journals, and extending inward, filled with water or other heat-conducting liquid and hermetically closed, as and for the objects specified.

136,792.—*Wax-Thread Sewing-Machine.*—ALEXANDER TITTMAN, Evansville, Ind.

The cam-block is attached to the awl-carrying bar; the curved arm at one end is connected with the shaft of the thread-guide, and the links are connected with rocking shafts having arms that operate the hooked needle and cast-off, and move the needle carriage laterally.

Claim.—The driving-shaft having the cams D^4 and D^5, and disk D with cam D^3 and pins *a d*, when combined with and operating the awl-carrier through the cam-block D^1, the thread-guide through the pivoted curved arm D^2, and the needle, and cast-off, and carriage, through the links M M and connecting mechanism, all substantially as and for the purpose specified.

136,793.—*Sash-Holder for Carriage-Windows.*—SILAS E. TOTTEN, Jr., New York, N. Y.

A segmental stop or sash-holder with curved edge and elastic pad is slotted nearly its entire length. A thumb or set screw, rising from a bracket on the sill of the carriage or other window, engages in this slot, and at the same time secures the stop in horizontal position. The device, when applied to the windows of a glass-front carriage, abuts against the sash to prevent shaking or rattling, and is released by the turning of the set-screw and lateral movement.

Claim.—The slotted segmental stop or fastener C, provided with an elastic pad, F, that abuts against the sash B, said stop working on a set or thumb screw, D, that rises from the bracket E, secured to the sill of the window-frame, substantially as and for the purpose described.

136,794.—*Slide-Rest for Lathes.*—CLAUS VAN HAAGEN, Philadelphia, Pa., assignor to himself and ANTHONY VAN HAAGEN, same place.

The slide is movable transversely on its base by a screw and nut. A block is swiveled on the slide and fastened by a follower and set-screw. A slide on the block is movable by a screw, and a slide on this latter slide is also movable by a screw. A screw imparts transverse motion to the whole device, or, when required, to one slide only, the latter being effected by locking screw and its nut together with a clutch. A nut turning with the screw imparts rotation through the bevel-wheel on its end, and other gearing to the motive-screw.

Claim.—1. The bed H carrying the slide I and admitting of being turned on the slide B, in combination with the mechanism described, or any equivalent to the same, whereby motion is communicated from the screw-shaft for operating the lower slide to the screw-shaft for controlling the upper slide, all substantially as set forth.

2. The sleeve b adapted to the slide B geared to the screw-shaft for controlling the upper slide I, and having an internal thread adapted to the screw for controlling the lower slide, in combination with the clutch *c*, or its equivalent, for throwing the said sleeve in and out of gear with the said screw-shaft D.

3. The duplex wheel F and its bearing E, composed of a severed ring fitted to an opening in the slide B, all as set forth.

4. The circular projection A of the bed H, adapted to a segmental shoulder, *i*, on the slide B, in combination with the follower *i'* and screw *j*.

136,795.—*Knob-Spindle.*—WALTER VARAH, New Haven, Conn.

A sleeve which fits the follower of a latch is arranged upon a round knob-spindle, and combined with a mechanism whereby the knob-spindle may be engaged with the said sleeve, so that turning the knob will turn the sleeve, or detached from the spindle so that the turning of the knob will have no effect upon the sleeve.

Claim.—The spindle D, made cylindrical at the central portion, combined with the square or angular sleeve I, latch *d*, and collar L, constructed and operating together substantially as and for the purpose described.

136,796.—*Eyelet for Harness-Traces.*—SAMUEL WALTERS, Dallas City, Ill.

A metallic eyelet is inserted in the slot in the end of a trace.

Claim.—The eyelet for harness-tugs, consisting of the slotted plate A, having the rim C raised from the inner edge of the elongated slot, and the flange B turned outward from the upper edge of the rim, substantially as specified.

136,797.—*Wrench.*—JAMES B. WEEDEN, Stafford, Conn., assignor to himself and MARCUS M. JOHNSON, same place.

Claim.—The combination of the lower jaw and handle, made in one piece with the upper jaw, and the nut fitted into the end of the handle, the whole constructed and designed to operate substantially as described, for the purpose set forth.

136,798.—*Sewing-Machine Table.*—JOHN J. WHEAT, Wheeling, W. Va.

The stationary top is recessed so as to allow the machine to drop below it. The machine is attached to a plate hinged to the top. A sliding top is arranged above the stationary top so as to cover the recess when the machine is lowered, or to form an extension of the table-top when the machine is raised for use. To the under side of the stationary top is attached a shield or protector to protect the machine from dust or injury when said machine is lowered.

Claim.—1. The combination, with a stationary sewing-machine table, recessed to allow the machine to drop below the sliding top B, constructed and operating substantially as set forth.

2. The sliding top B, combined with the frame C, when hinged to the main frame in such a manner that it will drop beneath and be covered by said sliding top, as set forth.

3. The shield E connected to the under side of the frame A, which, with the sliding top, protects the mechanism when the hinged frame is dropped beneath the main frame, as is herein set forth.

4. The combination of the frame A, sliding top B, hinged frame C, and shield E, constructed and arranged substantially as and for the purposes herein set forth.

136,799.—*Liquid-Meter.*—ALBERT M. WHITE, Bridgeport, Conn., assignor to THE FAIRCHILD WATER-METER COMPANY, New York, N. Y.

The wheel is suspended upon the upper end of an upright dead spindle around which it revolves. The dead spindle extends up through the center of the hub of the wheel, and through a sleeve attached thereto, and is constructed so as to form an oil-reservoir around the body of the dead spindle, whereby said sleeve has an elongated self-lubricating bearing. The oil is prevented from escaping at the lower end of the sleeve, and the propelling water or liquid restrained from passing up the sleeve by means of a fluid packing-cup.

Claim.—1. The fluid packing or quicksilver cup E, having an inner shell, F, in combination with the sleeve D of the wheel, the hollow hub A, the dead spindle C, and the oil-reservoir *c*, substantially as specified.

2. The combination of the cap G and nut *f* with the dead spindle C and collar *e* of the revolving sleeve D, whereby the wheel is wholly supported from above in both directions of its end thrust, essentially as described.

3. The oil reservoir or chamber *g* in the upper portion of the sleeve, in combination with the nut *f* and dead spindle C, substantially as specified.

136,800.—*Machine for Molding Panels.*—CHARLES H. WILLIAMSON and JOHN H. ALLEN, Whitestown, N. Y.

Devices are used on a bed of a planing-machine whereby square, oval, or round panels are molded by a pattern. Springs, one end of which are fastened to the bed and the other working on a screw-shaft attached to the sliding frames, afford uniform pressure of the gage against the edge of the pattern. Bars with stops and set-screws on the movable carriages limit the travel of the same.

Claim.—1. The springs T and V, substantially as and for the purpose hereinbefore set forth.

2. The combination of the rods M and P with the stops N and R with the adjustable stops O O O O and the adjustable stops S S S S, substantially as and for the purpose hereinbefore set forth.

3. The combination of the sliding head J, the grooved block L, the adjusting-screw K with the pitman and lever, substantially as and for the purpose hereinbefore set forth.

136,801.—*Transom Lifter and Lock.*—JOHN F. WOLLENSAK, Chicago, Ill.

The upright rod operating the arm which is attached to the transom is prolonged to some distance above the junction of the two and passed through a guide affixed to the wall. Thus a support is furnished the upper end and the ordinary bending and crooking of the rod is prevented. Directly beneath the point where the lifting-arm is joined to the upright rod is placed a roller, which, when the transom is heavy, sustains its weight and traverses the door-post.

Claim.—1. The roller R, arranged at the junction of the lifting-arm A and upright rod U, in a transom-lifter, substantially as and for the purpose described.

2. The guide G', arranged above the junction of the lifting-arm and upright rod, in combination with the prolonged rod U, the guide G, and arm A, substantially as and for the purpose specified.

136,802.—*Kitchen-Sink.*—FREDERICH WITTENBACH, Evansville, Ind.

The shifting sink is divided into compartments and is provided with a hand-grip and drain-pipes. In the act of drawing out the sink, the braces that are hinged to the closet are swung out and serve to support the sink.

Claim.—The combination of the shifting compartment sink E T, provided with hand-grip A and drain-pipes D D, with hinged brackets B B, and closet, all constructed and arranged as described.

REISSUE PATENTS.

5,316.—*Harvester.*—LINDLEY M. BATTY, Canton, Ohio, assignor to WILLIAM K. MILLER, same place.—Patent No. 111,424, dated January 31, 1871.

The main frame has a special construction to support and inclose the gearing. The double hinged coupling-frame, made of one piece bent into suitable shape, is adjustably hung between the driving-wheels and provided at its outer end with an auxiliary shoe. By detaching a pin the hinged finger-bar may be folded horizontally.

Claim.—1. The main frame, constructed as set forth, and consisting of the metal base-plate having the down-hanger cast at one end, the gear-chambers and casing at the side and near the outer corner thereof, and bearings for the journals, as described.

2. The combination of the driving-wheel hubs, notched intermittently to leave a bearing-surface on their interior, with the pawl-wheels fitting in said hubs, and carrying the spring-pawls taking into the ratchet-notches, as described.

3. The combination of the spring-pinion sliding on the counter-shaft, the swinging shipper, the lever pivoted on the box of the counter-shaft, and acting upon the swinging shipper, the link, the treadle and its spring, all these members being constructed and operating in combination, as set forth, to throw the mechanism out of gear whenever the driver releases the treadle.

4. The combination of the lifting-lever, its pawl, and the coiled-wire handle connected directly with the pawl, substantially as set forth, to enable the driver to release the pawl and move the handle by a single motion.

5. The combination, with the main frame, of the coupling-frame rocking on a longitudinal axis between the wheels, and pivoted to the main frame at one end by a swivel-joint and at the other by a sliding connection, these members being constructed and operating in combination, as and for the purposes set forth.

6. The coupling-frame, constructed as set forth, of a continuous bar, which also constitutes the guard-shoe.

7. The combination of the coupling-frame, the guard-shoe, the inner shoe of the finger-beam, the swivel-pin connecting the two shoes and the intermediate arm pivoted to the inner shoe and upon the coupling-frame, these members being constructed and operating substantially as set forth, to permit the folding of the finger-beam.

8. The combination, in a harvester, of a main frame, a hinged coupling-frame pivoted to said main frame, a guard-shoe attached to the coupling-frame, and a shoe carrying the inner end of the finger-beam pivoted to the coupling-frame, substantially as set forth, to allow the inner shoe to vibrate independently of the guard-shoe.

5,317.—*Stopper for Ingot-Mold.*—ALEXANDER LYMAN HOLLEY, Brooklyn, N. Y.—Patent No. 129,957, dated July 30, 1872.—Division A.

Claim.—1. The combination, with a bottom-casting ingot-mold, of a suitable device or devices capable of stopping off the mold at various heights, substantially as and for the purposes set forth.

2. A stopper for ingot-molds, supported at different heights by elastic flanges or friction-springs, substantially as herein described.

3. The flanged sheet-metal stopper F for stopping off ingot-molds at various heights, constructed and operating substantially as described.

4. The combination of an adjustable metallic stopper and a loam or sand filling, L, above the same, as herein set forth.

5. The combination of an adjustable metallic stopper, F, a loam or sand filling, L, and a supporting-plate, M, applied and secured substantially as illustrated.

5,318.—*Ingot-Mold.*—ALEXANDER LYMAN HOLLEY, Brooklyn, N. Y.—Patent No. 129,957, dated July 30, 1872.—Division B.

Claim.—1. The combination of a flask or distributer composed partly of loam or its equivalent and partly of iron with runners formed in the loam and cores to cover the runners, substantially as and for the purposes herein set forth.

2. A suspended cast-iron stopper for bottom-filled ingot-molds, substantially as herein described.

3. The suspending spring G, in combination with an ingot-mold, E, and a stopper, F, substantially as herein described, for the purpose set forth.

4. The adjustable corner-plates I, in combination with a stopper-supporting post, K, as and for the purpose herein set forth.

5. The supporting-post K with beveled top, in combination with the plates I, for the purpose specified.

5,319.—*Cotton-Press.*—MORAH M. JONES, Morrisville, N. Y.—Patent No. 28,281, dated May 15, 1860.

Claim.—1. The combination, with the follower of a press, of screws passing through nuts jointed to the follower, substantially as and for the purpose specified.

2. The combination, with the bed-piece of a press, of screws passing through nuts jointed to the bed-piece, substantially as and for the purpose described.

5,320.—*Steam-Gage.*—THOMAS WILSON LANE, Meredith, N. H.—Patent No. 23,032, dated February 22, 1859; extended seven years.

A double-branched Bourdon spring tube has its extremities joined to the index-lever at different points, so as to move in opposite directions as the two extremities diverge on expansion; the peculiarity being that the lever has no fixed pivot or attachment to the back of the case.

Claim.—The combination, with the two branches of the indicating-tube, secured in the gage in the manner herein described—that is to say, so that each branch shall not exceed a semicircle in length, the whole tube being placed in such position that it shall descend at every point toward and drain back into the pipe from the boiler—of a lever-transmitting the movement of the tube to an indicating mechanism, the lever being pivoted to the one branch and linked to the other by an arm jointed to the parts which it connects, without any attachment to the case or other rigid part of the gage, substantially as shown and set forth.

5,321.—*Chill for Casting Mold-Boards.*—JAMES OLIVER, South Bend, Ind.—Patent No. 86,579, dated February 2, 1869.

Claim.—The chill for casting mold-boards for plows, constructed to conform to the shape of the mold-board, and provided with seams or openings to allow the escape of steam and gas, substantially for the purposes herein set forth.

5,322.—*Machine for Dressing the Edges of Plate-Frames.*—JOHN W. SAYRE and ALEXANDER S. SHULL, Martin's Creek, Pa.; said SAYRE assignor of one-third, and said SHULL assignor of all his interest to HENRY W. HARPER.—Patent No. 50,170, dated September 26, 1865.

The slate-frame is placed in the holder, at the bottom of which revolve the cutters for dressing the corners. By a removal of the adjustable frame to the left the edges may be rounded by the same cutters.

Claim.—1. The combination, with a rotating cutter, J, of the frame T, which is arranged to receive a slate-frame, and which admits of being moved in a curved path, all substantially as set forth.

2. The said frame T, in combination with the clamp V or its equivalent.

5,323.—*Journal-Box.*—HARLOW H. THAYER, Sandwich, Mass., assignor of one-half interest to JAS. A. WOODBURY.—Patent No. 21,474, dated September 7, 1858; extended seven years.

A journal-box having a series of lubricating-chambers, each extending upward from the lower portion of the box containing lubricators, so arranged as to cause nearly the entire surface of the journal to be lubricated at each revolution. At each end of the lower portion of the box is a vertical chamber communicating freely with an oil-trough, and having a circular opening somewhat

greater in diameter than the journal in order to prevent oil from the journal running from the edge of the opening to the outside of the end of the lower part of the box. Immediately over each chamber the cap is grooved to intercept oil passing beyond the end of the outer bearing-surface, and also to conduct such oil into the chamber. Thus a constant circulation of oil is obtained between the trough and the journal while the latter is in rotation, and its whole surface is thoroughly lubricated at the same time.

Claim.—1. In a journal-box, the combination, substantially as described, of the lubricating-chamber *a* and bearing-surfaces *g* with the channel or trough *b* below the same.

2. The combination, substantially as described, of the intercepting-chamber *d* at each end of the box with the oil-trough *b*.

3. The openings *e* in the ends of the box made larger than the journal, as and for the purpose set forth.

4. The combination of the chamber *d* in the lower portion of the box with the groove *f* in the cap of the same.

5. The combination of inclined bearing-surfaces *g* with the inclined lubricating-chambers *a*.

5,324.—*Apparatus for the Manufacture of Illuminating-Gas.*—JOSEPH CARSON TIFFANY, Portsmouth, N. H.—Patent No. 133,391, dated November 26, 1872.

Claim.—1. A conducting or air-chamber, arranged within a gas-furnace at or near its top, created between the outside surface of the retort and a flanged ring forming a continuation of the wall of the inner furnace, whereby the heat is retained upon the retort and egress formed for the passage of the products of combustion around the upper portion of the retort, substantially as described.

2. In retort-furnaces, the combination of the grate ring B and the air-chamber ring H with the fire-chamber D and the retort K, substantially as described, for the purpose specified.

3. In a gas-furnace in which is employed a suspended retort, an adjustable top, J, having a depending flange for surrounding the outside shell of the furnace, for compensating for contraction and expansion.

4. The combination of the adjustable top J with the air-chamber ring H, substantially as described, for heating and supporting the retort.

5. Concentrating the heat of the inner furnace upon the retort, and protecting the outer shell from being destroyed by the heat of the inner furnace, by means of a non-conductor arranged on the inside or interposed between the fire-walls of the inner furnace and the outer shell of a gas-furnace.

6. A non-conductor interposed directly between the fire-walls of the inner furnace and the outer shell of a gas-furnace, for the purpose of concentrating the heat in the inner furnace upon the retort and protecting the outer shell from being destroyed by the intense heat of the inner furnace.

7. The combination and arrangement of the fire-chamber D, the non-conducting substance forming or interposed between the fire-chamber and the shell A, and the enveloping furnace-shell A, when constructed and arranged substantially as described.

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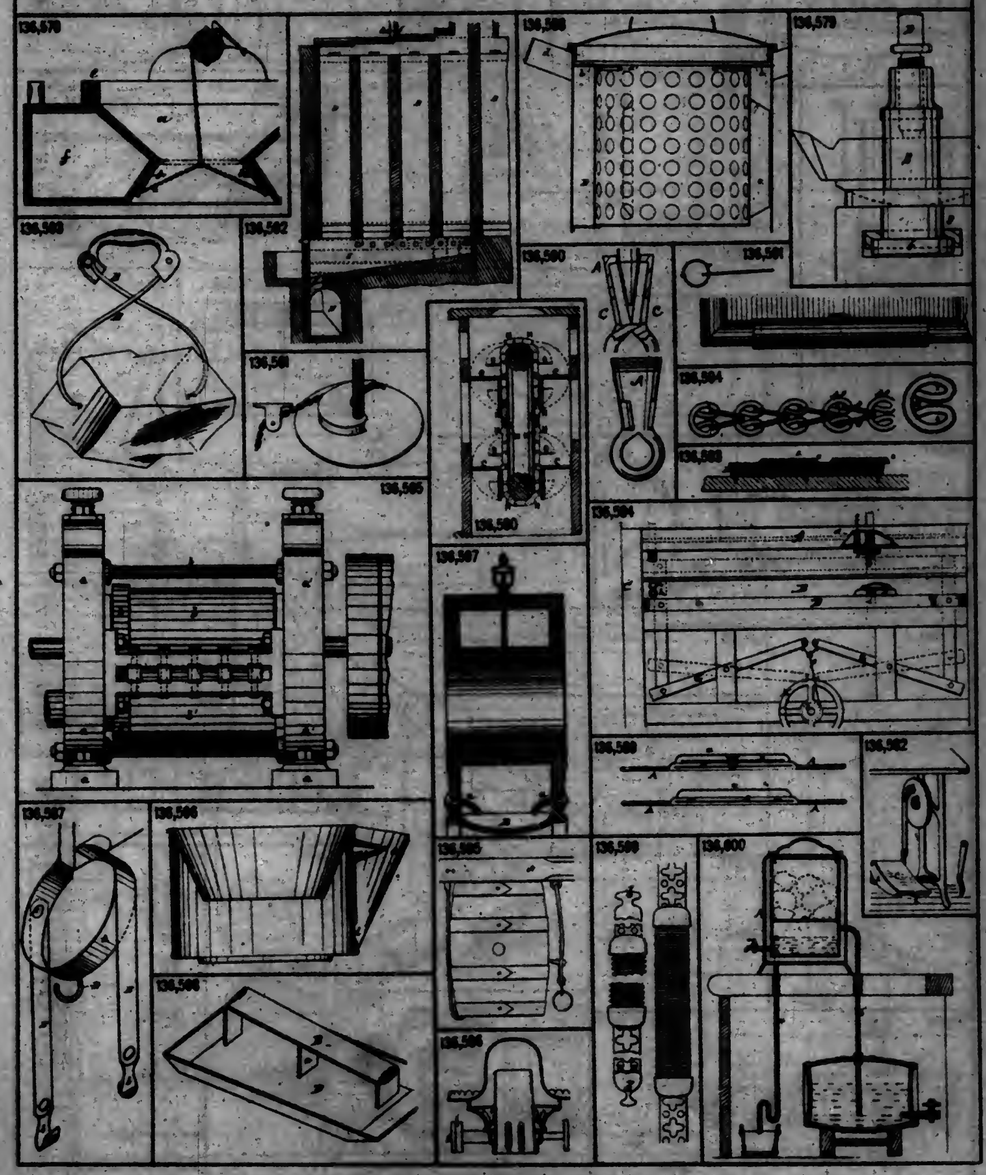
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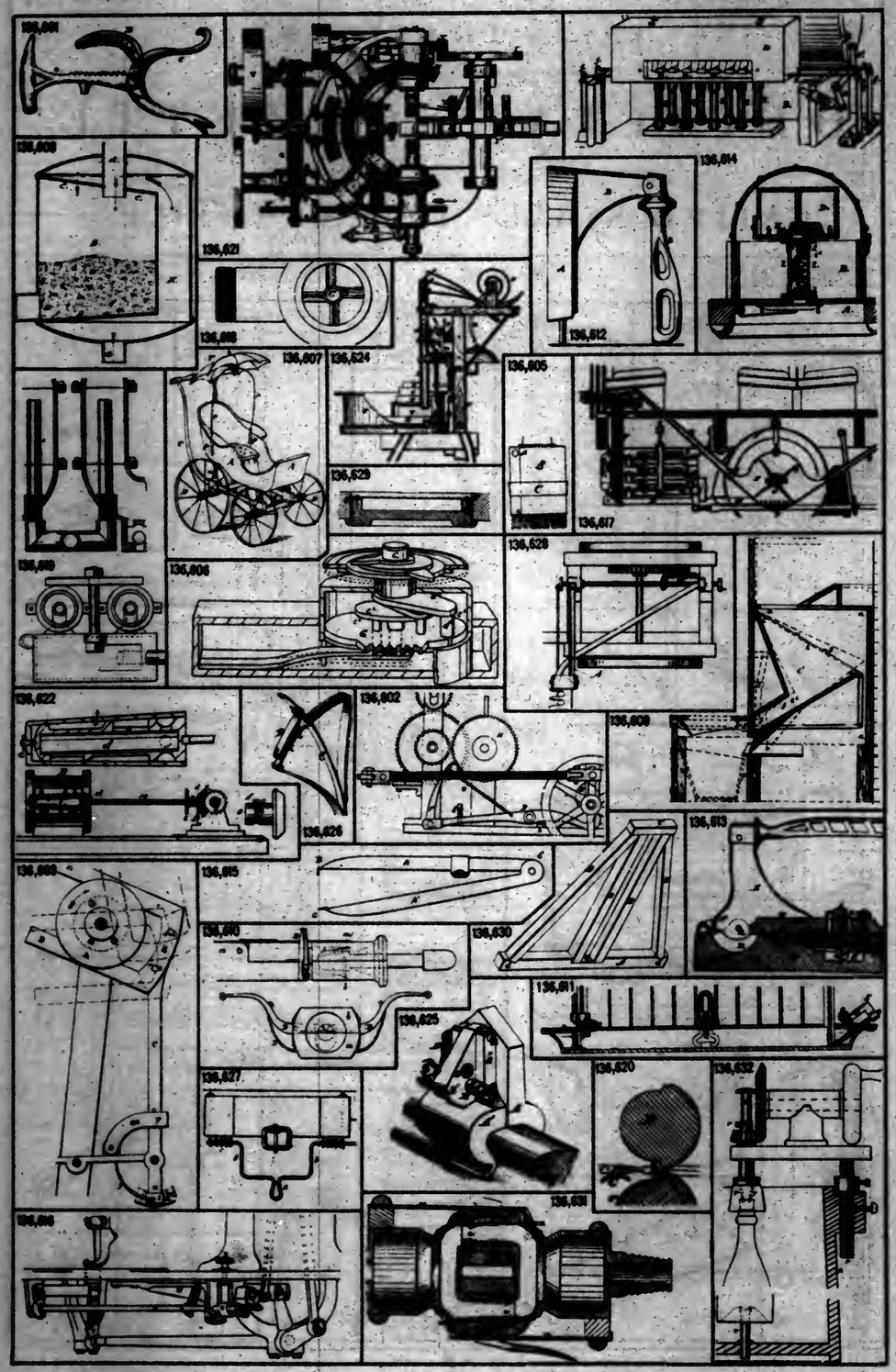
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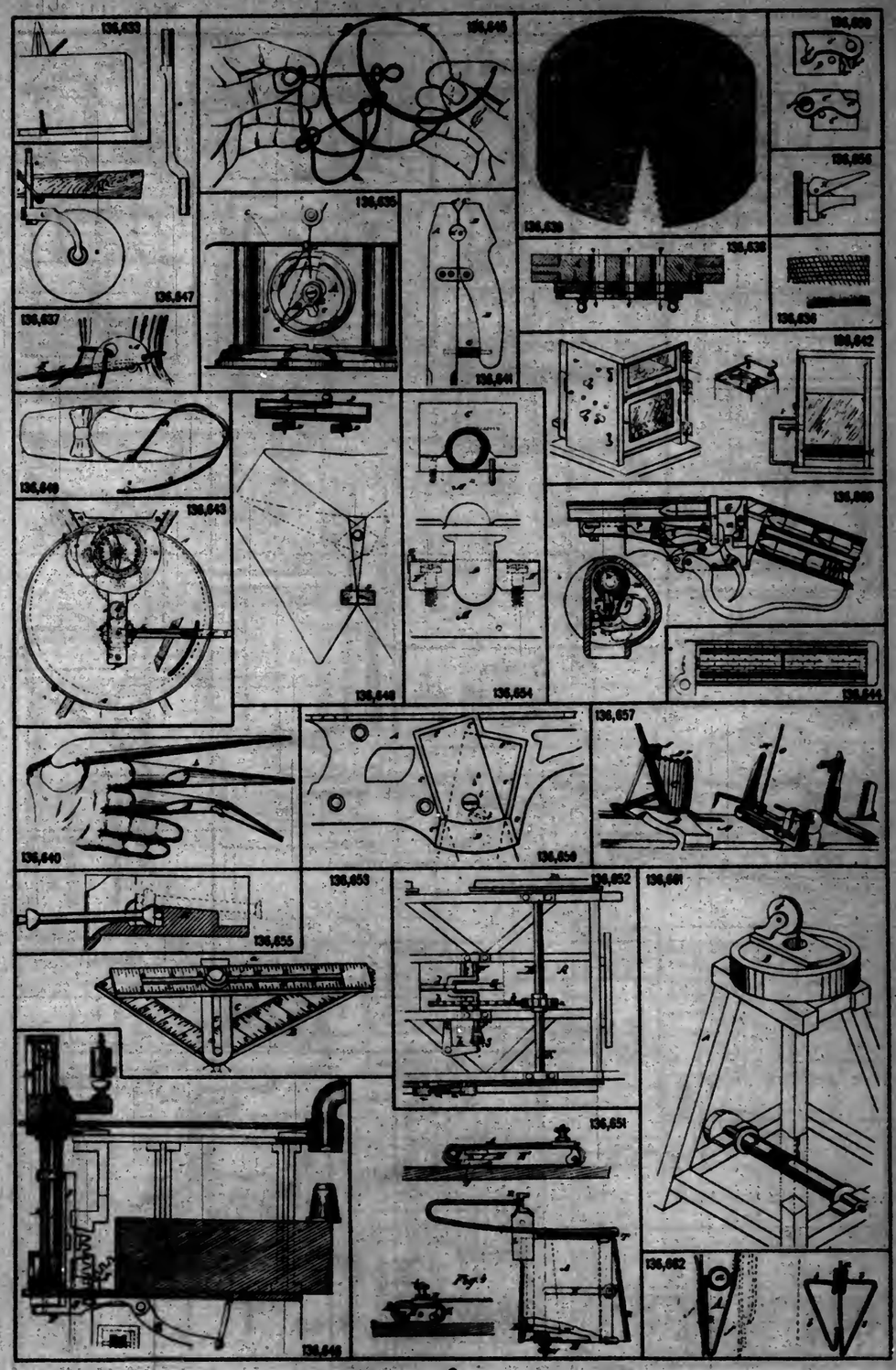
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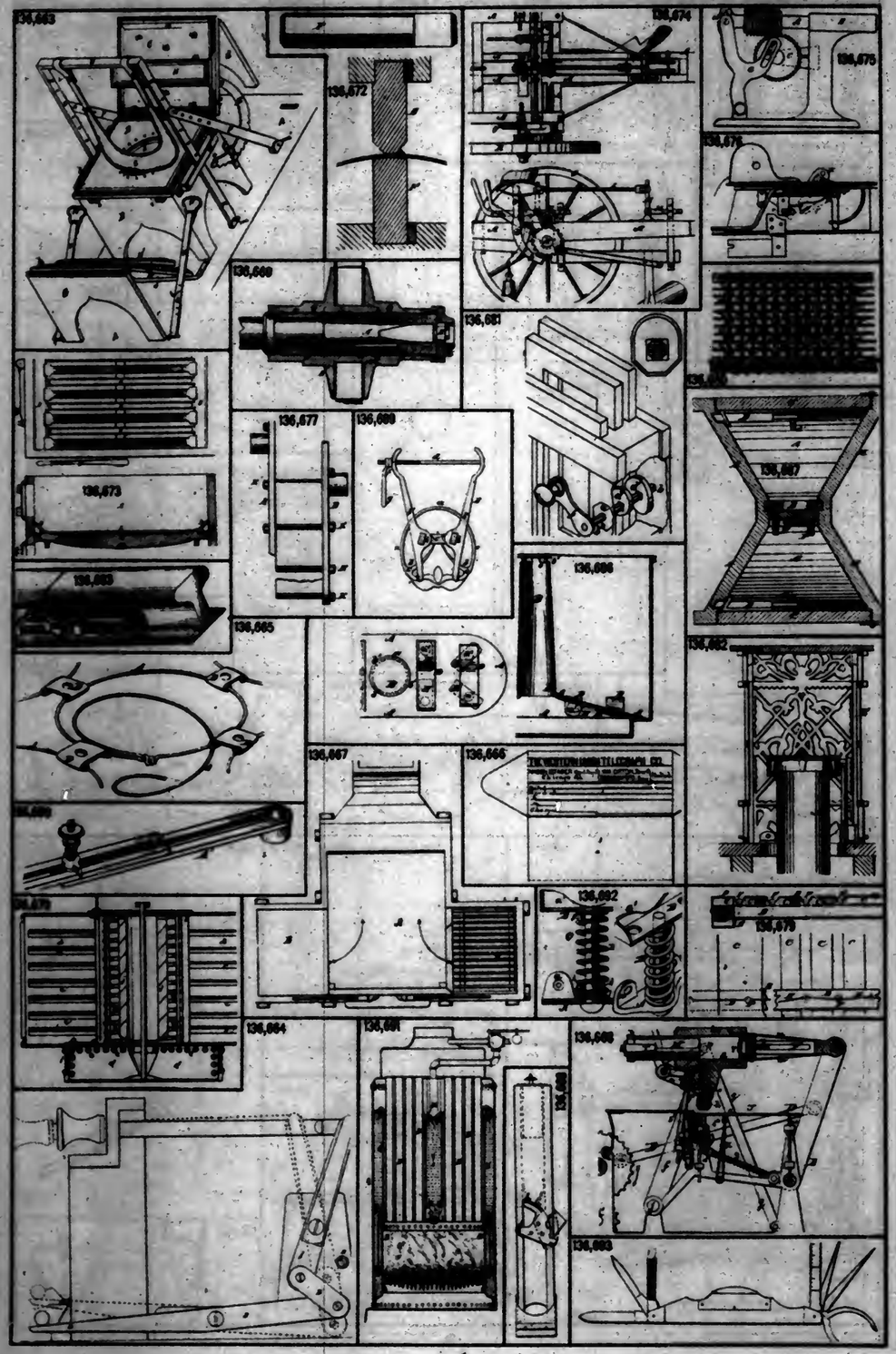
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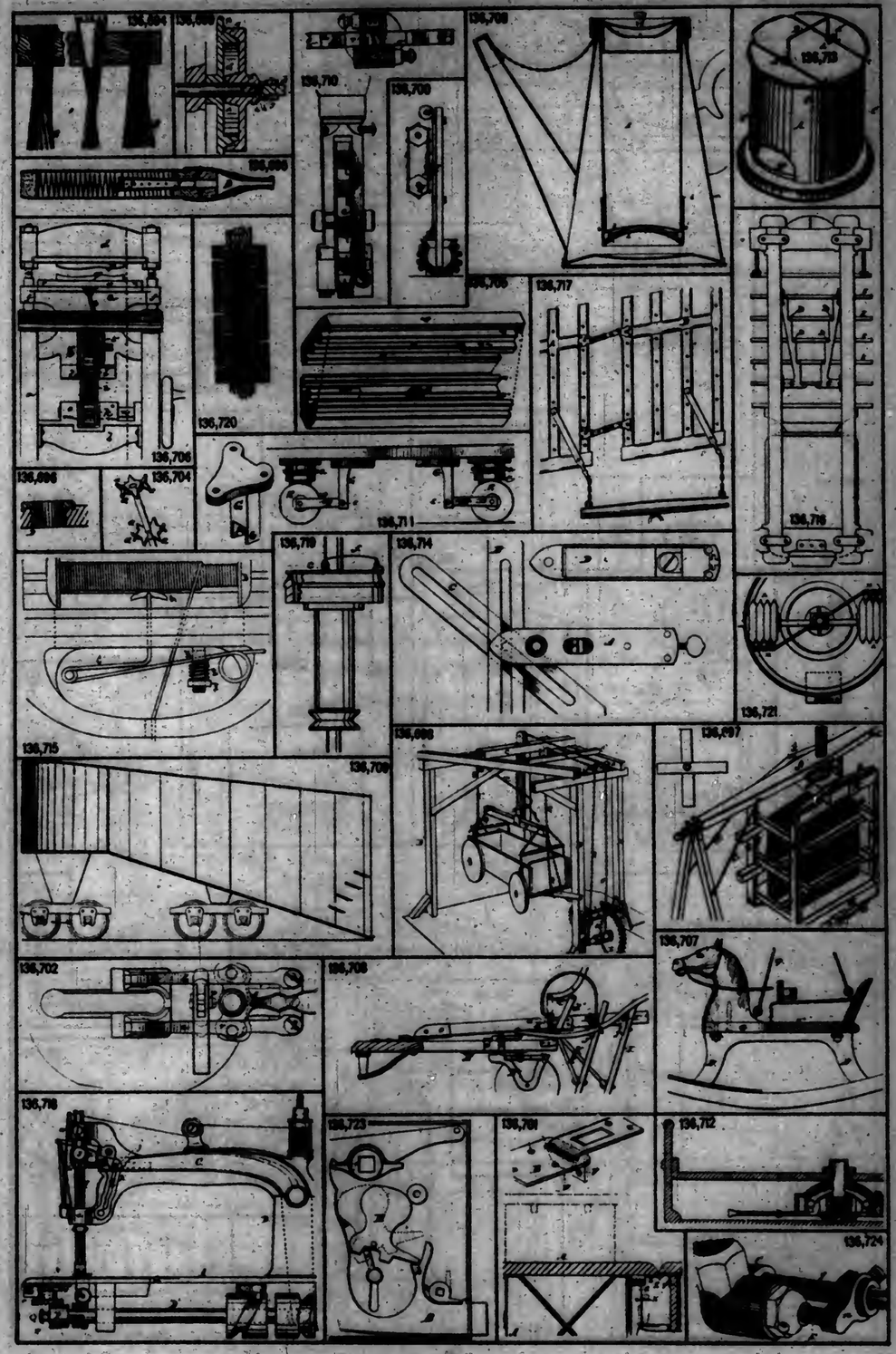
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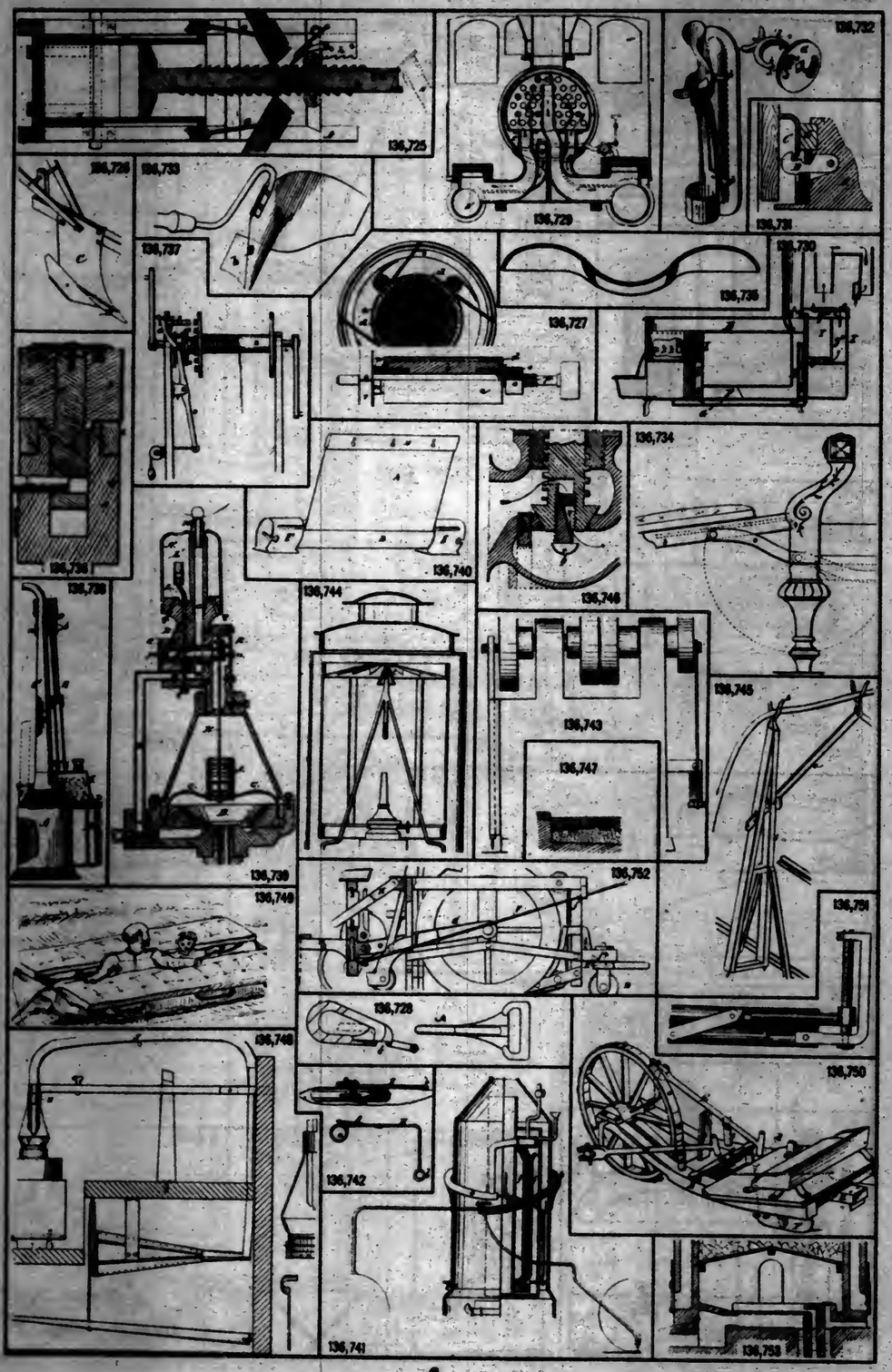
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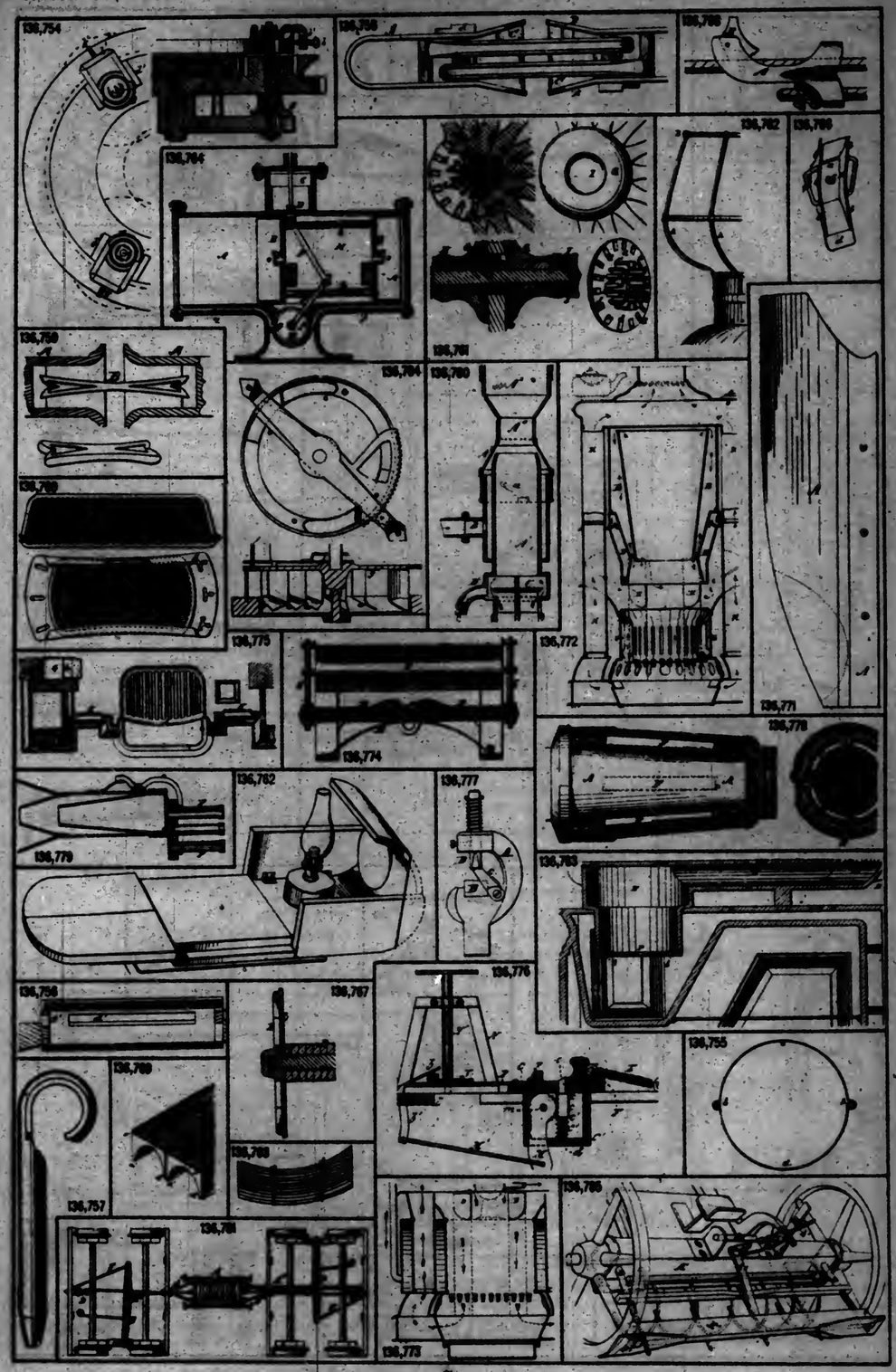
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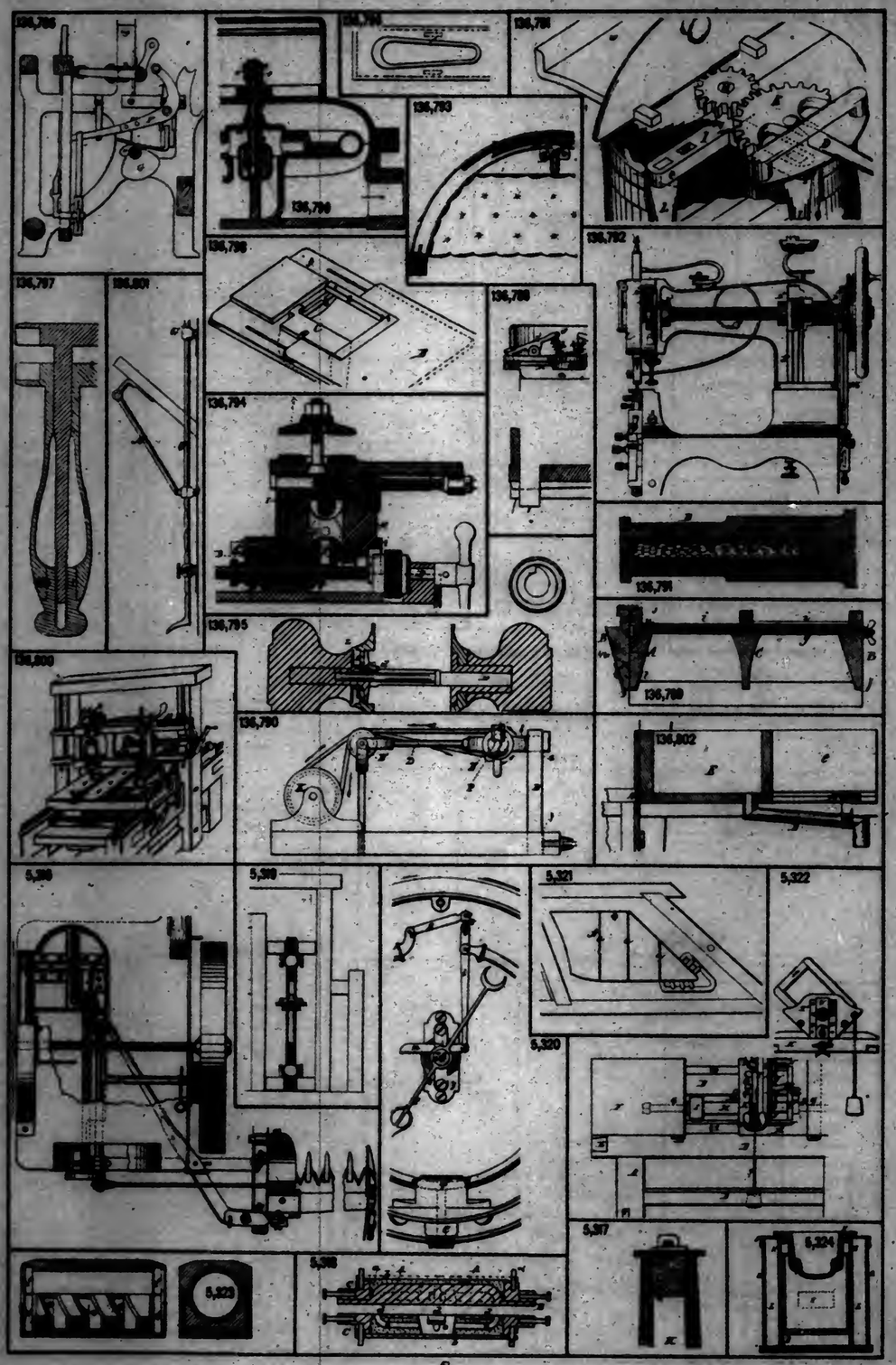
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COMMISSIONER'S DECISIONS.

J. W. WATTLES.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Joseph W. Wattles for letters patent for* IMPROVEMENT IN SUSPENDER-STRAPS.—*Decided March* 22, 1873.]

AMENDMENTS DURING PENDENCY OF APPLICATION—ARTICLES OF MANUFACTURE—NOVELTY.

An amendment should not be received which introduces into the application a feature not described in the specification as originally filed, and which has not been sworn to by the inventor.

There is no novelty in making a suspender-strap by uniting several layers of a fabric which is well known although it has never been used for that purpose before, if such straps have been previously made from other similar fabrics in the same way.

To claim a production as "a new article of manufacture" does not entitle it to a more favorable consideration.

In order to render an article of manufacture patentable it should require invention to produce it just as much as a machine.

If any one has the right to use a certain fabric he is not to be restricted in his right by a patent for employing the fabric in a way which did not require invention.

LEGGETT, *Commissioner:*

The alleged invention in this case is set forth in the claim, as follows:

"I therefore claim, as an improved article of manufacture, a suspender-strap as composed of two or more layers of elastic warp knit fabric, cemented together and united by a strengthening thread or wire sewed or stitched through the layers, as described."

An examination of this case shows a little irregularity of practice upon the part of the Examiner. As the case was originally filed no allusion was made to the use of cement in making the straps, yet an amendment prepared by the attorney, embracing this element, not sworn to by the applicant, was afterward admitted by the Examiner into the body of the specification and also in the claim.

The Examiner, however, seems to have made no objection as to the amendment with respect to this matter, but has examined the case and rejected it upon its merits as if properly filed and amended. The references show that a patent was issued to Charles Benedict, October 23, 1852, for suspender-straps made of two layers of felt; to J. Flagg, April 27, 1869, for straps made of felt and leather combined; to the same party, September 14, 1869, for straps made of two layers of cloth or leather and one sheet of metal interposed; and one to Joseph W. Wattles, the present applicant, December 6, 1870, for straps where one or both faces are made of woven cloth and the center of leather. Reference is also made to a rejected application of Henry Heath, filed April 14, 1870, for straps made of canvas lined with muslin, and to several other similar devices for the same purpose.

In most, if not all of these references, the layers are fastened together by stitching or cement, or both, substantially in the same manner as described by applicant.

The only novelty applicant claims in his reasons for appeal is in the use of two or more layers of "elastic warp knit fabric," none of the others specifying this particular material. If the applicant was the inventor of this special fabric, there is no doubt but that he would be entitled to his claim. But the fabric is old, and the only special quality of merit claimed for this strap is to be found in the quality of the material used.

I cannot see, therefore, that the applicant has in this case presented anything to which he is entitled. Whoever has the right to the use of the fabric he names certainly should not be prevented from using it in the construction of an article of dress so old and so common as that of suspenders; and as he shows nothing new in the mode of constructing the straps there is nothing new in the suspender when constructed with this material that should entitle him to a monopoly.

The applicant seems to suppose that by claiming the strap manufactured of this material as a "new article

of manufacture" he will be entitled to a patent without showing that in its production he has exhibited invention.

I do not understand that a "new article of manufacture" is to be granted the protection of a patent without invention any more than a machine. In the production of a new article of manufacture there must be some obstacle to overcome, some new result to be attained that calls into action the inventive faculty. The mere substitution of one well-known material for others so similar as to be distinguishable only by expert examination, in the construction of a well-known article, is the furthest thing possible from invention.

BEHR & MONGEL, ADM.—*Extension.*

[*In the matter of the application of Julia Behr, administratrix, and H. C. Mongels, administrator, of the estate of Edward Behr, deceased, for extension of patent No. 23,344, for* IMPROVEMENT IN SKATE-FASTENINGS, *granted March 29, 1859, and reissued August 2, 1870.—Decided March 28, 1873.*]

EVIDENCE AS TO DILIGENCE AND REMUNERATION—VALUE—INTEREST.

The extension of a patent refused because the application was sustained only by the affidavits of the petitioners, and also because the invention was never in extensive use, and the demand for it had ceased.

It is a grave objection to the extension of a patent if an interest in it has been assigned upon the purchaser's agreeing to employ counsel, and, if it can be made to cover subsequent improvements, to take measures for that purpose.

LEGGETT, *Commissioner:*

This application is only supported by the affidavits of the administrator and administratrix accompanying their statement and account. It is possible that an extension might properly be granted upon no more proof than this, if the invention upon examination should be found to have constituted a decided advance step in the art to which it pertained and had not been superseded by other inventions of more importance not resting upon it as a foundation. But in this case it appears that this skate-fastening never did go into public use to any considerable extent, and that now it has become wholly obsolete, so far as any demand in the market is concerned. It is set forth that one-half of the interest in the extended term, if granted, will be in a Mr. Ladd, who has agreed "to secure able counsel to consider the relation of this patent to the later improvements, and, if just, to secure a proper royalty, to be equally divided between him and ourselves after the expenses are paid."

This exhibits a scheme to subordinate and control the improvements of subsequent inventors, if "able counsel" think there is a prospect that the reissue will serve such a purpose. This makes a rather remote contingency upon which to base either an expectation of reward to the representatives of the inventor, or an estimate of the value and importance of the invention to the public. In fact, it is a somewhat singular proposition. An extension of a patent is asked upon a promise to ascertain if it is not possible to torture the patent into shape to mulct subsequent inventors and the public by means of it.

This is not what is contemplated by the law providing for the grant of extensions. There appears to be no ground whatever to warrant the grant, and the extension is refused.

HENRY R. ROBBINS.—*Extension.*

[*In the matter of the application of Henry R. Robbins for the extension of letters patent for* "IMPROVEMENT IN FIRE-PLACE HEATING-STOVES," *granted March 29, 1859, and reissued Nov. 12, 1872.—Decided March 21, 1873.*]

EVIDENCE OF DILIGENCE.

Although the evidence does not give all the information as to the value of the invention and the diligence of the patentee which the rules require, yet if it gives enough to satisfy the Commissioner, and there is no serious opposition on that point, the patent will be extended.

If there is a reasonable doubt whether one of the claims in a patent is anticipated in an old unexplained drawing, it should not prevent the extending of the patent.

Although one of the claims in a patent seems to be invalid, yet if it has been embraced in a subsequent patent granted to other parties, and there are other claims for a valuable invention, the patent will be extended.

If a device which has been used before in a stove can be applied to one of another kind without difficulty, a claim for the new application should receive no countenance.

It would seem that the merit of novelty should not be denied to a device upon reference to a mere drawing not accompanied by any explanation.

It is questionable whether merely advancing the fire-pot of a stove farther into a room in order to heat it more effectually should be regarded as an invention.

THACHER, *Acting Commissioner:*

The application in this case is not satisfactorily supported. Besides certain certificates, which cannot be received as evidence, there have been filed only four short affidavits, which do not furnish all the information required by official rules, and do not substantiate all the averments of the sworn statement. Nevertheless I am not disposed to regard these defects as fatal, for the evidence does, to some extent, inform the Commissioner as to the value and importance of the invention and the reasons why the inventor has failed to receive reasonable rémuneration.

There is no serious opposition to the extension on this account, but the real point of attack is the second claim of the reissued patent, which is as follows:

"A fire-place stove having a portion of the cylinder or fire-pot projecting into the room, substantially as and for the purpose described."

It is asserted that this claim is wanting in novelty, and a number of references were cited at the hearing to prove the declaration. All of these which really have pertinence are considered in the report of the Examiner, who reaches the conclusion, after a somewhat elaborate discussion, that the novelty of the invention is unimpeached. I have studied the cases carefully, and believe none of them demand special notice, except the old patent granted to E. Nott, October 25, 1832. The restored drawings illustrating Nott's invention are very voluminous, but only Fig. 20 is supposed to show an arrangement of parts like that claimed by Robbins. The title of the patent is "Improvement in the adaptation of the anthracite-coal stove to open fire-places," and, if I was satisfied beyond doubt that the figure in question represents the stove placed in a fire-place and having the combustion-chamber projecting into the room, I should hold the second claim of the Robbins patent to be completely answered, for I do not think the point well taken that the reference, to be valid, must show what is known as the "Baltimore heater," as there is no apparent obstacle to the application of the arrangement, supposed to be shown by Nott, to the cylinder stove known as the "Latrobe."

The drawing is the only evidence of such an arrangement of the stove. There is not one word in the patent relating to the position of the stove with reference to the fire-place and room; it is all a matter of inference from the drawings. The title of the patent and the relative arrangement of the grate, combustion-chamber, upper damper, and what is supposed to be the face-plate, give color to the inference, and lead me to believe that it is substantially correct. Yet I cannot say that this is a matter about which there can be no *reasonable* doubt. In the absence of all verbal description, the assertion either that the heater was not set out in the room like an ordinary stove, or wholly within the fire-place like the old "Latrobe," would be unwarranted. The sufficiency of references of this description to defeat a patent has been seriously questioned. *Seymour* vs. *Osborne*, 11 Wallace, 516; *Reeves* vs. *Keystone Bridge Co.*, Off. Gaz., vol. 1, 466. On the authority of these cases it is only necessary to repeat what has been said already in a former extension case—that to impeach the novelty of an invention the reference must be a matter of certainty, not of inference. A. C. Herron, Off. Gaz., vol. 1, 608. In view of these decisions the objection to the second claim for want of novelty in the invention must fail.

An objection much more serious, though not heretofore raised in the case, it seems to me would lie to the patentability of the subject-matter of this claim. There appears to have been no hindrance to the advancement of the stove further into the room, and the effect of this projection is just what would be expected by any one familiar with even the elementary laws of heat. I am at a loss, therefore, to know where the evidence of invention is to be found, or on what ground the claim was allowed. If it was the only claim in the patent I should have little hesitation in refusing an extension. But the other claims are unobjectionable and evidently valuable. The patent is a leading one, and undoubtedly will be litigated. Furthermore, it appears that in the reissue, obtained June 11, 1872, of a patent granted to Bibb and Augee in 1861, the same claim in substance was allowed; so that, if the claim in question should be disclaimed by Robbins before extension, its spirit would stil exist in the Bibb and Augee patent to plague the manufacturers and users of modern "Latrobe stoves." If this claim can be sustained it belongs to Robbins, whose patent antedates that of Bibb and Augee a little more than three years. It would be a great hardship, then, to compel him to strike it from his patent, thereby leaving him, with others, subject to the annoyance which might arise in the manufacture of his own stove by reason of a claim inadvertently granted to subsequent inventors.

Under these circumstances I believe the rights of all parties interested will be promoted by permitting the claim to remain in the patent, in order that the whole question may go to the courts for final adjudication.

The extension will be granted on the payment of the usual fee before the expiration of the original term.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF NEW JERSEY.

E. S. EMERSON *et al. vs.* EDWARD SIMM *et al.*

In Equity.—Before Nixon, Judge.—Decision rendered February 20, 1873.]

MEASURE OF DAMAGES—EXEMPLARY DAMAGES—RIGHTS OF DEFENDANT UNDER A DECREE FOR DAMAGES.

In a suit in equity for the infringement of a patent it is not necessary that damages be prayed for *eo nomine*. Under the general prayer of the bill for such relief as may be agreeable to equity the complainants become entitled to damages upon a decree being rendered in their favor.

Where the defendants purchased the infringing machine in the open market, without knowledge of the patent, and abandoned all the patented appliances on being notified of their infringement: *Held*, that it was not a case for exemplary damages.

If the owner of a patent has an established license fee for persons doing the class of business in which the defendants were engaged, the amount of such fee is his loss or damage for the use of the invention by them without a license.

Under such circumstances, the fact that defendants discontinued the use of the infringing machine when notified of the infringement, and that they might have used some other machine as advantageously, has no weight in measuring the complainants' damages.

But a decree for damages, where the complainants have an established license fee, for the amount of such fee, gives the defendants the right to use the invention during the life of the patent.

This was a suit in equity under letters patent granted to Robert G. Emerson and John Myers, under date of May 23, 1854, for an improved sawing-machine.

It appeared that the defendants, without knowledge of the patent, had purchased a single machine which was acknowledged to be an infringement of complainants' patent; and, further, that when they were notified that they were infringing they promptly abandoned the use of all the devices protected by the patent. It also appeared that the complainants had an established license fee for persons of the class of the defendants for using machines made under the patent.

The case came up upon exceptions to the master's report, to whom it had been referred to state an account of the profits received by the defendants and to assess the damages suffered by the plaintiffs.

[*F. H. Betts*, for complainants.

S. J. Glassey, for defendants.]

NIXON, *Judge:*

The bill of complaint in this case prays "that the defendants may be compelled to account for and pay over unto the plaintiffs all such gains and profits as have accrued or arisen to, or been earned and received by, the defendants, and all such gains and profits as they would have received but for the wrongful acts of the defendants, and such other relief as the equity of the case may require."

The bill was taken, as confessed, for want of an answer, and a final decree entered May 9, 1872, with a reference to a master to take and state an account of the profits accrued to or received by the defendants on account of their infringement, and also to assess the damages suffered by the plaintiffs from such infringement.

The master's report was filed November 22, 1872, finding—

1. That no satisfactory proof was made before him that the defendants had derived or received any profit from the use of the plaintiffs' invention; and

2. That the plaintiffs had suffered damage by the infringement of their patent right by defendants to amount of $1,200, arising from their loss of the license fee, as established by the complainants for the use of their invention and machine by persons engaged in business of the character carried on by the defendants.

Six exceptions are filed to the report in behalf of the defendants, all of which, I think, are embraced in these two:

1. Because the master reports that the complainants are entitled to any damages in this suit.'

2. Because he reports that they should be awarded the sum of $1,200 as a license fee for damages for the infringement; or that the evidence in the case warranted the finding of any such sum as the value of a license for complainants' invention.

1. The first exception was not very seriously urged at the argument.

The bill in this case was filed June 14, 1871. The 55th section of the act of July 8, 1870, supplementing the provisions of the patent act of 1836, provides that, "upon a decree being rendered in any case for an infringement, the complainant shall be entitled to recover, in addition to the profits to be accounted for by the defendant, the damages the complainant has sustained thereby, and the court shall assess the same, or cause the same to be assessed under its direction, and shall have the same powers to increase the same in its discretion that are given by said act to increase the damages found by verdicts in actions upon the case."

It will be perceived that the above section materially changes and adds to the remedy given to plaintiffs under the act of July 4, 1836.

The 14th section of that act confined the jury to the *actual* damages which had been sustained by the plaintiff; and this amount the court was authorized to increase to any sum not exceeding three times the amount of the verdict.

The objection of the defendants in this case is, that the bill of complaint does not pray for damages *eo nomine*, and, hence, that no damages should be allowed.

The answer is, that the bill asks for an account of gains and profits, and such other relief as may be agreeable to equity, and that under this general prayer for relief, upon a decree being rendered in favor of the complainants for an infringement of their patent, they are entitled, under the statute, "to receive, in addition to the profits to be accounted for by the defendants, the *damages* they had sustained thereby."

The damages follow, by the law, as one of the results of the decree, whether specifically prayed for or not. It has been so held in England under Lord Cairns' act, (22 and 22 Vict. Cap. 27,) which simply gives jurisdiction to the court of chancery to award damages, if it sees fit so to do. *Betts* vs. *Neilson*, 16 Weekly Rep., 524; *Id.*, 19 Weekly Rep., 1125; *Cotton* vs. *Wyld*, 32 Beavan, 266.

2. I have examined the testimony taken by the master, returned and filed with his report, upon which he bases his award of $1,200 for damages to the complainants. It appears that the defendants purchased the machine in the open market, without a knowledge of the patent; that they used it about nine months, commencing in September, 1870, and ending in June, 1871; that it was used solely in their own business in sawing boards for the manufacture of trunks, and that they abandoned all the patented appliances to the machine, when notified of their infringement, and before the suit was commenced. No case is therefore made for exemplary damages, and the sole question is whether the amount fixed by the complainants for a license fee to be paid by persons engaged in business of the character carried on by the defendants is a fair criterion by which to judge of and measure the damages suffered by complainants from the defendants' infringement.

The courts have always found it difficult to lay down any precise rule of damages in patent cases. The legislation of Congress in the matter is quite suggestive. By the 5th section of the act of 1793, if any person made or used an invention without the consent of the patentee he forfeited and became liable to pay to the patentee a sum that should be at least equal to three times the price for which the patentee had usually sold or licensed to other persons, the use of the said invention. This was found in actual practice to be a measure of damages both inconvenient and harsh; inconvenient, because it did not make provision for those cases where the patentee manufactured and sold his invention and depended upon the profits thus realized for his remuneration; and harsh, because it did not allow any discrimination to be made between the innocent violator and the wilful pirate. The 14th section of the act of July 4, 1836, before referred to, restricted the jury to *actual* damages, but allowed the court in its discretion to treble the amount, according to the circumstances of the particular case. This section has been re-enacted in the law of July 8, 1870, and, in addition thereto, authority has been conferred upon the court, sitting in equity, to ascertain and assess, not only the profits of the infringer, but the damages of the inventor, with power of a corresponding increase in its discretion. But, although no rule can be laid down applicable to all cases, there is one which ordinarily applies to cases of this sort, where the patentee depends upon license fees or royalties for his compensation for the use of his invention. If he has an established license fee, the amount of such fee is his loss or damage for the use of the invention without a license.

The Supreme Court, in *Seymour et al.* vs. *McCormick*, 16 How., 490, says: "Where an inventor finds it profitable to exercise his monopoly by selling licenses to make or use his improvement, he has himself fixed the average of his actual damages, when his invention has been used without his license." The same rule was applied in *Sickles* vs. *Borden*, 3 Blatch. C. C., 543; in *Goodyear* vs. *Bishop*, 2 Fish., 160; and in *Spaulding* vs. *Page*, 4 Fish, 641.

The defendants seek to avoid the application of this rule in the present case by showing that they ceased to use the complainants' invention, when apprised of the patent, and substituted other appliances which rendered the machine quite as effective and useful for their purposes. I do not now listen to the suggestion of complainants' counsel that these substituted appliances are mere mechanical equivalents, for this is not the proper time and mode of trying that question; but, surely, the defendants are not permitted to get rid of the consequences of a confessed infringement by alleging that they might have used some other machine as advantageously as the complainants'. However available such proof might be in considering the question of the defendants' profits, it has no weight in measuring the complainants' damages.

I am, therefore, of the opinion that the exceptions must be overruled and the master's report confirmed, and it is ordered accordingly.

Such a decree in this case will give to the defendants the right to use the invention of the complainants during the life of the patent.

SUPREME COURT OF THE UNITED STATES.

BENONI E. GARDNER, APPELLANT, *vs.* THE GOODYEAR DENTAL VULCANITE COMPANY *et al.*

[*Appeal from the circuit court of the United States for the district of Rhode Island.—Motion No.* 133.—*December Term*, 1871.]

A compromise was made between the parties to a suit for infringing a patent, in pursuance of which a decree for the complainants was entered in the circuit court, and affirmed on appeal in the Supreme Court, and they paid defendant's counsel as well as their own. Upon these facts being shown to the Supreme Court the decree of affirmance was vacated, the appeal dismissed, and the mandate which had been issued to the circuit court was recalled.

Mr. Chief Justice CHASE delivered the opinion of the court:

The original suit in equity was brought by the Goodyear Dental Vulcanite Company against Gardner to enjoin him from the use of certain patented subjects belonging, as alleged, to the company, and for an account. The case was heard upon a bill, answer, and testimony, and there was a decree in favor of the company in the circuit court for the district of Rhode Island in September, 1870. Upon appeal to this court the decree below was affirmed on the 6th of May, 1872, but the opinion has not been read.

The defense was conducted by counsel originally employed and paid by Newbrough, under whom Gardner was licensee. On the 1st of July, 1869, before the decree in the circuit court, Newbrough and the company compromised all matters of difference between them, with the understanding that this suit should go on to the final hearing and determination, both in the circuit court and in this court on appeal, as if the compromise had not been made.

The company, however, paid the counsel employed for the defense as well as for themselves in the circuit court, and subsequently in this court.

These facts appear from the record and from the admissions of the company in the ninth article of their answer to the motion to dismiss the appeal. They are the only facts which we think it necessary to notice.

It may be that the company has not become the legal or equitable owners of the opposing interests involved in the suit. There may be, and doubtless are, large opposing interests of which they are neither the legal nor equitable owners. But it cannot be admitted that one party to a suit can pay the fees of counsel on both sides, both in the court below and on appeal, without being held to have such control over both the preparation and argument of the cause as to make the suit merely collusive in both courts. It can make no difference that the counsel fees were charged to the party, apparently though not really liable to pay them, and payment from the other party procured through him. This, indeed, is a circumstance against the party who pays the fees rather than in his favor.

The motion to vacate the decree of affirmance heretofore made, and to dismiss the appeal, must, therefore, be granted, and an order made to recall the mandate which has been issued to the circuit court. We take occasion, however, to say that we see nothing in the conduct of the counsel who actually represented the company which merits blame or which ought to affect in any degree the high esteem in which they have been held. Neither of them appears to have had any knowledge of any arrangements made by their clients with the opposing party.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,528.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,436.—*Machines for Wringing Clothes.*—Granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, and May 14, 1867. Hearing March 19, 1873.

23,445.—*Paper-Folding Machines.*—Granted to CYRUS CHAMBERS, Jr., April 5, 1859. Hearing March 19, 1873.

23,448.—*Valve Arrangements of Steam-Engines.*—Granted to HENRY CLAYTON, April 5, 1859. Hearing March 19, 1873.

23,491.—*Machinery for Laying Rope.*—Granted to GEORGE W. PITTMAN and WILLIAM C. BOONE, April 5, 1859. Hearing March 19, 1873.

23,520.—*Burnishing-Machines.*—Granted to LE ROY S. WHITE, April 5, 1859. Hearing March 19, 1873.

23,525.—*Bedstead-Fastenings.*—Granted to LEVI W. BUXTON, April 5, 1859. Hearing March 19, 1873.

23,533.—*Faucets.*—Granted to GEORGE W. RANDALL, April 5, 1859. Hearing March 19, 1873.

23,536.—*Pyrotechnic Night-Signals.*—Granted to MARTHA J. COSTON, administratrix of B. F. COSTON, deceased, April 5, 1859. Hearing March 19, 1873.

23,577.—*Sewing-Machines.*—Granted to WILLIAM CLEVELAND HICKS, April 12, 1859. Hearing March 26, 1873.

23,589.—*Steam-Generators.*—Granted to ALEXANDER B. LATTA, April 12, 1859. Hearing March 26, 1873.

23,598.—*Screw-Propellers.*—Granted to JAMES MONTGOMERY, April 12, 1859. Hearing March 26, 1873.

23,613.—*Harvester-Rakes.*—Granted to HIRAM H. SCOVILLE, April 12, 1859 Hearing March 26, 1873.

23,622.—*Cooking-Stoves.*—Granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, and April 7, 1868. Hearing March 26, 1873.

23,635.—*Gates for Canal-Locks.*—Granted to CORNELIUS W. WILLIAMS, April 12, 1859. Hearing March 26, 1873.

23,642.—*Obtaining Fibers from Waste Felted Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865. Hearing March 26, 1873.

23,643.—*Machines for Disintegrating Waste Felt Fabrics.*—Granted to JOHN F. GREENE, April 12, 1859. Hearing March 26, 1873.

23,650.—*Steam-Boiler Furnaces.*—Granted to JONATHAN AMORY, April 19, 1859; reissued, No. 2,057, August 20, 1865. Hearing April 2, 1873.

23,665.—*Cooking-Ranges.*—Granted to B. WELLS DUNKLEE, April 19, 1859. Hearing April 2, 1873.

23,703.—*Machines for Making Drain-Pipes.*—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, April 19, 1859; reissued February 28, 1865, January 14, 1868, and April 27, 1869. Hearing April 2, 1873.

23,707.—*Harvesters.*—Granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, again, in three divisions, Nos. 4,824, 4,825, and 4,826, March 26, 1872. Hearing April 2, 1873.

23,710.—*Stoves.*—Granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, and in two divisions, No. 1,621 and 1,622, February 16, 1864; No. 1,621 being again reissued September 27, 1864, and February 12, 1867. Hearing April 2, 1873.

23,725.—*Double-Seaming Machines.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 9, 1873.

23,726.—*Machines for Corrugating Sheet Metal.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859. Hearing April 9, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,963, June 6, 1865; No. 1,960 having been ordered to again reissue, No. 5,259, January 22, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

23,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MERRIHON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,860.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,903.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,998.—*Surgical Splints.*—Granted to DAVID AMI, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tire.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.* Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,098.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,169.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WEBSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,207.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL P. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. FALKER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABBATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHEBLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,291.—*Improved Metallic Band for Baling*, granted to GEORGE BRODIE, March 22, 1859; reissued April 27, 1869, numbered 3,405.

Claim.—1. The bale-tie, formed by passing the bent ends or loops of the hoop A into the link B and holding them there by means of the pins C C passed through them and over the sides of the link, in the manner herein described and shown in Figs. 1 and 3.

2. The bale-tie formed by passing the loops of the hoop A into one or more recesses in the link B through a slit or opening in its side, and holding said loops in the recesses by placing pins G within them, and thus giving such extension to the loops as to prevent their being withdrawn from the recesses while the pins remain in place, in the manner herein described, and as shown in Figs. 4 and 5.

3. The connecting-link of a bale-tie, having a slit or opening in its side or end through which the hoop can be introduced into the link, as herein described, and as represented in Figs. 6, 7, 13, and 14.

23,309.—*Envelope*, granted to SIMON E. PETTER, March 22, 1859.

Claim.—The form of envelope-blank herein described and represented, whether cut from a continuous roll of paper or from separate sheets.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 18, 1873.]

6,493.—*Ornamenting Rolls.*—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to JOHN P. CONNELL, same place.

6,494.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,495.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,496.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,497.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,498.—*Floor Oil-Cloths.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,499.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,500.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,501.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,502.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,503.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,504.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,505.—*Floor Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,506.—*Beer-Mug.*—J. ERNEST MILLER, Pittsburg, Pa.

6,507.—*Lounge.*—JOHN B. ROHRER, Philadelphia, Pa., assignor to SAMUEL COOPER and JOHN HALL, same place.

6,508.—*Basket.*—SAMUEL L. RUSSELL, Chicago, Ill.

6,509.—*Organ-Case.*—SAMUEL HAYWARD, Boston, Mass., assignor to J. ESTEY & COMPANY, Brattleborough, Vt.

6,510.—*Organ-Case.*—SAMUEL HAYWARD, Boston, Mass., assignor to J. ESTEY & COMPANY, Brattleborough, Vt.

6,511.—*Organ-Case.*—SAMUEL HAYWARD, Boston, Mass., assignor to J. ESTEY & COMPANY, Brattleborough, Vt.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date March 18, 1873.]

1,166.—*Smoking and Chewing Tobacco.*—LEWIS BREMER'S SONS, Philadelphia, Pa.

1,167.—*Smoking and Chewing Tobacco.*—LEWIS BREMER'S SONS, Philadelphia, Pa.

1,168.—*Files.*—CROCKER CUTTER-TOOTH FILE COMPANY, Norwich, Conn.

1,169.—*Syrup.*—FAIRBANKS & GILMAN, New Orleans, La.

1,170.—*Syrup.*—FAIRBANKS & GILMAN, New Orleans, La.

1,171.—*Cough-Balsam.*—FRANK W. KINSMAN, Augusta, Me.

1,172.—*Smoking-Tobacco.*—ROBERSON TOBACCO MANUFACTURING COMPANY, Louisville, Ky.

1,173.—*Fine-Cut Chewing or Smoking Tobacco.*—ROBERSON TOBACCO MANUFACTURING COMPANY, Louisville, Ky.

1,174.—*Rubber Hose.*—THE BOSTON ELASTIC FABRIC COMPANY, Boston, Mass.

1,175.—*Rubber Hose.*—THE BOSTON ELASTIC FABRIC COMPANY, Boston, Mass.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date March 18, 1873.]

ORIGINAL PATENTS.

136,803.—*Staple-Socket for Hames.*—RICHARD J. ALGEO, Kalamazoo, Mich., assignor of one-half his right to A. UTLEY NOBLE and BENJAMIN CLEEKEWERCK, same place.

The metallic shield is shaped to slip over the hames, and is cast with the breast-strap and hame-tug staples.

Claim.—The arrangement of the socket C under the iron B of the hame A, the latter being tenoned to receive the inner and back edges of said socket, in the manner and for the purpose set forth.

136,804.—*Horse-Collar Cap.*—RICHARD J. ALGEO, Kalamazoo, Mich.

A zinc collar-cap is covered with leather entirely, and with a slotted girder for the collar fastening.

Claim.—1. As a new article of manufacture, a collar-cap, A, of sheet-metal, having a backing, C, of leather, pressed over its edges, as shown and set forth.

2. The combination, with the cap A and backing C, of the slotted girder B, as and for the purpose set forth.

136,805.—*Clover-Separator.*—CHARLES L. ALLEN, Flat Rock, assignor to JOHN L. HOOD, Grafton, and EUGENE ARMSTRONG and HENRY C. HOOD, Ash, Mich.

Arrangement of sieves in a shoe for thoroughly winnowing the clover and obviating the necessity of running it or any of it through the thrasher a second time.

Claim.—The construction and arrangement, with relation to the shoe A, screens B C, spout E, and screen F, of the partitions *a b*, conductor *d*, spout G, and its screen H, substantially as shown and set forth, and for the purpose specified.

136,806.—*Direct-Acting Steam-Engine.*—JOHN BAILEY, Quincy, Ill., assignor of one-half his right to HENRY BREITENSTEIN, same place.

Steam entering a conduit leading to an upper cut-off and to the lower end of main cylinder presses against the piston and valve in the latter, and, on account of differential areas, raises the same (steam having entered supplementary cylinder and raised the cut-off valves and closed the upper port to main cylinder) until the valve passes a port which permits steam in supplementary cylinder to be exhausted through lower end of main cylinder, and the cut-off valve to descend by gravity and pressure of steam acting as a cushion between its head and an adjustable piston, the upper port of main cylinder being thus opened. Cone-shaped device employed instead of stuffing-box, and cone-shaped projections and recesses to prevent concussion of several valves and pistons, water and steam being caught therein.

Claim.—1. The cylinders D and E, provided with the adjustable cylinder-head V, in combination with the rod P, piston N, and head R, substantially as shown and described.

2. The cone L, valve H, provided with the pocket *l*, in combination with the piston-rod F and cylinder C, substantially as shown and described.

3. The cylinder B, provided with the annular groove *a*, in combination with the piston-head G and conduit M, substantially as shown and described.

4. The cylinders B and C, in combination with the rod F, piston G, and valve H, substantially as shown and described.

5. The piston-rod P, having its surface so reduced as to allow a passage of steam between the head R and valve O, and below the latter, arranged relatively to the cylinder D, conduit M, and port *f*, substantially as shown and described.

6. The piston-head N, provided with the annular recess *m*, in combination with the port *g* and bumper T, substantially as shown and described.

7. The loose valve, consisting of the piston N, with pocket *t*, rod P, valve O, and head R, in combination with the head V and bumper T, and arranged in the cylinders E D, provided with the ports *f* and *g*, conduit M, and escape-pipe S, substantially as shown and described.

8. The arrangement of the conduit M and escape-pipe S and ports *g* and *f*, in relation to the several cylinders, substantially as shown and described.

9. The combination of the cylinders B C with the cylinders D E, arranged substantially as shown and described.

10. The rod F, provided with the valve H and piston G, in combination with the rod P, provided with the piston N and valve O, and the several cylinders, the conduit M, escape-pipe S, and ports *g* and *f*, substantially as shown and described.

11. The cylinder D, provided with the space *e*, and arranged relatively to the head R, valve O, ports *f* and *g*, substantially as shown and described.

136,807.—*Machine for Pointing Pickets.*—HIRAM BALCOM, Ann Arbor, Mich., assignor to himself and ALFRED H. PARTRIDGE, same place.

The lever carrying the knife is pivoted to adjustable blocks in the sides of the standards by an adjustable block in itself, thus affording a compound movement for adaptation to varying widths of pickets.

Claim.—1. The forked lever C, provided with the knife D and guide-plates E E, pivoted through the fulcrum-pin F to the standard B, as and for the purpose set forth.

2. The arrangement of the block *b* in the standard slot *a* and

of the blocks *c c* in the lever-slots *d d*, the guide-plates E E and fulcrum-pin F, for giving the lever a compound adjustment to its fulcrum, substantially as and for the purpose set forth.

136,808.—*Hospital-Canteen.*—HUGO BECK, Detroit, Mich., assignor to himself and ULRICH KREID.

A tin case or can with three receptacles on its upper end, with a drinking-cup on the center opening. On its bottom is connected a receptacle for surgeons' instruments, bandages, lint, &c., and on its side is a box for plasters, all for army purposes.

Claim.—A hospital-canteen, composed of the parts A C, the former being subdivided into two compartments as described, and provided with a drinking cup, B, and the latter being divided into compartments as described, and provided with the pocket D, substantially as and for the purposes set forth.

136,809.—*Siphon-Pump.*—JAMES M. BOIS, Salamanca, N. Y.

The stop-cocks in the lower ends of the legs of the siphon are first closed and the siphon filled through an opening in the crown. All the cocks are then opened and the water is discharged through the lower end of the long leg until its momentum closes the valve in said leg, when the water will raise the valve in the discharge arm or duct and flow out though the faucet, thereby relieving the valve in the long leg of excessive pressure and enabling the spring to open the valve, when the same operation will be repeated.

Claim.—In combination with a siphon, the valves *b h f*, the cocks *g i*, and duct *e*, when arranged to operate as specified.

136,810.—*Treadle.*—JOHN B. BOLINGER, Michigan City, Ind.

The friction mechanism is attached to the shaft, and the treadle and said shaft attached to each other by means of belts passing over a cross-bar, so that when the treadle is operated a continuous rotary motion in one direction is given to the shaft.

Claim.—1. The pulley A with lateral flange D, in combination with the friction-pawl H, spring I, and eccentric G, said pawl H being arranged to act against the lateral flange D in producing the rotation of the pulley A, substantially as described.

2. The drums E E' with eccentrics G, pulleys A A' with flanges D D', pawls H, and springs I, arranged and operating on the shaft B, substantially as and for the purpose specified.

3. The brake R r R, operated by the treadle M, and acting on the pulleys A A', substantially as and for the purpose specified.

4. The combination of the pitman N N', double belt O O', pulleys E E', eccentrics G, pawls H, springs I, and pulleys A A', the whole being so arranged as to produce a continuous rotation of the shaft B on imparting a reciprocating motion to the pitman N N', substantially as described.

136,811.—*Hitching-Strap.*—ALMUS M. BRUBAKER, Millersville, assignor of two-thirds his right to WILLIAM COMPTON and ABRAHAM B. GREENWALT, Lancaster, Pa.

The hitching-strap is stiffened by the insertion of a rod so as to preserve trees, &c., to which the animal may be attached.

Claim.—The combination of a rigid detachable rod, A, with loops *a*, with a continuous hitching-strap, B, in the manner and for the purpose specified.

136,812.—*Safety-Clamp for Rock-Drill Rods.*—MILAN C. BULLOCK, New York, N. Y., assignor of one-fourth his right to SAMUEL E. GRISCOM, Mahanoy Plane, Pa.

The vertical teeth of the gib prevent the rod from turning, while the upwardly-projecting teeth of the wedge serve the usual purpose of supporting and retaining.

Claim.—1. The safety-clamp for rock-drill rods, operating as described, and provided with an arm, G, whereby it may be secured in a fixed position.

2. The above-described combination, in a clamp for rock-drill rods, of a gib whose face is formed with vertical teeth, and a wedge whose face is formed with horizontal upwardly-projecting teeth.

3. The combination, in a clamp for rock-drill rods, of the parts A and B, constructed and arranged as shown and described, with a gib and wedge which clamp the rod.

4. The combination, with a clamp for rock-drill rods, of the gib I, whose face is formed with vertical teeth, operating as described.

5. A clamp for rock-drill rods, consisting of the parts A and B, provided with means for supporting the clamp, the gib I, set-screw M, and wedge H, all constructed and operating substantially as above set forth.

136,813.—*Car for Carrying Petroleum.*—JOHN CLARK, Pontiac, Mich.

Upon a flat car is placed a close metallic tank having an opening in the top, through which the tank is filled. The tank is strengthened by an internal wooden frame, which is made so as to be flush with the top. Over the top of the tank is fitted a wooden cover, which is used on return trips to carry freight.

Claim.—The tank B B', provided with the internal wooden frame-work D D', and inclosed by the cover E, substantially as and for the purpose set forth.

136,814.—*Wagon-Seat.*—ANDREW J. COGAN, Bon Homme, Dakota Ter.

The seat-bottom rests upon supports, the lower ends of which are fitted to the wagon-body. The upper portion of the seat is separate from the bottom, and between the two spiral and rubber springs are placed, the bottom of the seat having a vertical movement within the sides.

Claim.—The spring-seat, having for its support spiral springs and rubber blocks, the whole arranged in the manner shown and described.

136,815.—*Apparatus for Casting Type.*—ALFRED C. CONVERSE, Boston, Mass.

The furnace-flues are arranged in close proximity to the ejector-tube, and between the exterior case and the walls of the metal pot, to maintain a proper temperature of those parts.

Claim.—1. The arrangement of the draft-flues K K so as nearly to surround the passage *a*, through which the molten metal flows and is ejected, substantially as and for the purpose described.

2. A casing, E, in combination with the metal pot A and the cover *d'*, substantially as described, for the purpose set forth.

3. A lining, G, extending over the flues *k* and around the flues *f g h i*, in combination with the metal pot A and casing E, as and for the purpose described.

136,816.—*Roll for Rolling Railway Rails.*—JOHN W. COOPER, Hubbard, Ohio, assignor to AMOS E. ROGERS, La Grande, Oreg., and CYRUS ROOSE, Newcastle, Pa., trustees.

The invention is fully explained by the claims and drawing. Its object is to roll a sectional rail of which the inferior portion shall interlock with both the head and web of the superior portion.

Claim.—1. The rolls A A', constructed with grooves *a a*¹ and reduced rib *a*², as and for the purpose described.

2. The rolls B B', constructed with grooves *b b*¹ and projecting rib *b*², as and for the purpose set forth.

136,817.—*Means for Buoying and Stopping Holes in Vessels.*—JOHN W. COOPER, Hubbard, Ohio, assignor to AMOS E. ROGERS, La Grande, Oreg., and CYRUS ROOSE, Newcastle, Pa., trustees.

Flexible and inflatable flat bags are suspended from the gunwales of vessels, and are connected by cords which pass around the outside and up through tubes in the bottom, and are operated by a windlass on decks so that the bags can be drawn down to cover any leak below the water-line.

Claim.—A flat, flexible, and inflatable bag, B, secured to the gunwale, and stretching-cords passing down the side of the vessel, up through the tubes C, and connecting with windlasses D on deck, all as shown and described, whereby said bag may be adjusted to cover a breach at any point in the side of the vessel, as set forth.

136,818.—*Screw-Cutting Machine.*—CHARLES S. CRANE and WILLIAM H. LAVINIA, Chicago, Ill.

The jaws are slotted where they are pivoted to the frame, allowing them to drop slightly when opened. They are drawn up in place again by two pins projecting from the frame, which pass through inclined slots in the jaws, and by a yoke of the jaws depressed by a lever. They are opened by a wedge depending from the center of the yoke.

Claim.—1. The combination of the jaws *c* and *d*, slotted at *e* and *h* and pivoted to the frame *a* provided with pins *h*, substantially as and for the purposes specified.

2. The combination of the jaws *c* and *d*, constructed and operating as described, with the wedge *i*, yoke *j*, and lever *k*, substantially as described.

136,819.—*Gage for Setting Carriage Axle-Trees.*—LEWIS D. CROSS, Phelps, N. Y.

A bar is provided with a cross-piece and two adjustable pieces which are set to the angle at which the ends of the axle are to be bent.

Claim.—In combination with the stock A of carriage-axle setters, the graduated bars B and B' having the fixed arms *g* and *h* and the adjustable gage G, arranged to be adjusted in the manner and for the purposes set forth.

136,820.—*Pruning-Shears.*—MYRON DE GROODT, Eaton, assignor to THERON S. DE GROODT and LAFAYETTE DE GROODT, Pratt's Hollow, N. Y.

A two-edged oval blade is pivoted upon a single upright blade furnished with overhanging double or anchor-like hooks. The tangs of the blades are bent outward so as to allow the handles to pass each other when different sides of the oval blade are to be brought in use. Thus two pairs of shears are furnished from two single blades.

Claim.—Pruning-shears composed of a two-edged blade, A, and an overhanging double or anchor-like hook, B *b b'*, the respective tangs A' and B' of which are bent, throwing the handles out of line so that they can move past each other, all substantially as and for the purpose specified.

136,821.—*Adjustable Ingot-Mold.*—MAHLON S. DRAKE, Newark, N. J.

The upper part B is held at an angle to part A, and the unflanged edge is slipped over the flange of the other part B, until the proper countersinks come under the set-screws, when the handles are griped, and the two parts come together firmly ready for use.

Claim.—1. A mold for casting ingots, consisting of two parts, A and B, having flanges *f*, substantially as and for the purposes described.

2. Part A having a bottom plate, C, and standards E E, with or without the screws G, substantially as and for the purposes set forth.

3. In combination, parts A and B, plate C, lip D, standards E E, screws G, countersinks *o o o*, flanges *f f*, and handles H H, substantially as and for the purposes set forth.

136,822.—*Reversible Car-Seat.*—PETER F. DUCHEMIN, Somerville, Mass.

Claim.—1. A reversible car-seat back, provided with arms *a* made in one and the same piece therewith and pivoted, substantially as described.

2. The plate *d*, in combination with the central standard E or seat-frame G, for supporting and steadying the back of the seat, substantially as described.

3. The stud *e* projecting from the side of the car, in combination with the arm *a* of the back C, substantially as set forth.

136,823.—*Sewing-Machine.*—JOHN V. D. ELDREDGE, Detroit, Mich.

The feed-actuating bar is bent so as to alternately engage the upper and lower parts of the feed-dog to raise and lower it, and it is provided at its side with a wedge-shaped cam, which, as the bar moves forward, engages the spring-latch and moves the dog forward, but on the return movement of the bar the thinner portion of the wedge-shaped cam passes between the latch and feed-dog and does not move it longitudinally.

Claim.—1. The combination of the feed-piece R having the spring-latch *k* with the feed-actuating bar P having the wedge-shaped cam *c*, as described.

2. The slotted feed-piece, provided with the denticulated part *g*, latch *k*, and spring *l*, working in guides *e*, vibrating therein on the pin *f*, and reciprocated by the feed-actuating bar P, substantially in the manner described.

136,824.—*Chair-Brace.*—GEORGE F. ELLS, Deposit, N. Y.

A brace for chairs having three bearings, one on the seat and one on each of the front and rear legs.

Claim.—1. The application or combination of metallic trusses as units (and consisting, essentially, of brace, counter-brace, and tie) with the bottoms or rails and the legs of household chairs, settees, and other furniture, substantially as and for the purpose hereinbefore set forth.

136,825.—*Washing-Machine.*—OLIVER B. EVANS, Titusville, Pa.

A boiler with a revolving corrugated cylinder, over which are curved wings, the whole covered by a recessed lid.

Claim.—The boiler F and recessed lid S, in combination with the corrugated and perforated cylinder *a* and wings E, all arranged as and for the purposes specified.

136,826.—*Window-Screen.*—LEVI W. FIELD, Worcester, Mass.

The screen adjusts itself to the window-opening when the thumb-nut is released by means of the spiral springs acting on the extension piece, which is guided by the slots and screws.

Claim.—The guides C C, springs *b b*, thumb-nut *a*, and slide B, in combination with the bar D and frame A, all constructed and arranged substantially as and for the purpose specified.

136,827.—*Apparatus for Rendering Fats and Deodorizing the Gases.*—HENRY S. FIRMAN, New York, N. Y.

The digester is provided with a central hot cylinder, which receives air from a heating chamber placed over the furnace. Fresh air is admitted at the forward part of the heating-chamber. The products of combustion are deflected and caused to pass around the chamber by a downwardly-projecting curtain. The foul gases, after leaving the condenser, enter the furnace through a perforated pipe.

Claim.—1. Forming the arch or upper portion of the furnace with one or more downward or downwardly-inclined projections, Q Q, substantially as and for the purposes set forth.

2. In combination with the furnace L and heating-chamber O, the hot-air flue X, for conveying the heated air and gaseous products of the furnace directly into the heating-chamber, substantially as set forth.

3. The retort or delivery-pipe P, either perforated or close, arranged along the top and center of the furnace L, as and for the purposes set forth.

4. Mixing hot air from the drum J with the vapors and gases evolved in the rendering-tank, before burning in the furnace, as set forth.

5. The shield or curtain R, in combination with the furnace L, and heating-chamber O, for checking the flames and heated products until perfect combustion has occurred, substantially as set forth.

6. The arrangement of the pipe U for withdrawing air from the heating-chamber O and mingling it with the condensed vapors and gases before burning the same, substantially as set forth.

7. The use of charcoal, or its equivalent, in the retort, as a deodorizer of the noxious gases and vapors from a rendering apparatus, as described.

136,828.—*Wash-Board.*—JOHN B. FISHER, Amsterdam, N. Y.

Vertical grooves are made in the body of the board. Across these are placed horizontal ribs, which allow the water to run down the grooves out of contact with the clothes being washed.

Claim.—In a wash-board, the combination of the vertical gutters *x x* with the ribs *a a* and spaces *z z*, in which the said gutters will communicate with the faces of the several spaces *z z*, and will be run through the several ribs *a a*, and terminate on the lower side of the lowest rib *a*, substantially as shown and described, for the purpose specified.

136,829.—*Sad-Iron.*—SAMUEL S. FITCH, New York, N. Y.

A sad-iron cast with an opening to receive a heater, which is held in place by closing the opening with a latch or gate pivoted at one end, and in form to turn up or over, and is held, when closed, by slots in an extended part of the face of the iron.

Claim.—The chambered sad-iron made or provided with the threshold *b* and two projections or studs, *c c*, to its mouth, and having the door arranged therewith and pivoted to the body, all as specified.

136,830.—*Brace-Drill.*—GEORGE GIBBS, Canton, Ohio.

One end of the driving-shaft is tapered and forms the journal for a sleeve fitting over it, in the end of which the drill is secured. Motion applied with a common brace to the shaft is transmitted, through gear-wheels, to the sleeve, which is caused to revolve with a greater velocity than the driving-shaft, but in the same direction.

Claim.—The herein-described attachment for a bit-brace, consisting of frame I I' with handle O, brace-shaft A with tapering spindle A', hollow drill-shaft F, and gear-train B C D E, the several parts being constructed and arranged substantially as and for the purpose specified.

136,831.—*Clothes-Drier.*—EZRA BREWSTER GILDERSLEEVE, Wading River, N. Y.

A movable furnace, with a pipe having collars upon it, which supports arms on which the clothes are to be dried.

Claim.—The clothes-drier composed of the collars C and F and arms D, having the supports E, in combination with the pipe B of a gas and smoke consuming stove or furnace, substantially as shown and described.

136,832.—*Raising Sunken Vessels.*—RICHARD W. HALLETT, Brooklyn, E. D., N. Y.

Tanks for lightering vessels are sustained in their relative positions to the sunken ship by supplementary air-vessels on the surface of the water; said air-vessels having chains passing through them with means for adjusting the depth of the main tanks.

Claim.—In an apparatus for lightering ships and other similar vessels over bars and other obstructions, the combination of the regulating-floats with the lightering-tanks, substantially as described and for the purposes set forth.

136,833.—*Hook and Eye for Tackle-Blocks.*—JOHN HOLROYD, Washington, D. C.

Claim.—Turning the nib or point of the hook from the block, substantially as described, so that it will catch against the under side of the eye and prevent the hook from unhooking, and hold the block horizontally or at such an angle or position as may be desired.

136,834.—*Fish-Spawn Hatcher.*—MARCELLUS G. HOLTON, Rochester, N. Y., assignor of one half his right to SETH GREEN, same place.

A deep square box is filled with removable screens or spawn-holders, through which upward runs a stream of water. The rim is furnished with overflow-channels on every side to avoid a current at any particular point through the hatchers.

Claim.—1. The spawn-hatching apparatus A, constructed as described, to produce an equally-distributed upward flow or circulation of the water, for the purposes set forth.

2. In a spawn-hatching device, the trays *c* and water-inlet opening *a*, in combination with the deflector A, arranged to operate substantially as and for the purposes shown and described.

3. In combination with the spawn-hatching apparatus A, the overflow-channels C, arranged to equalize the overflow on all sides, substantially as and for the purposes set forth.

4. In combination with the spawn-trays *c*, the concave or hopper-shaped bottom B, substantially as described, for the purposes set forth.

136,835.—*Mold for Making Glass Blind-Slats.*—ELIAS B. HUNGERFORD, Corning, N. Y.

The dovetail on the bed-plate has a small recess to hold a wire staple, around which the glass is pressed.

Claim.—1. In a mold for forming pressed-glass blind-slats, the base block D, provided with the recess *c* in the dovetail, for holding the wire staple *c*, all as and for the purpose set forth.

2. A window-blind slat, constructed of glass, having inserted in it, in the act of pressing, a wire staple, substantially as set forth.

136,836.—*Table-Leaf Support.*—WILLARD JEFFS, Battle Creek, Mich.

A slide attached to a spring and to the table-cover, working in a bracket and through an opening in the end of the frame, with its end in form of a wedge and sliding upon a wedge-form piece attached to the table, (under side,) furnishing a support for the leaf.

Claim.—The wedge B, the slide C, and the spring D, all combined and arranged substantially as and for the purpose hereinbefore set forth and described.

136,837.—*Table.*—WILLARD JEFFS, Battle Creek, Mich.

The corner-blocks are formed by gluing together the required number of pieces of wood, so that the grain of one piece shall cross the grain of the adjoining piece. The side and end pieces are joined to the corners by tenon and mortise, and the legs are joined to the corner-blocks by being screwed in, or in any other suitable manner.

Claim.—The corner-block A constructed of two or more pieces of wood, as described, and adapted to the reception of the side and end pieces B and C and the leg D, substantially as and for the purpose hereinbefore set forth and described.

136,838.—*Mill for Grinding Paints.*—THOMAS R. KINGDON and LEMUEL P. DODGE, New York, N. Y.

Material fed upon the periphery of a larger and carried under a smaller cylinder. Discharge-spout held by spring or weight against the larger one scrapes it clean.

Claim.—The combination of a large lower roller, B, and of a small top roller, C, both rollers being geared together by cog-wheels of equal diameters, and operating in conjunction with a feed-apron and with a discharge-trough, substantially in the manner and for the purpose herein shown and described.

136,839.—*Sleigh-Brake.*—FRANCIS A. KIRCH, Mansfield, Pa.

Claim.—1. The square socket C with stays D D, having wedge-shaped mortises in their rear ends, in combination with the oscillating cross-bar E having wedge shaped shoulders at its ends to pass through said mortises, as herein set forth.

2. The tooth K, provided with the shank or tenon *f* and shoulders *i i*, and held rigidly in a mortise on the dog J by a ring, *h*, and allowing the tooth to be removed, substantially as herein set forth.

3. The pivoted dog J with removable tooth K, and the lever I attached to the dog between the fulcrum and the tooth, substantially for the purposes set forth.

4. The combination of the sliding tongue B, rods H H, levers I I, dogs J J, and removable teeth K K, all constructed and arranged substantially as and for the purposes herein set forth.

136,840.—*Composite Roofing.*—REINHARDT LEENDORFF, Detroit, Mich.

The composition described is laid on the roof and a coarse open fabric is stretched over it. The fabric is then pressed with a paddle until it is embedded in the composition. When dry a coat of paint is applied.

Claim.—The compound for covering roofs, composed of the ingredients in the proportions herein set forth, and adapted to a fabric of loose texture, in the manner and for the purpose set forth.

136,841.—*Cotton-Press.*—RICHARD LEWIS, Charleston, S. C.

Modo of compressing cotton bales on trucks provided with bars or openings for bands, (which may be on bottom of truck or in the bottom adjustable board, or both,) dispensing with the bars now on the press, leaving the platens a perfect plane, and so adjusting and securing the bales to the trucks that the taking in of the slack of the bands and locking or tying them is all that is required at the press.

Claim.—The compressing of cotton bales in trucks, as above described.

136,842.—*Animal-Trap.*—ARM TEAD M. LOVATT, Zanesville, Ohio.

A central inaccessible chamber is fitted for the permanent lodging of a decoy-animal, the avenues to it containing traps.

Claim.—1. In connection with one or more traps, S, a decoy-chamber with upper apartment A provided with bed or nest *b* and communicating with lower apartment A', the upper chamber having a removable top and the lower a removable bottom or floor, substantially as and for the purpose set forth.

2. The combination of decoy-chamber A and two or more radial traps, S, substantially as and for the purposes herein set forth.

136,843.—*Folding-Lounge.*—AUGUST LUNDBERG, Chicago, Ill.

The bed-bottom in the main frame is adjustable vertically by means of bent rods, to which it is pivoted. Said bed-bottom is jointed to aid in the adjustment. The head of the lounge is hinged to the end of the bottom frame. It is also made of two parts, hinged together and kept apart at the free ends by a hinged leaf, so that the head can be left at full height or partially raised.

Claim.—1. The combination and arrangement, in a folding-lounge, of the jointed bed-bottom E E', loops or staples *e e*, and the bent and pivoted rods D D, substantially as specified, and for the purposes set forth.

2. The combination and arrangement, in a folding-lounge, of the head H, part H', leaf H'', spring-bolt L and the button N', and the straps J or equivalent fastening devices, all operating together substantially as specified.

136,844.—*Fire-Escape Ladder.*—HENRY LYLES, Washington, D. C.

The ladder is composed of two tubes connected by rounds and properly stayed and braced, having means for connection with hose at bottom and a flexible nozzle at top for throwing water. The nozzle is manipulated from the ground by a cord. The tubular ladder is mounted upon wheels, and is adjustable both vertically and horizontally, the movements being effected by chains and windlasses. A shelf or platform, protected by a fire-shield, is provided near the top for the fireman. An auxiliary ladder, extending horizontally, affords exit from the windows of the burning building at the lower stories.

Claim.—1. In combination with the ladder D, constructed with tubular arms, the section of hose I with a helix *i*, and supplied with the manipulator I', substantially as and for the purpose set forth.

2. The combination of the ladder D, brackets J, and shelf or platform J' guarded by the shield I², substantially as and for the purpose specified.

3. The construction and arrangement with relation to the ladder D, having both of its sides or arms tubular and braced on three sides, as shown, and mounted on wheels, of the elevating and adjustable supporting device, the shelf or platform J', shield I², helix *i*, hose-section I, and manipulator I², when arranged and operating as shown, and for the purpose specified.

136,845.—*Railroad-Track Tamper.*—PATRICK MAGEE, New Orleans, La.

The earth is compressed beneath the track by means of the face-plates and pivoted jaws, operated by the hand-lever.

Claim.—The improved earth-tamping apparatus herein described, and consisting of the frame A, standards B, shafts *b* and *c*, lever *c*, cranks *d*, links *f*, arms *g*, clamps *h*, and face-plates *i*, when these are constructed and arranged for operation substantially as described, for the purposes herein set forth.

136,846.—*Cotton-Press.*—BENJAMIN G. MARTIN, New York, N. Y.

The swivel-braces are secured to the dick, revolving in the head-blocks and in the slide which carries the pawls that engage with ratchet-teeth on the stem of the follower. By turning the disk in one direction the follower is forced toward the foot-block, and by turning it in the other direction the slide is drawn back and the pawls take a fresh grip.

Claim.—1. The follower D, with its centrally-located stem J, provided with ratchet-teeth, in combination with the swivel-braces H, disk G, and slide E, and with the head-block of a press, substantially in the manner herein shown.

2. The combination of the follower D with its centrally located stem J, provided with ratchet-teeth and working-pawls K K, and stop-pawls L L, swivel-braces H, disk G, slide E, and head-block A, substantially as set forth.

3. The releasing-levers N M in combination with the pawls K K L L, swivel-braces H, slide E, follower D with its centrally-located ratchet-stem J, and the head-block A of a press, substantially in the manner and for the purpose shown and described.

136,847.—*Cider and Wine Mill.*—ALEXANDER MCCREIGHT and ROBERT W. GLASGOW, Tranquility, Ohio.

A series of bars passing crosswise through a cylinder and interlocking each other, held in position by a single key, said bars mashing the fruit by the revolutions of the cylinder in an eccentrically-shaped trough or box.

Claim.—1. The bars D, constructed so as each will interlock with another, and held in position by a single key, *b*, in the cylinder C, as and for the purpose set forth.

2. In a cider and wine mill, the combination of the interlocking arms D, cylinder C, and concave B, all constructed and arranged substantially as and for the purpose herein specified.

136,848.—*Washer for Nut-Locks.*—MALCOLM F. MCINTYRE, Girard, Pa.

A circular washer is provided with projections on its under side to prevent it from turning when used upon wood, and an overhanging shoulder to prevent it from turning when used upon iron.

Claim.—The washer A formed with the radial ribs C and flange C² and hollowed out on its under side, so that said ribs and flange may engage with suitable depressions in the wood, plate, or bar, in combination with the key F, substantially as shown and described.

136,849.—*Lamp.*—LEWIS MICHAELS, Covington, Ky.

The chimney-tube is made adjustable at any desired point by use of a "cap-tube," constructed and adapted for any size of lamp and independently of other connections with the lamp. Uses an attachable screw-thread and pin, spiral slot and pin, pinch-band and adjustable bracket.

Claim.—The cap-tube attachment for wall and ceiling lamps, when constructed independently of other mechanism, substantially as set forth and shown, whereby the cap-tube may be raised or lowered and secured in any desired position.

136,850.—*Breech-Loading Fire-Arm.*—ISAAC M. MILBANK, Greenfield Hill, Conn.

The sliding breech-blocks, with a tubular connection between them, around which is the eye of the lever *e*, are screwed together so as to be removable from the cylinder. Also, the spring-retractor has a steadying-pin that passes diagonally into the breech-block, and is retained in place by the firing-pin, that passes through an elongated opening in said steadying-pin. Also, the band upon the outside of cylinder to strengthen the same where the opening is made for the lever.

Claim.—1. The sliding breech-blocks *c d*, with a tubular connection between them, around which is the eye of the lever *e*, the parts being screwed together so as to be removable from the cylinder *b*, as set forth.

2. The spring-retractor *r*, having a steadying-pin, *s*, that passes diagonally into the breech-block *c*, and is retained in place by the firing-pin, that passes through an elongated opening in said steadying-pin, substantially as set forth.

3. The band *v* upon the outside of the cylinder *b* to strengthen the same where the opening is made for the lever *e*, and to aid in connecting the parts with the wooden stock, as set forth.

4. The safety-pin *o*, in combination with the eye of the lever *e* and the notch or opening 12, into which a portion of that safety-pin turns when the parts are in proper position for firing, substantially as set forth.

5. The latch *i* upon the lever *e* entering the cylinder *b*, in combination with the screw 5, or its equivalent, whereby the lever is either latched or locked, as set forth.

136,851.—*Stop Valve, Cock, &c.*—HARRY C. MONTGOMERY, Boston, Mass.

A double-convex reversible valve, made of glass or other non-corrosive substance, is arranged in a valve, cock, &c., being readily removed and replaced.

Claim.—1. A double-convex reversible valve made of glass or other non-corrosive substance, substantially as described, and for the purpose set forth.

2. In combination with the double-convex reversible valve E, the valve socket or shell D, the concave valve-seat G with the working-parts of an ordinary valve or faucet, substantially as described and shown, for the purpose set forth.

136,852.—*Railroad Rail.*—GEORGE C. MORGAN, Chicago, Ill.

Claim.—The combination of the sub-rail A, provided with the recessed flanges *c* and narrow boundary ledges, with the lining L and cap-rail B, provided with the flanges *d* extending laterally to the side ledges so that the spikes D will fasten the parts together and to the ties without the rivets or bolts, substantially as specified.

136,853.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

Claim.—1. The machine for melting snow, consisting of the steam-boiler A, furnace B, tank C with perforated bottom, apron E, and auxiliary distributers G G', arranged substantially as and for the purpose specified.

2. The movable perforated steam-chests G G', constructed and arranged substantially as specified.

3. A machine for melting snow and ice on streets and pavements, consisting of a truck mounted on plain tired or rimmed wheels, and supporting a steam-boiler and furnace and a horizontal steam-tank, the latter located between the wheels, perforated in its lower surface, and otherwise constructed as shown, and having communication with the steam-boiler, substantially as specified.

136,854.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

Snow is swept by a revolving brush into a double-walled hopper. Steam is conveyed from the boiler to the hopper and melts the snow.

Claim.—A machine for melting snow having a brush or brushes, D, and a receptacle for receiving the snow and melting the same, substantially as shown and set forth.

136,855.—*Washing-Machine.*—HIRAM MYERS, Highland, Kans.

A wash-boiler with a cylinder formed of net-work secured to the ends of it, and another within it secured or sustained by leading cords from a supporting cross-piece, and on its opposite side a ledge formed with cords to give motion to the clothes in its revolution.

Claim.—The cylinder S with the interior cylinder I and the division-walls J and K, in combination with the wash-boiler R, substantially as and for the purpose hereinbefore set forth.

136,856.—*Dish-Cover.*—AUGUSTUS J. OHMER, Hamilton, Ohio.

A glass cover for placing over cakes, pies, &c., has a handle on the top, in which is a metallic tube with a perforated cap for the passage of air and to prevent flies from entering.

Claim.—The glass cover A, provided with the orifice passing out through knob B, as a new article of manufacture, for the purpose described.

136,857.—*Manufacture of Rub-Irons for Carriages.*—HENRY W. OLIVER, Jr., Pittsburg, Pa.

A bar having a longitudinal section of sufficient width to serve as means of fastening the iron to the wagon, and with a beaded flange along one edge, which, by its excess of metal, presents a durable wearing angle, and at the same time saves the metal which heretofore has formed the other plate or half of the rub-iron.

Claim.—1. A wrought iron bar, having a flat longitudinal part, *b*, a narrow flange, *a*, at right angles thereto, and a bead, *s*, at the angle outside the flange, substantially as described.

2. An angled rub iron, *b'*, having a bead, *s*, on the outside of the angle at the point subject to wear, substantially as set forth.

136,858.—*Window-Blind.*—LINDEN PARK, Brady, Pa.

The slats are connected by single tapes on the inside by means of staples on their edges, and drawing-cords behind the tapes and a middle tape on the outside edge.

Claim.—The arrangement of the slats A suspended at top by hooks K K, and by a single pair of tape-lines, C C, on the inside of the blind, with the wire staple-fastenings B B, the drawing-string D running in notches on the sides of the slats A, through the staples B B, and through the blocks E E, and a small tape, J, on the outside of the blind passing through the center staples B, when combined and operating as herein described, and for the purposes set forth.

136,859.—*Attachment for Sewing-Machines.*—THOMAS J. PEASLEE, Boston, Mass.

The lips turn the edge of one piece of cloth and deliver it so turned on the upper side of a second piece resting against the shoulder, and in this condition the two pieces are united by stitching.

Claim.—The seamer as made or provided with the lips *f g* and the shoulder *e*, all being of one piece of metal, and arranged and constructed as shown and described.

136,860.—*Potato and Pea-Nut Digger.*—CYRUS E. PIERCE, Centreville, Mich.

A triangular frame carries a double plow, upon each side of which is placed a fingered mold-board, facing inward, and between them, and directly in rear of the plow, is placed a separating-wheel, armed upon each side with projecting rods.

Claim.—The combination of the finger-plates F with the frame A, opening-plow D D', and wheel E, as set forth.

136,861.—*Door-Bolt.*—ABRAM PELHAM, Plymouth, Mich., assignor to himself and REUBEN HAINES, same place.

A plain cylindrical bolt, with a toothed rack at the rear part, which is inserted in a mortise bored from the edge of the door, and in a cranked pinion mortised in a socket bored from the inner side of the door, which pinion engages with the rack of the bolt and reciprocates the latter in the rotation of the crank.

Claim.—The cylindrical bolt A, of uniform size throughout, inserted in a mortise bored from the edge of the door, in combination with the crank B' and pinion *b*, the bolt being adapted to be used without a covering-plate, as shown and set forth.

136,862.—*Composition for Artificial Stone, Tile, Pavement, &c.*—ANTONIO PELLETIER, Washington, D. C.

Claim.—The above-described composition of matter, formed of a mixture of Portland cement, oxide of zinc, or its equivalent oxide, sharp sand, and lime paste, in the proportions and molded as described, and when partly dry treated with a solution of the chloride corresponding to the oxide used in making the molded article, substantially as set forth.

136,863.—*Millstone-Driver.*—JOHN PLANCK, Constantine, Mich., assignor to himself and WILLIAM PATTERSON, same place.

The driver is connected to the bale by adjustable links, so that the two ends may pull equally upon the bale.

Claim.—The employment of an adjustable link or links at each end of a millstone-driver, for connecting the same to the bale of the runner-stone, substantially as shown and set forth.

136,864.—*Candlestick.*—ZIMRI I. PRATT, Chicago, Ill.

The cup which holds the candle against the spring is extended upward and outward in cup-shape, to prevent the dripping of the melted tallow over the outside of the candlestick. An annular flange is secured to the candlestick to serve in supporting it.

Claim.—1. A candlestick, substantially the same as set forth, when provided with the supporting-flange E, arranged to support the candlestick in the manner specified.

2. In a candlestick substantially the same as described, the cup D having its upper end terminating in a flaring rim, substantially as shown, and for the purposes specified.

136,865.—*Fare-Box.*—ZIMRI I. PRATT, Chicago, Ill.

Claim.—A fare-box for omnibuses and other similar vehicles, consisting of an elongated box, A, which is provided with flange G for fastening to or through the roof or driver's seat, with an incased rod, M, for operating the trap or valve C, with glass B at its top and glasses B¹ B² in its sides for convenience of seeing money put into either of the openings H or H', as and for the purpose set forth.

136,866.—*Combined Stalk-Cutter and Land-Roller.*—JOSEPH PRICE, Columbia county, Fla.

A common land-roller is provided with dovetailed longitudinal grooves, into which may be inserted, at pleasure, cutting-knives or lugs, thus making a convertible stalk-cutter or land-roller.

Claim.—The cylinder A, when provided with dovetail-grooves adapted to receive interchangeably the knives B and strips C, as and for the purposes set forth.

136,867.—*Perambulator.*—ARTHUR W. RICHARDS, Indianola, Iowa.

Claim.—The perambulating and adjustable cot formed by mounting the sections E G J upon the carriage A B C D, substantially as described, and for the purposes specified.

136,868.—*Lubricating-Compound.*—EDWIN ROAT, Buffalo, N. Y.

Claim.—A compound composed of any tallow, lard, oil, or grease ordinarily used for lubricating purposes, and beeswax mixed with a solution of sal soda, borax, salts of tartar, and carbonate of ammonia, to which is added plumbago, substantially in the proportions and for the purposes above set forth.

136,869.—*Drawer.*—FABIUS ROSE, Boston, Mass.

Two slides or plates are employed in combination with the drawer and its case or support, one upon each side thereof, said slides being attached to and sliding upon the sides of the case and in immediate contact with the sides of the drawers, while each side of the drawer is provided with a stud which rests and slides upon the upper edge of the adjacent slide. Each plate or slide has a long countersunk slot, in which slides a screw or knob attached to the adjacent side of the case.

Claim.—The invention herein described, consisting of the slides D D', in combination with the drawer B and its support, the slides containing the abutments *d* and slots *e*, and operating in connection with the screw or stops *b* and the drawer containing the spurs *a a*, the whole being in manner and operating substantially as hereinbefore explained.

136,870.—*Harness-Saddle.*—ABRAHAM V. SARGEANT, Newark, N. J.

The saddle is constructed so that it can be taken apart for repairs without ripping.

Claim.—1. The solid separate layer or leather middle piece C, when provided with the double-edged bindings *d d*, substantially as and for the purpose herein specified.

2. A harness or coach pad, composed of the bottom A, inclosed pad plate B, layer C, with its double-edged bindings, and the top D, all constructed and arranged substantially as herein described, so as to admit of replacing the pad-plate without unmaking or injuring the other parts of the pad, as herein specified.

136,871.—*Cartridge-Ejector for Revolving Fire-Arms.*—JOHN T. SMITH, GEORGE M. SAITH, and JOSEPH J. SWEENEY, Springfield, Mass.

Construction and combination of frame, hammer, and ejector-rod, whereby the ejector may be connected or disconnected at will with the hammer, and made to operate automatically to throw out the shell by the action of the main spring through the medium of said hammer and ejector.

Claim.—In combination with the hammer, the plunger B directly connected thereto by the arm *b* through the slot L, and so as to have lost motion within the hammer, being arranged to operate together, substantially as shown and described.

136,872.—*Process for Treating Tobacco.*—JUDSON A. STAFFORD and HARVEY C. FOWLER, Cleveland, Ohio.

American tobacco, or strong and gross qualities of tobacco, are macerated and pressed and desiccated, and then immersed in the liquid from scraps of Cuba or fine tobacco similarly treated.

Claim.—The improved process herein described of treating tobacco by extracting the rank flavor from the domestic tobacco and impregnating the same with the flavor of the Havana tobacco, substantially as and for the purpose specified.

136,873.—*Duplex Telegraph.*—JOSEPH B. STEARNS, Boston, Mass.

Electro-magnets or helices are arranged in a branch circuit from the equalizing relay-magnet circuit, the extra currents there from neutralizing the extra current in the line-relay magnet.

Claim.—In an apparatus for double transmission, the combination of a helix or series of helices with a branch or compensating circuit, whereby the effect of static induction upon the receiving relay or instrument is counteracted, substantially as and for the purpose herein specified.

136,874.—*Duplex Telegraph.*—JOSEPH B. STEARNS, Boston, Mass. Case B.

Improvement on patents 78,547 and 78,548, combining differential or equalizing relay of former with circuit changing and preserving key of latter.

Claim.—1. The combination of the circuit-changing key K, composed of the levers *a* and *b*, or their equivalents, the differential relay or receiving instrument, and the rheostats or resistance-coils R R′ and their connections, substantially as and for the purpose as set forth.

2. The differential relay composed of the coils M M′ N N′, connected as shown in Fig. 4 of the drawing, as and for the purpose as set forth.

136,875.—*Duplex Telegraph-Key.*—JOSEPH B. STEARNS, Boston, Mass.—Case D.

Preserves circuit of distant station in duplex transmission. When key-circuit is open, circuit from distant station is closed to the ground through D G O D′, when key-circuit is closed through D D′ C C′ and connecting-wires.

Claim.—The combination of the lever A, insulating-bar B, metallic plates C C′, metallic springs D D′, insulating-block M, projection G, and connecting-wires F F′ L E, and O, substantially as and for the purpose as set forth.

136,876.—*Telegraph Relay and Sounder.*—JOSEPH B. STEARNS, Boston, Mass.—Case A.

Shunt-circuit established around relay by action of its own armature-lever or by lever of the sounder it controls, thus lessening "retardation" and ensuring decisive action.

Claim.—In telegraphic apparatus, the combination, with the relay or receiving magnet, of a shunt-circuit, which is established automatically on the completion of the stroke of the relay-armature, as and for the purpose set forth.

136,877.—*Hasp-Lock.*—EDWARD P. STIMENS and THOMAS C. MARTIN, Perrysville, assignors of one-half their right to ABRAHAM CLARK, Osnaburg, Ohio.

The hasp is mounted on a shaft extending through the door, and arranged to drop through a staple on the door-jamb and enter the lock-box so as to permit the reception of the lock-bolt, thus allowing the hasp to be operated from either side of the door and to be locked when desired.

Claim.—The hasp B with catch C mounted on shaft *b*, which passes through the lock-plate *a* and door I, said hasp being arranged to be operated from either side of the door, and to drop into the lock-box A and be secured by the lock-bolt G, the several parts being constructed and combined substantially as specified.

136,878.—*Trowel.*—SUMNER F. STREETER, Bernardston, Mass.

The shank is not forged in one piece with the blade, but is attached, and its upper end is formed into a socket for the handle, which is fastened by the rod and nut.

Claim.—1. The shank B, provided with foot *b* and socket *b*¹, as described.

2. The tool described, consisting of the blade A, shank B, handle C, ferrule D, and rod E, all constructed and combined as described, for the purpose set forth.

136,879.—*Car-Coupling.*—JOHN M. SUTTON, Sutton's Corners, Pa.

When the weighted arm is thrust backward, it raises and holds the pin up until the lower face of the dog is struck by the entering-link.

Claim.—The dog E, constructed as described, in combination with the pin F, the lever C, and the link *n*, for the purposes set forth.

136,880.—*Loom-Stop Mechanism.*—JOHN J. SWITZER, Boston, Mass.

When the weft-thread breaks or fails one arm of a tumbler-lever in the shuttle comes in contact with the horizontal bent end of a vertical lever pivoted on the lay, thereby giving its lower end a slight lateral movement, sufficient to give a similar lateral movement to a horizontal lever pivoted just below it on the loom-frame. This movement of the horizontal lever causes its forward end to act on a cam-piece on a rock-shaft extending across the loom a little below the breast-beam, by which means the rock-shaft is rotated sufficiently to place an arm or incline projecting forward from it in such position as to raise the dagger on the lay as it beats up, and bring it in contact with the vibrating lever under the breast-beam, which is connected with the shipping-lever.

Claim.—1. The levers D F, the cam *e*, the rock-shaft G, the arms *f*, M, and H, combined and arranged together and with the loom-frame, the lay, and the operative shipper-actuating lever I such being to operate with the shuttle, provided with the lever and groove, as explained.

2. The lever and groove arranged in the shuttle and with the other thereof, as set forth, in combination with the shaft G, the levers D F D′ F′, cams *e e*′, shaft G, arms M, *f*, and H, and lever I, arranged and applied to the lay, the loom-frame, and the shipper, substantially as specified, the whole constituting a stop-motion, for the purpose set forth.

136,881.—*Apparatus for Treating Linseed-Oil.*—DUNCAN D. TEMPLETON, New York, N. Y.

The chemicals for bleaching and refining the oil are injected into and through the perforated tube. The air is exhausted from the boiler through the cock a^1, and the oil is admitted through cock a^2.

Claim.—The portable boiler or tank, having the perforated tube, as described, the boiler being adapted to be transferred to a furnace, and revolved, for collecting, treating, and drying linseed-oil, night soil, &c., substantially as set forth.

136,882.—*Button.*—ALBERT E. THURBER, Providence, R. I., assignor to EDWIN F. KEAT and GEORGE HALL, same place.

The end of the shank of the button is enlarged, and has a short screw-thread cut upon it. It is secured to a garment by means of a collet or chambered nut, the collet being screwed on the shank until it runs off the screw, and rests upon it at its smaller diameter.

Claim.—The chambered screw-nut or collet, as described, and the button-body, provided with the screw and reduced shank to operate with such collet, all being substantially as specified.

136,883.—*Fire-Escape.*—FRITZ A. L. VON EHREN, New Orleans, La.

The platform is retained in central position over the elevating apparatus by means of the system of jointed levers pivoted to the platform in the center, and to the blocks secured to the cross-arms of the elevating apparatus and moving in guide ways affixed to the platform. Rollers relieve the friction of the sustaining-levers when moving under the platform, and these rollers are guided by guard-rails. The elevating apparatus is securely braced at the foot by forked braces placed between the levers. A shield protects the apparatus from the intense heat.

Claim.—1. In combination with the levers K the sustaining-braces L L, for the purpose of making a compact support for elevators of this class.

2. The pivoted central bar *d*, links *c c*, sliding blocks *a a*, groove *b*, rods *x x*′, and rollers 2 2 2 2, whereby the platform N is held in central position over the levers K, substantially as described.

3. In combination with the apparatus above described, the fire-protection blanket P, for the purposes set forth.

136,884.—*Stove-Window.*—FRANCIS WARRINER, Troy, N. Y.

The box-frame has mica windows in front. Its inner sides project sufficiently far into the stove to be securely fastened thereto. Apertures in the sides of the box admit air into the stove.

Claim.—1. A frame for mica or other windows made in a box-form, with apertures in the outer part of such frame for the admission of small jets of air into said box, when such box projects into the fire-chamber of a stove or range sufficient to admit of its attachment to a stove or range, substantially as and for the purposes hereinbefore described and set forth.

2. The inner part of the box B, with the opening C, nibs I, when extending to and holding in position the mica O, the inner frame E in combination with the flange *f*, the lugs *c* and *k*, or their equivalents, and the apertures *a*, outer part of frame A, the projection of said box into the fire-chamber of a stove or range, substantially as and for the purposes hereinbefore described and set forth.

136,885.—*Reel-Rake for Harvesters.*—CYRUS A. WERDIN, Waukegan, Ill.

The rake is hinged to and revolves with the reel, and is adapted to be folded up and locked while passing over the platform, or to be locked in working position, as the operator may desire.

Claim.—1. The revolving arm U having the lever V pivoted thereto and fulcrumed in the cam W, constructed substantially as described, the outer end of the lever V being pivoted to the inner or upper end of the arm E′, in combination with the arm A′ also pivoted to the arms U and E′, substantially as described, all for the purpose of bringing the lower end or heel of the arm E′ to a state of rest and returning it to its original position during the operation of the reel, substantially as specified.

2. The false beater F′ pivoted to the arm E′, substantially as described, and carrying the hinged rake H, in combination with the rod G′, swivel-jointed to the beater F′ and to the reel.

3. The bent rod B′ attached to the reel and arranged in the slot D′ of the arm E′, substantially as and for the purpose specified.

4. The rake H hinged to the false beater F′, substantially as described, and having its forward folding movement limited by means of the bent pieces I I attached to the rake-head and engaging the said beater.

5. The hinged rake H, in combination with the slide J provided with lugs *j j* and the pieces I I rigidly attached to the rake-head and engaging the lugs *j j*, substantially as and for the purposes specified.

6. In combination, the slide N provided with the arm *n*, the pivoted link O, pivoted rod P, bell crank Q, pivoted rod R, slotted rod S, and rigid arm T, substantially as and for the purposes specified.

7. In combination, the pivoted lever K, way L, and connecting-arm E, substantially as described, and as a means of operating the slide N.

136,886.—*Dummy or Traction Engine.*—ARETUS A. WILDER, Detroit, Mich., assignor of one-half his right to ARTHUR RANKIN, Windsor, Ontario.

The exhaust steam is conveyed into one side of a steam-tight chamber placed transversely across the car, said chamber being provided at its upper interior side with inclined deflectors, which convey the condensed water to the bottom, from whence it is drawn by a drip-pipe. The uncondensed steam passes to and through a coil placed in the fire-box, where it is superheated and then escapes as hydrogen-gas through the smoke-pipe.

Claim.—1. The combination of chamber D, arranged to receive exhaust steam, as described, with the coil F located within the fire-box, as described.

2. The construction and arrangement, with relation to the boiler and engine of a dummy car, of the chamber D, deflectors *c c*, exhaust-pipes *b b*, drip-pipe *e*, the coils *f f*, and escape-pipe *g*, as and for the purpose set forth.

136,887.—*Machine for Breaking Coal and other Substances.*—RUFUS A. WILDER, Cressona, Pa.

A series of teeth, constructed with flanges in their centers and tapering toward each end, are inserted into the surface of a cylinder, and are held in place by means of the plates which are arranged between them.

Claim.—1. The teeth constructed as described, with a flange in their center, and tapering from such flange toward each end, as and for the purposes specified.

2. The plates constructed as described, and arranged between the rows of teeth, as and for the purposes specified.

3. In a coal-breaking machine the teeth, constructed as described, in combination with the plates and rotating cylinder, as and for the purposes specified.

136,888.—*Single-Tree.*—LEANDER WILLIAMS and WALTER S. MCKINNIE, Stonelick township, Clermont County, Ohio.

The trace is detached from the whiffletree by pulling a strap which is attached to the lever-fastener.

Claim.—1. In a single-tree, the combination of the lever-fastener C, constructed as described, with the trace-hook B, substantially as and for the purpose specified.

2. The combination of the lever-fastener C, the trace-hook B, and the forked spring D, substantially as and for the purpose herein set forth.

136,889.—*Car-Coupling.*—GEORGE WITHINGTON, Ione City, and FRANK F. TAYLOR, San Francisco, Cal.

A hinged plate, having a smooth under surface to give free escape to the link in case one car falls below the other, being bent up at the front end to form a hand-hold in removing the pin, forms the upper portion of the draw-head. The prong is so shaped as to permit the free escape of the link also, in case of accident.

Claim.—The prong C, constructed in the manner herein described, in combination with the hinged plate E, having a plane and smooth under surface, and the spring *c*, all constructed and arranged as and for the purpose specified.

136,890.—*Metallic Can for Meats, Paints, &c.*—EDMUND MORTIMER WOOD, Needham, Mass.

Claim.—A plate-metal vessel, having its body reduced in thickness in a narrow stripe along the line in which it is to be cut, the metal at each side of said stripe being thicker than at said stripe, as before set forth, such vessel being a new article of manufacture.

136,891.—*Made Feather.*—ALBERT E. WOLFE, New York, N. Y.

Two feathers are cemented together along their stems to form one full feather.

Claim.—As a new article of manufacture, the within-described feather A B C, composed of two natural feathers prepared and cemented together, substantially in the manner herein set forth.

136,892.—*Automatic Gate.*—WILLIAM L. WOOSTER, Harvard, Ill.

The gate is held open by a latch, which is operated by the same devices which open and shut the gate.

Claim.—The latch I, in combination with the wire A, and lever F, and post E, for the purposes set forth.

136,893.—*Machine for Making Match-Sticks.*—FREDERICK ZAISS, Philadelphia, Pa.

The matches, after being formed by the cutters, fall into a winnower for cleaning, straightening, and collecting in boxes.

Claim.—The cutter-head and cutters E F, butting-block G, and the winnower H, when used substantially for the purpose shown and described.

136,894.—*Breech-Loading Fire-Arm.*—GOTTLIEB ZELLER, Brussels, Belgium.

Claim.—The combination of the cock 5, provided with its finger-piece 5′, striker 7, and trigger 6, with the breech-block A, when the same is provided with the projection 2 A, the parts being constructed and arranged for operation as described whereby the gun may be cocked in the act of opening the breech or independently thereof, as set forth.

136,895.—*Railroad Switch.*—DON JUAN ARNOLD, Brownsville, Neb.

The connection of the swinging short rail is, by means of the side spring-straps *b b*, attached by bolts and elongated bolt-holes, which allow of the requisite play, in place of the ordinary hinge joint or pivot which is usual in this class of switches.

Claim.—The straps *b b* connecting the swinging frog-rail F to the crossing-rails A B, and made with elongated bolt-holes to allow the requisite vibration of the rail F, as set forth.

136,896.—*Shank-Laster for Shoemakers.*—JOSEPH H. BEAN, Cincinnati, Ohio.

A single handle, having a circular end, to which is pivoted the lower jaw, the upper jaw, pivoted to the lower, has in its projecting arm a set-screw, which, in moving over the circular end of the handle, operates to gripe or release, as may be required, by the movement of the handle.

Claim.—The shank-laster described, consisting of the handle A, having its bearing-surface arranged as described, the members B C, and the adjusting-stop D, substantially as described.

136,897.—*Tobacco-Hiller.*—ZACHARIAH D. BLAKISTONE, St. Mary's County, Md.—Case A.

A leveler, having a flat surface and central projecting rib for smoothing the ground and keeping the machine in a direct line. A hiller, having flanges on each side for drawing in the earth to form hills.

Claim.—1. A leveler, E, when provided with a rib, *b*, on its under side, for the purpose set forth.

2. A hiller, F, when provided with side ribs *i*, constructed substantially as described, and for the purpose set forth.

3. A hiller, F, when provided with side ribs *i* and a marking-rib, *h*, substantially as described, and for the purposes set forth.

4. A hiller, F, when provided with side ribs *i*, marking-rib *h*, and rearward-projecting piece *s*, substantially as described, and for the purpose set forth.

5. The combination of a hiller, F, with a runner, A, each being constructed substantially as described, for the purpose specified.

6. The combination of the leveler E and hiller F with a runner, A, all being constructed substantially as described, and for the purposes set forth.

7. The combination of two or more runners, when each is provided with a leveler, E, and hiller F, and with a single pair of handles, G, to guide the whole, substantially as described, for the purpose set forth.

136,898.—*Tobacco-Cultivator.*—ZACHARIAH D. BLAKISTONE, St. Mary's County, Md.

The weeding-blades are attached to spring-arms, and may be raised or lowered by means of levers and connecting-chains.

Claim.—1. A runner, A, when provided with a pair of cultivating implements, W, in front, and a pair of adjustable cutting or weeding blades, *m*, constructed and arranged as described, for the purpose set forth.

2. The weeding-blades *m*, when connected to the runner A by means of a curved spring-arm, *n*, for the purpose set forth.

3. In combination with the weeders *m* and curved spring-arm *n*, the lever *p* and connecting rod or chain *o*, for the purpose set forth.

136,899.—*Horse-Power.*—GEORGE M. BRANCH, Winona, assignor to W. A. MOORE, Magnolia, Miss.

The shaft-bearings slide in grooves within the uprights, and are adjustable by means of wedges.

Claim.—The combination of the bearings H N and wedges J O with the shafts G L, gear-wheels E F K, and bars I, substantially in the manner herein shown and described, and for the purpose set forth.

136,900.—*Hanging Bracket or Shelf.*—ALBERT C. BROWN, Chicago, Ill.

Pivoted cross-barred lattice, on which slide, by means of slots and pins, the shelves.

Claim.—The combination of a lattice extension frame and the slotted brackets B, substantially as specified, and for the purposes set forth.

136,901.—*Boot and Shoe Sole Stamp.*—ALFRED M. BURNHAM, Lynn, Mass.

The stamp attached to the presser-foot is for the purpose of impressing the number upon the surface of the sole during the cutting process.

Claim.—The combination of the stamp *a* with the presser-foot B of a sole-cutting apparatus, substantially as herein shown and described.

136,902.—*Ash-Sifter.*—CHARLES S COLLINS, Baltimore, Md., assignor of one-half his right to JOHN T. FLEEHEARTY, of same place.

Claim.—The covered vessel A, placed upon rockers, the smaller ash-receptacle C having its bottom and circumference perforated or in open wire-work, flanch *c*, plates or wings *d*, and supporting-brackets *e*, relatively arranged substantially as and for the purpose herein specified.

136,903.—*Sewing-Machine Table.*—WILLIAM M. CUTHBERT, Oil City, Pa.

The table-top is recessed, and the machine is attached to a hinged platform swinging down from said recess. A drawer protects the machine from dust when it is lowered beneath the table. Leaves are hinged to the ends of the table, that can be swung over onto the top of the table, so as to present the appearance of an ordinary table when the machine is not in use.

Claim.—1. The combination of the bed-plate F N, table-top R, platform M, and drawer E, all constructed to operate substantially in the manner herein set forth.

2. In combination with the above, the hinged leaves G G, when constructed to operate substantially in the manner herein set forth.

136,904.—*Artificial Stone.*—PHILANDER DANIELS, Jackson City, Mich.

Dissolves, by boiling, one pound of concentrated ley in two gallons of water; adds one-quarter pound dissolved glue and one-quarter pound isinglass, and mixes with it, when cool, from one to twelve ounces of soluble glass. This solution is applied to a mixture of two-thirds sand, one-third cement, and to each cubic foot thereof half a pound of pommeled glass.

Claim.—1. The solution as prepared from ley, glue, isinglass, and solution of glass, in connection with the suitable mixture of sand, cement, and pommeled glass, substantially as and for the purpose described.

2. The process of making artificial stone by means of the solution and other materials, as described.

136,905.—*Hat and Coat Hook.*—JOHN DANNER, Canton, O.

An ordinary metallic hat and coat hook is provided with a shank, partly plain, cylindrical, and partly screw-threaded. A series of these hooks are combined with the bars or frame of a swinging rack, so that they not only serve to pin or fasten the slats together, but, while retaining their own upright position, allow one set of the slats or bars to move obliquely into a diamond or rhomboidal form, the other set remaining horizontal and parallel with each other. This rack, hung up by rings against the wall, when swayed to the right or left, is held in place by a retaining-pin, while the tiers of hooks, themselves held upright, form an oblique line to admit of hanging clothes or hats upon any or all of them.

Claim.—A series of metallic hooks, having shanks partially plain and partially screw-threaded, and combined and united with two sets of slats or bars, B C, as and for the purpose described and represented.

136,906.—*Nut-Lock.*—BENJAMIN W. DAVIS, Fort Madison, Iowa.

Claim.—The curved spring *e*, provided with elongated openings for the bolts C, and also provided on its outer ends with vertically-projecting lips *g* having inclines and bearing against the side of the nuts, in combination with the ordinarily-constructed nuts D and fish-bar B, substantially as hereinbefore described, and for the purpose set forth.

136,907.—*Combined Adjustable Pincher and Grappling-Tool.*—SIMON B. DEXTER, Mason City, Iowa.

A pair of pinchers, operated by a wedged-shaped link passing through apertures at the end of its handles.

Claim.—1. In combination with the jaws A A and handles B B, the adjusting-holes D, eyes N, rod I, and slide J, arranged to operate as and for the purposes described.

2. The wedge-shaped slide J and rod I, in combination with the handles B B, as and for the purposes described.

3. The handle F, or its equivalent, and screw O in combination with the slide J, as and for the purposes described.

136,908.—*Washing-Machine.*—PRICE C. DILLAN, Villisca, Iowa.

A washing-machine constructed with two half-cylindrical racks, one within the other, the lower one attached to the frame, the upper with uprights, through which the main shaft passes, and extending above it to connect with a lever to give motion to the machine. Near the center of the upright a plate is attached, with a slot to receive the journal of the shaft, and is furnished with a latch or drop to hold it in place, and from the plate extends a lever connected to the frame by a hook, by which the upper cylinder is thrown over and out of the frame.

Claim.—The combination, with a box, A, of the concave formed of the wires D and frame C, the rubber formed of wires F and disks E, the shaft G, and slotted bars I provided with the lateral arms connected to the frame C, substantially as shown and described.

136,909.—*Washing-Machine.*—JOHN B. FISHER, Amsterdam, N. Y.

The beater is operated both by a lever on the shaft and by gearing attached to the shaft by another lever, that both hands may be used in different directions.

Claim.—In combination with the oscillating beater D, lever E, and shaft *e*, the gears G and F, or sections of the same, and lever H, when constructed and arranged to operate substantially as and for the purpose set forth.

136,910.—*Turn-Buckle.*—TACITUS GAILLARD, Brooklyn, E. D., N. Y.

The threaded end of one rod is inserted in the socketed end of the other rod, and the two are held together and moved one within the other by a socket-nut on the threaded rod, the socket extremity of which nut is bent inward to form a flange, that overlaps a flange on the extremity of the socketed rod.

Claim.—The nut *d*, made with a cylindrical extension, and the ring *c*, in combination with the tube *a*, flange *b*, screw *f*, and rod *g*, substantially as set forth.

136,911.—*Moth-Trap for Bee-Hives.*—LEROY GATES, Pleasant Hill, Mo.

The platform forming the base of the hive is projecting. The bees enter from this level. Deceptive doors beneath it decoy the moths, which take up their abode in a downwardly-contracting chamber below the hive, from which they may be easily removed with the hive-drippings.

Claim.—An improved combined moth trap and base or support, A, for a hive, formed with vertical end walls, the inclined sides E provided with entrance-holes D, the sliding bottom drawer, and the top C having projecting beveled ends and central opening F, all constructed and arranged as specified.

136,912.—*Mop-Holder.*—CHARLES L. HAINES, Carmel, Me.

Two jaws, the arms of which cross each other, are pivoted together, one secured in a handle, the other extended by the side of the handle, and attachable thereto by a ring and a thumb-screw.

Claim.—The arrangement, in a mop-holder, of jaws *a a'*, crossing each other and pivoted together at *b*, the said jaw below said pivot being driven firmly into the mop-handle, and the said jaw *a'* being formed into a spring lever-arm provided with a slot, *f*, in its lower end, and extending down said handle to a thumb-screw set in a ring, *g*, surrounding said handle, all said parts being constructed and operating as herein described.

136,913.—*Furnace-Block Press.*—ALFRED HALL, Perth Amboy, N. J.

The plunger-heads are adjustable to various angles by means of small wedges *m*, for the purpose of pressing irregular-shaped blocks, but are still presented squarely to the pressing power by means of changeable presser-knobs N.

Claim.—1. The combination, in a brick-machine, of changeable presser-knobs N and wedges *m*, with the plungers, for the purpose of adapting said plungers to be adjusted at various angles to each other, as and for the purpose set forth.

2. In a brick-machine, the combination and arrangement with plungers E F of rack-bars G, pinions H, shafts I, levers J, and toggle mechanism Q R S T U, as and for the purpose set forth.

136,914.—*Putting Up and Preserving Cider.*—MOSES HALSTED and JOHN L. WHEELER, Brooklyn, N. Y., assignors to HALSTED, COUES & CO., New York city.

Claim.—1. As an article of manufacture, a pure cider in siphon-bottles, charged with carbonic acid before the bottle fermentation and deposit has taken place, as and for the purpose described.

2. The process of preparing pure cider so as to preserve its good qualities by charging it with carbonic-acid gas, in the manner and for the purpose set forth.

136,915.—*Machine for Making Ox-Shoes.*—WILLIAM HAMILTON, Neversink, N. Y., assignor to himself and JAMES L. LA MOREE, same place.

The die on block A is open transversely, but closed on the other two sides. The punch or die for indenting the side of the plate is broad and flat, and has a rounded extremity; is actuated by the hammer-bar, and alternates in its movements with the hammer.

Claim.—The combination, with a trip-hammer having a socket-die or anvil, B, and a hammer-die, E, constructed as described, of a die, *c*, arranged and operating substantially as specified.

136,916.—*Attachment for Heel Trimming and Burnishing Machines.*—SAMUEL H. HODGES, Lynn, Mass., assignor to THE HODGES EDGE TRIMMING AND SATTING MACHINE ASSOCIATION, same place.

Tools for cutting, trimming, and burnishing are mounted upon a revolving cylinder or turret, with shafts running parallel to the driving-shaft through the entire length of the turret, each shaft being provided with a pinion. Any one of the tools may be brought into use by revolving the turret until it shall arrive, when its pinion meshes into the pinion of the driving-gear, when it is locked in position by means of detent-pins.

Claim.—1. In machinery for cutting, trimming, or burnishing the soles or heels of boots and shoes, a revolving tool holding turret supported in suitable bearings and carrying two or more tools, any one of which may, by rotating said turret, be brought into operative position, substantially as shown and set forth.

2. In combination with the revolving tool-holding turret arranged for operation as specified, the means herein described or their substantial equivalent, whereby the turret, after being turned to bring into position any one of its tools, may then be locked and prevented from further movement, substantially as set forth.

3. In machinery for trimming or burnishing the heels or soles of boots and shoes, the combination, with a revolving turret supported in suitable bearings, of two or more independent tool-holding shafts mounted in bearings in said turret, and capable of rotating upon their axes, substantially as and for the purposes set forth.

4. The combination, with the turret and the tool-holding shafts mounted therein and provided each with a pinion, as described, of a driving-gear, tangential, or nearly so, to the circle in which the said pinions move during the rotation of the turret, and so placed that when any one of the tools has been brought into the required position for work the pinion of the shaft of that tool will mesh with said driving-gear, substantially as set forth.

5. The combination of the revolving turret and its supporting-frame, the tool-shafts mounted in said turret, the locking-pins for holding the turret in position after its adjustment, and the driving-gear and pinions for rotating the tool-shafts, said parts being constructed and arranged for joint operation, substantially as shown and set forth.

136,917.—*Condensing Apparatus for Steam-Engines.*—JOHN HOUPT, Springtown, Pa.

The exhaust steam enters either a surface-cooler, surrounded by a cold-water jacket, or the primary jet-condenser, and, being therein partly cooled, passes to a small secondary surface-condenser, and from this through a worm-pipe in the tertiary condenser into the hot-well, from which it is drawn by the feed-pump. By circulating-pumps the sea-water is drawn into the condensers and forced out again, and the pipes are provided with suitable safety-valves.

Claim.—1. The surface-cooler A A with its circulating-pump E, safety-valve *d'*, and pipe B, the said parts being constructed, arranged, and combined to operate substantially as and for the purpose hereinbefore set forth and described.

2. The tertiary condenser F F, with the pipes 6, 7, and *f''*, in combination with the secondary surface-condenser C C, or its equivalent surface condenser, the said condensers being constructed and arranged to operate together substantially as and for the purpose hereinbefore described and set forth.

136,918.—*Jet-Condenser for Steam-Engines.*—JOHN HOUPT, Springtown, Pa.

The exhaust steam enters the condenser, and after being condensed by a jet of cold water the condense-water passes through a conical valve, arranged in the bottom of condenser and operated by a cam and lever, to the hot-well. Any uncondensed steam and air pass through the top of condenser into the chimney by a valve automatically operated by a cam, lever, and connecting-rod.

Claim.—1. The cam E, swinging arm G, and lever H, in combination with the valve B, the said parts being constructed and arranged to operate together, substantially as and for the purpose hereinbefore set forth and described.

2. The adjustable wrist-pin disk-plate I and face-plate *f'* on the shaft F, the adjustable connecting-rod K, and the rock-shaft *l''* and arms L and L', in combination with the water-jet valve C, the said parts being constructed and arranged to operate together substantially as and for the purpose hereinbefore set forth and described.

3. The crank *f''* on the shaft F, the adjustable connecting-rod O and rock-shaft N, cam M, lever P, and spring *p'*, in combination with the valve D, the said parts being constructed and arranged to operate together, substantially as and for the purpose hereinbefore set forth and described.

136,919.—*Composition Sidewalk.*—CHARLES H. HOWARD, Batavia, N. Y.

The natural earth of the walk is excavated to the depth of a few inches, thoroughly mixed with the ingredients claimed, replaced, and packed. It is top-dressed with a coat of chalk, magnesia, and water-glass.

Claim.—The method of constructing sidewalks by applying carbonate of baryta and silicate of soda to the soil thereof, as described.

136,920.—*Sealed Can.*—W. H. IRELAND HOWE, New York, N. Y.

Claim.—The thin metal foil inner cover, secured to the body of the can by a flange bent into the annular space formed by the ring E and body of the can A, as described and for the purpose set forth.

136,921.—*Distilling Apparatus.*—GASPAR HUNZIGER, Summit, Miss.

The condenser is formed by vertical pipes in pairs connected by return-bends at the top, and connecting at the bottom with a horizontal return-pipe. This condenser is connected with a second, through which the liquid to be distilled flows on its way to the still.

Claim.—1. The tanks O and pipes J combined and arranged to form condensers, as described.

2. The combination, with the series of condensers J O, the therewith connected condenser Q P, and the straight pipe L, of the supply device U V, and the vaporizer A C, all arranged as and for the purpose described.

136,922.—*Extension Attachment for Stove-Pipes.*—SAMUEL JOHNSON, James Creek, Pa.

A slotted bar is attached to the outside of one section of pipe, and in the slot a pin fixed to the adjoining section plays, so that the two sections may be adjusted on each other by means of a set-screw on the pin.

Claim.—1. The slotted bar B, the screw C, and the hand-nut D, in combination with the adjacent length A B of pipe, substantially as herein shown and described.

2. The combination of the finger-piece F with the slotted bar C, the screw D, the hand-nut E, and the adjacent lengths A B of pipe, substantially as herein shown and described.

136,923.—*Door-Spring.*—WILLIAM M. KELLIS, Chicago, Ill.

In one side of the bulb is formed a small hole having a ring or flange raised on either side, and through this hole the air is admitted and expelled slowly. The solid portions of the ends are pierced for attaching the chain or cord connecting the spring to the door and the jamb or casing. When this compound spring is drawn out by the movement of the door the coiled wire prevents the rubber bulb from collapsing, while the slowness with which the air is expelled prevents too rapid contraction, allowing the door to close gradually without slamming.

Claim.—An improved door-spring, formed by the combination of the inclosed elliptical coiled-wire spring B, having its ends embedded in the solid end parts of the rubber bulb A, with said bulb A having a hole in its side, and its solid ends perforated to receive the fastenings, substantially as herein shown and described.

136,924.—*Cotton-Harvester.*—JAMES W. LEIGH, Norfolk, Va.

A series of circular saws, arranged on a common outwardly-inclined shaft at each front corner of the carriage-box, pick the cotton from one side of two rows and deliver it into the box by clearing-brushes arranged parallel with the picker-saw shafts.

Claim.—The series of picker-saws supported in front of the receiving box and inclined outward to the rows of cotton-plants, substantially as specified.

136,925.—*Churn-Power.*—WILLIAM A. LEWIS, Springfield, Vt.

Improvement in churn-power, consisting, first, of a clutch by which two gear-wheels are fastened so as to revolve together; also, in the method of confining the wheels to the arbor; and, furthermore, the arrangement of the several parts, by which one wheel may be detached from the arbor and placed upon a stud so that the two wheels will mesh together and increase the motion of the dasher.

Claim.—1. The clutch M, or its equivalent, in combination with the gear-wheels, when the said wheels are employed as and for the purposes described.

2. The groove F, as and for the purposes described.

3. The combination and arrangement of the changeable wheels E and I, arbor C, stud N, clutch M, grooves F and K, and pins G and L, as and for the purposes described.

136,926.—*Machine for Turning Bags.*—JOSEPH MARTIN, New York, N. Y.

The bag to be turned is drawn over the receiving-arms, the turning-arms descend, engage the bottom of the bag extended from roller to roller, and in their further descent turn the bag, and at the same time the arms are spread, opening the bag. The bag is inserted between the tapes and roller, is moved along over the fly, and by it is deposited where desired.

Claim.—1. The grooved and stationary receiving-arms D D, the reciprocating turning-arms E E provided with inclines *e'*, the spring F, and bar *b'*, arranged to operate as specified.

2. The combination of the tapes M and rollers L N O P Q R with the receiving-arms D and turning-arms E to take the bags from the arms E and deliver them to the fly S, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the gear-wheel T, rack U, cam V, spring W, and wheel X with the fly S and tape-roller L, substantially as herein shown and described, and for the purpose set forth.

136,927.—*Molder's Pot or Ladle.*—JAMES MCLEARY, Martin's Ferry, Ohio.

Claim.—As an article of manufacture, the pot A, provided with the dross shield or guard E, substantially as herein specified.

136,928.—*Wheel for Vehicles.*—MICHAEL MCNALLEY, Houston, Tex.

Claim.—The metallic bands B B and flanges D D, connected by bars C and combined with a wooden hub slotted to receive spokes and longitudinally grooved to receive said bars C, as and for the purposes described.

136,929.—*Washing-Machine.*—WILLIAM E. MILLIGAN, McKinney, Tex.

A washing-machine constructed with a rubbing-board with fluted rolls, between which is attached a bucket by which water is conveyed to the upper portion of the wash-board, and is attached by rods leading from it to a cross-head connected with the levers by which motion is given to it.

Claim.—1. The rubber block formed by the combination of the rollers G and bucket H with the block F, substantially as herein shown and described, to adapt it to operate in combination with the inclined wash-board *a'*, as and for the purpose set forth.

2. The combination of the rods E, equal-armed levers D, and pivoted lever C with the rubber F G H, inclined wash-board *a'*, and box A, substantially as herein shown and described, and for the purpose set forth.

136,930.—*Balloon-Advertiser.*—ELHANAN LE BURTON MOODIE, New York, N. Y.

The sign—transparent letters on a cylinder—is suspended by a balloon and illuminated by burners from a spiral gas-pipe, which coils about the rope.

Claim.—1. The combination of the balloon A, advertising-cylinder B, and rope or cord *g*, substantially as and for the purpose herein specified.

2. The advertising-cylinder B, when composed of the wheels or forms *c c c*, constructed as described, and cloth or equivalent covering *e*, in combination with the rope or cord *g*, substantially as and for the purpose herein specified.

3. The combination of the spiral gas-pipe *k*, burners *h h*, and rope or cord *g*, substantially as and for the purpose herein specified.

4. The combination, with the gas-pipe *k*, burners *h h*, and rope or cord *g*, of the flexible pipe *p*, for the purpose herein specified.

5. The combination, with the gas-pipe *k*, burners *h h*, and rope or cord *g*, of the electric conducting-wire *i*, for the purpose herein specified.

136,931.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

Perforated cylinders, having brushes attached to their outer surface, are arranged below the boiler and parallel to the track. These cylinders are caused to revolve by gearing with the main wheels of the machine. Steam is conveyed from the boiler to these cylinders and discharged upon the snow.

Claim.—In a snow-melting machine, a series of perforated revolving cylinders, constructed and operating substantially as herein described, and made either with or without brushes, as set forth.

136,932.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

Claim.—1. In a snow-melting machine, the combination of the air-heating apparatus, conducting-tubes, and blast-fans with the perforated tank or distributer located underneath the apparatus and between the wheels, substantially as and for the purpose described.

2. The devices described for imparting motion to the blast-fans, in combination with the air heater, conduction-pipes, and tank or distributer, all substantially as and for the purpose specified.

136,933.—*Bee-Hive.*—JOSEPH NEWMAN and NOAH BROWN, Rossville, Ill.

A bee-hive, in which lower entrance is provided with slides so arranged that it may be contracted vertically as well as horizontally for excluding robber bees and preventing the escape of the queen.

Claim.—The slides or gates *g* and *h* applied to the hive-entrance *e*, to permit the contraction of the same vertically as well as horizontally, as and for the purpose specified.

136,934.—*Acid-Pump.*—FRANCIS NICHOLS, New London, Conn.

The pump is made of glass and may be converted into a siphon by the application of an extension tube to the nozzle. Action is produced by the compression and rarefaction of air in a chamber between the valves, the air being compressed in the chamber by a

hollow collapsible bulb, and rarefied by expanding into the bulb again. The nozzle of the bulb is fitted to a tube so as to slide along it, and a hole is made in the tube, to be uncovered when the bulb is moved upward to admit air for destroying siphonic action, for which the pump is adapted by the application of the extension tube.

Claim.—1. An acid-pump consisting of the chambered bulb A, valves G, collapsible bulb K, and pipe-connections B F, combined substantially as specified.

2. The arrangement of the bulb K on the tube L to slide over the hole O and back, substantially as specified.

3. The angle band Q provided with a lip, R, and applied to the parts A and E for connecting the same, as specified.

4. The nozzle E F projecting downward into the enlarged chamber of the bulb A, below the suction pipe L, and provided with a downwardly-seated valve, as shown and described.

136,935.—*Construction of Bridges.*—SAMUEL B. B. NOWLAN, New York, N. Y.

The bridge is constructed of metallic "voussoirs," so called, made by casting frames of iron around plates of corrugated iron or semi-steel, forming hollow rhomboidal boxes. These are hung upon each other in succession by means of the projecting hooks and corresponding sockets formed in the inclined ends; the shallow space which receives the hooks being afterwards filled with fusible metal through the opening E, thus sealing the joint. A similarly-constructed piece, but of different form, anchored to the pier forms the starting-point.

Claim.—1. The voussoirs formed by casting frames A around vertical parallel plates D, and provided with lock flanges or hooks B and sockets C upon their opposite inclined ends, substantially as herein shown and described.

2. The holes E and passages F in the frames A, in connection with the lock-flanges B and sockets C, substantially as herein shown and described.

3. The vertical connecting-plate G and inclined crown-plates H, provided with sockets C and holes and passages E F to adapt them to receive the abutting voussoirs, substantially as herein shown and described.

136,936.—*Excavator.*—BENJAMIN A. OLIVER, Bunker Hill, Ill., assignor to himself and A. M. COX, same place.

The revolving excavator or bucket-wheel derives motion from the ground-wheel, (brought into play by a lever,) which also actuates, through intermediate mechanism, the transversely-reciprocating frame carrying distributing-plates. The buckets have hinged sides, which are kept closed during the elevation by guides until they arrive directly over the distributing-platform, when they are allowed to separate by the weight of the inclosed earth which they discharge. The reciprocating frame carries it off at the sides. A caster-wheel supports the forward end. This is raised and lowered by a lever, and is fixed in position by spring-latch.

Claim.—1. The arrangement of the wheels A and axle B, bars C, and frame D E G H with each other, substantially as herein shown and described, to adapt the working-parts of the machine to be raised and lowered, as and for the purpose set forth.

2. The combination of the rack-bars K and pawls J with the axle B and carved bars H of the frame-work D E G H, substantially as herein shown and described, and for the purpose set forth.

3. The toothed rim or ring T, guide rollers U, dirt-boxes V, whether made with movable sides or bottoms, and the stationary scoop X, in combination with the frame-work D E G H, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the driving-wheel N, chain-wheel O O, endless chain P, and gear-wheel S with the toothed rim or ring T that carries the dirt-boxes V, and with the frame-work D E G H, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the stationary guide W with the dirt-boxes V, toothed rim or ring T, and frame-work D E G H, substantially as herein shown and described, and for the purpose set forth.

6. The stationary trough Y and sliding frame Z, provided with hinged valves or plates A', in combination with the toothed rim or ring T, dirt-boxes V, and frame-work D E G H, substantially as herein shown and described, and for the purpose set forth.

7. The combination of the caster-wheels L', standard M', pivoted lever N', and spring-catch Q' R' S' with the forward end of the frame-work D E G H, that carries the operating-parts of the machine, substantially as herein shown and described, and for the purpose set forth.

8. The combination of the cord T', sliding clutch-drum U', and lever V' with the lever N', and with one of the guides that carry the toothed rim or ring T, substantially as herein shown and described, and for the purpose set forth.

9. The combination of the cords B', wheels C', gear-wheel E', toothed rack F', connecting-rod H', crank I', and gear-wheel K' with the gear-wheel S that drives the toothed rim or ring T, and with the sliding frame Z A', substantially as herein shown and described, and for the purpose set forth.

136,937.—*Medical Compound.*—JOSEPH L. PUTEGNAT, Brownsville, Tex.

Essence of Jamaica, pure glycerine, simple sirup, fluid extract Amargosa root.

Claim.—The above-described medicinal compound, substantially as set forth.

136,938.—*Safety-Valve.*—GABRIEL J. RAINS, Aiken, S. C.

An inverted cone-valve made to cover and partly inclose the end of the escape-pipe, the cone forming an angle of ninety degrees. On account of the inclination of its outer side the steam has no power to force it back upon its seat.

Claim.—The inverted cone-valve V, made to cover and in part inclose the end of the escape-pipe *b*, the elements of the cone forming an angle of ninety degrees or less, when constructed and arranged as set forth.

136,939.—*Grindstone Trough and Support.*—CHARLES P. RICHARDSON, Groveton, N. H.

Claim.—1. As a new and improved article of manufacture, the grindstone-trough B, constructed substantially as described.

2. In combination with a grindstone-trough, the hanger or bracket G, arranged to support the stone and secure the trough, as described.

136,940.—*Harvester.*—RICHARD A. ROBERTS, Salisbury, Mo.

The horizontal and elevating slats, between which the teeth move, are jointed on a line with the joint of the platform, which is sustained by a shoe at its outer and inner ends.

Claim.—The parallel slats E, jointed or hinged, and arranged in pairs, in combination with the jointed or hinged finger-bar A, grain-divider B, shoe C, and toothed belt or belts I J, substantially as herein shown and described, and for the purpose set forth.

136,941.—*Stone-Puller.*—GEORGE SPRINGER, No. th Leverett, Mass.

Claim.—The chain-drums D, ratchet-wheels E, pawls F with their crank-rod G, and pawls K with their double lever L, in combination with the pivoted arm J, draft-chain N, and extension tongue P Q, substantially as herein shown and described, and for the purpose set forth.

136,942.—*Rice Huller.*—MILTON E. STACY, Thomasville, Ga.

Rice fed into groove of bed and hulled by roller-wheels passing over it, the brush leveling it in the path of wheels and the scraper throwing back any rice forced out of the groove by the wheels.

Claim.—1. The combination, with the mortar A having the ring-groove *a'* with its inner side inclined toward the center, of the scraper G, as and for the purpose described.

2. The brush H, arranged to rotate over the bed *a'*, as and for the purpose described.

3. The combination, with arm F that holds the brush H, of pivoted rod I, rod J, sleeve K, lever L, and rod M, applied substantially as and for the purpose described.

4. The combination of the arm or arms F and brush or scraper G with the bed A, shaft C, arms D, and wheel E, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the brush or scraper H with the bed A, shaft C, arms D, and wheels E, substantially as herein shown and described, and for the purpose set forth.

136,943.—*Treating Offal and in the Manufacture of Fertilizers.*—JACOB J. STORER, Boston, Mass.

Improvement on Patent No. 135,383 by adding a combustion-chamber.

Claim.—1. The combustion and radiating chamber, constructed in the manner and for the purposes substantially as described.

2. The combination of the fire-places, lined cylinder, and combustion and radiating chamber, in the manner and for the purposes substantially as described.

136,944.—*Machine for Sawing Laths.*—JOHN M. STOWELL, Milwaukee, Wis.

Adjustable guides upon the feeding-table allow bolts of different widths to be fed into the machine, when they are automatically carried forward and discharged from the machine by a system of toothed feed and pressure rolls.

Claim.—The table provided with self-adjusting gage-bars, serrated feed-rolls, and pressure-rolls L K with their operative mechanism, in combination with the gang of circular saws and receiving-table Z, substantially as and for the purpose set forth.

136,945.—*Lubricating Compound.*—ETHAN A. TONNER, St. Louis, Mo.

Tallow and oil or similar oleaginous substances, three pounds; Tripoli, two pounds; lamp-black, one ounce.

Claim.—The above described lubricating compound, substantially as specified.

136,946.—*Box Slide for Ornamental Chains.*—OSCAR J. VALENTINE, Newark, N. J.

Claim.—In combination with a watch-chain, necklace, or bracelet, the box-slide having the longitudinal grooved pieces A, cross-bars B, and binding-springs D, arranged to bear edgewise upon the chain, substantially as described.

136,947.—*Floor-Timber Support.*—THEODORE VORLCKER?, Boston, Mass.

The wall-plate is designed to afford a secure support for floor-timbers, which shall not weaken the wall, and in case of breakage or fire will permit the timbers to turn upon the stud-plate without doing other damage.

Claim.—The plates A B, the plate A having a transverse groove, *a*², formed upon the upper side of one or both ends, and the plate B having a corresponding transverse projection formed upon the under side of its outer end, substantially as herein shown and described, for the purpose of supporting floor-timbers and connecting them with the walls, as set forth.

136,948.—*Furnace for Steam-Boilers, &c.*—JAMES WESTERMAN, Sharon, Pa.

A hollow metallic suspended wall connected with the feed-pipe and the steam-space of the boiler to heat the feed-water is combined with the hollow bridge-wall, which is perforated at its rear side to admit air to the combustion-chamber, to assist in the combustion.

Claim.—1. The hollow metallic wall or chamber H, filled or supplied with water, in combination with the hollow bridge E having air-passages, substantially as and for the purpose specified.

2. The hollow metallic wall or chamber H, supplied with water, in combination with the bridge E, fuel-chamber D, and combustion-chamber G, constructed and arranged substantially as and for the purpose specified.

136,949.—*Air-Tight Tin-Can.*—JAMES W. WRIGHT, New York, N. Y., assignor to W. H. I. HOWE, same place.

Claim.—1. The tin-foil top B, in combination with a can for preserving fruits, &c., air-tight, substantially as shown and described.

2. The foil cover B, in combination with the cover C and can A, as shown and described.

3. A tin can provided with an air-tight top beneath the cover C, as shown and described.

136,950.—*Apparatus for Tapping Water-Mains.*—WILLIAM YOUNG, Easton, Pa.

The drill is entered through a divided case, which is taken off after the main has been tapped and the pipe screwed in. A cock placed in the line of division, but at right angles to the drill, is turned when the drill is partly withdrawn to stop the flow of water through the top. Some is allowed to escape, however, through an opening in the side to wash out the cuttings.

Claim.—The case A B provided with notched cock L N, the drill E, the packing F, the washer G, and the gasket I, combined, constructed, and arranged as and for the purpose set forth.

136,951.—*Truss Bridge.*—JAMES ANDERSON, Gouverneur, N. Y.

Improvement on the Howe-truss bridge. The saddle-pieces form a seat for the cross-girders. The truss-rods, bars, and clamps, as combined, co-operate to tie the structure together so as to conduce to strength and lightness.

Claim.—1. The top chords, constructed substantially as described, with the clamps E, in combination with truss-rods C, as described.

2. The combination of the truss-rods C with bars *b*, constructed as described, and forming the bottom chord B.

3. The saddle-pieces I, in combination with prisms D and cross-girders K, substantially as and for the purposes set forth.

4. The combination of top chord A, bottom chord B, clamps E, saddle-pieces I with other parts of framing of a Howe-truss bridge, substantially as and for the purposes set forth.

136,952.—*Pipe for Gas, Water, &c.*—ELIJAH H. AUSTIN, New York, N. Y.

The pipe is provided with a series of passages, each of which is lined with glass or other vitreous material and separated from the other passages by an intermediate layer of cement, so that each passage is insulated from the remaining passages and from the surrounding solid or fluid substances while conducting a series of telegraph-wires under ground, and so that the fluid passing through it will not come in contact with the metallic parts of the pipes.

Claim.—A pipe, P, provided with a multiplicity of passages, each of which is lined with glass or other vitreous material, and separated from the remaining passages and from the shell B by an intermediate layer, C, of cement or other suitable material, substantially as shown and described.

136,953.—*Match Composition.*—JAMES F. BABCOCK, WILLIAM A. LEONARD, and EDWARD B. CRANE, Boston, Mass.

Dissolves collodion cotton in ether and alcohol, and mixes with the solution gum copal, camphor, and olive oil. Dips a plate repeatedly, into the composition till there is deposited upon it a sufficiently thick coating. This is peeled off and cut into strips, which are pressed into molds so as to make one side serrated. A friction-match composition is applied to one side of the strip.

Claim.—1. A match composition, consisting of pyroxyline, (pure or mixed,) having applied to the whole or a part of its surface an ordinary friction-match composition.

2. The fuse-strip or match, made of composition and formed into shape by molding, substantially as described.

3. The composition fuse-strip, molded with serrations, substantially as described.

136,954.—*Punching-Machine.*—ROBERT BAIRD, Stirling, Scotland.

The eccentric head of the lever has its axis of rotation between two rolls, which, as said lever is moved by the screw, roll in contact with it and against the inclined face of the frame above and the concave head of the punch-stock below.

Claim.—The combination of the lever-piece 5 with its varying diameter and upper and lower lever-pieces 4 and 6 with the right and left hand screw-spindle 10 passing through lever-arm 9 and stationary arm 11, all constructed, arranged, and operating substantially as described, for imparting a reciprocating motion to the punch 8, as set forth.

136,955.—*Gridiron.*—ACHILLE BATAILLE, New York, N. Y.

The parallel end wires on each side project beyond the rear of the frame, and the loops so made in the lower and upper halves of the gridiron are connected by metallic straps. By these means secure hinges are made.

Claim.—The gridiron made with the loops *e* at the back of the bar *b* of the wire forming two of the parallel bars *a a*, and said loops being united by the metallic straps *d d* forming the hinges, as set forth.

136,956.—*Chair.*—JACOB BAUGHMAN and BENNET R. CHALK, Mount Washington, Md.

To the top of the rear of the seat is attached a metallic plate having an upright stop and a perforated vertical lug, which has a pivotal connection with the bifurcated plate attached to the back post of the chair. These plates are used on both sides of the chair. Slotted arms are pivoted to the chair-back. The slots on the lower ends of the arms slide over bolts entering the chair-seat, near the front, and lever-nuts hold the arms in the desired position to adjust the back.

Claim.—1. The chair-back rounds *d d* provided each with a plate, C *c*, and combined with seat A having the plate B provided with stop *b* and perforated lug *b*¹, as and for the purpose described.

2. The spring F, slotted arm G, and lever-nut H, combined with a chair having a pivoted back, as and for the purpose set forth.

136,957.—*Glass-Furnaces.*—EDWARD BAYARD and BENJAMIN A. MASON, New York, N. Y.

Two pipes coil around the furnace, of cylindrical or other shape, from which project small pipes or tubes toward openings made at intervals in the walls of the furnace; said pipes are one above the other. Through one pipe gas flows, issuing from its projecting tubes; is ignited and the heat intensified by uniting with an air-blast forced through the other pipes and tubes.

Claim.—1. In a glass-furnace, the air-pipes C and *c*, in combination with the gas-pipes B and *d*, extending only to the exterior walls of the furnace, as and for the purpose set forth and described.

2. In a glass-furnace, the openings *a*, when placed in its walls and used in combination with air-pipes C and *c*, and gas-pipes B and *d*, or their equivalents, substantially as and for the purpose set forth and described.

136,958.—*Car-Coupling.*—WILLIAM E. BYMAN, Portland, Me., assignor of two-thirds his right to MICAH SAMPSON, same place.

Devices for changing the draw-bars of a car to different heights, so that they may correspond in height to the draw-bars of cars to which they are to be coupled.

Claim.—The combination of the draw-bar, lever *m*, ratchet *p*, spring *l*, and stirrup-irons *j* and *k*, all in the manner and for the purposes as set forth.

136,959.—*Extension Table for Sewing-Machines.*—JOSEPH BENNOR, Philadelphia, Pa., assignor of one-half of his right to JOHN N. MCLEAN.

The cover is used as an extension to the table, being connected to the side of the table by a sliding rod provided at its inner end with two studs, which engage with a notched block on the under side of the table, and at its outer end with a hook and arm. The hook engages with an eye-plate on the side of the cover, and the arm bears against the side of the cover.

Claim.—In combination with the sewing-machine table, provided with the notched block *e*, the rod B, provided at its inner end with the studs *m* and *n*, and at its outer end with the hook *g* and arm A, when arranged as described, for the purpose of locking the cover to the end of the table, as set forth.

136,960.—*Process for Using Anthracite-Coal Dust or Slack as Fuel in Locomotive-Boilers.*—ALFRED BERNEY, Jersey City, N. J.

Divide tender into two parts, one for bituminous coal, other for anthracite dust. Fire up engine in usual manner with bituminous coal. When heat has reached one hundred pounds pressure, add anthracite dust. Proportions of bituminous coal and anthracite dust to be regulated by speed required.

Claim.—The improved process herein described for using anthracite-coal dust or slack as fuel to make steam in locomotive-boilers, the same consisting in adding bituminous coal and anthracite-coal dust to the fire under a locomotive-boiler, substantially as described, so as to utilize anthracite-coal dust in generating steam, as set forth.

136,961.—*Corn-Planter.*—DAVID G. BOARDMAN, Albia, Iowa.

The shares are changed in their angle by means of a curved wedge-shaped slotted block interposed between them and the standards. The seed-slide has grooves upon each side of the seat upon which it rests, to prevent the clogging of the seed.

Claim.—1. The combination of the corn-box H, bar *d* with inclined sides and grooves *i*, and the slide J with adjustable plate *f* and collar *g*, said slide being operated by the lever K, rod *h*, spring *m*, and crank-lever L, substantially as and for the purposes herein set forth.

2. The combination of the plow G, concave standard E, and convex bar *a* with longitudinal slots, substantially as and for the purposes herein set forth.

136,962.—*Combined Chair and Lounge for Invalids.*—DAVID G. BOARDMAN, Albia, Iowa.

A back frame, having rack-bars working on pinions on the main frame, and connected to the back of the chair by pivoted bars, is drawn out, and thereby the inclination of the back is adjusted. The leg-rest frame is also provided with rack-bars working on the pinions attached to the front of the main frame. Under the opening in the seat a box is supported, being hinged at one end and held by a bolt at the other.

Claim.—1. The toothed frame D, pinion *d*, connecting-bars *a a*, and back C, constructed and arranged as and for the purpose set forth.

2. The toothed frame E and its pinions or wheels *d'*, in combination with the seat A and movable or adjustable back, as and for the purpose set forth.

3. The box I hinged to the chair-frame beneath the seat, said box being supported or held in position and used as and for the purpose specified.

136,963.—*Permutation Lock.*—EDWARD W. BENTZELL, New Haven, Conn.

The oscillating tumbler is arranged to turn upon a tubular stud attached to the lock-case, and serves to operate the sliding bolt, and also to hold it in position when locked. The fence-lever, gear-wheels, and the disconnecting-lever that supports the revolving disk-tumblers are all mounted upon and move with the oscillating tumbler. The operating-shaft has a longitudinal as well as a rotary motion, and upon its inner end is secured a carrier-wheel which has an engaging-pin, by means of which the gear-wheels are picked up and revolved, the gear-wheels imparting their motion to the revolving tumblers, so that they may be properly adjusted for locking and unlocking the lock.

Claim.—1. The carrier-wheel F, having an unbroken periphery around its inner face and the recess f^2 and pin f'', in combination with the projection g' on the fence lever and shaft or spindle E, having a longitudinal and rotating movement, as set forth.

2. The fence-lever G, provided with the riding-lug g and projection g', in combination with the carrier-wheel F having recess f^2, and arranged on a spindle having a longitudinal movement, the parts being constructed and operating substantially as described.

3. The oscillating tumbler C, carrying the rotating tumblers I, wheels H, and disconnecting-lever K, or its equivalent, substantially as and for the purpose specified.

4. The combination of the oscillating tumbler C, rotating tumblers I, wheels H, fence-lever G, and disconnecting-lever K, the whole being arranged to oscillate upon the stud m in the manner described.

5. The elements of the preceding clause, in combination with the bolt B, as and for the purpose specified.

6. The fence-lever G, provided with lug g, projection g', and fence g'', as and for the purpose specified.

136,964.—*Wrench and Bolt-Cutter.*—PETER BROADBOOKS, Batavia, N. Y., assignor of one-half his right to SCHUYLER LOZIER and EDWIN F. WHITNEY, same place.

The head B′, being recessed, is used as a wrench to tighten up the nut. The head A′ is then used to trim off the end of the bolt.

Claim.—The combined wrench and bolt-cutter herein described, consisting of the levers A and B, cam-head A′, and wrench-head B′, provided with notches and offset, substantially as specified.

136,965.—*Baling-Press.*—HENRY K. BURNETT, Poughkeepsie, N. Y.

The doors are closed and power is applied to the windlass, which draws down and inward the ends of the curved arms, the curved side acting as a lever in forcing the arms or levers upward, and this upward movement of the levers, acting on the short levers e, moves them upward, carrying the follower with them until they rest against the side of the body or box.

Claim.—1. The combination of the three levers c e i, the short one e having its end attached to the side of the frame so as to exert a direct pull upon the follower, substantially as shown and described.

2. A press in which the various parts are arranged and combined substantially as specified.

136,966.—*Iron Fence.*—CLARK T. BUSH, Oneonta, N. Y.

Ornamental pickets are hung by means of lugs to the horizontal rails. Said pickets have wings extending laterally on the horizontal bars with ends clamped to the rail by couplings having flanges which force the pickets outward from the rails. The rails are held to the posts by a bent strip held above and below by a band, the post-cap forming the upper band.

Claim.—1. The rail R secured to the post T by means of the iron loop L, band b, and cap C, substantially as shown and described.

2. The couplings G G provided with flanges on each side to fit snugly under the wings W W of the pickets and acting in combination with the embracing projections S S of the pickets P P and the rail R, substantially as shown and described.

136,967.—*Machine for Folding and Measuring Cloth.*—ALONZO M. CHENEY, Charlotte, Mich.

Claim.—In combination with the ordinary folding and measuring rollers of a cloth folding and measuring machine, the hinged tray T provided with an adjustable gage, V, the rollers r r, and bars s s, and adjustable gage G arranged between the rollers and bars to guide the cloth, and all constructed and arranged as described.

136,968.—*Fruit-Crate.*—WILLIAM H. CLARKSON, Bridgeville, Del.

The device is for a fastening for the lid of the box or crate by a belt formed of wire, bent at the upper end to form a hook, which, by turning, enters a staple attached to the lid, and extending down is secured by staples, and has a lug operating against a spring to hold it in position, and its lower end bent at an angle, by which it is operated through the slats of the crate.

Claim.—The fastening D, constructed as described, with handle c, lug d, and arm e, and used, in combination with the spring K and staple G, on the inside of a berry box or crate, substantially as and for the purposes herein set forth.

136,969.—*Lawn-Mower.*—THOMAS COLDWELL and GEORGE L. CHADBURN, Newburg, N. Y.

A spiral revolving cutter has its bearings in hinged arms, which are adjusted to and from the stationary cutter by set-screws, which turn between fixed lugs on the sides of the frame.

Claim.—1. The means employed for rendering the revolving cutter adjustable toward or from the bed-knife, consisting of the pivoted bearings E, provided with the threaded lugs E′, the screws G, working in said lugs, and the lugs H, secured to or upon the frame A, and embracing the ends of said screws, substantially as set forth.

2. The cutter-heads M, having their peripheries reduced in front of the cutters, and their edges chamfered, in the manner and for the purpose substantially as shown and described.

3. The handle shown, consisting of the sides P and cross-bar p, formed of one piece, and combined with the frame sides A and bar Q, substantially as and for the purpose specified.

136,970.—*Washing-Machine.*—CONVERSE COLE, Meriden, N. H.

A washing-machine constructed with metallic non-corrosive plates covering the sills, with cleats for attaching it to the tub connected with the uprights, which may be adjusted to the size of it, the upper roll being corrugated and working on plain ones for rubbing.

Claim.—In combination, the guard C′, made of thin plates of non-corrosive metal, the sills C, cleats H I, standards D, springs E, fluted cylinder A, and bed-rolls B, all constructed and arranged substantially as and for the purposes set forth.

136,971.—*Glass-Mold for Forming Lamp-Chimneys.*—MICHAEL H. COLLINS, Chelsea, Mass.

In the sections of the stationary mold, at the top and bottom, segmental knives or creasers are fixed for giving one uniform size to the chimneys as they are blown, by partially severing them at such points, the surplus glass being then easily removed without fracturing the chimney.

Claim.—In a stationary glass-mold for making lamp-chimneys, formed in sections as specified, the arrangement of one or more fixed segmental creasers or knives in each section, in manner as shown and described.

136,972.—*Device to Prevent Retrograde Motion of Balance-Wheels on Sewing-Machines.*—GEORGE W. COOK, Chicago, Ill., assignor of one-half his right to HARVEY T. WEEKS, same place.

Device to prevent retrograde motion of balance-wheel on sewing-machines.

Claim.—The pulley c, cord m, and lever h, in combination with the arm l and dog n, substantially as and for the purposes hereinbefore set forth.

136,973.—*Medicine-Case.*—WILLIAM H. CUTLER, Buffalo, N. Y.

Two holes are bored side by side in a solid wooden block. A metallic cover slides over one end, and is guided by flanges which run in grooves cut in the wood just below the edge. A small struck-up metallic stop serves both to limit the motion of the cover and to retain it in position. This box and cover, composed of two pieces only, is for carrying an inhaler and bottle of medicine, and is, from its construction, of such strength that the bottle would not be broken when the case is carried in the pocket or in a trunk.

Claim.—The improved medicine case or box formed of the solid wooden block A having the longitudinal openings a a and the sliding sheet-metal cover B therefor, provided with the flanges d d fitting in grooves c c, and with the stop and thumb-piece e, as shown and described.

136,974.—*Door-Spring.*—SPALDING CUTLER, Cincinnati, Ohio, assignor to himself and HUGH MCCONNELL, same place.

A helical spring coiled around a rod, and adjustable by a nut to regulate tension, is pivoted at one end of the rod to the jamb or casing, and carried, at or near the other end, by a b acket on the door. This device is provided with an eccentric-lever cam arranged upon and working in a slotted bail on the bracket, which acts as a brake to press down upon the rod and suspend the action of the spring, thus holding the door at any angle or in desired position.

Claim.—In a door-spring of the character described, the combination of the rod A, slotted bearing C i, and cam G g, substantially as and for the purpose specified.

136,975.—*Railroad Snow-Plow.*—WILLIAM DAVIS, Five Corners, N. Y.

The snow is divided by the revolving cutters, and then carried up the inclined plane by means of an endless band. It then falls upon another endless band which runs at right angles to the inclined plane, and thereby conveyed to the sides of the track. The cutter and endless bands are revolved by their being connected, through intermediate gearing, to gear-wheels which are attached to the car-axles.

Claim.—The breaker c, incline platform U, belts W O with shovels V and P attached thereto, in combination with the incline frame A, driving-wheels B B and C C, pulleys S T N N′ G F, gear-wheels D E I J P Q R K M, bevel-gear wheel g h i, and boards u and u, substantially as and for the purpose hereinbefore set forth.

136,976.—*Sewing-Machine.*—ALFRED S. DINSMORE, Boston, Mass.

The loose pulley, which, by frictional contact with the fast pulley, drives the machine, is moved on the main shaft between the fast pulley and the fixed collar provided with an arm. When the long arm of the rocker is depressed the pulleys are engaged, but when allowed to rise under the action of the spring the loose pulley is moved back against the collar, and the stop on the rocker is brought under the arm on the collar, and the machine is stopped preferably with the needle always in its highest position.

Claim.—The rocker k provided with the arms l and m, shoe n, stop r, and a reacting spring, combined with the collar and its arm q, the friction-hub x, and the fast and loose pulleys h k, and shaft b, substantially as and for the purpose described.

136,977.—*Suspension-Ring.*—GEORGE DOOLITTLE, Bridgeport, Conn., assignor to THE DOOLITTLE MANUFACTURING COMPANY, same place.

The device is constructed of a continuous piece of wire, all the corners or angles of the suspension portion being rounded. The penetrating-points are formed at right angles to and below the lower plane of the circle forming the ring. The points are barbed, one being longer than the other and bent over it.

Claim.—1. As a new article of manufacture, a suspension-ring formed of a continuous wire, with the penetrating-legs terminating at right angles to and below the lower plane of the circle forming the ring proper, as and for the purpose set forth.

2. In a suspension-ring composed of wire or its equivalent, the penetrating-points, arranged substantially as described, so that the lower one shall be wholly or partially covered by the upper, as and for the purposes set forth.

136,978.—*Elevator.*—CHARLES DU BOIS, Fishkill Landing, N. Y.

Improvement in elevators, to enable the weight of articles which are to be transported between an upper and a lower point to be wholly or in part counterbalanced, so as to lessen the amount of power required to withstand or overcome the force of gravity, and consisting of self-balancing carriages provided with reservoirs for the reception of water, in combination with suitable apparatus for supplying said water to said reservoirs at points within the tracks of said cars, and for receiving the same from said reservoirs at other or higher points.

Claim.—Two self-balancing carriages provided with reservoirs for the reception of fluid, &c., in combination with suitable apparatus for supplying such articles to said reservoirs at points within the travel of said cars, and for receiving the same from said reservoirs at other or higher points, substantially as and for the purpose specified.

136,979.—*Circular-Saw Bench.*—BENJAMIN F. DUNKLEE, Concord, N. H.

Two circular saws are hung in oscillating frames beneath the table, and are so connected as to balance each other.

Claim.—The combination, with two saw-frames arranged to counterbalance each other so that both saws may be raised and operated together when desired, of devices for fastening it in position, substantially as shown and described.

136,980.—*Cover for Coffee-Roasters.*—LODIEK J. DYKE, Hamilton, N. Y.

Claim.—The cover B provided with a handle, f, bearings g l, slot h, and the pivoted piece j having sockets k, all constructed and arranged substantially as described, for the purpose specified.

136,981.—*Rotary Engine.*—WINSLOW P. EAYRS, Boston, Mass., assignor of one-half his right to T. E. STEWART, same place.

A rotary wheel, provided with two or more circumferential steam-channels, and abutments provided with packing and friction roller, is combined with a balanced oscillating valve having a passage through it. The packing-rings are made in sections, and the roller is set out by steam admitted through a passage in the side of the abutments.

Claim.—1. In a rotary engine the wheel C provided with two or more circumferential steam-channels, a, each having abutments D provided with packing and rollers e and a balanced valve, constructed to operate as and for the purposes herein set forth.

2. The packing-rings d, made in sections and placed in grooves b on the rotating wheel, in combination with the rollers e, groove i, and passages f, substantially as and for the purposes herein set forth.

3. The combination of the cylinder A, wheel C with grooves a and b, packing-rings d, and abutments D, the valve-boxes E G, valves I I′, pipe K, and the various ports, all constructed and arranged substantially as and for the purposes herein set forth.

136,982.—*Means of Snubbing Canal-Boats.*—THOMAS W. EDGAR, Espy, Pa.

Stout pieces of timber, intended to be used as brakes in canal-locks, are hinged at their front ends to the bows or sides of a canal-boat, and are extended laterally and outwardly by levers, which levers are operated by chains extending aft to the man at the wheel. Springs retain the brakes against the sides of the boat when they are not in use.

Claim.—1. The combination of brakes with the sides of a canal-boat, operated by any suitable mechanism for projecting them outward, for snubbing the boat in locks, substantially as described.

2. The combination of the brakes B B with the sides of a boat, the brakes being operated by means of the levers F F, chains E E and E′ E′, rods H H, and capstan J, substantially in the manner and for the purpose set forth.

136,983.—*Safety-Pocket.*—SAMUEL ENGEL, Chicago, Ill.

Two pieces of whalebone or other elastic material are secured to opposite sides of the pocket. An elastic band is attached to one strip at the ends, as a string to a bow, by which it is made to bend forcibly upon the other strip and keep the pocket closed.

Claim.—The safety-pocket herein described, consisting of the pocket A, springs a b, secondary spring c, all constructed and arranged to operate substantially as and for the purposes specified.

136,984.—*Tobacco-Package.*—EDWARD L. FELGNER, Baltimore, Md.

A tobacco-package, having a semi-cylindrical form, for convenience in carrying in the pocket. The string, which is used for tying the package, is concealed beneath the folded end until ready for use.

Claim.—1. A package or sack having when filled the form, in transverse section, substantially as and for the purposes set forth.

2. A sack or package of tobacco having its mouth closed by folding and sealing, substantially as shown and described, and concealing beneath the fold or folds a string, c, as and for the purpose set forth.

136,985.—*Balanced Valve.*—HENRY FITZSIMMONS, Houston, Tex.

Slide-valves, with opposite faces, are arranged between seats on both sides of the valves, and the sides of the valves are adjusted, as required, automatically by the pressure of the steam upon an intermediate section of wedge-shape, to insure a proper fit of the valve between its seats.

Claim.—The combination of the wedge-shaped and automatically-adjustable intermediate section B′ with the outside sections B B′ of the open body or frame-like valve, the strips m m, the screws k k, the valve-seats C C, and the ports or passages c c, c' c', d d, and f f' g, substantially as shown and described.

136,986.—*Machine for Wiring Sheet-Metal Pans.*—WASHINGTON FOGLESONG, Dayton, Ohio, assignor to himself, JOSIAH E. BOYER, JOHN MCMASTER, and ISAAC HAAS.

By a series of consecutive mechanical movements the wire is fitted to its place, and the edges of the sheet-metal pan bent entirely over it. The four sides of the pan are operated upon simultaneously.

Claim.—1. In combination with the movable table A, having the hinged wings m m for bending the edges of the metal sheet, the plunger C and its two heads D E, one, E, movable, with arms f f carrying blades G G′ for pressing the wire to its place, and one, D, stationary, for holding the pan, the whole constructed, connected, and operating substantially as and for the purpose specified.

2. In combination with the elements of the first clause, the cross-head H, carrying the corner-standards M M′, shaped and operating as described, the whole connected and operating substantially as herein specified.

3. In connection with the elements of the two preceding clauses, the slots c c' in the arms f f, and slots k k in the bars A A′, and slots j in the cross-head H, with the accompanying tightening-nuts, or their equivalents, for rendering the blades G G′ and corner-standards M M′ adjustable for different sizes of pan, the whole being arranged, connected, and operating substantially as and for the purpose specified.

4. In combination with the elements of the first clause, the toggle-joint F, bell-crank lever O, and trigger p, with the arm q, or their equivalents, for raising the movable head, arranged and operating substantially as and for the purpose herein specified.

5. In combination with the elements of the preceding clauses, the cam B′, connecting-rod C′, sliding arm J, and screw L, adjustable to the bottom of the table A, constructed and acting substantially as and for the purpose specified.

136,987.—*Cartridge-Holder.*—LEROY J. GAINES, West Meriden, Conn., assignor to CHARLES PARKER, same place.

Combination with a belt provided with a shelf or ledge of spring-clasps, the ledge to support and the clasps to hold the cartridges.

Claim.—A belt, A, constructed with a ledge, B, at or near its lower edge, and provided with independent clasps D, more or less in number, above the said ledge, substantially as and for the purpose set forth.

136,988.—*Lizard for Sails.*—CHARLES H. GALLAGHER, Gloucester, Mass.

The eye or ring, having cast with it the web and arm, has a hook pivoted to the arm and fastened to shoulder by a screw or pin, the hook and arm being constructed to form a clasp, when closed, of irregular internal form, to more securely grasp the boltrope and thimble.

Claim.—The jack or lizard formed of metal and having the eye or ring a, the web b, and the arm c cast in one piece, and the hook d pivoted to the arm c and fastened to the shoulder f by a screw or pin, g, the hook and arm being so constructed that when closed they form a clasp having the irregular curvature described, for the purpose set forth.

136,989.—*Portable Fence.*—JOSEPH E. GARLINGTON, Chambers Court-House, Ala.

The end posts are secured to the panel by upright battens, which form a hollow post. Oblique braces are stepped into the base-plank, which is also centrally notched on each side to receive and support the end upright of the post.

Claim.—The portable fence, constructed as above described, consisting of the panels having upright end posts C, the mortised and centrally-notched base-plank D, and the oblique braces E, stepped in the mortises of the base-plank, and pinned to the end posts C with battens B, which are stepped in the notches of the base-plank, as specified.

136,990.—*Knife-Cleaner.*—HORACE C. GILBERT, New London, Conn.

The machine is located in a box or platform with raised sides, and is arranged with cork blocks, fitted together to receive the article to be operated upon, and has a cap, with a handle to raise it, which is held by two uprights with spiral springs. On the top of the uprights is a bar extending across, holding the upper end of the springs and serving as a rest for the hand in using the machine.

Claim.—In a knife-cleaner having rubbing-blocks and plates with corks attached to each, in connection with posts and springs arranged and attached to a box, I claim the plates C D provided

with the hooks *h*, in combination with the bar *g* attached to the top of the posts, substantially as shown and described.

136,991.—*Boot and Shoe Shank.*—GEORGE GOODYEAR, New York, N. Y.

The shank is made from a solid piece of wood by means of saw-cuts from each end, said cuts not meeting in the center, leaving a solid part.

Claim.—As an article of manufacture, a wood shank for boots or shoes formed from a single piece of wood slit from each end toward the center, leaving a portion at or near the center solid and uncut, substantially in the manner described.

136,992.—*Extracting Tubular Casings from Oil-Wells.*—HART HARRIS, Tidioute, Pa.

The cutter is worked by the rope until the bottom of the tubing is cut or slit longitudinally, allowing it to collapse and clear the packing and the sediment usually caked above the packing.

Claim.—1. The method of removing the casing from oil and artesian wells by splitting the casing longitudinally a suitable distance to enable it to be withdrawn, substantially as and for the purpose specified.

2. The combination of the body formed with a longitudinal slot having an inclined bottom, and a block that carries a cutter or its equivalent that rests upon and is fed outwardly by the inclined bottom of the slot, substantially as and for the purpose specified.

3. The combination of the body of the implement formed with a longitudinal slot, a cutter-block provided with an inclined groove on its side, and a set-screw that takes into the groove and holds the block in place, substantially as and for the purpose described.

136,993.—*Apparatus for Shearing Horses.*—WILLIAM HARRISON, Chicago, Ill.

A supplemental plate is attached to the stationary toothed plate, underneath, to regulate the height of the shearing-edge, so that the hair upon the horse may be clipped long or short. Several of these plates are provided for each machine, and are of varying thickness.

Claim.—The combination of the movable plate C, the stationary plate A provided with lugs G, and the supplemental plate or plates H, and bolts *g*, substantially as and for the purpose specified.

136,994.—*Lantern.*—EDGAR K. HAYNES, Boston, Mass.

An inclined ring surrounding the exterior of the gallery deflects currents of air upon an impervious plate beneath the burner. The wick-tube is covered by a cone upon an open frame-work. The air, after impinging upon the impervious plate, passes partly up around the wick-tube and partly through the frame-work of the cone, the two currents mingling above the flame. Above the top of the lantern is a dished plate, and surrounding vertical ring in such relation that currents of air, striking the lantern, create a draft to withdraw any excess of air therein.

Claim.—1. An annular deflector, *g*, and perforations e^3, arranged in relation to an impervious plate, *f*, and the wick-tube of a lantern, substantially as and for the purposes described and set forth.

2. The combination of the dished top plate b^1, annular dished or curved ring b^3, annular opening b^4, and annular band b^5, all arranged in relation to each other substantially as and for the purposes specified.

3. In combination, the dished plate b^1, annular dished or curved ring b^3, annular open space b^4, annular band b^5, impervious plate *f*, deflector *g*, and lantern-globe, arranged and operating substantially as and for the purposes set forth.

136,995.—*Rat-Trap.*—THOMAS HEBB, Great Mills, Md.

The trigger of a revolving floor is so arranged over a movable bait-box that the animal is dropped into a lower prison-chamber, and the trap is reset without loss of bait.

Claim.—The trigger *r* and bait-trough, as arranged and combined with a winged wheel, C, the whole operating in the manner and for the purposes set forth.

136,996.—*Fruit-Jar.*—GEORGE W. HEMPELL, Millville, N. J.

The jar is constructed with an oval-shaped mouth, with an inner shoulder or offset a short distance below. Within this mouth, and extending above the top of the jar and below the shoulder or offset, is arranged a rubber gasket, which is provided with flanges extending outward over the top of the jar and underneath the shoulder, and serves as packing for the inner and outer caps which are forced in upon them by means of the screw, and a perfect joint is thereby effected.

Claim.—A jar with an oval mouth, as constructed, in combination with the inside cover C, rubber packing-ring D, plate G, and screw *d*, constructed as herein set forth.

136,997.—*Camera-Stand.*—BALTHASAR HOLLER, Brooklyn, E.D., N. Y.

Two or more slides arranged to move up and down in guide-slots in the legs of the camera-stand, and connected at their upper ends to the platform by hinge-joints, are controlled in their movements by weights and friction-springs, respectively, the latter being released at will by treadle mechanism, so that the operator can adjust the platform without requiring the aid of his hands.

Claim.—1. The slides B B C, constructed as described and connected with the platform A by the hinges *a b*, in combination with the legs F F G of the camera-stand, the several parts being arranged substantially as herein shown, for the purpose specified.

2. The weight *f* and spring *g*, or their equivalents, in combination with the slides B B C, platform A, and legs F F G, substantially as set forth.

3. The friction devices *c c'* and treadle of lever H connected thereto, in combination with the weights or springs *f g* and with the slides B B C, platform A, and legs F F G, substantially as shown and described.

136,998.—*Breech-Loading Fire-Arm.*—HENRY HOPPENAU, Kansas City, Mo.

Sliding cover for cartridge or charge chamber adapted to be caught and locked by a spring-catch lever for raising the catch and arrangement of the sight in a slotted handle for the cover.

Claim.—1. The sliding cartridge-chamber cover B, having the notch *b*, in combination with the spring *d* attached to the rear end to the case, and provided with pendent stud on the front end, as and for the purpose described.

2. The bifurcated lifter E, attached to slide B, and combined with spring having the headed stud d^2, as and for the purpose set forth.

3. The sight *f*, combined with and adjustable on the slotted post F of slide, as and for the purpose specified.

136,999.—*Combined Slop-Pail and Commode.*—GARDNER HOWLAND, Brunswick, N. Y.

The pail is divided horizontally by a valved partition, operated by a rod, and one side of the conical top is formed for a commode with a cover.

Claim.—1. The combined slop-pail and commode, constructed of two compartments, separated by a valved partition, and formed at top to serve as a seat, all substantially as herein set forth.

2. The partition D, separating the compartments A B, provided with a valve, E, packed around its edge, substantially as set forth.

137,000.—*Package Band and Fastener.*—FREDERIC R. HUNT, Leavenworth, Kan.

The fastener is fastened to the band by side flaps, and has end flaps *b* which form a doubled wearing-edge.

Claim.—The band and fastener herein described, consisting of the band A, attached to the fastener B by pasting down the sides *d d*, said fastener being formed with the tongues *b* and slits *c c*, substantially as shown and described, for the purpose specified.

137,001.—*Snow-Shovel.*—EDWARD HUNTER, Norwich, Conn.

A metallic tip is secured between two thin plates of metal, and these, in turn, are riveted upon both sides of the wooden blade.

Claim.—A tip or shoe for a wooden snow-shovel, consisting of a wrought or cast iron core, in combination with sheet-metal plates, substantially as set forth.

137,002.—*Gathering Attachment for Sewing-Machines.*—THOMAS S. HUNTINGTON, Baltimore, Md.

The grinding-edge of the base-plate is slotted to receive the feed-bar that carries the feeder that bears on the strip of cloth to be gathered. One end of the jointed lever rests against the feeder, the other end against the adjustable feed-regulating stop. The spring keeps one end of the feeder against the stop and the jointed lever elevated at its center. The needle works through the slot in, and the needle-bar bears on, the spring-lever, depresses the jointed lever, draws back the feeder, and as the needle rises the spring moves forward the feeder, and it makes a gather in the cloth.

Claim.—The adjustable spring-lever *m*, the jointed lever *b*, stop *c*, feed-bar *f*, feeder A, spring *i*, and plate *a*, constructed substantially as shown, for the purpose set forth.

137,003.—*Ruffling Attachment for Sewing-Machines.*—THOMAS S. HUNTINGTON, Baltimore, Md.

Employment of a hinged feeder, a spring-feeder in connection with a stationary adjustable guard, and also in the employment of a hinged bar, in connection with these devices, in place of the lever.

Claim.—1. The guard *s*, in combination with the reciprocating hinged feeder A, spring A^1, and feed-bar *f*, all constructed and arranged on the supporting-bed having the vertical guiding-face, in the manner and for the purpose substantially as set forth.

2. The hinged bar *m*, jointed lever *b*, adjustable stop *c*, feed-bar *f*, hinged feeder A, spring A^1, guard *s*, and plate *a*, all constructed substantially as set forth, for the purpose specified.

137,004.—*Leaching and Tanning Apparatus.*—CHARLES KORN, Brooklyn, N. Y.

Troughs, supported upon and surrounding the entire vat, are provided with tubular connections with the different compartments of the vat. The vat and troughs are made air-tight, and the pressure regulated by means of valves.

Claim.—1. The combination of the vessel A and of the distributing-trough D with the cover B and pipes *b d*, as set forth.

2. The cover E and trough D in combination with the vessel A, cover B, and pipes *b d*, as specified.

137,005.—*Upright Piano Action.*—RUDOLPH KRETER, New York, N. Y., assignor to DAVID DECKER and JOHN J. DECKER, same place.

A spiral spring is introduced under the hammer, but to withdraw it nimbly from the string. The action-frame is jointed in line with the pivots of the action-lift hinges, so that the whole may be turned back from the strings when desired.

Claim.—1. The combination of the spiral spring O, the upright *d*, and the knuckle C of the hammer, when these parts are arranged in relation with each other and the spring connected to the knuckle in close proximity to its center of motion, *e*, and around the latter, so as to act at a uniform leverage on the knuckle of the hammer, substantially as shown and described.

2. The arrangement, essentially as herein described, of the hammer-rail A, the rest-rail F, and the regulating-rail H, and accompanying parts of the action with the pivot or joint *c* of the base-piece of the jack, for the purposes specified.

3. The standards which support the action, constructed each of separate pieces M N, the one, M, of which is fastened to the key-frame, and the other piece, N, which carries the action, is pivoted to the fast piece M so as to turn on a center which is coincident with the center *c* of the lower jack connection, essentially as herein described.

137,006.—*Combined Fire-Plug and Cistern.*—FINLEY LATTA and WILLISON H. HUGHES, Cincinnati, Ohio.

The plug is located within a shallow cistern and has a three-way cock, arranged to admit of the discharge of water directly within the cistern when it is desired to supply one or more suction-engines, or allowed to pass upward through the top of the plug, as required. The lower end of the plug is provided with a collar, which is traversed by equidistant screws, whose points enter and rest upon a ring, which itself rests upon the top of the barrel to prevent the jamming of the plug. The handle for operating is pivoted, so, when not in use, it is turned down to admit of the cover being secured.

Claim.—1. The fire-plug, substantially as described, located entirely within a suitable cistern or tank provided with a detachable cap, the removal of which gives access to any part of the plug, and enables a supply of water to be obtained directly therefrom or from the cistern by turning the stem H, substantially as set forth.

2. The described arrangement of pivoted and folding handle L on the hollow stem H of the fire-plug, as and for the purpose explained.

3. The provision in the plug proper of collar O, having the screws P, resting upon a ring, Q, supported and revolving upon the top of the barrel, as and for the object set forth.

137,007.—*Sewing-Machine.*—WILLIAM S. LINCOLN and WILLIAM A. RAYER, Boston, Mass.

The ends of pieces of fabrics to be joined together are confined on pins projecting from the rotating guide and annular frame, which move together, firmly hold and present the material under the needle. The ends are trimmed by the rotating shears, and a marker attached to one of the cutters receives ink from the inking-rollers, and marks the fabric with any desired designating mark.

Claim.—1. The combination, substantially as described, of a rotating guide, B, and an annular frame, D, each provided with hooks or points *a a b b* all constructed and arranged to operate as herein set forth, for the purpose specified.

2. The marker L arranged on the cutter E, and in respect to inking-rollers M^2 M^3, all arranged and operating substantially as described, for the purpose set forth.

137,008.—*Pill-Making Machine.*—CHAUNCEY B. LITTLEFIELD, Manchester, N. H.

The rolling-board, provided at its front edge with a recess formed by a cleat, which projects over it. This cleat has transverse vertical slots at equal distances from each other. A spring plate is secured upon the upper side of the rolling-board, and at one end is armed with cutting-teeth, which pass between the slots in the cleat and cut the roll into separate pieces for each pill.

Claim.—The pill roller and cutter, consisting of the board or body A, provided with the spring-plate B, having the series of knives or cutters *c*, when constructed substantially as described.

137,009.—*Manufacture of Bolts and Rivets.*—WILLIAM LIVINGSTONE, Brooklyn, assignor to himself and JOHN HENRY WHITNEY, New York, N. Y.

Two cylindrical rolls, each surrounded with an eccentric and laterally-shaped band, which, at its narrow end, is flush with the surface of the roll, but rises gradually and widens as it extends spirally around, its broadest end being equal to the length of the rivet's shank between the under side of the head of one and the top of the head of the succeeding one. The edge of the band on the side where the rod is entered has a gradually-increasing bevel or scotia where the other is perpendicular, and thus, while the latter drives the head forward, it also keeps the under surface of it square with the shank while the former rounds the end of the unwrought part of the rod for the head of the next rivet.

Claim.—1. The method herein described of making rivets or bolts.

2. The combination of the rolls B and B, constructed essentially as described, with the journal-boxes, one or both of which is adjustable, and mechanism to rotate said rolls, in the manner substantially as described.

137,010.—*Rock-Drilling Machine.*—CONRAD LOHNES, Springfield, Ohio.

Claim.—1. In combination with the frame and the derrick A C, and the drill E and ropes D I, the frame F, and the windlass G with its ratchet and pawl *g* substantially as set forth.

2. In combination with the drill E and the rope D and the vibrating frame F, the rope I, spool *h*, and the clutch J upon shaft H, substantially as and for the purpose set forth.

3. In combination with the spool *h* and clutch J, and their connections to raise the drill, the clutch-lever K and cam-wheel L, as set forth.

4. A rock-drilling machine, constructed with the hinged derrick or drill-frame C, and the seat or saddle T mounted upon flexible supports *l* above the driving-wheel N, which is provided with foot-cranks *m*, whereby the operator may propel the machinery with his feet, and have his hands at liberty to manage and guide the drill.

5. The drill-frame or derrick C, and the seat or saddle T upon elastic supports, arranged as set forth, in connection with the counter-shaft H, provided with a cam or eccentric, Q, and the push-bar and ratchet R *r* to actuate the drill, as set forth.

6. A rock-drilling machine, with the following instrumentalities, arranged substantially as described—viz: A main frame, A, supported upon feet; a perpendicular derrick or drill-frame, C, erected upon and hinged to one end of said frame A; a seat or saddle, T, for the operator, mounted upon flexible supports and above the drive-wheel, which is fitted with cranks to be propelled by the feet; a cam, Q, upon the shaft of said drive-wheel; a push-bar actuated by said cam; and ropes or cords extending from shaft over pulleys *i f c* to the drill E which is thereby suspended and operated in the manner set forth.

137,011.—*Excavator.*—ASAHEL P. LOMAX, Warsaw, Ill.

The inclined wheel is attached to the bar H, which is so hinged to the frame as to permit the wheel to be adjusted to the depth of the ditch. The earth is thrown by the plow onto the flange of the wheel, and is carried up between the curved guide plates to a point opposite the plow, where it is thrown off by the plate k^4. The lugs on the under face of the wheel assist in its rotation by contact with the ground. The guide-bar is adjustable in the clevis to vary the line of draft.

Claim.—1. The inclined wheel K, having attached to its periphery the flange *k* with lugs *l* on the under side, in combination with the plow A and guide-plates k^2 k^4, substantially as shown and described.

2. The hinged bar H, supporting the inclined wheel K and provided with the wheels R and S, substantially as specified.

3. The combination and arrangement of the axle M, draft-bar N, clevis P, and the frame, constructed and operating substantially as shown and described.

137,012.—*Windmill.*—CORNELIUS P. LONG and CHARLES N. MCEVERS, Murrayville, Ill.

A series of sails are pivoted, by means of sockets attached to the sail-bars, to the spindle ends of the spokes of a horizontal wheel. The sail-bar is ballasted by a weight at its lower end, and is pivoted below the middle point of the sail. The spindles are in two parts, and both parts are provided with corresponding stops to prevent the ballasted sails from swinging back beyond a vertical position after being "bowed" forward. In an ordinary wind the sails remain upright, turning edgewise when coming up in the wind, and flatwise when facing the wind. Under a high wind the ballasting-weight is overcome, and the sail is bowed to an angular position.

Claim.—1. In a horizontally-rotating wind-wheel the sails D, hinged to the bars or heads F, holding the ballasts G, and journaled to the spindles or arms of the wheel at points below the middle of said bars or heads, substantially as specified.

2. In combination with the hinged sails D and spindles *d d'*, the ratchet or check E and stops *a b*, substantially as specified.

137,013.—*Earth Closet.*—BENJAMIN L. MACK, Essex, Conn., assignor to himself and THOMAS N. DICKINSON, same place.

Above the sliding seat is pivoted a lever, its outer end connected to the seat and to the lever a scoop is attached. As the seat is drawn out the lever is drawn forward with it carrying the scoop into the earth-chamber, receiving the required quantity of earth, and when the seat is again thrown back the scoop is also thrown back, taking with it the earth and discharging it through the opening in the seat.

Claim.—In combination with the seat A, case B, and earth-chamber C, the scoop E, arranged upon a lever or levers, D, the said lever in connection with the case and seat, and constructed and arranged to operate substantially as set forth.

137,014.—*Car-Coupling.*—FRANK W. MARSTON and OWEN JONES, Philadelphia, Pa.

As the cars come together, whether straight or at an angle, the inclined faces of the catches meet, and moving by each other, the spring yielding sufficiently to permit each hook and buffer-bar to separate from each other, slip into place and complete the coupling.

Claim.—1. The combination of the catch A and buffer-bar B, substantially as described.

2. The combination of the catches A A having recesses a^1 a^1, with the buffer-bars B B having projections *b b*, as shown.

3. The combination of the catch and buffer-bar, constructed and arranged as described, with the connecting-rods a^2 b^2, bar *c*, spring F, and lever I, as described.

4. The combination of the bar *c* having the nut H, with the volute spring F and the cross-bar G, the spring being made adjustable, as described, for the purpose set forth.

5. The combination of the slotted lever, the spring-bar *c*, and the connecting-rods *d d*, with the short arms a^3 b^3, as described.

6. In combination with a coupling of substantially the described construction, the bar, link, and hook, *x* x^1 x^2, adapted to hang down between the cars when not in use, as and for the purpose described.

137,015.—*Fishing-Rod.*—JOHN B. MCHARG, Rome, N. Y.

The rod is divided at the point where the reel is attached, and is fastened together by an encircling band; this band has a depression in which fits the reel-plate, and has the usual clamp-ring.

Claim.—In combination with a fishing-rod, the metallic reel-plate band A, having its clamp-ring *c*, substantially as shown and described.

2. In combination with said reel-plate band A, having the rings C, C^1, and C^2, a fishing-rod, divided and jointed, substantially as described and shown.

137,016.—*Burglar-Alarm.*—WILLIAM H. MCPHERSON, Nashville, Tenn., assignor to WM. A. T. GODFROY and DANL. BENNETT, same place.

A small fire-arm barrel is provided with a gimlet-screw for attaching it to a door-jamb, and the hammer is supported by a toggle-joint trigger connected by an arm or lever to the door so as to discharge the fire-arm on the opening of said door.

Claim.—1. The pivoted dog or prop *f*, jointed and arranged to operate as described, for the purposes specified.

2. The extensible and articulated trigger or tripping-lever *g*, constructed and arranged as described, in combination with the pivoted dog or prop *f* and hammer *d*, for the purpose set forth.

3. The improved burglar-alarm and animal-trap gun, composed of the barrel *a* and the nipple *b*, supporting-screw *c*, hammer *d*, spring *e*, dog or prop *f*, and trigger or tripping-lever *g*, constructed and combined substantially as herein described, for the purposes set forth.

137,017.—*Wheel for Vehicles.*—SAMUEL J. MILLER and LUNA WRIGHT, Economy, Ind.

Tubular spoke-sockets form braces to the sides of the hollow metallic felly, which also has transverse braces connecting its outer edges.

Claim.—The hollow metallic felly A, having the elongated spoke-sockets B and transverse braces D, constructed and arranged substantially as specified.

137,018.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

The steam and hot water are conveyed from their respective boilers by means of pipes, or from perforated revolving cylinders, or into a perforated hopper, which receives the snow swept up by a suitable brush.

Claim.—A machine for melting snow and ice, consisting of suitably-mounted portable steam and hot water apparatus, in combination with the perforated distributing tank or chest E, through which hot water alone or hot water and steam together may be discharged upon the snow or ice, said tank being arranged be..eath the truck, substantially as specified.

137,019.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

Claim.—A machine for melting snow or ice, consisting of a suitably mounted portable steam-generating and superheating apparatus, having tubes so arranged as to receive superheated steam from the superheater and discharge the same upon the snow or ice through pipes arranged between the wheels of the truck, substantially as specified.

137,020.—*Machine for Melting Snow.*—JOHN MULLALY, New York, N. Y.

Heated air and steam are discharged upon the snow or ice through the perforated distributing-disk.

Claim.—The combination, with a portable furnace, steam-generator, and hot-air chamber, of the perforated distributing tank or chest E, located between the wheels, and a blower or blowers, all substantially as and for the purpose specified.

137,021.—*Cattle-Guard for Railroads.*—GEORGE W. NEWTON, Hubbard, Ohio.

The transverse slats are journaled in a frame located between the rails, so as to partly turn when trodden upon by the animal, being prevented from complete rotation by the notches or stops *b b*. The unsteady footing causes the animal to withdraw.

Claim.—The combination of the frame A, slats *a a*¹, and the notched or recessed stops B, substantially as and for the purpose set forth.

137,022.—*Sawing Machine.*—ALBERT T. NICHOLS, Williamsport, Pa.

The parallel bars, which maintain the tension of the driving-belts, are pivoted to the saw-frame at their upper ends and connected at their lower ends to another set of bars journaled upon the driving-shaft, the two sets of bars maintaining the same tension of the belts when the position of the saw is changed.

Claim.—The combination with the sliding saw-carriage D and its guide *x* of the forked levers G' G', belt A, frame G, and shaft B, with one or more driving-pulleys, E, and belts *d*, all substantially as and for the purposes herein set forth.

137,023.—*Die for Making Carriage-Bolts.*—EBENEZER H. PLANT, Plantsville, Conn.

The device is fully explained by the claim and drawing, and the purpose of it is to transform, by lateral compression, the portion of a cylindrical bolt, commonly called the neck, to the shape of a triangle, and thus obtain three sharp angles connecting three flat faces that are severally of a breadth greater than the diameter of the remaining cylindrical portion of the bolt.

Claim.—The dies A C, one having a flat surface, and the other a triangular recess, D, substantially as and for the purpose specified.

137,024.—*Cultivator.*—WILLIAM H. PLATT, Dayton, Ohio.

A sleeve with a tongue in rear revolves on a round axle-tree or its equivalent. A pin passing through it and into one of a series of recesses cut at regular intervals from a portion of the circumference of the axle-tree, permits lateral adjustment and limited revolving movement. A corresponding part of the attachment has a socket for the front end of the plow-beam, and two ears in front to cover the tongue, a bolt attaching them. On the socket there is a clamp with corrugated surfaces for the arm of a clod-fender.

Claim.—1. In combination with an axle having recesses *c*, the sleeve H cast in a single piece, and having bolt *n*, substantially as specified.

2. The braces E and G, constructed and arranged as described, in combination with an axle having screw-thread D, substantially as described.

3. The socket M, cast in a single piece, adapted for holding a plow-beam, and for connection with a sleeve, H, and having serrations, as shown, to op rate in conjunction with the clamp P for holding a clod-fender, substantially as described.

137,025.—*Converting Cast-Iron into Wrought-Iron and Steel.*—ALONZO C. RAND, Aurora, Ill.

Claim.—1. Passing the molten iron from the cupola onto and through a perforated pan upon the top of a cylinder provided with an air-pipe and an eduction-pipe, substantially as and for the purposes herein set forth.

2. Passing a blast of air laterally into the molten iron while it is in fine streams, and falling into the cylinder under a perforated pan, substantially as and for the purposes herein set forth.

3. The combination of a cupola, one or more cylinders, C, with closed bottom and open top, a perforated pan. B, an air-pipe, E, and an eduction-pipe, D, all substantially as and for the purposes herein set forth.

137,026.—*Seeding-Machine.*—SILAS G. RANDALL, Providence, R. I., assignor to AMELIA A. RANDALL, same place.

A seed-box lies over two beams pivoted under the hounds of a wagon to admit of their being placed at an angle thereto and to one another. Attached to the under side of each beam is an axle longitudinal therewith, having on and revolving with it a series of disks, each bent to a segment of a sphere. A universal joint on one of the axles gives, by a rod, motion to gearing on the seed-box.

Claim.—1. The combination of the seed-box and the seed controlling apparatus with the axle-bars B and B', each of which is provided with the series of plate-wheels and is pivoted to the top plate, substantially as described, by means of which the m chine may be adjusted so as to cover the seed as it is dropped with much or little earth, as may be required.

2. In combination with a seeding-box and distributing device, operated by axles which are adjustable at various angles, the universal-joint coupling-link F, as and for the purposes specified.

137,027.—*Machine for Holding and Soldering Cans.*—WILLIAM REDHEFFER, JAMES REDHEFFER, JR., THOMAS G. REDHEFFER, Kansas City, Mo., and LUKE A. SMITS, Pawnee, Kan.; said SMITH assigns his right to said WILLIAM REDHEFFER, JAMES REDHEFFER, JR., and THOMAS G. REDHEFFER.

A wedge-shaped expander is operated by the handle. An adjustable hoop surrounds the can and arrests the action of the expander at a given point. A presser-lever, having an adjustable blade, is employed for pressing the edges of the can together at the seam.

Claim.—1. The combination of the spring N with the sliding plate I and the plates D E, substantially as specified.

2. The said spring connected to plate I by the pins which actuate the plates D and E, and said pins provided with a head above plate D, and made square in the part passing through plate I, substantially as specified.

3. The plates D E confined against overrunning each other endwise by flanges Q, substantially as specified.

4. The arrangement of the adjustable hoop T and the vise U W X, substantially as specified.

5. The combination, with the expander A, of a presser, A', substantially as specified.

6. The combination, with said presser, of an adjustable blade, C', substantially as specified.

137,028.—*Sewing-Machine.*—GEORGE REHFUSS, Philadelphia, Pa., assignor to AMERICAN BUTTON-HOLE OVERSEAMING AND SEWING-MACHINE COMPANY, same place.

The bent end of the lever, when in the position shown, prevents the shuttle from rising in its carrier. To remove the shuttle the elastic arm is disengaged from the carrier and the lever turned aside.

Claim.—The lever t, having a bent arm, adapted to the shuttle and an elastic arm arranged for being locked to and released from the carrier, all substantially as set forth.

137,029.—*Candlestick.*—AMOS E. ROGERS, La Grande, Oreg.

The top of the candlestick is weighted and so hinged that when the candle burns below it the top will drop over. A pin projects from the bottom, upon which the candle is held. A circular spring adapts the stick to hold different-sized candles. The metal of the drop part is cut away as much as possible to prevent heating of the candle.

Claim.—1. The socket A, the spur *d*, the spring *c* or its equivalent, in combination with the stand or base A and pipe or stem B, substantially as and for the purposes hereinbefore described and set forth.

2. The spur *d*, the socket A, and spring *c*, in combination with the automatic drop, the hinge-joint *b*, the weight E, the flange C, the stand A, and stem B, substantially as and for the purposes herein before described and set forth.

3. The automatic drop with the opening I therein, the socket A, and spur *d*, in combination with the stand A and pipe B, substantially as and for the purposes hereinbefore described and set forth.

137,030.—*Mattress.*—THEOPHILUS ROLLER, Allegheny City, Pa.

A series of spiral springs are suspended in a central rectangular frame. A filling of hair or other material upon each side of the springs completes the mattress, and makes either side precisely the same as to its elasticity.

Claim.—A reversible mattress, provided with a central frame, in which are suspended spiral springs, which are suspended between canvas secured to the frame, between which and the outer ticking is placed filling of hair or any suitable material, substantially as herein described, and for the purpose set forth.

137,031.—*Shutter-Bowing Device.*—TOBIAS ROYER, Lancaster, Pa., assignor of one-half his right to JOSEPH R. ROYER, same place.

A rigid arm, in form of an arc of a circle, is pivoted to a stud, which is removably secured by a slot and lug to a plate, to be secured upon one of the shutters. This arm is furnished with a stop projection at its outer end, and with a series of slots along its side for fastening the shutter at any point desired. These slots fit over a small lug on the bottom of a recess in a plate, to be secured upon the opposite shutter. A single slot only, which is near the pivoted end of the arm, allows the arm to enter and leave the opposite plate, so that the shutters cannot be entirely freed so as to be opened, except when brought almost together. The shutters can thus be bowed partially open and yet secure against burglars from the outside.

Claim.—The curved bar B, with its notches *b b b'* and arresting-lug *d*, when hinged to a swivel-head, F, with its key *f*, in combination with the plates A A', all jointly arranged and operating substantially in the manner and for the purpose specified.

137,032.—*Cap.*—BONIFACE SCHARL, Boston, Mass.

A stiff visor is secured within the brim, which it retains in various positions.

Claim.—As a new article of manufacture, the above-described multiform cap, composed of body A, top B, visor D, and band or shield E, when constructed substantially as set forth.

137,033.—*Machine for Making Double-Tapered Thread.*—GEORGE V. SHEFFIELD, Boston, Mass.

An ordinary drawing and twisting tube has pivoted to it, on opposite sides, and projecting into its bore, holding jaws, which are closed automatically and intermittingly upon the roving, passing through the tube, and hold it while it is drawn and twisted by the rollers in front of the tube so that between the rollers and the jaws it will be drawn fine, while at other points its full size is preserved.

Claim.—1. The combination, with the tubular frame E, of the clamping-jaws F' F', drawing-rolls *c c*, clamping-ring I', and the intermittingly-operating lever L, substantially as and for the purposes set forth.

2. The combination, with lever L, of the cam K, shaft J', gear J, and worm *f*, substantially as and for the purposes set forth.

137,034.—*Lamp Shade.*—WILLIAM SIMONS, Charleston, S. C.

The shade is made of two like parts, each of double-lanceolated form, joined at their ends in such manner that their lower edges form a complete circle, while between the upper edges is left an opening considerably longer than it is broad.

Claim.—As an improved article of manufacture, the shade formed of the two like parts A and B, each shaped as shown and described, and lapped and united at their ends by detachable fastenings *a a*, so as to form V-shaped notches at the top and a complete circle at the bottom, as shown and described, for the purpose specified.

137,035.—*Crushing-Mill.*—JAMES W. SMITH, Columbus, Ga.

Cylinder having alternate plane and toothed surfaces, combined with adjustable concave formed of sections having deep grooves between them. Plane surfaces and grooves relieve crushing-surfaces and prevent clogging. Concave attached to a door so as to be accessible for repairs.

Claim.—1. The crushing-cylinder D, provided with the plain spaces *g* and teeth h, as herein shown, in combination with two or more adjustable section concaves, G, having the recess *f* between them, as described, the whole constructed and arranged substantially as set forth.

2. The door F on the case A, in combination with a concave and with a crushing-cylinder, constructed and operating substantially in the manner and for the purpose herein set forth.

137,036.—*Earth-Auger.*—HIRAM C. STOUFFER, Canfield, Ohio.

The spiral threads penetrate the soil, which is cut smoothly by the knives and forced through the openings into the cavity of the shell, where it is retained by valves so as to be lifted and removed.

Claim.—1. In an earth-anger, the combination of a closed shell, A, with encircling spiral ribs or threads B and an interior closed receiving-chamber, D, for the earth, essentially as described.

2. The combination, in an auger having an interior closed chamber, D, and external spiral threads, of knives E, arranged at entrance-openings F of said interior chamber, essentially as and for the purpose described.

3. The combination, with an auger in which the spiral threads encircle an interior earth-receiving chamber having inlet-openings F, of flexible valves G, arranged to operate essentially as described.

137,037.—*Valve for Air-Brake Cylinder.*—NICHOLAS THOMAS, Chicago, Ill., assignor of one-half his right to THOMAS HULL, same place.

A valve, pivoted to the cylinder-head, has two faces, one above and one below, which have proper seats thereon. When the air is turned on the upper valve admits the air and closes the lower one. When the supply is cut off the back pressure closes the upper and opens the lower one, as the surface of the upper one is in excess of the lower one.

Claim.—The combination of an air-brake cylinder with the valve hung on a pivot with two valve-seats, one or both of the valves or valve-seats being made elastic, and so arranged that the opening of one will close the other, substantially as and for the purpose specified.

137,038.—*Fire-Proof Roof.*—EDWARD S. TOBEY, Boston, Mass.

Claim.—1. In combination with a building having its roof so constructed as to form a tank or reservoir, the supply-pipes *b* and *k*, the discharge-pipes *e*, and the slots or apertures *d*, and plugs 5, so as to increase the overflow of the water on the side of the building most exposed to the fire, all constructed and arranged substantially as and for the purpose set forth.

2. The pipe *k* leading from one of the supply-pipes to a point near or over the scuttle, substantially as and for the purpose described.

137,039.—*Bed-Bottom.*—BENJAMIN C. VAN DUZEN, Cincinnati, Ohio.

To the head-bar are attached lever springs, with a rod passed through the coils. Metallic stripe are running longitudinally and held by knobs on the outer sides of the head and foot bars, rest at the head upon the stirrup end of the springs.

Claim.—The described arrangement of frame A B C D, pins G H, elastic stripe I, duplex springs J, and rod K, arranged and operating as set forth.

137,040.—*Extension Step-Ladder.*—ANCIL W. WALKER and JAMES E. WALKER, Detroit, Mich.

An ordinary staple and hook form the means of attachment of the leg-extensions to the ladder. The extension-piece rests, by means of a stop, upon a latch. Adjustment is made by means of a button attached to the end of a rod passing through the ladder from side to side, which, when rotated, lifts the latch and allows the extension to be lowered.

Claim.—1. In combination with the rails A B the rod G, buttons H, latches or arms I, and stops J, substantially as described, and for the purposes set forth.

2. The combination of the side rails A B, legs C D, steps E, hooks and staples K, substantially as described, and for the purposes set forth.

137,041.—*Machine for Piling Textile Fabrics.*—ALBIN WARTH, Stapleton, N. Y.

The material, to be laid in a pile so that it may be cut out in patterns, is placed in the package-carrier, its end is passed about and between the bars of the tension device, and is then clamped at one end of the table, when the package-carrier is moved over the table and the fabric is laid and confined thereon at one edge by means of needles. A layer of fabric is added at each movement of the carrier. The table may be moved and the carrier left stationary.

Claim.—1. The combination of a tension mechanism, *d*, with the package-carrier C and piling-table A, substantially as and for the purpose described.

2. The combination of the gage *g* with the bars of the tension-reel *d* and with a package-carrier, C, and piling-table A, substantially as set forth.

3. The combination of gage-plates with a piling-table and a package-carrier, constructed and operating substantially as and for the purpose set forth.

4. A series of retaining devices, substantially as described, arranged on the edge of a piling-table, as and for the purpose set forth.

5. The combination of pressure-plugs with the needles *p*, the piling-table, and the package-carrier, constructed and operating substantially as set forth.

6. The needles and their protectors combined with the piling-table and package carrier, constructed and operating substantially as and for the purpose described.

137,042.—*Sawing-Machine.*—JOSEPH M. WESTMORELAND, Willis, Tex., assignor of one-half his right to A. J. THOMPSON, same place.

A cross-cutting saw is attached to the lower end of a vibrating lever, the fulcrum of which has a vertical adjustment.

Claim.—The vibrating beam *a*¹, arm *e*, vertically-sliding block D, flanged scantling A, and saw F, combined and arranged substantially as and for the purpose described.

137,043.—*Revolving Fire-Arm.*—DAVID WILLIAMSON, Greenville, N. J.

Cylinder-stop operated by a cam on the pawl, and is arranged so as to catch with projections on the rear end of the cylinder or its connections. Also, extractor for starting all of the cartridges in a many-chambered fire-arm, the claws or shoulders of which are arranged in different planes so as to start one at a time. Also, extractor-stem provided with a return-arm so as to be operated at the joint or pivot of the barrel and have space for the returning-spring in a small pistol. Also, special construction of the frame, hammer, and pawl, whereby said parts may be assembled without having a removable side or bottom plate and still have the top of the opening fully closed.

Claim.—1. The pawl *e* hinged to the hammer *d*, and provided with the cam *i* and used in connection with lock-bolt *g* provided with the cam *i'*, substantially as and for the purpose specified.

2. The pins *u*, whether on the retractor or cylinder, when combined with suitable mechanism, so that the pins serve the double purpose of ratchets for revolving the cylinder and stops for holding it in position.

3. The retractor constructed substantially as described, and adapted to be used in connection with a many-chambered fire-arm, so that it will successively start the shells, as and for the purpose described.

4. The retractor having head *e* for displacing the shells, stem *n*, rearward-extending arm *r*, and pawl *s*, constructed and arranged to operate and to economize space substantially as and for the purpose specified.

5. The pawl *s*, hinged to the hammer *d* and the lock-bolt *g*, all constructed so as to be admitted through the opening *b* in the solid frame *a*, and when in place close the opening *b*, substantially as and for the purpose herein specified.

137,644.—*Wheel-Plow.*—JOHN WORRELL, Belleville, Ind.

An arched axle having one rearwardly-projecting arm so that the wheel may follow in the furrow cut by the plow.

Claim.—1. The axle A having the arms B B' projecting vertically downward, one bent at a right angle and extending toward one side, and the other bent at an obtuse angle and extending downward and toward the rear, substantially as shown and described.

2. The combination of the lever K and notched bar L, jointed pole M, connecting-bar G, and plow-beam R, substantially as shown and described.

3. The combination with the jointed pole and lever, of the elbow-lever H, radial hinge-brace D D E, plow-beam, and connecting devices I and G, substantially as specified.

REISSUE PATENTS.

5,325.—*Street-Sprinkler.*—LOREY F. BANCROFT, Worcester, Mass., assignor, by mesne assignments, to EDWARD E. QUIMBY, trustee, New York city.—Patent No. 53,257, dated April 3, 1866; reissue No. 3,917, dated April 12, 1870.

The tank is made with a flat bottom, and in a circular form from one edge of the flat portion up and over to the other edge. It is provided with a suitable sprinkling apparatus, and is held to the carriage by adjustable clamping-bands.

Claim.—1. In combination with the tank provided with apparatus for discharging jets of water, the adjustable clamping-bands L L, and the carriage or truck upon which the tank is mounted, substantially as described.

2. A carriage or truck and suitable sprinkling apparatus, in combination with a tank having a flat bottom narrower than the extreme lateral diameter of the tank, substantially as described, and for the purpose set forth.

3. The turret G upon the tank, as arranged with relation to the valve and to the sprinkling apparatus, substantially as described, and for the purposes set forth.

5,326.—*Process and Apparatus for Using Liquid Fuel for Producing Heat and Light.*—THOMAS S. DICKERSON and RODNEY M. WHIPPLE, Chicago, Ill.—Patent No. 102,662, dated May 3, 1870.

Improvement on invention described in patent 95,665 by placing the superheater over the jets which burn the gas, and a steam-generator over the furnace. Steam or superheated steam is mixed with the gas to assist and modify the combustion.

Claim.—1. The improved apparatus herein described, composed of a steam-boiler, superheater, gas-generator, arranged and combined as described.

2. The steam-pipe F, to supply steam to the apparatus, for the purpose described.

3. The process herein described for burning petroleum and other vaporizable hydrocarbons, the same consisting in first vaporizing the gas-producing material by means of superheated steam and then mixing with the gas or vapor superheated steam, substantially as described.

5,327.—*Manufacture and Application of Gas from Petroleum, &c.*—THOMAS S. DICKERSON, Chicago, Ill., assigner to himself and RODNEY M. WHIPPLE, same place.—Patent No. 95,665, dated October 12, 1869.

An upright tubular generator to contain oil which is vaporized by means of superheated steam in the tubes, the apparatus for superheating the steam being placed in the furnace in which the gas is burned.

Claim.—1. The generator, composed of steam-space E E, tubes A A, oil-space *b b*, steam-pipe F, when used for the manufacture of gas from petroleum and any other oleaginous substance, substantially as shown, and for the purpose set forth.

2. The combination of the generator and the dome.

3. The use and application of petroleum or other oleaginous substance for generating steam and for heating and illuminating purposes, by the combination and the process herein described, substantially as shown, and for the purposes set forth.

4. The combination of a steam superheater, a connecting steam-pipe, and a tubular generator, so as to form a gas or vapor apparatus, substantially as described.

5. The tubular generator, composed of a series of tubes connected by the flanged heads at opposite ends, and the whole surrounded by a boiler-plate covering, or its equivalent, substantially as shown, and for the purposes set forth.

5,328.—*Lubricator.*—WILLIAM T. GARRATT, San Francisco, Cal. Patent No. 133,217, dated November 19, 1872.

Claim.—1. In combination with the oil-reservoir A of a lubricator, the elevated condensing-pipe or vessel F, the lower end of which is connected by an opening, B, with the lower part of the reservoir A, substantially as and for the purpose hereinbefore set forth.

2. The combination, in a lubricator, of the cock or valve I with the condensing-pipe F and oil-reservoir A, substantially as and for the purpose hereinbefore set forth.

5,329.—*Stock for Holding Cutters in Planing-Machines.*—IVERS GIBBS, Worcester, Mass.—Patent No. 20,999, dated July 27, 1858; extended seven years.

The head is made of metal and cast hollow, for the purpose of securing the necessary strength with the least possible amount of material.

Claim.—A planer-arm of the external form herein described, and having between its central hub and cutter-sockets longitudinal cavities, as and for the purpose herein set forth.

5,330.—*Clothes-Wringer.*—THOMAS POOL, Brunswick, Ohio, assignor to METROPOLITAN WASHING-MACHINE COMPANY.—Patent No. 35,705, dated June 24, 1862.

A clothes-wringer constructed with rolls in ordinary form, with journals extending through the sides of the frame, over which are sliding journal-boxes, held over them by screw-heads with slots to allow the adjustment of the roll. Over and under the journal-boxes are springs extending the entire length of the frame, secured at their center by screws and their ends resting upon the boxes, to allow the separation and closing of the rolls when in use.

Claim.—1. The combination of two pressure-rollers with a slotted supporting frame, in which the axes of both rollers are free to move toward and from each other, and with yielding bearings acted on by springs to allow the movement of both rollers, and thereby increase the elastic action, substantially as herein specified.

2. In connection with the above, giving an equal, or nearly equal, elastic action to each roller by means of the long springs M N, made exact counterparts of each other, and arranged substantially as and for the purposes herein set forth.

3. The combination and arrangement of the spring or springs M N, sliding bearing-blocks P P Q Q, having guide slots and bearings *d d g g*, and the stationary guide-screws or pins *f f* applied to the rollers, substantially as and for the purposes herein specified.

5,331.—*Cradle.*—LEWIS SPERRY, East Windsor Hill, and LESTER ROBINSON, New Haven, Conn., assignors to LEWIS SPERRY and ADELIA SPERRY.—Patent No. 92,896, dated July 20, 1869.

A cradle sustained on uprights by pinions, having clock-work under it attached to a frame with a pivot-plate, the pivot of which passes through a slot in another attached to the cradle, by which motion is communicated to it.

Claim.—In combination with a clock-work driving a crank, K, a slot, *b*, formed in or attached to the thing to be vibrated, the crank-pin *a* working in the said slot to cause the said slot to move transversely to the axis of vibration, substantially as described.

5,332.—*Basket.*—ROSCOE B. WHEELER, Dowagiac, Mich., assignor of one-half interest to HENRY LARDNER.—Patent No. 132,703, dated October 29, 1872.

An overlapping series of splints or staves are used as an inside lining to a stave basket, or a basket made with vertical splints.

Claim.—The overlapping series of staves C, when used as an inside lining to a stave basket, substantially as and for the purposes hereinbefore set forth.

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I. The joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. A part of these copies are to be bound in volumes and placed for free public inspection in the capitol of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

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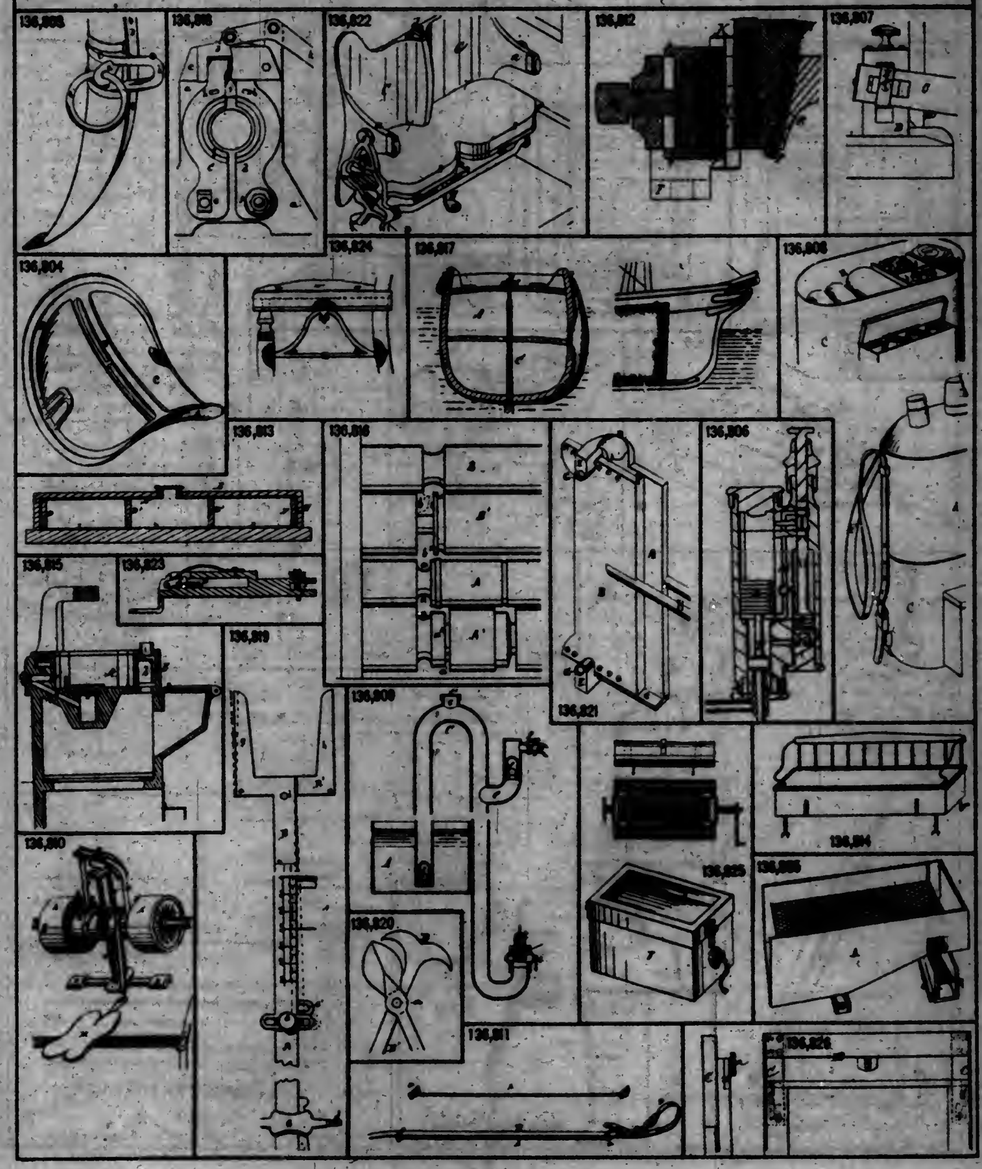
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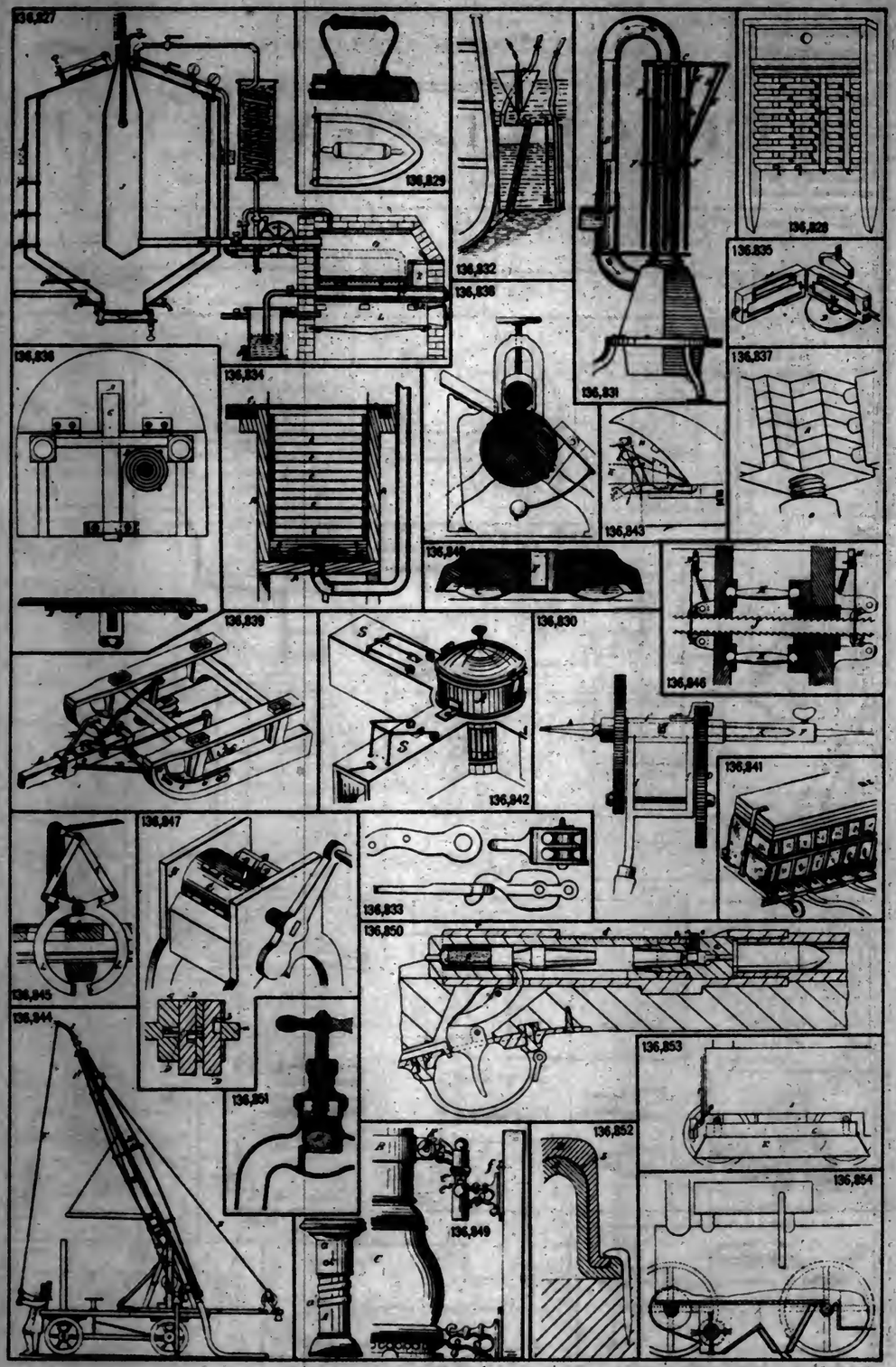
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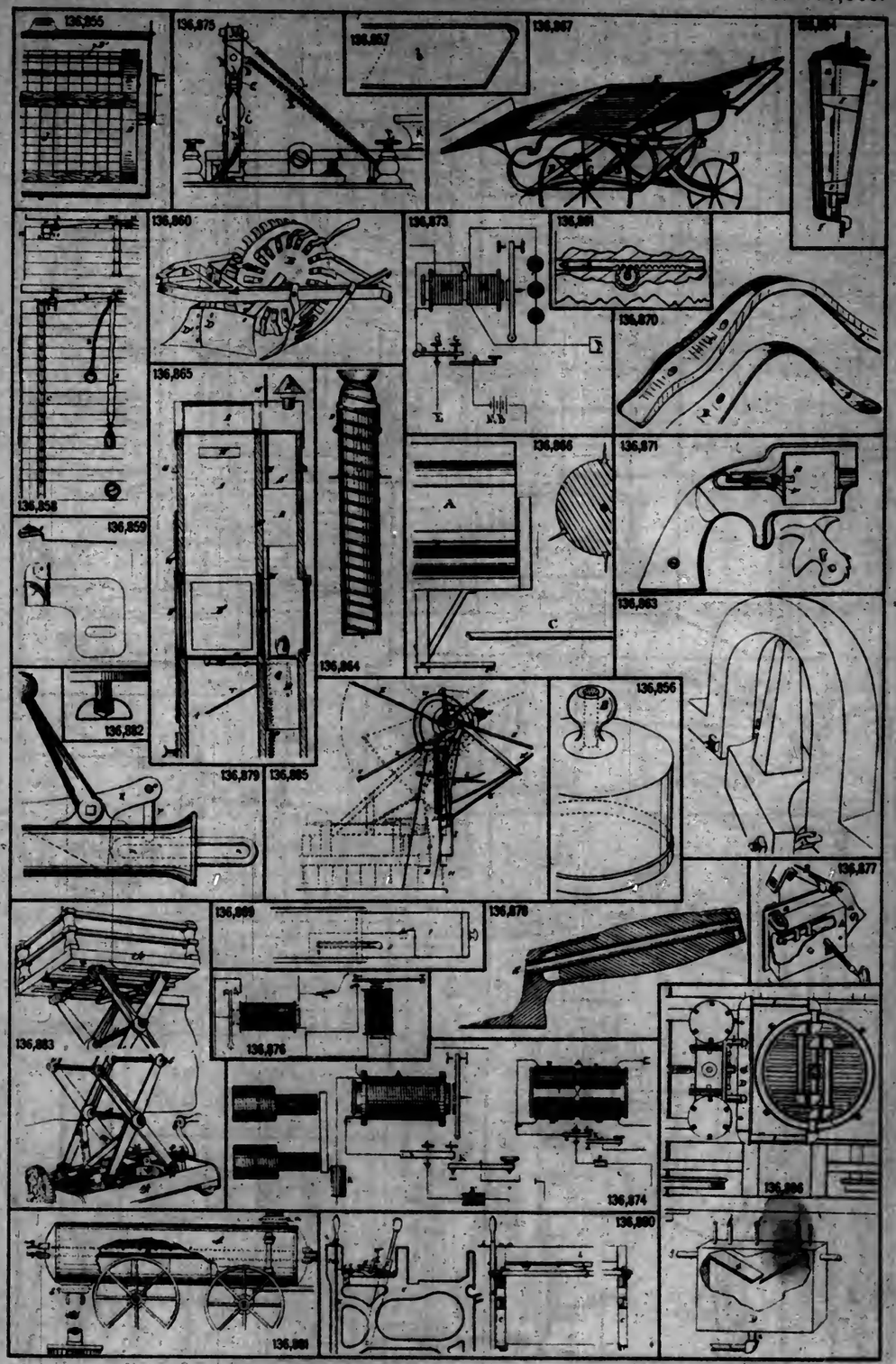


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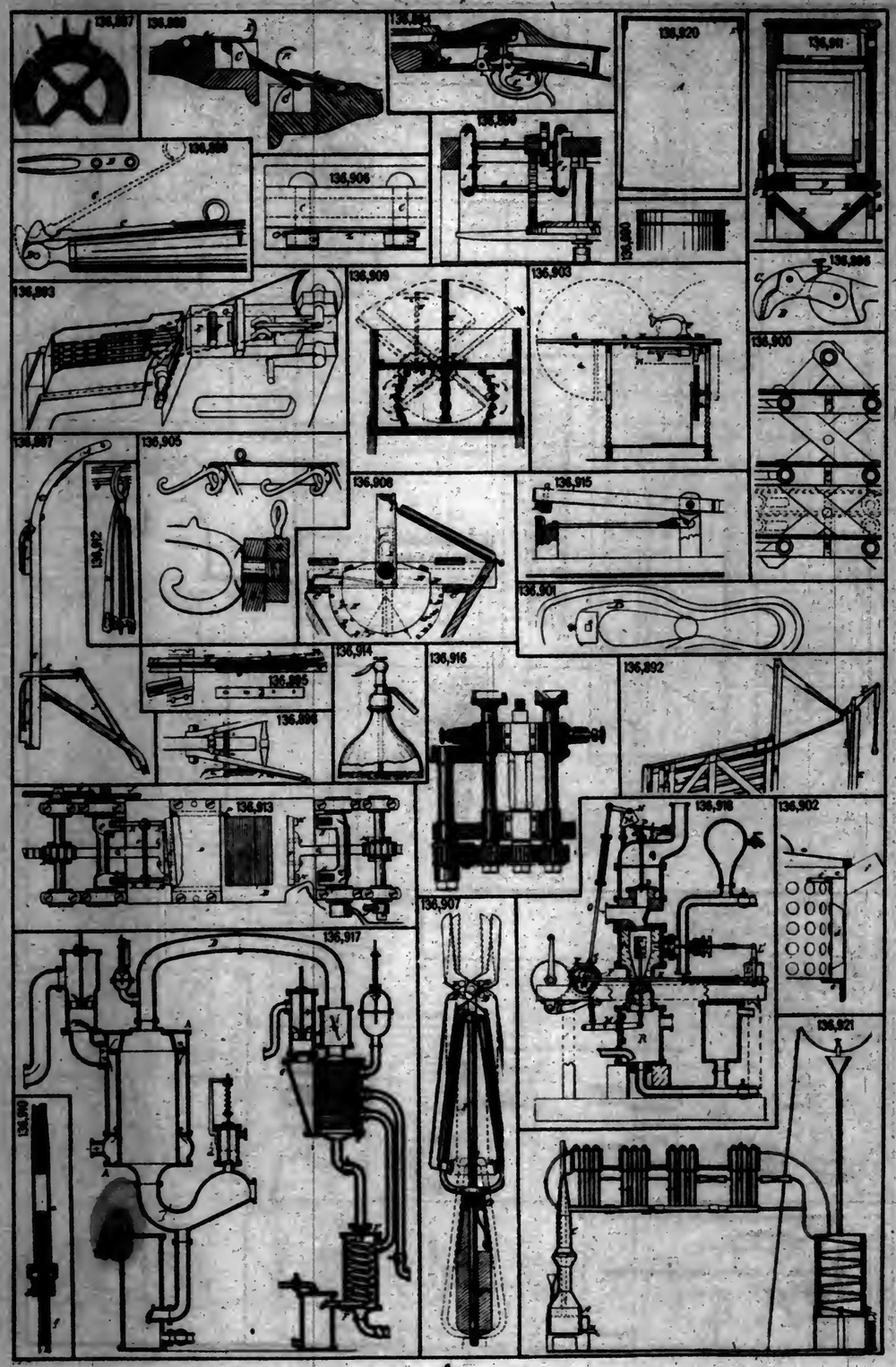
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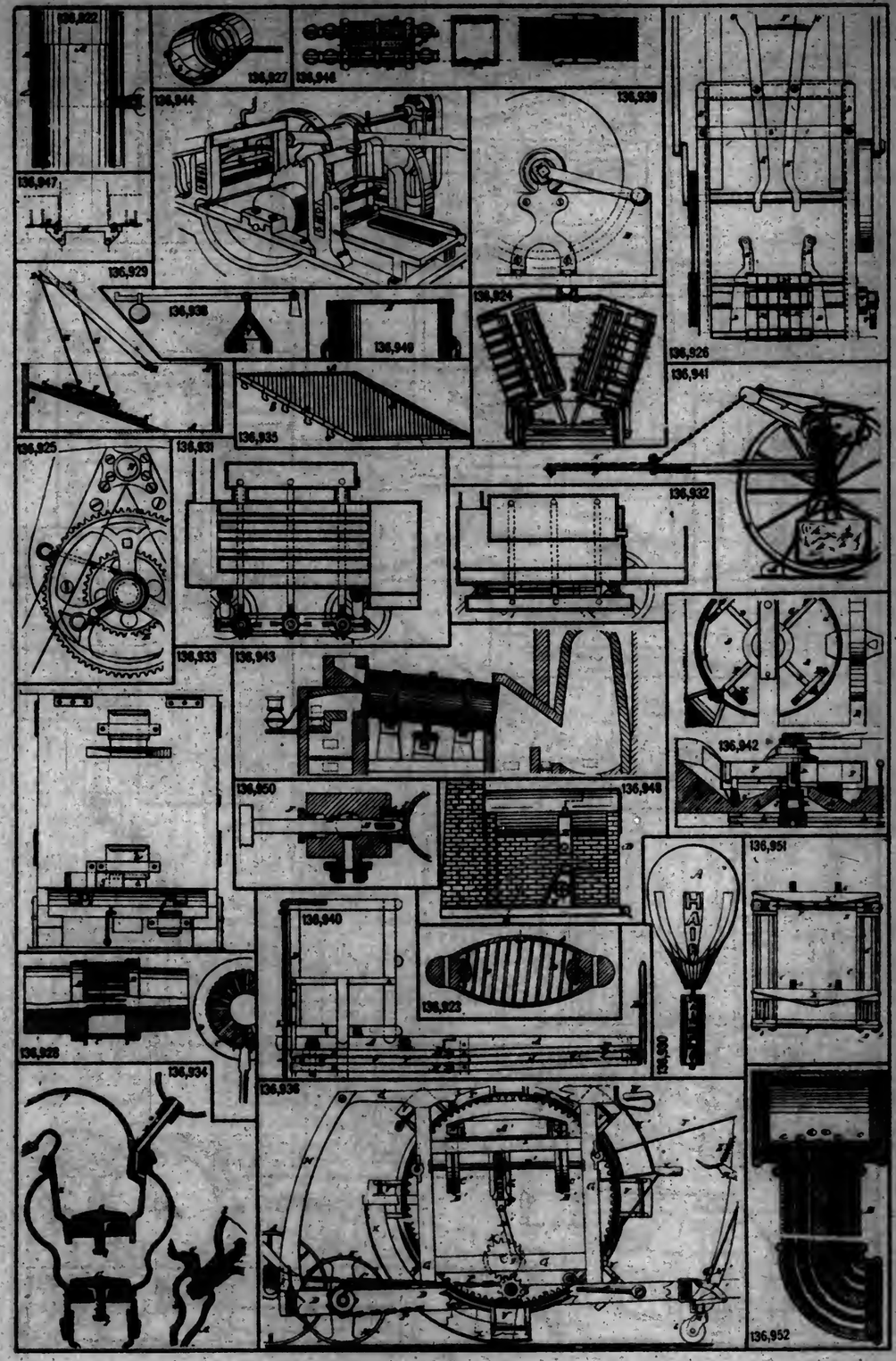
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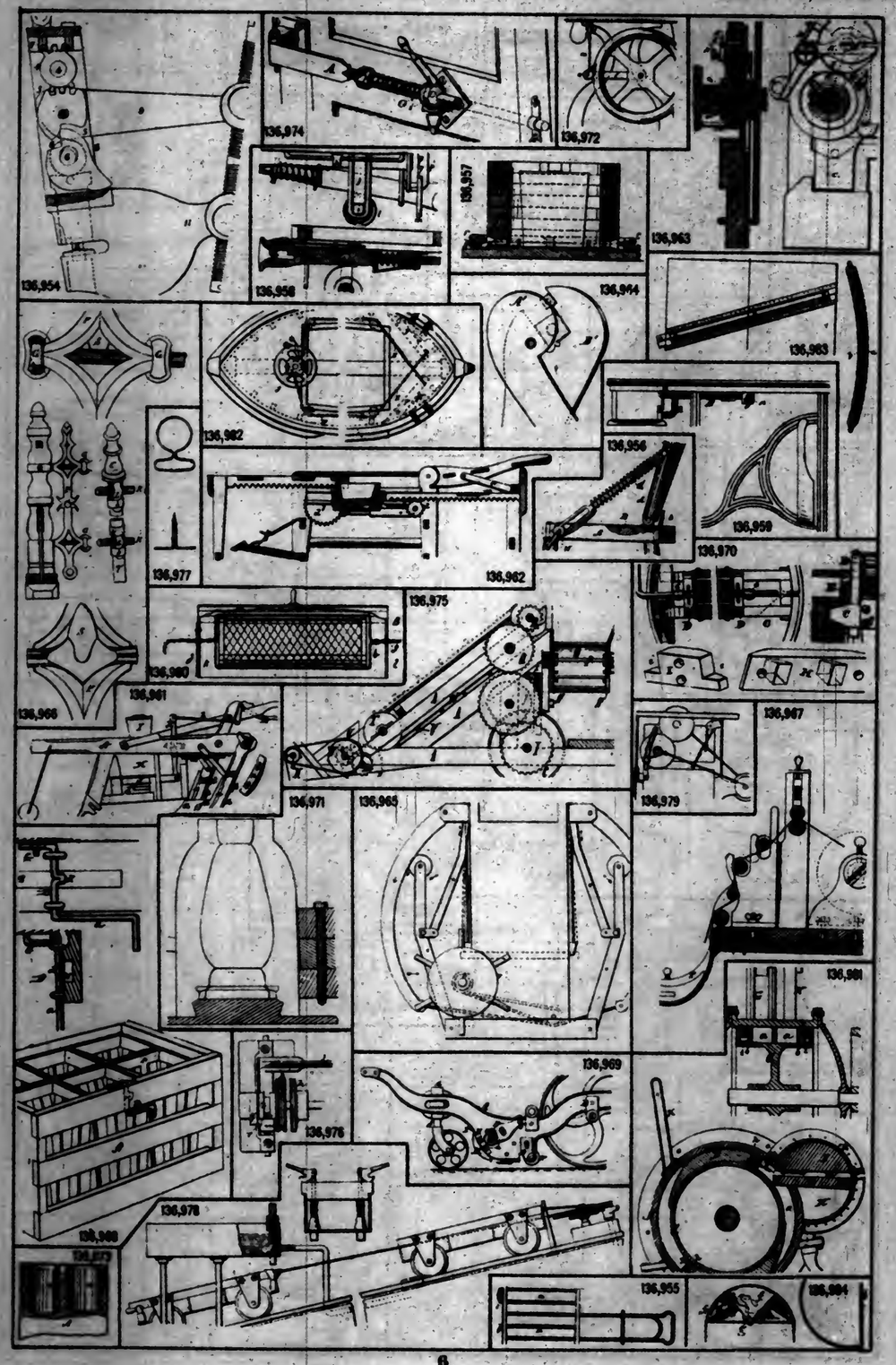
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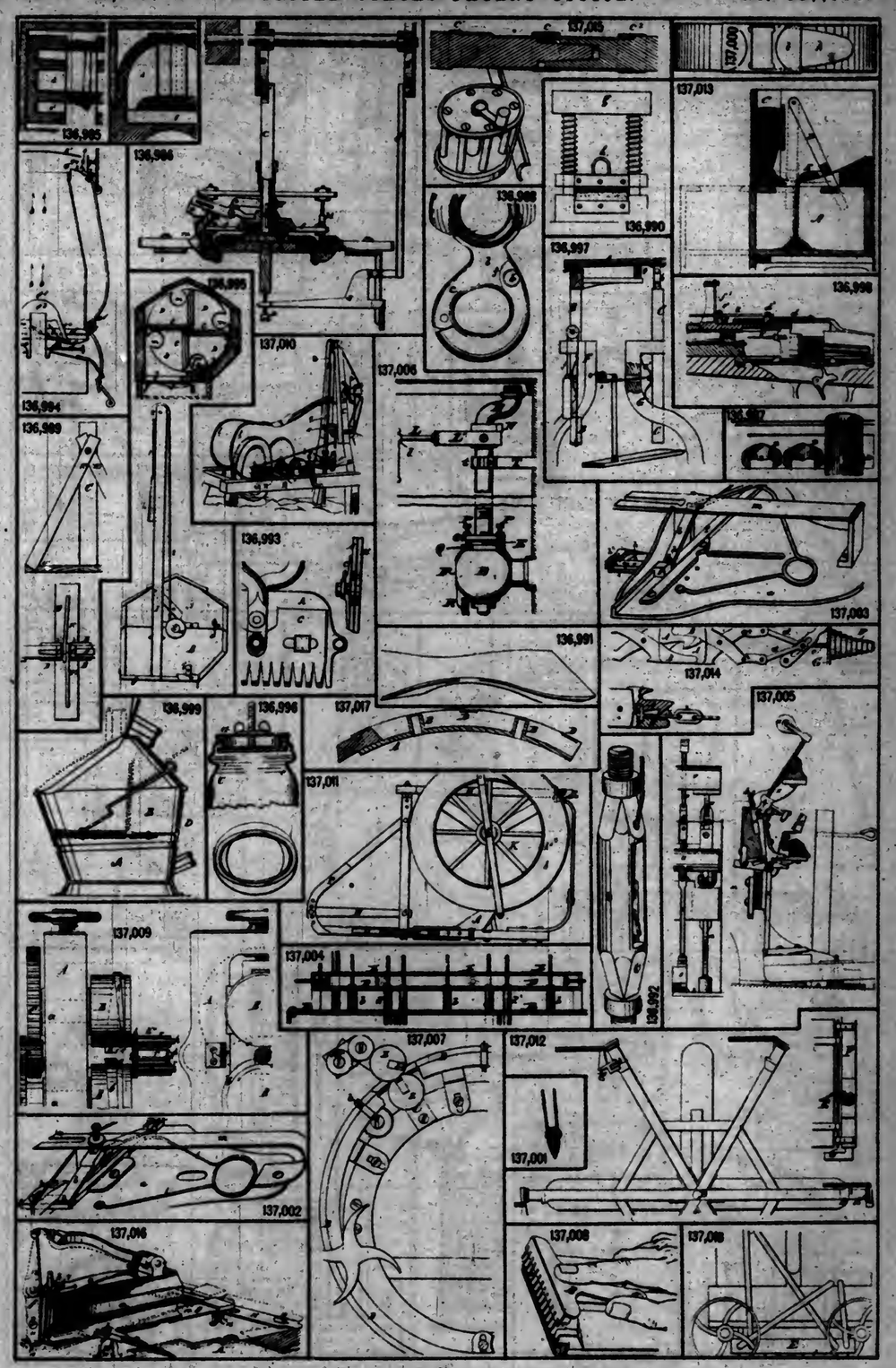
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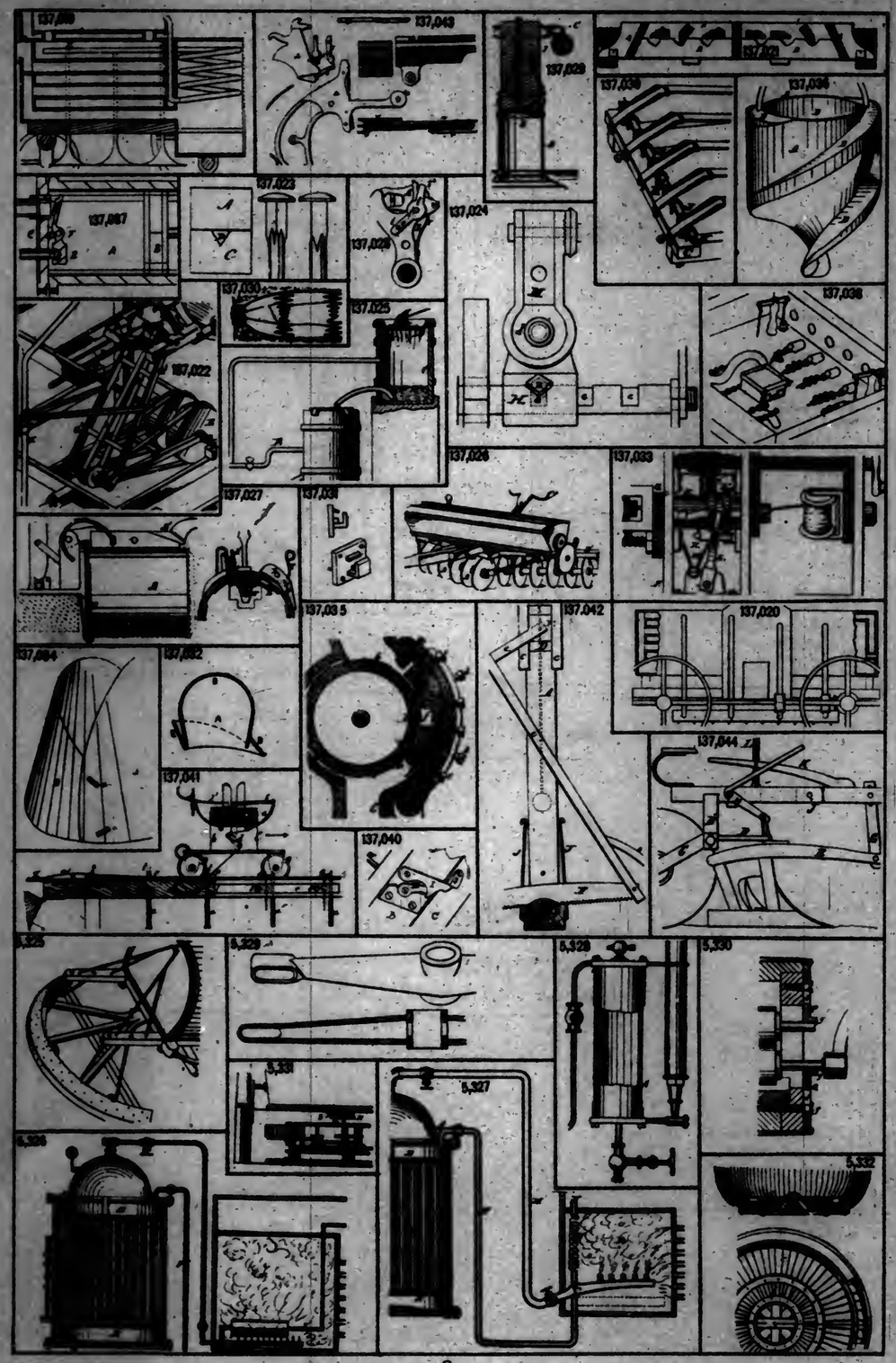
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OFFICIAL GAZETTE

OF THE

United States Patent Office.

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COMMISSIONER'S DECISIONS.

A. C. GALLAHUE.—*Extension.*

[*In the matter of the application of Alpheus C. Gallahue for extension of patent for* PEGGING-MACHINE, *granted March 29, 1859, and reissued June 22, 1869, No. 3,517.—Decided March 29, 1873.*]

The employment of a known mechanism upon a machine to which it has never been applied before does not possess sufficient merit to entitle a patent for it to an extension, if it did not operate successfully and never went into use, although others afterward made the mechanism successful by adding devices which gave it a movement radically different.

In all successful shoe-pegging machines the point where the awl meets the last is made the center of an arc in which vibrates the pivot that the shoe swings on; and a machine in which that pivot is the center of an arc in which the last swings must be inoperative, and a patent for it is entitled to no favor upon an application for an extension.

LEGGETT, *Commissioner:*

This application is ably contested, the evidence is voluminous, the points for consideration are numerous, and the time left in which to dispose of the case before the expiration of the patent has been short, even though I had been pressed to the performance within this time of no other official duties of equal importance and difficulty. It is proper for me to say this much in explanation of the necessary omission here of a number of matters which counsel have properly deemed important to a full presentation and discussion of the case. I have given the fullest consideration possible, under the cir-

cumstances, to the facts and expert opinions presented pro and con, and I believe nothing of controlling importance has escaped my attention.

The reissued patent in question contains seven claims, but the contest mainly refers to the subject-matter of the second claim, which is as follows:

"Pivoting the plate or frame G that supports the last, at or near its center, and so arranging it that it may turn on said pivot during the operation of pegging, thereby so adjusting the boot or shoe as to present the various portions of the sole in the requisite position to the awl and peg as the sole moves along, substantially as described."

This claim, as I understand it, covers only the pivoting of the plate which supports the last, to give it a longitudinal oscillation—that is, a tipping up and down of the toe and heel alternately. The lateral swing, which is accomplished by the pivoting of the bed-plate near the base or platform of the machine, is not referred to.

The "pivoting" of the plate G "at or near its center," so "that it may turn on *said* pivot," is the entire substance of the claim. The rest is merely explanatory. It sets forth the result of that pivoting, and turning on that pivot as "thereby so adjusting the boot or shoe as to present the various portions of the sole in the requisite position." It is manifest to my mind, as testified by remonstrant's expert, and clearly illustrated by counsel, that the result specified, or any other very valuable result, cannot follow merely from this pivoting. A peculiar lateral movement is necessary in connection with a longitudinal pivotal adjustment. It is certain that no marketable machine could be produced upon the plan for providing a lateral movement shown by Gallahue. His lower pivot, near the base-plate, is his center of motion laterally, (and is not embraced in his claim,) as his upper pivot, immediately under his last, is his center of motion longitudinally with the last.

In a successful working machine the point of contact of the sole with the pegging devices must necessarily be the center of motion, in order that the pegs may have at once the proper direction and the proper uniform spacing. It is obvious to me, and I think it is proved, that neither of these results can be successfully accomplished by applicant's tipping jack upon irregular curved bottom shoes, to provide for the "undulations" of which his attempts were directed. The surface of the sole at the point of contact with the pegger must be kept in a horizontal plane, not by tipping from a pivot below, but by some other means that will not cause it to move in the arc of a circle, but which will make it the pivotal point or center of motion. This can only be done by having both the longitudinal and lateral pivots on the same horizontal plane, as in gimbals, or by having the pivots themselves movable under the point of contact with the pegger, as in the pegging-machines now in use. Such an arrangement is exactly the opposite of that of applicant. It is true that no successful pegging-machine is or probably can be made without a pivot for tipping and adjusting the last longitudinally to the pegger. Such a pivot, in connection with other pivots for making the point of contact with the pegger the center of motion in all directions, is proved to be used in all existing successful machines. The case, then, is this: Gallahue applied such a pivot in a certain way, with the purpose in view, as expressed in his claim, of "so adjusting the boot or shoe as to present the various portions of the sole in the requisite position to the awl and peg." He was the first to conceive and embody this idea, so far as he may be said to have embodied it. He procured a patent and had machines made, but none of them did, or in the nature of things could, prove successful in the shoe manufacture, because of his practical failure to adapt his pivot to the purpose he had in view. He did not apply it so that it would accomplish what he claimed for it. Such a pivot, however, has been found to be essential in pegging-machines, but others have rendered it useful by properly applying it and adapting it to the end in view through their own inventions and improvements.

Its value and importance were not practically demonstrated by Gallahue, because he did not proceed in the right direction and upon the proper plan. Gallahue made the pivot a *fixed center* upon which the last tilts longitudinally. The practical machine required that the fixed point should be at the point of contact of the awl with the sole, and that the pivot should oscillate. In Gallahue's the pivot is the center of an arc, through which the last swings. In the only machines which have proved successful the point where the awl meets the sole is made the center of an arc, through which the pivot vibrates. The difference is substantial and radical. It is the difference between success and failure. The pivot itself was not his invention. That was common property. It was only its proper application to the last-holder that constituted the invention and was valuable to the public. The conception of the idea of applying it was due to him, but he made such an application of it in his machines that it was of no practical importance. It was a failure so far as his work shows. The merit of applying it so as to make it a success involved invention which he did not exhibit, and is due to others.

Seeing it applied by others in a way to be valuable, and finding that he had not claimed it, he obtained a reissue of his patent with a specific claim seeking to cover it, but failed to do so for the reason that it was not shown in the records of his case.

It does not appear in proof that a single machine or a single tipping jack that he has made or caused to be made according to this patent has gone beyond the purposes of mere experiment into practical use in the shoe manufacture.

The testimony in the case is almost exclusively confined to the second claim, the other six claims being substantially ignored in the testimony and arguments.

With the evidence before me I do not perceive that what Gallahue has actually done for the public is of sufficient value and importance to warrant the grant of the extension sought, and it is accordingly refused.

C. CHAMBERS.—*Extension.*

[*In the matter of the application of Cyrus Chambers, Jr., for Extension of Patent No. 23,445, granted April 5, 1859, for* IMPROVEMENT IN PAPER-FOLDING MACHINES.—*Decided April 1, 1873.*]

Stops for receiving the paper after having been once folded in a paper-folding machine preparatory to a second operation, and which require a lateral adjustment in order to receive signatures of varying sizes, constitute no objection to the novelty of a curved or angular stop which will receive such signatures of any size without being specially adapted to them.

A device which has been superseded in practice by a better one of a different construction must be disclaimed, as well as one which is shown to be old, before a patent which specifies them as the patentee's invention will be extended.

Embracing in an argument reflections upon the Examiner, and insinuations against his motives, emphatically condemned.

LEGGETT, *Commissioner:*

The Examiner has submitted a very full, clear, and satisfactory report in this case, which leaves but little more for me to do than to verify its correctness. He correctly describes the operation of the machine, as follows:

"In this machine the sheet is impaled through the press-register holes, upon spring-seated register-pins on either side of the folding-line, which turn in brackets, one pin being adjustable to and from the other, and laterally, and the frame carrying the two being adjustable both laterally and longitudinally.

"As the folding-blade strikes the paper to double it into the bite of the folding-rollers the pins yield to release the sheet, which is carried onto the next set of folding devices by endless tapes, (under guide-rods, the ends of which project into recesses in one roller,) until the folded edge abuts against an adjustable concave-faced gage, when the second fold is accomplished as was the first. Successive folds are thus formed, and the completely-folded signature is ejected from the last folding-rollers and guided by two rods, twisted so as to turn it into correct position to be deposited in a V-shaped trough, where a reciprocating plunger (having adjustable plates to suit varying-sized signatures) carries it past a spring-seated lever, 10, (which strikes an alarm,) bearing against the back fold, and an adjustable arm or plate, 9, bearing against the free upper corners, which retain it, together with the accumulated mass, against a head retiring under pressure of such movement. The head has spring-jaws, which bear on wedge-shaped strips, decreasing toward the trough end, whereby their friction decreases as the head moves and the mass and weight of paper increase."

I concur in his opinion that the second claim, covering the means of adjusting one of the register-pins independently of the other, was improperly granted. Substantially the same means of adjusting one of the register-pins of a folding-machine are shown in the patent granted to applicant October 7, 1856. I find nothing to impeach the novelty of any of the remaining claims. The Examiner cites the patents of Smith, May 19, 1857, and North, August 10, 1858, against the fifth claim, which is as follows:

"The adjustable stop Z, with its inner edge of a curved or angular form, or otherwise, so constructed that the end of the folded edge only of the sheet shall be in contact with the said stop, for the purpose specified."

These patents show two adjustable stops on opposite sides of the machine formed of vertically-projecting strips of metal. It is true these will come in contact only with the ends of the signatures; but they are not adapted without special lateral adjustment to receive signatures of varying sizes. They are, therefore, not the equivalent of applicant's concave or angular stop, which will receive signatures of all sizes equally well without alteration of its position.

The curved wire for turning the folded signatures and delivering them into the trough in proper position for compression by the packing-plunger, embraced in the seventh claim, is admitted to have been supplanted in use by a superior device of a different character for this purpose. Therefore it appears not to possess the requisite value and importance as an invention to warrant the embodiment of a claim for it in a patent to be extended.

The utility of the devices embraced in the remaining claims has not been more successfully attacked by the remonstrants than their novelty.

The inventions embraced in them precisely meet the requirements of a simple and perfect automatic paper-folder of this class, and excite admiration. Their excellence for the purposes intended is manifest, and the ample testimony upon this point was not needed to convince me, having an operating machine before me. Applicant's statement and account are unusually full and particular, and bear the indications of candor and good faith. His diligence has been exemplary and his machines of his own manufacture have gone into extensive use. They rank among genuine labor-saving inventions of a high order; and under the law, upon proofs before me, it is clear that applicant, through no fault of his own, has not received a reasonable remuneration for the benefit he has conferred upon the public.

The extension will therefore be granted upon the filing of a proper disclaimer of the second and seventh claims, and the payment of the proper fee in accordance with the rules.

I regret that my duty in this case does not stop here. The attorney for the remonstrant has availed himself of the privilege of filing a printed argument in the case, to embody in it abusive language toward the Examiner, and to insinuate that he has been influenced by improper motives in making his report. If attorneys or others think they have reason for the use of such language, they should file direct charges, so that the Examiners may have opportunity to be heard. To interpolate such charges in an argument before the Commissioner is unprofessional and cowardly, and cannot be too strongly condemned.

N. H. GALUSHA.—*Reissue.*

[*In the matter of the application of N. H. Galusha for reissue of letters patent No. 89,304.—Decided March 31, 1873.*]

ABANDONMENT—RENEWAL UNDER THE ACT OF 1870.

Applications for a reissue do not come within the purview of section 32 of the act of 1870.

Neglecting to take any steps in prosecuting an application for a reissue for two years after the last action of the Office upon it does not work an abandonment of it.

LEGGETT, *Commissioner:*

The applicant in this case has permitted two years to intervene between the time of the previous action of the Office and one now sought to be made, and the question raised by the Examiner is as to whether section 32 of the law of July 8, 1870, applies so as to work an abandonment of the application.

The Examiner, without expressing an opinion in the matter, sends the case to the Commissioner for advice. Reading section 32, in connection with 30 and 31, I am inclined to the opinion that it was not the design of Congress to include in the operation of section 32 applications for reissue, especially as section 32 does not name reissues in terms. If the Office should hold the

contrary the only effect would be, not the abandonment of the invention as contemplated in said section, but simply the requirement of another fee, as the applicant could immediately make another application for a reissue.

For this reason it is very evident that reissues were not intended to be covered by this section. The case, therefore, will be proceeded without reference to the lapse of time since the previous action of the Office.

HENRY M. STOW.

[*Appeal from the decision of the Principal Examiner in the matter of the application of Henry M. Stow for patent for* WOOD PAVEMENT.—*Decided February* 21, 1873.

PRACTICE IN APPLICATIONS—SINGLE AND DUAL INVENTIONS.

Different structures, having no connection or co-operation with each other, and formed by different processes, cannot be allowed in the same application, although they belong to the same class and are of the same kind.

A wooden pavement in which the rows of blocks are kept separate by cords, and one in which the spaces are formed by cords, and after they are removed are filled in with sand, &c., and one formed of thin blocks with spaces between the blocks in each row, and not between the rows, cannot be considered in the same application, nor the processes by which the first two are made.

Each kind of pavement may be embraced with the process for making it in the same application.

THACHER, *Acting Commissioner:*

The subjects relating to the construction of wood pavement presented for patent in this application, as stated by the appellant and agreed to by the Examiner, are—

"1. Separating the rows of blocks by cord which is not to be removed, (or a strip of paper.)

"2. Separating them by a removable cord.

"3. Setting the blocks so as to obviate the necessity of interposing anything."

With reference to the first subject, applicant proposes to lay a row of rectangular blocks across the street, then to stretch a cord or a strip of thick tarred paper along the row against the blocks, and to set the next row against the cord or paper. The cord is left in place, and he finishes the pavement by filling the narrow spaces between the blocks with melted coal-tar, pitch, or some suitable cement. He claims the pavement as a new product formed of these elements in this way, and also the method of constructing it.

Second, applicant proposes to provide a number of ropes with a suitable covering to make them smooth, and to proceed as above described to lay the rows of rectangular blocks. When a number of rows have been laid the first rope is to be withdrawn, brought forward, and stretched against the row last laid. After another row is laid the next rope is to be withdrawn, brought forward, and used again, and so on with the others, the ropes forming no part of the completed pavement, but being employed merely to space the rows of blocks. After the ropes have been withdrawn the spaces are to be filled with sand, gravel, or cement. He claims this pavement and also this method of constructing it.

Third, applicant proposes to avail himself of the advantages of employing thin rectangular blocks in constructing a pavement (as narrow boards are employed for flooring) to avoid the effects of expansion and contraction. He takes rectangular blocks, of not less than one inch in thickness, and places them in rows across the street in close contact, but leaves spaces between the ends of the blocks, which he fills with sand, pitch, asphalt, or cement. He lays his blocks in the ordinary way, so that there is nothing novel in his method of proceeding, and in this case he claims the pavement only.

Thus it appears that applicant presents three distinct plans of construction, and he produces three distinct varieties of wood pavement. Two of the methods of construction he regards as new, and he claims them respectively. He regards all three of his pavements as new, and accordingly claims them all. The five claims are presented in a single application, and the Examiner requires that they be presented in separate applications, so far as they relate to complete independent and distinct devices. In other words, he holds that although the inventions are comprehended in the general subject—wood pavement—they are distinct wood pavements, complete in themselves, and have no relation to each other in construction or use, other than that of individual things of the same general class.

On the other hand, the applicant says: "I emphatically deny that this application relates to any more than one subject-matter, viz: the subject of *wood pavements*. That it may embrace three *inventions* I am not disposed to deny. This is true of every patent containing three valid claims, for no claim can be valid unless based upon a patentable invention, capable of sustaining a patent independently of the other claims in the same patent. * * If no more than one invention could be embraced in the same patent, then no patent could legitimately have more than one claim."

It is undoubtedly true, and the Examiner agrees, that the various inventions here claimed relate to one general subject, viz., wood pavement. It is also true that each valid claim in a patent must be based upon a *distinct* invention. Nevertheless, it does not follow that the inventions here claimed can properly be embraced in the same patent, because it is not all inventions belonging to the same general class that may be embraced in a single patent, but only such as are *related* to each other in construction and operation, such as have some *connection* or *dependence* when applied to use, either directly as co-operating and aiding each other, or indirectly as constituting independent parts of the same individual article, machine, or device. This is plainly the rule to be derived from the very cases applicant has cited. In *Hogg* vs. *Emerson*, 6 Howard, 437, in which the subject-matter under consideration by the Supreme Court of the United States was "certain improvements in the steam-engine, and in the mode of propelling therewith, either vessels on the water or carriages on the land," it was held as follows:

"To obtain more revenue the public officers have generally declined to issue letters for more than one patent described in them. Renouard, 293; Phillips on Patents, 218. The courts have been disposed to acquiesce in the practice, as conducive to clearness and certainty; and, if letters issue otherwise inadvertently, to hold them, as a general rule, null. But it is a well-established exception that patents may be united, if two or more included in one set of letters relate to a like subject, or are in their nature or operation connected together. Phil. on Pat. 218, 219; *Barrett* vs. *Hall*, 1 Mason, C. C., 447; *Moody* vs. *Fiske*, 2 Mason, C. C., 112; *Wyeth et al.* vs. *Stone et al.*, 1st Story, 273. *Those here are of that character*, being all connected with the use of the improvements in the steam-engine as applied to propel carriages or vessels, *and may therefore be united in one instrument.*"

The words above italicized are decisive of the meaning of the preceding declaration that "patents" may be united if they "relate to a like subject or are in their nature and operation connected together." All the cases of which I am cognizant are of the same tenor.

I concur in the opinion of the Examiner, that the three pavements here presented are *separate* and *distinct* devices, having no connection whatever with one another, such as to warrant their union in the same patent. Each is a *complete article*, and as *independent of the others* as it is possible for two devices of the same general class to be. They must therefore be presented in separate applications before patents can be granted for them. There is of course no objection to presenting a claim for one of these pavements and for the method of laying it in the same application, for such inventions "relate to the same subject" in the sense indicated by the decisions of the courts, and by the decision of the Commissioner in Linus Yale, *ex parte*, C. D., 1869, p. 110, relied on by the Examiner.

The decision of the Examiner is sustained.

L. W. FAIRCHILD.—*Design.*

[*Appeal from the Principal Examiner in the matter of the application of L. W. Fairchild for letters patent for a* DESIGN FOR A SIGN.—*Decided March* 12, 1873.]

SUBJECT FOR DESIGN PATENT—SPECIFICATION.

A name-sign with an imitation gold pen attached to it constitutes a proper subject for a design patent.

The case of Parkinson, *ex parte*, Commissioner's Decisions 1871, p. 251, distinguished from this and approved

All description of the mechanical construction of the article represented in a design for which a patent is asked should be eliminated from the specification, as well as all reference to the utility of its purpose.

THACHER, *Acting Commissioner:*

Applicant attaches an imitation gold pen to a name-sign, and asks a patent for the whole as a new design. The Examiner holds that this is not proper subject-matter for a design patent, and from this decision an appeal is taken.

The decision of the Commissioner in Parkinson, *ex parte*, 1871, is cited as authority for the opinion of the Examiner. In that case the article was a tool for mechanical purposes, and the peculiar form, for which a design patent was asked, was intended solely for purposes of utility. In the present case the completed article has no mechanical function whatever, and the design represented is a matter of taste. It is not, therefore, in my opinion, open to the criticisms so justly made in the Parkinson case.

As the subject-matter of this application is a matter of taste, and, to some extent, ornament, designed to attract the eye, I think there can be no doubt of the propriety of granting a patent for the design as requested.

The decision of the Examiner to this extent is overruled; but, of course, without pronouncing upon the question of novelty, which is not brought up by this appeal.

The specification, however, requires careful revision. All description of the mechanical construction of the article should be eliminated, as well as all reference to its purpose as a matter of utility. All matter of this description is improper in a design patent. The Examiner will, therefore, require suitable amendments in the case before further action.

L. F. MUNGER—*Extension.*

[*In the matter of the application of Lyman F. Munger for the extension of letters patent No.* 23,040, *for* IMPROVEMENT IN LOCKS, *granted February* 22, 1859, *and reissued December* 1st, 1871.—*Decided February* 21, 1873.]

INTEREST IN EXTENDED TERM.

A patentee who has allowed his employers to work his invention without compensation, and has agreed that they may continue to do so during the extended term, which will therefore inure mainly for their benefit, if not entirely, should not have his patent extended, although he has not received an adequate remuneration.

THACHER, *Acting Commissioner:*

This appears to be a meritorious case in nearly all respects. I find, however, two insuperable obstacles to the grant of the extension sought. It appears that after a series of unsuccessful attempts to introduce his invention into public use and make it remunerative to himself, the inventor, about 1870, entered the employment of Sargent & Greenleaf, manufacturers of locks at Rochester, New York. They commenced the manufacture of his patented locks, and have continued said manufacture ever since, putting upon the market a large number, said to be at least six thousand, and they are now making large quantities. The inventor states that this use of his patent was with his consent and allowance, and that he never charged them anything for it, but gave his employers the free use of the invention. At the same time he estimates that thirty cents on a lock would be a fair royalty for the use of his invention. If this had been paid him by the manufacturers it would have yielded a handsome remuneration. It seems, therefore, that he has failed to secure remuneration for the use of his invention by fault of his own.

It furthermore appears that an agreement has been entered into with Sargent & Greenleaf, by which they are to continue the manufacture of the locks under the extension, if granted, upon the same terms as in the past.

I do not see, therefore, how the inventor is to obtain remuneration in the future. Sargent & Greenleaf have already the market for the article, and, as they will manufacture without the payment of royalty, they will be able to hold the market against other manufacturers who may enter into arrangements to make and sell Munger's locks upon the payment to him of a suitable royalty.

Under these circumstances the conclusion is inevitable that the extension of the patent would be almost solely for the benefit of Sargent & Greenleaf instead of the inventor.

The prayer of the petitioner, therefore, must be denied.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,526.—*Manufacturing Webbing.*—Granted to JAMES C. COOKE, January 4, 1859. Application filed under act of Congress approved January 10, 1873. Hearing April 9, 1873.

23,750.—*Animal-Traps.*—Granted to AMOS S. BLAKE, April 26, 1859. Hearing April 9, 1873.

23,771.—*Ladies' Collars and Cuffs.*—Granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued in four divisions, No. 1,960, 1,961, 1,962, and 1,963, June 6, 1865; No. 1,960 having been ordered to again reissue, No. 5,259, January 28, 1873. Hearing April 9, 1873.

23,792.—*Gas-Pipe Cutters.*—Granted to JOSEPH E. STANWOOD, April 26, 1859. Hearing April 9, 1873.

22,793.—*Cracker-Machines.*—Granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869. Application filed under special act of Congress approved January 10, 1873. Hearing April 2, 1873.

23,795.—*Pump-Boxes.*—Granted to FRANCIS and JOHN STOCK, April 26, 1859. Hearing April 9, 1873.

23,810.—*Regulators for Time-Keepers.*—Granted to RALPH S. MERRIMON, April 26, 1859; reissued February 7, 1860. Hearing April 9, 1873.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,860.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,892.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,896.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,903.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tire.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.* Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,098.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,162.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHERBLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

22,793.—*Improved Cracker-Machine*, granted to JOSEPH FOX, February 1, 1859; reissued May 4, 1869, numbered 3,415.

Claim.—1. The depressions in the spaces between the grooves in one or both of the rollers B and B′ that form the strips of dough from the sheet, substantially as and for the purposes hereinbefore specified.

2. The feed-bed of free rollers A′, in combination with the grooved rollers B B′, substantially as herein described and specified.

3. Moving the grooved rollers B B′, arranged with respect to each other, as herein specified, with a regular intermittent, or step-by-step motion, substantially in the manner and for the purposes hereinbefore specified and set forth.

4. The ways or guides E, in combination with the grooved rollers B B′, substantially as and for the purposes herein described and specified.

5. The perforated bar G, in combination with the ways or guides E, substantially as and for the purposes herein described and set forth.

6. The knife H, in combination with the perforated bar G, substantially as and for the purposes hereinbefore described and specified.

7. The rollers B B′, ways or guides E, perforated bar G, and knife H, all combined and operated substantially as hereinbefore specified.

8. Feeding the said strips of dough Y through the perforated bar G, and opposite the knife H, with a regular intermittent or step-by-step motion, in the manner and for the purposes hereinbefore specified.

9. Passing strips of dough Y through apertures in a plate or bar, G, and cutting of short sections of said strips by means of a sudden blow with a blade or knife, H, substantially in the manner and for the purposes hereinbefore described and specified.

10. The employment of the clamp-bars I I, in combination with the knife H, as herein described, to cut off and hold the sections of the strips of dough as the strips are fed through the bar G, as specified.

11. Forming short sections of skin-covered strips of dough into disks, or crackers, by pressure applied to the ends of the sections by the devices, substantially as herein described.

12. The rollers, substantially as described, by which the crackers are rolled on the apron, and by which the skin on the upper surface of the pressed crackers is completed.

13. Also, the straight edges R and R′, for evening the rows of crackers before rolling and docking, as specified, in combination with the rollers and dockers, substantially as herein described and set forth.

14. The combination of the docker O with the movable clearer-plate Q, and springs *g g*, substantially as and for the purposes herein shown and specified.

15. And, finally, the endless apron L, inclined plane T, follower U, and second endless apron S, all combined and operated substantially in the manner and for the purposes herein described and specified.

Approved by act of Congress, January 10, 1873, enabling him to make application to the Commissioner of Patents for the extension of his patent.

23,445.—*Improvement in Paper-Folding Machines*, granted to CYRUS CHAMBERS, Jr., April 5, 1859.

Claim.—1. The register-pins *e* and *e′*, so constructed and so attached to a paper-folding machine that they shall retain a position proper for the adjustment of the sheet, and yield by the movement of the latter.

2. Adjusting one of the register-pins *e′*, laterally and longitudinally, independently of the other pin by means of the slides n^1 and n^2, or their equivalents.

3. Adjusting both pins simultaneously, both laterally and longitudinally, by the frames X and Y, or their equivalents, the frame X being adjustable in one direction on the frame Y, and the latter, together with the frame X, being adjustable in another direction on the frame of the machine or any attachment thereto.

4. Any convenient number of rods, 1, 2, and 3, terminating at one of the folding-rollers, the ends of the rods passing into grooves in the said rollers, as and for the purpose specified.

5. The adjustable stop Z, with its inner edge of a curved or angular form, or otherwise so constructed that the end of the folded edge only of the sheet shall be in contact with the said stop, for the purpose specified.

6. The plunger 6 with its adjustable plate 8 in combination with the adjustable plate 9, said plates being arranged substantially as and for the purpose herein set forth.

7. The curved wires 15 and 16, or their equivalents, attached to the machine in any convenient manner, situated under the folding apparatus and adjacent to the trough, for the purpose specified.

8. The combination of an alarm or indicating apparatus with a paper-folding machine, when the said indicator is operated by a sheet folded by the machine.

9. Causing the sliding board *c′* to move along the trough with a diminution of friction as the folded sheets accumulate, by means of the springs 4 attached to the said board, and arranged to bear against the wedge-formed or inclined strips 5, substantially as herein set forth, and for the purpose specified.

23,536.—*Improved Pyrotechnic Night-Signal*, granted to MARTHA J. COSTON, administratrix of B. FRANKLIN COSTON, April 5, 1859.

Claim.—The signalizing of any numeral combination of numerals, or any character or combination of characters, by a methodical exhibition of different pyrotechnic fires, substantially as herein set forth.

23,436.—*Improved Machine for Wringing Clothes*, granted to SELDEN A. BAILEY, April 5, 1859; reissued June 28, 1864, numbered 1,710; reissued May 14, 1867, numbered 2,609.

Claim.—1. The employment of the wooden spring-piece *a a*, which is divided into two parts at its center, each part being slotted from the place of division, as shown in the drawing, toward its outer end, the same being covered by rubber cylinder, substantially in the manner and for the purpose specified.

2. The spring F, in combination with elastic rollers, for the purpose set forth.

3. I claim, in a wringing-machine, substantially of the kind herein described, the combination of elastic rollers impervious to water, with the standards B and vessel A, secured and operated substantially as and for the purpose specified.

23,525.—*Improved Bedstead-Fastening*, granted to LEVI W. BUXTON, April 5, 1859.

Claim.—1. The combination of the shoulders *j j* on the locking or rail piece *c* with the notched or serrated circular edges *l l* and conical pin *k*, substantially as and for the purposes set forth.

2. The combination of the hook *c′* with the tube or friction roller *f* and stationary pin *g*, substantially as and for the purposes herein described.

23,491.—*Improvement in Machinery for Laying Rope*, granted to GEORGE W. PITTMAN and W. C. BOONE, April 5, 1859.

Claim.—1. The laying and unlaying of the strands c^1 c^2 to forward the twist, as herein described.

2. The ring-guide *c′*, applied in combination with the bobbin c^2 to the nearest flier, substantially as and for the purpose set forth.

23,520.—*Improved Burnishing-Machine*, granted to LE ROY S. WHITE, April 5, 1859.

Claim.—1. So applying two burnishers in a burnishing-machine that they shall operate simultaneously at opposite points on opposite sides of the article or piece of work to be burnished, and burnish both sides at once, and that during such operation each shall serve to support the article or piece of work against the pressure of the other, substantially as herein set forth.

2. The combination of the reciprocating and partially rotating shaft C and yoke D, or their equivalents, and the tool-stock R, by means of the rods S S, the arm K, rod *l*, and arm *m*, the whole operating substantially as and for the purposes herein specified.

3. The sliding bars *n n′ p*, applied in combination with the tool-stock carriage to operate substantially as and for the purposes herein specified.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date March 25, 1873.]

6,512.—*Carpet.*—ALBERT COWELL, Kidderminster, England.

6,513.—*Carpet.*—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,514.—*Carpet.*—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,515.—*Carpet.*—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,516.—*Carpet.*—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,517.—*Carpet.*—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,518.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,519.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,520.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,521.—*Carpet.*—ROBERT HOSKIN, New York, N. Y., assignor to C. M. BAILEY, same place.

6,522.—*Carpet.*—JOHN HUMPHRIES, Kidderminster, England.

6,523.—*Pencil.*—EPHRAIM S. JOHNSON, Jersey City, N. J.

6,524.—*Carpet.*—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,525.—*Carpet.*—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,526.—*Floor Oil-Cloth, &c.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y.

6,527.—*Floor Oil-Cloth, &c.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y.

6,528.—*Inkstand.*—WILLIAM F. MULLER, New York, N. Y.

6,529.—*Carpet.*—ELEMIR J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,530.—*Carpet.*—ELEMIR J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,531.—*Carpet.*—ELEMIR J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,532.—*Carpet.*—ELEMIR J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,533.—*Carpet.*—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,534.—*Carpet.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn.

6,535.—*Boot-Jack.*—ELDRIDGE J. STEELE, New Haven, Conn., assignor to SARGENT & CO., same place.

6,536.—*Picture-Frame.*—LEWIS STEINHILPER and LOUIS WELKER, Williamsport, Pa.

6,537.—*Door Latches and Handles.*—ADOLPH WUNDER, New Haven, Conn., assignor to SARGENT & CO., same place.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date March 25, 1873.]

1,176.—*Product of Petroleum.*—JOSEPHUS CHANDLER, Pioneer, Pa.

1,177.—*Whisky.*—BARNETT H. ENGELKE, St. Louis, Mo.

1,178.—*Medical Preparation.*—REUBEN HOYT, New York, N. Y.

1,179.—*Cigars.*—KERBS & SPIESS, New York, N. Y.

1,180.—*Cigars.*—KERBS & SPIESS, New York, N. Y.

1,181.—*Whisky.*—JOHN J. MCCLELLAND, Austin, Tex.

1,182.—*Cooking-Stoves.*—BURDET, MCLEOD & CO., Troy, N. Y.

1,183.—*Compound of Sugar and Lemons.*—PRESTON & MERRILL, Boston, Mass.

1,184.—*Gold Foil.*—SAMUEL S. WHITE, Philadelphia, Pa.

1,185.—*Soap.*—J. B. WILLIAMS & COMPANY, Glastenbury, Conn.

1,186.—*Soap.*—J. B. WILLIAMS & COMPANY, Glastenbury, Conn.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date March 25, 1873.]

ORIGINAL PATENTS.

137,045.—*Apparatus for Cleaning Horses.*—OSCAR W. ALLISON and PAUL HOMELIUS, Buffalo, N. Y., assignors to JAMES H. SMALL, same place.

Power is transmitted to a rotary brush by means of an endless belt running over a main driving-pulley, guide-pulleys, and a weighted tension-pulley; the belt being further guided by a tube having guide-rollers at each enlarged end; the tube being pivoted to the case containing the pulley and gearing immediately connected with the revolving brush.

Claim.—1. The combination, with the rotary brush G, pulley g', main shaft a, driving-pulley C, and loose pulley C', of the guide-pulleys F F, weighted tension-pulley H, and endless belt f, as and for the purpose hereinbefore set forth.

2. The combination, with the endless belt f and brush-pulley g', of the case I provided with guide-rollers i for securing the belt against displacement while the brush is being operated at any desired angle, substantially as hereinbefore set forth.

3. The combination, with the brush G, pulley g', and tube I provided with guide-rollers i, of the bearing K K' hinged to the tube I and provided with guide-rollers k, so as to enable the brushes to be swung vertically without impairing the transmission of motion, substantially as hereinbefore set forth.

4. The combination, with the main shaft a, driving-pulleys C C', and endless belt f, of the perforated guide D provided with friction-rollers d, substantially as and for the purpose hereinbefore set forth.

5. The combination, with the driving-pulley g' and shaft g, of two brushes arranged on opposite sides of the pulley g', substantially as and for the purpose hereinbefore set forth.

137,046.—*Washing-Machine.*—JAMES BALLARD, Almont, Mich.

To a wash box, with a series of rollers in the bottom, are attached two standards. At the top of these a rock-shaft is journaled, and to this two reciprocating standards are attached, which are provided with guide-rods, which pass through holes in the same. To the lower ends of the standards is secured a rubbing-board, which is moved by levers pivoted in slots of the reciprocating standards.

Claim.—The combination of the lever K with the rub-board J, reciprocating standards H with guide-rods I, hanging fulcrums L, and rock-shaft F, as described.

137,047.—*Tucker for Sewing-Machines.*—DANIEL BARNUM and EDMUND B. BARNUM, Brooklyn, N. Y.

The gaging-edge of the plate bears against the seam of a previously-formed tuck, and the cloth for the new tuck is folded about the outer or folding edge of the plate. Different-sized plates are required for different-sized tucks and spaces, and as the plate is connected with the independent spring-arms it yields to inequalities.

Claim.—1. The folding and gaging plate A with its edges, whether parallel or divergent, constituting the folding-edge C and the gage B, substantially as described.

2. The gage B, when supported substantially as described, so as to be self-adapting in its bearings on the cloth when disturbed by inequalities.

3. The folding-edge C, when supported substantially as described, so as to be self-adapting in its bearings on the cloth when disturbed by inequalities.

4. The gage K, constructed to run in the back of the seam being sewed to keep the material from dragging away from the needle, substantially as described.

5. The detachable gage B, when pivoted to the arm F, so that it may be detached therefrom, substantially as and for the purpose described.

6. The arm F, constructed with elastic prongs, for the purpose specified.

137,048.—*Bobbin-Winder for Sewing-Machines.*—ALEXANDER B. BARY, Detroit, Mich.

For moving and regulating the speed of the wrist-pin, which constitutes the thread-guide.

Claim.—In mechanism of the described construction, the combination of the grooved cone E, friction-wheel F, worm G', slotted gear-wheel I, slotted plate H, wrist-pin b, and springs J J, arranged as described, for the purpose set forth.

137,049.—*Collar-Pad.*—PETER H. BEAVER, Montandon, Pa.

The pad-tree is made of perforated metal and allows the air to circulate under the collar and over the neck of the horse.

Claim.—1. The combination of the pad-tree A with the pads C, shaped or constructed as described, whereby a clear space is left above the crown of the animal's neck to which the pad may be applied, as set forth.

2. The combination of the open straps E and buckles F with the pads C D and tree A, substantially as herein shown and described, and for the purpose set forth.

137,050.—*Railroad Switch.*—GEORGE W. BILLINGS, Chicago, Ill.

The switch-rails are re-enforced by the long elastic bent plates, the flanges of which serve to attach the connecting-bars to, and thus avoid perforating the flanges of, the rails. The re-enforcing plates are used to strengthen the main rails at the bend.

Claim.—1. The re-enforcing bars or rails F, constructed as described, in combination with the rails C, as and for the purpose set forth.

2. In combination with the rails B the re-enforcing side plates d, constructed as described, and for the purpose specified.

137,051.—*Seeding-Machine.*—DANIEL CAINE, Battle Creek, Mich.

The bottom of the seed-box is provided with an agitator, and the seed falls upon an inclined board, provided with pins projecting from its upper surface to scatter the seed.

Claim.—1. In a broadcast-seeding machine, the adjustable plate E having L-shaped openings G, in combination with the reciprocating clearer F and the hopper a provided with escape-orifices, when constructed, arranged, and operating as described.

2. The removable board I studded with pins i, and arranged at an angle below the hopper a, substantially as herein described and shown, for the purpose specified.

137,052.—*Die for Forming Wrench-Heads.*—LUKE CHAPMAN, Collinsville, Conn., assignor to THE COLLINS COMPANY, same place.

The bar is formed into a blank by a die in one piece, which has a vertical aperture sunk into it; the upper part of the aperture is enlarged and forms a triangular head on the bar. In a horizontal slot in the die a wedge is placed, on which the lower end of the blank rests. By driving the wedge in, the blank is started from the die and is easily removed. It is then placed in another die for completion. This die is countersunk to form the wrench-head, a properly-shaped plunger or upper die forcing the metal into it. In all other respects this die is similar to the above.

Claim.—1. The die a, constructed and designed for use substantially as described, for the purpose set forth.

2. The combination of the dies e and g, when constructed and designed for use substantially as described, for the purpose set forth.

3. The process of forming a wrench-head by first forming, by means of dies, a head upon the bar, substantially like c', and then completing the forging by means of the second set of dies, substantially as described.

137,053.—*Die for Forming Wrench-Heads.*—LUKE CHAPMAN, Collinsville, Conn., assignor to THE COLLINS COMPANY, same place.

The die is in one piece and has a vertical aperture corresponding to the size of the wrench-bar sunk into it. The die is countersunk to form the head. A bar the size of the wrench-bar is placed in the die, and a plunger of proper shape forms the head. The die is also slotted horizontally, and in this slot a wedge is placed, on which the end of the wrench-bar rests. When the wrench is completed in the die the wedge is driven in and starts the wrench and facilitates its removal.

Claim.—1. The die and plunger constructed and designed to act in combination, substantially as described, for the purpose set forth.

2. The combination of the die, the plunger, and the key, designed and constructed for use substantially as described, for the purpose set forth.

137,054.—*Rotary Pump.*—LUKE CHAPMAN, Collinsville, Conn., assignor to himself and WILLIAM J. WOOD, same place.—E.

The shell is formed of two intersecting hollow cylinders having bearings and boxes for the plunger-shafts made to work in opposite directions. The cylindrical valves are held to the plunger by being inserted in seats somewhat greater than a half-circle, and thus continually present new wearing-surfaces, and at the same time are firmly held in their seats.

Claim.—1. The yokes i, when used to connect the valves s, substantially in the manner set forth.

2. The combination of the two plungers of equal diameter, each having an equal number of valve-seats, the half of which are occupied by cylindrical valves loose in their seats, and the other half of which are for the reception of the valves carried by the other plunger, substantially as described.

3. The combination of the two plungers, the cylindrical valves free to turn in their seats, and the yokes connecting the valves set into the ends of the plungers, so as to be flush with the same.

137,055.—*Rotary Pump.*—LUKE CHAPMAN, Collinsville, Conn., assignor to himself and WILLIAM J. WOOD, same place.—C.

On the shafts are fixed plungers having four parti-circular valve-seats, for the reception of cylindrical valves pivoted at their ends upon round pins projecting from yokes fitting into corresponding beds in the ends of the plungers. As the plungers rotate, their surfaces are always in contact except at the valve-seats, and these are closed by the valves themselves, each valve borne by either plunger striking into an empty valve-seat in the other plunger.

Claim.—1. The combination of the cylindrical valve s with the plunger c when the valve is held to the plunger by being inserted in a valve-seat of a depth and outline somewhat greater than a half circle.

2. The combination and arrangement of the two revolving plungers c of equal size, having valve-seats of the shapes and relative sizes shown and described, with the cylindrical valves s.

137,056.—*Rotary Engine or Pump.*—LUKE CHAPMAN, Collinsville, Conn., assignor to himself and WILLIAM J. WOOD, same place.—A.

The revolving cylinder is provided with cylindrical valves covered by rubber or other elastic material, and fit into recesses into the cut-off. Rings placed in the heads of the case form the bearings of said valves and revolve with them. Grooves in the back of the rings, connected by holes with the steam or water space, serve as a lubricant and packing for the revolving rings.

Claim.—1. The rings g, when used to hold the valve in place, substantially as described.

2. The rings g, provided with the groove g^2 and the holes g^3, substantially as described, and for the purpose set forth.

137,057.—*Rotary Pump.*—LUKE CHAPMAN, Collinsville, Conn., assignor of one-half his right to WILLIAM J. WOOD, same place.—D.

An outer shell or case is formed by two hollow intersecting cylinders; the upper one contains the solid rotating cut off, which fits into the upper part; this cut-off is set upon and rotates with the shaft. The lower cylinder contains the solid rotating piston, which is of the same size as the cut-off, set upon and rotating with the shaft. The gearing causes the cut-off and piston to rotate simultaneously.

Claim.—The combination of the rotating cut-off, rotating piston, cylindrical valves hung in the plate or plates e, and the plate or plates i, all constructed and designed for operation substantially as described.

137,058.—*Rotary Pump.*—LUKE CHAPMAN, Collinsville, Conn., assignor of one-half his right to WILLIAM J. WOOD, same place.—E.

The outer shell of a double rotary pump is formed by duplicating the parts. The pistons are each provided with one or more cylindrical valves, each having a valve seat or seats for the reception of the valves carried by the other piston. The valve-seat takes in more than half the valve that rests in it, so as to keep the valves to the proper piston. They rotate simultaneously and are actuated by the gearing.

Claim.—The combination of the two duplicate parts $a\ b$ and $a'\ b'$, and the two duplicate rotary pistons d d^1, each equipped with one or more cylindrical valves, f f^1 g g^1, and each having a valve seat or seats for the reception of the valve or valves carried by the other piston, the whole constructed and designed to operate substantially as described.

137,059.—*Process for Treating Sewage and Ammoniacal Waters for the Production of Fertilizers, &c.*—THOMAS CHRISTY, Jr., and ALEXANDER BORROWNICKI, London, England.

Sewage and similar matters are treated with silica, either in the form of fluoride, hydrofluosilicic acid, or a soluble silicate. The agglomerate or gelatinous mass precipitated is exposed to the atmosphere for the escape of water. Fresh ammoniacal water is treated with silicate of soda or potash, an acid added, and the precipitated gelatinous mass exposed to the air for a while and then washed with an alkaline solution until exhausted. The drawings are treated with a salt of iron to produce a blue.

Claim.—1. We claim to treat ammoniacal and other liquids of gas-works, sewage, and other waters containing foreign matters in suspension or solution by hydrated silicate, in the manner stated, so as to obtain a raw product which we call silicoid.

2. We claim to operate on the product "silicoid" in order to separate from it cyanogen and other matters, and to treat the sub-products formed during the operations, substantially as described.

3. We claim to treat the ammoniacal waters from gas-works according to their condition—that is to say, to treat them either direct or after they have been concentrated under the form of silicoid, as described, for the purpose of extracting from them for commercial purposes cyanogenized, ammoniacal, and other substances contained in them.

137,060.—*Plow.*—THOMAS J. CLARK and GEORGE M. CLARK, Higganum, Conn.

Lateral wings are attached to the rear extremities of the mold-boards, either rigidly fixed or pivoted and pressed down by a spring. Marking-rolls are attached to these wings; the whole designed to flatten the top of the ridges and mark the hills for planting.

Claim.—A plow with either single or double mold-board, having a wing or wings, b b', either rigidly fastened thereto or pivoted thereto and pressed upon by a spring, all constructed, arranged, and designed to operate substantially as described, for the purpose set forth.

2. The combination of the plow with single or double mold-board, the wing or wings, b b', and the marking roll or rolls attached to the wings, the whole constructed, arranged, and designed for operation, substantially as and for the purpose set forth.

137,061.—*Burglar-Proof Safe.*—WILLIAM CORLISS, Providence, R. I.

The shell of the safe is made in two parts, which are screwed together, and a key or pin is inserted in the joint to prevent them from being unscrewed. The door is attached to a frame that revolves within the shell, and is moved forward and back by means of screws which hold the door in its closed position by bracing across the interior of the structure.

Claim.—1. A safe-shell, made in sections, each in a single thickness, and secured together internally by the screw-threads a and c, substantially as described.

2. The key i in combination with the threaded portions A C of a sectional safe, and serving as a means for preventing the turning of the sections upon each other, as specified.

3. The revolving frame J and door D with means for moving the same relatively to each other, arranged to serve within a safe, as herein specified.

4. The column-nuts W and screws K L, arranged as shown, in combination with a door, D, opening inwardly, so as to move the door forward and backward, and to hold it in the forward position by bracing across the interior of the entire structure, as specified.

137,062.—*Combined Chair, Table, and Lounge.*—JAMES CROGHAN, Chicago, Ill.

A chair with its back pivoted near its center, to the back of which is attached a table which can be brought into use by turning forward the chair-back, resting it upon the arms of the chair, which are attached to each side of the seat and arranged to turn down, and are supported and their action limited by segmental braces, notched to extend the width of the seat for a lounge. Under the seat is a frame on slides, which, when drawn out, form a bedstead supported by legs, &c., below which is a drawer for receiving the bed-clothing when not in use.

Claim.—The combination of an easy-chair, table, bedstead, and lounge, when the said several parts are constructed and arranged together, substantially as specified.

137,063.—*Die for Cutting out Ornamental Forms of Paper.*—ADOLPHE DELKESCAMP, Brooklyn, E. D., assignor to JACOB J. NICHOLS, New York, N. Y.

The pattern-die is supplied with many slender pins protruding through it and flush with its face, which are pushed up as the dies are brought together, and descending by gravity, as the dies separate, force out the delicate figure of paper. The waste material in the male die is removed by similar pins mechanically raised.

Claim.—In combination with dies A B, operating as specified, the clearing-pins m, sinking out of the way when the dies are acting and protruded when the dies are separated, so as to expel the thin material by acting on thickly-distributed points on its surface, as herein specified.

137,064.—*Forming and Gaging Butter-Rolls.*—CHARLES H. FANCHER, San Francisco, Cal., assignor to himself and FRANK A. J. DIBB, same place.

A mass of butter is deposited in a box and the surface made level. A frame, carrying a cutting-wire at its base and a movable gage-board above, is adjusted for the desired length of roll and moved from end to end of the box, the board resting on the butter. A bisected cylinder, opening and closing by means of pivoted handles, as of shears, is forced through this cake of butter, (transferred to a table,) and the portion embraced, or the roll, is lifted out. The fragments are consolidated in a suitable press and the operation repeated.

Claim.—The improvement in the art of forming and gaging butter-rolls by means of the striker, consisting of the frame A A B with its gage-board C and cutting-wire d, and the cylindrical cutting-mold G G', all constructed and arranged substantially as set forth.

137,065.—*Wheel for Road-Steamers.*—JAMES S. FISHER, Utica, Mo.

Steam is admitted through steam-pipes above and below the center to central openings and branch passages in the valves, which are provided with notches by which they are rotated by projections on the revolving rim. The steam is exhausted through a central opening in the stationary center. Stops are arranged in the casing, by which the valves are held stationary until released by levers, which pass over inclines on the rim.

Claim.—1. The valves D provided with notches d d and passages e e, as described, in combination with the stationary center A and revolving rim C forming the chamber E, said chamber provided with partitions b b, all substantially as and for the purposes herein set forth.

2. In combination with the wheel A C and valves D D, the steam-pipes B B with side ports f f and passages h h and the grooves k', passages k, and exhaust-port m in the wheel, substantially as and for the purposes herein set forth.

3. The combination of the spring-stops s s, rods i i, levers G G, and inclines s s, constructed and arranged, as described, to operate in connection with the wheel A C and valves D D, substantially as and for the purposes herein set forth.

137,066.—*Sole-Trimming Machine.*—BERNARD GALLAGHER, St. John, Canada, and JOHN COYLE, Belfast, Great Britain.

The two arms, supporting upon their outer ends cylindrical cutters, have reciprocating motion imparted to them by means of an adjustable crank-shaft, their opposite ends being guided over a form approximating the shape of the boot or shoe sole to be trimmed. Machinery adapted to both trimming and setting the edges of boot and shoe soles.

Claim.—1. The construction and arrangement of the pivoted arms *g g*, provided with the circular cutters *p q p q*, guide-pins 6 6, or their equivalents, and the shoe-guide *e*, as and for the purpose set forth.

2. In combination with the arms *g g* and cutters *p p*, the mechanism for operating the latter, consisting of the driving-pulley *k*, pulleys *l l o o*, or their equivalents, as herein set forth and described.

3. In combination with the pivoted arms *g g* and movable bar *d*, the operating-arm 5, curved bar 4, and pivoted last-holder 1 movable in the guides *w w*, in the manner and for the purpose set forth.

4. The combination of the spiral cutters *p p* and disk-cutters *q q*, when arranged to operate upon the movable arms in the manner as shown, and for the purpose described.

137,067.—*Car-Coupling.*—CHARLES H. GEARHART, Farmer City, Ill.

The draw-head adjusts itself to others of different heights by reason of its being divided and its lower half resting upon a yielding bar. The spring-hook engages with the link when the draw-heads meet, and is uncoupled by means of the lever and chain connecting with the brake-shaft.

Claim.—The combination of the draw-bar B supported by yielding-bar F, and having hook C; of the lever G, chains *g g'*, and shaft G', all substantially as and for the purposes set forth.

137,068.—*Apparatus for Brazing Metal Tubes.*—THOMAS G. GORMAN and NATHAN W. PERRIGOY, Springfield, Ill.

The crank-lever gradually winds the chain on the pulley, turning the shaft and raising the plug or spindle, carrying along with it the tube. In this way the various portions of the work are gradually brought in contact with the hottest part of the fire.

Claim.—1. A forge, in combination with the fluted plug or spindle D, substantially as herein described.

2. The chain F, pulleys I and D', shaft H, pawl L, ratchet G, and crank G', for raising and depressing the spindle D, for the purposes herein described.

3. The circular opening in the hearth B, tuyere K, bottom C, and hole C', substantially as herein described, and for the purposes herein set forth.

137,069.—*Reclining-Chair.*—GEORGE D. GOSS, Boston, Mass.

To the chair-frame is hinged the back, to each side of which is pivoted one end of a rod, the other end of which fits into notches in a rack attached to the under side of the arm-rest.

Claim.—The back C, hinged or pivoted to the seat or frame of the chair, in combination with the rods *c* and racks D, constructed and operating substantially as described.

137,070.—*Steam Lubricator.*—WILLIAM GOWENLOCK, Susquehanna Depot, Pa.

Two or more hollow branch tubes attached to the hollow valve-stem within the heating-chamber so as to allow the steam to heat the parts of the lubricating material more remote from the central valve-stem.

Claim.—In combination with the hollow valve-stem of the lubricator of the class herein described, two or more hollow branches, *c c*, attached to the stem, substantially as and for the purposes herein set forth.

137,071.—*Cartridge Capping and Uncapping Device.*—GEORGE S. GREENE, Jr., Mott Haven, N. Y.

Claim.—1. The cartridge-case mover or chair E, or its equivalent, provided with means for grasping the cartridge-case by the rim, combined with a longitudinally-fixed screw, G, forming an abutment for capping the case, in connection with the guide or holder B, pin *h*, and cap *g*, all arranged and operating substantially and for the purposes specified.

2. The vibrating cartridge-case guide B, combined with a chair or cartridge-case mover E, substantially as and for the purposes specified.

3. The perforated removable cap *g*, in combination with the pin *h* and guide B, substantially and for the purposes specified.

4. The combination, with the guide or holder B, of the removable pin-holder *g*, whereby the instrument is adapted to be used with cartridges of different construction, as specified.

137,072.—*Manufacture of Boracic Acid.*—FREDERICK GUTZKOW, San Francisco, Cal.

Powdered borate of lime is sprinkled with dilute sulphuric acid and the stiff pulp is mixed with half its weight of ordinary coke to give the mass porosity. Superheated steam is then passed through the mass.

Claim.—The separation of boracic acid from borate of lime by distillation with superheated steam, substantially as set forth and described.

137,073.—*Steam Lubricator.*—WILLIAM HAMILTON, Erie, Pa.

The lubricating tube, extending horizontally through the cup, has at its extremity a conical valve-seat, through which passes the brass pointed valve-spindle, which regulates the flow of oil and keeps the valve-seat open.

Claim.—1. The hollow or tubular bolt D having orifices *d d*, and metallic point H' having cone-shaped opening *h*, spindle or needle G having a tapering point, *g*, the whole being so combined and arranged that the valve-spindle not only regulates the flow of the lubricant by its projecting point, but also serves to keep the discharge-orifice *g* open, substantially as described.

2. The adjustable steadying-plate K', socket K, recess *a'*, and set-screw *k*, when the same are so combined and arranged as to operate substantially as described.

137,074.—*Meat-Chopper.*—JOSIAH A. HARD, Lawrence, Kan.

A train of gearing operates a pitman and a vertical shaft, carrying, at its lower end, transverse knives cutting vertically. The bracket, affording guides to this shaft, presents an annulus of spears or wedges to a spur on the side of the shaft, which causes a partial rotation in the shaft and knives at each ascent thereof.

Claim.—1. The construction and arrangement, with relation to the spindle J, of the oscillating head K and knives L L' secured thereto, in the manner and for the purpose set forth.

2. The crown-teeth *e* on the bracket B', and the pallet *f* and stud *h* on the spindle J, for imparting to the latter an axial rotation during its reciprocation, substantially as shown and set forth.

137,075.—*Apparatus for Teaching Mensuration.*—ISAAC HARRINGTON, Huntington, assignor to himself, W. E. DOWNS, and THOMAS L. CORNELL, Birmingham, Conn.

Claim.—A series of blocks constructed and hinged together, and arranged to be transposed at will, without disconnecting the same, substantially as described and shown, whereby squares, triangles, and other forms known to geometry may be represented for the purpose of teaching and proving the rules of mensuration by ocular demonstration.

137,076.—*Bolt-Cutter.*—WILLIAM W. HILL, Fulton, N. Y.

Claim.—1. The bolt cutter and trimmer composed of the blades A A, fulcrum bars or plates B B, lever-handles C C, and fulcrum bar or plate D, pivoted together and operating substantially as herein specified.

2. The pin *h*, in combination with the notched jaws, substantially as and for the purpose herein specified.

137,077.—*Loom.*—CHARLES J. KANE, Milford, Conn.

For weaving narrow goods. The shuttle is reciprocated in the arc of a circle by the drivers, which reciprocate through the oscillating hub H. The drivers are engaged and disengaged with the shuttle by means of the cam.

Claim.—1. The oscillating and longitudinally-sliding shuttle fingers or drivers G G, arranged in relation with each other and with a circular raceway for operation, in combination with a curvilinearly-reciprocating shuttle, substantially as specified.

2. The combination of the curvilinearly-reciprocating shuttle B, provided with slots or guides *u u* on its inner side, the circular raceway A open above and below, and the oscillating and longitudinally-sliding shuttle fingers or drivers G G, the whole being arranged for operation, in relation with each other and with the warp, essentially as shown and described.

137,078.—*Plow-Clevis.*—AUGUST KAUFMAN, Davisville, Cal.

The direction of draft can be shifted without stopping the team.

Claim.—The clevis *r*, with its lever-handle *o*, in combination with the rack *m*, substantially as and for the purpose described.

137,079.—*Car-Brake.*—JOHN L. KNOWLTON, Sharon Hill, Pa., assignor of one-half his right to WILLIAM E. WALTON, same place.

Forcing down the foot-rod applies the brake-shoe to the friction-disk, and also a friction-roller is brought into contact with the friction-disk, and thereby revolved, winding up a chain which is connected to the brake-bars.

Claim.—The combination of the friction-roller C, shoe F, connecting-rod G, and small pulley D, arranged substantially as described, for the purpose specified.

137,080.—*Toy Gun.*—ALFRED JAMES, Chicago, Ill.

Claim.—In a toy gun the combination of the stock B, provided with a dovetail-groove, the sliding head *c* provided with the shoulder *c''* and fitted into the dovetail-groove of the stock, the bent spring-catch D engaging the shoulder *c''*, and the pivoted trigger E engaging the catch D, all arranged to operate together substantially as shown and described, and for the purposes specified.

137,081.—*Duplex Ticket.*—THOMAS A. JEBB, Buffalo, N. Y.

Employed in the collection of passenger fares and charges for excess baggage on railroads, and adapted for other uses, as the collection of fares on bridges, steam-boats, &c.

Claim.—A folded duplex ticket in which one part or half (as the passenger's) is conspicuously distinguished from the other by being of a different color, or by containing a prominent figure or design of a different color or appearance from that of the rest of the ticket or the other half thereof, substantially as hereinbefore set forth.

137,082.—*Water-Closet.*—JOSIAH GEORGE JENNINGS, Palace Wharf, Stangate, England.

Claim.—1. The non-corrosive valve-seat *c* in the described combination with the valve *d* and its lifting apparatus, bracket *m*, and water-supply valve *f*, as shown and explained.

2. The siphon-trap *a*, with a side opening or socket, a^2, in the ascending limb thereof, to which a pan, *b*, is adapted, substantially as herein described.

137,083.—*Wheel for Vehicles.*—PHINEAS JONES, Newark, N. J.

Claim.—In a carriage-hub in which the mortises to receive the spokes are formed in a metal band, constructing the said mortises with corrugations parallel to the axis or concentric thereto, to receive a common tenon, which, by expansion, fills the said corrugations, substantially as and for the purpose set forth.

137,084.—*Flavoring, Coating, and Putting Up Tobacco.*—JAMES KERR, Boston, Mass., assignor to WILLIAM H. TOWERS, same place.

Tobacco formed into blocks or lumps, coated with mucilage after partly dry, over the whole with powdered sugar flavored with pleasant extracts.

Claim.—1. The improved process herein described for flavoring and putting up tobacco, the same consisting in forming it into small pieces, covering these with mucilage or gum and sugaring, as set forth.

2. The improved article of manufactured tobacco, coated, flavored, and put up for use, as set forth.

137,085.—*Railroad Frog.*—JOHN H. LAKEY, Turner, assignor to GEORGE W. BILLINGS, Chicago, Ill.

The point rails of the frog are held together by means of broad flat keys, in place of the usual round bolts, with the object of better resisting the shearing action of the rails under pressure.

Claim.—The broad flat key or keys, as above described, in combination with the rails B C of a railway frog, substantially in the manner as and for the purpose set forth.

137,086.—*Hand-Truck.*—HENRY S. LA TOURETTE, New Orleans, La.

Upon either end of an ordinary hand-truck are secured wooden cross-pieces having grooves in the center of each, and of such height that the truck, when used for the transportation of railroad rails, to which it is especially adapted, each end of the rail will be carried clear of the ground.

Claim.—The cross-bars A and B when provided with the shoulders *a* and grooves *b*, and when the said cross-bars are employed upon a hand-truck, as and for the purposes herein set forth.

137,087.—*Table-Leaf Support.*—AUGUST MARCHAND, Lyons, Mich.

To the under side of the leaf a fly or brace is secured by means of a screw passing through the brace into an intervening plate, and then into the leaf. A coiled spring is interposed between the brace and plate, so arranged that when the leaf is raised it will cause the brace to partially rotate on its screw-pivot and project under the leaf to sustain the same.

Claim.—The fly or brace E, plate F, spring G, and hook-stop I, in combination with the screw-head J, table-rail H, and fall-leaf, when the parts are specifically constructed and arranged to operate as and for the purposes set forth.

137,088.—*Amalgamator.*—FREDERICK MORRIS, San Francisco, Cal.

The muller and bottom of the tub are made of wooden blocks placed with the grain vertical, so that the wear will be upon the end of the grain. The depressed strips form channels for conveying any free mercury to the outer annular groove. The tailings are siphoned off from near the center of the vessel.

Claim.—1. The tub or vessel A, having its bottom covered with wood placed with the grain vertically, and having the depressed radial strip *d d* and outer annular channel *f*, substantially as and for the purpose above described.

2. The tub or vessel A, having its bottom covered with wood placed with the grain vertically, in combination with the wooden muller G, substantially as and for the purpose above described.

3. The siphon A, in combination with the settling-vessel A, substantially as and for the purpose above described.

137,089.—*Lead-Pencil.*—THEILE H. MÜLLER, Yonkers, N. Y.

Provided with a longitudinal cavity, in which a file is inserted, with its handle forming the tip.

Claim.—The herein-described pencil, consisting of a sheath containing a lead, substantially as described, and formed at the rear end with an enlarged cavity containing a file, the handle of which constitutes the stopper or head of the sheath, as set forth.

137,090.—*Treadle.*—JOHN H. OSBORN, Guelph, Canada.

The treadle is suspended, and is adjustable, so that it can be moved and held at different angles, enabling the operator to alter the position of his feet.

Claim.—The combination of the foot-rest C, hangers D D, pins or pivots E E, thumb-screws F F, and legs A A, forming an adjustable treadle, substantially as and for the purpose hereinbefore described.

137,091.—*Tilting-Chair.*—FREDERICK A. PARKER, Gardner, Mass.

The seat-portion is provided with convex curved ribs, fitting to and operating with concave curved ribs on the supporting-frame.

Claim.—A tilting-chair consisting of a seat-portion provided with convex curved parts B B, in combination with a supporting-frame or base provided with concave parts C C, curved to correspond with the parts B B, said parts fitting and operating together substantially as shown and set forth.

137,092.—*Power-Hammer.*—SAMUEL PENNOCK, Kennett's Square, Pa.

The hammer can be adjusted at will to not only vary the force of the blow but also the length of stroke. The upper end of a pitman is pivoted eccentrically to the usual disk on the main shaft, while from the lower end of the pitman a circular arm extends horizontally through the hammer-slide. Pivoted to this arm is a crank, which, by means of a spring, forces the arm to the right. Rods connect the treadle with the spring, so that the foot on the treadle governs the position of the curved arm, and thus the length of stroke.

Claim.—1. The combination of the pitman, radius-link crank-arm, rocking disk, and slide-bar, substantially as set forth.

2. The combination of the pitman, radius-link, crank-arm, slide-bar, counterbalance-spring, and foot-treadle, substantially as set forth.

3. The combination of the radius-link, the pitman, and the adjusting-disk in the wheel which drives the pitman, substantially as set forth.

4. The combination of the slide-bar, the hammer-bar, and the adjustable spring connection between them, these parts being constructed and operating substantially in the manner set forth.

137,093.—*Compound and Apparatus for the Cure of Asthma.*—JEANBAPTISTE PINCHARD, San Francisco, Cal.

Claim.—1. The compound formed of the following materials in their respective relative proportions: Alum sixty grains, gum acacia twenty-seven grains, and camphor three grains, the whole mixed with or without the saturation of six cubic feet of oxygen gas, substantially as and for the purpose hereinbefore set forth.

2. The oval-shaped apparatus A A A, provided with a cover, C, interior brush B actuated by the handle H, mouth-piece M, and valve *v*, substantially as and for the purpose hereinbefore set forth.

137,094.—*Cultivator.*—ORLANDO M. POND, Independence, Iowa.

A device for regulating the depth of the plows, and an adjustable clamp for holding the shovel-arms.

Claim.—1. The forked hook *a* with projecting circular prong *b* to form an adjustable connection between the tongue D and shovel-beams E, substantially as herein set forth.

2. The combination of the flanged plate H, concave ratchet-piece I, eyebolt A, and shaft *i*, with ratchet-pinions *k k*, to which the clamps for holding the shovel-arm are attached, substantially as and for the purposes herein set forth.

137,095.—*Combined Hose-Pipe and Sprinkler.*—WILLIAM W. RANSOM, Buffalo, N. Y.

A perforated sprinkling-disk having a hole in its center corresponding to the opening through the neck of the sprinkler, and closed by a sliding valve.

Claim.—The combination, with the sprinkler A, of the hole D and sliding disk E, substantially as and for the purpose described.

137,096.—*Collar.*—GEORGE F. RICE, Worcester, Mass.

The collar is not disarranged by the turning of the head, and the tie and scarf are prevented from working up over the collar.

Claim.—The collar A having its ends formed with notches or depressions B and projections D E, substantially as described and shown, whereby said ends can be locked against each other when the collar is worn, as and for the purpose set forth.

137,097.—*Low-Water Alarm and Indicator.*—JOHN ROSS, Greenville, Mich.

Upon the falling of the water the peculiarly-shaped float depresses an arm, which, by means of shaft extending outside of boiler, moves a hand over dial, and through adjustable arm releases a weighted rod and opens valve to steam-whistle.

Claim.—The cranked shaft E journaled through the stuffing-box *b* and bracket, the rod F, float G, the dial-case H supported by the rods *d d'*, and the index *c* at the end of the shaft E, all arranged to operate as a water-indicator, substantially in the manner described.

2. The weighted rod D provided with the catch *a* suspended from the lever of an alarm-whistle, and the adjustable cam *e* on the shaft of the water-indicator, arranged to operate in the manner and for the purpose set forth.

137,098.—*Hand-Cultivator.*—GEORGE W. RUE, Hamilton, Ohio.

A frame mounted on a single wheel. To the front of the frame are attached the handles, and to the rear another triangular frame, with holes to carry one or more standards, to which a variety of interchangeable cultivating-tools are fastened.

Claim.—The combination of front frame *a a* with frame B, or its equivalent, so constructed as to admit of the use of one or more of the standards *b*, upon which either of the interchangeable tools D E H M may be secured, substantially as described, for the purposes specified.

137,099.—*Earth-Closet.*—ISAAC S. RUSSELL, New Market, Md., and HENRY R. RUSSELL, Woodbury, N. J.

The discharger consists of a grate and two slides, connected directly under the earth-reservoir and operated by the raising and lowering of the seat-lid. A table is connected to a vertical shaft, to the rear of the seat, upon which is placed the earth-receptacle, so when the seat-lid is lowered the earth-receptacle is in position under the seat-opening, and when closed the table carrying the receptacle is brought under the discharger, allowing the contents of the discharger to fall into the receptacle.

Claim.—1. The vertical shaft *f* and loosely-hung table T, in combination with seat-lid, as described.

2. A discharger, consisting of the grate G and two independently and alternately moving slides provided with slots, as described, in combination with the vertical shaft, arm *n*, and finger I, as and for the purposes set forth.

3. A loosely-hung horizontal table attached to a vertical shaft, in combination with the arm or clutch H, catch 2, wedge 3, and stops 4 and 5, so that the shaft may have a limited motion relative to the table, as described, and for the purposes set forth.

4. In combination with the seat-lid, shaft *f*, and arm *n*, the swinging table provided with a dust door and receptacle, W, as and for the purposes set forth.

137,100.—*Tailor's Pressing-Machine.*—ALVAH C. SAWYER, Canton, N. Y.

The lever is pivoted underneath a table. To one end of it is hung a weight, and to the other is attached the back of the treadle-bar, which connects the treadle with the flexible arm holding the goose. A straight bar holds the treadle-bar in place by connecting it with the frame of the table. The back of the treadle-bar receives a vertically reciprocating motion.

Claim.—The lever I, parallel rod B, in combination with the vertical reciprocating back R E, substantially as and for the purpose set forth.

137,101.—*Organ-Treadle.*—JOHN A. SMITH, Erie, assignor to NEW ERA ORGAN COMPANY, North East, Pa.

The treadle is made adjustable to accommodate to players of different stature.

Claim.—1. The treadle B, in combination with the webbing or strap J, constructed, attached, arranged, and operated substantially in the manner and for the purposes shown and described.

2. The ratcheted bracket C, constructed substantially as described, and for the purposes set forth.

3. The ratchets G F E D, in combination with the shaft H and adjustable treadle B, as shown and described.

4. The roller M, in combination with the treadle B and strap J, as shown and described.

5. The lever P, in combination with the shaft H and adjustable treadle B, as shown and described.

137,102.—*Reed-Organ-Stop Action.*—JOHN A. SMITH, Erie, assignor to NEW ERA ORGAN COMPANY, North East, Pa.

Any stop is returned by the same motion upon the same lever as drew it out. It is effected by a one-toothed ratchet and pawl. The stop-register has oscillating tablets differently entitled, and operated by above devices.

Claim.—1. The actuating-levers F E D C, being the levers in immediate connection with the operator, connected with the levers R, being the lever in immediate connection with the several stops, by means of such levers, pawls, hooks, and connecting rods as shall cause like movements of the said levers F E D C to produce opposite results upon the levers R, substantially as and for the purposes shown and described.

2. The actuating-levers F E D C, severally connected with the proper levers, pawls, hooks, &c., operating substantially as described, that various alterations of the positions of the various stops may be accomplished by one movement of the knee or other member upon two or more of the said levers, as shown and described.

3. The lever E and accompanying pawl J, in combination with the lever R and wire O, as shown and described, for the purposes mentioned.

4. The lever E and accompanying pawl J, in combination with the hook V, pawl L, and lever R, as and for the purposes mentioned.

5. The pawl L and hook V, operated as described, for the purposes set forth.

6. The tumbler K, constructed as described, and in combination with the lever R, connecting rod G, and tumbler S, as shown and described.

7. The tumblers S, constructed and operated to display the tablets indicating the positions of the stops.

8. The tumblers S, in combination with the cylinder B, as shown and described.

9. The stop-register indicating the positions of the various stops of the organ by means of oscillating tablets, as shown and described.

137,103.—*Whiffletree Attachment for Vehicles.*—ANTOINE SOURSIN, St. Louis, Mo.

Claim.—The combination of spring-collar E, formed with a ring, E', and united at its bottom by ears $e e^1$, screw-bolts e^2, bolt F, clip D, draw-bolt C of tapering form and having head c, arranged to operate as and for the purpose set forth.

137,104.—*Machine for Grinding Metal Castings.*—GEORGE H. SPENCER, York, Pa., assignor to himself and GEORGE P. SMYSER, same place.

The swing-frames, horizontal grinding-rollers, vertical grinding-rollers, and horizontal arm, the treadle by means of which the horizontal rollers are operated, and the operative mechanism, pulleys, belts, cranks, &c. The work rests on table or sliding plate, to which it is fastened, and on which it is moved up between the grinding-rollers until the edge comes against the vertical roller.

Claim.—1. The combination of the swing-frame, the grinding-roller mounted therein, the pulley on the axis of the swing-frame, and the belt for driving the grinding-roller, these members being constructed and operating substantially as set forth, to apply the grinding-roller to the work without slackening the driving-belt.

2. The combination of the two swing-frames, the crank-wheels, the links connecting the two frames to the crank-wheel, and the treadle mechanism for operating the crank-wheels, these members being constructed and operating substantially as set forth, simultaneously to move the upper and lower rollers toward or from the work.

3. The combination of the vertical grinding-roller, its horizontally-swinging arm, and the driver-pulleys swinging with said arm, substantially as set forth.

4. The combination of the vertically-moving grinding-rollers with the horizontally-moving grinding-roller, these members being constructed and operating substantially as set forth, simultaneously to smooth three sides of the casting.

137,105.—*Horse-Collar Fastening.*—ELIAS H. SPRAGUE, Mount Vernon, Ohio.

The ends of the collar are lined with a metallic lining so as to more properly secure the cape, which are fastened together.

Claim.—The interior casing R, placed between the padding and covering on the end of a horse-collar, and fitting inside of an exterior casing, substantially as and for the purposes herein set forth.

137,106.—*Clasp for Preventing Ingrowing of Toe-Nails.*—EDWARD E. STEDMAN, Ravenna, Ohio.

Two small hooks are connected together by a bent spring. The hooks are carefully polished and flattened so that they may be inserted under the corners of the ingrowing nails without great irritation to the tender parts. The spring can be bent to fit a wide or narrow nail, and assist in drawing up the nail-corners out of the flesh.

Claim.—The attachment of a spring, connecting the two hook, which pass under the corners of the nail, as above specified.

137,107.—*Adding-Machine.*—ARCHIBALD M. STEPHENSON, Manteno, Ill.

The successive pin-wheels for giving the decimal counts are placed at regularly-diminishing distances apart, (counting from the units-wheel,) so as to allow the arms to engage only with the pins or teeth of the wheel on the advancing side, which arrangement, together with an alternate elevation and depression of the said tripping-arms, permits the count-wheels to be placed compactly in the same plane.

Claim.—The disks provided with figures, as described, and placed at a gradually-decreased distance from each other, and provided with arms of a corresponding decreased length, said arms being alternately raised and depressed to avoid interference, all arranged substantially as and for the purpose herein specified.

137,108.—*Tuck-Creaser for Sewing-Machines.*—JAMES T. STEWART, Philadelphia, Pa.

The marker is attached to the outer end of the frame pivoted to the supporting-arm, is moved upward about its pivotal point by a spring coiled around the arm and frame, and is pressed down so as to crease the fabric by the needle-bar, which strikes the lever, the latter being laterally adjustable for tucks of various widths.

Claim.—1. The operating-lever F connected to and sliding on both the supporting-arm C and frame D, substantially as and for the purpose described.

2. The frame D supported at both ends on the arm C, in combination with the marker E fixed to the frame and the operating-lever F sliding thereon, substantially as and for the purpose described.

3. In combination with the screw-plate A, the elevated and overhanging plate J and the screws g and h, to operate with the sliding pieces B and H, and hold them in position, as set forth.

137,109.—*Rotary Steam-Engine.*—WILLIAM C. STILES, Nevada City, Cal.

Both the force and the expansive power of the steam are exerted to drive an endless chain or belt and produce a rotary motion of the pulleys over which the belt passes, and from which power can be taken.

Claim.—1. The pulleys B B' and endless band D, with the pistons $e e e$, in combination with one or more cylinders, F, provided with suitable means for the ingress of steam, and sliding abutments, substantially as set forth.

2. The extended springs or levers with their arms $l l$, in combination with the projections m for automatically separating the abutments, substantially as described, for the purpose specified.

137,110.—*Method of Heating Photographic-Negative Baths.*—HARRY J. SUNTER, Buffalo, N. Y.

Claim.—1. The method of heating negative or other photographic baths or solutions for sensitized plates or paper coated with a preparation of collodion or albumen, by means of steam generated in a suitable apparatus and injected into said bath, &c., substantially as and for the purpose set forth.

2. The method of heating negative or other photographic baths or solutions used for sensitized plates or paper coated with a preparation of collodion or albumen by means of steam and the vapor of aqua-ammonia injected into said baths, &c., substantially as and for the purpose set forth.

137,111.—*Windmill.*—GEORGE A. SWARTZ, Twin Grove, Wis.

The turn-table is provided with an interior collar or ring, which is capable of turning within and independently of the turn-table, and will also turn with the same. The collar is provided with a frame, which supports the shaft to which the wheel is attached. By means of ropes and pulleys the collar and frame may be turned so as to bring the wheel into the wind or carry it out of the wind. The rope may be attached to a heavily-weighted lever, which is supported upon a hook that is pivoted upon the side of a tank having a lid with a projection. As the tank fills with water from the pump operated by the wheel the lid rises and pushes up a lever so as to release the weighted lever, which, falling, pulls the rope and throws the wheel out of the wind.

Claim.—1. In a windmill, the arrangement of the wheel and shaft upon a separate frame swinging upon and independent of the turn-table carrying the vane, substantially as and for the purposes herein set forth.

2. The combination of the turn-table A with vane B and arms C D, ring or collar E with frame G, carrying the shaft H and wheel I, ropes a b, and pulleys d d' and e e', all constructed and arranged to operate substantially as and for the purposes herein set forth.

3. The combination of the tank K, lid L with projection i, lever P, hook h, and weighted lever J, all substantially as and for the purposes herein set forth.

137,112.—*Refrigerator.*—ROBERT TAYLOR, New York, N. Y.

A refrigerator constructed so as to allow the air to circulate entirely around the provision-chamber without coming in contact with the food contained therein.

Claim.—1. The air-space s made in relation to openings d, f, k, L, and E, that the external air is made to circulate upward all around the food and ice chambers without entering either, substantially as set forth.

2. The inverted pans h, in combination with the gutter I and waste-pipe J.

3. The holes k and L, whereby ventilation is effected, as and for the purposes set forth.

137,113.—*Game-Table Tops.*—GILES G. THOMSON, New Haven, Conn.

For playing card-games on railroad cars, steamboats, &c.

Claim.—The table A, provided with the slides a b, having a cribbage and pitch-board upon their under surfaces, in combination with receptacles beneath, substantially as and for the purpose specified.

137,114.—*Machine for Cutting Biscuit.*—JOHN TURNER and SYDNEY TURNER, Toronto, Canada.

To the ordinary biscuit-cutting device, which is rigidly attached to uprights or guides, is a bent or crooked lever extending, for motion, to the main shaft, on which is connected a cam, so arranged that in its revolution, after the cutting is effected, to produce a partial stop or hesitating motion for the release of the dough or biscuit.

Claim.—Attaching the cutter-pan J in a solid manner to the movable spindles H, and, by the combination of the links I, short levers C, rocking-shaft F, and lever E, imparting to the said cutter-pan a hesitating motion, substantially as and for the purpose specified.

137,115.—*Mechanical Movement.*—ADDISON G. WATERHOUSE, Portage, Wis., assignor to WATERHOUSE MANUFACTURING COMPANY, same place.

Two concentric wheels are fixed to one shaft, and engaging on the opposite sides of a double-faced rolling wheel, arranged to be free to change its plane so that all points of its toothed or friction surfaces can come in contact with the wheels attached to the shaft.

Claim.—1. The combination of the three wheels A, B, and C, substantially as and for the purposes hereinbefore set forth.

2. The combination of the oscillating coupling w with the wheels A, B, and C, substantially as and for the purposes hereinbefore set forth.

3. The combination of the swinging arm s and the crank m with the wheels A, B, and C, substantially as and for the purposes hereinbefore set forth.

137,116.—*Mill-Pick.*—THOMAS R. WAY, Springfield, Ohio, assignor of one-half his right to WILLIAM H. REEVES, same place.

The small clamp may be unscrewed and set further down toward the point of the pick as the cutting-edge wears away.

Claim.—1. The arrangement of eccentrics d and d' with springs e and e', blade b, and head a, as shown and described, as and for the purpose hereinbefore set forth.

2. Ears or lugs m m on the head, when the same are used as bearings for eccentrics or other clamping device, in the manner shown and described, as and for the purpose set forth.

3. Handle c, with its reversible sides s' and c'', of different inclinations, in combination with collar s' and the clamping device, heretofore described, consisting of the eccentric d'' and spring e''', arranged in the manner shown and described, as and for the purposes hereinbefore set forth.

137,117.—*Printing-Telegraph.*—CHARLES J. WILEY, New York, N. Y.

Two slotted type-cylinders, one locked, while the other is free to revolve, the locking of either being under control of operator at a certain point in their revolution. Ratchet-wheels, giving step-by-step motion, having teeth on both sides and face of circumference, with proper holding and actuating pawls.

Claim.—1. The combination of the slotted type-cylinders H H with the vibrating arm or bar M, and its prongs m m, operated so as to arrest or release either cylinder, as desired, so that the one released is rotated by the two sets of magnets E E E E, arranged in the same circuit, all constructed and operating substantially as set forth.

2. The vibrating arm M, the horizontally-vibrating plate 9, and the sliding boxes having heads 12, and operated by the revolving fingers or pointers 13, combined with the cylinders and armature-levers O O, constructed and operating substantially as and for the purposes set forth.

3. The combination of the forked pawls 1 1, the ratchet-wheel, toothed on opposite sides, the springs or clicks 2, and detents 3 and 4, for regulating the step-by-step motion, substantially as set forth.

4. The square guide-frame 23, and pressure plate or spring 22, for guiding and regulating the paper ribbon, constructed and arranged substantially as set forth.

137,118.—*Carpet-Fastener.*—ALFRED J. WILLIAMS, Seneca Falls, N. Y.

A curved plate and a flat plate are hinged together. The flat plate is secured to the floor, and is provided with upward-projecting hooks to hold the carpet. The curved plate is turned down to conceal the hooks and the edge of the carpet.

Claim.—The carpet-fastener H, consisting of the plates A and P, joint j, hook h, and screw or nail s, constructed and arranged substantially as herein described.

137,119.—*Toy.*—WILLIAM R. WITHERS, Newark, N. J.

A miniature fan-blast is used to support a pith ball.

Claim.—The use of a miniature fan-blower in combination with a ball or balls, figure, or image, (of light material,) for the purpose of holding the said ball or balls, figure, or image suspended in mid-air by the current or currents of air produced by the said miniature fan-blower, when a sufficient motion is imparted thereto, thus constituting a toy for the amusement of children or others, substantially as hereinbefore described.

137,120.—*Post-Driver.*—ISAAC V. ADAIR, Romulus, N. Y.

The hammer is actuated by a cam on a windlass-shaft, which is driven either by horse or manual power. The windlass is supported in a spring-frame to ease shocks. The frame can be inclined laterally on the rocker bearings to allow the hammer to deal vertical blows, although the wagon should stand inclined.

Claim.—1. In a post-driver, the narrow frame B resting on false bolsters a a and having curved tenoned end pieces d d, constructed, and applicable to the running-gear of a wagon, as and for the purpose described.

2. The windlass-frame D of a post-driver, connected at one end by a hinge-joint, A, and at the other by a spring, i, as and for the purpose set forth.

3. The combination, in a post-driver, of a rocker-frame, B, frame D pivoted thereto, cam and shaft C f, and hammer-shaft E, constructed and arranged substantially as and for the purpose described.

137,121.—*Children's Swing.*—WILLIAM H. ALCORN, West Hoboken, N. J.

The child, by pulling upon the reins, oscillates back and forth in a nearly horizontal plane.

Claim.—The combination of the levers F and pivoted connecting-rods E with the stationary frame A and with the seat or carriage D suspended by pivoted bars or cranks B from said frame A, substantially as herein shown and described.

137,122.—*Brick-Machine.*—RICHARD T. BANTON, New Haven, Conn.

The clay from the pug-mill is fed into molds in the rotating mold-board, and is successively pressed and condensed by plungers, and the brick then ejected by the pusher, all during the onward intermittent rotation of the mold-board.

Claim.—1. The rotating mold-board H, in combination with the successive pressing devices D F G D^1 F^1 G^1 D^2 F^2 G^2, substantially as herein described.

2. The arrangement of the cams C C^1 C^2, K K', and P, the levers D D^1 D^2, L, and R, the bars M m and Q, and the wheel O, and springs E E^1 E^2 and T, for producing the described motions of the mold-board, the pressing-blocks, and the discharging device, substantially as specified.

137,123.—*Air-Pump and Engine.*—THOMAS BEACH, Freeport, Pa., assignor of one-half his right to JOHN C. MCCLELLAND, same place.

To the under side of a revolving plate, in the bottom of the reservoir, are attached, in circular order, a series of air-pumps. Above the revolving plate is a fixed plate, in which are two apertures—one for admitting air from the pumps, the other for supplying air to the pumps—the latter being covered with an inverted air-receiver, communicating with the exhaust of the engine. The stroke of the pistons of the pumps, which are operated by racks and pinions, is so regulated that as the down-stroke of the piston commences the port of the pump will register with the aperture last mentioned, and at the commencement of the up-stroke it will register in like manner with that of the reservoir.

Claim.—1. A series of air-pumps revolving around a common axis, and successively brought under an air-discharge port or ports at the upward stroke of the piston in each, substantially as set forth.

2. A revolving plate arranged between the discharging ends of a series of air-pumps and an air-receiver, in combination with a stratum of water or other suitable liquid, as a check-valve to the pumps, substantially as set forth.

137,124.—*Combined Garden Hoe and Roller.*—EDMOND BLANCHARD, Pocomoke City, Md.

The blade of the hoe is bifurcated at one end, and the other is entire. The divided part is in the form of an arch, and in the rear, at a distance of about the diameter of the arch, is attached a roller of an equal length. The handle is joined at the apex of the arch.

Claim.—A garden implement formed of the hoe A, curved and beveled or twisted plate B, shank or eye C, arms D, and roller E, constructed and arranged in connection with each other, substantially as herein shown and described, and for the purpose set forth.

137,125.—*Cupola and other Metallurgic Furnaces.*—OGDEN BOLTON, Jr., Pittsburg, Pa.

The openings, made by the connection of the pipe to the furnace, are stopped up and sand poured over the end of the pipe to complete the breast of the furnace. With this tapping-pipe the breast can be renewed daily, preventing the hardening or baking thereof.

Claim.—The tapping-pipe d, in combination with the breast b of the furnace, substantially as shown and described.

137,126.—*Clack-Valve for Wooden Pumps.*—AMOS BREED, La Harpe, Ill.

Claim.—The raised rim a of the valve-seat B in connection with the neck or under-band D driven into the end of tube A, substantially as shown, and for the purpose of securing a water-tight joint, and preventing the lodgment of substances under the clack-valve; and I disclaim all other parts.

137,127.—*Marbleized Composition Stone.*—THOMAS CARSON, Brooklyn, assignor to himself and THOMAS F. ATTIX, New York, N. Y.

Process of marbleizing composition stone, &c., by first preparing the surface with varnish to fill all pores, then immersing said surface (after providing it with any desired ground color, by brush or otherwise,) in a bath of water, whereon another color, which is to predominate, ground in oil and (chiefly) Dammar varnish, is floated and broken by rapidly stirring; and another veining color, mixed chiefly with oil, is also floated and broken; and lastly, removing the surface and drying the coating so applied, after which finishing-varnish is applied to render the colors clear and distinct. Or the marbleized finish may be transferred from paper (sized first, to prevent the colors running together,) to

the surface of the composition stone, &c. In this case the process above described is wholly reversed—the veining colors applied by means of the bath first, and the ground color applied last, so that the effect in either case is the same.

Claim.—The process of marbleizing mantles, tables, casings, and panels, made of stone or composition, substantially as above described.

137,128.—*Horseshoe.*—ISAAC DE MOTT, Cannonsville, N. Y.

Claim.—A calk fastened to the shoe by a screw and supported by a lip and doweled thereto, substantially as shown and described.

137,129.—*Combined Wrench and Grappling-Tool.*—SIMON B. DEXTER, Mason City, Iowa.

Can be used as a grappling tool, pinchers, or hand-vise.

Claim.—1. In combination with the jaw-levers A B and wedge-shaped slide F, arranged to operate substantially as described, the swivel and band H and J, ferrule K, handle L, and screw M, arranged substantially as and for the purposes set forth.

2. The spring N, in combination with the slide F, as and for the purposes described.

137,130.—*Grapple.*—SIMON B. DEXTER, Mason City, Iowa.

For raising or turning heavy stones or other bodies in building.

Claim.—1. A grappling-tool consisting of the adjustable levers B B having jaws A A, guide-bar E, and adjustable slides H H, arranged to operate substantially as and for the purposes described.

2. In combination with the inclined slide-bars H H and levers B B, the rollers J J, substantially as and for the purposes described.

137,131.—*Temporary Binder.*—DELOS DUNTON, Carpentersville, Ill.

The paper is laid face down and the bar carrying the adjustable pins inserted through the bottom of the box, when the presser forces the pins through the paper. The package thus formed is placed right side up in the box and the bar D placed underneath, with its spring-arms pressing the clamp-bars together.

Claim.—1. A file or paper-holder which has its sides provided with vertical ribs to prevent the papers from contact with the sides, substantially as specified.

2. A file or paper-holder which has its bottom constructed to receive and support a removable bar provided with pins for the reception of the papers, substantially as specified.

3. One or more pointed and screw-threaded pins, C C, in combination with a paper-file, when the said pins are adjustable and removable, and are arranged to pass through the papers and thereby retain them in the file, substantially as specified.

4. The removable bar B, provided with removable, adjustable, and pointed pins, and with fixed pins or posts, in combination with the removable bar D, provided either with perforations or depressions and with perforated flexible strips, substantially as and for the purposes specified.

5. A combined paper-holder, file, and binder, constructed and arranged to operate substantially as described, and for the purposes set forth.

137,132.—*Combustion-Chamber for Burning Hydrocarbon Vapor.*—CHARLES J. EAMES, New York, N. Y., assignor to MARY E. SMITHE, same place.

Claim.—Mixing-chamber, composed of a series of communicating chambers, or a single mixing-chamber divided by perforated walls, in combination with a surrounding air-chamber provided with means for the admission of combustible gases, substantially as specified.

137,133.—*Core for Casting Stench-Traps.*—MICHAEL GAFNEY, Newark, N. J.

The core is constructed in three parts and arranged for forming the exterior and interior shells.

Claim.—The combination of the core-pieces A, I, and K, and a suitable flask or mold, D, substantially as specified.

137,134.—*Locomotive Spark-Arrester.*—JOSEPH GIBBS, Opelousas, La.

The dust and cinders thrown by the currents of air against the hood fall into the water-tank just beneath.

Claim.—The hood C, composed of the semicircles E and F and conical cover D, on the smoke-stack of a locomotive-boiler, constructed and arranged substantially as shown and described.

137,135.—*Device for Sharpening Scissors.*—THOMAS HALVORSEN, New York, N. Y.

Arrangement of two files under a certain angle, so that by introducing one blade of a pair of scissors held in position by a strong spring, and sliding the same back and forth, the edge is sharpened rapidly and evenly by the files.

Claim.—The scissors-sharpener composed of frame C, spring D, files *b* and *b*, slot *d*, substantially as and for the purpose described.

137,136.—*Machine for Making Spool-Blanks.*—JOHN T. HAWKINS, Salisbury, Vt., assignor of one-half his right to GEO. R. HOLT, same place.

The stick from which the blanks are to be made is placed in a feeding-trough having a reciprocating and vibratory movement, which carries the blank forward to the turning-tool, then withdraws and moves it laterally against the cutting-off saw, which severs the turned blank from the stick.

Claim.—1. The combination of cams K and M with carrier, provided with arms for engaging therewith, the carrier-shaft B, spring R, and revolving cutter, substantially as specified.

2. The combination of guide I′ and rollers H′ with the pivoted vibrating carrier, substantially as specified.

3. The combination of spring H, pivoted lever F, and stop with the vibrating carrier D E, substantially as specified.

4. The combination of spring H and pivoted lever F with clamp G and carrier D E, as specified.

5. The carrier E, provided with a groove and teeth on the sides or edges thereof, as specified.

6. The combination of rest L′, spring K′, and stop-lever *p*′ with the carrier and cutter, as specified.

7. The combination of the brake X′ with the friction-gear W T and its operating mechanism, as and for the purpose described.

137,137.—*Incasing Caustic Alkali.*—GEORGE W. HUMPHREY, Pompey, assignor to himself and J. MUNROE TAYLOR, New York, N. Y.

Claim.—The mode or process herein described of putting up caustic alkali (soda or potash) for sale and use, and preserving it from the action of the atmosphere in air-tight India-rubber envelopes or coverings, substantially as described.

137,138.—*Wagon-Loader.*—JEREMIAH JOHNSON, Iowa City, Iowa.

Within a portable frame is suspended, by hoisting-gear, the platform upon which earth is scraped. When full the platform is elevated, the wagon drawn under it, and the load dumped.

Claim.—1. The loading apparatus, consisting of the portable frame, the elevating and dumping platform, and the apparatus for working said platform, arranged and adapted for loading the platform with a scraper, and for driving wagons, carts, &c., under it, and dumping the earth from it into them, substantially as specified.

2. The arrangement of the platform C, frame A, roller N, chains O, pulleys P, and driving-wheel, substantially as specified.

3. The arrangement, with the doors E and platform C, of the catch-bars F, bolts G, bell-cranks H, rods I, lever K, and handle L, substantially as specified.

4. The combination, with the doors E and a chain, S, connecting them in the manner described, of rod T on the floor of the frame, substantially as specified.

137,139.—*Molasses-Pitcher Top.*—GEORGE P. LANG, Jr., Allegheny City, Pa., assignor to LANG AND LAUSTER, same place.

A pitcher-top constructed with guide-pieces attached to the inside to form a delivery-spout, and the inclined flange or projection to conduct the drip back to the body of the pitcher.

Claim.—The guide-pieces *e e*, placed in a molasses-pitcher top, *a*, so as to form a delivery-spout, *f*, the bottom of which is formed by the inclined flange *h*, the whole being closed in or covered by the lid *c*, substantially as and for the purposes described.

137,140.—*Culinary Boiler.*—RICHARD B. LEWIS, Quincy, Ill.

A cylindrical heating-chamber, communicating with the furnace below, surrounds a cylindrical water-chamber. A boiler and this, in turn, envelops the central cylinder, where the food may be cooked. The amount of heat can be regulated by change of position of the exit-pipe.

Claim.—1. The combination of a food-cylinder, a heating-cylinder surrounding the food-cylinder, and a furnace for applying heat to the heating-cylinder, substantially as set forth.

2. The combination, with heating-cylinder, of the furnace, the breeching, one or more return flues, and a detachable chimney, substantially as set forth.

3. The combination of the heating-cylinder, the food-cylinder, and the connecting-pipe, substantially as set forth.

137,141.—*Sewing-Machine Caster.*—JESSE B. LINCOLN, Providence, R. I., assignor to himself and JAMES M. SAYLES, same place.

The caster of a sewing-machine table or similar article of furniture is locked in position by a peculiar form of brake attached to the swivel of the caster, and having a slight vertical movement, which brake is forced down upon the wheel of the caster by a bent cam-lever turning upon the connecting-rod, and having its lower arm in the shape of a wedge-hook to clasp around the spindle; the sets of casters being connected by rods in the usual manner.

Claim.—The combination of the caster A, brake B, lever C, wedges E E′, and rod D, with or without the adjustable hinge-clamps F F′, as and for the purpose specified.

137,142.—*Doughnut-Mold.*—GEORG MACHLET, Newark, N. J.

Two rims, each provided with a handle, support the two halves of the molds, which are formed of wire-gauze. The molds are connected together by guide-pins.

Claim.—The doughnut-mold, consisting of two half-molds, C, of wire-gauze placed within rims A, having pins *d e* and lug *f* and handles B, substantially as and for the purpose described.

137,143.—*Thill-Coupling.*—JOHN MARTIN, Henry City, Ill.

Claim.—The described means for coupling a draft-iron ball to an axle clip, consisting of open-bottomed lug F and bolt H passing through said lug and ball at right angles to thill, as set forth.

137,144.—*Stop-Cock.*—JOHN P. MERN, New York, N. Y.

On the breakage of the valve-stem the nut attached to the sliding gate can be disengaged therefrom by the removal of the keys.

Claim.—The keys *d*, in combination with the valve A and nut D, substantially as and for the purpose described.

137,145.—*Sizes for Separators.*—BYRON MILLER and MAJOR MILLER, Lowell, Wis.

Plain vertical longitudinal ribs, intersected by inclined transverse ribs, alternating with each other between the longitudinal ribs. Tops of both sets in same plane.

Claim.—A thrashing-machine sieve, having the inclined plates *b* short, the adjacent ones in different planes, and all with their tops in the same plane with the tops of the perpendicular plates *a*, as and for the purpose described.

137,146.—*Water-Wheel.*—JOHN NOLAN, Waddington, N. Y.

The upper portions of the buckets are vertical to the bottom of the chutes and sufficiently tangential to the axis of the wheel to beat right angles to the water columns flowing through the chutes, so that the greatest resistance will be offered to it. Below the chutes the buckets are joined to the outer conical rim, and are then turned backward by an abrupt curve, so that at the lower ends they become vertical and tangential to the inner rim, being in the form of the convex side of a spirally-curved plate on the upper side, by which the water is thrown mainly upon the outer rim after it passes from the place where it acts directly upon the buckets as it emerges from the chutes.

Claim.—The combination of the conical rims A and H, and the buckets F I J, all being constructed and arranged substantially as represented in the drawing.

137,147.—*Machine for Beading Sheet-Metal Vessels.*—CHARLES W. PRIEST, Troy, N. Y., assignor of one-half his right to J. WARREN LAMB, same place.

The lever that carries the knurl or beading tool is attached to a quadrant arm, which forms a guide or support for the lever and gives it a uniform movement.

Claim.—1. In a machine for beading sheet-metal vessels, a swing-lever guided by a quadrant, or its equivalent, in combination with a platform or slide rest, substantially as shown and described.

2. The shoe H, in combination with the elements of the preceding claim, substantially as shown and set forth.

3. The knurl N, constructed as described, in combination with the swing-lever J′ and quadrant-guide, as set forth.

4. The swing-lever J, knurl N, quadrant-guide K, and slide-rests, in combination with a lathe, for the purpose set forth.

137,148.—*Extension Table.*—ABRAHAM REED, Chicago, Ill., assignor of one-half his right to WILLIAM T. COOLEY, same place.

Each side of the table has three slides or extension bars, and the slides on the opposite sides are connected by four rollers, one roller being attached to the outside pair, another to the inside pair, and two rollers to the central pair of bars. This forms a pocket for the jointed extension leaves.

Claim.—The combination of the bars A A¹ A² and depressed rollers *a a′ b c* in an extension table, substantially as and for the purposes specified.

137,149.—*Can-Opener.*—JOHN J. REED, Lyons, Iowa.

A curved blade with convex cutting-edge has upon the back, near the point, a rectangular shoulder. The point pierces the tin to be cut, and the shoulder serves as a fulcrum when the blade is pressed into the tin.

Claim.—A can-opener, A B *b*′, constructed as described, with a curve or edge of blade, and a rectangular notch on back near the point, as and for the purpose described.

137,150.—*Saw-Setting Device.*—JOHAN B. SCHMID, Salem, Va.

Two handles, hinged at their end to U-shaped plates, are provided with narrow wedge-shaped projecting blades, the blade on one handle lying by the side of that on the other. Duplicate blades may be added, and their distance apart regulated by means of nuts placed between them. A thumb-screw in the handle regulates the set of the teeth, and an arched plate projecting from one handle through a slot in the other steadies the movement of the handles.

Claim.—1. The saw-set composed of the handles A B the inclined plates *f g* thereon, and curved or bent plates *a a* for upsetting two saw-teeth simultaneously in opposite directions, as set forth.

2. The additional plates *f′ g′* applied to the saw-set, having the plates *f g*, substantially as set forth.

3. The ears *l l* formed on the handles A B of a saw-set, and provided with the screw *m*, substantially as specified.

137,151.—*Washing-Machine.*—GEORGE SEYMOUR, Boone, Ia.

A bed of alternate fluted rolls and located fluted blocks on its lower rubber, and its upper or moving rubber with fluted cross-sections attached to ends so formed that it is supported by journals resting on a hoop-spring, which is held by a cross-bar on its upper side and serves to give it tension, when in use, by the aid of spiral springs connected with the lever, by which motion is imparted to the machine.

Claim.—1. The combination of the pairs of grooved rollers G and their metallic bearings H and the stationary grooved bars I with the grooved ends B of the tub, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the ring rods or wires Q with the cross-bar O, springs P, and oscillating rubber J K L, substantially as herein shown and described, and for the purpose set forth.

137,152.—*Hoisting-Machine.*—IRA SMITH, Tomhannock, N. Y.

A hoisting-machine, consisting of projecting arm, post, brace, wheels, and belts or ropes, with the crank-wheel, in combination.

Claim.—A hoisting-machine consisting of the parts A, B, and C, wheels F and J, and belts or ropes H and K, with the crank-wheel I, when the same are combined and arranged to operate as and for the purposes described.

137,153.—*Ash-Sifter.*—SAMUEL SMITH, Brooklyn, N. Y.

Claim.—A sieve, C, provided with projecting curved perforated band *h*, a vessel, A, having slot *d*, and a loose hand-lever, *e*, combined as and for the purpose described.

137,154.—*Breastpin-Tongue.*—LEWIS H. SONDREIM, New York, N. Y.

Claim.—As an article of manufacture, a breastpin-tongue consisting of the stem *a* and hinge-socket *b*, said stem being made of harder material than the socket, and provided with a threaded end that makes a corresponding thread in the socket, as and for the purpose described.

137,155.—*Liquid-Measuring Register.*—MORITZ SPRINGWATER, Evansville, Ind.

A float resting on the mash or liquid of a brewery or distillery, and connected by a chain and counterpoise with a sprocket-wheel which is in gear with a suitable registering mechanism, through a spring-ratchet clutch, serves, by every rise of level resulting from an addition to the liquid, to register and indicate the quantity thus added; while the amounts withdrawn from the vats or tubs permit the float to fall without affecting the register.

Claim.—A float, D, chain *i*, weight *j*, loose sprocket-wheel *a*, and spring-ratchet clutch *a d*, combined with the driving-shaft of an indicator mechanism that is turned only when the float D moves upwardly, as and for the purpose set forth.

137,156.—*Printing-Press Feeder.*—ROBERT J. STUART, Yonkers, N. Y.

The feed-table is pivoted and is lowered at the proper time to release the upper sheet from the clamps. A series of short, quick vibratory motions is imparted to the rubbing devices, which detach the sheet and deliver it to the carriers, which grasp and deliver it to the gripers.

Claim.—1. The combination, with the table B of the vibration rubbing-fingers L L and vibrating rollers N N, for separating sheets of paper upon the pile for delivery to a printing or other machine, constructed and operating substantially as described and specified.

2. The combination, with the separating mechanism described, of clamps b^1 b^1 and s^2 s^2, for holding the paper during the process of separating the sheets, substantially in the manner described and specified.

3. The combination, with the clamping and separating mechanism, as described, of a vibrating adjustable table to automatically present the sheets to the separating mechanism, constructed and operating substantially in the manner described.

4. The combination, with the separating and clamping mechanism, of the jaws P P^1 P^2 P^3 to seize and deliver the sheets to the gripers *a a*, substantially in the manner described.

5. The vibrating separating-fingers L L and vibrating rollers N N, operated by the undulating cam E, constructed and operated substantially in the manner described.

6. The combination, with the vibrating table, of the clamp-rod S, so constructed and arranged that the clamps s^2 shall always bear their proper relative position to the pile of paper.

7. The combination of the following elements, viz: A separating mechanism to separate the sheets of paper, a clamping mechanism to hold the paper during the separation of the sheets, and adjustable table for presenting the paper to the separating mechanism, and a delivering mechanism for delivering the sheets to a printing-press, all co-operating together substantially in the manner described and set forth.

137,157.—*Oil for Lubricating from Petroleum.*—JOHN K. TRUAX, Pittsburg, Pa.

A lubricating-oil from gum or wax and undistilled petroleum.

Claim.—A lubricating-oil composed of the herein before described residuary gum or wax and undistilled petroleum, substantially as described.

137,158.—*Fire-Proof Shutter.*—WASHINGTON M. VARS, Westerly, R. I.

The window-cap is made funnel-shaped, to catch and convey a portion of the water thrown on the face of the wall into hollow metallic shutter, which is provided with a discharge valve at the bottom. The recesses are for containing a lock and bolt, and to give access to the valve. A projecting flange surrounds the shutter to make a secure fire-proof joint, and it also affords attachment for the hinges.

Claim.—1. A hollow water-tight shutter, D, open at the top and having a controllable water-discharge at the bottom, as and for the purpose described.

2. The conducting-cap C, in combination with a tank-shutter, constructed substantially as shown and described.

3 A shutter, D, provided with the recesses K L and flange H as and for the purpose described.

137,159.—*Reversible Knob-Latch.*—RODOLPHUS L. WEBB, New Britain, Conn., assignor to THE RUSSELL & ERWIN MANUFACTURING COMPANY, same place.

The latch-hub is spheroidal in outline and mounted within the lock-case so as to be semi-rotated on its vertical axes, whereby the arms of the hub are disconnected from the horseshoe-plate and the latch-head projected so far beyond the face-plate of the case as to admit of its being reversed to adapt the same to a right or left hand door.

Claim.—A latch-hub having a spheroidal outline, mounted within the lock-case so that it may, as usual, be rocked or rotated in its bearings by and with the knob spindle, and also semi-rotated in its bearings independently of said spindle, in combination with a horseshoe-plate and swiveled latch-head, substantially as described, whereby the hub and horseshoe-plate may be temporarily disconnected, for the purposes specified.

137,160.—*Apparatus for Compressing Cotton, Hay, &c.*—FRANCIS WELDON, Kilmorony, Ireland.

A series of press-boxes placed on rails laid transversely upon the platform, to which short legs are attached, the upper ends of which connect with beams and the beams with the follower. The

whole is operated by means of ropes passing around pulleys and the windlass.

Claim.—1. One or more press-boxes, W, mounted upon wheels V, which are guided by rails, in combination with the vibrating shear-legs D, and the beams E, and ram F, substantially as and for the purposes explained.

2. The combination, with the swinging shear legs D D and the beams E, of the windlass G and H, and toe ropes and pulleys J K M N, arranged substantially as described.

137,161.—*Washing-Machine.*—BENJAMIN A. WILLIAMS, Berea, Ohio.

A clothes pounder or washer, constructed with an outside cylinder with chambers over it for springs, which are connected with the working-handle. Within it is the beater or pounder provided with chambers with apertures and valves, through which the water flows in its upward motion and is returned to the tub.

Claim.—The plunger C, partitions D, valves E, shell A, standards I, and springs K, constructed and arranged to operate in the manner substantially as described, and for the purpose specified.

137,162.—*Harvester.*—HIRAM M. YALE, Coldwater, Mich.

The pin which couples the pitman to the cutter-bar is retained in place by a hinged angular plate, which is secured to the inner end of the finger-bar by set-screws.

Claim.—The adjustable plates D, in combination with the hinged plate E, flange G, buttons h, and set-screws *m*, substantially as and for the purposes herein set forth.

137,163.—*Rotary Valve and Variable Cut-Off.*—ROBERT T. P. ALLEN, Farmdale, Ky.

A rotary valve having a chamber whereby the steam-pressure is equalized and the valve balanced, with a cut-off having a sector connecting with a governor for regulating the flow of steam to the engine.

Claim.—The hollow valve C, forming a steam-chest, in combination with the cut-off B provided with teeth *c*, the cogged sector *d*, and valve-seat A, all provided with the inlet and exhaust ports, as described, and operated substantially in the manner and for the purposes herein set forth.

137,164.—*Means for Propelling Boats.*—JOHN S. ANDERSON, Flintville, Wis.

Special combination of parts, whereby steam is applied to operate directly against the water as a motor for boats.

Claim.—The cylinders or boxes G, tubes D, valve-chest F^1, and valve F^2, tubes *g*, and valves E, in combination with the steam-boiler B and boat A, substantially as specified.

137,165.—*Safety Attachment to Hoisting-Machines.*—WILLIAM D. ANDREWS, Brookhaven, N. Y.

Claim.—1. The hook-shaped lips *c c* on or attached to the platform or cab in combination with the T-shaped guides attached throughout their whole length to the guide-posts A A.

2. The combination, with the stationary inclines H H on the platform or cab, the friction-rollers G G and the sliding blocks or wedges F F, and the levers E E, when the connection of the said sliding blocks or wedges with the levers is made by a free connection, substantially as herein described, whereby the sliding blocks or wedges are liberated only by the upward movement of the platform or cab.

3. The combination of the levers E E, the freely-attached sliding blocks or wedges F F, the stops *h h* on the platform or cab, fixed inclined surfaces H H, the rollers G G, the hook-shaped lips *c c*, and the T-shaped guides *b b*, the whole arranged and operating substantially as herein set forth.

137,166.—*Reversible Knob-Latch.*—WILLIAM H. ANDREWS, New Haven, Conn., assignor to MALLORY, WHEELER & COMPANY, same place.

Claim.—1. In a knob-latch in which the arms D are formed upon a yoke around the hub, and with a stud, F, to enter a recess in the rear of the hub, constructing the hub with its opposite sides parallel and the yoke of the arms corresponding thereto, so that by means of the said parallel sides the hub causes the movement of the arms, substantially as described.

2. In combination with the subject-matter of the first clause of claim, the bar G, connecting the arms D D forward of the hub, substantially as described.

3. In combination with the subject-matter of the first clause of claim, the spring *e* upon the stud F, substantially as and for the purposes described.

137,167.—*Reciprocating Steam-Engine.*—AUGUSTUS E. BAKER, Providence, R. I., assignor to HENRY W. GARDNER, same place.

Sliding valves, opened by tappets on shafts placed midway between the chests, are assisted in their closing movement by the excess of steam-pressure on their ends. A two-armed wiper on a rocker-shaft operates the exhaust-valves placed at the lower side of the cylinder. Clearance passages at each end of the cylinder allow the exhaust-valves to be manipulated. A tapering adjustable plug is arranged in the bottom of the air-cushion dash-pots.

Claim.—1. The arrangement of the detachable sliding valves F F, their valve-rods *a a*, and the valve-gear which operates the valves for their opening movements, substantially as herein described, whereby the excess of steam-pressure on the back ends of the valves may be made available to assist their closing movements, as herein set forth.

2. The combination of the two-arm wiper E on the rocker-shaft *k*, the two exhaust-valves *g g*, and their connecting-rod *m*, substantially as described.

3. The arrangement of the clearance-passages G G, the chamber H, the exhaust-valves *g g*, and the heads of the cylinder, substantially as described.

4. The tapering adjustable plug K, in combination with the piston J and air-cylinder L, substantially as described.

137,168.—*Feed-Cutter.*—WARREN S. BARTLE and JAMES GARLOCK, Newark, N. Y.

The bent lever, which carries the cutter-blade, is attached to a rock-shaft by an angular fitting and a bolt. The knife is adjusted to the throat by a cam-collar on the rock-shaft and a rib or lug. The length of cut is governed by a reversible gage-plate secured to the rock-shaft.

Claim.—1. The cam-collar G and the rock-shaft D, provided with rib *d*, in combination with the bent knife-lever E and the knife *b*, all constructed substantially as and for the purposes set forth.

2. The bent knife-lever E, with a projection, *c'*, at the end, having an angular recess, in combination with the rock-shaft D, having a corresponding projection, upon which the recessed end of the lever is secured by a bolt, all substantially as set forth.

3. The reversible and bent gage-plate H', constructed as shown, with a forked end, and secured to and adjustable upon the lever E by means of the washer *h* and bolt *i*, substantially as set forth.

137,169.—*Machine for Opening, Smoothing, and Guiding Fabrics.*—WILLIAM BIRCH, Manchester, England.

The fabric passes between the pairs of chains, which smooth it from center to selvage and thence under the central one of the corrugated bars. These bars are pivoted centrally and connected with the chain-carrying arm by means of elbow-levers, so that when the fabric deviates from a straight line the bars will turn and, through the levers, will move the chains and cause one pair to gripe the fabric harder than the other and draw it in its proper position.

Claim.—The combination of the two pairs of endless chains *q*, both pair running from the center outward, the two pairs of bars *w x*, the two two-armed levers *y z*, the plates *b'*, the jointed arms *c'*, and corrugated bar *d'*, all constructed and operating together substantially as described.

137,170.—*Machine for Shearing and Booking Tobacco.*—INGHAM W. BIBBING, Philadelphia, Pa., and JOHN S. M'CUNE, Camden, N. J., assignors to said BIBBING, JOSEPH O. CUTHBERT, Haddonfield, and LOUIS NORRIS, Camden, N. J.

The elastic portion of the rolls presses the leaf without injury to it, while the metallic portion flattens the stem.

Claim.—1. The combination of the yielding-rolls B B, having a middle portion, *a*, of metal, for rolling down the tobacco stems, substantially in the manner above described.

2. The combination of the shears J and J' with the rolls B B, for shearing off from the stems any remaining portions of the stalks, substantially as and for the purpose set forth.

137,171.—*Hydraulic Motor.*—BORACH ALBERT BLOCH, Paris, France.

The buckets of an overshot-wheel are suspended from pins or trunnions on the fellies of the wheel-caps. Inside of each cap is a circular plate, provided with slots in which slide pins, attached to the sides of the buckets, so that by a slight movement of the plates the angle of the buckets and the motion of the wheel are exactly reversed. The water falls on the wheel from either of two channels, each provided with two sets of cocks, thus enabling the operator to direct the water to either side of the wheel, as necessary.

Claim.—1. The combination, with an overshot-wheel, of a series of supply-pipes, each provided with a cock, and arranged, substantially as set forth, so as to regulate the quantity of water delivered to the wheel at different points.

2. The pipes or channels *c*, each provided with two series of cocks inclined in opposite directions, for the purpose specified.

3. The combination of a series of buckets, *a*, adapted to each other, as described, with a plate or plates, S, or equivalent device, for simultaneously reversing the whole series of buckets.

137,172.—*Saw-Filing Machine.*—GEORGE BLYTHE, Chillicothe, Mo.

The saw is clamped at the point of contact with the file. A curved bar, having grooves cut at certain distances apart, form guides for the file-frame. The center of the arc is located at the point where the line of travel of the file crosses the saw-clamp.

Claim.—1. The yokes C C carrying the wooden pegs P P, in combination with the set-screws D D and bars B B', substantially as shown and described.

2. In a saw-filing machine, the curved bearing-bar G provided with the grooves *g*, and having one end turned abruptly, and continues toward the center in nearly a radial line, terminating near the clamping-point, where its under side rests upon the bar B, as specified.

3. The guide H, having the tongue A and downward-projecting bolt A^2, in combination with the bar G, block F, and screw-shaft E, constructed, arranged, and operating substantially as shown and described.

137,173.—*Apparatus for Pitching Casks.*—FRIEDRICH BRENNER, Cincinnati, Ohio.

The machine is provided with three lines of rollers, arranged with one line at the top and one upon each side of the same, which last two lines are provided with screw-threads upon their peripheries in such a manner as to impart to the cask a lateral as well as rotary motion.

Claim.—A beer-cask pitching-machine, having revolving rollers C on which the cask rests, one or more of the rollers having a screw-thread or threads, *d*, the whole being arranged and operated substantially as and for the purpose specified.

137,174.—*Apparatus for Exhausting and Washing Gas.*—CHARLES H. BROWN and JOHN J. THOMAS, Philadelphia, Pa.

Low steam or water, or both, are introduced into the downward-extending portion of the discharge-pipe through suitable jet-tubes in such a manner that the jets will discharge in a downward direction.

Claim.—In combination with the vertical or downward-projecting portion of the discharge-pipe C the jet-tubes D, constructed and arranged to discharge steam or water, or both together, into the said discharge-pipe C, substantially as hereinbefore set forth and described, and for the purposes specified.

137,175.—*Portable Fountain and Lawn-Sprinkler.*—RUSSELL BRUSIE, New York, N. Y.

On the outer ends of the revolving arms are secured perforated caps, the perforations or orifices in which vary in number from two to five, and in their angles of inclination from ten degrees to sixty degrees. The arms are also perforated. The water issuing from the arms sprinkles a circle close to the base of the fountain, while that issuing from the perforated caps is thrown in concentric circles, one arm throwing beyond the other, according to the inclination of its perforations.

Claim.—In a revolving lawn-sprinkler, a series of discharge-orifices having an inclination varying with its different arms and of variable number, substantially as shown and described.

137,176.—*Thill-Coupling.*—WHEELER CABLE, Boston, Mass.

The spring is concave on both surfaces, and when compressed flattens the arch and forces the rubber more tightly against the shaft-iron.

Claim.—The rubber cushion or spring, formed with the concave *c* in addition to the recess *b*, substantially as and for the purpose set forth.

137,177.—*Washing-Machine.*—HENRY H. CASE, Berea, Ohio.

A wringer-roll is attached or connected to the upper side of the main cylinder by uprights with slots to allow upward play for the roll. A wash-board, on the under side of the cylinder, is arranged with two rolls and ribs. A corrugated roll is sustained by a coiled spring against the cylinder.

Claim.—1. The wash-board D with its ribs *d*, rollers d^2, and springs d^3, arranged substantially as shown and described.

2. The wringer G journaled in the ends of the bent and coiled elastic rods *g* and having a vertical play in the slots *s* upon the drum B, substantially as shown and described.

137,178.—*Spring Butt-Hinge.*—HENRY A. CLARK, Boston, Mass.

In the interior of the hinge-knuckles cams are arranged for raising and lowering the gate or door when it is operated. One cam is fixed upon the pintle part and the other slides up and down the inner surface of the knuckle, guided by V-shaped lugs running in V-shaped slots. An inserted coil spring forces down the sliding cam, and thus aids in closing a door or gate.

Claim.—The knuckle portion D of the leaf A of a hinge provided with a spiral cam-edge, *o*, in combination with the slide *f* having V-shaped projections *g* adapted to similar-shaped recesses in the knuckle portion, and with a spiral cam-edge, *n*, and a spring arranged beneath the slide, all arranged to operate substantially as described.

137,179.—*Treadle for Sewing-Machine.*—CHARLES F. CLOUGH and JESSE B. LINCOLN, Providence, R. I.; said CLOUGH assignor to WHIPPLE V. PHILLIPS, Greene, R. I.

Claim.—1. The combination of a rocker-plate with foot-plates, which are adjustable with relation to the fulcrum, as described, whereby the treadle may be operated with variety of movement, as and for the purposes specified.

2. The combination of a concave-faced rocker-plate with foot-plates, which have a convex bearing-surface fitted to the rocker-plate and adjustable thereon, substantially as described.

137,180.—*Kiln.*—RALPH CONNABLE, Jackson, Mich.

The floor of the kiln is made of bricks, each of which has a tapering cavity in one side. The bricks are set on edge so as to form draft-passages, which, having the largest opening below, cannot easily be clogged up.

Claim.—1. The brick F, having a tapering cavity in one side, substantially as specified.

2. A perforated floor of a down-draft kiln, built of bricks F, which are constructed and arranged substantially as specified.

137,181.—*Indicator-Lock.*—EDWARD A. COOPER, Lancaster, N. Y.

A lock in which a numbered wheel is connected with the mechanism of the lock so as to be moved one degree each time the lock is opened and indicate the number of times the lock has been opened, by exposing a different number or character through an opening in the lock-case. A vibrating arm is coupled to the locking-dog by a link in such manner that the dog may be moved by the hasp, in the act of closing, without affecting the vibrating arm, while the movement of the arm, by the action of the key upon its cam-face, will cause the dog to be withdrawn from the hasp and the numbered wheel to be moved one degree, thus indicating that the lock has been opened.

Claim.—1. In the combination with the hasp and locking-dog of a vibrating arm, coupled to the locking-dog by a link, in such manner that the dog may move independently of the arm, while the latter, when moved by the action of the key upon its cam-face, will necessarily withdraw the locking-dog, substantially as and for the purposes set forth.

2. The combination, with the locking-dog C and pivoted arm D, provided with spring-pawl *f*, of the indicator-wheel G, sliding detent-disk K, and key L, substantially as herein before set forth.

3. The combination, with the indicator-wheel G, provided with notch *e*, of spring-lever M, arranged on the plate A, for locking the indicator-wheel, substantially as hereinbefore set forth.

4. The combination, with the indicator-wheel G, locking-lever M, arm D, and detent-disk K, of a through-key, T, for disengaging the lever M and unlocking the lock, as hereinbefore set forth.

137,182.—*Measuring-Funnel.*—THOMAS E. CROPPER, Suffolk, Va.

A vertical plate within the funnel, extending from the handle side to the center, is graduated to indicate the varying measures of capacity at different levels, and also serves as the support for the thumb-lever, central valve stem, and valve.

Claim.—1. The plate C, extending from one side of the funnel inward to the center, and provided with graduating-marks extending across its face, substantially as shown and described, and for the purposes set forth.

2. The combination, with a funnel, of a graduated plate, C, valve D, rod *b*, lever E, spring *f*, and spring-hook G, all constructed and arranged substantially as and for the purposes herein set forth.

137,183.—*Machine for Skiving and Splitting Leather.*—PERLEY D. CUMMINGS, Portland, Me., assignor to THE SHOE-MACHINERY MANUFACTURING COMPANY OF CONNECTICUT.

A rotary disk-knife is supported upon a rotating spindle, and is adapted for either skiving or splitting leather. A pair of feed-rolls, mounted one above the other, and driven by suitable belting and gearing connections, feed the stock forward underneath the lower roll, the upper split portion returning between the rolls back upon the table, the lower portion passing under the knife.

Claim.—1. The combination of the horizontal disk-knife at the top of the rotary spindle, the table *b*, and the pivoted or tipping plate *k*, the plate having the edge-guide with its gage *n*, and the yielding bed-spring *x*, all substantially as shown and described.

2. In combination with the disk-knife mounted and rotating as described, the gage-bar *q*, bed-springs *x*, and feed or draw rolls *s t*, substantially as shown and described.

3. In combination with the disk-knife mounted and rotating as described, the rotating and reciprocating sharpening roll or cylinder, arranged and operating substantially as described.

137,184.—*Machine for Printing and Embossing Skirts.*—HENRY J. DAVIES, Brooklyn, N. Y., assignor to JAMES G. BANNETT and ANDREW H. SMITH, same place.

Conical printing, embossing, and impression rollers for printing and embossing articles of circular form. The feed-table is arc-shaped, and has a corresponding guide on its outer edge.

Claim.—The combination of one or more conical printing or embossing rollers, a conical impression-roller, an open-sided frame supporting the said rollers, and a feed-table having an arc-formed guide, the whole arranged and operating substantially as herein described, for the purpose set forth.

137,185.—*Fanning-Mill.*—LYMAN H. DECKER, Sauk Centre, Minn.

Frame made square, part thereof forming fan-drum. Delivery-spout hung on shaking-rod, and made reversible.

Claim.—1. In a fanning-mill, a square or rectangular drum, D, surrounding the fan, substantially as and for the purposes herein set forth.

2. The spout J hung upon a shaking-rod, *h*, and provided with a central longitudinal partition, *d*, substantially as and for the purposes herein set forth.

137,186.—*Combined Percussion and Time Fuse for Shells.*—ELLIS DRAKE, Stoughton, assignor to himself and JOHN S. SMITH, Leicester, Mass.

Special construction of fuse-stock and percussion plunger, adapted to each other, and having combined therewith a spring-stop and a time-fuse.

Claim.—A fuse-case provided with the grooves *a' a'*, in combination with the plunger F, having spurs or legs *c c* to receive percussion-caps, and provided with the retaining-spring *s* adapted to a groove or slot, *f*, in the fuse-case, all arranged to operate substantially as described.

137,187.—*Buffing-Mandrel.*—GEORGE B. DUNHAM, Lynn, Mass., assignor to JOHN G. BUZZELL & CO., same place.

A wooden roller having an abrasive covering is divided longitudinally and centrally. The mandrel is provided with screw-threads and nuts having concave faces, which correspond with the conical ends of the wooden roller and hold the sections together.

Claim.—1. In combination with the shaft A, the buffer-roller B divided longitudinally and centrally, and its sections connected together at one side by means of the elastic hinge C, substantially as and for the purpose specified.

2. In combination with the divided roller B and felt covering E, the metal flanges D attached to said roller, and provided with the perforations *d*, substantially as and for the purpose set forth.

3. In combination with the divided roller B provided with conical ends, the nuts F made concave upon their inner faces and fitted upon the threaded portions *a* of the shaft A, substantially as and for purpose shown.

4. The shaft A provided with the threaded portions *a*, the divided roller B having conical ends and covered with felt E and abrasive material G, and the nuts F having conical inner faces, when said parts are constructed and combined substantially as and for the purpose specified.

137,188.—*Loom Take-Up Mechanism.*—SAMUEL ESTES, Newburyport, Mass.

To allow the cloth-roller to rotate back a short distance when the weft breaks. The shaft of the stop-motion carries a detent-pawl, between which and the impelling-pawl is arranged a slotted stop-pawl working on a stud upon the frame. A link connects the detent and actuating pawls, so that the stop-motion shaft, when operated, raises both from the ratchet-wheel, which is thereby released and allowed to move back a distance corresponding with the length of the slot in the stop-pawl. The three pawls are also so arranged that with one hand the workman can easily disconnect them all from the ratchet-wheel.

Claim.—The slotted stop-pawl G, lifter O, and draw-pawl C, constructed as set forth, and arranged as described, with the main pawl F and with the ratchet B arranged with the cloth-roller H and connected therewith by gears, all as specified.

137,189.—*Automatic Fan.*—WILLIAM FAY, New Orleans, La.

The fan-stock and its counter-weight are both made adjustable upon the rock-shaft.

Claim.—The operating mechanism herein described, which is substantially that of the clock, in combination with a rock-shaft having a series of perforations, *m m*, fan M′, and balance-weight O, the whole being constructed and arranged to permit of the fan and weight being adjusted on the rock-shaft, as described, and for the purpose specified.

137,190.—*Combined Sail and Marine Drag.*—THOMAS M. FLEETWOOD, Savannah, Ga.

A boat's sail has secured to its head or upper edge a light bar of metal, which acts as a yard. When used as a drag, the mast is unshipped, lashed to the foot of the sail, and a line attached. A bag is formed by tuck-ropes at the head of the sail, and the weight of the metal keeps it just below the surface of the water.

Claim.—The combination of the spar A, constructed to form a mast, the sheet or sail B, the metal bar C, and the tuck-ropes *d d*, substantially as and for the purpose herein set forth.

137,191.—*Bedstead.*—FREDERIC G. FORD, Bridgeton, N. J.

Auxiliary hinged or pivoted legs are attached to the side rails to sustain them when detached at the ends, and connecting-rods bind the two side rails together.

Claim.—The combination of the hinged or pivoted legs D D on the rails C C, and one or more connecting-rods, G, substantially as and for the purposes herein set forth.

137,192.—*Machine for Rounding and Backing Books.*—ROBERT F. FOSTER, THOMAS S. BAYLIE, and JAMES HARBIN, Washington, D. C.

The book is placed upon the feed-table, which, moving forward, carries the back of the book between two forming-rollers, while the mandrel concaves the face. The book then passes to the pressing-rollers, and finally between clamps forward to the backing-roller.

Claim.—1. The rounding-rollers E, operating substantially as herein described, in combination with a form or mandrel and a supporting table or holder, for the purpose specified.

2. The combination of changeable rollers and forms or mandrels for rounding books of different thicknesses.

3. The rounding form or mandrel D erected on the feeding-table B to operate in connection therewith to introduce the books between the pressing-rollers, substantially as set forth.

4. The pressing-rollers F, in combination with the rounding-rollers E, for receiving the rounded books so as to preserve their form, and for expressing the air so as to solidify the books, as set forth.

5. The clamp G G^2, arranged and operated substantially as described, in combination with the pressing-rollers F and backing-roller J, for holding the rounded books during the backing operation.

6. The stop-gage H, arranged and operating substantially as described, for the purpose specified.

7. The combination of a feeding-table, B, a rounding form or mandrel, D, rounding-rollers E, pressing-rollers F, a clamp, G G^2, and a backing-roller, I, arranged and operating substantially as herein described, for rounding and backing books by automatic machinery at one continuous operation, as set forth.

137,193.—*Process and Implement for Expelling Air from the Composition from which Artificial Stone is Molded.*—GEORGE A. FREAR, Chicago, Ill., assignor of one half his right to CHARLES HOLLAND, same place.

Claim.—1. The process herein described of expelling the air from the plastic mass from which artificial stone is molded, by perforating the mass in the mold with numerous small holes, and jolting or striking the mold or tamping the mass, substantially as described.

2. The instruments represented in Figs. 1, 2, and 3, substantially as and for the purpose described.

137,194.—*Kiln for Drying Malt, &c.*—JOSEPH GROMEN, New York, N. Y.

Improvement on his patent of September 17, 1867. The floors are made of independent perforated and flanged sections, having spaces at their edges for passage of air. Each section is supported by a rock-shaft provided with crank, &c., to secure an oscillating motion by means of a tappet-shaft. With the floor slides are combined with spring-bolts, adjusted automatically by cams on the tappet-shaft, to lock the alternate floors while the others are tilted. The charging-truck depends a little into the top of the kiln, and its bottom has partitions with tilting floors to correspond with the sections of the drying-floor.

Claim.—1. The perforated and flanged sections a^1 of the floor B, each mounted upon its own shaft b^1, for operation in connection with the tappet-shaft *p*, as herein shown and described.

2. The floor-tilting slides *j j′* and bolts *m m′*, in combination with the tappet-shaft *p* and with the sectional floors B, so that the sections of the floors are turned in succession and then returned to their horizontal position, substantially as described.

3. The truck C supported by rails on the kiln A, and divided into a series of partitions, *e e*, and depending within the kiln, as described, for operation in connection with the sectional and tilting floors *a a*, substantially as herein shown, for the purpose specified.

4. The arrangement of air-channels formed between the floor-sections *a* by means of flanges a^2 b^2, or their equivalents, substantially as and for the purpose set forth.

137,195.—*Dispensing Apparatus for Soda-Water.*—WILLIAM GEE, New York, N. Y.

A swinging arm furnished with a cock, whereby the soda-water may be delivered from the apparatus in proximity to the sirup with which it is to be flavored. Also, in combination with the draft-arm, of a series of sirup vessels or cocks arranged in an arc of a circle concentric with the point from which said arm swings, whereby the arm may be shifted to bring its outlet-orifice in a position adjacent to the sirup-outlet, so that both the soda-water and its flavoring-sirup may be delivered into the tumbler at the same time. A tumbler carrier or guide is combined with the draft-arm.

Claim.—1. The swinging draft-arm for soda-water apparatus, substantially as specified.

2. The circularly-arranged series of sirup cocks or vessels, in combination with the draft-arm, substantially as and for the purpose herein set forth.

3. The tumbler guide or carrier *h i*, in combination with the draft-arm, essentially as and for the purpose specified.

137,196.—*Self-Tamping Torpedo.*—MONTROSE GOTHAM, Oil City, Pa.

Claim.—1. The combination of the blocks *g g* with conical winged wedges *c* and rods *i*, arranged parallel with the sides of the wedge, so that the raising of the blocks contracts the diameter of the ping, substantially as shown and described.

2. The side wedges *c c*, when arranged on opposite sides of cone *c* so as to maintain an even pressure upon blocks *g g* upon the explosion of the torpedo, substantially as shown and described.

3. The combination of the cord *o* with the subject-matter of the foregoing claims, whereby the torpedo *b* and wedges *c* are suspended, substantially as shown and described.

137,197.—*Carriage-Spring.*—CHARLES S. S. GRIFFING, Salem, Ohio.

In combination with an elliptic spring, two or more guide-rods are arranged parallel to one another in vertical positions, and surrounded by rubber cylinders, that the lateral or vertical displacement of the spring will be prevented.

Claim.—An elliptic carriage-spring, A, in combination with the vertical guide-rods, two or more, B B′, elongated bearings D D′, and rubber springs E, substantially as and for the purpose specified.

137,198.—*Torpedo for Oil-Wells.*—ALEXANDER HAMAR, Philadelphia, Pa.

The plunger fires the charge and the bullet ruptures the casing, causing the two explosive substances to mingle and detonate with great violence.

Claim.—1. In a torpedo, the combination of separate charge-chambers, containing substances explosive only when commingled, and a cartridge-chamber, the projectile from which, when fired, ruptures the walls of the charge-chambers, commingles the substances therein contained and produces an explosion, substantially as set forth.

2. The combination, in a torpedo, of a cartridge carrying a projectile, a separate charge-chamber, and a compressed air-chamber to supply oxygen to the explosive substances, substantially as set forth.

137,199.—*Sewing-Machine for Quilting.*—JOHN HAPPE and WENZESLAUS NEWMAN, New York, N. Y.

A straight-line needle-bar is combined with a double needle-bar adapted to sew in zigzag and curved lines. The ends of the shaft carrying the cam-disks, which give the rising and falling movement to the double needle-bar, are arranged to slide in tubes to allow of a lengthwise reciprocation corresponding with a similar movement of the double needle-bar, and by means of these tubes and suitable crank connections the shaft above referred to actuates the shaft carrying the cam-disks, which reciprocate the straight-line needle-bar vertically. By means of a stair-shaped tappet, to regulate the movement of the feed-motion pawl, the needles are moved in curved lines.

Claim.—1. The tubes *t* and cranks *v* s^0, connected by rods *w*, in combination with the shaft E, which imparts motion to the traversing needle-bars F F′, and with the shaft M, which imparts motion to the rising and falling needle-bar O, substantially as set forth.

2. The combination of a curved or stair-shaped tappet, f^0, with the feed-pawl f^0, and with the traversing needle-bars F F′, substantially as and for the purpose shown and described.

137,200.—*Vapor-Engine.*—JOHN F. HASKINS, Fitchburg, Mass.

The cylinder is provided with a double-headed piston, one head working in one part of the cylinder and the other head in the other part of the cylinder, the two heads being of different diameters and the two parts of the cylinder of correspondingly different diameters for the respective vapors—vapor of water and a vapor evolved from a highly volatile liquid. The two parts of

the cylinder are separated by an annular recess, which receives the liquid condensed from the upper part of the cylinder and prevents such liquid from cooling the piston head of the lower part of the cylinder, it being drawn off by any suitable device.

Claim.—The cylinder made with the two piston-spaces *a b*, having between them the condense recess *d*, substantially as shown and described.

137,201.—*Sad-Iron.*—JOHN HEWITT, Pittsburg, Pa.

A reversible sad-iron, with one face polished in ordinary form, having an opposite face inclined or tapering, extending in an angular direction and form from the center to its point.

Claim.—The reversible plate A having one face, D, flat and finished as a sad iron, and the other face, D′, tapering from a point at or near its center so as to leave a polishing ridge, *d*, extending entirely across the plate and about midway thereof, substantially as described, as and for the purpose specified.

137,202.—*Carriage-Jack.*—DAVID HIESTAND, Pughtown, Pa.

Improvement in carriage-jacks, consisting in a spring-catch attached to the stock, which holds the lever in position and renders it stationary while the wheel is being removed.

Claim.—The spring-catch D, in combination with stock A and lever C, substantially as shown and described.

137,203.—*Combined Register and Stove-Pipe Thimble.*—CARLTON HILTON, Lockport, N. Y.

The register is provided with two operating-rods, one being for use in the room above and other for use in the room below the thimble.

Claim.—As a new article of manufacture, the combined stove-pipe thimble and register shown, consisting of the cylinders A and B, the heads C and D, the sliding plate E and the operating-rods G and H, substantially as and for the purpose specified.

137,204.—*Casting Bottoms on Sheet-Metal Vessels.*—ROBERT J. HOWDON, Cincinnati, Ohio.

The patterns are constructed to facilitate the removal of the sand from the surface upon which the bottom is to be cast.

Claim.—1. A pattern for molding and casting bottoms on sheet-metal vessels, consisting of the disk D, flanged rim *d e*, and ring *f*, arranged and acting substantially as and for the purpose specified.

2. In combination with the elements of the first clause, the ear F and supplementary strips *i i′*, substantially as and for the purpose described.

137,205.—*Sad-Iron.*—WILLIAM L. HUBBELL, Brooklyn, N. Y.

The iron has two smoothing faces, set at an angle to each other. At each end are inlets for gas and air. A wire helix, placed between the upper and lower shell of the device, allows the currents of air and gas to pass upward, but retains the flame.

Claim.—1. Two sad irons of different shapes or sizes, united together at an angle to each other and provided with a handle, as and for the purposes set forth.

2. The double sad-iron, formed of the hollow shells *a b*, with air and gas inlets at both ends, and constructed substantially as specified, so that the flame burns beneath the inclined shell, as set forth.

3. The double hollow sad-iron separated into a mixing-chamber and a flame-chamber by a division within the hollow shells that allows the air and gas to pass through, but retains the flame above such division, as set forth.

137,206.—*Washing-Machine.*—FLETCHER HULET, Berea, Ohio.

A washing-machine constructed with a center plain cylinder, around which is appended a spring, at the lower end of which is attached a roll. On its upper end a roll of similar form, and a rubber or wash board corrugated back of it, closely connected with the cylinder by the operation of the spring, and motion communicated by an ordinary crank to the center shaft of the cylinder.

Claim.—The springs C C, rollers E F, and wash-board G, as arranged to co-operate in combination with the cylinder B, provided with a bar, H, and box or tub A, in the manner substantially as and for the purpose specified.

137,207.—*Middlings-Purifier.*—ANDREW HUATER and CHARLES E. WHITMORE, Quincy, Ill.

Wire-cloth and bolting-cloth on sieve, former imparting vibration to latter; sieve suspended and reciprocated so as have an up-and-down and to-and-fro movement; vibrating trough feeding over its side to the screen in an even sheet across whole width; two fans, adjustable so that point of meeting and deflection upward of the blasts can be regulated.

Claim.—1. A bolt or screen, B, composed of wire and bolting cloth, arranged one above the other, substantially as and for the purpose set forth.

2. The combination, with the bolt or screen B of a middlings-purifier, of the cams D, vibrating levers E, and springs O, for imparting a vibratory and percussion movement to said bolt or screen, as described.

3. The combination, with the bolt or screen B, of the inclined suspending-links C, and the mechanism for vibrating the bolt, substantially as described, whereby a rising-and-falling as well as a reciprocating or vibratory movement is imparted to said bolt, as described.

4. A vibrating feed-trough, K, or the equivalent therof, for receiving, leveling, and spreading the middlings or other materials discharged therefrom, substantially as described.

5. The combination of the feed-trough with the bolt or screen B for spreading the middlings evenly across the receiving end of the bolt or screen, substantially as described.

6. The combination, with the bolt or screen B, of the two fans for producing counter currents of air, substantially as and for the purposes set forth.

137,208.—*Duplex Railroad Ticket.*—THOMAS A. JERR, Buffalo, N. Y.

Claim.—A folded duplex ticket, each member or half of which is provided with a corresponding and coincident series of amounts, names of months, and figures representing the days of the month, and adapted to be punched, as described, and having also a blank space for the terminal station, the initial station being printed or written, as hereinbefore set forth.

137,209.—*Book of Railroad-Fare Tickets.*—THOMAS A. JERR and LOUIS BRUSH, Buffalo, N. Y., assignors to THE AMERICAN DUPLEX-TICKET COMPANY, same place.

Claim.—1. In books of duplex railroad tickets, a cover having delineated upon it the book number and a system of dates, whereby a punch mark or marks will indicate the time of delivery or both the delivery and return, and the detached cover thus punched operates as a record of the transactions, as between the agent and conductor, substantially as hereinbefore set forth.

2. In such a book, the two covers carrying the data above set set forth, whereby one punched and detached cover operates as a receipt therefor, and the other attached cover as a credit for its return, substantially as hereinbefore set forth.

137,210.—*Table-Leaf Support.*—ANDREW C. JOHNSON, Rockford, Ill.

The supporting-bracket is made in two pieces for convenience in connecting with the supporting-arm. The outside piece of the bracket is provided with an arm extending below the supporting-arm, having at its end a pin, around which is secured a spiral spring, the other end of the spiral spring being secured to the lower side of the supporting-arm. To the table-rail is fastened a metallic plate, having a flange located so as to receive the lower end of the supporting-arm.

Claim.—The bracket C provided with the arm C′, in combination with the pivoted arm or latch D and spiral spring E, arranged and operating substantially as described.

137,211.—*Door-Bolt.*—JOHN JONES, New York, N. Y.

The bolt-plate is provided with a slot enlarged at both ends, and the stem of the knob or thumb-piece which passes through the slot is flattened so that, by a partial rotation of the knob, the bolt may be locked when drawn in or when thrown out.

Claim.—The slot in the plate E, enlarged at both ends, and the rotary flattened stem D, in combination with the bolt B, spring C, and slotted tube A, substantially as herein shown and described.

137,212.—*Horse Hay-Rake.*—JOHN F. KELLER, Hagerstown, Md.

The rake-head is the front side of a frame, which is pivoted to arms in rear of the main axle.

Claim.—1. The rake-head D, in combination with the arms *d* d^2, lift-bar D′, and bars C C, substantially as and for the purpose specified.

2. The combination of the rake-head D with transverse grooves for the teeth and keepers F F and teeth G G curved or affixed thereto, substantially as and for the purpose set forth.

137,213.—*Mucilage.*—ADRIAN KLOCZEWSKI and DEMETRY MIKELEFF, Washington, D. C.

A compound for causing paper, leather, wood, &c., to adhere to the surfaces of their or similar substances.

Claim.—1. The improved mucilage, consisting of gluten with acetic and tannic acids, substantially as described.

2. The combination of gluten with acetic, tannic, and sulphuric acids and chloride of calcium, in the manner described.

3. The combination of gluten with acetic, tannic, sulphuric, and carbolic acids and chloride of calcium, in the manner described.

137,214.—*Bed-Urinal for Medical Purposes.*—JONATHAN R. KNIGHT and JOSEPH P. COBURN, Greenfield, Mass.

The vessel is constructed in the form of a hollow cone, and inclosed at its upper end by a cover permanently attached, and at the center an opening within which is secured a metallic pipe extending downward into the vessel. The small end of the vessel is open, and communicates, through a flexible pipe, to a suitable receiver, so that the vessel may be placed within the bed in a convenient position to enable it to receive the contents without the patient sitting up.

Claim.—1. The reservoir A, provided with the cover B, the opening C, and the pipes D and *d*, and connected with a suitable vessel by means of a flexible pipe, E, substantially as and for the purpose specified.

2. In combination with the reservoir A, constructed as described, the pipe H provided with the flaring mouth *h* and lip *h′*, substantially as and for the purpose shown.

137,215.—*Governor for Gas-Exhausters, &c.*—RICHARD KOCH, New York, N. Y.

A bellows-valve in a case is connected at its lower end with a pipe, through which the gas, &c., enters, and is provided at its upper end with a spring-fork. This fork engages with a lever that connects to the throttle-valve of the engine and regulates it. Combined therewith is an alarm which is operated by a projecting pin that strikes against the edge of the case.

Claim.—1. The rod F, constructed with two spring-jaws, *b b*, the shanks of which are curved at their lower ends, in combination with a bellows-valve, A, a hood or cross-bar, E, and with the

throttle-lever G, the whole constructed and operating substantially in the manner set forth.

2. The rod F provided with the pin *f* and the bellows-valve A, in combination with a suitable alarm, substantially as and for the purpose described.

137,216.—*Dummy-Engine.*—MATTHEW H. KOLLOCK, Philadelphia, Pa.

The boxes of the car-wheel axle move in curved bearings concentric with the pinion, so that the axle of the latter shall at all times be equally distant from the car-axle.

Claim.—1. The arrangement of the pinion D either above or below the horizontal line of the car-axle, but parallel therewith, to allow the spring to be independent of the axle, and still keep the pinion in gear.

2. The combination of the pinion D, arranged as described, and the concentric bearings of the car-wheel axle.

137,217.—*Soldering Apparatus.*—CHARLES B. KOONS, Philadelphia, Pa.

A soldering iron and heater combined with a reservoir or reservoirs for containing solder and resin.

Claim.—1. A soldering-iron and a heater for the same combined in one instrument, substantially in the manner described.

2. The combination of the said soldering-iron and heater with a reservoir for containing solder, or reservoirs for both solder and resin, or other flux.

137,218.—*Washing-Machine.*—JULIUS H. KRUSE, New Melle, Mo.

A washing-machine constructed in form of a cylinder working within a boiler upon journals, with its inner surface or diameter covered with cylindrical ribs, open in opposite directions, that the water may be distributed upon the clothing at any angle, and its opening or cover held in position by a spring-bolt.

Claim.—The combination and arrangement, in the rotary cylinder of a washing-machine, of the open ribs F F', having mouths presented alternately in different directions, the door G, and spring-bolts I, substantially as and for the purposes set forth.

137,219.—*Musical Instrument.*—WILLIAM LEIGH, Bridgeport, Conn.

Claim.—In a musical instrument having a key-board, substantially as set forth, a wooden case having a mirror or glass plate, E, inserted immediately over the keys, with or without the key-slip D of glass mirror or colored glass, substantially as and for the purpose set forth.

137,220.—*Apparatus for Shearing Animals.*—CHARLES AUGUSTE JOSEPH LENOBLEE, Paris, France.

Upon a toothed plate provided with a fixed handle, a movable handle is pivoted, upon the extension of which the rear ends of the blades rest, their points being pressed upon the teeth of the fixed plate by a forked lever pivoted by a universal joint to the extended handle near the blade-seats, and adjusted by a screw at the rear end.

Claim.—In combination with the toothed sector, provided with its fixed handle, the pivoted handle, upon which is arranged the blade carrier or carriers *a*, having seats for the rear end of the blades, the adjusting lever or levers *f*, and the set-screw *h*, whereby the pressure of the movable blades may be adjusted, substantially as set forth.

137,221.—*Cultivator.*—MYRON LEWELLIN, Bergen, N. Y.

A jointed head armed with teeth for the purpose of raking through the rows of corn, and thus freeing them from weeds and dirt; arranged for attachment to a common cultivator.

Claim.—The cross-beam C, with jointed heads C' C', the bearings D D, stirrups *d d*, brace-bars E E', and loop *g*, when combined and arranged with an ordinary cultivator, in the manner and for the purpose specified.

137,222.—*Apparatus for Producing Bromine from Bitterns, &c.*—GOTTLIEB LEYER and JOHN A. WINTER, Pomeroy, Ohio.

A rectangular retort incased within a wooden box for distilling bromine from bittern.

Claim.—1. The retort D, provided with the small tube I and the sheathed orifice R S, in combination with the revolving stirrer N O, operated by the pitman P, substantially as and for the purposes hereinbefore set forth.

2. In combination, the box A, having orifices B C, the retort D provided with pipes I J M, funnel K, tube I, and sheathed orifice R S, and the revolving stirrer N O, arranged relatively one to the other as as and for the purposes hereinbefore set forth.

137,223.—*Lantern.*—ADAM LOEFFELHOLZ and ANTON PRIER, Milwaukee, Wis.

A narrow vertical wall forms with the lamp a chamber adapted to receive the chimney-holder, which has an overhanging portion to which the braces are secured. The lamp, the holder, and its overhanging portion are locked by pins running in slots and secured by springs. The upper cap is adjustable to the length of chimney by screw-threads and screws.

Claim.—1. In combination with the rim C having the openings *c c*, and supplied with the spring-catch c^1 and fenders C' C'', the chimney-support B *b* with an overhanging flange, substantially as shown, and for the purpose described.

2. The lamp A *a*, chimney-support B *b b*, rim C *c c* with spring-catch c^1 c^2, fenders C' C'', cover D *d*, chimney-balance D' d^1, and a chimney, all combined substantially as and for the purpose specified.

137,224.—*Feed and Delivery Apron.*—PRESTON R. MANSFIELD, Lancaster, Mass.

An apron made of rubber cloth and having ribs or projections formed as integral parts thereof and during the process of manufacture, as explained by the claim. A substitute for the ordinary slatted apron.

Claim.—An elastic feed or delivery apron made of a strip, *a*, rib-forming fillings *b*, and covering-strip *c*, the edges of strip *a* lapping the edges of strip *c*, and the whole being vulcanized together, substantially as shown and described.

137,225.—*Car-Coupling.*—HENRY E. MARCHAND, Pittsburg, Pa.

Claim.—1. The trigger-arm H, provided with shoulders and a tenon, K, as described, and having its bearing within the seat I for operation in connection with the coupling-pin B and a link, substantially as described.

2. The notched coupling-pin B provided with an enlarged shouldered end, G, and with lateral ribs D to operate in respect to ways or grooves in a draw-head, in combination with a pivoted ring, O, substantially as and for the purpose herein described.

137,226.—*Metal-Lined Copper and Other Vessels.*—JOHN MATTHEWS, New York, N. Y.

A sheet of copper or other tough metal is coated with tin or other non-corrodible metal, and by means of dies and pressure forms into two seamless halves, which are then united by the process of "sweating;" or the coating may be applied after forming the parts.

Claim.—A metal-lined fountain or reservoir of copper or other tough metal, constructed of two seamless halves formed by pressure or other equivalent process, as set forth.

137,227.—*Eccentric Rod for Steam-Engines.*—JOHN F. MCCUTCHEN, Philadelphia, Pa.

A block is inserted around the eccentric pin to obviate the undue wearing of the ends of eccentric rods. To prevent the block from turning beyond a given distance on the pin a small pin is inserted into a segmental recess in the fixed collar.

Claim.—1. A block, B, adapted to and entirely surrounding the pin D of a valve-lever, and fitted to the end of an eccentric-rod, all substantially as set forth.

2. The combination of the pin *e* of the block B with the segmental recess *f* of the collar *a*, substantially as and for the purpose described.

137,228.—*Bran-Duster.*—JOHN T. MCNALLY, Brooklyn, N. Y.

Alternate strips of card-clothing or fine teeth and wire-cloth are arranged inside of a case upon which revolving brushes act to separate the bran from the flour.

Claim.—The bran-duster, made with a case having alternate sections or strips of card-clothing or fine teeth and wire-cloth, substantially as and for the purpose set forth.

137,229.—*Reversing-Valve for Steam-Engines.*—PETER W. MILLER, St. Louis, Missouri.

An oscillating valve is arranged between the slide-valve and the steam-cylinder, and is provided with twin-ports that register with double ports in the cylinder and slide-valve seat. To reverse the engine the oscillating valve is turned to register with the opposite ports.

Claim.—1. The reversing-valve I having steam-passages L L' and M M', substantially as and for the purpose set forth.

2. In combination with the valve I, constructed as described, the case H having ports G G' N N' O O', and forming upon one side the seat of the slide-valve E.

3. The combination of the reversing-valve I and case H, constructed as specified, with the slide-valve E and a steam-engine cylinder, substantially as and for the purposes set forth.

137,230.—*Dinner-Pail.*—PETER MOLAN, New York, N. Y.

The inner vessel is provided with a perforated extension to the bottom, suitable legs or supports, and with bracing-arms at the top thereof.

Claim.—The inner casing or receptacle D, provided with the perforated extension F, the legs E, and arms G, in combination with the outer casing A, as described.

137,231.—*Package-Register.*—GEORGE W. MOORE, Philadelphia, Pa.

Sets of checks are strung upon pins, which are set in the bottom of a drawer with their ends projecting into a groove in the top of the case. They are transferred from pin to pin to indicate the delivery of the articles they represent.

Claim.—The box A provided with a sliding drawer, B, carrying pins or fingers C, in combination with the longitudinal grooves D, when constructed and operating as herein set forth.

137,232.—*Tucker for Sewing-Machines.*—JOSEPH S. OAKLEY, Passaic, N. J.

The folder pivoted to folder-bar and confined in working position by means of the adjustable stop has its forward edge inclined with relation to the surface of the table and the line of feeding movement, and the edge of the folder toward the needle is made gradually thinner, thus positively and sharply creasing the goods just as it is to be sewn, and extending the tuck horizontally and evenly. The guide bears against the seam of the last tuck, and, by adjusting the roller as to its inclination, the fabric may be drawn more or less firmly over the folder.

Claim.—1. The combination of the folder-bar D, the adjustable folder E, the adjustable stop K, the sliding guide H, and the inclined table I, for arrangement in relation with the needle and presser-foot, substantially as specified.

2. The folder E and guide H, when said folder is of tapering thickness at its forward edge *f*, and inclined forwardly at its thinner edge, in combination with the adjustable inclined table I, all arranged essentially as described.

3. The combination of the movable or swinging spring-arm N with the obliquely-arranged stretching-roller M, substantially as specified.

137,233.—*Umbrella-Handles.*—ABRAHAM OBERNDORF, Jr., Baltimore, Md.

The handle has fitted to it a ring with a projecting plate or hook, by which to suspend the umbrella to some part of the dress. A rotary ring on the handle having a slot, engages the end of the hook-plate when not in use.

Claim.—1. The ring B provided with the projecting plate C, and both applied to the portion A of an umbrella or parasol handle, as and for the purpose described.

2. The loose rotary ring D having open slot *d*, and applied to a recess in the portion A of an umbrella or parasol handle, to hold the plate C at the time, in the manner and for the purpose set forth.

137,234.—*Washing-Machine.*—ABIEL O'DELL, BUCYRUS, Ohio.

A washing-machine with an adjustable slide to adjust it to the size of tub, connected by a link attached to a spring on the outside of it—that is, the tub.

Claim.—The combination of the adjustable slides *a*, clamp *b*, and springs *s* with the tub or vat O, substantially as and for the purpose set forth.

137,235.—*Swinging Crib or Hammock.*—DE COURCY O'GRADY, Charleston, Ill.

The four posts or uprights held in position at the top by pivots passing through slots in the cap, to which pointed uprights or pins are inserted to hold in position the seat on its top. The seat is removable at will, and when removed the supporting-posts or uprights can be brought in close connection for transportation. Appended to the cap, by ring and screw-bolt, is a spiral or coiled spring; from the spring four cords connected at their top; to the cords is appended the crib with its mattress table, &c.

Claim.—1. The combination of the cap A, posts A^1, the staples in their upper ends, and the rods A^1 A^1, whereby the posts are held in position when in use, and provision is made for folding the posts when desirable, substantially as set forth.

2. The combination of the folding-bed B^1, frame B, and table C, substantially as and for the purpose set forth.

137,236.—*Spindle for Spinning-Machines.*—WILLIAM G. PERRY, Manchester, N. H.

The spindle is dragged around by the friction of the whirl and bobbin has a bulb on its lower end, which prevents it from being raised while doffing; and is removable downward by unscrewing the step.

Claim.—1. The bobbin or spool and the spindle *a*, whirl *b*, and tube or cup *c*, connected and relatively arranged substantially as shown and described.

2. In combination with the spindle and tube, the removable step *n* and the bulb *o* upon the foot of the spindle, substantially as shown and described.

137,237.—*Door-Check.*—BRITTON POULSON, Fort Wayne, Ind.

A rubber wheel is secured to one end of an arm, which is pivoted at or near its center to a base-plate, on which it oscillates, actuated by a spring. At a suitable distance from the pivot a foot-piece is formed, and at the other extremity over the wheel is another foot-piece for adjusting purposes. The base-plate is also provided with projections or flanges, which serve as a double stop. By pressing the wheel downward it impinges on the floor, and when released by the foot-piece is held by the spring in normal position.

Claim.—The combination of elastic wheel A, pivoted arm *b*, base-plate *d*, spring *h*, inclined plane and stop *i*, and foot-pieces *f* and *g*, the whole being constructed, arranged, and operating substantially as specified.

137,238.—*Car-Coupling.*—ADAM PRITZ, Dayton, Ohio.

Claim.—The coupling-pin D, constructed as shown, and provided with a central opening, D', which has the general form of a triangle with round corners and concave sides, in combination with the draw-head A, substantially as and for the purpose specified.

137,239.—*Spindle-Bolster.*—GEORGE RICHARDSON, Lowell, Mass.

Claim.—1. An upright shaft or spindle bearing or bolster, having the annular trough *b*, the tubular extension *c*, and one or more capillary eductа, *e*, all arranged substantially as described and represented.

2. The felt or absorbent ring *a*, the annular trough *b*, the tubular extension *c*, and one or more inclined capillary eductа, *e*, combined and arranged substantially in manner, and to operate with a shaft or spindle, as explained.

137,240.—*Feather-Renovator.*—JAMES B. RILEY, Muncy, Pa.

A stirrer revolves in the interior fixed renovating-chamber; about the heads and bottom of this are steam spaces; steam is admitted at will into these spaces or the inner chamber, or both. The condensed steam and dirt in the inner chamber falling through the grate on the bottom, are taken from thence by a pipe. The condensed steam, &c., in the outer spaces may flow off by same pipe. One of the standards is slanted off at its top, and the gearing-box forms a strap so that the cylinder can be tipped forward down this incline.

Claim.—1. The cylinder B, having steam spaces in each head and steam and dirt chambers G I in its bottom, in combination with the pipes *d* and *b* and stop-cock K, which connects with both, as and for the purpose set forth.

2. In combination with the above the pipe *m*, used for allowing an exit for the steam and dirt from the chambers G and I, as set forth.

3. The combination of the cylinder B with the standards A, by which it is supported, when one or both of said standards are so formed that the cylinder may be tilted and supported in that position, as is herein set forth.

137,241.—*Hame for Harness.*—CLARK ROBINSON, Eau Claire, Wis.

The tug-loop is adjustably hooked between hooks and secured by means of a dog, which is itself secured by the breast strap ring.

Claim.—1. The plate E, provided with the recessed lugs F and perforated lugs or ears G, in combination with the link H and tug-clip I, substantially as and for the purpose specified.

2. In combination with the plate E, provided with the lugs F and perforated ears G, and with the link H, constructed as shown, and hinged within said ears, the breast-strap ring K encircling the inner bar *h'* of said link, substantially as and for the purpose shown.

137,242.—*Water-Wheel.*—BENGAMEN RUOF, Zoar, Ohio.

The gate, bed-plate, and wheel are so constructed that the water has but a short distance to travel through the gate and bed-plate before acting on the buckets of the wheel. The frame-work is arched and supports the upper bearings of the shaft, and these parts are connected by braces for strengthening them. The buckets have a peculiar curve, whereby the water is discharged with the least delay and the greatest economy of centrifugal force.

Claim.—1. The concave-convex gate D, in combination with the bed-plate C of similar form, arranged substantially as shown and described.

2. The bed plate C formed with the central dome or hub G, substantially as shown and described.

3. The arched frame-work K, in combination with the bed-plate C and bolts L, substantially as shown and described, for the purpose specified.

4. The buckets M, made in the form shown and described, in combination with the rims b^2 b^3 of the casing, said buckets being curved in such form and arranged in such position that the water is received in a direct line and discharged instantaneously in nearly a radial direction, substantially as specified.

137,243.—*Musical Instrument.*—ALBERT SCHOENHUT, Philadelphia, Pa.

A set of metallic plates are mounted upon a sounding-box, and operated by down-striking hammers attached to keys like a piano.

Claim.—1. The arrangement of the plates A upon a sounding-box, B, beneath the hammers D, as and for the purpose set forth.

2. The combination of the slotted plates A, sounding-box B, its pins *a*, and the isolating material arranged between the box and plates, as and for the purpose described.

3. The combination of the keys F and hammers D having elastic shanks and connected positively with the keys, as and for the purpose specified.

4. The hammers D and keys F, in combination with the connecting-rods *i* and springs *j*, for the purpose described.

137,244.—*Soldering-Tool.*—JOSEPH SEARS, Chicago, Ill.

A jet of mingled inflammable gas and air is conducted through a flexible pipe common to both, into which pipe they are each introduced under pressure. The soldering-tip is formed with a concavity that incloses the end of the handle-tube and keeps the flame entirely within the tip.

Claim.—1. The combination of the gas-pipe G, air-pipe H, flexible mixing-tube E, and the tubular soldering-tool A B C D, substantially as and for the purposes described.

2. The hollow tip A, formed with a cavity which incloses the end of the handle-tube C, so as to locate the flame completely within the hollow tip, as explained.

137,245.—*Machine for Pressing the Soles of Boots and Shoes.*—GEORGE F. SEAVER, EDWARD W. SOUTHWORTH, and JOHN M. ANTHONY, Ashland, Mass.

Two dies, representing relatively the shape of the upper and lower faces of a sole, are arranged in a suitable press, one above the other, so that when brought together a lateral as well as vertical pressure is automatically given to the sole, leaving it in the shape that it is desired to assume when the boot or shoe is completed.

Claim.—1. A machine for pressing the soles of boots and shoes, &c., provided with adjustable curved dies K and *l*, arranged and operated substantially as shown, so that a vertical and lateral pressure is at the same time brought to bear upon a sole of a boot or shoe, &c., and form it in the desired finished shape, substantially as specified.

2. In a machine for pressing the soles of boots and shoes, &c., adjustable dies K and *l*, formed with curved projections K' *l'*, and vertical flanges K'' *l''*, and arranged and operated substantially as specified.

3. In a machine for pressing the soles of boots and shoes, &c., a curved adjustable die *l*, arranged as described, in combination with a sliding bed or platform, *p*, arranged and operated substantially as specified.

4. In a machine for pressing the soles of boots and shoes, &c., cams *u*, arranged on and operated by shaft *v*, cog-wheels *x y*, and shaft *y'* in combination with the bifurcated arms *t*, and bed or platform *p*, arranged and operated substantially as specified.

5. The combination of dies K *l*, head *e*, beams *f*, crank-rods A, shaft *v*, cog-wheels *x y*, shaft *y'*, standards *b b* and *w*, and frame *a*, all arranged and operating substantially as and for the purposes specified.

6. The combination of dies K *l*, platform or bed *p*, head *e*, standards *b b*, beams *f*, shafts *v y'*, cog-wheels *x y*, cams *u*, bifur-

cated arms *t* and frame *a*, all arranged and operated substantially as specified.

137,246.—*Hand-Planter.*—DAVID B. SEELEY, Sterling, Ill.

An oblong box with a plunger seed-cup slide, which, in its descent, deposits in a cup on the face of the box the seed, which, on the rise of the plunger, falls through another orifice in it to the ground through the jaws. Just above the latter there is an opening with a bent spring-plate above it, acting, by pressure of the foot, as a scraper for the plunger.

Claim.—1. The plunger G with its seed-openings, in combination with the spring-clapper D, as and for the purposes set forth.

2. The spring-scraper I, struck up from the foot or nozzle B B, and used in combination with the plunger, as and for the purpose specified.

137,247.—*Revolving Rake.*—ABSOLAN B. SHARP, Labadieville, La.

A revolving rake, having four rows of teeth, the ends of which are concave so as to conform to the surface of the ground between the furrows, is mounted on the rear of a sled and drawn lengthwise of the ridges.

Claim.—A pea and bean vine rake consisting of the revolving rake B C, the teeth of unequal lengths to rake in the furrows and on the ridges, as described, frame A, pivoted stop D E, lever F, and connecting rod or link G, as and for the purpose set forth.

137,248.—*Table-Caster.*—THOMAS SHAW, Providence, R. I., assignor to GORHAM MANUFACTURING COMPANY, same place.

The caster is of oval form, and has under its base or bottom a swivel-standard, so that it may be rotated.

Claim.—The improved oval caster having beneath its bottom or stationary standard B a swivel-standard upon which the caster may rotate, substantially in the manner shown and described.

137,249.—*Furniture-Caster.*—CEVEDRA B. SHELDON, New York, N. Y.

The socket is formed of two concentric sheet-metal cups, with a rubber ring between them. The inner cup carries small friction-balls, which revolve over the surface of a large caster-ball partially inclosed therein. At the bottom of the inner cup is a circumferential enlargement to prevent the binding of the friction-balls, and at the top is a circular depression to prevent the balls from passing entirely to the top of the large ball. A screw is passed through the outer case, and then made rigid therein by means of a cup-shaped nut. The upper end of the screw has an independent thread, which serves to secure the entire caster in the leg of a piece of furniture.

Claim.—1. A caster-socket formed of two concentric sheet-metal cups, the inner one, B, having the circumferential enlargement F at the base and the cavity or bent-in portion H at the top, as shown and described, for the purpose specified.

2. In combination with the caster, the elastic lining E, substantially as and for the purposes described.

3. A caster with a fastening-screw, made rigid therein by means of a cup-shaped screw-nut, substantially as seen at J, as and for the purposes described.

4. A caster having a fastening-screw, provided with a square head and two separate screw-threads thereon, substantially as shown and described.

137,250.—*Furniture-Caster.*—CEVEDRA B. SHELDON, New York, N. Y.

A conical cavity is formed in the bottom of a trunk, and a struck-up metallic plate is fitted therein. Tongues or clips are struck up from this plate and serve to secure the caster firmly, by being bent over the rim of the caster-cup. Thus security is afforded against knocking off the caster in handling the trunk.

Claim.—The ball-holding cup E secured in the cavity of the trunk-frame by means of the clips or tongues H, struck from the metal plate lining the cavity, and bent over the rim of said cup, as specified.

137,251.—*Furniture-Caster.*—CEVEDRA B. SHELDON, New York, N. Y.

A series of small friction-balls are arranged in an annular groove formed between the turned-out flange of the cap or upper plate and the inner side of a metallic cup, which is inserted within the box formed above the wheel-frame. The central portion of this interior metallic cup is forced upward, and around this center another series of friction-balls revolve.

Claim.—1. In combination with a caster, a casing composed of two or more parts, one of which is attached to the stand or bracket and the other to the fastening-screw or plate, with friction-balls between the two, substantially as shown and described.

2. The friction-balls K, arranged in the annular groove I, formed between the inner side of the cap G and the turned-out flange of the cup D, as and for the purpose specified.

137,252.—*Power-Loom.*—JOHN SHINN, Philadelphia, Pa., assignor of one-half his right to JOHN DOBSON and JAMES DOBSON, same place.

Claim.—1. The cord A, arranged in vertical and parallel lines and secured to the ends of the heddle-frame and connected with the operating parts of the loom, as described.

2. The combination, with the heddle-frame end pieces *a a*, of the eyebolts *c c c c* for fastening and adjusting the heddle-frames on the cord A, as shown and described.

137,253.—*Railroad-Rail Joint.*—GEORGE W. SKAATS, Cincinnati, Ohio.

Claim.—The combination of rails A A' *a a'*, fish plates B B', and bolts C, when the plate B not only forms a part of the rail tread, but is fitted and supported in a prepared bed, *b*, in the rails, substantially as and for the purpose specified.

137,254.—*Harrow.*—JOSEPH SMITH, Woodland, Mich.

Connecting four sections of a harrow together by means of a center piece provided with double slots, which receive corresponding tenons on the end of each section.

Claim.—A harrow composed of smaller harrows, which are connected together by a central coupling, D, the whole constructed and operating as and for the purpose set forth.

137,255.—*Insect-Trap.*—J. MCN. SMITH, Fort Wayne, Ind.

A corrugated pan, with an inverted rim for a base to which are attached two woven-wire cones, the inner and shorter one having openings to admit the insects to the larger outer one.

Claim.—The combination of the corrugated pan A, having cavity *a* and beveled edge *b*, the cone B with open conical points *d d* and band D, the top C with band D', and the ears *f f* with pins *f f*, all constructed and arranged substantially as and for the purposes herein set forth.

137,256.—*Machine for Cutting Nicks in Umbrella-Runners.*—OREN M. SMITH, Philadelphia, Pa.

The pocketed disk that supports and presents the blanks is rotated intermittingly by a pawl on the end of a reciprocating bar that has an elevated surface near its point of junction with the pawl that is attained to by a gradual slope, and on this bar rests a vertical rod that carries a lateral arm, from which depends a bolt designed to enter any of a series of holes in the ratchet-wheel. The reciprocation of the bar, and the consequent elevation and depression of the rod, alternately bolts and unbolts the ratchet-wheel.

Claim.—The combination of the ratchet i^1, reciprocating pawl i^2, the retainer q^2, and the inclined projection *z* on the pawl, whereby, on the forward and backward movements of the latter, the retainer is alternately raised and depressed, substantially as and for the purpose specified.

137,257.—*Tag-Holder.*—ELISHA C. STILLMAN, Hopkinton, R. I., and EDMUND F. BURROWS, Mystic River, Conn.

A flanged plate holds the card, and carries, hinged to one of its sides, a spring-ball, which swings down under the flange to secure it.

Claim.—1. A tag-holder composed of a plate, A, having a lap, A^1, and a spring-clamp, B, connected to the plate and adapted to be sprung under the lap A^1 thereof, substantially as and for the purpose specified.

2. The combination of the plate A A^1 *a*, and spring-clamp B *b b'*, pivoted thereto, substantially as and for the purposes specified.

137,258.—*Fluting-Machine.*—THEODORE STOCKMARR, New York, N. Y.

Two endless chains pass around rollers, and are arranged relatively to each other, so that their links engage together as the teeth of ordinary fluting-rollers.

Claim.—The combination, in a fluting-machine, of the two chains A and B, the one having round-headed links and the other having T-headed links, substantially as and for the purpose herein set forth.

137,259.—*Weighted Gage-Cock.*—STEPHEN P. M. TASKER and WILLIAM H. MCMILLAN, Philadelphia, Pa., assignors to MORRIS, TASKER & CO., same place.

The valve is constructed to be readily removed, and the lever so formed as to be limited in its movement and to move said valve.

Claim.—1. The combination of the valve B with the lip *h* on the inner end of the lever D for arresting its upward movement, in the manner and for the purpose set forth.

2. The combination of the valve B and the bifurcated hooks A on the lever D, for drawing the valve from its seat, substantially as specified.

3. The combination of the body A, the cylindrical valve B, and a weighted lever with the lip *g* and hook *k'*, substantially as described.

137,260.—*Spring-Bed.*—DAVID E. TAYLOR, Charlton, Mass.

Lever-springs with bent ends are secured at the base by a button inserted through the coil and held by a screw. Coiled springs, supporting slats, are held by a button of peculiar form fixed to the under side of the slat. The webbing is attached at the lower end to a removable slotted plate, and passes over the lever-springs.

Claim.—1. The combination, with the canvas F, of tension-springs C, having their upper parts bent substantially as shown in the drawing at *c*, and for the purposes set forth.

2. The tension-springs C, having an upper supporting-bend, *c*, and lower coiled and bent ends, substantially as shown and described.

3. The holding-buttons K, substantially as and for the purposes set forth.

4. The combination, with the springs B and slats J, of the buttons K, substantially as and for the purposes set forth.

5. The combination, with the base-rail A and canvas strap F, of the slotted holding-parts G, substantially as and for the purposes set forth.

6. The combination, with a base-rail A and canvas F, of the tension-springs C, buttons *a*, and screws *b'*, substantially as and for the purpose set forth.

7. The combination, with the base-rail A and slats J, of the tension-springs C, canvas F, supporting-springs B, attaching parts G, and buttons K, substantially as and for the purposes set forth.

137,261.—*Rotary Steam-Engine.*—HENRY TAYLOR, Baltimore, Md.

A stationary case, provided with a series of faces and inclines, is combined with a series of steam-cylinders carried by and radiating from a rotary hub or steam-chest, whose axis of revolution is the center of the stationary case, the said cylinders receiving steam at their inner ends and containing pistons provided with piston-rods having rollers, which work against the faces and inclines. Steam is admitted and exhausted by segmental adjustable valves with a central exhaust-passage.

Claim.—1. The combination, with a stationary case provided with a series of faces and inclines, as described, of a series of steam-cylinders carried by and radiating from a rotary hub or steam-chest whose axis of revolution is the center of the stationary case, said cylinders receiving steam at their inner ends and containing pistons provided with piston-rods adapted to work against the faces and inclines of the stationary case, at the times and in the manner substantially as shown and set forth.

2. In combination with the rotary hub or steam-chest, the stationary valves located within the same and arranged to admit steam into and exhaust it from the cylinders carried by said hub or steam-chest, substantially in the manner and for the purposes set forth.

3. In combination with the elements named in the preceding clause, the central exhaust and steam-admission pipes, under the arrangement and for operation substantially as shown and set forth.

4. The arrangement of the valves in pairs, each pair being supported upon and communicating through an exhaust-passage with a tubular stem radiating from and opening into the central exhaust-pipe, substantially as shown and described.

5. The arrangement of the valves upon a central stem capable of being rotated to shift the position of said valves in relation to the cylinder-ports, in order to reverse the engine or to regulate at will the cut-off, substantially as shown and set forth.

137,262.—*Counting-Register.*—GEORGE H. VAN VLECK, Buffalo, N. Y.

A series of wheels numbered on their peripheries, and having on one side a segmental flange and on the other a circular row of pins, is mounted loosely on short shafts bearing arms at right angles on each side of the wheels. The arms are connected at their outer extremities to arms of adjacent shafts by pins, which serve as shafts for pinions of four leaves, each leaf of which has a curved groove cut across its face to fit over the segmental groove of one wheel, a leaf fitting between two pins of the opposite wheel. Half way between the ends of the flange is a pin which strikes a leaf of the pinion as one end of the flange passes from its groove and turns the pinion, thus causing the next wheel to advance one number, while the groove in the following leaf of the pinion is brought in position for the other end of the flange to pass into it and lock the pinion from turning further.

Claim.—1. I claim the construction of the numbering-wheel A, having on one side the pins *d d*, and on the other the segmental guide *f* and carrying-pin *h*, and moving on short shaft *a*, all arranged as and for the purpose hereinbefore set forth.

2. I also claim the locking and moving pinion or catch-wheel C, formed as described, and arranged between each numbering-wheel, and in combination with the pins *d h* and guide *f*, on wheels A A, as and for the purpose hereinbefore set forth.

3. I claim the mechanical movement produced by means of the wheels A A, having the pins *d d h*, and guide *f*, and the catch-wheel C, all arranged, constructed, and operating as hereinbefore fully specified.

137,263.—*School-Desk.*—DAVID GLASS VENABLE, Christiansburg, Ky., assignor to WILLIAM T. VENABLE, same place.

The book-boxes are located at or near the back of the desk-top, and are provided with hinged lids opening toward the front of the desk. The permanent part of the desk-top comes next to the scholar setting at the next seat in the rear.

Claim.—The book-boxes D D, with their beveled lids C C hinged as described, in combination with the desk-top T with its edge beveled as shown, constructed and arranged substantially as set forth.

137,264.—*Car-Brake.*—ISAAC H. VOORHIES, Ypsilanti, Mich.

By turning the brake-wheel the chain which passes around the drive-wheel axle is tightened, and turns a pulley which is fastened to its shaft. To this shaft is secured a chain, which passes around the car-axle, and the other end is fastened to the brake-lever. This chain, being wound about the shaft, operates the brake-lever. Also, the additional friction on the car-axle acts as an extra brake-power. The brake-chains, where they come in contact with the axle, are provided with wear-irons, which are dovetailed into their links.

Claim.—1. The arrangement, substantially as herein described, of the chain *b*, pulley E, and center shaft G, for operating the brake-lever, as herein set forth.

2. The arrangement of the drive-axle I, cord *d*, pulley *e* on the brake-wheel, and rod J, and the pulley H on the center-shaft G for turning said shaft, substantially as shown and described.

3. The wear-irons *h h* dovetailed into the links *f f* of the chain where said chain passes around the axle, substantially as herein set forth.

137,265.—*Car-Replacer.*—HENRY VOTH, St. Louis, Mo.

The inclined skid forms a track for the wheels of the displaced car to ascend upon for the purpose of replacement, its upper end being clamped firmly to the rail by means of the notched cams.

Claim.—The notched cams B B, arranged to automatically clamp the rail by the weight of the frog, in combination with the skid D, substantially as and for the purpose set forth.

137,266.—*Car-Wheel.*—ALANSON B. WAKEFIELD and BAYARD A. BERRYMAN, St. Louis, Mo.

Peculiarly flanged caps for securing the truck to the wheels; also serving as part of an oil-chamber.

Claim.—1. The oil-chamber, consisting of the fixed members A B and rotating members G *f* connected by a coupling, *b b' g' g''*, substantially as and for the purpose set forth.

2. The combination of the axle A, collar B, bearing-collar C, case G, and wheel F with the truck-frame D, substantially as and for the purposes set forth.

3. The combination of the axle A, collar B, case G, wheel F, and cap K, substantially as and for the purposes set forth.

137,267.—*Differential Gearing for Hoisting Apparatus, &c.*—JUSTUS WEBSTER and JOHN H. WEBSTER, Boston, assignors to themselves and LORENZO D. HAWKINS, Stoneham, Mass.

A center pinion-wheel on the driving-shaft meshing into and rotating one or more loose pinion-wheels, the teeth of which, opposite to the center pinion, mesh into teeth on the interior surface of an outer or gear-encompassing ring or pulley, the driving-pinion having one set of teeth, which mesh into corresponding teeth of the auxiliary pinions, and each of the latter pinions having upon one or upon each side of the main teeth another set of teeth, the side pinion formed by such teeth being of less diameter and, of course, less number of teeth, the pinion of lesser diameter meshing into one set of teeth on the inner surface of the stationary gearing-frame, and the large pinion meshing into a set of internal teeth, the ring or part of the ring embracing which will, of course, be of correspondingly larger diameter.

Claim.—The combination of the driving-pinion *e*, differential pinions *f*, and the internal gear-rings *g k*, with their differential gear-teeth.

137,268.—*Rain-Water Cut-Off.*—JEROME W. WETMORE, Erie, Pa.

The handle, which is made in the form shown and passes through the top of the box, is for the purpose of operating the chute so as to throw the water either into the side pipe or into the discharge-pipe.

Claim.—The handle F G R S of the chute of the rain-water cut-off attached to its upper end, and passing through the cover B of the box, substantially as and for the purpose specified.

137,269.—*Endless-Chain Propeller.*—JOHN W. WHEYATES, Liverpool, England.

Endless-chain propellers are mounted in a vertically-adjustable frame and revolve around sprocket-wheels, the lower one being of a triangular form so as to change the floats from a horizontal to a vertical position, and vice versa, as they enter and leave the water. An endless revolving chain-propeller is contained in an upright cylinder at the bow or stern, and the cylinder, being turned horizontally or laterally by a steering-wheel, has the effect to turn and steer the vessel.

Claim.—1. A chain-propeller mounted in an adjustable frame carrying the chain-wheels *d*, and the angular wheels *g*, around which the chain, with the propellers or buckets, passes, substantially as set forth.

2. The cylinders *k* and *m*, in combination with the chain-propeller *f A*, and mechanism for revolving the cylinder *m*, substantially as and for the purposes set forth.

137,270.—MOSES K. WHIPPLE, Warren, Mass.

Claim.—A copper-faced cast-iron pulley, substantially as and for the purposes set forth.

137,271.—*Reversible Knob-Latch.*—ANDREW F. WHITING, Crestline, Ohio.

The latch-bolt is swiveled to the yoke or supporting frame in such manner that by disengaging a pawl, which holds the latch in position, it is allowed a limited end movement, sufficient to permit of its being reversed.

Claim.—The combination of a supporting-frame with the independent endwise movable and reversible bolt A B, the shank of which is cylindrical in form, and supplied with notches *b* b^1 and head b^2, pawl D D', and actuating-spring E, substantially as shown and described.

137,272.—*Reversible Knob-Latch.*—ANDREW F. WHITING, Crestline, Ohio.

The hub is provided with an aperture for the reception of a cross-bar, which serves to retract the latch when the hub is rotated. This cross-bar is held in position by means of the knob-spindle. On the removal of the latter the cross-bar may be slid in one direction by its own gravity, so as to release one of the lugs on the carriage, which will allow the latch-bolt to be projected far enough to permit of its being reversed.

Claim.—In combination with the lugs *c c'* of the carriage B, the movable cross-bar E, provided with shoulder *e* and nick *e'*, and hub F, having an aperture in the enlargement F', substantially as and for the purpose set forth.

137,273.—*Reciprocating Steam-Engine.*—JOHN W. WILBRAHAM, Philadelphia, Pa., assignor to himself, THOMAS WILBRAHAM, and JAMES WILBRAHAM, same place.

A vibrating arm on the rock-shaft is operated by a hand-lever, and is connected to the slide by a link. The slide connects by the valve-stem with the valve, and moves in a suitable guide. The eccentric-rod can be thrown out of gear by a guided rod having a roller on its end, and is operated by a treadle.

Claim.—The combination of the slide A attached to the valve D and operated by an eccentric with the rock-shaft J, arm E, and link G.

137,274.—*Manufacture of Fifth-Wheel for Carriages, &c.*—DARIUS WILCOX, Derby, Conn.

The several cavities of the dies are so related to each other in position, and so shaped in cross-section, as to accurately mold the principal bar and its two lateral arms from a blank previously forged to a shape approximating that of the finished article.

Claim.—Dies A B, constructed with cavities of the forms herein specified, for forming clip-heads for fifth-wheels of vehicles, in the manner and for the purposes set forth.

137,275.—*Chest-Protector.*—EDWARD F. WILDER, West Roxbury, assignor to JAMES W. TUFTS, Medford, Mass.

The ordinary chest-protector, composed of several thicknesses of felt or flannel, is provided with a thin sheet of rubber placed between the different layers. Thus the perspiration is prevented from reaching the outside, this being objectionable for the reason that the cold air striking the wetted protector chills the wearer and defeats the object of the device.

Claim.—A chest or lung protector, composed of two thicknesses of felt, flannel, or other suitable material, with a film or thin layer of rubber or gutta percha placed between them, substantially as and for the purpose set forth.

137,276.—*Lamp-Burner.*—JOSEPH N. WYATT, Baltimore, Md.

The lamp-cap has an annular perforated plate, under which is an inclining shield to direct the gases from the oil to the flame and the dripping oil back to the reservoir. The wick-tube is surrounded by an auxiliary tube, and is screwed into a flange on the perforated plate.

Claim.—The collar C, consisting of an outer wall, *e*, perforated flange-plate *e*, ring-plate *d*, having female-screw-thread on its inner face, and annular inclined shield-plate *f*, the whole being so combined and arranged as to operate substantially as described.

137,277.—*Hot-Air Furnace.*—THEODORE YATES, Milwaukee, Wis.

Through the apex of a conical grate air is delivered from the apartment at a point above the fire. The air-pipe serves as a ventilator for the apartment. The lower part of the conical grate has movable bars which can be agitated by a handle. The smoke-flues depend into the combustion-chamber and retard the escape of products of combustion.

Claim.—1. The conical grate B, constructed substantially as described, with an opening at its apex to admit air directly above the fuel, as and for the purpose set forth.

2. In combination with the grate constructed substantially as described, the air pipe I, extending outside of the furnace, as and for the purposes described.

3. The combination of the grate provided with the cross-bar *g* and eyes *k*, the rock-shaft C provided with the pivot A, and the rod M, arranged to operate as described.

4. The smoke-flues extending downward within the chambers, as shown and described, for the purpose of retarding the escape of the smoke and gases, as set forth.

137,278.—*Broiler Attachment for Stoves and Ranges.*—JACOB S. YORK, Brooklyn, N. Y., assignor to himself and JAMES H. SELKENS, same place.

A vertical grate, single or double, is so adapted to the usual fire-grate as to expose one side to the fire and contain the broiler in the other. There is a suitable drip-pan for the broiler.

Claim.—1. The vertical grate or perforated partition A arranged in the fire-space of a stove or range for producing a vertical broiling-chamber, as set forth.

2. The combination with each other of two vertical grates or perforated partitions, A, within the same fire-chamber of a stove or range to allow broiling between two fires, as set forth.

3. A stove or range provided with a vertical broiling-chamber, as specified.

4. The narrow trough or pan E arranged in combination with the broiler D for use in a narrow vertical broiling-chamber, as specified.

REISSUE PATENTS.

5,332.—*Cotton-Bale Tie.*—GEORGE BRODIE, Plum Bayou, Ark., assignor to JAMES JENNINGS MCCOMB, Liverpool, England.—Patent No. 22,291, dated March 22, 1859; reissue No. 3,405, dated April 27, 1869; extended seven years.

Combination with open slot-ties of metallic bands having their ends looped, and held in position by the expansion of the bale.

Claim.—1. The swell or curve in the link, for the purpose of facilitating the introduction of the bands with their inserted pins, substantially as described.

2. The double lap of the band, as shown in Figs. 11 and 12, in combination with a metallic link.

3. The combination of an open slot for introducing the band sidewise, with a link having a single rectangular opening for holding both ends of a metallic band, and the band.

4. An open slotted link, when combined with metallic bands, the ends of which are turned under the link and held in position by the expansion of the bale.

5. The method of baling cotton with metallic bands, and of taking up the slack of the band by bending the same at any desired point into the form of a loop and passing such loop sidewise through an open slit into the slot intended to receive it and over the bar of the clasp intended to hold it.

5,334.—*Hoop-Skirt.*—THOMAS B. DE FOREST and THOMAS S. GILBERT, Birmingham, Conn., assignors, by mesne assignments, to ALEXANDER K. YOUNG.—Patent No. 74,672, dated February 18, 1868.

Narrow metallic springs (one or more) are inclosed by a fabric of textile material, or textile and paper combined, said springs being held in place and permanently apart by a cement of peculiar character, constituting, as it were an artificial spring wider than the wire employed, and rendering the fabric to a certain extent unyielding and non-compressible.

Claim.—A skirt-hoop composed of two or more wires kept permanently apart at a regular distance from each other by means of a covering, in which they are inclosed, and a cement substantially of the character described, which, when set, renders the whole fabric more unyielding, as set forth, the object being to produce a broad and firm elastic skirt-hoop lighter and cheaper than if made entirely of metal, and yet practically possessing all the valuable qualities of metal.

2. A skirt-hoop composed of only one wire, inclosed within a covering wider than the wire by means of a cement substantially of the character described, which, when set, renders the whole fabric more unyielding, substantially as described.

3. A skirt-hoop composed of one or more wires, inclosed within a covering of paper and cotton or some other textile fabric, combined and cemented on the wires by a cement, which, when set, renders the whole fabric more unyielding, substantially as described.

5,335.—*Double-Friction Coupling.*—JOSHUA HENDY, San Francisco, Cal.—Patent No. 25,733, dated October 11, 1859.

Claim.—1. The application of two such truncated-cones to one coupling, one at either end, and operated by a single lever, so as to work in cavities or conical sleeves attached to pulleys or wheels arranged on one shaft, so that said shaft may be run slow or fast, or backward or forward, or entirely stopped, without stopping the prime motor or changing its speed, substantially as herein set forth and explained.

2. The lever E, in combination with the double-acting friction device, substantially as set forth.

5,336.—*Sewing-Machine for Making Button-Holes.*—EDMUND HOWARD, Flushing, and WILLIAM H. JACKSON, Brooklyn, N. Y., assignors, by mesne assignments, to HENRY E. TOWNSEND, CHARLES P. BRIGHAM, and GEORGE W. SIMMONS, Boston, Mass. Patent No. 94,212, dated August 31, 1869.

The vibrating finger takes the shuttle-thread from the under-thread catcher and carries it over the edge of the fabric where the loop so formed is entered and confined by the needle and its thread. The device is operated by means of cams on the shuttle-driver.

Claim.—1. The improved under-thread catcher, consisting of an arm with an eye near its end, when constructed and operating so that it shall move away from the throat of the machine with the under thread, while the needle is above it, and return to the throat, so that the needle shall pass through it at each descent, all substantially as set forth.

2. The vibrating finger F, when constructed and arranged substantially as described, and moving not only on its pivot but also bodily in order to carry the under thread up over the edge of the fabric, and then move out of the way of the needle, as set forth.

3. The special mechanism for giving the two motions to the finger F, above set forth, said mechanism consisting of the two elbow-levers, D and E, connected together by the pin on one arm of the lever E, and the link on one arm of the lever D.

4. A thread carrier and catcher, substantially as described, provided with pins *i j* and operated by cams *a*, *b*, *b'*, and *k*, substantially as set forth.

5. The pivoted wedge-shaped piece T, in combination with the rocking-arm I for varying the extent of the feed motion, substantially as described.

5,337.—*Grain-Weighing Machine.*—FRANCIS S. MCWHORTER, St. George's, Del.—Patent No. 83,298, dated October 20, 1868.

A sack-supporting frame is suspended from a scale-beam which carries an arm and plate so arranged as to cut off the supply of grain to the sack by compressing the flexible tube or delivery spout, when the required weight causes the sack and its supporting-frame to preponderate.

Claim.—1. The combination of a steelyard, carrying a grain-receptacle, with a flexible sleeve, V, and with the mechanism described, or its equivalent, for arresting the passage of grain through the sleeve on the descent of the receptacle.

2. The within-described arresting device, consisting of a flexible sleeve contained within the spout A and a slide, W, or its equivalent.

3. The sack-holder, consisting of bars L L and cross-plate T suspended from the steelyard, as set forth.

4. The cross-plate T, readered adjustable vertically on the suspension-bars of the sack-holder, as and for the purpose specified.

5. The within-described retainer for the mouth of the sack, consisting of the bars Q and dogs *f* combined with the suspension-bars, all substantially as set forth.

5,338.—*Tassel-Clip for Window-Shades.*—FREDERICK MÜLLER, Boston, Mass.—Patent No. 85,953, dated January 19, 1869.

The clip is formed with two jaws with inwardly-inclined lips, and held in position by a spring secured to the jaws.

Claim.—1. A clip, constructed of side-jaws or plates A, hinged together and provided with an inward-projecting flange or lip, *e*, substantially as and for the purpose described.

2. A clasp, consisting of the jaws or plates A and the spring B, united together by means of the lips *e*, all substantially as shown and specified.

5,339.—*Attaching Handles to Cross-Cut Saws.*—ISAAC PELHAM, Elmira, N. Y., assignor to EMANUEL ANDREWS.—Patent No. 30,153, dated September 25, 1860.

The arrangement of parts places the handle at the extreme end of the saw, and allows it to be easily disengaged should the saw become caught in a log, rendering such removal necessary.

Claim.—The combination of the handle to a cross-cut saw, attached by one of its sides to the extreme end of the saw-blade, and rods for securing the handle to the saw-blade, in the manner and for the purposes substantially as shown and described.

5,340.—*Hot-Air Engine.*—ALEXANDER K. RIDER, New York, N. Y.—Patent No. 128,979, dated July 16, 1872.

The air, being compressed in the supply-cylinder, is admitted through the waist-piece into the working-cylinder, where its effect is increased by being expanded by heat. The pistons and exhaust-valve are so arranged that the latter closes before the working-piston has completed its descent, thus equalising the degree of compression in the two cylinders.

Claim.—1. The supply-crank G, arranged behind the working crank E, in combination with the exhaust-valve A, and means for closing it before the working-piston *a* has completed its downward stroke, as herein specified.

2. The waist-piece C, in combination with the parts A, A', and B, all constructed and arranged as represented, for the purposes set forth

3. In combination with the working and supply cylinders, with their respective pistons and passages and cranks E G, the valve A, arranged to close so as to induce a compression in the clearance-space equal to the simultaneous compression in the supply-cylinder.

4. The perforated tubular valve J, constructed and arranged, relatively to the packings *k k'* and casing K, substantially as and for the purposes herein specified.

5. The entire combination and arrangement of the supply-cylinder and piston B *b*, connection-passage C, working cylinder and piston A A' *a*, exhaust-passage H, and valve A, with suitable means for operating the latter, by which a portion of the air contained in the compressing or supply cylinder B is blown through the air-passages so as to displace a corresponding quantity of hot air, supplying its place with colder, and consequently denser, air, as herein specified.

5,341.—*Water-Wheel.*—JAMES E. STEVENSON, New York, N. Y.—Patent No. 48,737, dated July 11, 1865.

The buckets of the wheel are between rims, the lower parts of which do not extend down to a common level with the lower ends or lasues of the buckets, but are notched or have recesses, so that the lower parts of the buckets—say, a distance of about a third of their length—are fully exposed at each side. By this means a free lateral discharge is allowed the waters as it leaves the lasues of the buckets. The tail ends of the buckets have an area increasing from the impinging-point toward the point of discharge.

Claim.—The combination, with a turbine wheel, of buckets, the tail ends of which have an area increasing from the impinging-point toward the point of discharge, substantially as herein set forth.

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The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks) 6,500
SEWING-MACHINES and attachments 2,000
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PRINTING; including presses, type, and printers' furniture. 2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles 1,200
FELTING and HATS; including caps, bonnets, flock, &c. 1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments) 1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs 1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)

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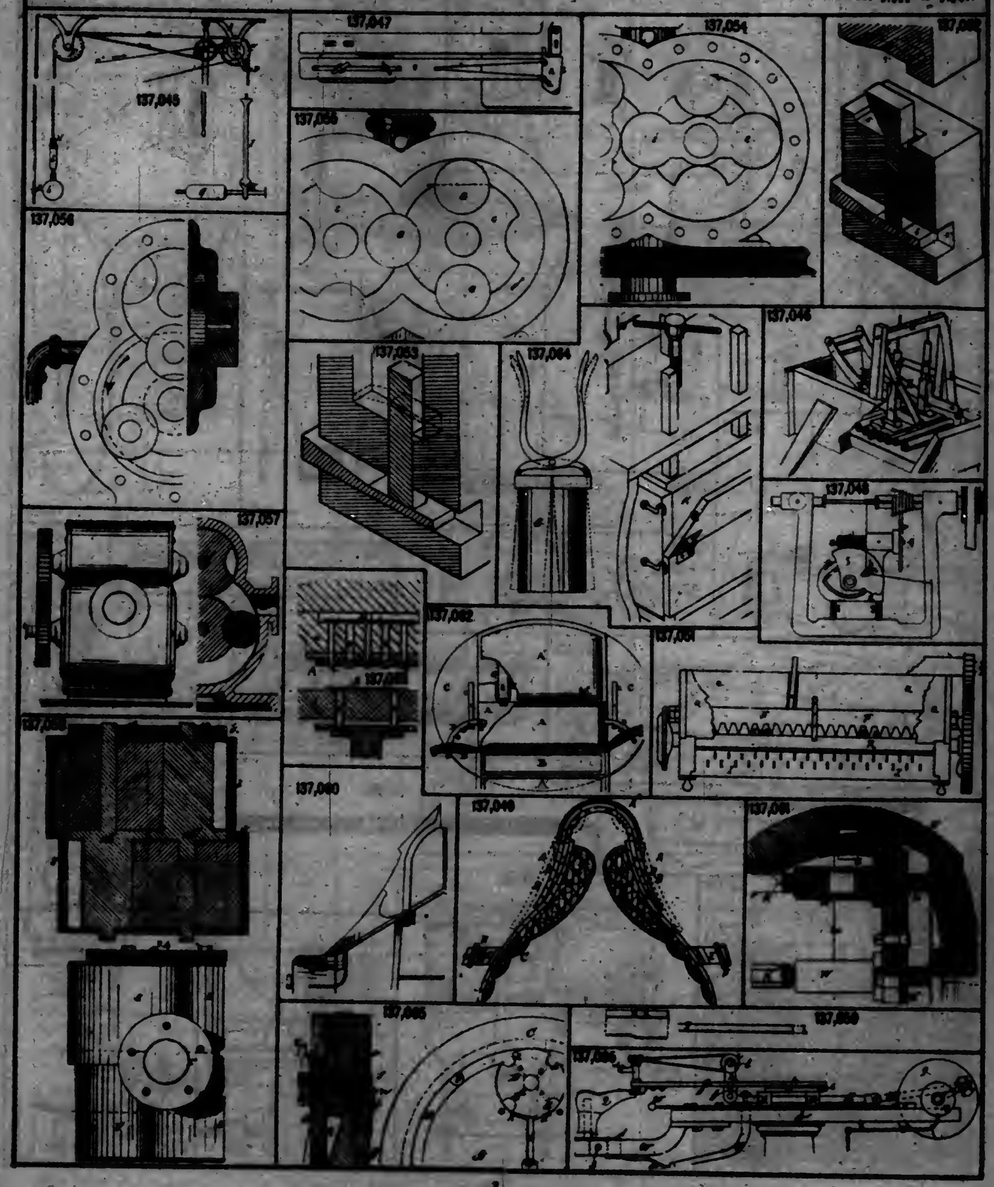
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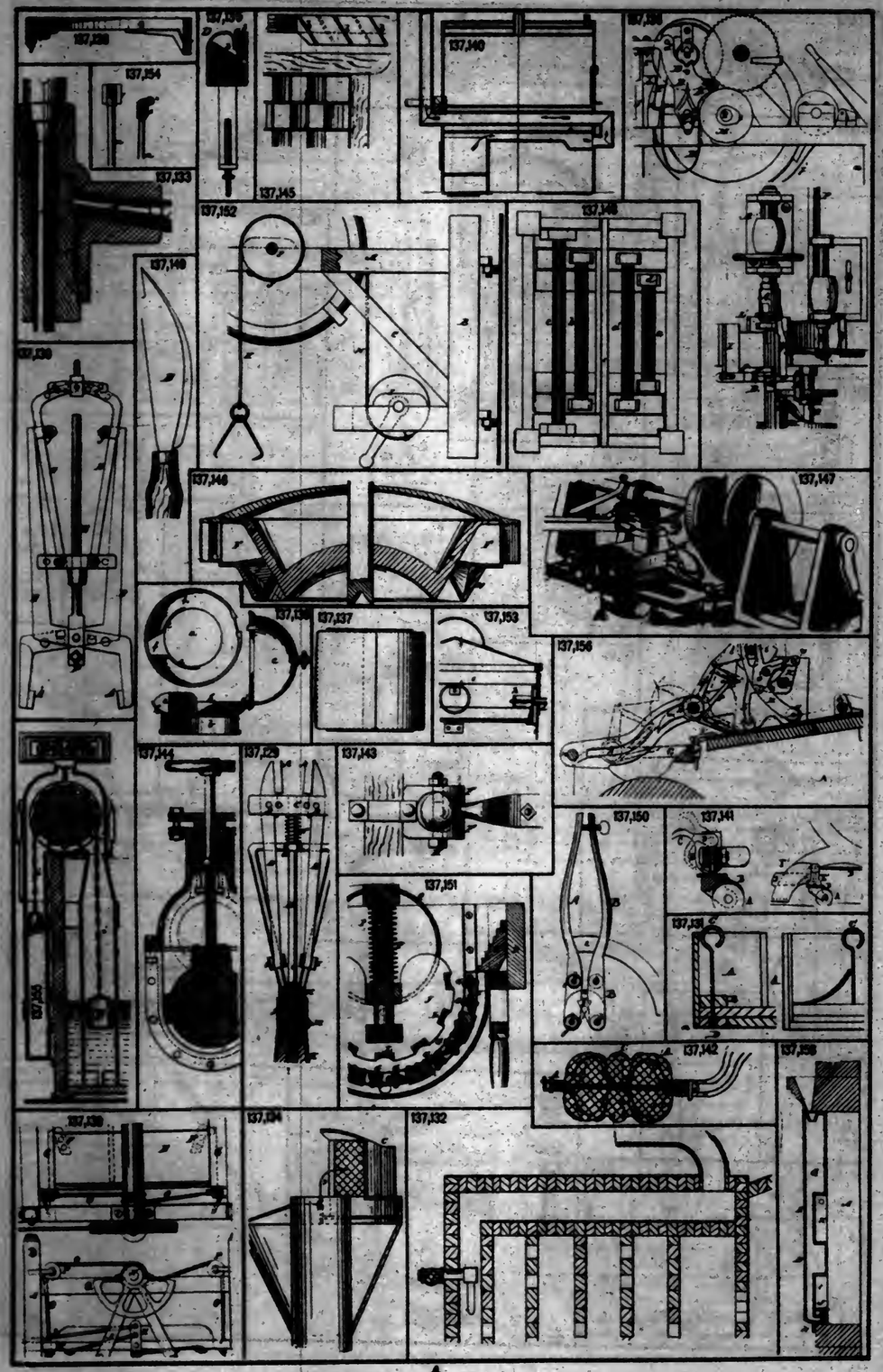
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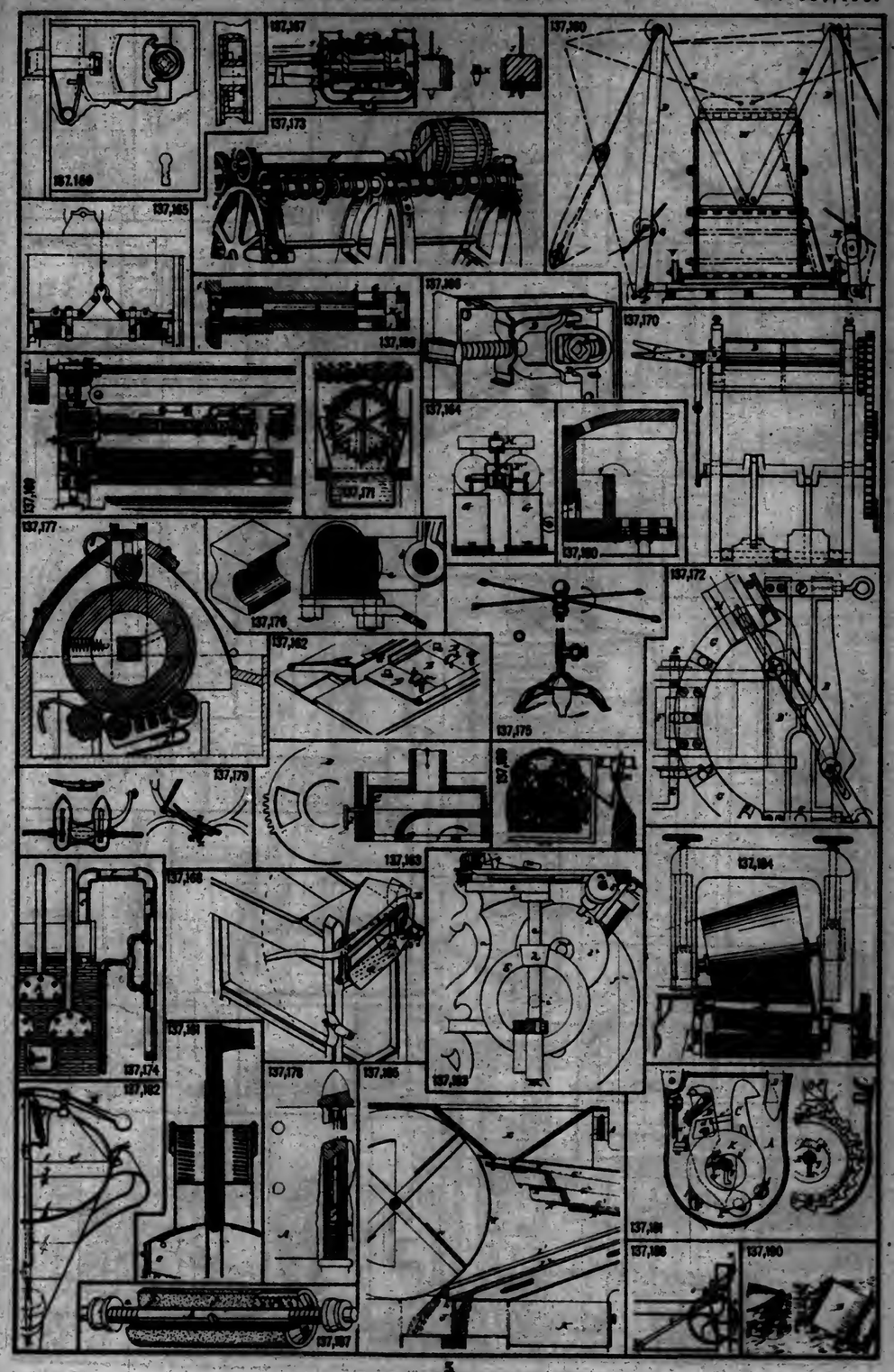
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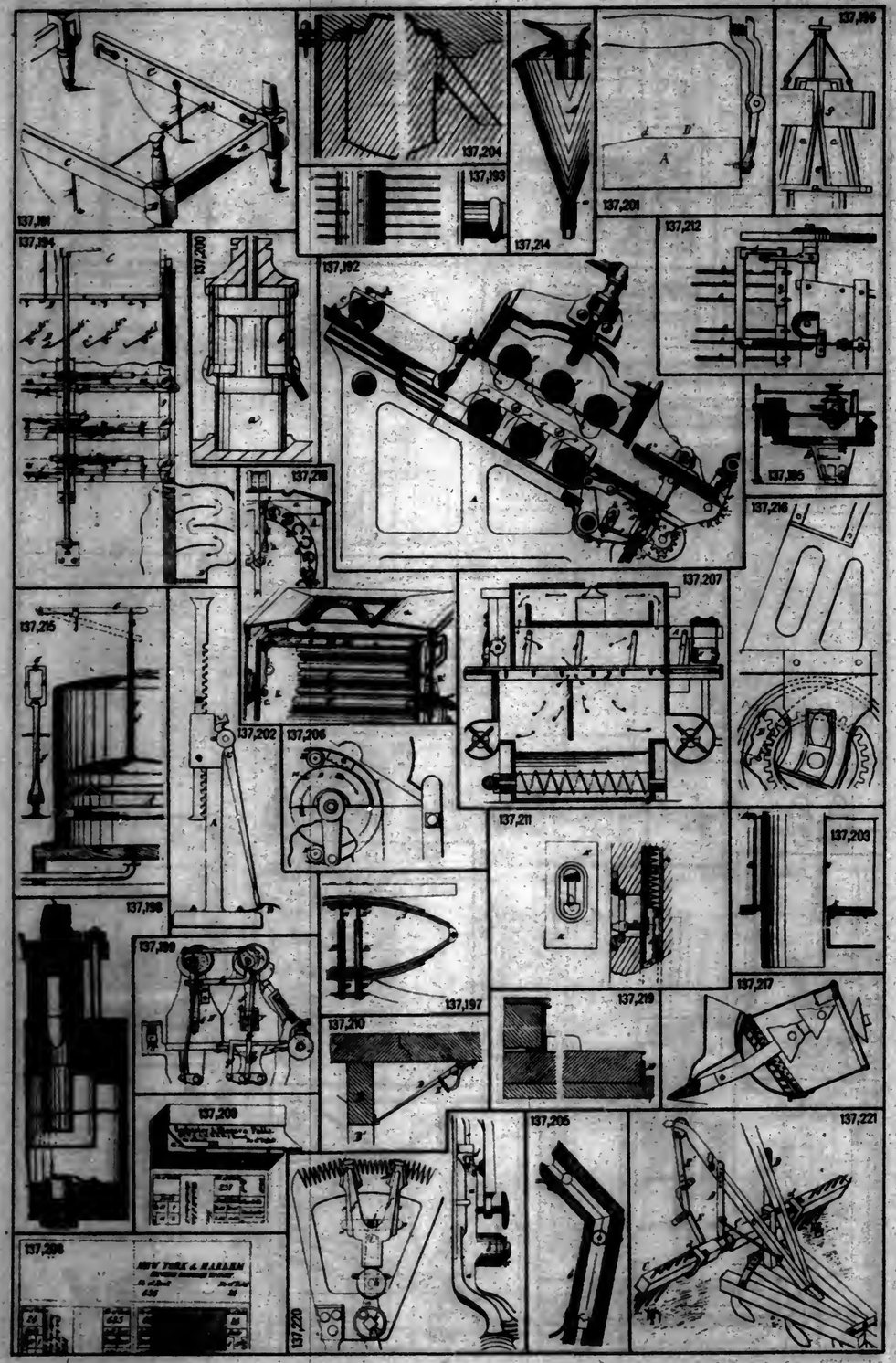
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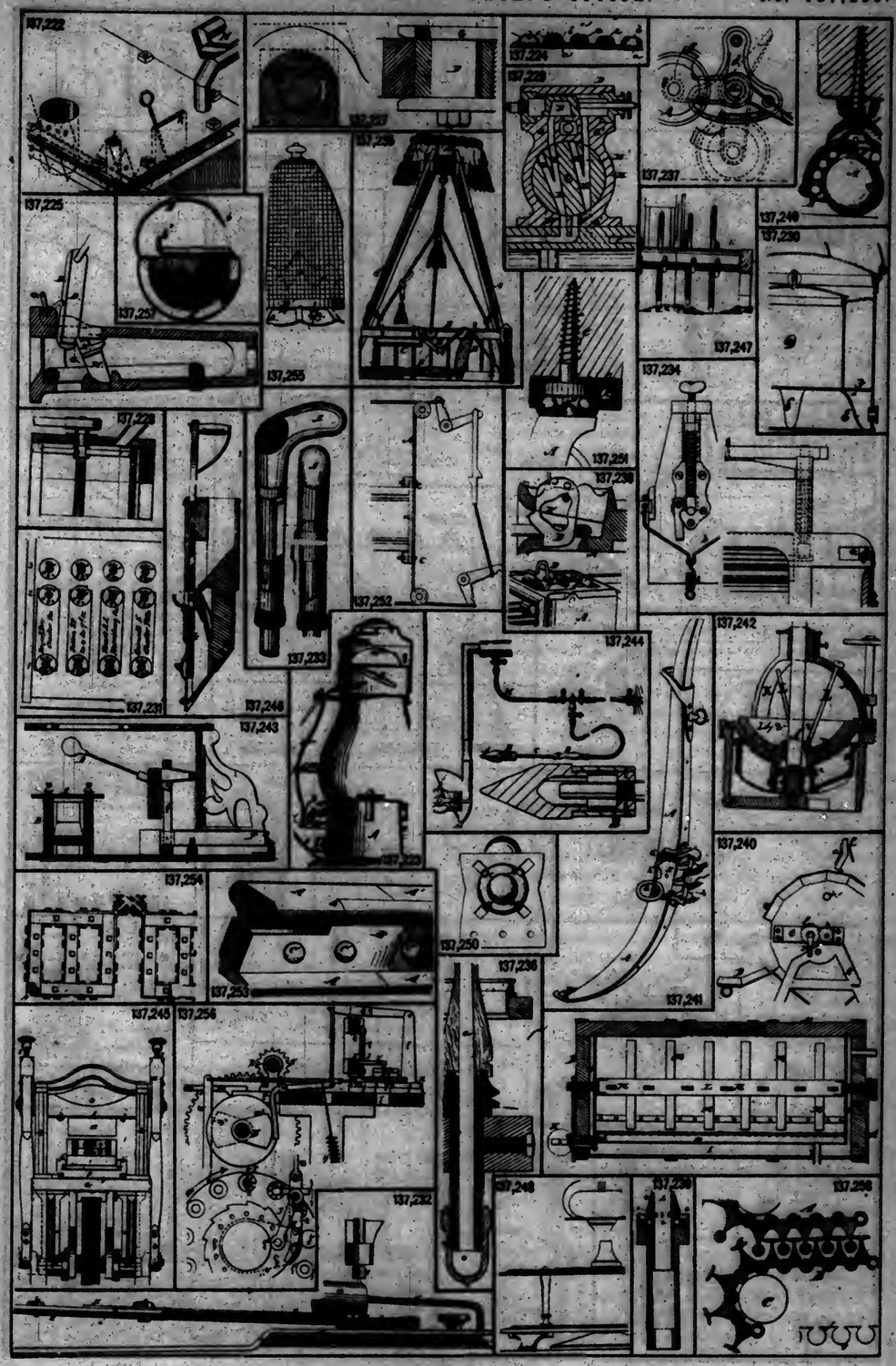
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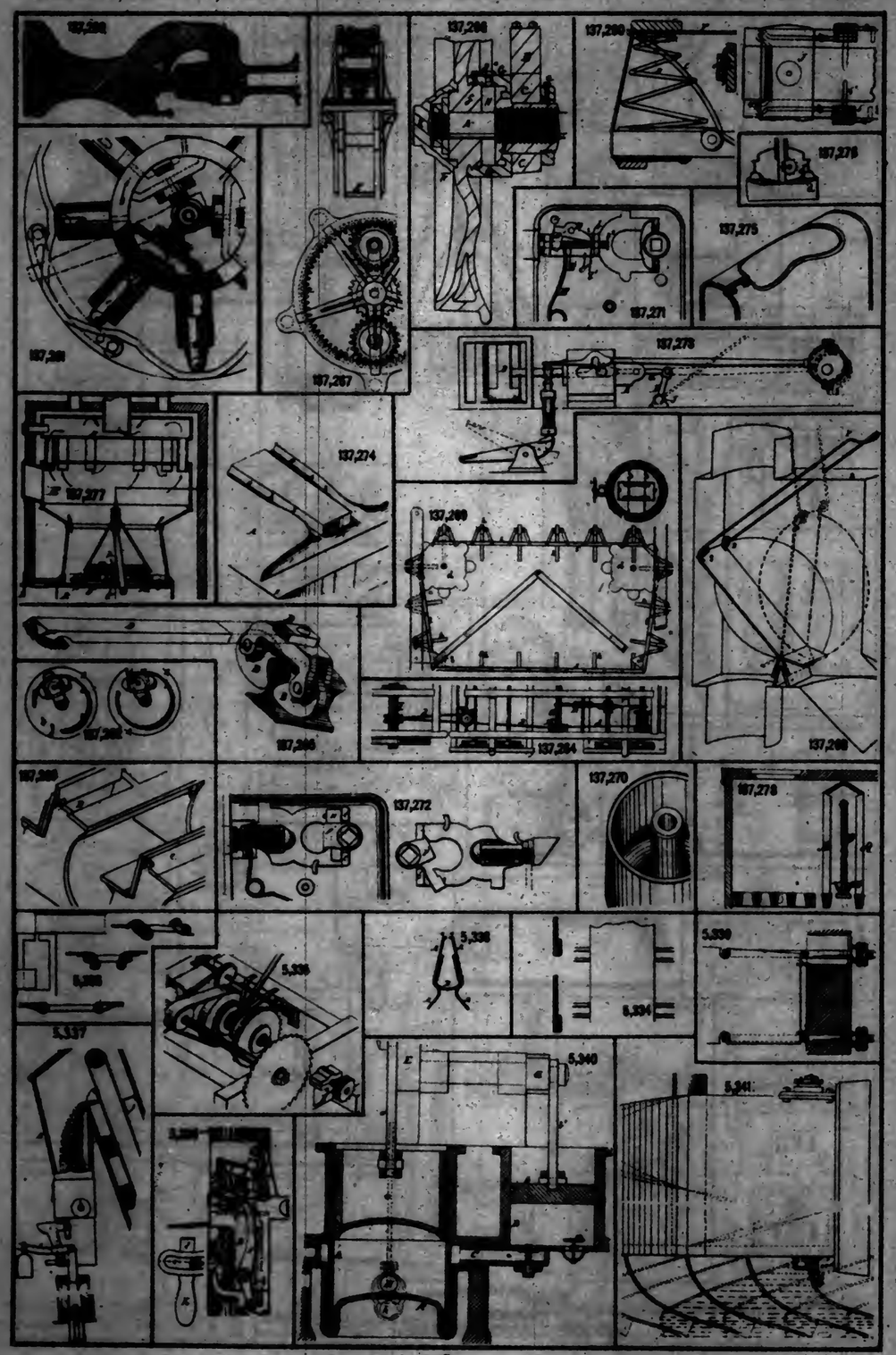
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COMMISSIONER'S DECISIONS.

W. W. GOODWIN.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of W. W. Goodwin for letters patent for* IMPROVEMENT IN PHOTOMETERS.—*Decided April* 1, 1873.]

To place upon a photometer two scales beside each other upon a single plate, one indicating the pressure of the gas, the other the degree of light, so that they can be readily compared, involves so much novelty that the originator of the device should have his right to it sanctioned.

To denominate such scales indexes in the specification and claim is incorrect, and justifies a rejection of the application.

LEGGETT, *Commissioner:*

Applicant proposes to combine, in an ordinary photometer having a pressure scale and index, a scale for exhibiting the number of candles to which the gas is equivalent. He constructs a plate with these two scales formed upon it, and thus dispenses with the use of the separate diagram of Kirkham and Sugg, and enables the inspector, by a single glance at the apparatus, to determine both the pressure and the light power of the gas. It is true, as stated by the Board, that he has not "ascertained the several degrees of pressure required in order to produce a seven-inch flame from a given aperture for gas of various qualities." All that has been done by others. He has simply produced a device in which is combined two scales adapted relatively to each other, so that the pressure-index shall also serve to indicate the light power, which device seems to be a novel and useful mechanical production, and, if not met by a reference, should receive favorable consideration.

The scales are termed "indexes" in the specification and claim—a misnomer, which, perhaps, has led to the misunderstanding of the case. As the case now stands the decision of the Board must be affirmed.

If, however, the application is amended in compliance with the above suggestion, and a claim is substituted covering the combination of the two scales and the index as shown in the drawings, I see no reason why a patent should not be granted.

SMITH *vs.* HOPKINS.—*Interference.*

[*Appeal from the decision of the Examiners-in-Chief in the matter of the interference between the applications of O. A. Smith and D. A. Hopkins for patent for an* ATTACHMENT FOR CAR-AXLE BOXES.—*Decided April* 1, 1873.

LEGGETT, *Commissioner:*

This interference arises respecting an invention designed to prevent the entrance of dust into the journal-boxes of railroad-cars. It consists of a sleeve inserted in a circular groove in the hub of a wheel, and having a flange or diaphragm which enters an annular recess on the end of the journal-box. The parties are both from the same place, and occupied the same office. Smith was superintendent of car repairs, and Hopkins

a manufacturer of railway machinery. They employed draftsmen who worked at the same desk, and their drawings were open to mutual inspection. Hopkins had drawings of the invention made early in 1870, and Smith not till early in 1871. The parties were on good terms, and Smith admits that he saw drawings of axle-boxes on the table of Hopkins's draftsmen in 1870, although he denies that he thereby obtained any suggestion of this invention. Under the circumstances the doubt suggested by the Board whether Smith is an independent inventor would be natural. As soon as Hopkins became aware that Smith was engaged with the invention he made claim to it. He also pointed out defects in Smith's device which experiment proved to exist. He at no time relinquished his invention, nor does it appear that he neglected it. He had patterns and castings made at different times. He observed the experiments of Smith for his own advantage, but not without warning him that he claimed the invention as his own. Without unreasonable delay he made application for patent preceding Smith's application. He has gone one step further than Smith. He accommodates the "tip" of the box by forming his groove in the hub wider than the thickness of the sleeve and interposing a leather packing.

Admitting that Smith was an original inventor, which I am inclined to believe, both parties were seeking to adopt and perfect the invention preparatory to making application for a patent. Hopkins began first, has gone furthest in his contrivance, and was first to ask for a patent. Upon the proofs he is clearly the first inventor. There is no advantage in a practical application of an invention after its completion by a party to an interference unless it appears that the other party has been unreasonably negligent in perfecting and laying claim to the invention. To be sure such an application to use is a demonstration of the practicability of the device, but it is not otherwise meritorious or important in a controversy of this kind, where the utility of the invention is not likely to be a point of dispute.

The decision of the Board awarding priority to Hopkins is affirmed.

RICE *vs.* WINCHESTER.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of Aaron Rice and George C. Winchester for a patent for a* TILTING CHAIR.—*Decided April* 3, 1873.]

He is the prior inventor and is entitled to the patent for an invention who first embodies it in a complete, practical, working utensil, and exhibits it in public, though another afterward reduces it to practice and applies for a patent before him.

After such an embodiment of his invention his delay in applying for a patent can operate only as an abandonment to the public; it is not forfeited thereby in favor of a subsequent inventor.

Although an invention is embodied in a complete working article, and used so far as to demonstrate its practicability and establish the inventor's right to a patent, yet he will not lose his right by delaying for nearly two years to file an application.

LEGGETT, *Commissioner:*

The invention in controversy is a torsional spring for tilting or oscillating chairs, combined with the hinges which connect the stool and the tilting seat. Two straight steel springs extend under the seat obliquely from the upper portion of one hinge to the lower portion of the other, crossing each other and being secured to the respective parts of the hinges at their opposite ends. The facts in proof appear to be substantially agreed upon by the Examiner of Interferences and the Board, but they have come to opposite conclusions as to which of the parties should be held, in contemplation of law, to be the prior inventor. This has arisen not from any conflicting view of the law, but from a difference of opinion as to what is proven by the testimony in the case.

It has been laid down by the courts in numerous cases, too often cited to require specific reference here, that where one has conceived but not perfected an invention, an independent inventor may have a valid patent who has subsequently conceived, perfected, and introduced the invention, unless in the meantime the party first to conceive it was using reasonable diligence in adopting and perfecting it. In this case it is clear that Winchester was first to conceive the invention, but the tribunals named differ as to whether he had completed it, or was using reasonable diligence to do so. If Winchester had completed and embodied his invention in practicable form, in which it could unmistakably be communicated to the public, and it was new, then no obstacle but abandonment in fact, or its use in public for more than two years, could deprive him of his right to a patent for it under the statute. But if he had not done this, then, unless he used reasonable diligence in adopting and perfecting it, he might be forestalled by a patent to an independent inventor more diligent than himself. Such is the rule which does and must govern this Office in cases of this nature; and it is reiterated here only because an elaborate argument is introduced in the case which shows that the rule is not well understood. Any other rule will involve the absurdity of granting patents which it is known in advance will not be sustained in the courts.

The proof shows that Winchester conceived the invention in the early part of 1870, and immediately had one or two chairs constructed embodying the invention, and that these chairs were exhibited in Winchester's office, where they remained for a long time. Rice conceived the invention in October, 1871. He also made two chairs embodying the invention, and applied for a patent December 13, 1871. Winchester filed his application December 29, 1871, sixteen days later. In view of these facts the Examiner of Interferences awarded priority in favor of Winchester.

The testimony, however, shows that the torsional springs in Winchester's chairs were made of wire too light to furnish the requisite stiffness, and the Board seize upon this fact and condemn his invention as an abandoned experiment and award priority to Rice.

The proof shows clearly that Winchester's chairs were constructed upon substantially the same plan and principle as Rice's, the only difference being that Rice made the better chairs, because he used wire of larger gage. Winchester used such wire as he had on hand at the time, and noticed and remarked that it was too light. The invention, then, was just as complete in the hands of Winchester in the spring of 1870 as it was in the hands of Rice in the fall of 1871. Winchester completed it and exhibited it in public early in 1870, nearly two years before Rice invented it. If Winchester abandoned his invention after having completed it he abandoned it to the public—not to Rice; but there is no evidence of abandonment. He explains in his testimony why he delayed in applying for a patent earlier, and why he did not proceed to manufacture the chairs.

I am fully satisfied that Winchester completed his invention in the spring of 1870, by reducing it to practice, and must, therefore, reverse the decision of the Board and decide priority in favor of Winchester.

A. B. LATTA, BY ADMINISTRATOR.—*Extension.*

[*In the matter of the application of Finley Latta, administrator of A. B. Latta, for the extension of letters patent No.* 23,589, *for* IMPROVEMENT IN STEAM-GENERATORS, *granted April* 12, 1859.—*Decided April* 2, 1873.]

A patent for an invention which is described and shown in a previous patent to the same grantee will not be extended.

An application for an extension refused because the sworn statement and testimony were highly defective, and failed to furnish the information required, they consisting mostly of copies of what was filed upon a former application for the extension of another patent.

THACHER, *Acting Commissioner:*

The presentation of this case is so defective that an extension could not be granted even if the application appeared to possess merit. A copy of the "sworn statement" in a prior application for extension has been filed in this case with the supposition that it related to this patent also for the period covered thereby. Upon examination, however, it is found that no allusion whatever is made to the patent, the extension of which is now sought, so that the "sworn statement" required by official rules in applications for extension is entirely wanting, with the exception of a brief and supplementary affidavit covering the period intervening since the date of the former application in 1871. Most of the testimony submitted in this case is of the same character. There are but two affidavits relating in any way to the patent of April 12, 1859. The others are certified copies of affidavits filed in the application for an extension of a patent granted in 1857, and are deficient in the same particular as the copy of the statement in the same case. The patent now under consideration with exceptions noted is not included in the statement and testimony, and the petition is, consequently, left almost entirely without support. I also find that this patent could not be extended, even if the case were properly presented. The invention here claimed is a special device for regulating the circulation of water through division-coils. This identical device is found to have been described and illustrated in a prior patent granted to Latta October 20, 1857. It was also indirectly claimed in this prior application, but on reference cited the claim was stricken out, but without any objection on the part of the Office that it was not proper subject-matter to be included in that application. This fact seems to have been overlooked when the 1859 patent was granted. It appears that the latter patent, the extension of which is now sought, was improperly granted. The device should have been obtained by reissue of the 1857 patent, and not in a new application. The objection to the extension of patents like this has been stated in decisions heretofore. (L. M. Singer, C. D., 1870, p. 146.) It would be virtually continuing the protection afforded by letters patent for a longer term than the law contemplated, in this case amounting to a difference between October 20, 1857, and April 12, 1859, or about two years. What rights applicant may have under the patent of October 20, 1857, which has been extended, it is not necessary to discuss here; but the state of facts developed in the examination of this case is fatal to the grant of the extension sought.

The prayer of the petitioner must therefore be refused.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

THE RUMFORD CHEMICAL WORKS *vs.* JOHN E. LAUER.

SAME *vs.* JOHN HECKER *et al.*

[*In Equity.—Before Blatchford, J.—September* 13, 1872.]

The first and second claims of the reissued letters patent granted to the Rumford Chemical Works, June 9, 1868, as assignees of Eben N. Horsford, as inventor, for an "improvement in pulverulent acid for use in the preparation of soda powders, farinaceous food, and other purposes," the original patent having been granted to Horsford April 22, 1856, and reissued to the plaintiffs May 7, 1867, and again reissued to them June 9, 1868, namely, (1) "As a new manufacture, the above-described pulverulent phosphoric acid; (2) The manufacture of the above-described pulverulent phosphoric acid, so that it may be applied in the manner and for the purposes described," are void for want of novelty, regarding the second claim as one to the described process of making the acid claimed in the first claim as a new manufacture.

Two chemical processes held to be the same, although the proportions of the ingredients used in the two were not the same.

The products of the two processes held to be the same.

The 9th section of the act of March 3, 1837, (5 U. S. Stat. at Large, 194,) is designed to allow a patentee to recover on one claim of his patent, notwithstanding other claims in it are void for want of novelty, but it requires that the parts claimed without right and the parts rightfully claimed shall be definitely distinguished from each other in the claims.

The third claim of the said patent, namely, (3) "The mixing, in the preparation of farinaceous food, with flour, of a powder or powders, such as described, consisting of ingredients of which phosphoric acid, or acid phosphates, and alkaline carbonates are the active agents, for the purpose of liberating carbonic acid, as described, when subjected to moisture or heat, or both," is a claim to the mixing of the acid and alkali with the flour in a dry state, and stopping at that point, without applying moisture or heat.

Such claim is void, in view of the letters patent granted by the United States, May 1, 1849, to John Fowler, which describe a mixture consisting of flour and dry powdered tartaric acid and a dry powdered alkaline carbonate, requiring only the addition of water to make dough.

The substitution of phosphoric acid, or acid phosphate, in the mixture referred to in such claim, in place of the acid named in Fowler's patent, was a mere formal and colorable alteration of Fowler's mixture, and not an invention and not the subject of a patent.

The fourth claim of the said patent, namely, (4) "The use of phosphoric acid or acid phosphates, when employed with alkaline carbonates, as a substitute for ferment or leaven in the preparation of farinaceous food," is a claim to the actual use of such acid and alkali in making raised dough, and is valid.

It required experiment and invention to find out whether phosphoric acid could be used in place of tartaric acid practically and successfully, and with safety to health.

Proper form of decree on the infringement of the fourth claim.

Motion to amend a bill of complaint denied.

Motion to open proofs and for a rehearing granted.

The suit of the *Rumford Chemical Works* vs. *John E. Lauer* was a suit in equity, brought by the Rumford

Chemical Works, a Rhode Island corporation, founded on reissued letters patent granted to the plaintiffs June 9, 1868, for an "improvement in pulverulent acid for use in the preparation of soda powders, farinaceous food, and for other purposes," as assignees of the alleged inventor, Eben N. Horsford. The original patent was granted to Horsford April 22, 1856, and was reissued to the plaintiffs May 7, 1867, and reissued to them a second time June 9, 1868. The infringement alleged in the bill was the making and selling by the defendant of pulverulent acid, in infringement of said reissued patent of 1868. The defendant, in his answer, admitted that he had made and sold improved acid compound for use in baking and cooking, under letters patent granted to him February 19, 1867.

The specification of the plaintiffs' patent stated the invention to be a "new pulverulent acid for use in the preparation of soda powders, farinaceous food, and for other purposes." It then described the acid and the mode of its preparation. It said:

> Carefully-washed and properly-burned bones, after being ground, are put into freshly-diluted oil of vitriol, with continual stirring and in the following proportions: Five hundred pounds of the above-described bones, (sometimes called bone-ash,) four hundred pounds of oil of vitriol, and one thousand pounds of water. These ingredients are stirred from time to time for about three days, when, ordinarily, the action will be completed, and the resultant products will be phosphoric acid, superphosphates, and sulphate of lime, or gypsum, with a small proportion of salts of magnesia and soda, in a paste-like mass.

Various methods were then described for making this mass pulverulent: 1st. Mixing it while moist with any farinaceous substance, drying it slowly in the sun, or with artificial heat not above 150° of Fahrenheit, and pulverizing it. 2d. Mixing it with freshly-burned gypsum, drying it in the sun or by artificial heat, and pulverizing it. 3d. Mixing it with stearine or other fatty bodies, drying it, and pulverizing it. 4th. Leaching the mass, mixing the concentrated extracts with burned gypsum or stearine, drying it, and pulverizing it. 5th. Drying and pulverizing it without admixture. All of these modes were stated to have given desirable results, but a preferable mode was then described, which consists in leaching the mass, concentrating the mass to 25° Baumé, thereby obtaining a solution consisting of phosphoric acid and acid phosphate of lime, with slight traces of other salts, substantially freed from gypsum or sulphate of lime, heating ten gallons of this mixture to boiling, adding four pounds of perfectly-white bone-ash, continuing the boiling until the concentrated liquid mass, containing in solution the added bone-ash, became pasty, cooling the mass, adding seventy-six pounds of wheaten flour mixed to a uniform paste, adding sixteen pounds of potato-starch carefully mixed, sifting it through a sieve with quarter-inch meshes, drying it thoroughly at a temperature of not over 150° Fahrenheit, and pulverizing it. The sole object of these manipulations of the paste-like mass was to obtain it in the shape of powder. The specification said:

> The object is to obtain phosphoric acid in such form—that is, a pulverulent powder—so that it may be intimately mixed with any alkaline carbonates, or other sensitive chemical compounds, without decomposing them or entering into combination with them, except upon the addition of moisture or the application of artificial heat. This requires that the phosphoric acid or acid phosphates be mixed with some neutral agent, as flour or starch, gypsum, &c., so that action of the acid shall be prevented while dry, and shall, when moisture or heat is applied, be prompt, thorough, and equally diffused. * * * As a dry, brittle powder the article has the advantages of a pulverulent acid, may be handled, weighed, stirred, &c., as tartaric acid or cream tartar, and as a substitute for these and a variety of pulverulent acids and acid salts it has many uses in manufacture. It may, among other uses, be mixed with dry alkaline carbonates, (carbonate of potassa or carbonate of soda,) and remain in this state, without evolution of carbonic acid, until moistened or heated, thus making it a substitute for cream tartar and tartaric acid in the preparation of yeast-powder or baking-powder. I am aware that acid phosphates have been used as fertilizers; but because of the method pursued in their manufacture, their coarseness, dark color, and offensive impurities, they were totally unfit to be used in the preparation of food. I am also aware that acid phosphates and phosphoric acid, in a liquid or more or less viscid condition, have been prepared in the laboratory of the chemist; but neither of these forms of phosphoric acid or acid phosphates possessed the properties essential to the purpose for which I design to employ them. The body which I have invented and above described is a form of acid phosphate of lime, or of mixed acid phosphate of lime and phosphoric acid, in which the phosphoric acid is the active and valuable constituent, free from the objectionable qualities of the above mentioned bodies. It is a dry, fine, white, or nearly white, homogeneous powder, unobjectionable on account of odor, taste, or composition, is an essential and important element in healthful nutrition, and is suited to be employed as the acid ingredient in the preparation of self-raising farinaceous food. In order to make the article possessing these qualities and suitable to this office, it is necessary that a powder should be made which can be not only evenly comminuted and diluted, but one which shall have so little affinity for the moisture of the atmosphere that it can be mixed with flour and bicarbonate of soda in the practical preparation of self-raising flour. * * * To meet the wants I have contemplated, the phosphoric acid must be a dry, fine, homogeneous powder, white, or nearly white, and unobjectionable on account of smell, or taste, or healthfulness. It must be a dry powder, to permit it to be mixed with flour and bicarbonate of soda and not evolve carbonic acid prematurely. If sticky it would mix unequally, and if moist it would at once act on the bicarbonate of soda to decompose it and set free carbonic acid. It must be a fine powder, in order, so to speak, that, with proper distribution, each minute quantity of flour may be brought into juxtaposition with a particle of acid and a particle of bicarbonate of soda, so that upon the application of moisture the carbonic acid of the bicarbonate of soda shall be so uniformly liberated throughout the entire mass of the dough that it shall secure a uniform finely porous structure throughout the loaf. It must be a homogeneous powder—that is, all particles must have a like acidity—in order that the decomposition of the alkaline carbonates shall be uniform, and thus prevent portions of the bread from becoming dark-colored, heavy, and alkaline by the action of undecomposed bicarbonate, while certain other portions may become sour on account of uncombined acid. * * * The acidified mixture above described as acid phosphate, or acid phosphate and free phosphoric acid, I have called "pulverulent phosphoric acid." The acid agent which this preparation places in available condition is phosphoric acid, as tartaric acid is the available acid agent in cream tartar, and this is used as a substitute for tartaric acid or cream tartar to decompose alkaline carbonates, as stated above, in the well-known process of making bread, cake, &c., without the use of ferment.

The claims of the patent were as follows:

1. I claim, as a new manufacture, the above-described pulverulent phosphoric acid.
2. I claim the manufacture of the above-described pulverulent phosphoric acid, so that it may be applied in the manner and for the purposes described.
3. I claim the mixing, in the preparation of farinaceous food, with flour, of a powder or powders, such as described, consisting of ingredients of which phosphoric acid or acid phosphates and alkaline carbonates are the active agents, for the purpose of liberating carbonic acid, as described, when subjected to moisture or heat, or both.
4. The use of phosphoric acid or acid phosphates, when employed with alkaline carbonates, as a substitute for ferment or leaven in the preparation of farinaceous food.

The case was brought to final hearing on pleadings and proofs, and the court (BLATCHFORD, J.) held that, as the alleged infringement charged in the bill was confined to the making and selling of pulverulent acid in infringement of the patent, only the first two claims of the patent were involved; that the first claim was a claim to the described pulverulent phosphoric acid as a new article of manufacture; and that, whether the second claim was to be regarded as a claim to the process of making such acid, or as being, in substance, the same as the first claim, in another form, it was unnecessary to determine in the view taken of the case by the court.

The defenses set up were that Horsford was not the original and first inventor of anything which had been made and sold by the defendant, and that the defendant had not infringed the patent. On the question of novelty, the defendant undertook to establish that Horsford was not the original and first inventor of a pulverulent acid phosphate of lime suitable to be used with bicarbonate of soda, as a substitute for ferment or leaven, in the preparation of farinaceous food; and that an acid phosphate possessing all the properties and qualities of the acid phosphate described in the plaintiffs' patent was known in the arts prior to the date of Horsford's invention. The article relied on by the defendant as antedating Horsford's acid was what was known as the three-fourths phosphate of Berzelius, described in the Hand-Book of Chemistry by Leopold Gmelin, volume 3, page 195, published in 1846. It was claimed by the defendant that this three-fourths phosphate was an acid phosphate of lime, possessing all the properties and qualities specified in the plaintiffs' patent as being possessed by Horsford's pulverulent phosphoric acid, and as being necessary, in admixture with bicarbonate of soda, for the preparation of self-raising farinaceous bread; that it was a dry, non-hygroscopic, fine, white, homogeneous powder, unobjectionable on account of odor, taste, or composition; that the phosphoric acid of such powder was the active agent, when the powder was mixed with bicarbonate of soda and moistened, in liberating carbonic-acid gas to give porosity to dough; and that such acid, in uniting with the soda of the carbonate to evolve carbonic-acid gas, formed phosphate of soda, which was deposited in the dough. The three-fourths phosphate was so called as having a chemical composition of four atoms of oxide of lime and three atoms of phosphoric acid. The entire passage in Gmelin describing this phosphate was as follows:

> 4 Ca O, 3 PO^5 c. *Three-fourths Phosphate.* Aqueous solution of phosphoric acid is saturated with the salt *a*, the solution mixed with alcohol, and the white precipitate formed washed with alcohol and dried. White powder, having an acid taste and reddening litmus. With water it separates into the insoluble salt *b* and an acid salt, which remains in solution, (with one atom of acid?) (Berzelius *Ann. Chim. Phys.*, 2, 167.) If the salt *a*, recently precipitated, is immersed in a solution of hydrated phosphoric acid ignited just before it was dissolved in water, it gradually changes to a tenacious acid mass, which may be drawn out into threads and sticks to the teeth; after drying, it becomes yellow, transparent, and very friable. This substance has the same composition as *c*, and is decomposed in the same manner by water, but contains metaphosphoric acid as well as ordinary phosphoric acid. (Berzelius', *Lehrb.*, 4, 277.) Graham regards this compound as metaphosphate of lime.

The court held that the first claim of the plaintiffs' patent, if valid, would be infringed by the manufacture, sale, or use of any dry, fine, homogeneous powder containing, as an active agent, phosphoric acid in an available condition to be used as a substitute for tartaric acid, in decomposing an alkaline carbonate, in making bread without the use of ferment; that the prior existence of any such powder was an answer to such first claim; that the testimony showed that, by following the description in Gmelin, a dry, fine, homogeneous powder was produced, containing, as an active agent, phosphoric acid, in an available condition to be used as a substitute for other acid in decomposing an alkaline carbonate, in making bread without the use of ferment, and which was used for that purpose successfully, and which powder did not, by being kept, lose its acid strength or become inert, or absorb moisture from the air, or part with any of the qualities defined in the plaintiffs' patent as necessary in such a powder; that the pulverulent phosphoric acid, as a chemical substance, claimed in the first claim of the plaintiffs' patent, was shown by the evidence to have existed prior to the invention of it by Horsford; and that the first claim was therefore void for want of novelty.

The court held, as to the second claim, that if it were regarded as a claim to the process described in the patent for making the acid, the defendant had not infringed it, because his process was as different from that of the plaintiffs as the plaintiffs' was different from that described by Berzelius or Gmelin; that the defendant dissolved bone-black in a mixture of muriatic acid and water, filtered the product, added sulphuric acid, and dried the resultant mass by heat till it crumbled into a powder which was white and acid, and could be used, in connection with bicarbonate of soda, to liberate carbonic acid, to make bread; that bone-black was burned bones; that the muriatic acid dissolved the phosphate of lime in the bones from the carbon, the filtering got rid of the carbon, the action of the sulphuric acid created sulphate of lime, acid-phosphate of lime, and free phosphoric acid, and the heat drove off the muriatic acid; that Horsford removed the carbon from the bones by fire before he applied the sulphuric acid, while the defendant removed the carbon from the bones by muriatic acid, and then got rid of that acid by heat; that Horsford burned away the carbon from the phosphate of lime in the bones, while the defendant dissolved away the phosphate of lime from the carbon; that the products produced by the two processes were substantially identical with each other and with the product produced by the process of Berzelius and Gmelin, as powders containing phosphoric acid as an available agent to decompose alkaline carbonates, for the purpose of liberating carbonic acid, to give porosity to dough, but the three processes differed each from the other, in substance; that it appeared from the evidence that the use of sulphuric acid to act on what was indifferently known as bone-earth, or bone-ash, or bone-phosphate, being common bones containing phosphate of lime, and thus form sulphate of lime and liberate phosphoric acid, or an acid phosphate of lime, was well known before the date of the alleged invention of Horsford; that the defendant did not, by the use of the process described in his patent, infringe the second claim of the plaintiffs' patent, considered as a claim to the process described in that patent for making the pulverulent acid therein described; and that, if the second claim were considered as a claim to the acid as a product, the conclusions arrived at in regard to the first claim applied to it.

The third and fourth claims of the plaintiffs' patent not being involved in the case, the court remarked that the questions so largely discussed by the counsel for the plaintiffs, on the argument, as to whether Horsford was not the first person who used, as a substitute for yeast, a powder containing phosphoric acid as its active agent, and as to whether he is not entitled to a patent for applying phosphoric acid, in connection with an alkaline carbonate, to the raising of dough, and as to whether the third and fourth claims of the plaintiffs' patent were not valid, as containing inventions which involved the necessity of experiments to determine whether phosphoric acid, when artificially introduced into bread, would be healthful, and whether and how the acid could be mixed with flour and with an alkaline carbonate, and remain inactive until moistened or heated, were questions which would arise on the patent when a suit was brought on it for the infringement of its third and fourth claims, but they were not pre-

sented in this case; and that it might be that there were claims which Horsford could make and hold in reference to certain constituents and qualities of the pulverulent phosphoric acid that was made by his process, but the broad claim made to the acid described was not tenable.

The conclusion was that the bill must be dismissed.

Before a decree was signed or entered on such decision the plaintiffs moved to amend the bill by adding to the averment that the defendant had made and sold pulverulent acid in infringement of the patent—an averment that he had used such acid. The motion was made on the ground that, as the answer of the defendant admitted that the defendant had made, used, and sold improved acid compound for use in baking and cooking, under letters patent granted to him February 19, 1867, such averment of user would, in connection with such admission, raise an issue as to the infringement of the third and fourth claims of the patent. It was shown, however, by affidavit, on the part of the defendant, that he had never used any acid phosphate with an alkaline carbonate, except in a few instances for the purpose of experiment, and had never mixed any acid phosphate with an alkaline carbonate for sale, to be used in the preparation of farinaceous food or for any other purpose; and it did not appear that the defendant had used the plaintiffs' acid otherwise than by making and selling the acid compound patented to the defendant. The court, therefore, held that the defendant had not infringed the third and fourth claims of the patent; that the issues as to the first and second claims were raised by the averments in the bill as to making and selling the acid as fully as if the averment in regard to using it were contained in the bill; and that the motion to amend the bill must be denied.

At the same time a motion was made, on the part of the plaintiffs, to open the proofs in the case for further testimony and for a reargument. The ground of the motion was that two of the chemical experts for the plaintiffs did not, in preparing specimens which they produced as specimens of the three-fourths phosphate of Berzelius, follow the process of manufacture described in the public works referred to, in that such specimens differed in chemical composition from such three-fourths phosphate, and that they boiled the solutions they employed. It was also urged that a three-fourths phosphate fulfilling the formula of Berzelius could be produced without the use of heat, and had been so produced by the plaintiffs' expert, and was, when so produced, practically inert and useless as a constituent of a baking-powder. The court held that that branch of the case had not been fully developed in the testimony taken for the hearing; that the question as to the effect of using heat in the process had not been gone into to the extent which seemed desirable; that the question as to whether the substance produced as the three-fourths phosphate was made by the process of Berzelius was a vital question in the case; and that both parties ought to be allowed to take further testimony as to the novelty of what was covered by the first and second claims of the plaintiffs' patent, as affected by the descriptions in the public works referred to, the case to be then heard on the testimony already taken and on the new proofs to be taken.

The case now came on to be reheard.

[*William Whiting* and *Clarence A. Seward*, for the plaintiffs. *Charles M. Keller*, for the defendant.]

BLATCHFORD, *J.*:

Although the announced decision of the court on the motion of the plaintiffs for a reargument was that both parties would be allowed to take further testimony as to the novelty of what is covered by the first and second claims of the plaintiffs' patent, as affected by the description of the three-fourths phosphate in the Lehrbuch and in Gmelin, yet the formal order entered was an unrestricted one, reopening the cause, with liberty to either party to take further proofs, and to bring on the cause for a rehearing on the proofs then already taken and such further proofs as might be taken. A large mass of further testimony has been taken on all the points involved in the cause, and it has been reargued.

The first two claims of the patent are the only ones involved in this suit. As to them the contest is as to their novelty. Regarding the second claim as a claim to the described process of making the acid claimed in the first claim as a new manufacture, the process so described consists, so far as substance is concerned, in mixing together five hundred pounds of bone-ash, (made by grinding burned bones,) and four hundred pounds of freshly-diluted oil of vitriol, (which is sulphuric acid,) and one thousand pounds of water, stirring the ingredients from time to time for about three days, and drying and pulverizing the resultant mass. The resulting pulverized powder is claimed in the first claim as a new manufacture. It is said, in the specification, to consist of phosphoric acid, superphosphates, and sulphate of lime or gypsum, with a small proportion of salts of magnesia and soda.

The process of the plaintiffs' specification is fully anticipated by the description of Lawes' process of making a dry superphosphate, which was not before the court on a former hearing. The Lawes process was published in England in 1845, in an article in volume 5 of the Journal of the Royal Agricultural Society of England, entitled "On the action and application of dissolved bones." The article says: "Where calcined bones are used, owing to their containing merely the earthy portions of the bones, and to their being so easily dissolved, a dry superphosphate may be formed." For effecting this Mr. Lawes gives the following excellent and simple directions for making this superphosphate:

> Calcined bones are to be reduced, by grinding, to a very fine powder, and placed in an iron pan with an equal weight of water; (a cast-iron trough such as are sold for holding water for cattle will do.) A man with a spade must mix the bone with the water until every portion is wet. While the man is stirring an assistant empties at once into the pan sulphuric acid, sixty parts, by weight, to every one hundred parts of bone. The acid is poured in at once, and not in a thin stream, as commonly recommended. The stirring is continued for about three minutes, and the material is then thrown out. With four common farm laborers and two pans I have mixed two tons in one day. The larger the heap that is made the more perfect the decomposition, as the heap remains intensely hot for a long time. It is necessary to spread the superphosphate out to the air for a few days, that it may become dry.

The evidence shows that the Lawes process is the same as that of the plaintiffs' patent. In each ground calcined bones are mixed with water and sulphuric acid, the proper chemical action and decomposition are allowed to take place, and the result is a dry product, capable of being pulverized. The relative proportions of the three materials—bone-ash, sulphuric acid, and water—differ somewhat in the two processes. Lawes uses ten parts, in weight, of bone, to ten of water and six of sulphuric acid. The plaintiffs prescribe ten of bone to twenty of water and eight of sulphuric acid; but the specification says: "It will be obvious to any practical chemist that the above-described processes of producing this pulverulent acid may be modified in various ways. The proportions of the agents employed may be varied somewhat without materially affecting the result." The prescribed quantity of sulphuric acid in the patent is larger, in proportion to the bone, than in Lawes' process. But it is shown to have been a well-known chemical fact that the greater or less acid strength of the product of such a mixture would be due to the greater or less relative proportion of sulphuric acid used. There is no invention in so varying proportions as the specification itself in effect states. The process remains, in substance, the same. There can be no doubt that Lawes' process, if it had been first resorted to subsequently to the issue of the plaintiffs' patent, would be an infringement of that patent.

The processes being the same, the natural conclusion would be that the products would be substantially alike. The evidence is to that effect. It shows that the product of the Lawes process, as described, is to all practical intents and purposes the same thing as the product of the plaintiffs' process, and capable of being used for the purposes set forth in the specification of the plaintiffs' patent. It is no invention, in preparing the article to be used as an ingredient in food, to carefully wash the bones clean. The direction as to each process is simply to use sulphuric acid or oil of vitriol and calcined or burned bones generally. Any impurity of extraneous matter that would exist in the sulphuric acid or the bones, or in the product, because of the quality of such acid or of such bones in the one case, would exist in the other. The evidence shows that the Lawes product is equally non-hygroscopic with that of the plaintiffs' process; that the one is as much entitled to the appellation of a dry powder as the other, and no more; and that the Lawes product has sufficient acid strength of a permanent character for use for the special purpose of an ingredient in a yeast-powder.

The first two claims of the plaintiffs' patent are, therefore, anticipated by the Lawes process and product. This conclusion makes it unnecessary to consider any of the other matters discussed on the question of novelty.

It was suggested on the hearing that, as the defendant uses starch with his acid, and, as the plaintiffs' patent states, as its preferred method of preparing the acid, the use of starch in it, the first claim ought, at all events, to be held good for the acid when prepared with starch in it, on the ground that starch had never before been used as an ingredient in it. This view was urged on the idea that the case falls within the 9th section of the act of March 3, 1837, (5 U. S. Stat. at Large, 194,) which provides that when a patentee claims, in his specification, "to be the original and first inventor or discoverer of any material or substantial part of the thing patented, of which he was not the first and original inventor, and shall have no legal or just right to claim the same, in every such case the patent shall be deemed good and valid for so much of the invention or discovery as shall be truly and *bona fide* his own; *provided*, it shall be a material and substantial part of the thing patented, and be definitely distinguishable from the other part so claimed without right as aforesaid; and every such patentee, his executors, administrators, and assigns, whether of the whole or of a sectional interest therein, shall be entitled to maintain a suit at law or in equity on such patent, for any infringement of such part of the invention or discovery as shall be *bona fide* his own as aforesaid, notwithstanding the specification may embrace more than he shall have any legal right to claim." This section has no application to the case. It is designed to allow a patentee to recover on one claim of his patent, notwithstanding other claims in it are void for want of novelty. But it requires that the parts claimed without right and the parts rightfully claimed shall be definitely distinguishable, as matters of fact, on the face of the claims—that is, be definitely distinguished from each other in the claims. Here there is no distinction, in the claims, between acid prepared with starch and acid prepared without starch. If there were a claim to the acid prepared with starch and a separate claim to the acid prepared without starch there might, under the statute, be a recovery on the former, although the latter were void for want of novelty, provided there had been no unreasonable delay in filing a disclaimer to the latter.

The bill must be dismissed with costs.

At the same time with the foregoing case the case of the same plaintiffs against John Hecker and George V. Hecker, founded on the same patent, was heard, being argued by the same counsel.

BLATCHFORD, *J.*:

The patent involved in this case is the same one sued on in the case brought by the same plaintiffs against Lauer, just decided. The present defendants are charged with infringing all four of the claims of the patent. The first two are disposed of by the decision in the case against Lauer.

The third and fourth claims are as follows:

> 3. I claim the mixing in the preparation of farinaceous food, with flour, of a powder or powders, such as described, consisting of ingredients of which phosphoric acid or acid phosphates and alkaline carbonates are the active agents, for the purpose of liberating carbonic acid, as described, when subjected to moisture or heat, or both.
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> 4. The use of phosphoric acid or acid phosphates, when employed with alkaline carbonates, as a substitute for ferment or leaven, in the preparation of farinaceous food.

The proper construction of the third claim is that it claims the mixing of the acid and the alkali with the flour, in a dry state, and stopping at that point, without applying moisture or heat. In other words, it claims the preparing of self-raising flour containing the powder or powders named in the claim, and requiring merely the application of moisture or heat to enable it to be leavened. Against the novelty of this claim the defendants set up a patent granted by the United States May 1, 1849, to John Fowler, assignee of Henry Jones, the inventor. The specification of the Fowler patent says that the invention covered by it consists "in the adding to a certain weight of flour such quantities of alkalines and acids, sugar, and salt, as shall, by the addition of water only, enable such prepared flour to be manufactured into bread, &c., without the use of fermenting matter." The specification then describes a mode of making the prepared flour, by first mixing with one hundred-weight of dry flour ten and a half

ounces of fine dry tartaric acid, and then, after two or three days, mixing with the flour and acid twelve ounces of bicarbonate of soda or fourteen ounces of bicarbonate of potassa, in fine powder, twenty ounces of muriate of soda, (common salt,) and eight ounce of loaf-sugar, in fine powder. The specification adds:

The quantities of acids and alkalies may have to be slightly varied, according to their quality; but the point to be attained is the neutralization of both. My prepared flour, when used to make bread, biscuits, or other like food, only requires to be made into dough with cold water, in the proportion of ten ounces of water to one pound of flour for bread, and about six ounces to one pound of flour for biscuits, and baked at once in a well-heated oven. I do not claim mixing acid and alkali with flour as a substitute for yeast; nor do I claim mixing one of these ingredients with flour in the dry state when the other is dissolved for making bread.

The claim is this:

Mixing both the acid and the alkali with the flour in the dry state, sugar and salt being added or not, at will, substantially in the manner and for the purpose herein set forth, as a new article of manufacture.

In view of the Fowler patent it is impossible to see any patentable novelty in the third claim of the plaintiffs' patent. The prepared flour made with the ingredients named in said claim contains the phosphoric acid, or the acid phosphate, as a mere equivalent for the tartaric acid of Fowler's prepared flour; as much so as a screw or a lever is a mechanical equivalent for a pulley. Any pulverulent acid capable, on the application of heat or moisture, of liberating carbonic acid to make the dough porous, is, in the prepared flour, the equivalent of any other pulverulent acid having the like capacity, so far as regards such prepared flour, before heat or moisture is applied. Everything of substantive patentable invention in regard to prepared flour as composed of an acid in dry powder and an alkaline carbonate in dry powder mixed with dry flour is found in the patent of Fowler. Especially is this so in regard to the plaintiffs' patent, in view of the fact that the specification of that patent discloses no mode of practically mixing the ingredients composing the self-raising flour, but merely states that the acid "may be mixed with flour and bicarbonate of soda" as a substitute for cream tartar and tartaric acid "in the practical preparation of self-raising flour."

The fourth claim is a claim to the use of the acid and an alkaline carbonate, as a substitute for ferment in leaven, in the preparation of farinaceous food. This is a claim to the actual use of such acid and alkali in making raised dough. Nothing is shown which anticipates this claim, and the invention covered by it is patentable. Horsford was the first to use phosphoric acid or an acid phosphate for the purpose. It required experiment and invention to find out whether phosphoric acid could be used in place of tartaric acid practically and successfully, and with safety to health. As it is admitted and proved that the defendants have used what is substantially the same acid described in the plaintiffs' patent, mixed with an alkaline carbonate, as a substitute for leaven, in making bread from flour, they have infringed the fourth claim of that patent, and there must be a decree for the plaintiffs for an account of profits as to that claim. The question of costs is reserved.

On the settlement of the decree in the case against the Heckers, the plaintiffs asked to have the court review its decision as to the third claim, and to consider whether, in the light of the decision of the Supreme Court in the case of *Rees* vs. *Gould*, (2 Off. Gazette of Patent Office, 624,) the third claim was not valid. They also asked that the decree should direct that the account to be taken, on the infringement of the fourth claim, should include an account of the profits derived by the defendants from the sale of the mixture described in the third claim, on the ground that the defendants, by selling such mixture, were joint infringers of the fourth claim with every purchaser of such mixture from them, who used it in infringement of the fourth claim.

BLATCHFORD, *J.*:

In respect to the validity of the third claim of the plaintiffs' patent I am referred to the case of *Rees* vs. *Gould*, decided by the Supreme Court of the United States, (2 Off. Gazette of Patent Office, 624.) I do not understand that any different doctrine is laid down in the opinion delivered in *Rees* vs. *Gould* from that which is laid down in the opinion delivered in the same court in *Seymour* vs. *Osborne*, (11 Wallace, 516, 555, 556.) by the same judge, Mr. Justice Clifford. In view of the construction given by me to the third claim of the plaintiffs' patent and of what is found in the Fowler patent, and even irrespective of the evidence as to what was known prior to the plaintiffs' patent in regard to phosphoric acid and acid phosphate, and their chemical and other qualities and properties, I am confirmed, on full reflection, in the views and conclusions stated in my former decision in this case, and am of the opinion that, in respect to such third claim, the substitution of phosphoric acid or acid phosphate in the mixture referred to in such claim in place of the acid named in Fowler's patent was a mere formal and colorable alteration of Fowler's mixture, within the doctrine of *Seymour* vs. *Osborne*, and not an invention and not the subject of a patent.

At the hearing it was admitted and proved that the defendants had used what was substantially the same acid described in the plaintiffs' patent, mixed with an alkaline carbonate, as a substitute for leaven, in making bread from flour. It was, therefore, held that they had infringed the fourth claim of the patent. The proper decree, therefore, is that they have infringed the fourth claim, and that they account for the profits in consequence of their infringement of said fourth claim. Whether such infringement has taken place solely by a use of what is named in the fourth claim irrespective of any selling by the defendants of the mixture claimed in the third claim, or whether such infringement has taken place, also, through sales by the defendants of such mixture, in connection with the use of it by the vendees under the fourth claim, will be a question to arise on evidence to be given on the accounting as to the facts attending such sales, in connection with the use by the vendees of the things sold.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

DRAPER *vs.* HUDSON.

In Equity.—Before Shepley, J.—Decision March 11, 1873.]

A patent for an article of manufacture cannot be sustained on the ground that it was fabricated by new and improved machinery; it must be a new and improved thing in itself, possessing novelty of its own, independent of the devices, processes, or arts by which it was produced.

Where the defendant in a bill for infringement had deceased, and there was no prayer for a discovery against the executor, nor proof of infringement by him, the title to relief by discovery and injunction was held to have failed, and, as a mere incident of that, the right to an account also, and the bill was dismissed without costs.

[*J. B. Robb*, for complainant.

Walter Curtis and *C. M. Reed*, for defendant.]

SHEPLEY, *J.*:

The first claim in complainant's patent, as reissued, is for the combination of the devices described in his patent for producing letters and figures upon the edges of type-blocks for hand-stamps and other purposes, substantially as set forth. The evidence fails to show any infringement of this claim after the date of the reissued patent. The second claim is for, as a new article of manufacture, a type-block with letters, figures, or characters produced thereon, in the manner substantially as described. The patent itself shows that a type-block such as described was not a new article of manufacture. It describes at least one mode by which a similar type-block had been made before, but which mode consumed considerable time and was very expensive. His type-block is not represented in the patent as a new article of manufacture in any other sense than as an old article made upon a new machine. This is not a new manufacture in the sense of the patent law. It could not have been the intention of the statute that pins, matches, nails, and other old articles in common use should be patented as new articles of manufacture simply because they were fabricated by the use of new and improved machinery, unless the product itself was a new and improved product, and as such possessing novelty of its own, independent of the new devices or processes or arts by which it was produced. The second claim of the patent cannot, therefore, be sustained.

The record in this case shows the death of the defendant. No injunction can issue against the defendant, and, as there is no proof of infringement by the executor, none can issue against him. No discovery is prayed for against the executor, and there is no presumption of any knowledge by him of his testator's acts. When the title to the principal relief, which is the proper subject of a suit in equity—the injunction and discovery—fails, the incident right to an account fails, also. *Price's Pat. Candle Co.* vs. *Beawans C. Co.*, 4 K. and J., 727; *Bailey* vs. *Taylor*, 1 R. & M., 73; *Smith* vs. *London & S. W. R. R. Co.*, Kay, 415; Kerr on Injunctions, 435. Although the jurisdiction of the circuit court in equity in patent causes rests upon statute provisions, it is to be exercised according to the course and principles of courts of equity; and the Supreme Court of the United States having decided in *Stevens* vs. *Gladding*, 17 Howard, 455, that "the right to an account of profits is incident to the right to an injunction in copy and patent right cases," it would seem to follow that in a case like the present, where the title to equitable relief fails, the general rule of equity applies that the incidental relief fails, also.

Bill dismissed without costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

23,820.—*Manufacture of Watch-Cases.*—Granted to JAMES BOSS, May 3, 1859. Hearing April 16, 1873.

23,826.—*Skate-Fastenings.*—Granted to JOHN H. COE and WILLIAM B. SNIFFEN, May 3, 1859. Hearing April 16, 1873.

23,860.—*Cotton-Presses.*—Granted to H. W. RANDLE, May 3, 1859. Hearing April 16, 1873.

23,875.—*Lamp-Shades.*—Granted to CHARLES and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860. Hearing April 16, 1873.

23,882.—*Cements for Roofing.*—Granted to NATHAN A. DYAR, May 3, 1859. Hearing April 16, 1873.

23,886.—*Cultivators.*—Granted to MILTON ALDEN, May 10, 1859. Hearing April 23, 1873.

23,893.—*Skate-Fastenings.*—Granted to EDWARD BEHR, May 10, 1859. Hearing April 23, 1873.

23,921.—*Harvesting-Machines.*—Granted to M. G. HUBBARD, May 10, 1859. Hearing April 23, 1873.

23,924.—*Mail-Bags.*—Granted to THOMAS J. LAMDIN, May 10, 1859. Hearing April 23, 1873.

23,950.—*Clock-Dials.*—Granted to S. E. ROOT, May 10, 1859. Hearing April 23, 1873.

23,957.—*Lathes for Turning Irregular Forms.*—Granted to CHARLES and ANDREW SPRING, May 10, 1859. Hearing April 23, 1873.

23,970.—*Stoves.*—Granted to JOHN G. WIDMANN, May 10, 1859. Hearing April 23, 1873.

23,983.—*Cooking-Stoves.*—Granted to HENRY G. LEONARD, May 10, 1859. Hearing April 23, 1873.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tyres.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.* Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,098.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,102.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,486.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHERERLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,586.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,735.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE E. HAY, August 9, 1859. Hearing July 23, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 30, 1871. Hearing August 6, 1873.

25,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 29, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,557.—*Improvement in Sewing-Machine*, granted to WILLIAM CLEVELAND HICKS, April 12, 1859; reissued March 4, 1873, numbered 5,305.

Claim.—1. The combination, substantially as herein set forth, of a flat-shuttle sewing-machine table, provided with a shuttle-driver or race-way running substantially parallel with its upper surface; a bracket-arm, attached by its post to one end of said table, and extending substantially parallel with said shuttle-race to support the needle-stock and mechanism, substantially as set forth, for giving said needle-stock a vertical reciprocating motion by means of a cam or crank on the driving-shaft; a shaft arranged at right angles to said shuttle-race, in a bearing or bearings attached to the platform of the table, provided with a cam or crank which operates the feed, and with a crank which reciprocates the shuttle once forward and back at each revolution, by a continuous and positive crank motion, both located under the table and under the post of the bracket-arm; a wheel-feed or other feeding mechanism under the table; and a shuttle-driver, all arranged in such manner that the direction in which the materials to be sewed and fed shall be in a line parallel with said bracket-arm, and toward and into the bight formed by the said arm and the table.

2. The arrangement, substantially as herein set forth, of a partially-revolving thread-controlling crank or lever, on a stud set at right angles to the bracket arm, above and parallel with the table, and connected, substantially as described, with a cam or crank on the main shaft under the table, in such manner that the needle-thread is entirely controlled and drawn up between the tension apparatus and the needle by said lever, actuated by the movements of said cam or crank without the intervention of the needle-stock.

3. The combination, substantially as herein set forth, of the needle-stock, bracket-arm, pinion, connecting rod and lever, with the driving-shaft, in such manner that the motions of the cam or crank on said shaft may be transmitted to the pinion and needle-stock, substantially as herein set forth.

4. The combination, substantially as set forth, in a shuttle sewing-machine, of a table provided with a shuttle race or way running parallel to its upper surface, and with a bracket-arm, fastened by its post at one end of said table, lying substantially parallel with said shuttle race or way, to support a vertically-reciprocating needle-stock; and a shaft located (in a bearing or bearings attached to a platform of a table) at right angles to the shuttle race or way, and bracket-arm provided with cams or cranks under the table, and under the post of the bracket-arm, for actuating the shuttle and feed, by means of connecting-rods, reciprocating in the direction of their length, substantially as set forth; and connected, through the post of the bracket-arm, to a rod or bar running longitudinally through the bracket-arm, to actuate the mechanism which reciprocates the needle-stock, substantially as set forth, so that the table, the bracket-arm, and the connecting rods or bars, may be lengthened in the same direction, without changing the cams or cranks which actuate the needle-stock and shuttle, or their combined motions in reference to each other, substantially as set forth.

DISCLAIMERS FILED.

23,525.—LEVI W. BUXTON.—*Improvement in Bedstead-Fastenings*, granted April 5, 1859. Disclaimer filed April 1, 1873. Disclaims:

"That part of the claim in the specification of said Letters Patent which is in the following words, to wit:

"'I also claim the combination of the hook *e'* with the tube or friction roller *f* and stationary pin *g*, substantially as and for the purposes described.'"

23,445.—CYRUS CHAMBERS.—*Improvement in Paper-Folding Machines*, granted April 5, 1859. Disclaimer filed April 4, 1873. Disclaims:

"That part of the claims in specification of said Letters Patent which is in the following words, to wit:

"'Second. Adjusting one of the register-pins *c'* laterally and longitudinally, independently of the other pin, by means of the slides n^1 and n^2, or their equivalents.'

"'Seventh. The curved wires 15 and 16, or their equivalents, attached to the machine in any convenient manner, situated under the folding apparatus and adjacent to the trough, for the purpose specified.'"

133,376.—JAMES F. MASON.—*Improvement in Gloves*, granted November 26, 1872. Disclaimer filed April 4, 1873. Disclaims:

"The following parts of the glove claimed as new in the aforesaid specification, to wit:

"The pattern therein described and marked D; also, all of the pattern therein described and marked E, except that portion which covers and protects the back of the little finger, near the end, forming a cap-piece substantially like the patterns therein described and marked I and J, and also all the pattern therein described and marked A, except the forefinger cap-piece thereof, designated B in the specification."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 1, 1873.]

6,538.—*Music-Stand.*—WILLIAM P. BIGELOW, Natick, Mass. Application filed February 17, 1873.

6,539.—*Pen Sign.*—LE ROY W. FAIRCHILD, New York, N. Y. Application filed October 29, 1872.

6,540.—*Jewelry-Case.*—MAURICE HENDBERG, Boston, Mass. Application filed March 10, 1873.

6,541.—*Soda-Water Apparatus.*—CHARLES LIPPINCOTT and JAMES PATTERSON, Philadelphia, Pa. Application filed March 19, 1873.

6,542.—*Soda-Water Apparatus.*—CHARLES LIPPINCOTT and JAMES PATTERSON, Philadelphia, Pa. Application filed March 19, 1873.

6,543.—*Soda-Water Apparatus.*—CHARLES LIPPINCOTT and JAMES PATTERSON, Philadelphia, Pa. Application filed March 19, 1873.

6,544.—*Tumbler-Holder.*—CHARLES LIPPINCOTT and JAMES PATTERSON, Philadelphia Pa. Application filed March 19, 1873.

6,545.—*Lubricating-Cup.*—FREDERICK LUNKENHEIMER, Cincinnati, Ohio, and JAMES MEEHAN, Covington, Ky. Application filed March 21, 1873.

6,546.—*Floor Oil-Cloths, &c.*—CHARLES T. METER and VICTOR E. METER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed March 25, 1873.

6,547.—*Floor Oil-Cloth, &c.*—CHARLES T. METER and VICTOR E. METER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed March 17, 1873.

6,548.—*Group of Statuary.*—JOHN ROGERS, New York, N. Y. Application filed March 17, 1873.

6,549.—*Cook-Stoves.*—WILLIAM G. SEMPLE, Cincinnati, Ohio, assignor to GALWAY, SEMPLE & CO., same place. Application filed February 3, 1873.

6,550.—*Billiard-Table.*—NIKOLAUS STOLL, Chicago, Ill. Application filed March 18, 1873.

6,551.—*Carpet.*—JOHN T. WEBSTER, Philadelphia, Pa., assignor to JOHN DOBSON and JAMES DOBSON, same place. Application filed March 19, 1873.

6,552.—*Carpet.*—JOHN T. WEBSTER, Philadelphia, Pa., assignor to JOHN DOBSON and JAMES DOBSON, same place. Application filed March 19, 1873.

6,553.—*Carpet.*—JOHN T. WEBSTER, Philadelphia, Pa., assignor to JOHN DOBSON and JAMES DOBSON, same place. Application filed March 19, 1873.

6,554.—*Carpet.*—JOHN T. WEBSTER, Philadelphia, Pa., assignor to JOHN DOBSON and JAMES DOBSON, same place. Application filed March 19, 1873.

6,555.—*Lamp-Chimney.*—MARION J. WELLMAN, New York, N. Y. Application filed March 12, 1873.

6,556.—*Lamp-Chimney.*—MARION J. WELLMAN, New York, N. Y. Application filed March 12, 1873.

6,557.—*Bell-Pulls.*—JOHN B. WHITNEY, New York, N. Y. Application filed January 6, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date April 1, 1873.]

1,187.—*Watches and Watch Materials.*—BOURQUIN BROTHERS, New York, N. Y. Application filed March 10, 1873.

1,188.—*Boots and Shoes.*—THOMAS EMERSON'S SONS, Wakefield, Mass. Application filed March 7, 1873.

1,189.—*Boots and Shoes.*—THOMAS EMERSON'S SONS, Wakefield, Mass. Application filed March 7, 1873.

1,190.—*Printing-Inks and Varnishes.*—LOUIS H. GEIS, New York, N. Y. Application filed March 22, 1873.

1,191.—*Playing-Cards.*—VICTOR E. MAUGER, New York, N. Y. Application filed March 15, 1873.

1,192.—*Candles.*—PROCTER & GAMBLE, Cincinnati, Ohio. Application filed March 17, 1873.

1,193.—*Medicines.*—RAINER RATTINGER, St. Louis, Mo. Application filed February 19, 1873.

1,194.—*Ruffles and Dress-Trimmings.*—JAMES V. ROCKWELL, New York, N. Y. Application filed March 10, 1873.

1,195.—*Medicine.*—D. DODGE, TOMLINSON, San José, Cal. Application filed March 29, 1873.

1,196.—*Hams and Shoulders of Pork.*—FREEMAN P. WOODBURY, New York, N. Y. Application filed February 27, 1873.

1,197.—*Hams and Shoulders of Pork.*—FREEMAN P. WOODBURY, New York, N. Y. Application filed February 27, 1873.

1,198.—*Hams and Shoulders of Pork.*—FREEMAN P. WOODBURY, New York, N. Y. Application filed February 27, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date April 1, 1873.]

ORIGINAL PATENTS.

137,279.—*Alloy for Producing Ornamental Coatings on Metals.*—HENRY AIKEN, Philadelphia, Pa. Application filed February 21, 1873.

Antimony, zinc, tin, copper.

Claim.—1. The mode of making ornamental castings by pouring a melted compound of metals, substantially as set forth, in the open air into open molds or onto forms.

2. The mode of making ornamental castings by casting an alloy of metals, substantially as described, in open molds, or over forms and then molding by compression.

3. The alloys of zinc and antimony with or without tin or copper, for producing colored castings, substantially as set forth.

137,280.—*Sash-Holder.*—CHARLES C. ALGEO, Pittsburg, Pa. Application filed March 10, 1873.

A cam-fastener for the meeting-rail of the sash is furnished with a deep groove running around its edges and sides. This groove is intended to prevent forcing the cam back with the blade of a knife inserted from the outside between the sashes. The knife-point, being in the groove, cannot crowd the cam back.

Claim.—The groove *i* formed in the cam G, substantially as and for the purposes herein set forth.

137,281.—*Stalk-Cutter.*—JAMES ARMSTRONG and GEORGE ARMSTRONG, Elmira, Ill. Application filed October 28, 1872.

A pair of cutting-rollers are mounted upon independent frames and secured to a main frame supported by three wheels, the forward and middle one of which is a swivel-wheel. The rollers are elevated by a self-locking hand-lever, assisted in raising by a foot-lever.

Claim.—1. A foot-lever in combination with a self-locking hand-lever, I, for the purpose and substantially as described.

2. The tongue hinged directly to the main frame, in combination with the swivel-wheel, the tongue and swivel-wheel being on the same end of the frame, so as to turn the machine bodily when the cutter-heads are raised, substantially as described.

3. The loops b^3 and yoke or coupling *b* attached to the front ends of both cutter-carrying frames C, in combination with the draft-chain b^1 and pulley *d*, whereby the draft of the team will act to depress the cutters, substantially as described.

4. The main frame mounted on three transporting-wheels, the forward and middle one of which is a swivel-wheel, and runs in the center between the rows which are being cut, substantially as described.

137,282.—*Spool-Holder and Thread-Cutter.*—ALMON PERRY AYERS, Benton Harbor, Mich. Application filed July 1, 1872.

The spool-holder has a spring flap, which carries upon its face a hooked thread-cutter.

Claim.—The end pieces *a' a*, center-bolt *d*, hinged flap *b* carrying a cutter, *c*, hinge-bolt *g* and its spiral spring, all combined and arranged as shown and described.

137,283.—*Screw-Cutting Die.*—SAMUEL D. BATES, Lewisburg, and SAMUEL W. MURRAY, Milton, assignors to MURRAY, DOUGALL & COMPANY, Milton, Pa. Application filed January 28, 1873.

The dies, situated in the chuck, have pins projecting into blocks that slide in a cam-groove in a disk fitted on the hub of the chuck. A lever, acting against stops on the edge of the cam-disk, and released by a cam on the chuck, holds the cam-disk stationary while the chuck revolves, thus opening and closing the dies.

Claim.—The cam-disk D, provided with stops *g g'*, in combination with a chuck, A, carrying the cutting-dies, and provided with a releasing-cam, A, the whole being constructed and operating substantially in the manner shown and described.

137,284.—*Sawing-Machine.*—EDWIN BENJAMIN, Chicago, Ill., assignor of one-half his right to SAMUEL W. PEARE, same place. Application filed March 3, 1873.

The guide-rolls, together with the table upon which they are placed, are adjusted by a system of screw-gears.

Claim.—1. The combination of the rollers G G, rack I *f*, pivot-sleeve N, plate H, and screw-rod M J, substantially as and for the purpose set forth.

2. The combination of the rollers G G, carriage T V, depending standards Rp toothed wheels O O, sleeve N, and screw-rod *a b*, as and for the purpose set forth.

137,285.—*Steam-Trap.*—JAMES H. BLESSING, Albany, N. Y., assignor to FREDERICK TOWNSEND and JAMES H. BLESSING, same place. Application filed January 2, 1873.

Condensed water from the coils in the building enters stationary tanks, from which it flows into a supplemental gravitating chamber suitably supported by a weighted lever, and by depressing said chamber through suitable valve mechanism allows the steam to pass into the tank and force the water from it and the chamber into the boiler.

Claim.—1. The auxiliary tank S combined with the gravitating receiver A, constituted and operating substantially as described.

2. The valve-tripping mechanism applied on top of the gravitating receiver A, in combination with such receiver and the tank S, substantially as described.

137,286.—*Draft-Evener.*—RUSSELL BUNKER, Hudson, Wis. Application filed September 7, 1872.

Attaching the double-tree to the draft-pole by means of a slotted tongue-piece, said tongue-piece having attached to it rods, which extend back and outward, and are connected by two bell-crank levers pivoted in suitable bearings secured to the cross-bar, and a rod extending from one to the other, so that the draft is transferred from the double-tree to the draft-pole through these rods, thereby equalizing the draft when a wheel on one side of the vehicle is obstructed, and preventing the pole from deviating to the right or left.

Claim.—1. The vibrating and bodily movable double-tree C, connected by chains J J to connected levers *i i*, substantially as described.

2. The slotted tongue-piece *g* on double-tree C, connected by a pin, *e*, to the pole B, and connected to the pole-bar A by means of levers *i i*, a connecting-rod, D, and arms *h h*, substantially as described.

137,287.—*Spring-Bed.*—OLIVER C. CAMPBELL, Omaha, Neb. Application filed February 24, 1873.

Coiled springs at the head, foot, and center are joined by connecting-links. An auxiliary spring is attached one end to an

intermediate bar, the other to the links near the hinged head-rest frame, forming a joint and affording resistance to the head-rest. The latter is operated by a serrated plate and spring-pawl.

Claim.—1. The combination of the springs *a* and connecting-links *b* with the auxiliary springs *c*, as and for the purpose specified.

2. The frame A provided with the adjustable part B, in combination with the springs *a* and *c* and their connections, substantially as set forth.

3. The frame B provided with the serrated plates *e*, in combination with the sliding pawls *f*, springs *n*, and cord *g*, all constructed and operating substantially as and for the purpose specified.

4. The coiled springs *a*, connecting-links *b*, and frame A, in combination with the springs *c*, the adjustable part B, and its operating devices, as shown and described.

137,288.—*Machine for Inserting Screw-Pegs in Boots and Shoes.* ANDREA CAVALLI, San Francisco, Cal., assignor of one-half of his right to VICTOR NOLY, same place. Application filed May 17, 1872.

The two revolving forms carrying wire reels are provided with casings for inclosing thumb-screws for tightening and metallic tubes for conducting the wire, that two threads of wire may be inserted and severed at the same time. That different thicknesses of wire may be used, adjustable dies are provided.

Claim.—1. The revolving forms F F', provided with reels D D', and gearing *b b' b²*, placed in connection with the actuating-wheel B, stand K, head-plate M, and feed-block *c*, in the manner described, so that two or more nails or screws may be inserted at the same time into boot or shoe leather, substantially as and for the purpose hereinbefore set forth.

2. The adjustable casings C C', and tubes *t t'*, in combination with the wire-feeding reels D D', screws *m m' n n'*, and tubular shafts *s s'*, substantially as and for the purpose hereinbefore set forth.

3. The adjustable metallic form O, provided in the central block *e*, through which the two wires pass, in combination with the reels D D' and tubular shafts *s s'*, substantially as and for the purpose hereinbefore set forth.

4. The adjustable die *g* in the holders *d d'*, in combination with the supply-wire reels D D', head-plate M, and tubular shafts *s s'*, substantially as and for the purpose hereinbefore set forth.

137,289.—*Burial-Casket Handle.*—ALFRED G. CHAPMAN, East Hampton, Conn., assignor of one-half his right to HENRY E. NILES, same place. Application filed January 24, 1873.

The knuckle in which the lifting-arm is pivoted fits over and conceals lugs, which extend outward from the ear or back plate. A single pivot holds the handle in the knuckle, and the knuckle upon the plate.

Claim.—1. The combination of the knuckle *f* with the ear *a*, the knuckle being so shaped as to cover and conceal the teats *b b*, all constructed and arranged substantially as described, for the purpose set forth.

2. The combination of the screw-pin *c* with the knuckle *f*, teats *b b*, arm *d*, and ear *a*, in such shape that the pin performs the double office of a pivot for the arm *d* and of securing the knuckle in place, the whole constructed and arranged substantially as described, for the purpose set forth.

137,290.—*Apparatus for Cleaning Sewers.*—WILLIAM H. CHASE, Washington, D. C. Application filed March 1, 1873.

Claim.—1. A machine for cleaning sewers, composed of a sectional tubular shaft mounted upon trucks, substantially as and for the purpose specified.

2. A machine for cleaning sewers composed of sections A of pipe united together by universal joints A', and mounted upon trucks B, substantially as and for the purposes specified.

3. A machine for cleaning sewers composed of a sectional tubular shaft mounted upon trucks, in combination with a turbine, F G, to operate a boring-tool, substantially as specified.

4. The sectional tubular shaft mounted in bearings upon trucks, in combination with an eccentric scraper-blade, E, substantially as and for the purpose specified.

137,291.—*Stove-Support.*—WALTER M. CONGER, Newark, N. J. Application filed January 9, 1873.—A.

Claim.—1. The within-described stove-support, having one or more shields formed separate from the main body, and supported by a central stem with space around the entire edge for ventilation between the parts, substantially as herein specified.

2. The dome *a*, screw *b*, and nut C, in combination with the body A and shield or shields D, the head of the screw being let up into the dome *a*, as herein specified.

137,292.—*Stove-Support.*—WALTER M. CONGER, Newark, N. J. Application filed January 9, 1873.—B.

Claim.—The within-described stove-support, having a shield in two thicknesses with a non-conductor between mounted at a little distance therefrom, with space for ventilation between the shield and main body, substantially as herein set forth.

137,293.—*Apparatus for Trimming the Heels of Boots and Shoes.* LOUIS COTÉ, St. Hyacinthe, Canada. Application filed March 6, 1872.

In hand apparatus for the above purpose, the knife-carrier is provided with a joint, by reason of which the knife can be set in position to conform to the shape of the heel. A long elbow is attached to the holder of the boot that it may enter the leg of and hold more securely "stoga boots."

Claim.—1. The knife-carrier *n*, constructed with joint at 1, substantially as described.

2. The plate *s*, in combination with the elbow *t*, pin *t'*, and spring *t²*, substantially as and for the purposes described.

137,294.—*Horse-Power.*—EARLSWORTH CROCKETT, Macon, Ga. Application filed January 11, 1873.

Claim.—1. A horse-power composed essentially of a stationary shaft or post, A, tubular shaft D supported on anti-friction balls *c c*, driving-wheel E, pulley I, and bearing-arm L, all arranged substantially as herein specified.

2. The arm L provided with the bearings *o p* and brace *r*, or its equivalent, arranged in combination with the stationary shaft A, substantially as and for the purpose herein specified.

137,295.—*Car-Spring.*—DAVID G. DANIELS, Pittsburg, Pa. Application filed February 5, 1873.

Equalising spring-plates are interposed between the main plates that the strain shall be distributed equally throughout their entire area.

Claim.—1. The equalizing spring-plates *h*, applied between the pairs of main spring-plates *c*, all constructed of the form of segments of a cylinder, substantially as described.

2. The springs *c* and *h* and inclosed substance *g*, piled together in a nest and connected by a bolt, C, and nut *n*, substantially as described.

3. The overlapping cap B, constructed with a centrally-depressed portion, B', and combined with the box A, substantially as and for the purpose described.

137,296.—*Steam-Washer.*—JACOB DAVIS, Florida, Mass. Application filed February 5, 1873.

A wash-boiler constructed with steam-pipes on its bottom, one with openings for steam to escape, over which is a sloping false bottom, open in its center and covered by a perforated plate. At or near the ends are upright conductors, with openings at their tops, one of which is open at its center that it may be removed in sections, and has hinged guides to conduct the water and steam as required.

Claim.—1. The arrangement of the hinged rim *g* and hinged plate *l*, substantially as and for the purpose hereinbefore specified.

2. The guard-plate *n*, when combined with the bottom *f*, constructed substantially as above described.

3. The arrangement of the valve *m* with the plate *l'* and bottom *f*, as and for the purpose above set forth.

4. The corrugated bottom *f f'*, arranged in combination with plate *h* and flue *k*, as above specified.

5. The arrangement of the steam-washer above described with the support *b* and pipes *c c' c''*, and also with the pipe *d*, for the purpose of using steam or hot water as a heater or for motive power, as specified above.

137,297.—*Case for Laces, Ribbons, &c.*—MARTIN DEITZLER, Ashland, Pa., assignor of one-half his right to HAMILTON ADAMS, same place. Application filed February 12, 1873.

A box or case, open at its center, and hinged. Opposite the hinged connection is an opening, through which the article to be shown is passed. In the center of the box or case is a shaft, on which the article to be shown is held by its spool or holder, and is held in its position by its journal passing through the box, to which the crank to give it motion is attached. Outside the box, under the opening, is a recess, into which cards, with the name or price of the article, may be marked.

Claim.—The hinged case A B provided with spools E, on which are collars I and spring-clamps H to hold the strip G, and constructed with a recess, K, to receive a number of marking-cards, all substantially as shown and described.

137,298.—*Carrier for Lathes.*—FRANK FERRIN, Camden, N. J. Application filed February 19, 1873.

One end of the work is inserted into the ring D, with its axis coinciding with the axial line of the said ring, and the screws F are turned so as to hold the work. The ring is then slipped over the sleeve, the lugs entering slots, the tail-stock moved up so as to hold the work between the two centers in the usual manner, and the screws are again turned so as to clamp the work more tightly, and the machine is started.

Claim.—The combination, with a lathe spindle and center, of the sleeve B provided with one or more lugs, C, and the loose slotted sleeve or ring D provided with set-screws F, all substantially as described.

137,299.—*Rubber Eraser.*—EZRA W. FROST, Brooklyn, N. Y. Application filed March 6, 1873.

A flat piece of rubber, within the center of which is secured the metallic grommet.

Claim.—As a new article of manufacture, the centrally-hollowed eraser described, having the hollow face-pieces B C secured together through the erasive material A, and adapted to serve as herein specified.

137,300.—*Car-Spring.*—GEORGE F. GODLEY, New York, N. Y. Application filed July 27, 1872.

A case and plunger of peculiar shape, and spiral springs of different size or power, separated by a diaphragm of shape corresponding to that of the case, and having, as have also the case and plunger, cups for the reception of these springs, the object being to construct a car-spring which will operate equally well under a light or heavy load.

Claim.—1. The movable diaphragm-plate F, constructed with cups on one face of a diameter or size greater than those on its opposite side, as and for the purpose set forth.

2. The follower C having bearing-points E, and adapted to enter and move within the under side of the case, and constructed with cups upon its upper side to receive spiral springs and hold them from contact with the sides of the case.

3. The combination, with the diaphragm-plate F, of the two sets of spiral springs G and H, those of one set having a diameter or power different from those of the other set.

4. A follower constructed with bearing-points E, combined with a case having ribs *g*, which, when in contact with E, leave spaces *x* between the follower and its case, substantially as and for the purpose set forth.

5. The case A, constructed with rounded parts to receive the spirals and follower, and with the ribs *g* to form bearing-points, as and for the purpose set forth.

6. In a car-spring, the combination with the cups to receive the spiral springs at their extremities of the springs having their ends cut and coiled as described, and thus forming their own seats, and requiring no grinding or reducing or any holes to receive their tips.

137,301.—*Cotton-Bale Tie.*—ANDREW J. GOING, Clinton, La. Application filed February 26, 1873.

Claim.—The within-described bale-tie, consisting of the strip A, having one or more tongues, *b*, at each end, with a slot, *a*, on each side of each tongue, substantially as shown and described, and for the purposes herein set forth.

137,302.—*Vise.*—DAVID GREEN, Penrock, Ohio. Application filed August 26, 1872.

The lever bears against the inclined pieces placed inversely to each other. By turning the lever the jaws are tightened as it acts upon the inclined planes.

Claim.—The fulcrums E E, arranged inversely to each other, combined with the lever C, as and for the purpose described.

137,303.—*Gas-Burner.*—GEORGE W. HATCH, Brooklyn, N. Y., assignor to LYON & FELLOWS MANUFACTURING CO., same place. Application filed January 23, 1873.

A gravitating valve rests either upon or under the gas port in the base of the burner. It is forced toward its seat by a shaft, bent at its center for the purpose, to which shaft the levers outside the burner are attached.

Claim.—In combination with a gas-burner the gravitating valve B controlled by the cam-shaft C, provided with either a single or a double lever, as described, and for the purposes set forth.

137,304.—*Machinery for Finishing the Heels of Boots and Shoes.* LORENZO P. HAWKINS, Lynn, Mass., assignor to WILLIAM F. MORGAN and BENJAMIN DORE, same place. Application filed September 12, 1872.

Claim.—The combination, with the reducing or finishing wheel, of a guard-plate, adapted to enter the rand seam, and attached to a sliding bar or support, arranged to be moved more or less, as desired, toward or away from the wheels, and there fixed in such position, substantially as shown and described.

137,305.—*Lacing-Stud.*—DAVID HEATON, Providence, R. I. Application filed February 7, 1873.

Improvement on patents Nos. 120,474 and 133,233. A button of a sheet-metal blank is made similar to those used in above patents, but arranged so that the lacing-post is in the center of the button-head instead of on one side.

Claim.—The improved shoe-button or lacing-stud, made from sheet metal, with its neck or shank *n* in the center of the head H, by forming the under part *b* of the head H and the neck *n* and the table F from two similar parts of a blank, bent or clasped together at the center, substantially as shown and described.

137,306.—*Shade-Holder.*—MARK WIGGINS HOUSE, Cleveland, Ohio, assignor to THE CLEVELAND NON EXPLOSIVE LAMP COMPANY, same place. Application filed December 6, 1872.

A metallic ring, having an inwardly-projecting flange upon its upper edge, is fitted around the burner and rests upon a slight flange thereon. It is secured in place upon one side by the chimney-screw and flange, between which it rests, and upon the opposite side by a set-screw passing up through the ring and abutting against the lower surface of the chimney-support.

Claim.—1. The improved shade-holder constructed, substantially as before set forth, with a ring-stock, a set of hook-ended arms free at their outer ends, an internal flange, and a screw arranged, as described, in position to bear against the under side of the gallery of the burner to which the shade-holder may be applied.

2. The combination of the said shade-holder with the chimney-gallery of the burner by means of the flange and the screw of the shade-holder and the hub of the fastening of the chimney-gallery, substantially as before set forth.

137,307.—*Carburetor.*—JOHN F. G. KROMSCHRÖDER, Gloucester street, Regent's Park, England. Application filed October 1, 1872.

Above the vaporizing-chamber is arranged the air-forcing apparatus, with the hydrocarbon-reservoir surrounding it, the reservoir being connected with the vaporizing-chamber by the usual bird-fountain feed.

Claim.—1. The combination and arrangement of the air-forcing apparatus, the hydrocarbon-reservoir, and the volatilizing-chamber, substantially as before set forth, the volatilizing-chamber being at the base of the machine, the hydrocarbon-reservoir being above the said chamber, and the air-forcing apparatus being at the upper part of the machine.

2. The combination of the following instrumentalities, viz: The air-forcing apparatus, the hydrocarbon-reservoir, the volatilizing-chamber, and the non-conducting jacket for the said chamber, substantially as before set forth.

3. The combination and arrangement of the following instrumentalities, viz: The volatilizing-chamber arranged at the base of the machine, the hydrocarbon-reservoir arranged above the volatilizing-chamber, the bird-fountain arrangement between the reservoir and the volatilizing-chamber, and the air-forcing apparatus arranged at the upper part of the machine and over the base containing the volatilizing chamber.

137,308.—*Changeable-Gage Railway-Truck.*—JAMES MCCAULEY, Elkton, Md. Application filed January 24, 1873.

The truck-frame is divided into two sections, the inner ends of the frame being provided with racks, and, by means of pinions, secured to the ends of a central shaft. The frame is laterally extended or contracted.

Claim.—The combination of frame-pieces H H and F' E', guide-bars I I, and blocks D E D E, constructed substantially as and for the purpose described.

2. The combination of the center shaft A provided with the pinions C C, the blocks D D E E having the rack-bars *v v v v*, substantially as shown and described, for the purpose set forth.

137,309.—*Combined Corn-Planter and Plow.*—JOHN T. MCELHENEY, Moberly, Mo. Application filed January 11, 1873.

A hopper on, and a spout and shoe beneath, the axle of a pair of running-wheels; a frame for plows in front; a single covering-wheel behind, with seat over it, from which the driver, by means of a lever, &c., can, when turning the machine, raise the front and rear frames and throw their weight on the running-wheels; at the same time, by another lever, he can unclutch the wheels and raise the shoe. A valve at the bottom of the spout is operated by a semicircular slot on the face of a circular seed-cup box.

Claim.—1. The combination of the wheel K attached to the axle of the running-wheels, channel N, lever O, spring *w*, spout E, and valve T, all constructed and arranged substantially as and for the purpose shown and specified.

2. The combination of the wheels A A' and their axle, clutches *a a' b b'*, rings *f f'*, rods *n n'*, &c., bands *c c'* having grooves *c c'*, &c., and levers R, H, and H', all constructed and arranged substantially as and for the purpose shown and specified.

3. The frame V, pole Y, segment *z*, extension X, rods Z *z*, arms *g g'*, D D', W W', and 10 10, lever 11, wheels 9 and A A', all combined, arranged, and constructed substantially as and for the purpose shown and specified.

137,310.—*Wrench.*—PETER E. MCINTOSH, Chicago, Ill. Application filed January 4, 1873.

Claim.—The wrench described, consisting of the cased angled lever *f* and its two clicks and springs, ratchet *k*, movable lever *c*, and connecting-rod *d*, arranged as set forth.

137,311.—*Fabric for Dress-Protectors, &c.*—JAMES MCMULLEN, Brooklyn, N. Y. Application filed February 4, 1873.

Claim.—As a new article of manufacture, a water-proof fabric composed of leather scrap and Manilla or other vegetable fiber japanned and rendered impervious, substantially in the manner and for the purpose set forth.

137,312.—*Shingling-Bracket.*—LYMAN W. MERRIAM, Fitchburg, Mass. Application filed March 5, 1871.

The lugs are inserted under the shingles, forming, in connection with a lever, a clamp to assist in retaining the bracket in its place upon the roof.

Claim.—A roofing-bracket having ears or lugs E E' and F F' and suitable feet D D, all substantially as described.

137,313.—*Steam Drop-Hammer.*—FREDERICK B. MILES, Philadelphia, Pa., assignor to FERRIS & MILES, same place. Application filed July 29, 1872.

Upon the movement of the treadle, whose length of vibration is regulated by adjustable stops, the valve which controls passage of steam from the boiler is operated simultaneously with the valve governing the admission of steam to the cylinder, so that positive amount of steam admitted to the valve-chest and relative amount to cylinder is controlled readily. Rubber abutments are provided to prevent concussion.

Claim.—1. The drop D, piston P, and guide-plates, in combination with valves V V' and mechanism, substantially as described, for connecting and operating the same.

2. The treadle T with adjustable screw-stops *t t t* and holes *o o o o o o o o*, in combination with rods *r* and *r'* connecting it to valves V and V'.

3. The bumpers B B in combination with the drop D, when arranged in the manner and for the purpose substantially as specified.

137,314.—*Hub for Wheels of Vehicles.*—JOHN MONK, Norwich, Conn. Application filed November 14, 1872.

A metallic hub-shell extends the length of the hub, and has shoulders and ribs near its ends to hold a wooden core in place, and also has beveled mortises over a groove in the core.

Claim.—1. The combination of a metallic hub-shell, A, with shoulders *a a'*, flanges *b b'*, and mortises B with a wooden center, D, substantially as shown and described, and for the purpose herein set forth.

2. The combination of a hub-shell, A, having flanges *b b'*, shoulders *a a'*, and beveled mortises B with a wooden center, D, having a groove, C, substantially as described, and for the purpose set forth.

137,315.—*Dovetailing-Machine.*—WILLIAM F. MOODY, Chicago, Ill., assignor of two-thirds his right to ELIJAH STONE and CHARLES SWIFT, same place. Application filed January 27, 1873.

Two chisels are arranged in such a manner that one of them has a vertically-reciprocating as well as a vibratory movement. The other reciprocates horizontally, and when operating together they form the mortise of a blind dovetail.

Claim.—1. In a dovetailing-machine, the slotted head *p*, constructed and operating substantially as specified.

2. In a dovetailing-machine, the eccentric sleeve *k*, constructed and operating substantially as specified.

3. The sliding head *b b'*, in combination with the chisel-head P, all so constructed that by the lateral movement of the sliding head an angular or oblique movement can be given to the chisel-head while it retains its vertical position, substantially as specified.

4. The sliding frame G, when provided with one or more springs, *u*, in combination with the bar *z* provided with pins, substantially as and for the purpose specified.

5. The combination, in a dovetailing-machine, of the single vertical chisel *e* with the angular chisel *f* so as to form a dovetail-mortise with two chisels, substantially as specified.

137,316.—*Machine for Turning Axles.*—ARTHUR F. MOORE, Florence, Ind. Application filed September 2, 1872.

The machine is secured upon one end of the piece of timber from which an axle is to be formed. The frame is then revolved by the handles, causing the cutter to travel along the screw.

Claim.—The cutter-guide D, feed-screw J, plate *i*, set-screws *s*, and screw K, in a machine for turning axle-spindles, when arranged to operate, in connection with the plates A and B and pinions F and G, substantially in the manner shown, and for the purposes specified.

137,317.—*Stencil-Plate.*—FRANK L. MORRISON, New Albany, Ind. Application filed January 14, 1873.

The stencil-plate is in a circular hoop form, with one edge turned up to fasten the frame to, the handle being attached centrally and forming the axis about which the hoop revolves.

Claim.—1. The band *c*, with letters or figures cut through it and fastened around a circular frame or wheel with the surface of the lettered band at or near a right angle to the side or face of the frame, substantially as and for the purpose herein shown and described.

2. The circular frame *a* and handle *b*, when used in connection with the band *c*, substantially as and for the purpose herein shown and described.

3. The stencil-braud consisting of the frame *a*, handle *b*, the band *c*, and the shield *d*, all made and operating as herein shown and described.

137,318.—*Ditching and Grading Machine.*—LEVIN D. NOBLE, Cerro Gordo, Ill. Application filed August 5, 1872.

The earth is dislodged by a share or cutter with inclined mold-board attached, which throws the earth upward and outward. The machine runs upon caster wheels as usual, and in addition there is another caster-wheel, mounted in a hinged frame, which runs upon the bank, and is for the purpose of steadying the machine. Flanged guide-wheels also run upon the land-side, upon the edge of the ditch, which gage the cut. A scraper and spreader, connected by jointed and extensible arms, throw the earth off from the edge of the ditch.

Claim.—1. In combination with the excavator, the supplemental adjustable caster-wheel H arranged to run upon the bank, substantially as and for the purpose specified.

2. In combination with the excavator, the guide-wheels M M', substantially as and for the purpose specified.

3. The guide-wheels M M' having sharp flanges *m*, in combination with the excavator, substantially as and for the purpose specified.

4. The combination of the scraper and jointed extensible arms L, which are composed of the parts *l1*, *l2*, 2, F, and *l3*, substantially as and for the purposes specified.

137,319.—*Portable Earth-Closet.*—ALFRED PANYARD, Massillon, Ohio. Application filed April 16, 1872.

The deposit-chamber has an inclined seat arranged in connection with a hinged earth-chamber having an inclined bottom, so when the earth-chamber is swung over the seat the deposit-chamber will be sealed, preventing the escape of any odors, and when swung back the bureau or other article of furniture to which it is attached will act as a counterpoise to prevent the overturning of the apparatus by the weight of the earth-chamber and contents. It also consists of the arrangement in the earth-receptacle of a valve provided with a measuring-cavity and perforated discharge-plate.

Claim.—1. The combination of the hinged earth chamber C, deposit-chamber N, and bureau A, or equivalent piece of furniture, the several parts being arranged substantially as specified, so that the bureau or equivalent piece acts as a counterpoise to the earth-chamber when swung open, as is herein set forth.

2. The packing-strip L secured on the inclined bottom J of the earth-chamber C, and acting in combination with the inclined seat D, substantially as is herein specified.

3. The inclined seat D having the packing-ring *d* thereon, in combination with the deposit-vessel E and earth-chamber C, with inclined bottom J and packing-strip L, substantially as is herein specified.

4. The sliding covered or cushioned seat F, in combination with the deposit-chamber N and bureau A, or equivalent piece, said seat being arranged to slide into the part A, substantially as and for the purpose specified.

5. The valve H, provided with the measuring-cavity h and perforated discharge-plate I, arranged between the hopper G and perforated bottom J, and operated by the spring K, substantially as and for the purpose specified.

137,320.—*Rack for Curtain-Fixtures.*—JOSHUA PUSEY, Philadelphia, Pa. Application filed March 13, 1873.

The metallic plate has a longitudinal slot, enlarged at the top, and a series of alternate slots inclining slightly upward and enlarged at their upper ends. The cord-sheave is provided with a shank having a terminal knob.

Claim.—The arrangement of plate A, provided with slots B and C, and the sheave E, or its equivalent, provided with shank L and button K, substantially in the manner and for the purpose set forth.

137,321.—*Sewing-Machine.*—DANIEL H. ROGAN, Newton, Iowa, assignor of one-half his right to ALBERT LUPKIN, same place. Application filed January 3, 1873.

A crank-pin on the outer face of the wheel enters a slot in the upper arm of the pivoted toothed sector, and the sector engages a pinion on, and imparts a reciprocating rotary motion to, the shuttle, which has its delivery-eye at its center. The pin in the shuttle has a hole through it near the little collar fastened thereon; a spiral spring presses the pin in the socket, and the thread is pressed between the collar and the end of the socket.

Claim.—1. The toothed sector C provided with the slotted arm *z* and the wheel M having the crank-pin m^2, combined with the pinion C', rock-shaft *u*, and shuttle having a central thread-delivering eye, all constructed and arranged substantially as shown and described.

2 The combination of the balance-wheel M provided with the cam-groove K, the lever J' having the slotted arm j^3, the lever j^2, link j^1, shaft j^4, and bars J J, constructed and arranged to operate the feed, substantially as and for the purpose described.

3. The combination inside of the shuttle F of the pin *k* having hole *m* and collar, cylinder *m'*, spiral spring *l*, and plate-spring *p*, substantially as described and shown, and for the purpose set forth.

137,322.—*Manufacture of Artificial Stone.*—JAMES L. ROWLAND, Milwaukee, Wis. Application filed November 26, 1872.

Claim.—1. The apparatus, substantially as described, for mingling carbonic-acid gas with vapors of fluids in a chamber containing the material to be indurated, as set forth.

2. The combination, with an indurating-chamber, G, of a carbonic-acid generator and a vapor or steam generator, substantially as described.

3. The combination of a gas and vapor mixing pipe or passage, gas-generator, vapor-generator, and indurating chamber, substantially as described.

137,323.—*Treatment of Lime for the Manufacture of Artificial Stone.*—JAMES L. ROWLAND, Milwaukee, Wis. Application filed November 26, 1872.

Claim.—1. As a means of slaking a lime or hydraulic or common or air lime, and producing a hydrate, the application to the lime of water in very finely-divided particles, as steam or vapors, substantially as set forth.

2. As a means for slaking a hydraulic or common or air lime, and producing a hydrate or subcarbonate hydrate, the application to the lime of carbonic acid, together with or in combination with water, either in its natural state or in any of the forms it is susceptible of taking that are practicable in this process, as steam, vapor, mist, or spray, substantially as set forth.

3. As a means of slaking a hydraulic or common or air lime, and producing a hydrate or subcarbonated hydrate, the application to the lime of water charged or saturated with carbonic acid or holding it in solution, substantially as set forth.

137,324.—*Road-Wagon.*—CYRUS W. SALADEE, St. Catharine's Canada. Application filed December 30, 1872.

Claim.—1. The employment of two sets of slats or perches, the one above the other, rigidly connected at their centers, for the purpose of connecting the rear axle and front bolster of running gear for vehicles, substantially as set forth.

2. The employment of one or more standards, B, between the upper and lower slats or perches B^1 and S, substantially as and for the purpose set forth.

3. The employment of one or more cross-bars, C C', in combination with the upper and lower slats or perches B^1 and S, substantially as and for the purpose set forth.

4. The intermediate slats B B^2, having their rear ends and center portions rigidly secured to the gearing, and their front ends left free to vibrate under the pressure of the feet, substantially as and for the purpose set forth.

5. The dash-board P secured to the spring foot-board U, substantially as and for the purpose set forth.

6. In combination with the under slats or perches S and rear axle T, the short intermediate slats B^3, Fig. 2, as a receptacle for baggage or other articles to be carried, substantially as and for the purpose set forth.

7. The connecting-rod E, Figs. 1 and 2, arms F, and stirrups H, when secured and operated upon the slats or perches at or about midway between the axle and bolster, and combined with the sides of the springs, seat-risers, or seat, substantially as and for the purpose set forth.

8 The foot-board U, composed of slats B, or other equivalent bottom, having its rear end rigidly secured and supported upon the gearing at or near the cross-center between the hind axle and front bolster, and its front end suspended independent of the bolster or other support, substantially as and for the purpose set forth.

9. An independent foot-board, U, composed of slats or other equivalent bottom, rigidly connected and suspended to the bottom of the seat K, the latter being supported upon the springs A^1 by seat-risers J, substantially as and for the purpose set forth.

137,325.—*Means for Detaching Boats.*—THOMAS SHAW, Philadelphia, Pa. Application filed January 9, 1872.

Both ends of the boat are detached at the same time, and the liability of swamping rendered less.

Claim.—The davits, and the ordinary tackle for raising and lowering boats, ropes *c* provided with loops at their extremities, a boat provided with eyebolts *e*, and the coupling or lashing cord adapted to be cut as described, when combined for operation as a boat-detaching apparatus, substantially as herein described.

137,326.—*Combing-Machine.*—ISAAC SMITH, BENJAMIN SMITH, HENRY SMITH, and CHRISTOPHER BRADLEY, Bradford, England. Application filed May 21, 1872.

The object is to effect an additional combing of the material.

Claim.—The improvements in apparatus for combing wool and other fibers of the character described, whereby the outer circle or ring of combs is divided into two rings, with one portion divided into segments capable of movement to and from the other, in manner and for the purposes substantially as described.

137,327.—*Drying Tomatoes.*—MARSHALL P. SMITH, Baltimore, Md. Application filed March 21, 1872.

Part of the water is removed by pressure and the rest by evaporation.

Claim.—The within-described process of drying and preserving raw tomatoes, by submitting them first to pressure to remove a portion of the water which they contain, and then partially or wholly evaporating the residue, substantially as set forth.

137,328.—*Stove-Door Frame.*—SAMUEL SMITH, Philadelphia, Pa. Application filed February 19, 1873.

A series of downwardly-projecting hooks are cast with and on the inner surface of the frame. These hooks pass through suitable orifices in the sheet-iron body of the stove, and, engaging behind their lower edges, hold the frame firmly in place.

Claim.—The hooks or studs *a'*, in combination with the openings *i* in the door-frame A or nozzle B, or in either of them, the same being cast on simultaneously with the casting of the said door-frame or nozzle, substantially as and for the purposes hereinbefore set forth and described.

137,329.—*Wood-Scraper.*—HENRY D. SPICKLER, Canton, Ohio. Application filed December 5, 1872.

Two knives are used in the same stock, one curved and the other straight-edged.

Claim.—The double scraper herein described, consisting of a frame, A, with handles *a a*, in which are secured two knives, D E, with turned or scraping edges *d e*, said knives being arranged back to back, and on opposite sides of the frame A, and one of said knives, D, having a straight, and the other knife, E, a curved edge, substantially as and for the purpose specified.

137,330.—*Generator for Generating Carbonic-Acid Gas.*—JOHN W. STANTON, Brooklyn, N. Y. Application filed November 29, 1872.

Near the top of the generator is arranged one or more series of shelves for supporting the alkaline substance, each shelf having a crank attached to its axis, a pin on which engages in a slot in a sliding bar on the outside of the generator, so that any desired portion of the alkali may be precipitated into the acid solution at the will of the operator. Below the tripping-shelves are arranged breakers, so that if the alkaline substance becomes caked by long standing it will be subdivided in falling.

Claim.—1. In combination with a gas-generating chamber, a series of shelves or supports for holding, in properly-divided quantities, the alkaline substance, substantially as described, and for the purposes set forth.

2. In a carbonic-acid-gas generator, the combination of a receptacle for holding a solution of sulphuric acid and water, with a series of tripping-shelves or their equivalents for sustaining the alkaline materials in controllable quantities, and permitting the dropping of any desired part of the alkaline material into the acid and water at the will of the operator, as described, and for the purpose set forth.

3 The combination, in a carbonic-acid-gas generator, of the mechanism for scattering or disseminating the alkaline materials, substantially as described, with the mechanism for supporting the same in separate quantities, substantially as described, and for the purpose set forth.

4. In combination with the supports for the alkaline substance in a gas-generating chamber, the tripping or tilting devices, substantially as described, and for the purpose set forth.

137,331.—*Pressure-Gage.*—JOHN W. STILES, New York, N. Y. Application filed May 17, 1872.

A hydrostatic balance is arranged in connection with a pressure-rod receiving the pressure from a steam-boiler, in such a manner as to weigh or indicate the amount of the steam-pressure.

Claim.—The combination and arrangement of the steam-piston B and its chamber A with the float E, reservoir F, and weighing-fluid, in the manner and for the purpose substantially as described.

137,332.—*Powder-Flask.*—THOMAS L. STURTEVANT, Framingham, Mass. Application filed February 21, 1873.

Two gates are employed, the inner one of which closes to shut the opening into the flask simultaneously and automatically with the opening of the outer one, which allows the powder intervening between the two to be discharged.

Claim.—The combination, with the charge-tube and lower gate E, of the upper gate I, actuated from or by gate E, to close the top of the charge-tube when said gate E is moved to uncover the passage leading from said tube into the flask, and returned to its normal position by an independent spring, J, so as to uncover the top of the charge-tube when the gate E closes the bottom of the same, substantially as shown and set forth.

137,333.—*Claw-Bar.*—WALTER S. TERHUNE, Ridgewood, N. J., assignor of one fourth of his right to THOMAS ALDRIDGE WESTON, same place. Application filed June 7, 1872.

The fulcrum-block is attached to the bar by pins working in grooves on the sides. The fulcrum-block remains stationary, while the fulcrum is changed as the weight is raised.

Claim.—The segmental sliding fulcrum-block C, in combination with the convex-faced groove *b b* in the heel of the bar A, all constructed as herein shown, for the purpose set forth.

137,334.—*Self-Acting Spinning-Mule.*—GEORGE O. WICKENS, North Andover, Mass. Application filed September 30, 1872.

Relates to the device which, suspended from the counter-faller, seizes at times the belt or cord which turns the screw in the radial arm to regulate the winding. A standard to be attached to the carriage and forming the stationary jaw, has a shaft in its lower end, provided with an inclined groove, into which takes a pin from the weighted lever which forms the movable jaw, so that when the latter is lowered by the fallers it will also move toward the stationary jaw and the cord will be clamped between the two.

Claim.—The device constructed substantially as described, having a fixed jaw and a movable jaw attached to a weighted lever to form a clamp, which is opened and closed by an incline, and operated by the counter-faller, substantially as described.

137,335.—*Friction-Clutch.*—SAMUEL B. ALGER, Oswego, N. Y. Application filed February 8, 1873.

Claim.—1. The hooks *f'* formed on the plate F, and the projections *h'* of the sleeve H, arranged for connecting said plates and sleeve, as specified.

2. The friction-clutch formed by the combination with the shaft A and loose pulley B, provided with the grooved flange *b'* of the pivoted friction-blocks D having their outer edges V-shaped, the center-piece C, adjustable plates K, and plates F, with the sliding hooks *f'*, sleeve H having projections *h'*, and the wedges G, all as shown and described.

3. The wedge-keys G, in combination with the adjustable plates E F of the clutch, substantially as herein shown and described.

137,336.—*Ant-Trap.*—THEODORE G. AMES, Keese, Tex. Application filed January 6, 1873.

Claim.—An ant-trap, consisting of the conical outer vessel *a*, converging toward the top on the inside, and the inner conical vessel *b*, diverging toward the top on the outside, the two being connected by the bottom *d*, as and for the purpose set forth.

137,337.—*Railroad Rail.*—H. GATES ANGLE, Chicago, Ill. Application filed January 18, 1873.

Claim.—The improved rail formed of the wooden stringers, the metal angle-rail D E having the lip H taking into the groove C, and the metal bearing-plate K, all as shown and described.

137,338.—*Expansion-Bolt.*—DAVID L. BARTLETT, Baltimore, Md., assignor to BARTLETT, ROBBINS & Co., same place. Application filed February 20, 1873.

The bolt is composed of two half-sections and a wedge, and its head incloses a nut, into which a screw may, for any purpose, be inserted.

Claim.—1, The longitudinal portions A A of an expanding-bolt, constructed with recesses *g* in them for the purpose of confining therein a nut *g'*, substantially as described.

2. The two halves A A, grooved at *b c*, and otherwise constructed, substantially as described.

137,339.—*Manufacture of Traveling-Bag Frames.*—JAMES B. BLAKELEE and CHARLES F. BLAKELEE, St. Petersburg, Pa. Application filed December 9, 1872.

A strip of sheet metal, wide enough for the two bars and cut to the shape shown, is first bent transversely and then longitudinally, first at the corners and then along the straight portions; it is then split longitudinally, and the lips at the ends bent round to form the knuckles. The bending is effected gradually by a series of dies.

Claim.—1. The method of making the angle-bars for traveling-bag frames, by producing a double angle-bar from a plain flat strip, in the manner described, and separating it along the middle, substantially as specified.

2. The relative arrangement of the ears *n*, eyes *m*, and projections *k* of each part of the bars to hinge them together so that one will close within the other, substantially as specified.

3. Bending-dies *a b f g*, constructed and arranged substantially as shown and described.

4. The combination of the rests E D and the adjustable stop-guide F with the dies A B, substantially as specified.

137,340.—*Wall or Window Washer.*—ELIZABETH N. BRADLEY, Bridgeport, Conn. Application filed January 24, 1873.

A brush constructed with its face and back in two parts. The face portion of it is slotted and perforated, and to which is fitted sponge, cut in form to cover its surface closely and secured to it by cords or wire passing over and through it and through the perforations in the block and confined to the back of it, and the whole covered by the top or cap with an opening for the handle in its center.

Claim.—The combination of the cut sponge B, grooves *b*, holes *c*, and cord or equivalent *d* with rounded wood back A, as described, and for the purpose specified.

137,341.—*Whip-Lash.*—HENRY J. BUSH, Westfield, Mass. Application filed January 16, 1873.

Claim.—A whip-lash composed of a rolled cloth body or swell, *a*, with surrounding even-laid longitudinal threads *c* entirely covering the same, and an exterior cover of braid, *b*, substantially as herein shown and described.

137,342.—*Plaiting Attachment for Sewing-Machines.*—ORANGE M. CHAMBERLAIN, New York, N. Y., assignor of one-half his right to WM. B. CARRINGTON, same place. Application filed November 2, 1872.

The slotted blocks allow the brace which carries the folder to turn on its pivot in the reciprocating block or slide moved by the

connecting-rods F, so as to engage the fabric firmly as the folder is about to be moved forward and release it when about to move back. By the arrangement described in the second clause the plaits are made diagonally across the material, and the material is fed forward in a straight line.

Claim.—1. The slotted blocks S, in combination with the pitman H, folder J, and brace M, for the purpose set forth.

2. The guide K, the folder with the edge inclined to the path traversed by the material, and the feed inclined in a direction opposite the inclination of the folder, all as and for the purpose described.

137,343.—*Box-Plaiting Attachment for Sewing-Machines.*—ORANGE M. CHAMBERLAIN, New York, N. Y., assignor of one-half his right to WM. B. CARRINGTON, same place. Application filed January 22, 1873.

The formers are attached to the shafts *i i'*, which have a reciprocating and rocking motion imparted to them through the pitmen-links and rocking arms. The fabric passes between the former-blades, which move in opposite directions, and each in going forward passes over the other, and one always against the bed-plate and the other against the presser-foot, so as to form the plaits in opposite directions.

Claim.—1. In combination, the pitman L L' and rocking arms F F'', connected, substantially as described, with the formers G G'.

2. The combination of the arms *g g'* with the shafts *i i'*, springs A, and sliding bearings *m m'*, for the purpose described.

3. The combination of the wheels D E F with the adjustable pitman L L', rocking arms F' F'', links S S', arms *g g'*, and formers G G', for the purpose described.

137,344.—*Trimming.*—ORANGE M. CHAMBERLAIN, New York, N. Y., assignor of one-half his right to WM. B. CARRINGTON, same place. Application filed January 20, 1873.

A bias box-plait, formed of a single or double piece of cloth, either with a beading or binding, or without it, and is formed by making the ordinary box-plait at an angle to the edge of the cloth instead of in line with it.

Claim.—As a new article of manufacture, the trimming herein described, formed of bias box-plaits, substantially as shown, and for the purpose set forth.

137,345.—*Fire-Proof Floor.*—NATHANIEL CHENEY, New York, N. Y. Application filed February 8, 1873.

The tension-rods of the brick arches of the fire proof floors are made of wires placed close together and interwoven with cross-wires so as to serve the additional purpose of a metallic lathing upon which to lay the plaster of the subjacent ceiling.

Claim.—The tie-wires D provided with interwoven transverse wires, and suspended, substantially as and for the purpose described.

137,346.—*Presser-Block for Pants.*—LEWIS COHEN and JOHN C. WALLER, San Francisco, Cal. Application filed January 24, 1873.

Two parts of the block are grooved to slide upon each other in a diagonal line, by which the width of the block may be varied. A holder supports the block while the parts are being pressed and shaped upon it.

Claim.—1. The forming-block, consisting of the parts *b c*, said parts being arranged to slide upon each other in a diagonal line, either with or without a tongue-and-groove joint, substantially as and for the purpose above described.

2. The block *b c*, in combination with the block-holder A, substantially as and for the purpose above described.

137,347.—*Rotary Printing-Press.*—CALVERT B. COTTRELL, Westerly, R. I. Application filed February 8, 1873.

A griper attachment to a continuously-revolving cylinder. The gripers are moved forward on the cylinder by cams, and open just before coming to the place for taking the paper, and then fly back against a gage or stop and rest while closing on the paper.

Claim.—1. The combination, with a continuously revolving cylinder printing-press, of gripers having a period of rest relatively to the rotation of the cylinder while closing upon the paper, substantially as specified.

2. The combination, with a continuously-revolving cylinder-press, of gripers having an advance movement and a retrograde movement relatively to the cylinder preparatory to taking the paper, and a period of rest while taking it, substantially as specified.

3. The combination, with the table and the cylinder of a continuously-revolving printing-press, of movable gripers, stationary gage-stops therefor, and springs or other equivalent instrumentalities, in such manner that the gripers are controlled relatively to the table and the paper while taking it by the said gage-stops, substantially as specified.

4. The combination, with the cylinder of a continuously-revolving cylinder-press, of gripers having a period of rest while taking the paper, and a preparatory advance motion after taking it and before their motion with the cylinder is completely established, substantially as specified.

5. The combination, with the gripers and the rock-levers *e*, of the connecting-rods *m* pivoted to the cylinder eccentrically to the rock-levers, and either having the slotted holes and springs or not, substantially as specified.

6. The combination of the rock-levers *e*, stationary cams *i*, springs *j*, gripers, and the cylinder, substantially as specified.

7. The arrangement of the cams relatively to the rock-levers and the stops *q*, as represented at *w*, to begin the advance motion of the gripers preparatory to the completion of it by the stops *s* or other part of the cylinder, substantially as specified.

8. The combination of air-springs with the cylinder and gripers having a period of rest while taking the paper, to cause the gripers to advance after taking the paper before being fully set in motion by the cylinder, substantially as specified.

137,348.—*Bee-Hive.*—AMOS DEWEESE, Oak Mills, Kans. Application filed November 25, 1872.

The doors of the hives are duplex, the inner perforated, the outer close; a space between them and openings at the base; the doors of a row of hives attached to a bar, which bar is operated by a remote bell-crank with counter-weight to slide the doors, said bar also forming the alighting-board for each hive.

Claim.—1. The wire-gauze plates *g*, arranged in a cavity on the inner side of the gates *a* so as to leave a space between them for admission of air, as and for the purpose specified.

2. The bar B, arranged, in connection with the hives A, so as to serve in place of the usual alighting-board, as specified.

137,349.—*Hydraulic Cane-Crusher.*—CHARLES H. DICKINSON, Rosedale, La. Application filed September 28, 1872.

Cylinder provided with sliding grate-bottom, through which juice is forced into a sliding pan. Pan and grate being removed, bagasse falls onto an endless belt, conveying it away.

Claim.—1. The sliding grate H applied at the bottom of a cane-press cylinder, as and for the purpose described.

2. A cylinder for a cane-press provided with holes R for the exit of juice that rises above the piston, a grate-bottom, H, for the escape of the juice that flows in advance of piston, and the intermediate part of cylinder made solid, as described.

3. The sliding pan I arranged beneath the perforated bottom of the cylinder of a cane-crusher, as and for the purpose specified.

4. The endless carrier K applied below the pan I, as and for the purpose described.

137,350.—*Reed-Organ.*—ANTON DREHER, Cleveland, Ohio. Application filed February 8, 1873.

The reed-valves ordinarily employed are extended to cover the mouth of the channels of the upright back set.

Claim.—The combination and arrangement of the reed-board D, the conductors K, the extended valves C, and the board A with the reed-board B, substantially as shown and described, and for the purpose set forth.

137,351.—*Track-Clearer for Harvesters.*—OBIN DU BOIS, San José, Cal. Application filed August 3, 1872.

A bar extends diagonally from the point of the grain-divider to the frame of the machine for the purpose of inclining the grain or grass, and to throw the cut away from that which is uncut.

Claim.—1. The bar or rod D, standing at an angle with the cutters of a mowing or reaping machine, substantially as and for the purpose above described.

2. The sharp edged dividing or separating plate F, with its housing G, in combination with the rod D, substantially as and for the purpose above described.

137,352.—*Expanding Pulley.*—JOSEPH E. FALES, Worcester, Mass., assignor to RICE, BARTON & FALES' MACHINE and IRON COMPANY, same place. Application filed March 6, 1873.

Two sectional, adjustable, and expanding pulleys are arranged upon shafts within the frame, and both are connected by a belt. The pulleys are expanded by means of cones adjustable by set-screws connected with gearing and the sliding frame upon the shafts.

Claim.—1. The combination, with the shafts C D, shells E F, and slotted cones G H, of the expanding pulley-sections I, sliding frame M, screws L, gears 2 3 3, and connecting-rods A, substantially as and for the purposes set forth.

2. The combination, with the shafts C D and shells E F, of the cones G H, expanding pulley-sections I, substantially as and for the purposes set forth.

137,353.—*Collar.*—ANDREW FLATLEY, Brooklyn, N. Y. Application filed January 25, 1873.

Claim.—As a new article of manufacture a turn down collar having each of its lappets inclined or cut away from the center on the inner edge, as described and shown, to form a triangular space above and below the meeting points or centers *a'* when the collar is adjusted for wear, as specified.

137,354.—*Machine for Cutting and Dressing Stone.*—WILLIAM A. FORMAN, Genesco, N. Y., assignor of one-half his right to WILLIAM H. KELSEY, same place. Application filed March 10, 1873.

The loaded wheel connected by belting with a driving-wheel and a bar having attached thereto an operating-tool, actuated by vibration evolved from said loaded wheel when in rapid motion.

Claim.—A loaded wheel, F, in combination with a driving-wheel, G, connected by belting, and a bar, having attached thereto an operating-tool actuated by the vibration of the parts, substantially as herein recited.

137,355.—*Reservoir Cooking-Stove.*—SIMON W. FRANCK, Brooklyn, N. Y. Application filed September 7, 1872.

Claim.—1. The extension attachment to a cooking-stove for supporting a boiler or hot-water reservoir, provided with the channel E, dampers F and G, and escape-flue H, all constructed, combined, and arranged to operate substantially as described.

2. In combination with said channel E, dampers F and G, and escape-flue H, the partitions or collectors M M, as and for the purpose set forth.

3. In a boiler or hot-water reservoir for a cooking-stove, the combination of the smoke-flue B with transverse water-tubes C passing through the boiler or reservoir and the side smoke-flues H, with dampers so arranged that the smoke and heated products of combustion may be made to pass off through either of said smoke-flues by turning the dampers, substantially as described.

137,356.—*Wardrobe Bedstead.*—RICHARD W. FROST, New York, N. Y. Application filed February 8, 1873.

The mattress is divided into two sections, which are hinged together by a block let into notches in the side pieces of the frame and two jointed bars, forming two joints, which are distant from each other about the thickness of the part of the mattress above the frame, which allows the two parts to fold closely, so as to be folded in the case or wardrobe.

Claim.—The combination of case A, block F, jointed bars H I, and notches G with a folding mattress, as and for the purpose described.

137,357.—*Feeder and Filter for Boilers.*—JOHN G. FULTON, Toledo, Ohio. Application filed December 31, 1872.

A flexible pipe, provided with floats, located in a tank supplied with live and exhaust steam conveys the water from a point just below the level of the water to the boiler, &c. A revolvable sediment stirrer and remover is attached to the tank.

Claim.—1. The feed-water supply-tank A, in combination with the flexible or movable discharge-pipe F and the floats *a*, for the purpose of drawing the water from a point below the level of its surface, as set forth.

2. The stirring device E *a b*, in combination with the bottom of the tank A, having a sediment discharge-pipe, as specified.

3. The arrangement of pipe D and heating-pipe C with the feed-water tank A and the flexible pipe F, and stirrer E, as set forth.

137,358.—*Machine for Cutting Cam-Grooves.*—JOHN S. GEORGE and WILLIAM HOUGHTALING, Bridgeport, Conn. Application filed August 12, 1872.

Cams are connected with spindle and partake with it longitudinal movement imparted by fixed stub, projecting into the groove of cam. Cam F, through the medium of the rack-bar and a stud upon it, imparts rotary motion to the tool-holder *d* in such manner as at all times to preserve the cutting-edge of the tool at right angles to the wall of the groove that is being cut.

Claim.—1. The combination of the spindle C, the cams G and F, the rack-bar I, studs J and O, a carriage, D, substantially as described.

2. The combination of the cutting-tool *e*, tool-holder *d*, pinion *a*, rack *b*, and bar I with the carriage D and its adjusting-screw, substantially as described.

137,359.—*Propelling Vessels.*—SOLOMON GERHARD, Camden, N. J. Application filed June 8, 1872.

Arms having paddles on their outer ends, and vibrating on pins, are caused to slide horizontally by a double crank-shaft situated between and connected to the arms so as to raise and lower the paddles alternately.

Claim.—The arms D D' having paddles at their outer ends and vibrating on pins *b b'*, which slide horizontally, in combination with a double crank-shaft, A, situated between the two arms and connected directly thereto, so as to raise and lower the paddles alternately, as set forth.

137,360.—*Machine for Covering Cord.*—JOSEPH E. GILLESPIE, Norwich, and TOBIAS KOHN, Hartford, Conn.; said GILLESPIE assignor to said KOHN. Application filed January 31, 1873.

The rib and guide serve to conduct the covering-strands properly to the cord to be covered, and whether they be drawn from the upper or lower end of the spools. The core is inclosed with the cord by the covering-strands, but is withdrawn as the finished cord is led away, leaving the same soft and flexible.

Claim.—1. The circular raised rib C' upon the revolving bobbin-plate C over which the threads pass, substantially as and for the purpose herein described.

2. The guide G for conducting the covering-threads upon the cord, and through which the finished cord passes upward, when provided with adjusting-screws and combined with the frame, substantially as herein described.

3. The central core H, in combination with a cord-covering mechanism, substantially as and for the purpose herein described.

4. The combination of the rib C' and the guide G with a series of bobbins, substantially as herein described.

137,361.—*Oiler.*—CYRUS E. GRANDY and ZIBA B. GRANDY, Stafford Springs, Conn., assignors to themselves and WILLIAM D. HEALD, same place. Application filed February 21, 1873.

Oil enters the tube through openings in the main or exterior tube, and is ejected through the nozzle by means of the spring mechanism connected to the piston. The end of the nozzle is provided with a cover, which also serves as a cleaning-tool of parts to be lubricated.

Claim.—1. In combination with an oiler, a cover and spoon, substantially as and for the purposes described.

2. An oiler consisting of the vessel A, tubes D and F, lever G, orifices *e e*, plunger-rod J, and spring M, when arranged to operate as and for the purposes described.

137,362.—*Scarf-Ring.*—JOHN HAACK, Hoboken, N. J., and SAINTEMME DIOLOT, New York, N. Y. Application filed March 8, 1873.

The pin or tongue of the buckle passes through a perforation in the ring and pierces the scarf within. The side projections serve as a spring-fastening to hold the buckle securely in place when closed upon the ring.

Claim.—The ring A, in combination with the buckle B, consisting of wire pivot *a*, pin *d*, and side projections *e*, substantially as and for the purpose described.

137,363.—*Lifting-Jack.*—JAMES S. HALLEMAN, Kansas City, Mo., assignor to himself and HARRY E. CLARK, same place. Application filed October 5, 1872.

In lowering a weight, the lever F is arranged in the same way as for lifting, and the bar is raised slightly until the pawl is raised out of the teeth. The bar is then allowed to move down gently the space of one tooth, and so on, the bar and supported weight being lowered a tooth at a time.

Claim.—1. An improved lifting-jack, composed of the foot-plate A, pivoted and slotted bars B, toothed bar C provided with a shoulder or step, D, the lever F, pivoted loop or stirrup G, and pawl H, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purposes set forth.

2. The combination of the hook *h'* and loop J with the pawl H and loop G, substantially as herein shown and described, and for the purpose set forth.

137,364.—*Millstone-Dressing Machine.*—JOHN B. HARRIS, Ottawa, Ill. Application filed February 10, 1873.

The base, consisting of two parallel ways in which a frame works, having a feeding device working across the base and a pick attached to said frame.

Claim.—1. The feeding device, consisting of the following parts: The frame C, feed-screw *d*, lever *g*, slide *i*, guide-rod A, and the rest *m*, in combination with the pick K and the handle J, substantially as described.

2. The pick K and handle J in combination with the resting-block P and the feeding device, constructed and operated substantially as described.

137,365.—*Screw-Propeller.*—JOHN HARTMAN, Jr., Philadelphia, Pa. Application filed July 12, 1872.

A propeller-shaft has an inclination from the perpendicular, and passes through and is journaled in a solid rudder-frame, the top of said frame supporting a sleeve and attached bevel-gear, which gear meshes into similar bevel-wheel fixed on the upper end of propeller-shaft, and gives motion to said shaft. A worm and worm-wheel revolve the rudder-frame and shaft, while the vessel is under way, to steer the same.

Claim.—The combination of the propeller-shaft H with the main stock D, worm L, worm-wheel L', rudder E, and outboard-bearing I, substantially in the manner and for the purpose set forth.

137,366.—*Blast-Furnace.*—DAVID W. HENDRICKSON, Red Bank, N. J. Application filed October 7, 1872.

The draft induced in the flues by the steam-jets causes the air-blast of the furnace to enter at the top and pass through the charge, escaping by the tuyeres; and the form of the steam-jet gives a strong draft and prevents the formation of eddies in the flue.

Claim.—1. The combination, as shown in the accompanying drawing, furnace A, boiler B, steam-pipes N, nozzle P, flues C, and tuyeres E E' E'' E''', substantially as and for the purposes hereinbefore set forth.

2. The nozzle or covering P for pipe or pipes N, or plurality of jets of steam, substantially as and for the purposes hereinbefore set forth.

137,367.—*Door-Spring.*—LEONARD J. HIGGINS, Mount Desert, Me. Application filed January 11, 1873.

A semicircular case, containing a shank and spiral spring, is attached to the casing. The upper end of the shaft forms a lever-wheel, which is mortised or notched. In the notches of this wheel one end of a lever is detachably supported, passing out through the slotted case, and the other end of the lever, terminating in a friction-roll, presses upon and traverses a longitudinal track on the door or gate, the tension of the spring to prevent slamming being readily adjusted by slipping the detachable end of the lever in the series of notches provided for it.

Claim.—The lever I, one end carrying friction-roll K, resting against door L, and the other passing through a transversely-slotted case, C H, and supported detachably in one of the mortises J of a wheel, E, as and for the purpose described.

137,368.—*Basket.*—WILLIAM C. HIGGINS, North Blandford, Mass. Application filed February 15, 1873.

The basket has outer and inner vertical stays arranged opposite each other, and secured together by rivets passing through them and the hoops. To the bottom a cross-piece or foundation is fitted, and is riveted to the vertical stays that pass across the bottom of the basket.

Claim.—1. A basket having outer stays B and inner stays B', arranged substantially as shown and described.

2. In combination with a basket having stays B B', the bottom cross G, substantially as shown and described.

137,369.—*Churn.*—HENRY A. HINCHERS, Hustonville, Ky. Application filed July 27, 1872.

A bottomless cylinder within the churn, concentric thereto, is laterally perforated through its whole length, and descends nearly to the bottom of the churn proper. There are three dome-shaped dashers on one stem, the lowest nearly of the same area as the cylinder; the second smaller, and the third still smaller, the first and second being perforated. A warm or cold water jacket surrounds the whole, having a thermometer attachment at one side.

Claim.—The conical cover B, perforated cylinder C, dasher D E F G, and cover H, in combination with each other, to adapt them for attachment to a churn-body, substantially as herein shown and described, and for the purpose set forth.

137,370.—*Bean-Harvester.*—JACOB HINDS, Hindsburg, N. Y. Application filed February 15, 1873.

Two severing-knives are hinged to the inner sides of sled-runners, and held in a horizontal position for cutting and accumulating by the draft power, and dumped by stopping and allowing the knives to turn downward to a vertical position.

Claim.—The hinged plates or cutters, secured to a suitable frame, and arranged to operate substantially as set forth.

137,371.—*Extension Trough for Wagons.*—ANTHONY ISKE, Lancaster, Pa., assignor to MARTIN L. HERR, same place. Application filed February 7, 1873.

Claim.—The combination of sections 1, 2, 3, and 4, when constructed with bands H III, so as to embrace the sliding segments, which can be drawn out against stops to form a continuous open trough, or slid into each other and suspended to the end-gate by chains, the whole arranged as herein described, for the purpose set forth.

137,372.—*Rock-Drilling Machine.*—FERDINAND JOHNSON, Toledo, Ohio. Application filed February 8, 1873.

The drill is connected with a spring-lever above the gear-wheel, which gives the turning motion to the drill, and the rapid succession of strokes is effected by the alternate action of the cylindrical and grooved parts of the rollers.

Claim.—1. Spring C and cylindrical spring-rest E having projection *m* and pin *n*, in connection with the slotted ring-lever F and drill D, substantially as set forth.

2. The combination, with the spring C, spring-rest E, projection *m*, pin *n*, ring-lever T, and drill D, of the guide-hooks K, platform-wheel *f*, casing *e*, pinion *i*, shaft *h*, and crank *g*, to impart turning motion to said drill, as described.

3. The grooved guide-rollers G, with adjustable T-slides or cog-wheel arrangement, in connection with drill D, for raising and lowering the same, as specified.

4. The combination of the cog-wheels *o* and *w* and lever *p* with the guide-rollers G, adjustable T-slides, and drill D, for imparting the stroke and turn motion to said drill, substantially as and for the purpose described.

137,373.—*Adjustable Bit.*—FREDERICK JONAS, Burlington, Iowa, assignor of one-half his right to GEORGE O. RAY, same place. Application filed August 17, 1872.

The bit and counterboring-tool are both held in position by a single set-screw.

Claim.—In combination with the stock A, the bits B and G, when each bit is made independently adjustable of, or with relation to, each other, by means of the collar D and set-screw E, substantially as and for the purpose specified.

137,374.—*Adjusting Attachment to Reversing-Levers, &c.*—GEORGE W. JORDAN, Passaic, N. J. Application filed January 18, 1873.

A worm-wheel, operated by a vertical shaft and hand-wheel, shifts, adjusts, and holds the throttle-valve lever. The worm-wheel engages with a toothed segmental bar, from which it is disengaged by the ordinary spring-catch lever.

Claim.—The combination, with the lever A, sliding bar E, and the curved holding-bar D, of a worm-wheel and a toothed face on the bar D, the said worm-wheel having devices for turning it arranged relatively to the lever A, substantially as specified.

137,375.—*Process for Separating Gold and Silver from Base Metals.*—ERICK LUNDQUIST, Grass Valley, Cal: Application filed September 25, 1872.

Reduced bullion to a molten state in a reverberatory furnace, and adds any ordinary oxidizing agent, (nitrate of soda, saltpeter, &c.,) and stirs well until the oxidation is complete; then, previous to smelting, removes the oxidized mass into a bath of hot or cold water and washes out the oxidizing agent; dries the metal after washing, and smelts.

Claim.—The process above described for separating the base metals from gold and silver, or either of these metals.

137,376.—*Blacking-Brush.*—CHARLES W. MAGUIRE, Brooklyn, N. Y. Application filed October 19, 1872.

A blacking or shoe brush, with a distributing-brush attached or confined to the handle. Both handle and brush are held in their positions by a dovetail and slot or groove, by which either the brush or handle can be removed at will, but is firmly held when in use.

Claim.—A blacking-brush having the supply-brush A, polisher B, and handle C, jointed together by dovetail tongue and groove, in the manner and for the purpose described.

137,377.—*Upright-Piano Action.*—GEORGE C. MANNER, Mott Haven, N. Y. Application filed December 9, 1872.

Arrangement of hammer and rebound cushion with the main lever of the French action on which the key operates.

Claim.—The lever B pivoted at *b*, the rebound cushion F, the hammer E, and pivoted elbow-lever D, all arranged with respect to the damper-lifter I and rod *a*, as shown and described.

137,378.—*Drill-Jar.*—ROBERT MCMULLEN, Titusville, Pa. Application filed October 19, 1872.

The tapering shoulders distribute the shock more equably over the tool and lessen the liability of fracture.

Claim.—A jarring-tool having the links A formed with tapering or wedge-shaped shoulders *d* and E and re-enforce F, substantially as and for the purpose set forth.

137,379.—*Fire-Extinguisher.*—JOHN C. MEEHAN, Springfield, Mass. Application filed December 31, 1872.

If a fire should take place, a tube filled with explosive material is burst by a fuse connecting therewith, thus releasing a lever operating a valve, which permits fluid, &c, in the vessel, to be injected into building.

Claim.—In combination with a valve and releasing apparatus as above described, the cap C and nozzles D, substantially as specified.

137,380.—*Combined Bureau, Wash-Stand, and Wardrobe.*—THOMAS W. MOORE, New York, N. Y., assignor to FANNIE N. MOORE, same place. Application filed January 18, 1873.

A wardrobe of ordinary form and construction, connected to or with a wash-stand, arranged with brackets and places for all the implements appertaining, and having draws in the usual form formed in bureaus for clothing, &c.

Claim.—The bureau, wardrobe, and wash-stand, embraced in one article, and respectively arranged as and for the purpose described.

137,381.—*Gun-Lock.*—WALTER J. MORRIS, New York, N. Y. Application filed February 1, 1873.

Peculiar construction whereby the mechanism is protected from the entrance of dirt, &c.

Claim.—1. The lock-case having a cover, A, combined with a hammer having an arm, K, and slot D, as and for the purpose described.

2. In a gun-lock having the cover A, the arm K having the pointed nose-piece *m*, as and for the purpose set forth.

137,382.—*Nut-Lock.*—ISRAEL E. NAGLE, New Orleans, La. Application filed January 21, 1873.

Claim.—The combination of the lock-washer B having a tongue, *b'*, with the bolt A having its shank faced or grooved to form a bearing for said tongue and the nut C, when constructed and arranged substantially as described and shown.

137,383.—*Window-Mirror.*—ALFRED OLANDER, Glen Gardner, N. J., and ALBERT OLANDER, New York, N. Y. Application filed March 1, 1873.

A double mirror mounted on vertical pivots at the center, and to turn about a quarter of a revolution, and connected by a bell-crank with a pull-piece inside of the room. In the space between the two mirrors a spring is arranged, acting on one or both of the pivots; and to hold the mirrors against the action of the spring the pull-piece has ratchet-notches that engage with a catch.

Claim.—1. The combination of a double mirror, A, pivoted as described, a spring, E, and pull-piece I, when attached to a house, and the said spring and pull-piece arranged for actuating the mirror in opposite directions, as specified.

2. The combination of pull-piece I, ratchet bar H, and catch L, with the pivoted mirror A and its spring E, as specified.

137,384.—*Machine for Cutting Hoops.*—AUGUSTUS G. PARKHURST, Appleton, Wis. Application filed October 7, 1871.

The hoops or bands for forming cylindrical boxes are cut from a stock, and the ends are beveled at the same time to form the lap.

Claim.—1. The combination and arrangement of the adjustable knives M M and the knife J, substantially as and for the purposes described.

2. The adjustable pieces N N, in combination with the beveling-knives M M, for the purposes described.

137,385.—*Box.*—ELIAS C. PATTERSON, Rochester, N. Y. Application filed January 10, 1873.

The box has two lids hinged at opposite sides and fastened together on the top by a hook passing through a staple on the lower lid and engaging with the edge of the upper lid.

Claim.—A paper or wood cigar or other box having a lid in two sections, A and B, section B of any length or width, and section A of any width, and fastener F, consisting of the hook H, shank *k*, and staple *e*, substantially as herein described.

137,386.—*Self-Acting Spinning-Jack.*—ARCHIBALD PAUL, Cohoes, N. Y. Application filed July 19, 1871.

For controlling the backing-off cones, so that they shall go gradually into contact.

Claim.—In a self-acting spinning-jack, the combination of the cam U, cam-bearing *s*, and flange T with the wheel or disk O, or their described equivalents, and the backing-off friction-clutch, substantially as herein set forth.

137,387.—*Trunk.*—DANIEL POMEROY, Green Point, N. Y. Application filed September 13, 1872.

A single screw secures the pad and the front plate together and allows the last two to change their relative positions to each other and to the belt. The pad is provided with two slots in form of an arc of a circle, into which the fastening-pins upon the end of the straps are inserted. The truss serves as right or left hand by simply turning it over. The pad is turned to position and secured by the set screw, and the reverse buckle allows the thigh-strap to serve upon either side at will.

Claim.—1. The pad and pad-plate, rotating upon a single screw independently of each other and of the interposed end of the belt, so that both may be adjusted to and secured in any required position with reference to the interposed belt and to each other, for the purpose of making the truss reversible for either side, substantially as described.

2. The reversible buckle for the thigh-strap, in combination with the rotating pad and plate, and with the belt and thigh-strap, for the purpose of making a reversible truss, substantially as set forth.

3. The slots *c* and *c'* in the rotating plate A, in form of an arc of a circle, as described, and for the purpose specified.

137,388.—*Railroad Water-Tank.*—JOHN L. SHAW, Grand Rapids, Mich. Application filed February 17, 1873.

The tank for supplying locomotive-tenders with water is made by combining a spring with the fixed and movable sections of the discharge or supply pipe, and a jointed bar connecting said sections; said spring being so arranged that when the connection between the two pipes is broken for arresting the discharge of the water it shall remain inoperative; but when the pipes abut or are in contact with each other it will be brought into action by the weight of the delivery-pipe and caused to exert a pressure against the delivery-pipe for forcing the latter in contact with the fixed discharge-pipe, thus insuring, in connection with a projecting India-rubber packing-ring, a water-tight joint. Also, there is arranged, in relation to a discharge-aperture in the water-tank, a means of locking and closing, as well as opening, the valve by a lever, elbow-crank, and bolt.

Claim.—1. In combination with the fixed and movable sections of the supply-pipe, the hinged connecting-bar D and the spring F, or their equivalent, constructed and arranged for operation essentially as described.

2. In railway feed-water-tank pipes, the hollow protruding rubber mouth of the movable section C, arranged to slide upon the conical portion or nipple I of the other section B, to close the joint when the hinge of said sections is arranged as described.

3. The combination of the locking-bolt G, elbow-crank P, pivoted handle Q, and hinged valve O with the water-tank A and connecting-pipe sections B C, substantially as herein described.

4. In railway feed-water tanks having fixed and movable pipe-sections connected by a hinged bar, as described, the said connecting-bar D and the socket into which it fits made to hold the section C from swiveling upon its connecting-bar, as and for the purpose set forth.

137,389.—*Horse Hay-Rake.*—RICHARD B. SHELDON, Canastota, N. Y. Application filed January 11, 1873.

The rake-head, which is also the axle, turns in a semicircular T-shaped tongue and groove, one part of which is attached to the axle and the other to the thill-frame, which permits of detachment by turning the axle a whole revolution.

Claim.—1. The pivoted pawls, consisting of tooth H, block I, and spring J, in combination with the ratchet-wheels G attached to the hubs of the wheels C, and with the axle of a horse hay-rake, substantially as herein shown and described, and for the purpose set forth.

2. The hinge formed of the semicircular T-grooved piece E, and the semicircular T-flanged piece F, in combination with the axle and thills of a horse hay-rake, substantially as herein shown and described, and for the purposes set forth.

3. The combination of the extension-rods L, pivoted lever O, slotted and curved angle-lever P, and hand-lever Q with the pawl mechanism, consisting of tooth H, block I, and spring J to throw the latter into gear with the ratchet-wheels G of the wheels C, substantially as herein shown and described, and for the purpose set forth.

4. The combination of the outwardly-projecting branch or arm o^2 and curved or inclined plate S with the lever O, extension-rods L, and pawl mechanism, consisting of tooth H, block I, and spring J to throw the latter out of gear with the ratchet-wheels G of the wheels C automatically, substantially as herein shown and described.

5. The combination of the slotted rigid arm T, lever U, pivoted connecting-bars W, and slotted rigid arm V with the axle A, to which the rake-teeth B are attached, substantially as herein shown and described, and for the purposes set forth.

137,390.—*Apparatus for Supplying Salt to Cattle.*—FREDERICK STAMBERGER, Clarion, Ill. Application filed February 28, 1873.

A cylinder for containing salt is mounted upon a vertical shaft in the center of a shallow feed trough or platform, the lower edge of the receptacle revolving close to the platform as the cattle lick the salt away. A conical cap protects the contents of the cylinder.

Claim.—1. The combination of the feeding-table and the central revolving cylinder, substantially as described.

2. The table A, shaft B, collar *b*, and cylinder C with cap E, combined and arranged as described, for the purpose set forth.

137,391.—*Locking Device for a Series of Drawers.*—CASPAR A. SPOCK, New York, N. Y. Application filed January 20, 1873.

To the back of the bureau is attached a vertical bar, to which are attached latches to engage with catches on the rear end of each drawer, except the top one. Attached to each latch is a spring to hold said latch in position. To the top of the vertical bar is attached a lever, which bears against the top drawer when it is pushed in, and as the top of the lever is carried to the back of the case it raises the vertical bar and latches the lower drawers. When the top drawer is drawn out the lever is released, the bar descends by its own weight, and releases all the latches.

Claim.—1. The vertical bar C, which by its own weight disengages the latches *c*, as shown and described.

2. The latches *c*, suspended from the vertical bar C, in combination with the springs *a*, as and for the purpose described.

3. The vertical bar C, having the lever *b*, latches *c*, and springs *a*, in combination with the staples *d*, as and for the purpose set forth.

137,392.—*Magazine-Gun.*—ALFRED SWINGLE, San Francisco, Cal., assignor to himself and FRANK A. HUNTINGTON, same place. Application filed November 26, 1871.

Carrier-block provided with grooves, caused to reciprocate vertically by sliding rod operated by the lever-guard. Said rod also carries a spring-hook, which acts as an extractor; also a projecting stud, which acts in a cam-groove in the brush-plug to turn and loosen the same so that the carrier-block may be moved. Also, a safety arrangement for locking the hammer at full or less than full cock, as may be desired.

Claim.—1. The breech-block E, provided with the diagonal grooves *g g'* and horizontal grooves A A', in combination with the horizontally-moving pin *p*, substantially as and for the purpose set forth.

2. The switch-bar *i* having the tripping-horns *j*, in combination with the breech-block E having the diagonal grooves *g g'* and horizontal grooves A A', substantially as and for the purpose set forth.

3. The horizontal sliding bar N, provided with the pin *p*, claw *q*, and arm V with its pin *w*, in combination with the trigger-guard K with its arm M, substantially as and for the purpose above described.

4. The cylinder S having an enlarged screw-head, *t*, and having the cam-groove U in combination with the stud W operated by means of the slide, substantially as and for the purpose specified.

5. In combination with the hammer X, the pin Y, with its shoulder, in combination with the ledge Z' having a recess, Z, arranged to be depressed by the act of cocking the gun, substantially as described.

137,393.—*Dynamometer-Pulley.*—ISAAC P. TICE, New York, N. Y. Application filed March 3, 1873.

Two pulleys are adjusted to a determined resistance, one by the party leasing power, the other by the tenant, each furnishing a check upon the other.

Claim.—1. I claim the combination of the belt-pulley and its threaded hub A, friction-disk C, springs *b b b b*, spider D, bolts *c c c*, flanged nut *f*, driving-shaft B, and friction-blocks *a a a a*, as shown and described, for the purpose set forth.

2. I claim the friction devices and the pulley, excepting its face, inclosed by the heads E E', secured by the bolts and seal-nuts *e e'*, in combination with the heads E E', as shown.

3. I claim two pulleys with adjustable friction devices, in combination with a driving-belt, for the purpose described.

137,394.—*Exercising-Machine.*—LEONARD D. TICE, New York, N. Y. Application filed January 28, 1873.

A device representing an oar-lock, provided with an operating-lever, is employed in connection with band-wheels and friction-clutches, arranged so as to furnish resistance in the movement similar to that found in the operation of rowing.

Claim.—In combination with an oar-lock, c, shaft A, and an operating-lever, *d*, the friction-clutches *k*, wheels B and C, pulleys *a b*, brakes *f e*, and belt *g*, all arranged substantially as described, and for the purpose set forth.

137,395.—*Nut.*—WILLIAM VAN ANDEN, Poughkeepsie, N. Y. Application filed February 21, 1873.

The blank, a little longer than the nut required, is cut from a rod previously twisted, to give a spiral direction to the fibers. It is afterward heated, flattened, punched, and screw-threaded.

Claim.—Nuts in which the fiber of the iron is coiled spirally to the axis of the hole, substantially as specified.

137,396.—*Process for Removing Paper from Walls.*—CATHARINE F. WARE, San Francisco, Cal. Application filed January 6, 1873.

Saturated steam is introduced into the rooms until the paper is thoroughly moistened and limp.

Claim.—The process above described for saturating wall-paper preparatory to removing it from the walls of a room.

137,397.—*Strap for Street-Cars.*—MAHLON WARNE, Philadelphia, Pa. Application filed January 18, 1873.

Hand-support, for passengers compelled to stand in street or other railway cars or omnibuses, so constructed that it shall also serve as an advertising medium.

Claim.—An improved hand-support for passenger-cars, formed of the frame B, connected to the strap D on the rail A by means of a swivel-joint, E, and the strap F, attached to the pins G at the sides of the frame, as specified.

137,398.—*Bed-Bottom.*—ALBERT S. WELLS, New Britain, Conn. Application filed March 10, 1873.

A bed-bottom made of diamond-shaped plates of metal, linked together and attached to the end bars with springs.

Claim.—1. A bed-bottom made from diamond-shaped plates of sheet metal, when pivoted together in the manner described.

2. The springs *c*, plates *i*, and links *e*, when combined to operate as set forth.

137,399.—*Stop for Water-Main Attachments.*—WILLIAM YOUNG, Easton, Pa. Application filed February 8, 1873.

The pipe-connection attached to the main consists of two sections coupled together by a union with a disk of glass, or any substance that will break readily by a crushing force, and packing washers between the two sections, which will stop the water until the connection is made and then let it flow by screwing up one section against the other hard enough to break the glass.

Claim.—A temporary stop for pipes to be attached to water-mains under pressure, consisting of two sections, A B, a union, D, glass or equivalent disk E, and packing-washers, combined substantially as specified.

137,400.—*Guard for Door-Knobs.*—HERRMANN AHRENDT, Newark, N. J. Application filed November 22, 1872.

Within a rosette is arranged a notched and flanged nut, through which passes the spindle of a door-knob, said nut operating in connection with a swinging dog and one or more tumblers

for locking the spindle, the tumblers and dog being actuated from without the rosette, through a hole in its edge, by means of a suitable key. Combined with the swinging dog and tumblers is a catch pivoted in the rosette, so that its free end can be made to swing across an opening formed in the rosette to receive a stud that projects from the cover for the purpose of locking the cover to the rosette.

Claim.—1. The swinging dog J and tumblers T, in combination with the notched nut F, inclosed in the rosette B of a door-knob, substantially as described.

2. The combination of the dog J and tumblers T with the catch K and stud L of the cover of the rosette, substantially as described.

137,401.—*Nut-Lock.*—MARTIN L. BALLARD, Canton, Ohio. Application filed February 26, 1873.

The divided spring-ring is cut away to prevent contact with the nut at that point, thereby avoiding a tendency to open the ring when the nut is unscrewed.

Claim.—In combination with a bolt or rod and its screw-nut, the split, threaded, and spring ring C with its cut-away portion *c*, for forming a nut-lock, as and for the purpose described.

137,402.—*Saw-Handle.*—MARTIN L. BALLARD, Canton, Ohio, assignor to BALLARD, FAST & Co., same place. Application filed March 10, 1873.

The attachment is such that the handle may be quickly disconnected from the saw when desired.

Claim.—A saw-handle or handle-holder composed of the socket A, arms B, vertical screw-bolt or piece C, and projections *a*, *c*, and *e*, taking into or bearing against the saw-plate, the whole constructed and operating substantially as and for the purpose described.

137,403.—*Machine for Making Plaited Capsules.*—JEAN JOSEPH BARAKOWSKI, London, England, assignor to DAVID HUNTER BRANDON, Paris, France. Application filed January 3, 1873.

Claim.—1. The combination of the grooved cone *a* with a ring of articulated blades, *b*, operating to form the plaits successively, substantially as described.

2. A rotating star-wheel, *p*, for successively raising the said blades *b*, as above described.

3. The self-acting clip *q*, for maintaining each blade *b* closed on its plait on its being raised by one of the arms of the star-wheel.

4. The general arrangement of parts *n*, *m*, *o o*, *l l*, *a'*, and *c'*, for imparting the requisite motion to the machine.

137,404.—*Channeling and Edging Tool.*—LOUIS BAUER, San Francisco, Cal. Application filed February 24, 1873.

The converging sides of the bifurcated shank are provided with cutting-edges for rounding the sole-edge of the boot or shoe. A channeler-knife passes through a slot in the shank, and is transversely and vertically adjustable by means of a set-screw.

Claim.—The combined channeling and edging tool, consisting of the handle A, shank B, flattened portion *d* with its V-shaped edging-blades, and having the rib or projection C and opening *f*, in combination with the bar *p* with its knife-holder *r* and set-screws *s n*, steadied by the pin *o*, substantially as and for the purposes above described.

137,405.—*Curtain-Fixture.*—GEORGE W. BEERS, Bridgeport, Conn. Application filed September 7, 1872.

The pawl is arranged in an encircling groove on the bracket, and engages with either of the square sides of the projecting end of the barrel or shaft. A spiral spring is arranged around the pivot of the pawl, and holds said pawl in engagement with the square end of the barrel; the pawl is released by a cord which is attached to its lever end.

Claim.—The curtain-fixture B, circularly and horizontally grooved at *a*, to receive the hook-shaped dog *c*, and provided with the seated spiral spring *s*, the curtain barrel A having the square end *g* and flange *x*, as shown and described.

137,406.—*Revolving Attachment for Gas-Burners.*—JACKSON O. BELKNAP, Mobile, Ala. Application filed February 20, 1873.

A metallic frame, placed over a gas-jet or lamp, holds pictures, colored plates, &c., and is connected, by suitable arms, with a fan-wheel, which is revolved by the ascending current of air. The shaft of the wheel rests upon a slip of glass. The fans or flags may be reversed: The reflectors above the frame revolve in the opposite direction.

Claim.—1. A metallic frame, constructed substantially as shown, and adapted to hold pictures, colored plates, &c., said frame to be revolved around the light by the heated air arising from the lamp or gas-jet acting upon the reversible fans or flags A and B, as shown and described.

2. The combination of a series of revolving fans or flags and cones, fixed and reversible, marked A B, connected with shaft C, loop, metal and glass plates, and screw D, reflector I, arms G, circle H, zones or pictures F, with the use of stained glass, gelatine-board, isinglass, and diaphane, all of which are detachable and interchangeable, each part, as shown by the drawing, arranged one above the other, both of which revolve in opposite directions at one and the same time, substantially as and for the purposes hereinbefore set forth.

137,407.—*Feeding Device for Punching-Machines.*—WILLIAM B. BERRETT, Philadelphia, Pa. Application filed January 8, 1873.

A table having parallel ways; a feed-screw extending diagonally between, and from one end of the ways to the other; a carriage movable on said ways, and connected to the screw by a nut that projects from the former up through the latter and into a straight slot in a plate connected to, and that is horizontally adjustable on, the surface of the carriage. Thus, if at starting the plate be set with its slot directed toward any point that is not midway between a perpendicular drawn from the screw, and another drawn from the ways, the motion of the carriage will be accelerated or retarded corresponding to the direction and obliquity of the slot, the whole extent of which the nut must necessarily traverse in its movement from one end of the screw to the other.

Claim.—1. A feeding device, consisting of a slide controlled by a diagonal screw through the intervention of a slotted plate annularly adjustable on the said slide, all substantially as and for the purpose herein set forth.

2. The combination of the carriage D, controlled by the diagonal screw G through the intervention of the annularly-adjustable slotted plate K, with the short slides E E.

3. The combination of the said short slides E with their adjustable saddles.

137,408.—*Chain-Machine.*—GEORGE W. BINNIX, Sunbury, Pa. Application filed February 10, 1873.

A reciprocating cross-head carrying vertical bending-rollers, whose journals work in elongated slots, bends the blank over a stationary former. Side rolls work against the bending-rollers near the end of the stroke to force them inward and press the ends of the blank. The finished blank is removed by a bifurcated lever operated by a rod connecting with the cross-head.

Claim.—1. The combination, as hereinbefore described, of the cross-head D, the bending-rollers H, supported by the journals A within elongated slots formed in said cross-head, the former I, and the stationary compression-rolls K, substantially as and for the purpose specified.

2. In combination with the cross-head D and former or swage I, the pivoted bar L provided with the arms *l*, the rod M, and the spring O, substantially as and for the purpose set forth.

137,409.—*Tumbling-Barrel for Cleaning Castings.*—FREDERICK N. BIXBY, West Meriden, Conn. Application filed February 17, 1873.

The barrel is of a polygonal form. The plates that form the sides are provided with corrugated lips that underlap each plate, and form openings for the dust to escape.

Claim.—1. The plate *b* of the tumbling-barrel provided with a rounded lip, *c*, substantially as and for the purpose herein described.

2. The tumbling-barrel composed of plates *b*, which have lips *c*, and are made with channels or grooves, substantially as described.

137,410.—*Saw-Set.*—ALFRED BOYNTON and WILLIAM BOYNTON, Brooklyn, E. D., N. Y., assignors to themselves and EBEN M. BOYNTON, same place. Application filed December 10, 1872.

The saw-teeth are bent between a lower stationary die-bed, having a series of alternate projections and depressions formed at an angle, and an upper die furnished with similar projections and depressions, swung in adjustable bearings and operated by a lever.

Claim.—The die *f* in the stock A, and swinging in adjustable bearings, in combination with the die *e*, the surfaces of which dies are adapted to setting saw-teeth, so that the die *f* will act with a drawing movement as it bends the teeth, substantially as set forth.

137,411.—*Brush-Machine.*—EDWARD F. BRADLEY, New Haven, Conn., assignor to JOSEPH SHELDON, same place. Application filed March 1, 1873.

The brush-back is placed on a table that has both a longitudinal and a transverse movement, caused by connection with a cam having two grooved faces, one regulating the transverse and the other the longitudinal movement. The periphery of the cam-wheel is toothed, each of the notches corresponding to a tuft-hole in the brush-back. Into these notches drops a pawl that is operated by a crank on the driving-shaft, so that each revolution of the shaft moves the cam one tooth, and thereby adjusts the table. When the boring or setting of the tuft is completed the machine is automatically stopped by arranging, in connection with the cam-wheel, a smaller toothed wheel having a projection on one side, said projection, when the work is completed, coming in contact with a lever which is connected with a bar which disengages the operating-pulley from the driving-shaft.

Claim.—1. In combination with the two tables G G', the two cams or grooves L^2 and P, in connection, respectively, with the said tables, so that each cam will impart an independent movement to one of the tables, and the movement of the tables in right angles to each other, the combined movement by the said two cams indicating the path or line of tufts to be set, substantially as set forth.

2. The toothed periphery of the cam, combined with the pawl *a* and stop *d*, and, in connection with the table G, supporting the block, and operating to impart to the said table an intermittent movement, substantially as and for the purpose described.

3. In combination with the clutch D and pawl *a*, and stop *d*, and the cams L^2 and P, the sliding bar E, lever T, and stud *t* on the wheel S, to automatically arrest the movement of the cams and tables, substantially as set forth.

137,412.—*Chimney.*—JEREMIAH BROWELL, San Francisco, Cal. Application filed February 3, 1873.

The several sections of the chimney fit one on the other, and are held in place by tie-rods which pass through the collars, one of which is placed at each joint. The rods are securely fastened at top and bottom.

Claim.—In combination with a chimney or stack made of sections C C, the bands or rings *d d*, constructed as described, and the upright binding-rods *r r*, combined and applied as and for the purpose specified.

137,413.—*Fan.*—GUSTAV BRUECK, New York, N. Y. Application filed February 12, 1873.

The fan, in its case, resembles a sheathed dagger, and upon withdrawal unfolds automatically.

Claim.—1. The combination of a scabbard, T, with the detachable fan A, which unfolds automatically on being withdrawn from said scabbard, substantially as described.

2. A fan composed of two folding sections, B C, which are connected at their inner ends to a central rod, D, and at their outer ends to leaves F F hinged to the handle, and subjected to the action of a spring, substantially in the manner and for the purpose set forth.

137,414.—*Wood-Screw.*—STEPHEN P. BURDICK, New York, N. Y. Application filed February 26, 1873.

The screw-thread is of such form that the screw can be driven into a piece of wood without tearing the fiber, and can only be withdrawn by turning it backward. The point is of harpoon shape, and enters the wood, splitting it.

Claim.—1. A screw having ovolo screw-threads, as herein shown and described, for the purpose specified.

2. A screw having a harpoon-point, *d e e*, as shown, and ovolo screw-threads, as set forth.

3. A screw having the depressed or sunken neck *f* and harpoon-point *d e e*, substantially as herein shown and described.

137,415.—*Anti-Frictional Bushing.*—FREDERICK S. BURR, Brooklyn, N. Y. Application filed February 7, 1873.

Improvement in anti-frictional bushings, consisting in so arranging the rollers, grooved to correspond with slotted or recessed retaining-strap, as to prevent the possibility of contact one with another, and also the combination of grooved rollers with said retaining-strap, as above described.

Claim.—The combination of the grooved rollers C C with the slotted or recessed retaining-strap A, substantially as and for the purpose hereinbefore set forth.

137,416.—*Dry-Goods Rack.*—CHARLES N. CADWALLADER, Philadelphia, Pa., assignor to LIZZIE D. CADWALLADER and THOS. KELLEY, same place. Application filed February 11, 1873.

The stand consists of four posts secured together by projecting cross-pieces, which form the supporting-arms. The cross-pieces on one side are placed midway between those on the adjacent sides. The stand is supported on a box-like base by passing the four posts through openings in the top of the box, and then through openings in a shelf arranged within the box. The posts are provided with shoulders, that rest on said shelf.

Claim.—The combination, with the box-like base B, of a rack, A, having two series of arms, *a a*, arranged at right angles to each other, and adapted to receive goods to be displayed, as set forth.

137,417.—*Guide for Silk-Winders.*—JAMES H. CAMPBELL, Willimantic, Conn. Application filed September 25, 1872.

In order to avoid friction the rotating guide is supported between the two adjacent ends of oppositely-disposed arms.

Claim.—1. The herein-described device for guiding silk or other thread to a bobbin, consisting of a grooved pulley or sheave mounted upon the two adjacent ends of the arms D D attached to the bed-plate B.

2. The combination of the sheave E and the supporting-arms D D with the guides F F.

3. The combination of the sheave E and the supporting-arms D D with the traverse-beam A.

137,418.—*Millstone Bush and Spindle.*—RODNEY S. CATHCART, Cincinnati, Ohio, assignor of one-half his right to THE STRAUB MILL COMPANY, same place. Application filed March 15, 1873.

Securing the bushing to the spindle and millstone by the devices described in the claim.

Claim.—1. In combination with the tapered spindle A, the bushing B provided with a corresponding central opening, and secured in relative circumferential position by means of the key C, substantially as and for the purpose specified.

2. The means employed for adjusting the bushing to and securing it in a central position within the stone E, consisting of the wedges G driven into the space F between said bushing and stone, and the lead H caused to fill the remainder of said space, substantially as shown.

137,419.—*Wagon-Seat.*—EDWARD C. COLE, Pawling, N. Y. Application filed March 15, 1873.

The seat is held securely by means of a stationary hook, which is kept in place by a spiral spring.

Claim.—The combination of the stationary hook *a* and spring-holder E, applied both to the seat of a wagon or other vehicle, with the slotted plate C arranged on the body of the vehicle, substantially as and for the purpose herein set forth.

137,420.—*Stump-Extractor.*—EDNEY COLYAR, Clayton, Iowa. Application filed January 15, 1873.

A screw-rod is elevated by a rotary sweep or lever, and the rod is caused to operate uniformly with the sweep, regardless of the irregularities of the ground or line of resistance of the stump or stone, so as to prevent lateral strain on the screw.

Claim.—1. The combination, with the screw-rod, of the two loose bearing-rings H, flat on their outer faces and convex on their inner faces, and with enlarged openings, when arranged on the rod in reverse order, so that the outer faces, respectively, rest flat against the sweep and top of the frame, and the convex faces are in contact, and rise or ride on each other, substantially in the manner and for the purpose described.

2. The combination, with the bearing-rings H and with the sweep E, of the plate G, arranged with the screw-nut F on the lower side of the sweep, and forming an enlarged bearing and surface for the upper ring, substantially as and for the purpose set forth.

3. The construction of the frame A, the same consisting of the uprights B B, connected in pairs and bearing against each other, with rods *b c* passing through the portions of the uprights which meet, and the flaring opening *c* at the junction of said uprights, in combination with the plate C secured to and bracing the top of the frame and engaging with the screw-rod D, substantially as and for the purpose set forth.

137,421.—*Dummy-Engine.*—JOSHUA COMLY, Philadelphia, Pa. Application filed December 7, 1872.

A belt connects the pulley upon the crank-shaft with pulleys attached to each of the driving-axles, and is tightened by means of a belt-tightener between the wheels, which is so arranged in combination with a brake device that, when the brake is applied, the tightener is released.

Claim.—1. The combination in a locomotive of a driving-pulley, A, two pulleys, B B, on the two driving axles, and intermediate tightening-pulley A, and a band passing round all the pulleys, as specified.

2. The combination, with the pulley A and wheels B B, of the brake-shoe *m*, arranged and operating as set forth.

137,422.—*Electrical Indicator for Elevators.*—JAMES H. COREY, New York, N. Y. Application filed November 14, 1872.

The lifting-ropes of the platform, as well as the guide-ways of the elevator, are made to contain the electrical conductors and connections by which an indicator or annunciator of position may be operated within the elevator.

Claim.—The employment of the guide-posts and working ropes of the elevator, or either, as conductors for operating, by electrical impulse from each or any of the several floors, an indicator carried by the cab or traveling platform, substantially as specified.

137,423.—*Painter's Pot.*—THOMAS E. COSTELLO, Brooklyn, N. Y. Application filed March 10, 1873.

Claim.—As a new article of manufacture, a painter's pot having a sharp edge at the mouth and made tapering from it to the bottom, and constructed wholly without solder, substantially as and for the purpose herein set forth.

137,424.—*Device for Filing Saws.*—AZEL P. DURANT, Athens, Ohio. Application filed January 24, 1873.

The saw-blade is securely clamped between the jaws of a table and the teeth brought to a proper edge. The file-handle is grasped between the last fingers and thumb, and the index-finger is placed upon the projecting lip of the carriage. The point end of the file is held between the fingers and thumb of the other hand, and can be freely manipulated by the operator.

Claim.—1. The combination of the file with a rolling carriage that aids to support and control it in its movements, when constructed to operate substantially as and for the purpose specified.

2. The combination of the file and rolling carriage, as above described, provided with a sliding head-piece, substantially as set forth, for the purpose specified.

137,425.—*Sealing Dip-Pipes in Gas-Works.*—HENRY H. EGGERTON, Fort Wayne, Ind. Application filed March 24, 1873.

A reservoir is connected with the hydraulic main, into which the water which makes the seal is drawn by exhausting the air from the reservoir so as to seal or unseal the dip-pipes at pleasure.

Claim.—1. The method herein described of unsealing the dip-pipes of a hydraulic main by the formation of a vacuum in a chamber or reservoir communicating with said main, or the section thereof containing the dip-pipes to be unsealed, substantially as and for the purposes shown and set forth.

2. The combination with a hydraulic main of reservoirs, one for each section of the main, each reservoir being connected with its section and with a vacuum or exhaust pipe for removing at proper times the air, in whole or part, from said reservoir, substantially as and for the purposes herein shown and set forth.

3. The combination with the reservoir connected with the hydraulic main and with an air-exhaust so as to operate to unseal the dip-pipes substantially in the manner set forth, of the outlet and tar pipes for removing the excess of tar as soon as formed from the reservoir, substantially as described.

4. In combination with the reservoir communicating with the hydraulic as described, a system of pipes or conduits communicating with the external atmosphere and with an air-exhaust substantially as specified, and provided with a suitable regulating cock or cocks, whereby the reservoir may be put in communication either with the external atmosphere or with the exhaust, to effect the sealing or unsealing of the dip-pipes, as described.

5. In combination with the reservoir communicating with the hydraulic main, as specified, the pressure-pipe for conveying compressed air to the reservoir to counteract accidental disturbances or increase of gas-pressure in the hydraulic, substantially as set forth.

137,426.—*Nut-Lock.*—JOHANN R. EICHENBERGER and CHRISTIAN G. BIRELY, Burton City, Ohio. Application filed January 25, 1873.

Claim.—The nut-lock consisting of a washer having the hinge-barrels *a a* and a stout rectangular loop arranged to embrace the nut on two sides and the bottom, and turned at its ends to form the hinge-journals *c c*, substantially as specified.

137,427.—*Spike-Making Machine.*—DAVID EYNON, St. Louis, Mo. Application filed November 8, 1872.

The guides are on toothed quadrants, which are pivoted at one end to the frame, and can be inclined by means of pinions.

Two arms extend from the heading-bar to the guides, and have grooved blocks pivoted to their extremities, which slide on the guides, and so placed in respect to the heading-bar that when the bar strikes the spike the centers of the quadrant and the centers of the sliding blocks coincide; the bar will then return to the same point at each successive stroke, no matter what may be the inclination of the guides.

Claim.—1. The combination of the heading-bar H and slides K with the adjustable quadrants M and their guides *g*.

2. The said slides and quadrants so regulated in respect to the movement of the heading-bar that their axes shall coincide when the said bar has reached the limit of its forward movement.

137,428.—*Machine-Gun.*—WILLARD B. FARWELL, New York, N. Y. Application filed March 8, 1873.

A series of breech-loading barrels are arranged in a frame, swinging on trunnions and turn-table. Cartridges are fed to the gun from hoppers having inclined bottoms by a vibrating trough-shaped dropper, and are forced into the barrel, and secured against the force of the charge by reciprocating cylindrical breech-closers, which closers are locked in position by bars operated automatically. Hammers are cocked and caused to operate by means of cams or eccentrics.

Claim.—1. The combination of a series of droppers, N, with a series of gun-barrels receiving the cartridges in slots in the tops, and a series of hoppers having inclined and slotted bottoms, substantially as specified.

2. In a machine-gun, the combination of the reciprocating receivers P and breech-closers R, operated intermittently by positive force, substantially as and for the purpose described.

3. In a machine-gun, the combination of a series of locking-bars, T, with a series of breech-closers, R, and automatic mechanism for operating the same, substantially as and for the purpose described.

4. The combination of the cranks *d*, rod *e*, link *f*, crank *g*, pinion *h*, bar *i*, yoke *j*, and cam *k* with the crank-shaft and the droppers, substantially as specified.

5. The combination of the bar *m*, toothed steel bars *n*, segmental wheels *p*, and rock-shaft *q* with the breech-closers, substantially as specified.

6. The combination of the bar *w*, toothed sliding bars *x*, segmental wheels *y*, and the rock-shaft *z* with the receivers P, substantially as specified.

7. The charger A', with slides C' and D', combined and arranged substantially as specified.

137,429.—*Hopper and Casing for Grinding-Mills.*—JOHN M. FINCH, Cedar Falls, Iowa, assignor to J. M. FINCH and URIAL TOBEY. Application filed February 11, 1873.

The casing and hopper, having branched feeding tubes, are made removable, to readily expose the grinders when necessary for dressing or repair.

Claim.—The casing H, being removably fitted in the lower casing, and having removably fitted thereon the hopper I with the two tubes *h h*, and arranged with the grinders D D and C and hubs *b b*, all constructed as and for the purpose set forth.

137,430.—*Bolt for Flour and Middlings.*—BENJAMIN F. FOREMAN and JOHN P. SPECK, Upton, Pa. Application filed December 28, 1872.

A series of bolting-reels, each having an interior fan or blast and an annular sieve for separating the fine specks from the coarse middlings, the fine middlings or flour being separated from the coarse before affected by the blast, this separation being made as soon as the middlings enter the reels, by an arrangement of bolting-cloth upon the reel surrounding the fan-case.

Claim.—1. The annular sieves 7, constructed and applied within the reels, substantially as described, for the purposes set forth.

2. The combination with the sieve 7 of the double-acting conveyer Q^1 and conveyer Q^2, arranged substantially as set forth.

3. The combination or arrangement of reels 1, 2, and 3, interior inclosed fans *f*, and annular sieves 7, for the purpose set forth.

4. The combination of the reels 1 2 3, fans *f*, sieves 7 conveyers Q^1 Q^2 Q^3 Q^4 Q^5, and the successive spouts, all arranged to operate as set forth, for the purposes explained.

137,431.—*Velocipede.*—WILLIAM GAFFEY, Philadelphia, Pa. Application filed November 1, 1872.

An inclined shaft, supported by the inclined frame, is provided at either end with bevel-wheels, one gearing with a bevel-wheel which is secured to the rear axle, and the other with a bevel-wheel which is secured to an axle which revolves within a frame over the forward wheel. Upon the crank-shaft is secured a cog-wheel, wheel which gears with a cog-wheel upon this axle. Stirrups are combined with the yoke, that the velocipede may be guided by the feet.

Claim.—1. The inclined frame D, constructed substantially as described, with cross-pieces *d* and E, so as to serve as a connecting and supporting medium for the various parts of the velocipede.

2. The inclined shaft *h*, furnished at its opposite ends with bevel-wheels *n* and *p*, and serving as a transmitter of motion from the front to the rear end of the velocipede.

3. The combination, substantially as described, of the driving-crank shaft H, its cog-wheel A, the shaft *k* with its cog-wheel *l* and bevel-wheel *m*, the inclined shaft K with its bevel-wheels *n* and *p*, and the bevel *q* on the rear axle, all substantially as specified.

4. The yoke B and stirrups or foot-rests *a a*, consisting of wrought-iron bars, bent and connected as described.

137,432.—*Ratchet-Drill.*—BERNARD GALLAGHER, St. John, Canada. Application filed December 30, 1872.

The ratchets are formed on a sphere, and the handle is so connected with the sphere that it can be operated at different angles, below and above a horizontal line, to turn the drill to the right or left. The handle carries two pawls, one to be used when the drill is turned in one direction, and the other when turned in the opposite direction. A hub can be made to connect the handle with the stock when the handle is to be vibrated on a horizontal line.

Claim.—1. The combination of the symmetrically-grooved ball *a*, ring *g*, the two piston-pawls *n n'*, and the springs *o o'*, when all are combined, constructed, and arranged substantially as herein shown and described.

2. In combination with the ball *a*, hub *b*, and ring *g*, the guide C or its equivalent, for the purpose and in a manner as set forth.

137,433.—*Bee-Hive.*—EDSON GERRY, Garden City, Minn. Application filed January 7, 1873.

A veranda protects the main entrance. The alighting-board is hinged below the bee-entrance and over the moth-entrance, when lifted closing the bee-entrance, and when lowered sheltering the moth-entrance. The body of the hive is divided by screen-partitions into three separate compartments, each having its external entrance and alighting-board.

Claim.—1. The hinged lighting-board H, having the bee-entrances *e e* above, and forming the shelter and guide to the entrances *f f* leading to the moth-trap below, all as and for the purpose specified.

2. The casing A, end doors B B, screen-partitions G G, combined with entrances *e e* and *b b*, having no passage between the separate divisions of the hive, as and for the purpose specified.

137,434.—*Diamond-Pointed Drill for Dental Use.*—JAMES P. GILLESPIE, Louisville, Ky. Application filed July 3, 1872.

By using a diamond point in place of a steel cutting instrument the shank just below the head can be made of soft or spring temper. If the cutter is of steel the shank near it must unavoidably be of hard steel, while the diamond head is of soft untempered metal. This drill can therefore be used while the diamond head is turned slightly from the axis of the drill, and yet not be broken off.

Claim.—A dentist's drill, formed of a light tempered steel or equivalent shank, A, with a head, C, and a diamond point, B, substantially as and for the purposes herein set forth.

137,435.—*Machine for Cutting Grindstones.*—JAMES P. GILLESPIE, Louisville, Ky. Application filed November 21, 1872.

The sliding brace rests upon the surface of the stone or rock being cut, and centers and protects the bit of the inner drill or cutter.

Claim.—1. The combination, in a machine for cutting grindstones, of the exterior cylinder A provided with a series of diamond points, *b*, and the central shaft or pipe D with diamond points *b* on its end, all substantially as set forth.

2. In combination with a rotating cylinder, A or D, the longitudinally-adjustable and removable diamond-carrying teeth *a*, connected to the cylinder by a dovetail, substantially as herein set forth.

3. In combination with two tubular holders provided with diamond or carbon pointed steel teeth and one within the other, a circular sliding brace, E, surrounding the inner tube and fitting within the other, substantially as and for the purposes herein set forth.

137,436.—*Iron Tender and Car Frame.*—JOSEPH W. GOFF, Providence, R. I. Application filed February 12, 1873.

Claim.—A car or tender frame composed mainly of iron bars or beams which are rolled or formed in one main section, with two angular sections projecting therefrom in opposite directions at right angles thereto, and in different planes, substantially as and for the purpose specified.

137,437.—*Mainspring Safety Attachment for Watches.*—RICHARD GOVE, Laconia, N. H. Application filed April 1, 1872.

The outer end of the mainspring folded back upon itself has its extremity resting in a slight recess on the inside of the rim of the watch-barrel without any permanent attachment thereto, the object being to provide a sufficient hold of the spring upon the barrel in the direction of its normal strain, while allowing a slip in the reverse direction in case of a rupture of the spring.

Claim.—A detached watch-spring, made and bent back at its outer end, as described, its extreme tip being lodged in a slight notch in the inner face of the rim of the barrel and held by the mere force of the spring, and slipping from the notch in case of breakage of the spring, as and for the purpose described.

137,438.—*Spark-Arrester.*—WILLIAM F. GRASSLER, Muncy, Pa. Application filed January 2, 1873.

Having a hollow inverted cone with an adjustable deflector, whereby the sparks and cinders are thrown against a double-deflecting disintegrator, with an annular space between the inner and outside pipes for letting the sparks down into the smoke-box.

Claim.—1. The disintegrator G G', when constructed and arranged to operate substantially as and for the purpose specified.

2. The combination of the disintegrator, inverted bowl, and deflector with the enlarged portion of a spark-arrester, substantially as shown, and for the purpose specified.

3. The combination of the adjustable deflector F and the inverted bowl E with the interior pipe of a spark-arrester, substantially as and for the purpose set forth.

4. The combination of the inverted bowl E and the disintegrator G G', substantially as set forth.

5. The combination, in a spark-arrester, of an outer pipe, B B', an interior pipe, C, an inverted bowl, E, deflector F, and a disintegrator, G G', the parts being arranged to operate substantially as and for the purpose set forth.

137,439.—*Can for Transporting Nitro-Glycerine, &c.*—ALEXANDER HAMAR, Philadelphia, Pa. Application filed March 22, 1873.

A can possessing the usual filling and discharge tube, &c., said gas-tube being provided with one or more funnel-shaped diaphragms suitably perforated for the passage of gases.

Claim.—A can for the transportation of nitro-glycerine or similar explosive materials, provided with a discharge-nozzle, and with a vent-tube having one or more funnel-shaped diaphragms for the escape of gases created within the can, substantially as described, for the purpose specified.

137,440.—*Manufacture of Nitro-Glycerine.*—ALEXANDER HAMAR, Philadelphia, Pa. Application filed March 22, 1873.

The mixed acids from a tank flow along a trough, into which falls a small stream of glycerine. The compound stream falls upon a cold coil.

Claim.—1. The apparatus herein described for the manufacture of nitro-glycerine, consisting of a receiving-tank with a cooling-coil, upon which the mixture of acid and glycerine is caused to fall for mixing and cooling the same, as set forth.

2. The mode herein described of automatically manufacturing nitro-glycerine by flowing the acid and glycerine through a trough upon a cooling-coil, substantially as described.

3. The use of chloride of sodium, or its equivalent, in the manufacture of nitro-glycerine.

137,441.—*Crank-Shaft Eccentric.*—JOHN F. HASKINS, Fitchburg, Mass. Application filed January 3, 1873.

The crank-shaft eccentric, integral with the shaft, and combined with the removable and concentric supplemental ring, for frictional wear upon an eccentric.

Claim.—The crank-shaft eccentric, integral with the shaft and combined with the removable and concentric supplemental ring *d*, substantially as shown and described.

137,442.—*Projectile.*—SAMUEL HATT HAYCOCK, Ottawa, Canada. Application filed January 6, 1873.

Combination of elongated projectile provided with recess, and wooden plug having a conical rear end, whereby the projectile is forced to take the grooves when fired, and the tendency to a void behind the same is obviated.

Claim.—1. The projectile herein described, composed of an elongated body, A B, and a plug, F G, of lighter material, formed with a conical or tapering rear end.

2. The construction of the plug F G with a cylindrical forward end, H, fitting a corresponding cavity in the projectile A B, so as to hold the parts more securely together before use, and permit more free movement of the plug.

134,443.—*Spindle-Step.*—JOHN J. HENRY, Baltimore, Md. Application filed February 26, 1873.

Claim.—1. The screw-threaded guide or bearing B, constructed with the inverted conical opening and aperture through which the spindle-toe passes, and adapted for vertical adjustment around such toe, and within the recessed base A, to compensate for wear, substantially as described.

2. The locking-nut F, in combination with the adjustable guide or gearing B, substantially as described, for the purpose specified.

3. The step for spindles and other shafts, consisting of the guide or bearing B, adapted to screw into the base A, and the locking-nut F, arranged upon the guide above the base, substantially as described, for the purpose specified.

137,444.—*Packing for Piston-Rods.*—JOHN F. HERMANCE, New Haven, Conn., assignor to HENRY P. OSTROM and AARON C. ANDREWS, same place. Application filed September 20, 1872.

The India rubber, being compressed, forces the internal fabric onto the rod, and, externally, onto the box, so as to perfectly pack, and prevent the escape of steam.

Claim.—As an article of manufacture, the herein-described stuffing-box packing, consisting of the divided rings, formed from an India-rubber body, completely inclosed within a fabric, substantially as set forth.

137,445.—*Sad and Fluting Iron.*—JOHN HEWITT, Pittsburg, Pa. Application filed January 23, 1873.

A sad and fluting iron combined with both faces, finished as a sad-iron, and the fluting device inclosed within the body of it, which separates near its center, by which the fluting device is exposed and brought into use.

Claim.—The iron plate A, consisting of two section-plates, B and B', having grooves D D and rollers D' D', when the same are so combined and arranged as to operate substantially as described.

137,446.—*Dash-Rail for Children's Carriages.*—MERRITT HINE, New Haven, Conn., assignor to C. COWLES & Co., same place. Application filed March 7, 1873.

The center post is formed by doubling the wire at the center, instead of welding a separate piece at the center.

Claim.—As an article of manufacture, a dash-rail for child's carriage, having the center post formed in one and the same piece with the rail, by doubling at the center, substantially as set forth.

137,447.—*Sewer-Inlet Trap.*—JOHN HITCHCOCK, Springfield, Mass. Application filed March 12, 1873.

Claim.—The sink B, spout C, and valve D, constructed and arranged together in the manner and for the purpose set forth.

137,448.—*Roller Stand and Heater.*—CHARLES F. HITCHINGS, New York, N. Y. Application filed February 17, 1873.

The top of the heater having the smoke-nozzle, and supporting the water-reservoir, can be turned on the heater so as to bring the nozzle to any angle with the stove-door; thus the apparatus can be set in any place in the room. The water-jacket extends over the combustion-chamber nearly to the stove-door, and retards and diverts the flow of products of combustion. The water-jacket is connected by pipes with the reservoir above.

Claim.—1. The heater A, constructed with hollow walls, and with a hollow fire-space top, F, and with the openings *e* and *g*, substantially in manner set forth.

2. The heater-top F, cast in one piece with the flue-nozzle *a*, as specified.

3. The perforated flange *b* formed on the heater-top F, which carries the flue-nozzle *a*, to permit the turning of said top, as set forth.

4. The combination of the water-heater A A, containing the chambers *d f*, with the circular top F, carrying the flue-nozzle *a*, and with the boiler G and pipes H and I, all arranged to operate as specified.

137,449.—*Middlings Receiver, Cooler, and Duster.*—ANDREW HUNTER and CHARLES E. WHITMORE, Quincy, Ill. Application filed March 17, 1873.

Middlings from bolting-reel pass into a receiver, cooler, or duster by a conveyer, where they are spread out into an attenuated sheet, or into small bodies or streams, subjected to a current of air for removing the specks and light particles of bran, and in a measure the moisture; and also for cooling the middlings before they are subjected to rescreening.

Claim.—1. The tube A, in combination with a discharging-conveyer, and the fan, or its equivalent, for producing a current of air through the tube, substantially as and for the purpose set forth.

2. The spreader L, provided with radiating slats *s*, substantially as and for the purpose described.

3. The hand-brush K, provided with rods *k* and handles *k'*, in combination with a conveyer, bolt, or screen, substantially as and for the purpose described.

4. The combination, with the tube A, of the conveyer B, brush or brushes K, and fan H, all arranged and operating as and for the purpose set forth.

137,450.—*Curtain-Fixture.*—ALBERT D. JUDD and EDWARD M. JUDD, New Haven, Conn., assignors to HUBERT L. JUDD, Brooklyn, N. Y. Application filed February 24, 1873.

The rack slides through a loop or strap, which is permanently attached to the window-casing. Under the loop or strap a lever is arranged having a tooth on one end to engage the rack-teeth. The pulley is secured upon a boss or hub projecting from the upper end of the rack-bar, and the pulley revolves partly on the boss and partly on the rivet that holds it to the rack-bar.

Claim.—1. The dog *c*, made with the lever end 4, tooth 5, and lip 6, in combination with the loop *c* and rack *a*, substantially as set forth.

2. The boss 2 upon the rack-bar *a*, around which the pulley *b* revolves and into which boss the rivet or screw *c* passes, as set forth.

137,451.—*Water-Proof Material.*—XAVIER KARCHESKI, Belleville, N. J., assignor to SOLOMON D. MCMILLAN, trustee, New York, N. Y. Application filed March 15, 1873.

Claim.—As a new article of manufacture, cloth or other vegetable textile fabrics, either alone or united with paper or similar fibrous material, rendered insoluble in water by treatment with sulphuric acid, substantially as and for the purpose described.

137,452.—*Process of Rendering Fibrous and Textile Materials Water-Proof.*—XAVIER KARCHESKI, Belleville, N. J., assignor to SOLOMON D. MCMILLAN, trustee, New York, N. Y. Application filed March 15, 1873.

Claim.—1. The acid-bath of a temperature under 50° Fahrenheit, substantially as and for the purpose set forth.

2. Removing the material operated upon from the acid-bath and subjecting it to a higher temperature, either by exposing it to moist air or to heated air, substantially as and for the purpose described.

3. Prolonging the water-bath, substantially as and for the purpose described.

4. Subjecting the material to pressure under water, for the purpose described.

5. The process as a whole, consisting of the three steps distinctively referred to, substantially as described, and for the purpose set forth.

137,453.—*Nut-Lock.*—GEORGE W. KERN, Zanesville, Ohio. Application filed February 27, 1873.

The washer has inclined projections on its face, over which the nut is allowed to pass by reason of the rounding surface on the bottom of the washer, which allows it to rock.

Claim.—The rocking nut-lock washer, made with projections *b* or *d* at its back, and with the inclined projection *a* on its face, substantially as specified.

137,454.—*Gas-Regulator.*—PETER KELLER, New York, N. Y., assignor to himself and JOHN HEIM, same place. Application filed January 21, 1873.

A metallic cap fits loosely over the nipple, which rises within the casing and governs the flow of gas through perforations near the upper part of the nipple. A guide-pin upon the top of the cap passes through a hole in the upper plate, and a spiral spring surrounding the guide-pin bears against the cap and upper plate.

Claim.—In a gas-regulator, the cap D, having the solid depending flange for loosely overlapping the series of perforations *c c* near the top of the nipple B, and provided with the guide-pin *d* and spring *f*, as described, in combination with each other and with the casting C and shell A, substantially as herein shown, for the purpose specified.

137,455.—*Car-Coupling.*—CHARLES H. KNOWLTON, Rockland, assignor of one-half his right to FULLER G. COOKE and JOHN D. SPEAR, same place, and JOSEPH E. ROBINSON, Augusta, Me. Application filed January 31, 1873.

Claim.—1. A sliding frame to hold the springs of the draw-bar, combined with such springs and with the draw-bar and platform in such a manner that the frame, springs, and draw-bar can all be moved forward and backward together at will without changing their relative position to each other, substantially as described, for the purposes specified.

2. The frame F, draw-bar D, and springs c c^1 c^2, combined substantially as and for the purposes set forth.

3. The frame F, draw-bar D, and bar A, having two stops, combined and operating substantially as and for the purposes set forth.

4. The spring S, in combination with the frame F, draw-bar D, and the two stops, substantially as and for the purposes described.

5. In combination with the sliding frame, the sliding draw-bar, and the stops, a lever, or its equivalent, so arranged that by means of it the operator, standing upon the car-platform, can disengage the stops from the sliding parts, and leave the latter free to move, substantially as and for the purposes described.

6. A sliding draw-bar, a stop for holding it projected beyond or retracted beneath the platform, and a device for throwing the stop into or out of connection with the sliding parts, in combination with a lever, or its equivalent, extending to the platform, so that the whole apparatus can be adjusted and locked by a person standing on the platform, substantially as and for the purposes described.

7. The lever L, in combination with the sliding frame F, the locking-bar A, the lever C, and the draw-bar D, substantially as and for the purposes described.

8. The sliding arms M M, capable of being operated by means of a lever, L, or its equivalent, by a person standing on the platform, substantially as and for the purposes set forth.

9. The sliding arms M M, in combination with a locking device constructed to lock the arms in position when either thrust out or drawn back, substantially as and for the purposes set forth.

10. The combination of the sliding arms M M with the sliding draw-bar D, when constructed and connected so that a movement of the draw-bar in one direction moves the arms in the opposite direction, substantially as described.

11. The sliding arms M M, in combination with the sliding draw-bar D and frame F, and with the lock A and lever L, substantially as described, for the purposes specified.

12. A sliding draw-bar, a locking device, and sliding arms M M, in combination with a lever to operate the locking device, and a lever to operate the draw-bar or arms, or both, said levers being both arranged to be operated from the platform of the car, substantially as and for the purposes set forth.

13. The sliding draw-head D and the hook *h*, in combination with the shoulder *t* on the platform, substantially as and for the purposes set forth.

137,456.—*Burglar-Proof Door, Safe, &c.*—GEORGE LITTLE, Rutherford Park, N. J. Application filed October 25, 1872.

The safe is provided with recesses for the reception of chemicals (such, for instance, as phosphate of calcium) and water. These are separated by a friable substance, which will break by the jar, strain, or concussion to which the door or safe is usually subjected by burglars, and allow the chemicals to commingle and produce a light, together with a pungent penetrating vapor or smoke, which will force the burglars to retire.

Claim.—The burglar-protection for doors, safes, &c., consisting of two substances that will combine to produce light, smoke, or vapors, and a separating medium of glass or other easily-broken material, substantially as and for the purposes set forth.

137,457.—*Adjustable Stove-Pipe Cover.*—THOMAS M. LOSEE, Elmira, N. Y., assignor to THE LOSEE MANUFACTURING COMPANY, same place. Application filed August 17, 1872.

A metallic face-plate composed of two concentric rings and a central adjustable register or ventilator, and a set of guards or heat wires, designed to secure the device to the chimney-hole and to hold the stove-pipe.

Claim.—The face-plate ring, having its inner edge flanged at *x*, in combination with the bent wire *b* and button *d*, substantially as specified.

137,458.—*Hinge.*—WASHINGTON I. LUDLOW, Washington, D. C. Application filed March 22, 1873.

Flanges are cast upon the ends of the hinge, so that by driving the hinge into the mortise these flanges will hold it in place until the screws are inserted. Combined with this device are semicircular ridges upon the outsides of the leaves, which ridges fit into circular holes bored into the door and jamb placed closely together.

Claim.—1. The leaves or wings A B, formed with beveled or flanged edges H, for the purpose of securing the leaves or wings in their respective mortises, thus temporarily hinging the parts until they can be secured by the fastening-screws, as herein specified.

2. In combination with the beveled or flanged edges H, as in above claim, the series of ribs or ridges E, constructed substantially as herein shown and described.

137,459.—*Sugar-Drier.*—ALEXANDER MACKEY, New York, N. Y. Application filed February 5, 1873.

The hinged hollow drying-platforms, arranged alternately on opposite sides of the drying-chamber, can be adjusted at any desired angle. The hollow pivots connect the steam-pipes with the chambers in the platforms.

Claim.—1. The chamber A provided with the pivoted heating-platforms D, which are alternately arranged on opposite sides and adjustable on their pivots, substantially as described.

2. The hollow platform D provided with a hollow pivot, *e*, which connects with the steam-pipe E, as specified.

3. The curved pipe *b* extending from the pivoted hollow platform D into or over the curved pipe *d*, to allow the platform to vibrate on its pivot without severing its connection with the pipe *d*, substantially as herein shown and described.

4. The drying-chamber A containing the hollow adjustable pivoted platforms D D, and provided with the steam supply and discharge pipes E, and with the air-pipes F and G, substantially as set forth.

137,460.—*Brick-Machine.*—SAMUEL MARTIN, Knobnoster, Mo. Application filed January 21, 1873.

Molds, on a traveling belt, receive the clay from the hopper, and then pass beneath a yielding pressure-roller and a "scraper" or smoother. The bricks are discharged on an off-carrying belt by a spur, *f*, acting on the movable bottoms of the mold-boxes.

Claim.—The combination and arrangement of the hopper B, with stirrers C, molds D E *e*, belt *a b d a'*, projection *f*, roller G, and knife H, all constructed and arranged as and for the purpose specified.

137,461.—*Fruit Jar.*—JOHN L. MASON, New Brunswick, N. J. Application filed March 6, 1873.

Upon the neck of the jar is formed a screw-thread, terminating at both ends with square shoulders in such a manner as to leave a full thread to start with both in turning the screw-cap on and off, and the danger of running over the thread is obviated.

Claim.—1. The square shoulders *a a* on the ends of the screw-threads B B, formed by the transverse groove *b* on the neck of the jar, in combination with the screw-cap C, substantially as described.

2. The flat cover D, in combination with the gasket *d*, arranged on the shoulder *c* below the top edge of the jar, the flat cover being depressed on the gasket by the cap C, substantially as described.

137,462.—*Fruit-Jar Cover.*—JOHN L. MASON, New York, N. Y. Application filed February 14, 1870.

Plastic glass is applied to the inside of the cover by means of a powerful pressure.

Claim.—The mode herein described of uniting glass or enamel with a sheet-metal cover, the same consisting in applying the former in a hot and plastic state to the latter, and pressing them together, substantially as described.

137,463.—*Railroad Rail.*—MALCOLM F. MCINTYRE, Girard, Pa. Application filed January 21, 1873.

Claim.—A railroad rail having a wrought-iron rod or series of twisted wires inserted therein or incorporated therewith, substantially as shown and described.

137,464.—*Elevator.*—PETER W. MELLEY, St. Louis, Mo. Application filed November 21, 1872.

The rock shaft is connected with the elevator check-rope, so that when the operator pulls the check-rope the engine can be stopped, reversed, or started. To said rock-shaft is a grooved pulley attached, which is connected with a weighted brake-lever by means of a cord. The brake-lever is automatically lifted in the ascending of the elevator and thrown into action in its descent.

Claim.—1. The combination and arrangement of check-rope G^3, links *g*, hubs g^1, and arm G^2, as and for the purpose set forth.

2. The combination and arrangement of check-rope G^3, shaft G^1, arm G^2, arm G, link A^2, reversing-lever H, stems h h^1, forked arm A^2, and valve U, as and for the purpose set forth.

3. The combination and arrangement of check-rope G^3, shaft G^1, arm G^2, grooved pulley K, cord *k*, weighted lever K^1, and brake-band *k'*, as and for the purpose set forth.

4. The drum J^2, mounted loosely on its shaft *j*, and provided with circular ratchet teeth j^2, in combination with spring-dogs j^1 and hubs J^3, substantially as and for the purpose set forth.

5. The combination and arrangement of check-rope G^3, shaft G^1, arm G^2, grooved pulley K, cord *k*, weighted lever K^1, brake-band *k'*, drum J^2, ratchet j^2, spring-dogs j^1, hubs J^3, and shaft *j*, as and for the purpose set forth.

6. The dogs L^2, pivoted in cross-bar L, in combination with the straps L^1, spring *l*, ratchet-bars L^2, and guide-posts L^4, as and for the purpose set forth.

137,465.—*Buffing-Machine.*—WILLIAM W. MESSER, Jr., Boston, Mass., assignor to WILLIAM W. MESSER, Northwood, N. H. Application filed January 14, 1873.

The cone or cylinder is made hollow and fixed upon the end of a driving shaft so that it overhangs its bearings. The cone is open at both ends, and spiral-shaped blades are arranged within to create a current of air from the outer end as the cone rotates for the purpose of projecting the dust from the machine.

Claim.—1. A buffing-machine, having a cone-shaped or frusto-conical buffer surfaced with a removable sand-paper cover, substantially as described.

2. The rotary buffer-cone formed as a projection beyond the bearings of its shaft, substantially as shown and described.

3. The hollow frusto-conical buffer and the spiral blades formed within it, substantially as shown and described.

4. In combination with the hollow cone surfaced with a removable sand-paper cover, the propeller-wheel *i*, arranged substantially as shown and described.

5. In combination with the hollow cone, the trumpet-mouth guard-ring *k*, substantially as shown and described.

6. The conical shell, formed of the flexible abrader and to fit the cone *d*, substantially as described.

7. In combination with the cone *d* and sand-paper cone *f*, the ring *g* for securing the paper to the cone, substantially as shown and described.

137,466.—*Type-Setting Machine.*—CHARLES T. MOORE, White Sulphur Springs, assignor of one-half his right to THOMAS L. FEAMSTER, Lewisburg, W. Va. Application filed May 2?, 1872.

Upon the depression of one of a series of keys a lever is caused to enter one of a series of concentric grooves at one end of a constantly-revolving cylinder, through a wide longitudinal groove extending across the series, thereby moving one of a series of bars resting in longitudinal grooves, which, in turn, by moving the line of type in this groove, ejects a type into a circumferential groove in such cylinder, from which the type is removed by a tooth on a constantly-revolving wheel and a projection on the bar, and forced, together with the rest of the type, through a guide into one of a series of grooves in a removable form, which latter is moved automatically upon the completion of a line by the type coming in contact with peculiar mechanism.

Claim.—1. In a type-setting machine, the combination of a revolving cylinder with longitudinal grooves to carry the type and a circumferential groove to receive the type, a mechanism to move the type from the longitudinal to the circumferential groove, and a mechanism to move the type out of the circumferential groove and from the cylinder, substantially as and for the purposes herein set forth.

2. In a type-setting machine, the combination of a revolving cylinder with type-carrying grooves and a type-receiving groove, substantially as described, a mechanism to move the type from the carrying to the receiving groove, operated by a stationary key-board, and a mechanism to move the type from the receiving-groove and from the cylinder, substantially as and for the purposes herein set forth.

3. In a type-setting machine, the combination of a revolving cylinder with longitudinal grooves to carry the type and a circumferential groove to receive the type, a mechanism to move the type from the longitudinal to the circumferential groove, a mechanism to move the type out of the circumferential groove and from the cylinder, and an automatically-moving form to receive the type, substantially as and for the purposes herein set forth.

4. The part A of the revolving cylinder provided with a series of longitudinal type-carrying grooves, *a a*, and a single circumferential groove, *b*, into which the type are moved from the longitudinal grooves, all substantially as herein set forth.

5. The part C of the revolving cylinder provided with a single longitudinal groove, *d*, and a series of circumferential grooves, *e e*, each having side grooves and notches, substantially as herein described, and for the purposes set forth.

6. The arrangement of the key G with lug *f*, and the bar H with lug A, having flanges *i i*, and used in combination with the grooves *d e* of the revolving cylinder and the spring *n*, substantially as and for the purposes herein set forth.

7. The combination of the feed-bar I having teeth *t t*, projection *k*, and spring *m*, the type-box E with longitudinal ribs or grooves *o* and perforations at the top, and the follower J with spring-pawls *p s*, all substantially as and for the purposes herein set forth.

8. The arm *s* upon the feed-bar I, in combination with the arm *w* on the revolving wheel or cylinder L, for carrying the type out of the groove *b*, substantially as herein set forth.

9. The guide K provided with ribs *s x* projecting into the groove *b* on the revolving cylinder, substantially as and for the purposes herein set forth.

10. The adjustable bed O, in combination with form N, moved forward on the guides P P by the spring *z*, substantially as and for the purposes herein set forth.

11. The combination, with the form N, of the rod *d'*, spring *e'*, lever *f'*, slide *m'*, pawl *n'*, and spring *t'*, constructed and arranged to operate substantially as and for the purposes herein set forth.

137,467.—*Heating-Stove.*—GEORGE R. MOORE, Philadelphia, Pa. Application filed February 21, 1873.

By means of the notched rod the grate is made adjustable vertically. The fire-pot, being enlarged at its lower end, permits the grate to be turned vertically within it. The latch *a* holds the grate in a horizontal position. The poker B facilitates the descent of fuel and clinkers. The latch *b* holds the poker in position.

Claim.—1. The grate-hangings C C, or their mechanical equivalents, projecting beyond the surface of the stove, so that the grate may be adjusted by them at any height.

2. The enlarged portion of the fire-pot A at the bottom or mouth into the ash-pit, substantially as and for the purpose herein set forth.

3. In combination with the grate, the latch *d* for holding the same from tipping, also the handle in connection therewith for operating the grate, substantially as and for the purpose herein set forth.

4. The side poker B, in combination with the cylinder, substantially as and for the purpose herein set forth.

5. The latch *b*, when used for holding the side poker B, substantially as and for the purpose herein set forth.

137,468.—*Mainspring Attachment for Watches.*—SIDNEY S. MORRILL, Fulton, N. Y. Application filed December 16, 1872.

The outer end of the mainspring carries a cross-pin, which projects through slots on either side of the watch-barrel. A spiral groove in a side plate or cap against the barrel receives one end of the cross pin, and, being set on the winding-arbor so as to revolve with it, causes the outer end of the mainspring to be drawn toward the center as the said spring is wound up.

Claim.—1. In combination with the barrel and mainspring of a watch or clock, the pin E, slotted arm or arms D, and scroll C, for equalizing the power of the spring, substantially as specified.

2. The brace or support *f* attached to the under side of the arm D, substantially as specified.

137,469.—*Insect-Destroyer.*—DAVID G. MOSHER, Mosherville, Mich. Application filed February 19, 1873.

An improvement upon a former patent, 119,389, dated September 26, 1871, consisting of an automatic box cover for retaining the insects when captured.

Claim.—1. The box A constructed with a flaring mouth having tines and wings on each side, in combination with the hinged clapper, as and for the purpose set forth.

2. The clapper G made adjustable upon the arms D', and used as and for the purpose set forth.

3. In combination with the bottom of the box, the stop *b*, as and for the purpose set forth.

4. The combination, with the box A, of the chamber B having a hinged lid upon its top which operates automatically when the box is being used for catching insects, as set forth.

137,470.—*Car-Coupling.*—HUGH MULHOLLEN, Fostoria, Pa. Application filed February 27, 1873.

Claim.—The jaws B B, in combination with the springs C C, coupling-bar E, hook D, and levers I I, the several parts being constructed and operating as and for the purpose set forth.

137,471.—*Metallic Case for Turbine Wheels.*—ABRAHAM MYERS, Salem, Oreg. Application filed March 19, 1873.

A portable metallic case for turbines running upon horizontal shafts, combining in their construction water-induction and eduction openings, a head-plate, and bridges with adjustable bearings, and a downwardly-bent draft-tube. The draft-tube is enlarged at the part which incloses the bridge at the angle where it admits the water from its horizontal to its vertical course, the effect of this tube being to bring into operation the entire pressure due to the head.

Claim.—1. A portable metallic case for a turbine running upon a horizontal shaft, combining in its construction water induction and eduction openings, a head-plate, and bridges with adjustable bearings, and a downwardly-bent draft-tube, substantially as set forth.

2. The downwardly-bent draft-tube, enlarged at the portion surrounding the internal bridge, substantially as set forth.

3. In combination with the horizontal shaft, the internally-placed bearings I I', having openings between the adjustable followers for the passage of the outflowing current of water, substantially as set forth.

4. In combination with bearings F F' and I I', fitted with adjustable followers, the adjustable step J, substantially as set forth.

137,472.—*Sanding Device for Locomotives.*—MILTON V. NOBLES, Elmira, N. Y. Application filed January 11, 1873.

The sand is dampened upon the wheels, causing it to adhere sufficiently to prevent it from falling off during revolution.

Claim.—The combination, with the wheel or wheels of a locomotive, of the sand-discharge and moistening-jet, substantially as and for the purpose specified.

137,473.—*Wash-Tub Holder.*—AMANDRIN M. OLDS, Greeley, Colorado Ter. Application filed December 30, 1872.

A tub-holder formed with three pieces of timber connected near their center, and constructed with notches on their upper ends to receive the tub, and the size and form of it held in position by an adjustable latch above the center connection.

Claim.—The leg-pieces C, provided with suitable bearings or notches D, whereby tubs may be securely held in position, when arranged in combination with the adjustable pieces E and center-block A, substantially as described.

137,474.—*Manufacture of Pigments Containing Zinc and Lead.*—FRANKLIN OSGOOD, New York, N. Y. Application filed March 21, 1873.

Claim.—1. The process herein described for producing zinc-lead, the same consisting in passing the vapors of zinc and lead produced by heating the above-mentioned compounds through a flue by means of a pressure of air-blast, as set forth.

2. The process of producing zinc-lead by the mixture of an ore and a metal, or the dross of a metal, in a furnace, substantially in the manner described, so that when vaporized by heat they will pass over through flues into chambers and condense into a material known as zinc-lead, having formed a complete union at some point of their passage.

3. The method described for the utilization of dross or skimmings of zinc known as "ammoniacal skimmings," for the purpose of combining the same with lead or ores, for the production of the pigment known as zinc-lead.

137,475.—*Manufacture of Carriage-Axle Boxes.*—WOLCOTT J. PALMERLEE, Fort Plain, N. Y., assignor to ADELLIA A. PALMERLEE, same place. Application filed February 28, 1873.

The blank, cut to the proper length and width, and stamped to form shoulders or steps on the outer end, is bent and welded over a mandrel placed in dies constructed to form a finished axle-box.

Claim.—1. The stepped blank B', of the form described, from which to produce an axle-box, as set forth

2. The die sections A A and mandrel a^3 c^3 c^2, combined, for producing from the blank B' an axle-box, substantially as described.

137,476.—*Hydrant.*—FREDERICK J. PAUL, Cincinnati, Ohio. Application filed January 14, 1873.

When the piston is moved up to close the hydrant it carries the valve with it until the latter seats itself. The discharge of water is then stopped, but the piston continues its upward motion until all the water in the discharge-pipe above the perforations in the same is discharged into the cylinder, the spring allowing the piston to move while the valve stands still. The valve is forced off its seat, to open the hydrant, by the descent of the piston.

Claim.—In combination with the cylinder D having a bellow neck, R, for a valve-seat, the pistoned pipe E F *f*, valve S P *e*, and spring T, connected and operating substantially as and for the purpose specified.

137,477.—*Refrigerator.*—CHARLES O. PECK, Pittsfield, Mass. Application filed September 14, 1872.

Improvement upon patent granted to Chas. O. Peck, dated June 11, 1872, No. 127,919.

Claim.—1. As a new article of manufacture, an ice-box for the interior of refrigerators, constructed of galvanized wire cloth, substantially as shown and described, and for the purpose specified.

2. In combination with the wooden lining of a refrigerator, the sheet-metal-covered floor extending for a short distance up the sides, for the purpose and in the manner shown and described.

137,478.—*Cultivator.*—HAZEN H. PERKINS, Osceola, Ill. Application filed October 1, 1872.

The drag-bars carrying cultivator-stems are raised or lowered by levers on the staples attached to the axle. The cultivator-teeth are attached to pivoted shoes, and may be set at any angle. The bar which supports the draft-clevis is vertically adjustable.

Claim.—1. The beams E E, carrying the shovels or plows, and adjustable by means of the slotted plates *b b*, provided with ratchets *d d*, and attached to the axle, in combination with retractile levers F F, arms *e f*, and brace-rods 10' 10', substantially as set forth.

2. The adjustable shoes 8', provided with screw-cranks or their equivalents, in combination with the shovels I, having a casting, 9', on the back provided with a cross-slot to receive the pin of the shoe, substantially as and for the purpose set forth.

3. The clevis *x x*, having a pivotal connection with cross-bar M attached to the beams E E by braces 2' 2', in combination with the adjustable bar *z* and cross-bar *y*, substantially as and for the purpose set forth.

137,479.—*Carriage-Axle Lubricator.*—HENRY F. PHILLIPS, Auburn, N. Y., assignor to SHELDON & CO., same place. Application filed March 13, 1873.

The peculiar packing will remain in the groove.

Claim.—A carriage-axle lubricator made by forming a groove or chamber on the upper side of the axle journal, which is filled with a packing composed of a fibrous material and of wire, and with oil or other lubricator, substantially as and for the purpose described.

137,480.—*Curtain-Fixture.*—PHINEAS W. PHILLIPS, Salem, Mass. Application filed March 6, 1873.

To the end of the curtain-roller is pivoted a shouldered pawl, and on the end of the roller, above the pawl, is arranged a stop to limit the movement of the pawl. On the curtain-bracket is arranged a stop for the pawl to strike against when it is desired to stop the unrolling of the curtain. The end of the spindle has a shoulder with which the shoulder of the pawl engages when the roller is taken out of the brackets, thereby preventing the unrolling of the curtain at such times.

Claim.—In a curtain-roller provided with a coiled spring to raise its curtain, the shouldered pawl *f* pivoted to the curtain-roller, as shown, in combination with the stop *l*, the projecting end *m* of the bracket F, and the shouldered end of the spindle E, all constructed and operating substantially as described, for the purpose set forth.

137,481.—*Fire-Extinguisher.*—WILLIAM K. PLATT, Camden, N. J., assignor to himself and ARTHUR M. GREENE, Philadelphia, Pa. Application filed January 17, 1873.

Two chambers, both contain a solution of soda, and communicate with each other. In one of them is the acid-receptacle, inclined so that on withdrawing the stopper and half-inverting the apparatus the acid must traverse both chambers before it is discharged through the hose.

Claim.—1. A fire-extinguisher in which two chambers communicating with each other, and both containing soda solutions, are combined with an acid-receptacle contained within one chamber, but common to both, substantially as set forth.

2. A fire-extinguisher having communicating chambers, and an acid-receptacle, and an exit-cock, all so arranged that the acid must traverse both chambers before reaching the cock, as set forth.

3. A fire-extinguisher in which the acid-receptacle is arranged in respect to the soda-chamber or chambers substantially as set forth, so that the contents of the same shall be discharged into the said chamber or chambers on half-inverting the apparatus, substantially as specified, and as illustrated in Fig. 3.

4. The acid-receptacle D, inclined in respect to the pressure-chamber, within which it is contained, for the purpose specified.

5. The acid-receptacle D, pivoted to a frame, *c*, above its center of gravity, and arranged to be fixed to the said frame by a set-screw, *f*, or otherwise, substantially as and for the purpose set forth.

137,482.—*Wooden Truss-Bridge.*—THOMAS WILLIS PRATT, Boston, Mass. Application filed January 16, 1873.

A continuous bond of the parts is formed the whole length of the bridge.

Claim.—1. A wooden truss-bridge, in which the braces are arranged in a series of triangles by grouping planks together in sets of two or more as the strain increases, and lapping each other at their intersection, and thoroughly secured to the upper and lower chords and to each other, substantially in the manner described.

2. The mode of stiffening the braces laterally by springing them outward or apart from each other at or near their center, and securing them in that position by the use of clamps, with studs between the braces secured by metal bolts, substantially in the manner described.

137,483.—*Fire-Escape.*—HENRY A. RICHARDS, Chicago, Ill. Application filed January 24, 1871.

The sleeve to which the ladder is attached traverses upon the shaft, but by means of a spline rotates with it so that the ladders can be wound up within the cornice when not in use.

Claim.—In combination with shaft A and the mechanism B C C' and D for rotating said shaft, the reciprocating sleeve A', arranged to rotate with said shaft, wheel J, rope *g*, and ladders F and F', as specified.

137,484.—*Process of Treating Fibrous Substances for Paper-Stock.*—THOMAS ROUTLEDGE, Ford Works, near Sunderland, England. Application filed February 28, 1873.

The fibers are submitted to an alkaline bath, and then to a fermentative steep. This stock is then bleached by hydrostatic percolation in a series of connected vessels, whereby the bleaching-liquor, having passed through the whole, is reintroduced into No. 1, and thus repeatedly used.

Claim.—1. The preliminary preparation of raw vegetable fibrous substances, in order to reduce them into a fibrous condition suitable for textile purposes, and for paper-stock, by steeping the same in an alkaline bath, and subsequently subjecting them to a fermentative steeping, substantially as hereinbefore described.

2. The continuous system of bleaching vegetable fibrous substances, by hydrostatic percolation in a series of vessels connected together, substantially as hereinbefore described.

137,485.—*Apparatus for Charging Gas-Retorts.*—THOMAS F. ROWLAND, Green Point, N. Y. Application filed February 11, 1873.

The coal is elevated into a hopper, whence it is led through chutes in a revolving drum into a series of turning buckets, which, on reclining the charging-machine, are successively discharged through the bottom, and thus maintain a supply for the charger at whatever point it may be for the time located. The buckets are opened and closed automatically, and a safe-guard is provided against returning a bucket unemptied.

Claim.—1. The series of buckets E supported on a railway, A', suspended in the retort-house, with connecting means carried on drums C C', combined and arranged to serve, relatively to the gas-retorts and the charging means M therefor, as herein specified.

2. In connection with the above, the construction of the buckets E with the upper portion curved to match to the peripheries of the drums, and with openings therein adapted to receive the loads from the interior of a drum, as herein specified.

3. The trap-door E' with its holding means E² F G mounted on the traversing-buckets E, in combination with the tripping device *m* carried on the charger M, all arranged for joint operation, as and for the purposes specified.

4. The safety opening device O, arranged, as shown, relatively to the traversing-buckets E, filling means C C³, and movable charging apparatus M, and tripping device *m*, as herein specified.

5. The construction of the drum C with a receiving-mouth, C³, at the center of the top, and with chutes C³ adapted to lead the coal from the said mouth to the several buckets, as herein specified.

6. The gates J K with suitable operating means, in combination with the revolving chutes C³ and series of traversing-buckets E, substantially as herein specified.

7. The elevator L L, hopper I, arranged, as represented, relatively to the revolving mouth C³, branched chutes C³, controlling means J K, and traversing-buckets E, substantially as and for the purposes herein specified.

137,486.—*Apparatus for Raking Gas-Retorts.*—THOMAS F. ROWLAND, Green Point, N. Y. Application filed January 30, 1873.

A rigid framing, supported on wheels running on ways on the foundation-frame, carries a jumping frame, which is raised and lowered by a sector connected thereto, and adapted to roll on the track which forms the tread of the supporting-wheels. To the jumping frame the rake-carriage, capable of a slight horizontal movement, is connected by transverse-dovetailed ways or guides. The forward movement of the main carriage gives a rising movement to the jumping frame which lifts the rakes as they advance; the backward motion lowers the jumping frame and its rakes. If anything prevents the heads of the rakes from settling into the coke the knuckle-joints yield, saving the rakes from breaking.

Claim.—1. In combination with a carriage, A, moving forward and backward on the support X, the rising and sinking frame B, rakes D *d*, and means for raising and lowering them so as to enter the retorts in an elevated and return in a depressed position, as herein specified.

2. The knuckle-joints C between the rake-levers D and the rising and sinking frame and its connections, as herein specified.

3. In combination with the traversing carriage A, rising and sinking frame B, and connected rakes D *d*, the transverse carriage B' and adjusting means O, arranged to allow the adjustment of the rakes to one side or the other within moderate limits, as herein specified.

4. The friction-sectors M and spring H, in combination with the traversing carriage A and its operating means, rising and sinking frame B, rakes D *d*, and a balancing or partially balancing means, F, arranged as shown, so that the changes of motion of the carriage A will elevate or depress the rakes, as herein specified.

5. The stops B² on the jumping frame B, arranged to serve relatively to the main frame A and to the means of raising and lowering B, as and for the purposes herein specified.

6. The water-connections D', in combination with the hollow levers D, rakes *d*, and means for operating them, as herein specified.

137,487.—*Gas-Retort Charger.*—THOMAS F. ROWLAND, Green Point, N. Y. Application filed January 20, 1873.

The revolving meter is provided with removable partitions, forming an increased number of chambers, and sets of removable blocks, by which the capacity of these chambers are still further decreased, so that the charges may be varied at will. The valves within the casing which alternately open and close the spouts are connected by links to a cam upon the end of the revolving meter.

Claim.—1. A revolving meter having two or more chambers, M' M², in combination with the hopper B, casing A, spouts E' E², and valves *e' e²*, as and for the purposes herein specified.

2. In combination with the revolving meter D, the removable partitions D' D² adapted to be introduced and removed by a longitudinal motion, as herein specified.

3. In combination with the meter D, hopper B, casing A, spouts E' E², and movable valves *e' e²*, the levers F' F², links G' G², and cams H' H², arranged for joint operation, as herein specified.

4. In combination with the hopper B, the revolving meter D, provided with the angular steel knives *d* mounted in the meter and adapted to facilitate the division of the pieces of coal which stand across the mouth, as and for the purposes specified.

5. In combination with the meter D and several spouts E' E² mounted at different levels in the casing A, the deflectors I J arranged as shown and adapted to retard the descent of the coal to the lower spout or spouts, substantially as and for the purposes herein specified.

137,488.—*Medical Compound for Kidney Diseases.*—WILLIAM A. RUTH, Wyoming, Del., assignor to JOHN T. JAKES, WILLIAM BROADAWAY, and W. A. RUTH, same place. Application filed September 28, 1872.

Thirty grains each of the ingredients mixed and steeped.

Claim.—The compound of sarsaparilla, marsh mallow, and gin, as specified.

137,489.—*Veneer-Cutter.*—JOHN N. SEIB, Boston, Mass. Application filed January 15, 1873.

Logs, either round, half-round, or rectangular, can be cut into veneers by a slight change in the stay-log and holding apparatus. The sheets are cut to uniform size.

Claim.—1. The combination of a rest, *w'*, with the stay-log G*, constructed and arranged substantially as and for the purpose described.

2. The combination of the adjustable brackets *d'* with the screw-rods *t* and the chucks *s*, substantially as and for the purpose specified.

3. The shaft *f'*, bearing on the surface of the circular log and connecting with a rock-shaft that actuates slides *n'* carrying a pad, *p'*, in combination with a cutting-edge, *q'*, substantially as and for the purpose shown and described.

137,490.—*Harvester.*—JOHN F. SEIBERLING, Akron, Ohio, assignor to CLIMAX MOWER AND REAPER COMPANY, Corry, Pa. Application filed April 5, 1872.

Claim.—The combination of a shaft, a sleeve movable endwise on the shaft and revolving therewith, two gear-wheels, one revolving on the sleeve, a clutch on the sleeve between the wheels, ratchets on the wheels, and a shipping-lever arranged to move the sleeve endwise on the shaft to engage and disengage the clutch with the wheels, for varying the speed of the cutters, substantially as described.

137,491.—*Explosive Shell.*—JOHN T. SENN, Troy, Ala., assignor of one-half his right to SIMON SCHWARZ, same place. Application filed January 11, 1873.

Combination of two hollow spheres, one within the other, and secured in relation to each other by a bolt and the fuse-stock.

Claim.—The shell, constructed as herein described, having the two separate and independent hollow spheres A B, one within the other, connected together by means of the bolt *c*, and provided with the shouldered fuse-plug *d*, extending from the outer into the inner shell, as shown and described.

137,492.—*Attachment for Wash-Boilers.*—THOMAS SHUMAN, Corning, Iowa. Application filed February 17, 1873.

An attachment for a wash-boiler, constructed in a plain conoidal form, with aperture near its lower edge and open top for the free circulation of steam, which, when condensed, passes through the openings to the bottom of the boiler.

Claim.—The device A A B B, of conoidal form, complete in one piece, with a series of perforations, 1 2 3 4, near its base, substantially as described, and for the purposes specified.

137,493.—*Smelting-Furnace.*—BYRON M. SMITH, Topeka, Kans., assignor to ELIZA S. SMITH, same place. Application filed January 23, 1873.

The heated air is passed through a water-chamber, where it absorbs moisture and passes thence to the base of the furnace, where it unites with steam and hydrocarbons, the steam having been previously superheated in a chamber placed in the base of the furnace, which also acts as a deflector for the combined gases.

Claim.—1. The elevated water-tank *c*, when arranged to feed the boiler, and the moist-air chamber, substantially as described.

2. The superheater-chamber *m*, in combination with steam-pipe *l* placed in the lower part of the furnace, for the purpose of acting as a deflector for the gases and to protect the jet-tubes from the metal, substantially as set forth and shown.

3. The concentric pipes or chambers *l p t* for conducting the air, steam, and gas into the furnace, when provided with suitable jet-tubes, substantially as shown and described.

4. The furnace *a*, boiler *b*, tank *c g*, and moist-air chamber *d*, when connected by the various pipes, in the manner and for the purpose set forth.

5. The moist-air chamber *d* for moistening the air before its entrance to the furnace, as specified.

137,494.—*Washing-Machine.*—EDWIN SMITH, Whitestown, N. Y. Application filed December 20, 1872.

A washing-machine with corrugated rolls, with journals passing through the sides or frame, and held in their position by springs. The frame or sides are made conical and beveled in their connection with the segmental strips, which connect it to the tub.

Claim.—The two rollers *c c'*, combined with frame A *d f*, the springs *b*, and conical beveled segments *a*, all arranged as described, and for the purpose set forth.

137,495.—*Process of Manufacturing Middlings-Flour.*—GEORGE T. SMITH, Minneapolis, Minn. Application filed October 12, 1872.

After first grinding and bolting, the middlings are subjected to a series of alternate purifications, grindings, and boltings, making a granular middlings-flour.

Claim.—The herein-described process of manufacturing flour from middlings by subjecting them to successive grindings, boltings, and intermediate purifications by currents of air, substantially as set forth.

137,496.—*Oil-Still.*—WILLIAM B. SNOW, Brooklyn, N. Y. Application filed September 21, 1872.

A reciprocating dasher is suspended within the still, a little distance above the bottom thereof, so as to preserve a thin film of carbonaceous matter upon the bottom of the still to prevent burning of oil. The dasher is operated by a direct-acting steam-cylinder located in the still.

Claim.—1. The reciprocating dasher D, corresponding in contour, as described, with the transverse section of the tank A, and arranged to move in a direction longitudinal with the latter, and at a slight but appreciable distance from the heating-surface of the tank, substantially as and for the purpose herein set forth.

2. The combination, with the reciprocating dasher D, arranged and operating as described, of the steam-cylinder E and its piston F, rod C', and connecting-rod G, acting direct upon the dasher, substantially as and for the purpose specified.

137,497.—*Steam-Boiler Feeder.*—ABEL SPENCER, Jr., Penn Yan, and THEODORE C. SPENCER, Elmira, assignors of one-third their right to E. M. BIRDSALL, Penn Yan, N. Y. Application filed December 3, 1872.

A revolving chambered cylinder placed vertically in a case connected by pipes to the feed-water, and the water and steam-spaces of the boiler, regularly feeds the water to the boiler, the steam admitted from the boiler being condensed by the feed-water. Glass gages connected with the water-chamber in the case indicate the height of the water.

Claim.—The combination of the case A, chambered cylinder B, chamber C, pipes D E F, and one or more indicators, G, all constructed and operated substantially as and for the purposes set forth.

137,498.—*Spring Bed-Bottom.*—WILLIAM D. SPENCER and EMERY PARKER, New Britain, Conn.; said SPENCER assignor to said PARKER. Application filed March 7, 1873.

Diagonal links are combined with transverse springs, the latter being arranged between the connected ends of the links, whereby the action of the spring is transverse to the line of strain.

Claim.—In a spring bed-bottom, the diagonal links *d d'* and *f f'*, combined with the transverse springs D, arranged between the connected ends of the said links, so that the action of the springs is transverse to the line of strain upon the bed-bottom, substantially as herein set forth.

137,499.—*Road-Scraper.*—JOHANN STEFFENSEN, Lyons, Iowa. Application filed November 4, 1872.

Claim.—The combination of a road-scraper, a harrow rigidly attached thereto, and a draft-chain connected to the harrow at or near its ends, substantially as set forth.

137,500.—*Reservoir Cooking-Stove.*—HENRY STEPHENS, St. Louis, Mo. Application filed January 24, 1873.

In this stove two features are combined—the water-reservoir forms the front wall of the fire-chamber, and the hot closet extends in part under the ash-pit.

Claim.—The within-described cooking-stove, consisting of the casing A B, oven C, fire-box D, ash-pit E, reservoir G with its back forming the fire-box front, the plate H, and the front oven J, all constructed substantially as shown, and for the purposes set forth.

137,501.—*Fruit-Knife.*—GEORGE W. STEVENS, San Francisco, Cal. Application filed September 20, 1872.

The knife is furnished with a semicircular curve midway of the blade, and from the middle of the outer side of the curve a short blade extends in a plane at right angles to the plane of the

main blade. Passing this knife through the apple removes two separate quarters and frees them from the core at one and the same time.

Claim.—A fruit-knife constructed with a portion of the blade curved, and having three or more straight blades radiating from the curved portion, as described.

137,502.—*Tray for Drying Fruit.*—GEORGE W. STEVENS, San Francisco, Cal. Application filed September 20, 1872.

Notches are cut transversely in the slats, which increase the air-space and more thoroughly expose the undried fruit.

Claim.—1. A tray for drying fruit, composed of wooden slats A, having transverse channels *b*, substantially as herein described.

2. The slats A, having the transverse or diagonal channels *b*, when united to form a drying-table, substantially as herein described.

137,503.—*Metallic Grinding-Mill.*—HENRY B. STEVENS, Buffalo, N. Y., assignor to GEORGE L. SQUIER, same place. Application filed February 5, 1873.

The peculiar construction of cone and concave; in connection therewith, the feeding-screw and spiral recess in cylindrical mouth; also devices for giving double adjustment to the concave, all clearly set forth by the claim.

Claim.—1. The combination, with the cone E provided with the square or polygonal end *e*, of the concave F, provided with notches *h* for insuring a regular and uniform feed, substantially as hereinbefore set forth.

2. The combination and arrangement, with the cone E and concave F, constructed as described, and having a cylindrical mouth, *i*, of the feeding-screw *m* secured in the end of the cone for grinding wet or parboiled corn, substantially as hereinbefore set forth.

3. The arrangement, with the cone E provided with feeding-screw *m*, and the concave F provided with the cylindrical mouth *i*, of the spiral recess or way *k* formed in the latter to assist in feeding wet or boiled grain, as hereinbefore set forth.

4. The combination, with the grinding-cone and concave and fastening-bolts *n*, fitted loosely in the flanges *o o*, of rubber blocks *p* arranged on the latter to facilitate the double adjustment of the concave, substantially as herein before set forth.

137,504.—*Machine for Operating Drills.*—JOHN W. STOCKWELL, Portland, Me. Application filed November 16, 1872.

The drill-rod is lifted to a certain or desired distance, when it is released and allowed to fall, receiving a rotary motion.

Claim.—1. The combination of the crank-shaft C, the link *e*, pin *d*, slotted clamp *e*, the blocks *f f*, when applied to the rod *a* and combined therewith in the manner and for the purposes herein set forth.

2. The combination of the adjustable cross-piece *l*, head *p* with the rod *a*, and a tamp, *m* or *n*, to operate as herein set forth.

3. The arrangement of the clamp *e* with its blocks *f f*, with the spring *y*, and toothed rack *y'*, as herein set forth.

137,505.—*Sofa-Bedstead.*—CHARLES STREIT, Cincinnati, Ohio. Application filed November 12, 1872.

The extension frame is drawn out on metallic slides, having stops to prevent the frame from being drawn out too far. The sinking frame, when used as a bed, is held up at the head by a supporting-prop that is hinged to the main frame.

Claim.—In combination with the parts A B C of an extension lounge, the interlocking slides F F' having stops *f' f''* and supporting-prop D, the latter being hinged to the part A, all substantially as specified.

137,506.—*Harvester.*—ENOCH TAYLOR, Memphis, Tenn. Application filed February 27, 1873.

A pair of vertical brush picker cylinders is arranged on each side of a wheeled vehicle, and parallel with and to the inner side of each cylinder is arranged a clearer or comb, which revolves in an opposite direction, and by which the picked cotton is taken from the picker-cylinder and deposited in a proper receptacle.

Claim.—1. The combination of brush-cylinders D E having bevel-pinions *d*, the shaft C having bevel-pinions *c c'*, and the wheels having pinions *d*, as and for the purpose described.

2. The pairs of brush-cylinders D E arranged on the vehicle on each side of frame F, one in the rear of the other, to operate as and for the purpose set forth.

3. A guide, H, suspended over side of vehicle and with respect to brush-cylinder D E, as and for the purpose specified.

137,507.—*Sand-Ejector.*—JOSEPH THAYER, Topeka, Kans., assignor, by mesne assignment, of one-fourth interest to ELIZA S. SMITH, same place. Application filed January 3, 1873.

On a water-pipe, having its lower end turned upward, are formed jet-tubes, arranged in a circle around a central tube, through which water is forced upward into the ascending pipe. Into this central tube extends a tube, through which a current of compressed air is forced, mingling with the water. The sand, being packed around the open part of the pipe containing the jet-tubes, is forced up the ascending pipe by the combined force of the air and water.

Claim.—1. The jet-tubes B arranged around the central tube C, substantially as specified.

2. The tubes B C D, when combined with the tubes G H, substantially as set forth.

137,508.—*Door-Plate and Indicator.*—THEABOLD M. TOBIN and WILLIAM F. TOBIN, Middlebury, Vt. Application filed March 10, 1873.

A cylinder carrying inscriptions is rotated within a cylindrical case to expose its lettering through a slot therein.

Claim.—1. The cylinder D, provided with suitable notices and name, as described, in combination with the spring *b* or its equivalent, and supported by its shaft in standards B on the plate A, for the purposes herein set forth.

2. The combination of the supports A B, shaft C, cylinder D, and case E with glass-covered opening *e*, all the parts being constructed and arranged substantially as and for the purposes herein set forth.

137,509.—*Vulcanized Rubber Compound.*—WILLIAM A. TORREY, Mont Clair, N. J. Application filed March 29, 1873.

Claim.—The improved rubber compound herein described, made by combining mica with rubber or other equivalent gum and vulcanizing, as set forth.

137,510.—*Harvester Rake.*—JOHN S. TRUXELL, Greensburg, Pa. Application filed March 10, 1873.

The cam for guiding the rake and holding it in position has two continuous tracks, and a pivoted switch directs the rake-arm upon one or the other, as desired.

Claim.—The cam G, constructed with the elevated part G^1, continuous edge G^2, and curved rib G^3, in combination with the pivoted switch L, all arranged and operating substantially as and for the purpose described.

137,511.—*Bed-Bottom.*—ANDREW TURNBULL, New Britain, Conn., assignor to THE NATIONAL WIRE-MATTRESS COMPANY, same place. Application filed November 22, 1872.

A cross bar, each end resting in a support, is attached to the side rails and made adjustable in the support by means of a screw.

Claim.—The cross-bar C of a bed-bottom frame, each end arranged in a support, B, attached to the side A, and made adjustable in said support by means of a screw, D, substantially in the manner set forth.

137,512.—*Apparatus for the Manufacture of Bromine.*—DEWITT C. TURNER, Clifton, W. Va. Application filed March 21, 1873.

Claim.—1. In a bromine-still, the angle-irons H and clamping-bars G, constructed and arranged substantially as described.

2. In apparatus for manufacturing bromine, the combination of the steam-pipe W, hose O, and worm F, substantially as and for the purpose mentioned.

137,513.—*Nut-Lock.*—EDWARD TURNER, Greensburg, Pa. Application filed January 31, 1873.

Claim.—A nut-lock, consisting of one or more disks, E, cut away at *e*, swiveled on a bolt, F, and applied to prevent a nut from turning on its screw, substantially as described.

137,514.—*Explosive Pile-Driver.*—HENRY VOGLER, Baltimore, Md. Application filed March 1, 1873.

The tube surrounding the plunger confines the gases, thus enabling the cartridge-chamber to be made shallower to prevent overheating.

Claim.—The shallow cartridge-chamber D, having annular platform *d* around its base, and the plunger E, having the surrounding tube *e*, applied together in connection with a pile-driver, as and for the purpose described.

137,515.—*Brush-Socket.*—PHILIPP WAGNER, New York, N. Y. Application filed March 13, 1873.

The socket for containing the bristles has a bridge or cap with two corrugations, into which the edges of the socket are forced and secured when pressed together.

Claim.—The bridge D, having strong subjacently-grooved ribs *d d* applied to the upper edges of socket A, as and for the purpose described.

137,516.—*Extension Table.*—SAMUEL E. WALES, Orford, assignor to himself and JAMES H. WILLIAMS, Warren, N. H. Application filed March 21, 1873.

The extensible part of the top is composed of a series of transverse rails connected together by webbing or other flexible material, the webbing being left loose or folded up between each rail so as to allow of the necessary extension. Between the webbing and the transverse rails a strip of elastic material is placed to aid in contracting the table-top. The frame-work of the table is composed of two pairs of bars, one sliding in the grooves of the larger pair. To the larger or outside bar is affixed a pivoted spring-catch that engages with notches in the inside bar and holds the table in an extended position.

Claim.—1. An extension table, the top of which is composed of two fixed end boards and an intermediate extensible series of flexibly-connected transverse rails, substantially as described.

2. The combination of the two-part frame-work end boards A^2 and B^2, rails D, elastic bands E, and flexible but inelastic bands *h'*, substantially as specified.

3. The bolt H *a*, spring *h'*, inclined plate I, in combination with bar A and bar B having notches *b*, substantially as described.

137,517.—*Machine for Forming Carriage-Clips.*—WILLIAM S. WARD, Plantsville, Conn., assignor to H. D. SMITH & Co., same place. Application filed February 12, 1873.

Two sliding bars, forced up by cams, bend the bar around the rounded block and against the sides of a former, and hold it in that position. The block is then drawn downward out of the way, and the plunger moves up and forces the bow of the blank up against the face of former, the surfaces that impinge against the blank being such as will suitably mold as well as bend it.

Claim.—In combination with the principal former F and auxiliary former *w*, the two jaws C and a follower, E, constructed and operated together, substantially as and for the purpose specified.

137,518.—*Machine for Piling Textile Fabrics.*—ALBIN WARTH, Stapleton, N. Y. Application filed March 21, 1873.

Cloth passing from the package-carrier, mounted so as to be easily reversed to provide for keeping the nap of two pieces laid face to face in the same direction, is laid under the holding devices as the carrier is reciprocated over the table. The slots in the holders allow the passage of a cutting-knife. In order to even the folds on the table the standards are made adjustable, and the cloth is passed from one to the other about rods or rollers fitted to the notches of the standards, and should the last end of the cloth not be of suitable length to reach from standard to standard then the standards are adjusted and the fabric moved over the rollers.

Claim.—1. The combination of a reversible receptacle, *a*, with a package-carrier, B, and a piling-table, A, substantially as shown and described.

2. The combination of a turn-table, D, (one or more,) with a piling-table, A, and package-carrier B, substantially as and for the purpose set forth.

3. The combination of the winding mechanism with the package-carrier B, substantially as shown and described.

4. The holders *e* provided with a shoulder or groove to form a guide in cutting the fabric, in combination with the gage-plates and with a piling-table, A, and package-carrier B, substantially as set forth.

5. The standards *k k* on the gage-plates C, in combination with rollers *l*, and with a piling-table and package-carrier, substantially as and for the purpose described.

137,519.—*Buckle Attachment to Harness-Saddles.*—JOHN B. WELFTON, Tabor, Iowa, assignor to J. B. WELFTON and J. M. BARBOUR, same place. Application filed February 27, 1873.

Two metallic plates are connected by screws and lugs so as to be adjustable. The outer plate is bent up in the form of a hook at its lower end to receive a buckle. The inner plate is secured to the pad-skirt.

Claim.—The metallic plates B and C, constructed substantially as described, and used in combination with the bed plate A, which is secured to the pad-skirt of a harness, as and for the purpose specified.

137,520.—*Harrow.*—HENRY WENDOVER, Norway, N. Y. Application filed February 15, 1873.

Harrows made of a series of bars, the ends of which are connected by plates pivoted together midway between the bars, so that they can be rolled or folded together.

Claim.—The folding harrow or drag, consisting of the bars A provided on their surface with the plates B, hinged at a point midway between the bars A, substantially as shown and described.

137,521.—*Manufacture of Gas for Illuminating, Heating, &c.*—RODNEY M. WHIPPLE, Chicago, Ill., and JAMES G. BLUNT, Leavenworth, Kans. Application filed March 29, 1872.

In an upright retort heated by a surrounding furnace is placed charcoal or other carbon, through which is passed superheated steam to form water-gas. In another upright retort, also surrounded by a furnace, is placed pumice-stone, through which is passed vapor of petroleum or other hydrocarbon, so as to form oil-gas. The gases from both upright retorts are mixed in a third retort.

Claim.—1. The process herein described for producing gas suitable for illumination, the same consisting in generating hydrogen by the decomposition of steam in a retort, and mixing with it a gas produced from petroleum or other oleaginous material produced from petroleum in a separate retort, substantially as shown, for the purpose set forth.

2. The combination of a hydrogen-retort and the oil-gas retort and the mixing-retort, substantially as shown, for the purposes set forth.

3. The hydrogen apparatus composed of an upright retort filled with charcoal or any other carbonaceous substance, a surrounding-furnace, and a steam-distributer, substantially as shown, and for the purpose set forth.

4. The method for mixing the hydrogen gas and the hydrocarbon gas by discharging them into the mixing-retort against each other, substantially as shown, and for the purposes set forth.

5. The compound gas herein described, made by combining the products resulting from the decomposition of steam by means of heated carbon with hydrocarbon gas, each being generated in separate retorts, and then combined, substantially in the manner described.

137,522.—*Carpet-Stretcher.*—DAVID WHITE, Normal, Ill. Application filed February 7, 1873.

A swiveled button and sustaining yoke are applied to the jointed strips composing the frame of the stretcher so as to look the stretcher in any desired position.

Claim.—The oblong swiveled button I and yoke J, combined with the stripe H F F, as and for the purpose set forth.

137,523.—*Apparatus for Making Ice.*—GARDNER WILLARD, New York, N. Y. Application filed March 20, 1873.

Any of the usual freezing-mixtures are placed in a revolving cistern, which is surrounded by boxes containing the water to be frozen, the whole inclosed in a box of non-conducting material. The chemicals used are recovered by distillation.

Claim.—1. The improved apparatus for forming ice, consisting of a wooden case divided into two compartments, the upper lined with a good non-conductor of heat for insulating the freezing-boxes, and the lower for holding the liquid solution, as set forth.

2. The method described for forming blocks of ice by means of movable boxes arranged in an insulated chamber at the sides and around a cistern containing a freezing-mixture, substantially as described.

3. The entire apparatus, consisting of the freezing-vessel *d* with boxes *c c c c* and vessel *f*, all arranged as described, for the purpose set forth.

REISSUE PATENTS.

5,342.—*Shuttle for Sewing-Machines.*—GEORGE A. EDWARDS and GEORGE SCHLEDER, Syracuse, N. Y. Patent No. 136,311, dated February 25, 1873. Application filed March 26, 1873.

The bobbin-supporting spindle is hinged to the shuttle-case, and the spring, the pressure of which is governed by the nut, presses the head of the bobbin into the annular depression, and thereby regulates the tension of the thread carried by the shuttle.

Claim.—The shuttle provided with the pivoted screw-threaded spindle, thumb-nut, and spring, and with the depression *c*, into which the head of the bobbin may be pressed by the spring and nut, as described.

5,343.—*Coating Wood with Rubber, Gutta-Percha, &c.*—K. W. HOLMES, Winona, Minn., and ANDREW ALBRIGHT, Newark, N. J.; said HOLMES assignor to said ALBRIGHT.—Patent No. 64,419, dated May 7, 1867. Application filed March 6, 1873.

Claim.—The process herein described of coating or lining wooden articles with vulcanized rubber, gutta-percha, or other known vulcanizable gum.

5,344.—*Duplex-Telegraph Apparatus.*—JOSEPH B. STEARNS, Boston, Mass., assignor to THE WESTERN UNION TELEGRAPH COMPANY.—Patent No. 126,847, dated May 14, 1872. Application filed February 10, 1873.

Condenser placed in a branch circuit connected to compensating circuit. When main circuit is broken, discharge from condenser neutralizes effect of static discharge from line.

Claim.—1. In an apparatus for double transmission, the mode herein described of neutralizing the effect of the return current from the line when the line is put to earth by means of a return current traversing the branch or compensating circuit during this time, substantially as and for the purpose shown and set forth.

2. In an apparatus for double transmission, the combination of a condenser with a branch or compensating circuit, whereby the effect of static induction upon the receiving relay or instrument is counteracted, substantially as and for the purpose herein specified.

5,345.—*Revolving and Tilting Chair.*—DANIEL E. TEAL, New Lisbon, N. Y., assignor to HEYWOOD BROTHERS & COMPANY. Patent No. 103,516, dated July 19, 1870; reissue No. 5,055, dated September 10, 1872. Application filed March 27, 1873.

A spider is secured to or upon the upper end of the supporting screw or swivel, and is connected by its arms with the lower side of the seat; the spider and seat are also connected together by springs. The nut supporting the swivel-screw is connected with a metallic spider having four arms, each provided with a socket to connect it with the respective legs of the stool.

Claim.—1. A swivel-chair, in combination with a tilting seat, when the interposing springs are secured to a metallic spider and to the chair-seat, as described.

2. The supporting-spider F, constructed as described with side spring-arms *f*, and connected to the screw E and seat G, substantially as and for the purpose shown.

3. A spider with a central nut, said spider provided with sockets for connecting together, and in combination with the legs of a chair or stool, substantially for the purpose described.

5,346.—*Middlings-Purifier.*—EDWARD P. WELCH, Georgetown, D. C., assignor to himself, JAMES H. WELCH, ROSIA W. WELCH, HERBERT P. WELCH, and JAMES A. MALONEY, same place.—Patent No. 135,953, dated February 18, 1873. Application filed March 17, 1873.

An auxiliary blast in jets from perforated tubes keeps brushes and under side of screen clean, and also may prevent tailings passing over too rapidly.

Claim.—1. The combination, in a middlings-purifier, of a screen or sieve, through which a blast passes in one direction while the middlings pass in the other, with auxiliary air-pipes with jets from an independent fan-blower, substantially as herein-before set forth, to blow off fine adhering farina, &c., from its under side, to keep the meshes clear and open, and prevent their clogging.

2. The combination, in a middlings-purifier, of a vibrating screen, through which a blast passes in one direction while the middlings pass in the other, with a brush rotating across the under side of the screen on an axis substantially perpendicular thereto, substantially as hereinbefore set forth, to produce a drawing action of the brush across the screen diagonal to its line of vibration.

3. The combination, in a middlings-purifier, of a vibrating screen, brushes rotating across the under side of the screen, and perforated air-pipes to direct streams of air upon the screen and brush, substantially as set forth.

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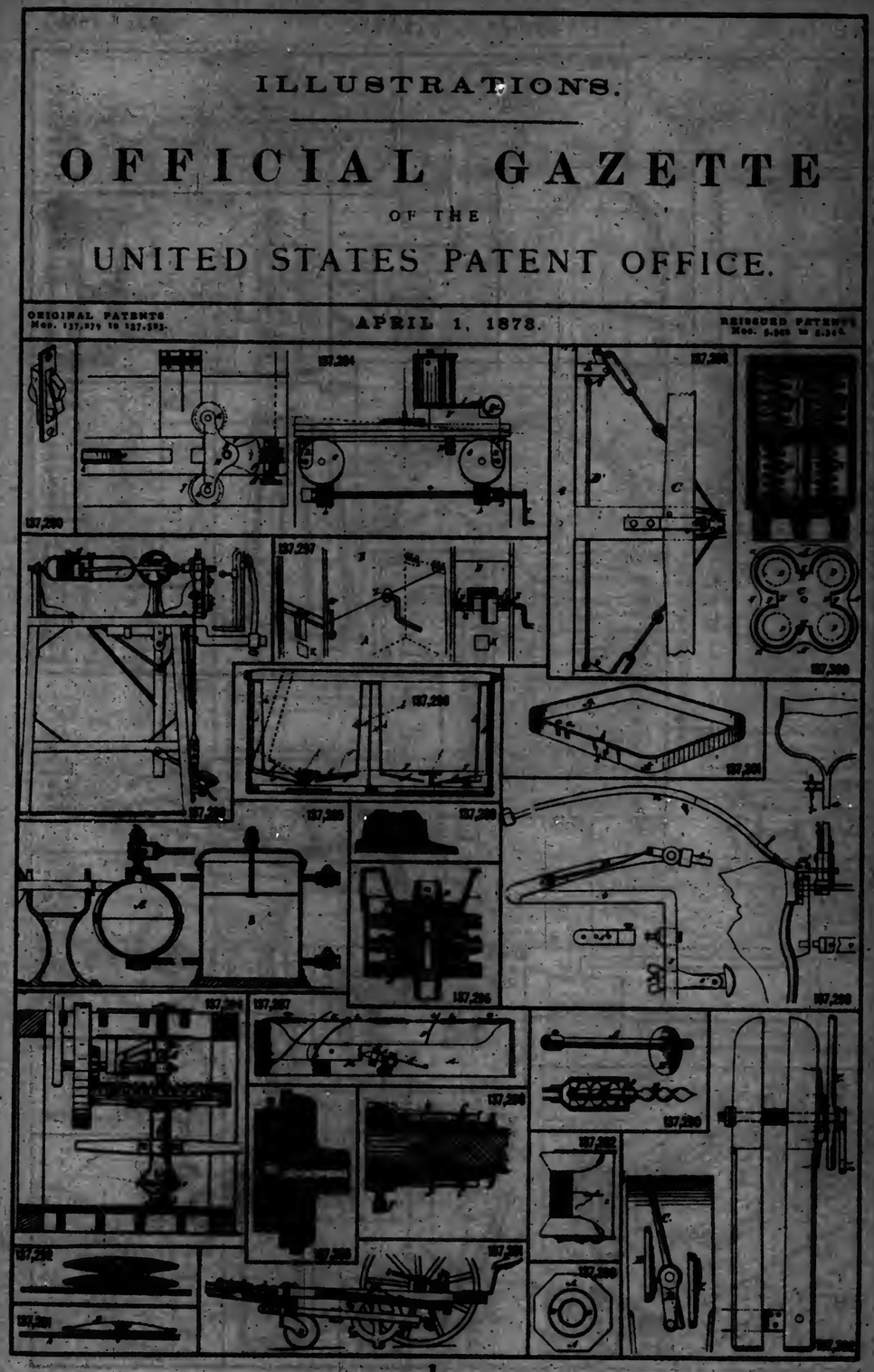
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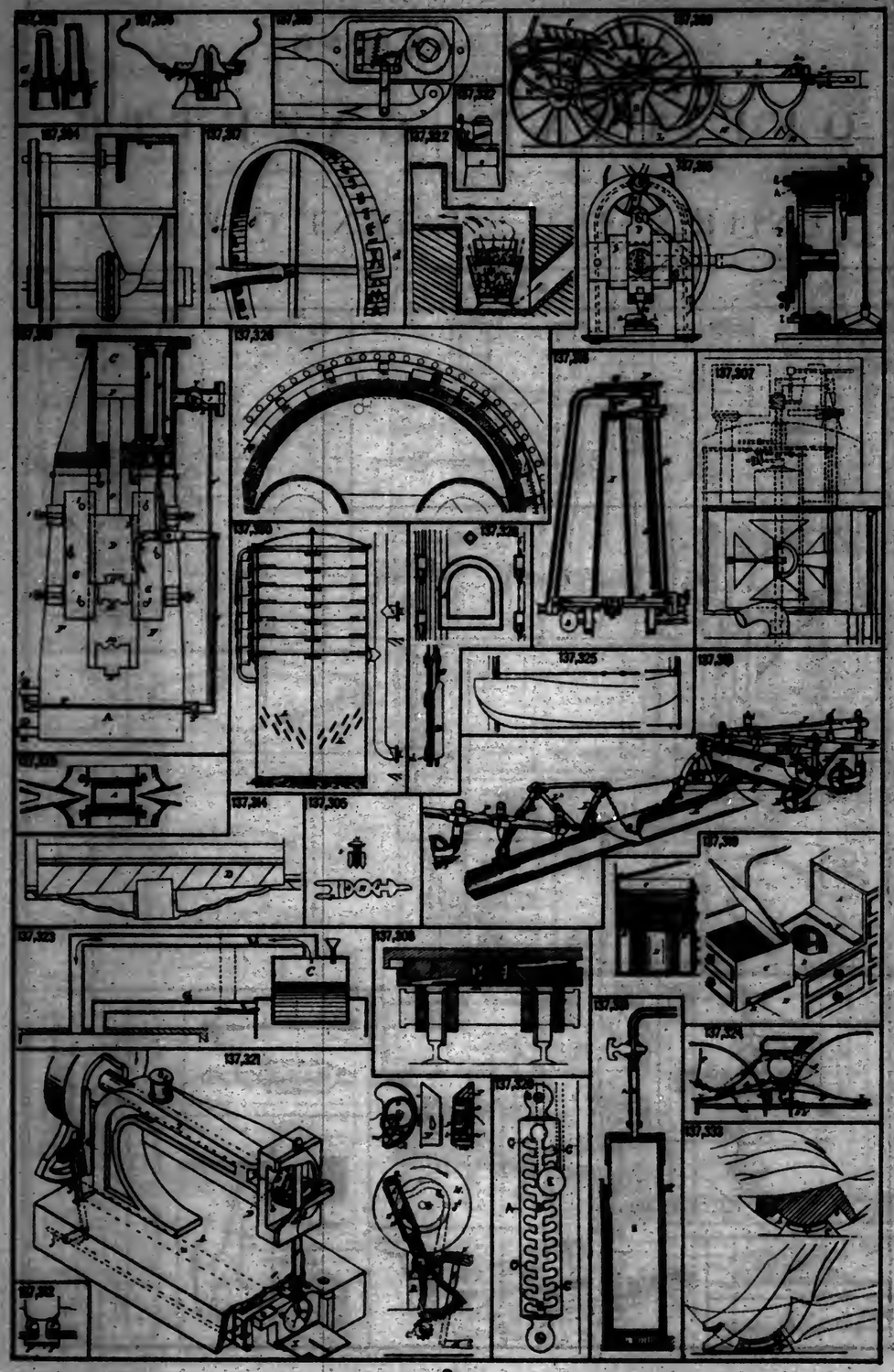
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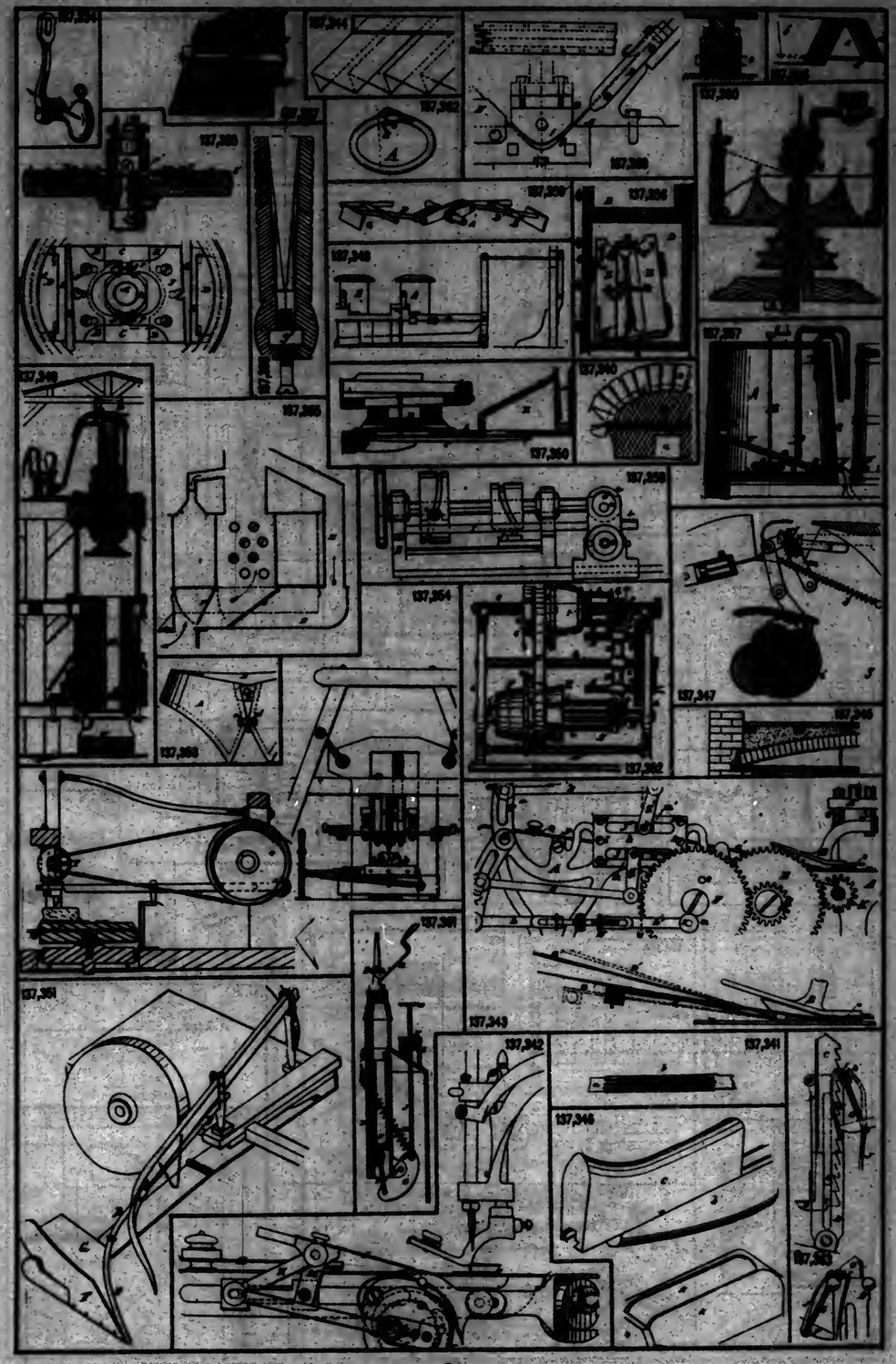


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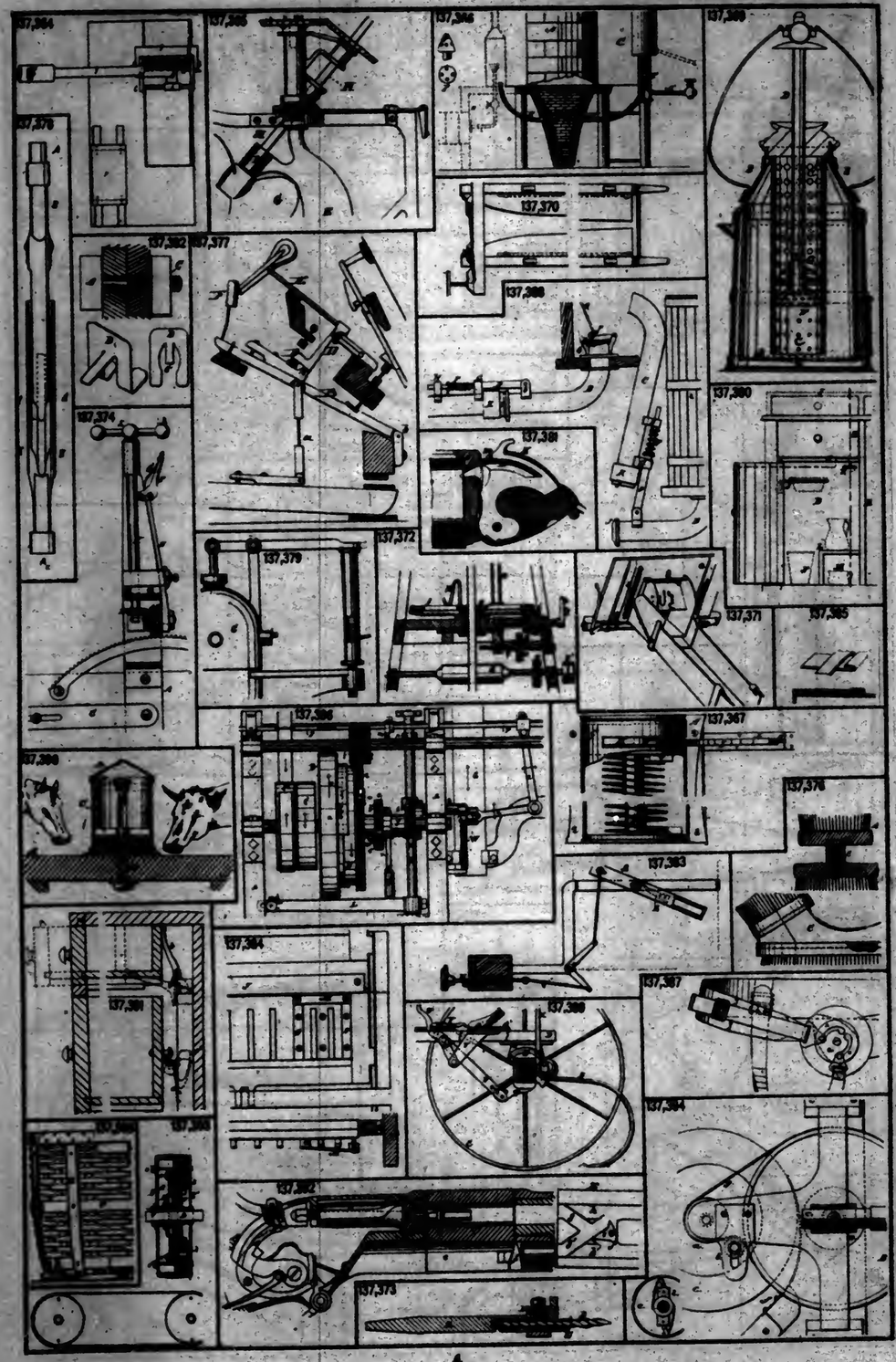
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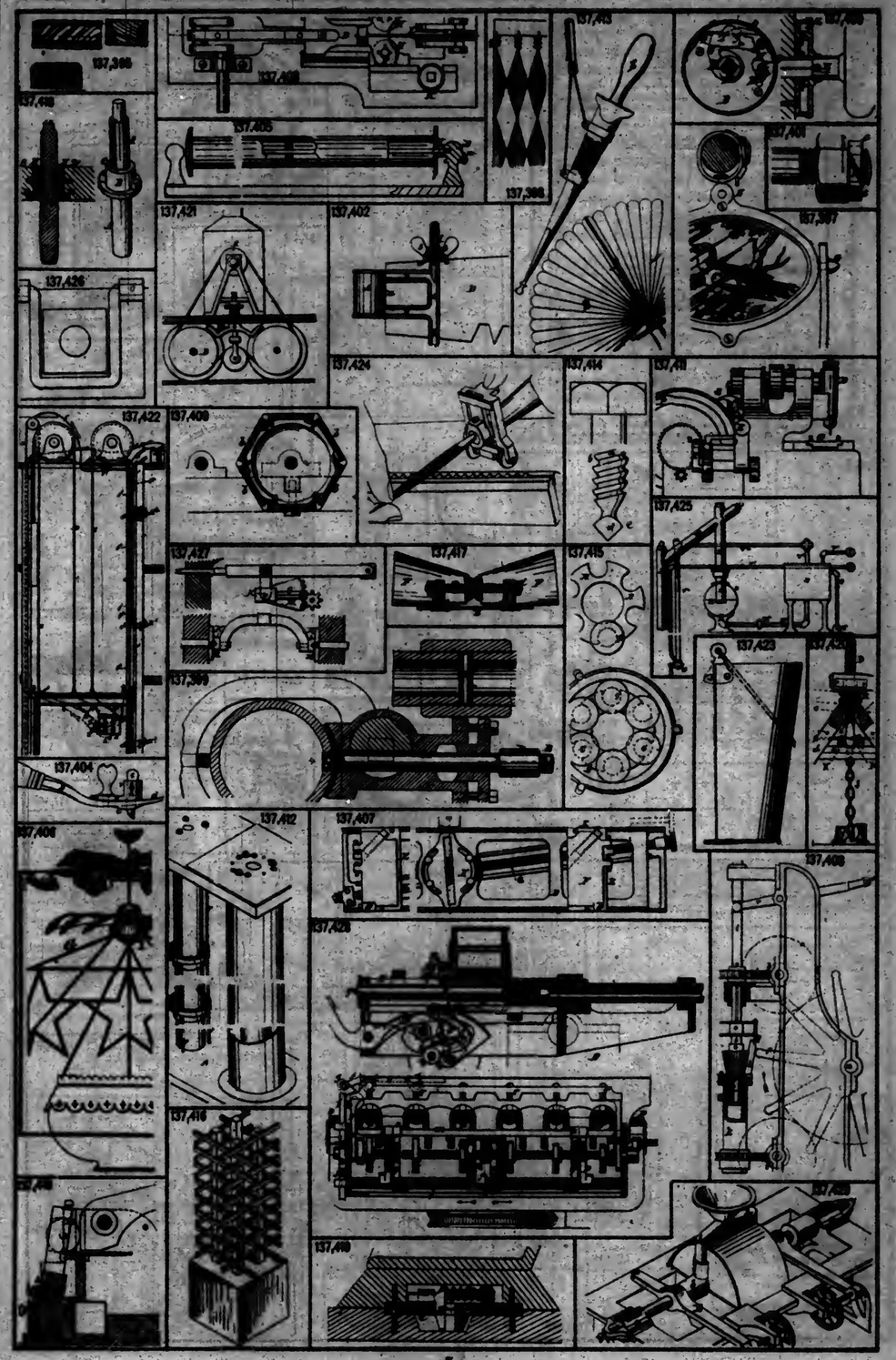
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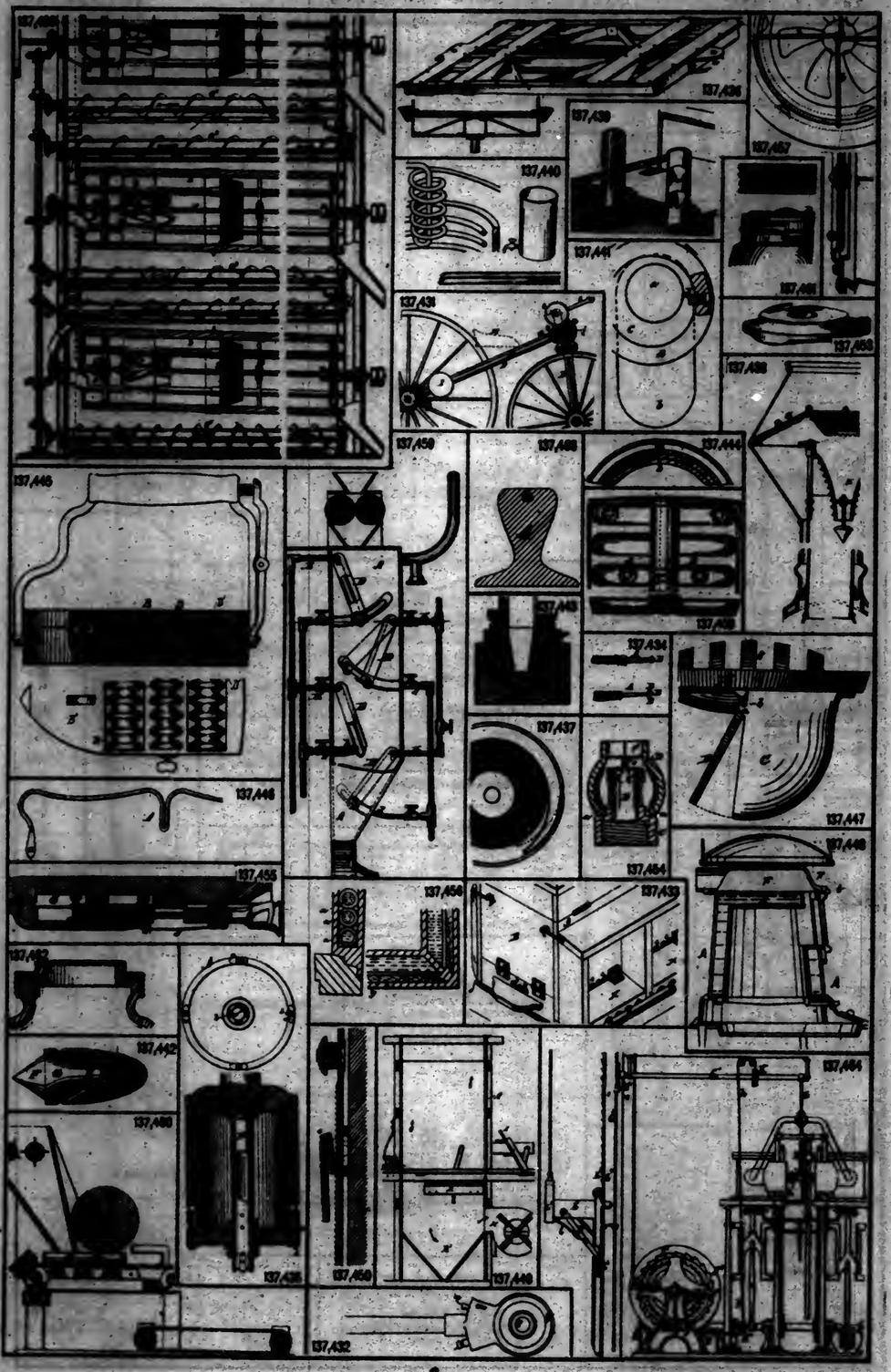
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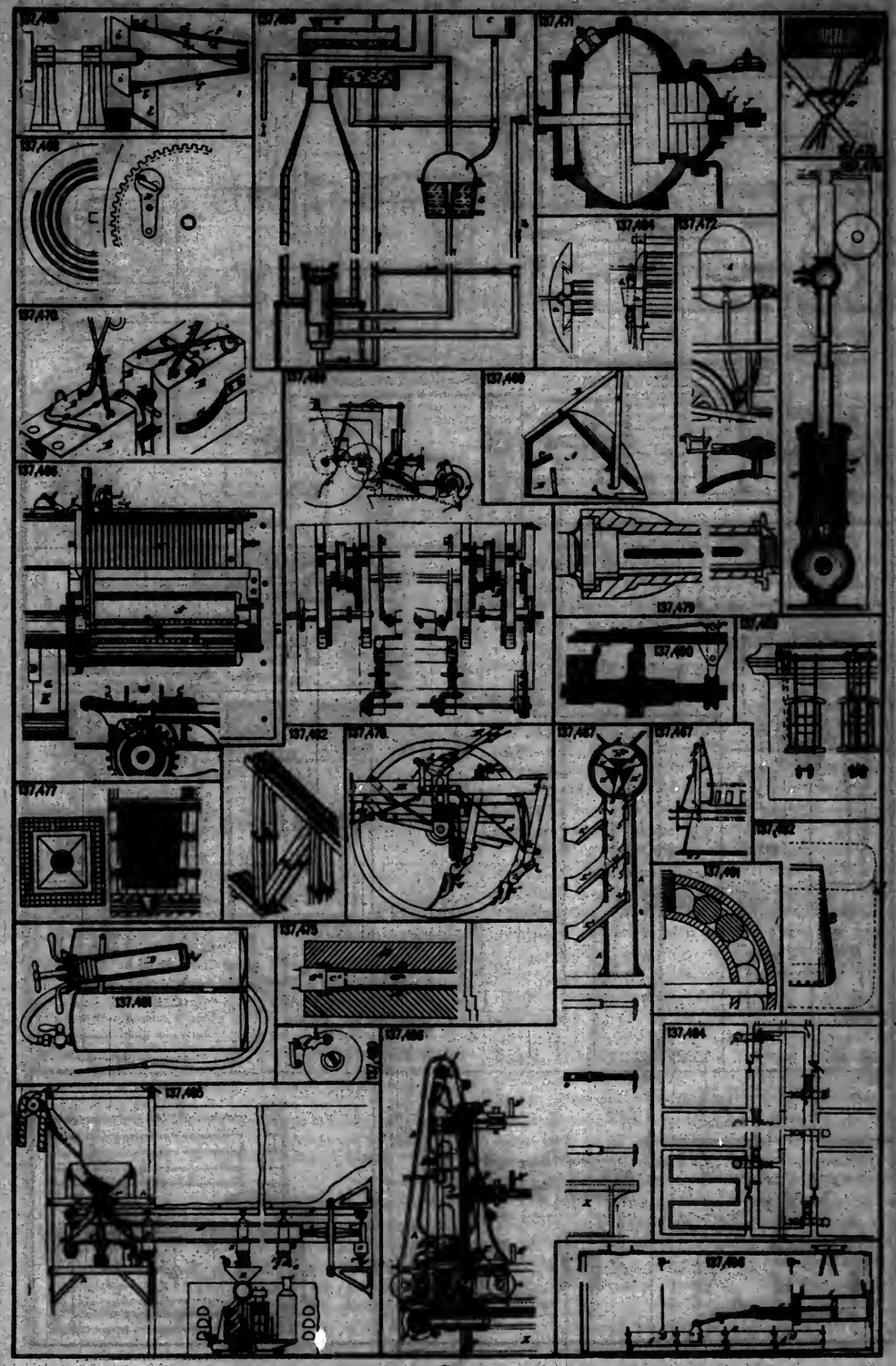
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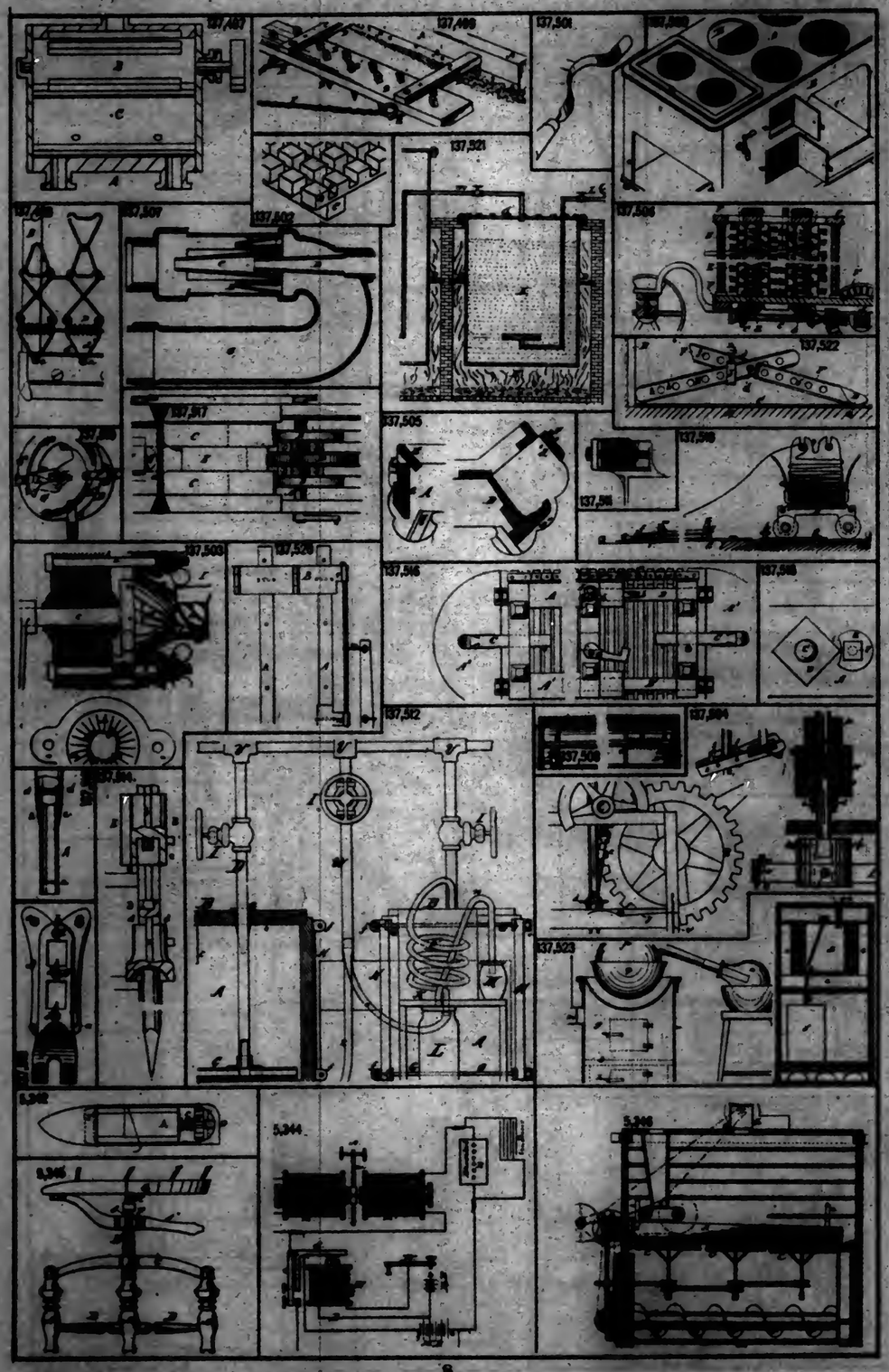
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COMMISSIONER'S DECISIONS.

LITTLE *vs.* STEPHENSON.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Saml. H. Little and John Stephenson for letters patent for* IMPROVEMENT IN STREET-RAILROAD CARS.—*Decided April* 8, 1873.]

COMPLETING INVENTION—ACTUAL USE.

In a controversy between two applicants for patent for improvement applicable to street-cars, where it appeared that one was first to conceive, embody, reveal, and test the invention by experiment and was first to apply for a patent for it, and the other second in all these, was first only in applying the invention to street-cars in actual use: *Held*, that the first had completed the invention before the second conceived it, and priority was therefore awarded to him.

Too much weight must not be attached to the first employment of an invention in actual use. It is important only where it is necessary to establish the date of its being completed.

LEGGETT, *Commissioner:*

The invention sought to be patented by the respective parties to this interference consists in the application of pulleys and continuous cords without weights to the sliding door of a street-car, so that the driver can slide the rear door open or shut from his place on the front platform. Little prefers to employ a pulley and crank which the driver can turn either way to draw the cords, and Stephenson prefers to connect the ends of the cords at the front of the car, like a pair of lines, so that the driver may pull one or the other to open or shut the door. The invention of the parties is the same, viz., the arrangement of the cords or pulleys with respect to the door to enable the driver with one hand to open or close it.

The Examiner of Interferences awarded priority of invention to Little and the Board to Stephenson. Stephenson made the invention in the spring and summer of 1870, and immediately applied it to practical use upon street-cars which he was largely engaged in manufacturing. In July of that year he filed a caveat, which he adopted as his preliminary statement. His proofs are not all admissible under this statement; but as all that he did in making the invention was done during the year 1870, subsequent to what Little did, it is immaterial whether his date be fixed in the spring or summer of that year. The evidence for Little shows that he conceived the invention and made a drawing illustrating it in June, 1869, which, during that year, was shown and explained to several witnesses, among them the superintendent of the Bellefontaine Street Railroad. This drawing is presented as an exhibit, and is fully identified by the witnesses, part of whom had previously signed it at the request of Little for the purpose of identifying it and aiding the proof of the date of the invention. During the year 1869 Little made a large working model, "Exhibit H," nearly the size of the rear end of a street-car with its door, fully illustrating the invention. This was also exhibited and explained to various parties, who from their testimony, show that they understood the principle of the invention and the construction of the device as applicable to a street-car, and as now sought to be patented. Subsequently, in the early part of 1870, Little made two other smaller models, both of which were likewise exhibited, explained, and understood. They only differed from the first in being made in a more workmanlike manner, and in certain minor particulars not affecting the invention. These models are presented as exhibits, and are fully identified. The evidence respecting them bears intrinsic marks of truth, and is not disputed on the part of Stephenson. To my mind these exhibits fully embody, illustrate, and reveal this invention. I cannot understand how, upon a view of them in connection with the testimony, it is possible to say that they do not exhibit the completed invention. If it was completed there was nothing more by way of adopting and perfecting it necessary, and the race of diligence was ended. It was only necessary that it should not be abandoned in order to be patented. It was finished, embodied, op-

erative, communicated to witnesses, and not to be misunderstood. He applied it to actual use as far as it was practicable for him to apply it, and as far as the law requires to make it patentable. There was not a street-car within less than ninety miles of him, so he made in rude form all the parts of a car involved in the invention and necessary to its operation, set them up in his shop, and operated them before his neighbors. Besides this, he expressed his intention to procure a patent. In the fall of 1871 he swears he exhibited his invention at a fair, and in December sent one to his attorneys in this city for patent. He preserved all his models and drawings, took care to have ample proof of his invention, never exhibited any intention to neglect or relinquish it, and without great delay, in fact without any that could under the circumstances jeopardize his rights, he filed his application for a patent January 29, 1872, preceding his competitor by nearly a month. Thus he was first to conceive, first to embody, first to reveal, and first to seek a patent for his invention. Stephenson, second in everything else, was first to apply the invention to use on cars. Why? Because he was a car manufacturer and a man of wealth. Little was a farmer and something of a mechanic and inventor, and comparatively poor. He had no facilities for applying his invention to cars, while Stephenson had the best possible. He did all he could to apply it and test it, and that was enough. I regard the proofs as establishing the fact that the invention was completed by Little in the eye of the law before Stephenson conceived it. In determining the question of "reduction to practice" I think the Board have attached too much importance to the mere matter of putting the invention into actual use upon street-cars. That was a matter depending more upon surrounding facilities than upon inventive genius; more upon money than brains. When Little conceived the idea in its details and mode of application he had done the brain-work; when he made the drawing, built the working models, exhibited them to the world, and explained them so fully and clearly that any one skilled in the art might construct cars embodying the invention, he so far reduced his invention to practice as to comply with the law, and should not be defeated by one later to conceive, later to embody in form and describe, and later to apply for a patent, simply because the subsequent inventor had the conveniences and means to first put the invention into actual use. It is only in those exceptional cases in which actual use is necessarily demanded to establish the date of the completion of an invention that it becomes important in determining the question of priority. No such necessity seems to exist in this case.

The decision of the Board is reversed and priority of invention awarded to Little.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

GEAR *et al. vs.* GROSVENOR *et al.*

[*In Equity.—Before Shepley, Judge.—Decided March* 11, 1873.]

The extension of a patent cannot be impeached for fraud in procuring its issue, in any collateral proceeding, such as a suit on the patent, but only in one instituted directly for setting it aside.

Where a public officer is authorized to grant a patent upon proof which is satisfactory to him that certain pre-requisites have been complied with, his issuing the patent is *prima facie* evidence that they have been, and no recitals to that effect are necessary in the grant.

It is the filing of the petition for an extension which gives the Commissioner jurisdiction over the proceeding, and not the advertisements required by law; whether they have been duly published it is his province to determine.

The construction of a statute which has been adopted for many years by the officers intrusted with its execution is entitled to great consideration.

It seems that publishing notice three times of the day appointed for the hearing of an application for an extension, the first of which is sixty days previous, is a compliance with the law which requires it to be published for sixty days previous.

A conveyance previously executed of an interest in the extension of a patent becomes operative upon the extension being granted, and the title passes thereupon to the purchaser.

The policy of the law seems to require that a patentee applying for an extension should have an interest in it; but an equitable is sufficient, although another holds the legal estate.

A conveyance of all the grantor's "right, title, and interest in letters patent for the full term for which they are or may be granted," without any reference to the extended term, conveys no interest in it.

Although the habendum clause contains the words "to the full end of the term for which said letters patent are or may be granted," the extended term will not pass.

That which is not embraced in the premises of a deed will not pass by being embraced in the habendum clause.

A conveyance of letters patent distinguished from a conveyance of both the letters patent and the invention. (See note.)

The case of *The Nicholson Pavement Co.* vs. *Jenkins*, 1 Off. Gaz., 465, commented on. (And see note.)

The owners of a patent are estopped from prosecuting those who have worked the invention under a license from a third party, relying upon their admissions that he had an interest in it.

But not from prosecuting those who have used the invention after learning that the owners claim an exclusive interest in the patent.

[*B. R. Curtis* and *T. L. Livermore*, for complainants.
B. F. Butler and *Marshall & Rice*, for defendants.]

SHEPLEY, *J.*:

This is a bill for an injunction and account based upon letters patent granted to Nathaniel Gear, November 8, 1853, for a machine for turning and cutting irregular forms, and extended for the additional term of seven years from November 8, 1867.

The answers of the defendants allege that the extension of the letters patent was procured by fraud, misrepresentation, and in violation of law.

It is well settled that a patent from the government cannot in a collateral proceeding be impeached for fraud in procuring its issue; this can only be done in a direct proceeding to set it aside. (*Eureka Co.* vs. *Bradley*, 11 Wallace, 489; *Rubber Co.* vs. *Goodyear*, 9 Wallace, 796.)

Respondents, however, claim that while they are precluded from relying upon any fraud or misrepresentation made to the Commissioner of Patents, while in the lawful exercise of his functions in judicially determining upon a matter in which he had acquired jurisdiction, they have a right to aver and prove the nullity of his decision for want of jurisdiction of the question upon which it is made.

As a matter of fact they contend that the notice, required by law to be published sixty days previous to a hearing before the Commissioner of Patents on an application for extension of letters patent, was fraudulently suppressed and never published in the manner required by law.

Respondents also claim that even if the order and notice in the proceedings for obtaining the extension were published in compliance with the terms of the order of the Commissioner, the publication was not made as required by the terms of the law then in force. The order of the Commissioner was as follows:

"Ordered, that this notice be published in the Republican and the Intelligencer, Washington, D. C., and in the Washington County News, Marietta, Ohio, *once a week for three successive weeks*, the first of said publications to be at least sixty days previous to the day of hearing."

Respondents claim this was not a publication "for at least sixty days," required by the act of 1861. For this reason, as well as by reason of the alleged suppression of the publication of the notice as ordered, it is contended that the Commissioner of Patents never acquired jurisdiction of the subject-matter, and that the extension was granted without authority of law.

If the defense, of want of validity of the extension by reason of informality in the order of notice, or fraudulent suppression of publication of the notice ordered, be one which is open to the defendants in a suit brought for alleged infringement of the extended patent, it may well be doubted whether the allegation in the answer in this case is sufficient to let in the defenses set up. The allegation that "the same was procured by fraud, misrepresentation, and in violation of law," is simply an allegation of a conclusion of law from facts, which facts are not pleaded. There is nothing in the allegation in the answer which would take the defense out of the scope of the decisions of the Supreme Court that the act of the Commissioner cannot be impeached for fraud.

But if the defense were well pleaded in the answer, and the facts were alleged, which are relied upon to establish the fraud and the absence of jurisdiction, I do not think they would avail the defendants in this proceeding.

The act of 1836, chapter 357, section 18, made it the duty of the Commissioner of Patents, whenever a patentee made application in writing to the Commissioner for an extension of his patent beyond the term of its limitation, to cause to be published in one or more of the principal newspapers in the city of Washington, and in such other paper or papers as he may deem proper, published in the section of the country most interested adversely to the extension of the patent, a notice of such application, and of the time and place when and where the same will be considered, that any person may appear and show cause why the extension should not be granted.

The act of 1848, chapter 47, section 1, vested in the Commissioner of Patents, solely, the power to extend patents previously vested in a board composed of the Secretary of State, Commissioner of Patents, and Solicitor of the Treasury, and provided for a reference of the case to the principal examiner having charge of the class of inventions to which the case belongs, after application made to the Commissioner "*and sixty days notice given thereof.*"

The law of 1861, chapter 88, section 12, required all applications for the extensions of patents to be filed at least ninety days before the expiration thereof, "and notice of the day set for the hearing of the case shall be published, as now required by law, for at least sixty days."

As has been previously stated, the Commissioner, in the case of this application, ordered the notice to be published "for three successive weeks, the *first* of said publications to be at least sixty days previous to the day of hearing,"—and the claim is that the publication should have been made for sixty days successively before the hearing, and not having been so ordered or made, the Commissioner had no jurisdiction.

It should here be noted that it appears that the construction put upon the act of 1861 by the Commissioner in this case in ordering the notice was in accordance with the invariable practice of the Office, no change having been made after the passage of that act in the forms of the orders of notice as issued since the passage of the act of 1848.

The construction given to a statute by the officers appointed to execute it, and acted upon by them for a long term of years, though not conclusive, is entitled to great consideration by the court. (*Union Ins. Co.* vs. *Hoge*, 21 Howard, 35–66; *Edwards's Lessee* vs. *Darby*, 12 Wheaton, 210.)

But it is not necessary to place the decision on this ground. The jurisdiction of the Commissioner over the subject-matter commences with the filing of the petition, which makes it his duty to exercise that jurisdiction by causing a proper notice to be published; before such order is issued he must, in the exercise of that jurisdiction, have determined whether the publication should be in one or more of the principal newspapers in Washington; what newspapers in Washington were "principal newspapers" in the sense of the statute; what "other paper or papers he may deem proper" for the publication, in the particular case before him; and what "section of country is most interested adversely to the extension of the patent."

It is plain, from this examination of the statute, that the filing by a patentee of the petition for extension and the payment of the required sum for expenses confers the jurisdiction. The subsequent acts of selecting the papers in which publication shall be ordered, and the number and locality of the papers, and issuing the order, and adjudicating upon the question whether that publication has been made according to law, are all in the exercise of the jurisdiction previously acquired.

It is insisted that the certificate of the Commissioner granting the extension shows upon its face a want of jurisdiction, and that the notices were not given as required by the act of 1861. The certificate of the Commissioner is, that in accordance with the provisions of the act of 1836 and the act of 1848, he "did, on this 30th day of September, 1867, decide that said patent ought to be extended." It contains no recitals respecting the notices issued or the mode of their publication. Such recitals in a patent, whether original, reissued, or extended, are unnecessary. Where, as in this case, an act is to be done, or a patent granted upon proofs to be laid before a public officer, upon which he is to decide, the fact that he has done the act or granted the patent is *prima facie* evidence that the proofs have been regu-

larly made and were satisfactory. No other tribunal is at liberty to re-examine or controvert the sufficiency of such proofs, if laid before him, when the law has made such officer the proper judge of their competency and sufficiency. It is not necessary that the patent should contain any recitals that the pre-requisites to the grant of it have been duly complied with, for the law makes the presumption, and if, indeed, it were otherwise the recitals would not help the case without the auxiliary proof that these prerequisites had been in fact complied with. (*Philadelphia & Trenton R. Co.* vs. *Stimpson*, 14 Peters, 458; *Seymour* vs. *Osborne*, 11 Wallace, 543; *Rubber Co.* vs. *Goodyear*, 9 Wallace, 797; *Stimpson* vs. *Railroad*, 4 Howard, 384.)

The answers of respondents deny the title of the complainants to the extension of the patent.

The deed of Nathaniel Gear, the patentee, to Alonzo S. Gear, one of the complainants, is dated July 10, 1867. It recites the granting of the original patent, that application has been made for an extension, and, for a valuable consideration, assigns, sells, and transfers to Alonzo S. Gear all the right, title, and interest which the grantor has or may have in and to the invention by virtue of the granting of the said extension, followed by the usual *habendum* clause. The extension was granted on the 30th of September, 1867, for the term of seven years from the 8th day of November, 1867. On the 25th of November, 1867, (after the extension was granted,) Alonzo S. Gear conveyed one undivided half of the patent for the extended term to John Gear, the other complainant.

Respondents contend that the assignment of N. Gear to Alonzo S. Gear was delivered before the extension was granted, and that Alonzo S. Gear did not take thereby a vested legal title, but only an equitable interest capable of being perfected by a court of equity, in event of a refusal by N. Gear to perfect it by a subsequent conveyance.

In *Railroad Co.* vs. *Trimble*, 10th Wallace, 380, the Supreme Court held that a conveyance made before a grant of extension became operative upon the right as soon as the extension had been granted, and that by force of such conveyance the legal title in that case, under the extended as well as under the original patent, passed to the grantee.

The act of Congress authorizing extensions of patents undoubtedly contemplated a benefit to the patentee not yet sufficiently rewarded by the receipts from his patent. The policy of the law would seem to require that the patentee applying for the extension should himself have an interest. An equitable interest is sufficient for this purpose, the court having decided that he may convey the legal interest. Such an interest the patentee in this case had, by virtue of the stipulations between himself and his grantee that he should be interested to the extent of one-half of the proceeds from sales or use of the patented invention.

Respondents aver that complainants never had the exclusive ownership of the territory of New York and Massachusetts for the extended term of the patent.

It is clear that complainants have no title to the extended term for the State of New York. Nathaniel Gear, before the conveyance to A. S. Gear, had conveyed his interest in the extension to the New York Circular Molding Company, by a deed in terms embracing all extensions that might be granted of the rights in the patent conveyed.

The rights of the complainants in Massachusetts depend upon a state of facts entirely different. Nathaniel Gear, by his assignment dated April 24, 1854, conveyed to John M. Buell as follows: "All the right, title, and interest I have in *said letters patent* in the following territory, and in no other place or places, to wit, the State of Massachusetts; the same to be held and enjoyed by the said John M. Buell, his heirs and assigns, for his own use and behoof, and for the use and behoof of his legal representatives, to the full end of the term for which said letters patent are or may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made."

An assignment of an interest in an invention and letters patent therefor before the expiration of the original term, does not carry with it any interest in a subsequently-extended term, unless the assignment contains a specific provision to that effect. (*Wilson* vs. *Rosseau*, 4 Howard, 646; *Bloomer* vs. *McQuewan*, 14 Howard, 539; *Clum* vs. *Brewer*, 2 Curtis, 520.)

The assignment to Buell does not contain any stipulation for an interest in any extended term that might be acquired by the patentee under the acts of Congress. The words in the granting clause are "all the right, title, and interest I have in said letters patent," &c. Referring to the previous recitals in the deed to find the meaning of "said letters patent," we find the recital to be that, "Whereas, Nathaniel Gear, of Zanesville, Ohio, did obtain letters patent of the United States for a machine for turning or cutting irregular forms, which letters patent bear date the 8th day of November, 1853. And whereas, John M. Buell is desirous of purchasing from me an interest therein." Thus far in the granting part of the deed, or in the previous recitals, there is nothing which can with any show of reason be claimed to apply to anything but the term of the patent for fourteen years from the 8th day of November, 1853. The grantor's interest in this patent for the State of Massachusetts was the subject-matter of the grant. Unless certain words in the *habendum* clause can be construed as extending the contract to a subject-matter not before embraced or referred to in the recitals or granting portions of the deed, there can be no doubt as to the intention of the parties. The *habendum* is to Buell and his assigns "to the full end of the term for which *said letters patent* are or may be granted, as fully and entirely as the same would have been held and enjoyed by me had this assignment and sale not been made." The claim that the interest in the extended term, either legal or equitable, passed by the deed is based upon these words in the *habendum* clause alone. If the thing granted be only in the *habendum*, and not in the premises of the deed, the deed will not pass it; and therefore if a man grant black acre only in the premises of a deed, *habendum* black acre and white acre, white acre will not pass by this deed. (Sheppard's Touchstone, 76.)

The words "may be granted" must be construed with reference to what precedes them. If not loosely used without any reflection, they may refer to reissues of the patent. As the reissued letters which might be granted would be for the same term as "the said letters patent," such might be referred to by the words "to the full end of the term for which said letters patent are or may be granted," as the letters patent which had been, and the reissues which might be, granted would be for the same term, and that the term described in the previous parts of the deed. An assignment very similar in form to this one has been construed not to carry the interest in the extended term, in a very carefully considered opinion of Judge Sawyer, in the case of *Jenkins* vs. *The Nicholson Pavement Company*, in the Circuit Court of the District of California, not yet reported.

Respondents also claim that complainants have licensed and authorized the defendant, Grosvenor, to make and vend the invention of Nathaniel Gear in the territory of Massachusetts and New York, and have openly encouraged and silently acquiesced in the construction and sale of his machines in those States by both respondents, by printing and circulating handbills and documents signed by them, setting forth that he had the right to construct and vend said invention in those States.

The right in the extended patent for the State of New York is not owned by these complainants. So much of the evidence in the case as relates to alleged infringements in the State of New York may be laid out of the case.

It appears that at one time Grosvenor, having obtained an interest, under the Massachusetts Molding, Wood Cutting, and Turning Company, in the original patent for the State of Massachusetts, supposed that he had thereby acquired an interest in the extended term. The complainants so far acquiesced at one time in this construction of the conveyances as to issue certain circulars, which are introduced in evidence, and which do so far admit that complainants have not the exclusive right for Massachusetts that they would, in the judgment of this court, estop the complainants from prosecuting as infringers any persons who, with knowledge of those circulars and acting upon the admissions therein made, had, upon the faith of those admissions, placed themselves in a condition to be injured by allowing those admissions to be disproved. This would be a defense to a purchaser in Massachusetts under Grosvenor, who purchased and used a machine, acting and relying upon the admission of the complainants. Whether it it would avail the respondents would depend upon the question whether the acts relied upon to prove infringements by them at any given time were after and in consequence of these admissions, and also in reliance upon them, and before they had notice that they were recalled and withdrawn.

The respondents were certainly aware in 1869 that complainants claimed the entire interest and title in the extended term for the State of Massachusetts. The letters of Grosvenor of March 28, and of Lawrence of September 17, 1869, preclude any presumption that they were then acting under any supposed license, encouragement, or acquiescence of the complainants.

The answer alleges that Nathaniel Gear was not the first and original inventor of the thing patented. Respondents rely upon alleged prior knowledge and use by Hazard Knowles, as described in his letters patent granted April 17, 1849, and prior knowledge and use by J. M. Doe, at Cambridge, Massachusetts, by Levi Haywood, at Erving and at Gardner, Massachusetts, and also prior knowledge and use at Princeton, Massachusetts.

Careful examination of the evidence has satisfied me that J. M. Stuart, who testifies to the use of Exhibit I at Princeton, is mistaken as to time, and that this cutter-head could not have been used at the time he supposes, nor in fact at any time prior to the date of N. Gear's patent.

The invention described in the letters patent to Levy assignee of Hazard Knowles, for a tonguing, grooving, and molding machine, clearly did not anticipate the invention of Gear. The round cutter-heads in the Knowles machine had no use except to support the cutters, and did not, like the cutter-head in the Gear machine, serve as a guide or direction to the form or pattern carrying the material to be dressed.

There is much more difficulty and doubt attending the decision on the question of novelty as affected by the evidence in relation to the alleged prior use by J. M. Doe and Levi Haywood.

In relation to the prior use of cutter-heads substantially like those claimed in the Gear patent by Doe and Haywood, there is, especially in Haywood's case, a vast mass of contradictory and irreconcilable testimony. Long and patient and careful examination of this evidence shows the utter impossibility of reconciling the conflicting statements, or of avoiding the conclusion that on one side or the other the witnesses were testifying to matters not within their knowledge or recollection. It would be useless to spread upon the pages of this opinion an analysis which I have carefully made of the many hundred pages in the record devoted to this portion of the evidence. Upon this point I need only state the conclusion to which I have come, not without some hesitation and some regret, that in a case like this of conflicting and contradictory statements from the respective witnesses, the judgment of the court could not have been aided by actual presence before the court of the witnesses on the stand. The complainants are entitled to the benefit of the presumption arising not only from the grant itself, but its unimpaired existence during the original term and its subsequent extension; the burden is upon those seeking to overthrow it for want of novelty to satisfy the court upon that issue, especially in a case like this, where the parties have exercised rights under the patent and claimed interests in it in the original as well as the extended term, and now rely upon evidence as to transactions occurring seventeen or eighteen years before the giving of the testimony to impeach the patent. Under these circumstances the court ought to be fully convinced by a clear preponderance of evidence before declaring a patent void on the ground of prior knowledge and use. The evidence fails to produce a conviction in my mind that prior to the date of N. Gear's patent there was either in the shop of Doe at Cambridge, or of Haywood at Erving or Gardner, or elsewhere, any cutter-head in use embracing the invention described in the claim of that patent.

Decree for an injunction and an account.

NOTE BY THE JUDGE.—"The case of *Nicholson Pavement Co.* vs. *Jenkins*, decided by the Supreme Court of the United States, reported in the OFFICIAL GAZETTE, U. S. Patent Office, vol. 1, No. 20, is not understood as controlling this case, as the *grant* in that case was of '*the said invention* and letters patent.'"

U. S. CIRCUIT COURT—DISTRICT OF MICHIGAN.

HENRY L. BROWN *vs.* JAMES D. HINKLEY AND HIRAM F. COLE.

[*In Equity.—Before Longyear, Judge.—Decided April* 7, 1873.]

In case of a reissue all rights under the original patent cease except as they are secured by the reissued patent.

The claim determines what is patented.

The use of any number of the elements of a patented combination less than the whole, or their equivalents, or what is substantially the same thing, is no infringement.

Where a reissued patent covers a combination which was not covered by the original, the patentee's rights and remedies as to such combination date only from the reissue.

To entitle a patentee to the extraordinary writ of injunction it is not sufficient for him merely to show his patent and an infringement of it. His right must be further substantiated in one of two ways: 1, by a possession accompanied by an actual use and enjoyment of the right for a sufficient length of time to afford a reasonable presumption of the acquiescence of the public in its validity; or, 2, by a judgment in his favor in a trial at law. The latter, however, is never necessary where the former exists.

A reissued patent covering a combination not covered by the original, issued less than two months before the filing of the bill, and unaccompanied by any actual use and enjoyment of the thing patented, held not sufficient to entitle the patentee to an injunction to restrain an alleged infringement without a trial at law and judgment in his favor.

Motion for a preliminary injunction to restrain an alleged infringement of a patent right on the bill of complaint and accompanying affidavits. The bill alleges that the invention in question is a new and useful improvement in hand-cars for railroads, and that a patent therefor was duly issued to the complainant September 7, 1869, and was reissued in two divisions February 11, 1873. The nature of the invention, as set up in the specifications accompanying the original patent, is to obtain greater speed "by means of a peculiar arrangement of sliding pinions connected with the driving-shaft and fixed pinions on an additional crank-shaft, whereby a large pinion on the driving-shaft is made to engage a small one on the crank-shaft, and vice versa." The claim is in the following words:

"What I claim as my invention, and desire to secure by letters patent, is, the arrangement of the double clutch W, pinions U and V, crank-shaft R, and pinions S and T, substantially as and for the purposes set forth."

This patent was surrendered and canceled and a reissue was granted in two divisions, A and B. In division A the nature of the invention is described the same as it was in the original. The claim is substantially the same, only it is set forth with more particularity. The claim is as follows:

"1. In a hand-car, a double crank-shaft carrying two driving-wheels of unequal size in combination with the pinions and double clutch, arranged upon the axle substantially as set forth.

"2. In a hand-car, the combination of a double crank carrying two driving-wheels of unequal size with suitable mechanism on the axle, so that the speed can be changed at will, substantially as set forth."

In division B the nature of the invention, as described in the specifications, "relates to the construction of a lever-power for running hand-cars and all similar purposes; and consists in two hand-levers fulcrumed upon the same shaft, one of which has a short dependent arm near its center, so that when the two levers are extended horizontally on a plane with each other the end of this arm and the end of the other lever to which the ends of the connecting-rods are attached will be of the same length and upon the same side of the shaft, thus requiring less room to operate them and making the connecting-rods by which they are attached to the double crank of the same length." The claim in this division is as follows:

"The combination of the levers c d, connecting-rods e, and double cranks, when the parts are arranged to operate substantially as described."

The allegations of the bill as to infringements concede that in the combination used by the defendants the two driving-wheels covered by complainant's combination patented by division A of the reissued patent are omitted, one driving-wheel only being used. As to the combination used by defendants covered by division B of the reissued patent, the allegation is as follows: "retaining, however, the double lever, double crank, and two pitmen of your orator's improvement, and, indeed, everything that is contained in the description and specification accompanying division B of the said reissued letters patent." And the affidavits accompanying the bill are to the same import in both of the particulars above mentioned.

It is distinctly stated in the bill that complainant has not manufactured or sold any cars, or in any manner put his invention to use since the reissue of his patent.

[*Mr. Millard*, for complainant.
Mr. Hunt, for defendants.]

LONGYEAR, *J.*:

The original patent having been surrendered and canceled, all rights under it have ceased, except as they are secured by the reissued patent. *Moffit* vs. *Gaar et al.*, 1 Fish, patent case, 610. Our attention, must, therefore, be confined to the reissued patent.

In order to ascertain what it is that is patented, we look to the claim. Looking at the claims accompanying both divisions of the reissued patent, we find that it covers (as did the original) combinations only, no one or more elements of which are claimed or patented as new. It is a well-settled rule of law, which does not need citation of authorities to prove, that the use of any number of the elements of a patented combination less than the whole, or their equivalents, or what is substantially the same thing, is no infringement. The use of two driving-wheels of unequal size in the combination covered by division A of the reissued patent is a material element, and those being omitted in the combination used by defendants, and nothing being substituted for them which can produce the same result, there is clearly no infringement of said division A made out by the bill. On the contrary, any such presumption is rebutted by the express allegations of the bill.

The bill does, however, show *prima facie*, at least, an infringement of the combination covered by division B of the reissued patent. But here we meet insurmountable obstacles to granting the relief by injunction in the present posture of affairs. The combination covered by division B was not covered by the original patent; therefore the complainant's rights and remedies as to it date only from the date of the reissue. As to it complainant is in no better position than if the reissue was an original patent instead. *Poppenhusen* vs. *Falke*, 2 Fish Pat. Cas., 181.

To entitle a patentee to the extraordinary writ of injunction it is not sufficient for him merely to show his patent and an infringement of it. His right must be further substantiated in one of two ways: First, by a possession accompanied by an actual use and enjoyment of it for a sufficient length of time to afford a reasonable presumption of the acquiescence of the public in its validity; or, second, by a judgment in his favor in a trial at law. The latter, however, is never necessary where the former exists; but I understand it to be essential in all cases that there should be a trial at law in the absence of such use and enjoyment. This has been the rule in England for more than a century, and it has always been the rule in the United States. The decisions by which the rule is established, and the reasons upon which it is based, are too numerous to be cited here. The cases of *Ogle* vs. *Ege*, (4 Wash. Circuit Court Reports, 584,) by Associate Justice Washington, in 1826, and *Motte* vs. *Bennett*, (2 Fish Pat. Cas., 642,) by Associate Justice Wayne, in 1849, are cited as leading cases on this point. In the latter case, Mr. Justice Wayne, after a thorough review of the authorities, English and American, deduces the rule substantially as above laid down. At page 659 he says: "In equity, where the case is clear and without reasonable doubt, where the bill states a clear right to the thing patented, which, together with the alleged infringement, is verified by affidavit, and where the plaintiff has been in possession of it, by having sold or used it in part or in the whole, the court will grant an injunction and continue it till the hearing or further order, *without sending the plaintiff to law to try his right.*" In that case it had been contended that a previous trial at law was essential in *all* cases, and the learned justice was showing that such was not the case and that it was never necessary where the other conditions named existed, but clearly conceding the necessity where those conditions or any of their essential elements were wanting. See especially pages 655 and 656.

In this case the patent has not been issued quite two months, and confessedly complainant has put his rights under it to no use whatever, even during that short time, and there has been no trial at law. I do not think a well-considered case can be found in the books where a preliminary injunction has been granted under such circumstances.

There are other objections which might be enumerated, such as the entire want of any verification whatever, by affidavit of complainant's right, under division B of the reissue, the want of the requisite degree of the right kind of knowledge of the persons swearing to the affidavits as to the alleged infringement, and the unsatisfactory nature of the contents of the affidavits; but after the views above expressed a full consideration of those objections is unnecessary. I shall therefore let this brief notice of them suffice.

The motion for a preliminary injunction is denied, with costs of the motion to the defendants.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tires.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.*—Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,096.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,102.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSE, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,364.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 4, 1873. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABBATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHEBLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,686.—*Machines for Boring and Mortising Blind Slats.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,709.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,724.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,153.—*Curling-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

DISCLAIMERS FILED.

23,635.—CORNELIUS W. WILLIAMS.—*Improvement in Gates for Canal-Locks*, granted April 12, 1859. Disclaimer filed April 12, 1873. Disclaims:

"That part of the claim in the specification which is in these words, to wit:

"'Third. Securing the bearings or boxes *f* to the lock A by means of the rods A, the boxes being attached to [the] slides *i*, and arranged substantially as shown, so that the boxes may be adjusted as occasion may require.'"

EXTENSIONS GRANTED.

8,654.—*Improved Ornamental Connection of the Parts of an Iron Fence*, granted to HENRY JENKINS, January 13, 1852; reissued September 6, 1859, numbered 807, and extended seven years. (LOUISA JENKINS, widow.)

Claim.—Forming the ornament or cast-iron connections for a railing, fence, or other article of iron cast into a divided iron-mold, substantially as and for the purposes specified.

23,642.—*Improvement in Obtaining Fibers from Waste Felted Fabrics*, granted to JOHN F. GREENE, April 12, 1859; reissued October 10, 1865, numbered 2,066.

Claim.—1. Subjecting the felts to be disintegrated to the successive and combined action of steam and picking, substantially as described, the steam having the effect either to unfelt or so loosen the hold which the fibers have on each other in felted fabrics that they can be drawn apart of sufficient length to be advantageously employed in the manufacture of other felts or other fabrics.

2. Subjecting the felts which are to be disintegrated to the action of steam for the purpose of loosening the fibers preparatory to the action of the machinery, as hereinbefore described.

3. The application of sal-soda or other equivalent chemical agent, in solution, with heat for the purpose of extracting the glue, mastic cement, or gums from the felts, in the manner hereinbefore described.

23,643.—*Improvement in Machinery for Disintegrating Waste Felt Fabrics*, granted to JOHN F. GREENE, April 12, 1859.

Claim.—The combination of the steaming apparatus and the picker, substantially as described, for steaming the felt as it passes to the picker to be disintegrated, as set forth.

23,692.—*Improvement in Cooking-Stoves*, granted to PHILO P. STEWART, April 12, 1859; reissued May 17, 1864, numbered 1,673; reissued April 7, 1868, numbered 2,915. (ELIZA C. STEWART, administratrix.)

Claim.—1. The method or the means, substantially as herein described and set forth, of preventing heat from passing through to the rising-flue, leading to the chimney, by separating it from the back oven-plate, and from the descending-flues by non-conducting partitions, or the equivalents therefor, and for the purpose herein set forth.

2. I also claim the employment of a double damper, filled in with cement or other equivalent non-conducting material, in combination with the flue above the oven and with the rising-flue leading to the chimney, in the manner substantially as and for the purposes herein described and set forth.

3. I also claim the separating of the direct-sheet flue, under the oven, from the return-sheet flue, immediately below the same, by means of the dividing-flue plate *i*, or any equivalent therefor, constructed, arranged, and combined with the said sheet-flues in the manner, and by the means, and for the purposes substantially as herein described and set forth.

4. I also claim the dividing of the space between the bottom plate of the oven and the bottom plate of the stove by means of the inclined dividing-flue plate *i*, or any equivalent therefor, in the manner and for the purposes substantially as herein described and set forth.

5. I also claim the employment of the space or chambers S', in combination with the outer edge of the oven-bottom plate, and with the back-end oven-plate, in the manner and for the purposes substantially as herein described and set forth.

6. I also claim the sheet-flue division-plate *i*, having a recess, *h'*, at each front corner thereof, and the projection A between such recesses, substantially as and for the purposes herein described and set forth.

7. I also claim the employment of a broad or sheet-flue division-plate, *i*, or any equivalent thereof, in combination with the oven and oven-bottom flues, in the manner and for the purposes substantially as herein described and set forth.

8. I also claim the additional bottom plate or encasement *r*, in combination with the broad sheet-flue *i*, or any equivalent therefor, in the manner and for the purposes substantially as herein described and set forth.

23,635.—*Improvement in Gates for Canal-Locks*, granted to CORNELIUS W. WILLIAMS, April 12, 1859.

Claim.—1. The rods C C and rack D applied to the gate B B, for the purpose set forth.

2. Having the journals *c* of the gates fitted in oblong slots *d* of pulleys *e*, which are placed in suitable bearings or boxes *f*, and arranged substantially as shown, to admit of the sagging of the gates and the close fitting of the same when closed, for the purpose specified.

3. Securing the bearings or boxes *f* to the lock A by means of the rods h, the boxes being attached to slides *i* and arranged substantially as shown, so that the boxes may be adjusted as occasion may require.

4. Operating the wickets H H by means of the gearing, arranged as described, whereby either wicket may be operated from one and the same crank-shaft *q*.

Disclaimer filed April 11, 1873.

Disclaims third clause of claim, as above set forth.

23,598.—*Improved Screw-Propeller*, granted to JAMES MONTGOMERY, April 12, 1859.

Claim.—A screw-propeller composed of a plurality of blades attached to their shaft in one plane, or nearly so, when surrounded by a containing-cylinder firmly attached to the peripheries of the said blades, substantially in the manner and for the purposes set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 8, 1873.]

6,558.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed April 1, 1873.

6,559.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed April 1, 1873.

6,560.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed April 1, 1873.

6,561.—*Carpet.*—RICHARD CARLTON, Liversedge, England, assignor to W. & J. SLOANE, New York, N. Y. Application filed February 15, 1873.

6,562.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,563.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,564.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April, 1, 1873.

6,565.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,566.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,567.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,568.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,569.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,570.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,571.—*Carpet.*—JOSEPH M. CHRISTIE, Brooklyn, N. Y., assignor to LOWELL MANUFACTURING COMPANY, Lowell, Mass. Application filed April 1, 1873.

6,572.—*Trimming.*—JOHN B. CLARKE, Brooklyn, N. Y. Application filed March 22, 1873.

6,573.—*Printing-Types.*—JAMES M. CONNER, New York, N. Y. Application filed March 15, 1873.

6,574.—*Printing-Types.*—JAMES M. CONNER, New York, N. Y. Application filed March 15, 1873.

6,575.—*Carpet.*—JOHN HAMER, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed April 1, 1873.

6,576.—*Carpet.*—JOHN HAMER, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed April 1, 1873.

6,577.—*Fork and Spoon Handle.*—MARTIN H. MOSMAN, Waterbury, Conn. Application filed January 25, 1873.

6,578.—*Carpet.*—CHARLES A. RIGHTER, Philadelphia, Pa., assignor to DORNAN, MAYBIN & CO., same place. Application filed March 27, 1873.

6,579.—*Carpet.*—CHARLES A. RIGHTER, Philadelphia, Pa., assignor to DORNAN, MAYBIN & CO., same place. Application filed March 27, 1873.

6,580.—*Plant-Stand.*—JOHN R. ROBERTSON, Syracuse, N. Y. Application filed January 23, 1873.

6,581.—*Carriage-Pole Trimming.*—ANSON SEARLE, Newark, N. J. Application filed January 16, 1873.

6,582.—*Revolving Bottle-Stand.*—THOMAS P. SPENCER, Morrisania, N. Y. Application filed March 14, 1873.

6,583.—*Paper-File.*—ELDRIDGE J. STEELE, New Haven, Conn., assignor to SARGENT & CO., same place. Application filed March 12, 1873.

6,584.—*Coffin-Handle Socket.*—JAMES S. RAY, East Haddam, Conn. Application filed March 24, 1873.

6,585.—*Knife, Fork, and Spoon Handle.*—WILLIAM ROGERS, Hartford, Conn., assignor to LUCY J. ROGERS, same place. Application filed March 22, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date April 8, 1873.]

1,199.—*Hams and Cured Meats.*—WILLIAM G. BELL & COMPANY, Boston, Mass. Application filed March 27, 1873.

1,200.—*Bottles of Brandy.*—CAZADE & CROOKS, New York, N. Y. Application filed February 8, 1873.

1,201.—*Glass-Ware.*—THOMAS G. COOK & CO., Philadelphia, Pa. Application filed March 18, 1873.

1,202.—*Paints and Colors.*—HARRISON BROTHERS & CO., Philadelphia, Pa. Application filed March 28, 1873.

1,203.—*Baking-Powder.*—JESSE H. LIPPINCOTT, Pittsburg, Pa. Application filed March 21, 1873.

1,204.—*Bitters.*—JOSEPH CLEVE, Boston, Mass. Application filed April 1, 1873.

1,205.—*Trimmings for Ladies' Wear.*—ERSKINE & COMPANY, New York, N. Y. Application filed March 15, 1873.

1,206.—*Medical Compound.*—JOHN H. HOPKINS, Providence, R. I. Application filed November 22, 1872.

1,207.—*Whisky.*—MOREHEAD, YOUNG & CO., St. Louis, Mo., and Leavenworth, Kans. Application filed April 2, 1873.

1,208.—*Rubber Paint.*—THE RUBBER PAINT COMPANY, Cleveland, Ohio. Application filed March 3, 1873.

1,209.—*Rubber Paint.*—THE RUBBER PAINT COMPANY, Cleveland, Ohio. Application filed March 3, 1873.

1,210.—*Lozenges and Syrup.*—TOWNSEND & CO., New York, N. Y. Application filed February 15, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date April 8, 1873.]

ORIGINAL PATENTS.

137,524.—*Apparatus for Cutting Cigar-Wrappers.*—REMSEN APPLEBY, Beverly, N. J. Application filed December 23, 1872.

The tobacco-leaf to be cut is laid upon a block having a cutter of the desired shape, projecting slightly upward; a roller is then passed over the leaf. A hinged gage is employed to hold down the leaf while it is being cut, and to gage the length of the wrapper, being movable on its hinge longitudinally with the wrapper.

Claim.—1. The cutter A having the form of a cigar-wrapper, arranged and operated, in connection with the roller D, as and for the purposes described.

2. The adjustable hinged gage C, for the purpose of holding the wrapper and of gaging it at different lengths, as shown and described.

137,525.—*Construction of Sheet-Metal Elbows.*—LAFAYETTE RANUHOFF, Springfield, Ohio, assignor of two-thirds his right to L. BROWN and W. G. BRYANT, same place. Application filed August 21, 1872.

The beveled sections are constructed with beads extending only partially around them, with a view to preventing them from turning upon each other, at the same time that they fit together firmly without bolts or rivets.

Claim.—An elbow or curved section of pipe, the beveled portions of which are joined together by means of beads, which extend only partially around the same, substantially as and for the purpose set forth.

137,526.—*Skate.*—EVERETT H. BARNEY, Springfield, Mass. Application filed January 21, 1873.

When the boot-heel is placed upon the heel-plate, and the screw is turned in, the clamp is drawn back against the front of the heel of the boot, and thus forces the boot heel back against the permanent upright projections upon the heel-plate, and the boot-heel is grasped firmly between the face of the clamp and the projections, both the clamp and the projections being provided with sharp points.

Claim.—1. The brackets *f*, forming an intermediate support for the heel-plate, and made in two parts, as described, in combination with said heel-plate A, the whole forming a socket within which the heel-clamp is operated, substantially as described.

2. The combination of the double plates *e*, provided with recesses *s* and secured to the heel-plate A, with the screw *d*, having the collar *e* thereon, substantially as and for the purpose described.

3. The beveled pieces *i*¹ having the shanks *i*² thereon, and secured to the foot-plate of a skate, constructed and arranged substantially as shown, and serving as the bearing or guides for the foot-clamps, as herein set forth.

137,527.—*Pump.*—WILLIAM D. BAXTER, New York, N. Y., assignor to SANDS & BAXTER, same place. Application filed February 7, 1873.

To prevent the water from freezing in the pump when not in use, a double-acting cock is placed between two cylinders, by which the water is drawn from the whole upper part of the pump down into the reservoir and outlet-pipe below with one movement of the cock.

Claim.—The double-acting hollow cock C with openings I, J, K, and L, cylinder F with pipes or channels A, B, D, and E, in combination with the pump-cylinders *d d*, reservoir R, and inlet-pipe *b*, substantially as and for the purpose hereinbefore set forth.

137,528.—*Wax-Thread Sewing-Machine.*—EDWIN R. BEAN, Boston, and FRANK BEAN, Medford, Mass. Application filed November 11, 1872.

The tension-roller and disk are mounted on an arm pivoted on a pin projecting from the overhanging arm. On this same pin is an elbow-lever or knee, connected at one end with a reciprocating rod, having secured to it a spiral spring and movable nut, between which bears the end of the lever that moves the rod. A projection or stop from the presser-foot bar receives the end of the roller-carrying arm when the presser is in its lowest position, and this arm is thrown to its position by the action of the lever against the spring on the rod, the spring allowing a yielding connection between the parts so as to adapt the arm to the position of the stop on the presser-shank, which varies with the thickness of the material. At the backward movement of the rod, which is positive, one end of the elbow-lever or knee presses against the disk and prevents it from turning as the arm and roller rise and draw on the thread. The drawing shows the irregularly-slotted pivoted arm moved by the crank-pin and the connecting-links for rocking the needle and operating rock-shafts.

Claim.—1. The tension-roller *w*, disk *r*, arm *t s*, and knee *q q'*, in combination with the rod *m*, spring *p*, levers *l i*, cam *h*, and the presser-foot bar 3 with its stop 4, all constructed and arranged substantially as and for the purpose set forth.

2. The mechanism for adjusting the needle centrally with the awl, consisting of the slotted lever 7 attached to the shaft 6 and adjusting-screw 13, or their equivalents, as and for the purpose shown and described.

3. The mechanism for adjusting the feed-post in a vertical plane, consisting of the screws 12 12 tapped through the lever 7 and resting in recesses made in the shaft 6, as shown and described.

4. The combination, with a needle-bar and awl-bar, of the single crank *g* and its connecting mechanism for imparting the respective movements to the said bars.

5. The spring 36, arranged to slightly elevate the cast-off bar, to prevent the escape of the loop from the needle as it begins to rise, as described.

6. The combination, with a needle-awl and thread-guide, of a single cam-disk, 18, and its connected mechanism for imparting the respective movements to the said parts.

7. A shaft, 21, with its seat 49, in which the adjustable screw 50, tapped through the arm 47, rests, for the purpose of adjusting the position of the arm in relation to the shaft 26, as herein shown and described.

137,529.—*Device for Cleaning Wells.*—WILLIAM F. BROWN, Hardin county, Ky., assignor of two thirds his right to WILLIAM F. COOMBS and BENJAMIN HOWSLEY, same place. Application filed October 21, 1872.

The bucket has hinged doors at the bottom, which can be closed, when the machine has been lowered into the sand, by

means of the notched bar and balls. A spring, which engages with the notches on the bar, holds the box closed until drawn up and released. Valves permit the exit of air and shut out water from the lead, said water flowing off through holes in the sides.

Claim.—The combination of the box A A with its folding caps B B, keys C C, cords D D, bar E, balls F F, notches G G, spring H, cord I, partitions J J with their openings K K K K, valves L L, slides N N, thumb-screws O O, rope P, pipe-box R, and openings S S, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

137,530.—*Bee-Hive.*—DAVID MCCONAHEY CALVIN, East Fallowfield, Pa. Application filed February 17, 1873.

A pyramidal frustum forms the hive, its base fitting closely within a rectangular external case. The combs are built from the top down, the laborers requiring the maximum of space at the completion of the work and the minimum at the beginning of the work and at the exhaustion of the honey. The space between the hive and case for air in summer and for packing in winter is hence graduated to the requirements of the seasons.

Claim.—I claim the hive proper B, forming a frustum of a pyramid, in combination with the rectangular external case A, when the same are constructed as described, for the purposes set forth.

137,531.—*Uterine Supporter.*—HORATIO N. CARR, Freeport, Ill. Application filed February 15, 1873.

The stem of the pessary has an upward and outward curve, and is attached at its lower end by a hinged adjustable joint to a frame, which extends entirely around, and without touching the external genitals, thus relieving them from the pressure, less or greater, which they usually sustain under the ordinary arrangement of the supporting-frame.

Claim.—The frame A A, constructed so as to extend around the labia pudendi and the mons veneris, in combination with cup-stem D, having upward and outward curves, and attached to the lower part of the frame by an adjustable hinge, substantially as described.

137,532.—*Burglar-Alarm.*—JOHN F. COPPOCK, West Newton, assignor to JOSEPH D. VINNEDGE, Indianapolis, Ind. Application filed December 23, 1872.

A ratchet-bar is attached to one of the window-sashes, and a plate carrying a bell with a spring-hammer having a projecting heel is attached to the other sash, in such manner that if either sash be opened or moved the passage of the hammer-heel over the ratchet-bar will sound the bell.

Claim.—The burglar-alarm consisting of the case C, supporting the bell F, and the hammer D J, with spring-arm E I, in combination with the ratchet-bar H, all constructed and arranged substantially as and for the purpose set forth.

137,533.—*Method of Constructing Paper Bags.*—LUTHER C. CROWELL, Boston, assignor to JOHN SMITH, same place, and LUTHER CRANE, Cambridge, Mass. Application filed August 16, 1872.

Claim.—The method of making paper bags, consisting in lapping and cementing the sides or edges of a band of paper so that the intermittent lines of paste *a a* shall be between the lapped edges E for a distance equal to the length of the bag to be made, applying a continuous line of paste, *b b*, to the outer surface of said contiguous lapped edges, folding said lapped and pasted band of paper in a continuous series of folds, as shown at A B, Figs. 1 and 2, completing the construction of said bags by making the cut S across the end of the folds, as shown at Fig. 14, for the purposes herein shown and described.

137,534.—*Railroad Gate.*—CHARLES S. CURRIE, Caldwell, Ohio, assignor of one-half his right to JONATHAN DILLEY, same place. Application filed August 26, 1872.

The wheels of the train depress the pressure-rails, guarded at their extremities by rollers. The movement of the pressure-rails opens the gate through the levers E, and chain passing around the gate-pivot and at the same time operates the latch through a rod. Springs restore the gate and pressure-rails to their normal position.

Claim.—1. The railroad gate B, poised at N and made to open and close by the traction of the springs D D′ and chain Q, in the manner substantially as set forth.

2. The combination of the pressure-rails K, provided at the ends with rollers L, levers E, rods M, lever F, chain J, springs D and D′, chain Q, and post N, for the purpose of opening and closing the gate B by the action of car-wheels on the pressure-rails K, all substantially as set forth.

3. The combination of lever F, rod G, chains I, and latches H, for fastening and releasing the gate B, substantially as set forth.

4. The springs D D′ and lever F, in combination with the rails K K and levers C, for the purpose of raising the pressure-rails K above the track.

137,535.—*Railroad Switch.*—HENRY S. DEWEY, Chicago, Ill., assignor of one-half his right to MICHAEL W. WOLF, same place. Application filed September 20, 1872.

A crooked switch-rail is employed instead of the usual straight one, so that the shock of change of direction of motion shall not occur till the locomotive is fairly on the rail, when it is expected to resist by its weight the tendency to lateral displacement of the rail.

Claim.—The combination of the crooked rails A A with the switch-rails E E, side track N N, switch-bar G G, frogs B B, and frog-guard F, substantially as and for the purposes hereinbefore set forth.

137,536.—*Horse-Brush.*—ROBERT DICKSON, Lansingburg, N. Y. Application filed March 25, 1873.

The back of the brush is bored at alternate slants, so that the tufts or knots shall slant inversely toward the others.

Claim.—In the construction of brushes, the slanting together of the inner rows of knots or tufts, so as to abut against each other at the tops or points, substantially as set forth and described.

137,537.—*Shirt-Collar.*—ORLANDO P. DORMAN, New York, N. Y. Application filed January 11, 1873.

Facing a collar made of ordinary collar-paper with a peculiar parchment-paper, and also patching the button-holes of paper-collars with parchment-paper.

Claim.—As a new article of manufacture, the herein-described collar composed of collar-paper and parchment-paper, substantially as described.

137,538.—*Street-Lamp.*—MICHAEL B. DYCTT, Philadelphia, Pa. Application filed June 10, 1872.

The globe is secured between two rings. Between it and the bottom ring is placed a yielding packing of cloth or like substance. The upper ring has upon its inner surface springs, which bear against the globe. Above the globe is placed a dome to form an annular cold-air space between it and the globe. Over the openings through which the current of cold air passes, and over the draft-openings, are placed auxiliary domes to prevent entrance of rain, &c.

Claim.—1. The ring B with its series of springs 2 2, and the ring D with its elastic packing *d′*, in combination with the frame of the lantern, substantially as set forth, for the purpose of supporting the glass globe C, in the manner described.

2. The dome A and glass globe C, in combination with the ring B and its series of springs 2 2, the same being constructed and arranged to operate together as and for the purposes hereinbefore set forth.

3. The combination of the glass globe C, its chimney *c′*, the dome A, and the air-space between the said globe and dome with the deflecting weather-bonnets E and F, the said parts being arranged substantially as and for the purposes hereinbefore set forth and described.

137,539.—*Clasp for Stocking-Supporters.*—STEPHEN K. ELLIS, Waltham, Mass. Application filed March 10, 1873.

Claim.—The within-described clasp for stocking-supporters, consisting of the spring-jaws *b e* with or without teeth, and one overlapping the other, in combination with the slide *a* and one or more projections, *g*, or equivalent device, for holding the slide when down, all constructed and operating substantially as set forth.

137,540.—*Safety-Valve.*—EDWARD C. FERNALD, Flatbush, N. Y. Application filed January 8, 1873.

The steam raises the weighted tube until an orifice in the latter registers with an opening in its surrounding case. Each section of the vertical boiler is provided with one of the valves.

Claim.—A safety-valve constructed with a weight, G, and a stem, *e*, combined with a tube, K, fitted with a seat for said stem *e*, and provided with steam-vent *n*, substantially as shown and described, and for the purpose set forth.

137,541.—*Feed-Water Regulator.*—EDWARD C. FERNALD, Flatbush, N. Y. Application filed January 8, 1873.

A valve in a lower chamber is connected by an adjustable rod to a float in an upper chamber. An alarm-rod is attached adjustably to a sleeve on the float-rod, which sounds an alarm when the water is too low. When the valve is opened by the falling of the water a communication is made with the feed to admit more water.

Claim.—1. The water-pipe A provided with valve O, valve-stem H, and float in float-chamber J, combined with alarm *e* and alarm-rod N, all arranged and operating in the manner set forth.

2. The combination with the valve O and float with their connecting valve-rod H, in two parts, joined by the sleeve F provided with binding-screws for the ready adjustment of said rod as to length.

3. The alarm-rod N attached to sleeve F, combined with valve-rod H, so that the adjustment of said rod may be secured without changing the adjustment of the alarm-rod N.

137,542.—*Medical Compound.*—HENRIK GAHN, Upsala, Sweden. Application filed February 1, 1873.

Claim.—A compound called amykos, composed of a decoction of glycerine, cloves, borax, and soda, substantially in the proportions specified.

137,543.—*Crimper for Boots and Shoes.*—CHRISTIAN GLANTZ, Baltimore, Md. Application filed February 21, 1873.

The movable foot-piece is attached to the leg-section of the boot-tree by means of a jointed arm and slotted curved plates. Curved or arched cap-plates cover the instep portion of the tree, overlapping each other and forming a continuous surface when the two sections are separated.

Claim.—1. In a boot and shoe crimper, the foot-section A thereof, connected to the leg-section B by means of the arc-shaped slotted side plates D, studs F F′, and hinged arm V to produce an extensible foot-piece, substantially as described.

2. The arched overlapping instep cap-plates C C′, in combination with the leg and foot sections A B to produce a closed extensible joint at the junction of said sections, substantially as described.

3. In a boot and shoe crimper having an extensible foot-section, the combination therewith of the adjusting-screw P, sliding stem M, and hinged arm V connected with said screw and the movable foot-section, substantially as described.

4. The sliding clamps S S′, hinged slotted arm V, and pin W with the sliding stem M, substantially as and for the purpose described.

5. The combination, with the sliding clamps S S′, of the guide-frame H hinged as described, the connecting-arm V, hinged link X, and slotted plate I, substantially as described.

137,544.—*Piano and Organ Key.*—CHARLES F. L. GOTTFRIED and JOHN H. SCHUCHT, London, England. Application filed December 17, 1872.

Each key is made in an upper and lower half, having its own separate fulcrum, and said portions are hinged at the front end to equalise the stroke at different points upon the key.

Claim.—In combination with a key composed of the sections *a* and *b*, the screw *c* and auxiliary lever *f*, constructed and operated substantially as and for the purposes set forth.

137,545.—*Wash-Boiler.*—OSCAR F. GLIDDEN, Stoneham, Mass., assignor of one-half his right to B. A. FOWLER, same place. Application filed February 19, 1873.

A wash-boiler constructed with ledges, on which is located the center pipe with outlets raised sufficiently above the natural bottom of the boiler attachment to admit the flow of water through openings, which are closed by a weighted valve to govern the flow of water to the center pipe and from it to the boiler.

Claim.—In a steam-washer, the combination of the weighted valves H H and the false bottom C D D′ with the pipe K, substantially as described, and for the purpose set forth.

137,546.—*Hot-Air Furnace.*—SAMUEL F. GOLD, Englewood, N. J. Application filed August 5, 1872.

Claim.—1. The combination, with the shell of the furnace, and cast therewith and forming part thereof, of the flanges *c c* and the projections *d d*, substantially as hereinbefore set forth.

2. The construction of the heating-chamber in sections adapted to form together a chamber for the products of combustion, and having thereon flanges *c* studded with projections *d*, substantially in the manner hereinbefore described, whereby the capacity of the furnace may be increased or diminished by the addition or removal of internal sections, substantially as hereinbefore set forth.

3. The arrangement of the smoke-pipe or aperture H below the center of the smoke-chamber, in combination with the disk I, substantially as and to the effect hereinbefore set forth.

137,547.—*Carriage-Step.*—CHARLES H. GOULD, Boston, Mass. Application filed January 2, 1873.

A disk of leather or other like material is covered with a shield of India rubber and fastened to the step.

Claim.—The combination of the India-rubber or equivalent elastic shield A with the sheet or disk B of leather-board or equivalent flexible fibrous material, composing an elastic shield for car and carriage steps, substantially as herein specified.

137,548.—*Inkstand.*—SAMUEL HAWSON, Jersey City, N. J., and THOMAS SWEENEY, Brooklyn, N. Y. Application filed April 9, 1872.

Two separate ink-fountains within a single body, the top of which is depressed to form a sponge-cup.

Claim.—As an article of manufacture, the within-described inkstand, consisting of the body A, sponge-receptacle B, partition C, ink-spaces E E, and cups D D with channels *a a*, all formed of one piece of material, substantially as and for the purposes set forth.

137,549.—*Bale-Tie.*—JOHN W. HEDENBERG, Chicago, Ill. Application filed February 19, 1873.

A metallic loop is combined with the strap-iron which passes around the bale, it being provided with a prong for holding the strap in the place when the bale is under pressure.

Claim.—A plate, A, constructed with the raised loop B, notch E, and prong F, in the form described, and combined with a suitable strap, G H, to form a bale-tie, as set forth.

137,550.—*Machine for Raising Oyster-Dredges.*—WILLIAM T. HOWARD, Baltimore, Md. Application filed March 1, 1873.

A binder, with a reversible fall, is arranged upon the dredge-rope, and is connected by suitable cords with the clutch-lever in such a manner that when a reverse motion is imparted to such rope it unclutches the rope-drum and allows it to turn back independent of the crank-shaft.

Claim.—1. In combination with the dredge-rope, the described or equivalent device and transmitting mechanism for releasing the winding-drum, as and for the purpose specified.

2. The hollow binder D through which the dredge-rope is passed, having means of attachment for the bracing and lever-operating cords, and having also a pawl capable of a vibratory and a perpendicular movement, and controlled by springs, the said movements being imparted to the pawl by the passage of the dredge-rope through the binder, substantially as and for the purpose herein specified.

3. The binder D, connected by the bracing-cord *i′* and weighted cord *i* to the windlass-frame, and detaching-lever to the dredge-rope, as the immediate operator of the whole, substantially as herein specified, for the purpose set forth.

137,551.—*Loom-Shuttle Guard.*—CHARLES H. HUDSON, Clinton, Mass. Application filed January 7, 1873.

The guard extends from the upper bar of the reed over the race-beam, and consists of two grooved arms and a rod, the ends of the rod being free to move up and down in the grooves. At the upper part of each groove is a semicircular recess for receiving and supporting the rod, and near the lower end of each groove is another recess to receive the rod and prevent it from ascending when struck by the shuttle.

Claim.—The shuttle guide or guard as composed of the movable or gravitating rod *b*, and the arms *a a*, grooved and provided with notches at the upper ends of the grooves, and also near their lower ends, all substantially as described.

137,552.—*Elevated Arch Railway.*—EDWIN JAMES HULBERT and AIMÉ NICHOLAS NAPOLEON AUBIN, Portland, Conn. Application filed March 25, 1872.

The arch is formed of angle-iron segments, bound and stiffened by girders and braces. The cars are suspended from wheels which run on the elevated rails borne on the shoulders of the upright bars, and are prevented from oscillation by guide-plates.

Claim.—In elevated arch railways, the combination of the segments *a*¹, binding-girders B B, cast-iron stiffeners C C, upright bars E E with shoulders *e*, and angle-iron guides or plates F, all constructed and arranged substantially as and for the purpose set forth.

137,553.—*Piston-Blower.*—CHARLES W. ISBELL, New York, N. Y. Application filed June 20, 1872.

Within the blower-cylinder are arranged two connected pistons, which reciprocate therein and are provided with valves opening inward to receive air between said pistons from the outside, through valves connected with the opposite ends of the cylinder, and to expel the air thus received through a chamber common to both pistons.

Claim.—1. The combination, with the cylinder A and its inlet-valves B B, of the connected pistons C C provided with inlet-valves F F, and the outlet chamber or passage G whereby the connected pistons receive the air in between them from opposite ends of the cylinder and discharge it through an opening common to both pistons, substantially as specified.

2. The combination, with the pistons C C, of the connecting stays and slides D, the guides and bearing-surfaces E, and the cylinder A, essentially as and for the purposes herein set forth.

137,554.—*Metallurgic-Furnace Lining.*—SAMUEL LANSDOWNE, Sharon, Pa., assignor to himself and RICHARD DAVIS, same place. Application filed July 26, 1872.

Claim.—1. A chamber, A, in the neck and stack of the furnace, communicating, by a pipe, A^2, with the chamber *i*, arranged and combined substantially as and for the purposes set forth.

2. A furnace lined on its exterior, as at *m*, and in the fire-chamber with a composition consisting of cement, Kentucky clay, fire-brick dust, and sand, prepared with water, substantially as described.

3. A lining for furnaces, &c., consisting of cement, Kentucky clay, fire-brick dust, and sand, prepared as described.

4. A lining for the insides of furnaces, consisting of Missouri iron ore, Lake Superior iron ore, Port Entry iron ore, limestone, and charcoal cinders, prepared substantially as described.

137,555.—*Well-Curb.*—NOAH H. LUNDLEY, Bridgeport, Conn. Application filed January 22, 1873.

The curb is composed of a plate having three flanges; the upper one is to receive the pump and prevent refuse water entering the well; the inner one is for the platform to stand upon; and the lower one is to prevent the dirt around the entrance to the well from falling into it and to assist in retaining the curb in place.

Claim.—As a new article of manufacture, a well-curb composed of the plate or cap A, with the rings or flanges B C D, substantially as herein shown and described.

137,556.—*Galvanic Battery.*—ROBERT M. LOCKWOOD, New York, N. Y., assignor to WILLIAM H. SAWYER, same place, and FRANK L. POPE, Elizabeth, N. J. Application filed December 6, 1872.

The negative element, consisting of a copper wire arranged in a horizontal flattened spiral, is held within or between the compound solutions, for the purpose of maintaining a separation of the two fluids.

Claim.—1. The method of effecting or maintaining a separation between two dissimilar liquids in a galvanic battery, by means of the influence of an electric current traversing the negative element of said battery, substantially as herein specified.

2. The continuous spiral wire $c\,c^1\,c^2\,c^3$, forming the negative element of a galvanic battery, and placed within the liquid, substantially as and for the purpose herein specified.

137,557.—*Milk-Cooler.*—WILLIAM D. MCDONALD, Randolph, N. Y. Application filed September 2, 1872.

An inner milk-vessel is arranged within an outer water-vessel. The inner one is provided with a double-flanged cover so constructed as to seal the inner vessel. A vertical pipe passes through the cover and communicates with another which extends horizontally within the milk, and it is so constructed as to discharge the water which flows through it into the space formed above by the cover and the upward-projecting flange.

Claim.—1. In combination with an inner and an outer pan, a cover having a flange, as described, so as to seal the inner pan in connection with water in the outer.

2. A cover having water-pipes depending from it within the milk-pan, so as to cool the contents of the latter, as specified.

3. In combination with the vessels A and B, the trough *e* having the tube e^2 and flap e^1, as explained.

137,558.—*Harness-Buckle.*—JAMES MCLEAN, Meadville, Pa. Application filed November 29, 1872.

The tongue of the buckle is supported at each end by a cross-bar.

Claim.—A buckle-frame having cross-bars E M, arranged to operate in combination with the tongue B H, so that the strain on the latter is relieved by the cross-bars in the manner specified.

137,559.—*Liquid-Meter.*—FRANKLIN A. MORLEY, Syracuse, N.Y. Application filed November 4, 1872.

The valve-stems are fixed to opposite ends of a rocking beam pivoted at the middle to a standard; above this swings a cage containing a heavy ball. A lever, fastened to the frame of the cage by a pin and slot, is pivoted at one end to the rocking beam and at the other to a yoke, the rod of which passes loosely through a U-shaped piece on the piston head and terminates in a button. The valves have each two seats, so that the water enters the upper and is discharged from the lower chamber, and vice versa. The whole mechanism is set on a bar so that the parts may be adjusted before the heads of the cylinder are put in place.

Claim —1. The combination and arrangement of valves F G, rods H I, the lever J, and a piston, B, with the cylinder A having ports C c c' D d d' and double valve-seats *f f g g*, all operating substantially as herein described.

2. In combination with the lever J, valves, and piston, the tilting frame L T and connections K N n O, all arranged and operating substantially as herein described.

3. In combination with a casing, A, having removable heads and containing operating mechanism, substantially as herein described, the bar M, employed in the manner and for the purpose set forth.

137,560.—*Scythe-Stone Holder.*—JESSE L. MORRISON and TRISTRAM H. FLETCHER, North Hollis, Me. Application filed February 10, 1873.

The stone is held in position more convenient for use and is strengthened by the frame.

Claim.—The combination of the frame *b*, the handle *c*, and nut *d*, arranged to hold the stone *a*, as shown and described, and to operate as herein set forth.

137,561.—*Chimney-Cowl.*—WILLIAM H. MYERS, Philadelphia, Pa. Application filed January 31, 1873.

The valve is weighted at one end and pivoted near its center between the two raised sides of the chimney. It is easily moved by the wind, and in a calm it stands vertically. The raised sides of the chimney prevent a down draft.

Claim.—The valve B pivoted so as to tilt over by the pressure of the wind upon its upper surface, substantially as herein described, in combination with the raised sides *a'* of the chimney.

137,562.—*Mode of Connecting Cement Water and Gas Pipes.*—G. CLARKE NICHOLS, Binghamton, N. Y. Application filed November 11, 1872.

The thimble is provided with a bead, forming shoulders. One end has a plane taper from the shoulder and is secured to the pipe by punching the metal into a notch in the socket and filling in with cement. The other end is of spherical form to allow the change of direction from a straight line in the connecting-pipe, which is rigidly secured in place by means of a sleeve slipped over the ends of the pipes and the bead and then filled with cement.

Claim.—The coupling A, having the recess *f* and rounded ends so as to allow the pipes to be turned at angles, in combination with the sleeve B, the parts being lined with cement so as to prevent the contact of the water with the metal of the pipes, substantially as shown and described.

137,563.—*Corn-Planter.*—JOHN NITKEY, Minneapolis, Minn. Application filed September 16, 1872.

The planter consists of a foot-piece with two standards and a hollow moving shaft, which receives the corn at the top and conveys it to a flap-valve at the bottom, from whence it is deposited in a point made to receive it, and the grains are covered by the movement of a covering-hook.

Claim.—1. The combination of the sliding hollow shaft B having chute *f'*, pivoted slotted arm E''', projecting pin *c'*, fly-cam F, connecting-rod G, link E'', sliding hopper E, and reciprocating pusher E' with the arm G'' and metal plate *g'*, constructed to operate substantially in the manner and for the purpose described.

2. The combination of the sliding hollow shaft B, cam-block C having projecting points *c* and *c'*, and arm C' with projecting points *c''*, and pivoted at *c'''*, with the cover D, constructed and operating substantially in the manner described.

3. The three-sided cup *a'* with inclined bottom, in combination with a reciprocating hopper and hollow shaft, substantially in the manner described.

137,564.—*Purifying and Separating Fats.*—ALFRED PARAF, New York, N. Y., assignor to the OLEOMARGARINE MANUFACTURING COMPANY. Application February 11, 1873.

Fat is minced and introduced, together with its own weight of water, into a wooden tank, which is heated to 100° or 120° Fahrenheit by a steam-coil. The oleomargarine and stearine separated are allowed to cool and separated from the water; they are then thoroughly worked with two per cent of salt, put in bags and subjected to pressure or centrifugal action in a temperature of 60° Fahrenheit, which separates the oleomargarine from the stearine. The oleomargarine may be worked a second time with salt.

Claim.—The process or processes for the improvements in the manufacture of products from fresh fat, substantially as hereinbefore set forth.

137,565.—*Windmill.*—JOSIAH B. PARK, North Platte, Neb. Application filed March 18, 1873.

The converging rim is, at its smaller end, provided with a spider, by means of which it is hung upon the horizontal shaft within the yoke which supports the shaft, and is in turn supported upon the vertical spindle so that it can turn thereon by the action of the vane. The shaft has a crank to which a pump-rod may be attached. The wings are arranged within the rim and are held in position by rods having bent ends passing through lugs upon the back of the wings. The rods are supported in elongated sockets on the rim, through which they project outward, and carry at their outer ends centrifugal balls. Each rod is encircled by a spiral spring, which draws the rod inward until further movement is prevented by the lugs upon the backs of the wings coming against the straight ends of the rods.

Claim.—1. The combination, with the converging rim and wind-wings, of centrifugal balls and their rods and springs, arranged to hold the wings at a determined obliquity until the wheel attains its maximum speed, after which they will adjust them in the manner and for the purpose specified.

2. The combination of the converging rim A, wind-wings B hinged thereto, ball-rods G, centrifugal balls H, and springs I, arranged and operated substantially as set forth.

3. In combination with the elements enumerated in the second claim, the series of hooks *a'*, substantially as and for the purpose specified.

4. A wind-wheel composed of a converging rim and wind-wings adjustably hinged within it, substantially as and for the purpose specified.

137,566.—*Fire-Proof and Water-Proof Roofing.*—EDWARD R. PERCY, Lawrence, Kans. Application filed January 22, 1873.

A sheathing of the ordinary water-proof material is laid and held in place by a coating of concrete instead of by nails, which, by perforating the covering, cause leakage under expansion and contraction.

Claim.—The method of combining water-proof and fire-proof roofing for buildings without the use of cleats or nails or their equivalents for fastening the water-proof covering to sheathing, substantially as described.

137,567.—*Barrel-Header.*—CHARLES B. PETTENGILL, Hebron, assignor of one-half his right to FREEMAN C. MERRILL, South Paris, Me. Application filed February 24, 1873.

A bent bar fits around the bottom of the barrel. To the ends cords are attached that are secured to the journals of a windlass, the journals moving in two bearings that fit to a press-board. By turning the windlass the barrel-head is forced into place by the press-board.

Claim.—The combination of the bent rod *a*, cords *h h*, windlass *c*, bearings *d d*, press-board *e*, and lever *i*, as and for the purposes herein set forth.

137,568.—*Knitting-Machine.*—COBIN H. PLATT and GEORGE A. STANDERT, Norwalk, Ohio. Application filed March 7, 1873.

Claim.—1. The disk B, having the annular key-ring b^1 and grooves $b\ b^2$, operating in combination with the needle-bar J, substantially as and for the purpose specified.

2. The needle-bearing rings C and D, constructed substantially as described, and seated on the disk B and operating in combination therewith, for the purpose specified.

3. The stitch-retainer L, rocker *l*, spring l^2, arm l^3, and cam A^1, all operating in combination, substantially as and for the purpose specified.

4. The combination of a horizontally-reciprocating needle, I, fixed comb-tooth or stripper E, and stitch-retainer L, substantially as and for the purpose specified.

5. The reversing yarn-carrier K, operated by means of sliding bar k^1, feather f^1, and reversing mechanism, substantially as set forth, and for the purpose specified.

6. The needle I, constructed as described, and provided with the notch i^2 and notch i^1, or its equivalent, for the purpose specified.

137,569.—*Harrow.*—WILLIAM H. PLATT, Dayton, Ohio. Application filed November 9, 1872.

The harrow tooth is made of steel and tapering toward the point. The head is conical and is set obliquely to the sides of the tooth.

Claim.—A tapering harrow-tooth having the square neck and the dome-like or convex head, having its under face oblique to two adjacent sides of said neck, as herein described and shown.

137,570.—*Cotton-Bale Tie.*—WILSON C. RAMSAY, Wadesborough, N. C. Application filed March 3, 1873.

A single strap of hoop-iron provided with a metallic loop having points or teeth on its under side.

Claim.—As an improvement in bale-ties, the loop B having pointed projections *i i* arranged to operate with the band A, bent substantially as and for the purpose specified.

137,571.—*Felly-Plate.*—HENRY SILVESTER, St. Louis, Mo. Application filed September 5, 1872.

The plate does not depend upon the insertion of bolts or screws through the rim, and the band clasping the ends of the fellies prevents their splitting.

Claim.—The felly-plate A, consisting of the plate *a* and the band *a'*, in combination with the tire C, provided with vertical flanges, and the rim of the wheel, substantially as described and shown.

137,572.—*Making Windows Weather-Proof.*—BENJAMIN SMITH, Chicago, Ill. Application filed October 21, 1872.

A strip of rubber is held in place in a shallow recess on the edge of the sash by a piece, D, so that its edges maintain contact with the frame and prevent ingress of air and water. Room is made for the cord by using a bent metallic holding-piece in place of the wooden strip.

Claim.—1. The stile A, provided with the V-shaped groove *b b* and rabbets B B, in combination with the V-shaped rubber C C and strip D, as set forth.

2. The curved plate G and rubber I I passing under the cord

F, and elongated at J S, to meet the rubber C, as and for the purpose specified.

137,573.—*Governor for Steam-Engines.*—BENNET B. SMITH, Nashville, Tenn., assignor of one-half his right to WILLIAM H. MCDONALD, Green Hill, Ala. Application filed January 29, 1872.

A shaft, provided with right and left hand screws, is revolved by a hollow driving-shaft into which it enters and reciprocates. To said shaft the governor-balls are connected by bevel-wheels. The first shaft, which is in constant rotation, is caused to reciprocate by two threaded plates alternately thrown in contact with either of the screws by the action of the governor-balls. To the reciprocating shaft the throttle or cut-off is connected.

Claim.—The combination of the hollow shaft A and shaft C with the right and left hand screws D and E, plates H and I, rods F and G, beam J, and rod T, the bevel-gear wheels K and L, shaft M, arms O O, balls N N, and valve U, all constructed and arranged as and for the purpose set forth.

137,574.—*Steering Apparatus for Vessels.*—HENRY JULIUS SMITH, Boston, Mass., assignor to WILLIAM B. FOWLE, same place. Application filed January 4, 1873.

The valves of a movable-cylinder engine, adapted to be directly connected with the rudder, are operated through the medium of the propeller-shaft, and any convenient means of throwing said valves and shaft into and out of gear.

Claim.—The combination of a propeller-shaft, steering-engine, and suitable means for throwing the valve-connections of the latter into and out of gear, the combination being and operating substantially as described.

137,575.—*Printer's Miter-Machine.*—JOSEPH A. STAKEMBURY, Salem, Ohio. Application filed September 4, 1872.

Claim.—1. The rod R and adjusting-screws *e e e e e e*, when used as and for the purpose herein specified and described.

2. The adjustable table C, constructed in the manner and for the purpose herein described.

3. The clamp L L M, constructed as described and shown, in combination with the recessed arm I of the table C, in the manner and for the purpose specified.

4. The combination and arrangement of the file-carriage B, rod R, stop or guide H, and bevel-edged file G, all constructed and operating in the manner described.

137,576.—*Sugar-Evaporator.*—HOMER C. STEVENS and THEODORE W. STEVENS, Enosburg, Vt. Application filed October 28, 1872.

The feed-coil connecting the reservoirs and pan is placed within the chimney to be heated by the waste products, and is attached to a hinged door which can be opened to clean and repair the pipe.

Claim.—1. The spirally-coiled pipe H, attached to the hinged door G or shutter, which can be easily opened and detached, and closed to connect with the sap-reservoir A, and discharging-spigot A to operate within the chimney or flue of the evaporating-furnace, as herein set forth.

2. In combination with the chimney E having an opening, F, the hinged door or shutter G and coil H, arranged to be easily opened to expose the coil for cleaning, as herein shown and described.

137,577.—*Buggy.*—CALVIN T. STODDARD, Colebrook, N. H. Application filed March 30, 1872.

The springs are connected at their ends by yokes and at their centers by a vertical guide-rod. The axle-box has an inclined projection on its inner end, by which the dust and sand are conveyed into the groove of the yoke, from whence they fall to the ground.

Claim.—1. The combination and arrangement of the springs C D I J, coupling-yokes G G K K, axles B L, and guide-rods H H N N, substantially as and for the purpose herein specified.

2. The inclined projection *p*, yoke-collar *r*, and sand-groove *s*, substantially as and for the purpose herein specified.

137,578.—*Universal Joint.*—JOHN TROXEL, Nankin, Ohio. Application filed March 10, 1873.

Universal joint consisting of a hollow shell in two parts, provided with internal grooves, in which a ball, with projections secured to its surface, has limited movement. Said projections or pivots, provided with friction-rollers to obviate wear and increase ease of motion, correspond to the said grooves, and serve to communicate motion from one shaft to the other.

Claim.—1. The ball *s*, provided with projections and rollers, or their equivalents, substantially as set forth.

2. The internally-grooved shell *a b*, in combination with the ball and its projections, substantially as shown and described.

137,579.—*Tent.*—EPHRAIM M. TURNER, Fort Worth, Tex. Application filed December 5, 1872.

A tent-frame is constructed of two side frames, consisting of ribs bowed at the upper end and pivoted at the lower end to a step-shaped plate, and when the ribs are erected to support the canvas they maintain radial positions to the plate. A picket-pin is riveted to the plate for fastening it to the ground. Short segmental braces are pivoted to the top of the braces on one side, and attachable by hook and staple to those on the other side, forming an arched roof. A beam extends from one end of the tent to the other over the short braces and under the canvas, and the tent-poles, at the upper ends, are hinged to the tie-braces. By detaching the hooks the tie-braces may be turned in upon the side ribs, and the entire frame can then be folded together for convenience of storage or transportation.

Claim.—1. The combination, with a tent-canvas, of the side-pivoted bowed ribs E, with the foot-plates F, segmental pivoted brace-ties G, and the roof-tree C, constructed and arranged substantially as herein described.

2. The roof-tree C, hinged at one end to the segmental tie-brace G, and locked at its other end to the other extreme tie-brace G, to allow it to be separated from the latter and folded over with the side rib to which it is hinged, substantially as herein described.

3. The tent-poles D D' hinged to their respective end tie-braces G to allow them to be folded with the side frames, substantially as herein described.

4. The roof-tree C, arranged within the space between the ends of the extreme side bow-ribs E and supported upon the intermediate segmental brace-ties, substantially as described.

5. The combination, in a tent, of the side bow-ribs E with the foot-plates F and pivoted picket-pins H, substantially as described.

137,580.—*Water-Wheel.*—HORATIO B. WEAVER, Hartford, Conn. Application filed March 7, 1873.

An outward or side discharging wheel receiving the water at the top, with an annular gate upon the outside of the wheel and moving with the wheel. The device for opening and closing the gate consists of a shaft and a rod arranged to rotate with the shaft, but free to move longitudinally, and provided with a pin extending laterally into an oblique slot in the gate-neck. By moving the gate-rod upward the effect of the pin upon the slot is to rotate the gate a short distance upon the wheel, and by moving the gate-rod down again the gate is rotated back again. The upward movement of the gate-rod opens the gate and the downward movement of the rod closes it.

Claim.—The combination of the wheel, the gate arranged to rotate with the wheel, the shaft upon which the wheel is fast, the gate-rod arranged to rotate with the shaft, but free to move longitudinally, and provided with a pin, (one or more,) or its equivalent, extending laterally into an oblique slot in the gate-neck, all constructed, arranged, and designed to operate substantially as and for the purpose set forth.

137,581.—*Sawing-Machine.*—SETH WHEELER, Albany, N. Y. Application filed July 24, 1872.

An internal gear-wheel is provided with two recesses upon opposite sides, into which a crank-pin, inserted in the periphery of a pinion revolving within the wheel, enters, the crank-pin being inserted with its center exactly upon the pitch-line of the pinion. The saw, therefore, makes two complete reciprocations at each revolution of the large wheel.

Claim.—The internal wheel B and pinion D, when arranged, substantially as herein described, for operating reciprocating saws.

137,582.—*Folding Ladder.*—JOSIAH M. WHITE and ANDREW J. KEE, Hannibal, Mo. Application filed December 11, 1872.

A removable top-piece or platform which can be applied to a folding ladder, or removed at pleasure.

Claim.—The movable step *h* and slots *i i*, arranged and adjusted substantially as set forth in specification, and for the purposes therein set forth.

137,583.—*Band Sawing-Machine.*—BAXTER D. WHITNEY, Winchendon, Mass. Application filed January 24, 1873.

A rotating bearing of hardened steel is placed behind the saw-blade, its rotation preventing the wearing of grooves in its surface.

Claim.—A saw-guide composed of the frame A, guides B B, and rotating disk D, or its equivalent, when arranged and operating in the manner and for the purpose herein shown and described.

137,584.—*Trestle-Platform for Unloading from Wagons.*—JOHN K. WILSON, Brimfield, Ill. Application filed March 3, 1873.

A trestle-platform consisting of bottom piece, sides, and brace, which serves to strengthen the platform and also to prevent its going too far into the wagon.

Claim.—The trestle-platform B C C *a b*, made to slide into the end of a wagon for unloading the same, substantially as described.

137,585.—*Manufacturing Sheet-Iron.*—W. DEWEES WOOD, McKeesport, Pa. Application filed March 17, 1873.

Claim.—In the process of finishing sheet-iron, the combination of the following steps: First, coating the sheets separately with a graphite-and-oil coating; second, rolling and annealing; and, third, hammering in packs while cold, substantially as set forth.

137,586.—*Fertilizer.*—JOHN W. YORK, Nolensville, Tenn., assignor of one-half his right to GEORGE W. MORTON, JOSEPH H. MURRAY, and THOMAS B. TAYLOR, same place. Application filed August 3, 1872.

On a pair of running-wheels is a large seed-box having, in a hopper beneath, a revolving cylinder, with pins upon it, working among others on a hinged apron which is adjusted by a worm-wheel. The cylinder revolves by bevel-gearing on the axle-tree, which latter, by a cam, opens and shuts the bottom of the hopper.

Claim.—1. The combination of the cylinder G and teeth H with the segment P and teeth I, shaft J, worm-wheel O and worm N, shaft K, and hand-wheel M, all as operated and arranged, for the purpose above described.

2. The combination of the shaft D with shaft B by means of bevel-gear wheels E and F, the cams U'', the rod V, crank W, shaft S, valve T situated in box S, and spring 9, all as arranged, for the purpose above set forth.

137,587.—*Railroad-Rail Joint.*—THOMAS V. ALLIS, New York, N. Y. Application filed February 21, 1873.

Expansion and contraction are provided for by turning down the middle portion of the bolt to the depth of the screw-thread

grooves, thus enabling the holes to be bored, as is preferable in steel rails, without excess or diversity of size.

Claim.—In a rail or other joint in which the rails or bars are subject to expansion and contraction, the holes for the joint-bolts formed of the same size in the crosswise direction of the rails or bars as the threaded portion of the bolts, and said bolts made as much smaller in the parts which are in said holes as the depth of the grooves of the thread, or thereabout, substantially as specified.

137,588.—*Insect-Trap.*—JOHN W. ANDERSON, Portland, Ind. Application filed October 25, 1872.

Two flanged plates, with the convex sides turned toward each other, are kept a suitable distance apart by studs or partitions. To the upper plate is attached the outside cage or cylinder.

Claim.—1. In combination with the chamber E, the flanges B and C, constructed substantially as and for the purposes set forth.

2. The combination of the bottom plate A, flanges B and C, the cone D, and chamber E, constructed substantially as and for the purposes specified.

137,589.—*Dentist's Flask.*—CLEMON BAILEY, Kingston, N. C., assignor to himself and H. C. BAILEY, same place. Application filed November 25, 1872.

A semi-elliptic spring is arranged upon the top of the flask, and connected by suitable rods with a bar across the bottom in such a manner as to hold the parts of the flask firmly together while in the vulcanizing-furnace.

Claim.—The curved spring C, hook-rods *f f*, and rod *g*, combined with flask, as described, and for the purpose set forth.

137,590.—*Construction of Metallic Casks.*—JAMES I. BARD, New Orleans, La. Application filed September 17, 1872.

The sheet of metal is cut of the proper size, heated, stamped with a die of the shape and size to depress that part which is to enter the end of the shell. The edge is turned down around the shell and secured to it by means of a groove, without solder or rivet.

Claim.—As an improvement in the construction of metallic casks, barrels, or other similar and equivalent vessels, the metallic head B, when constructed and secured to the shells of said vessels, substantially as described, for the purposes set forth.

137,591.—*Steam-Washer.*—CHARLES A. BRADLEY, Monticello, Fla. Application filed December 21, 1872.

A wash-boiler attachment, with downwardly-projecting tubes in triangular form attached to the under side of the covering-plate, is constructed with openings for passage of the water, and covers to protect the openings.

Claim.—The combination of downwardly-projecting tubes E, made V-shaped in their cross-section, with the ingress-opening in the plate A of a steam-washer, substantially as herein shown and described, and for the purpose set forth.

137,592.—*Grapple.*—JOHN BURKHART, Brookville, Ind. Application filed February 8, 1873.

Two adjustable corrugated grappling-hooks so arranged that they can be conveniently shortened or elongated, to suit the sizes of the bodies to which they are applied.

Claim.—The combination of two adjustable grapples, C, each having a row of hooks thereunder, with swiveled clevis A, having pin *b*, substantially as herein shown and described.

137,593.—*Hanger for Shafting.*—WILSON W. CAREY, Lowell, Mass., assignor to himself and GEORGE W. HARRIS, same place. Application filed March 15, 1873.

The cross-head, with its screw, serves to maintain the box upon the saddle and to allow of it working or accommodating itself to the motions of the shaft.

Claim.—1. The hanger, as composed of the cast-metal cap D, cross-head C, and saddle B, and the two wrought-iron screw-bolts E F, with their nuts *f f*, *g g*, and A A, all constructed and arranged substantially as set forth.

2. The box slotted at top, as described, and the tube or educt *i*, arranged in the slots *k* and connected with one or two oil-reservoirs, o, all substantially as explained.

137,594.—*Portable Stove.*—NATHANIEL E. CHASE, Boston, Mass. Application filed July 24, 1872.

The grate is attached to a side partition, and, being movable, can be so arranged as to admit the draft at one side or from the base at the other. The products of combustion do not pass into the oven-space.

Claim.—The portable stove, constructed as described, adapted to be used either with the outer air entering the flue *k*, and making its exit at *f*, as shown in Fig. C; or by reversing the grate and its partition, adapted to be used with the air entering at *f*, and making its exit through the flue *k*, the cylinder *e* having no passages communicating with the oven-chamber *a*, but such chamber extending around the cylinder *e* and being heated from the entire periphery of the same.

137,595.—*Corrugated Metallic Rolling Shutter.*—ALEXANDER CLARK, London, England. Application filed February 4, 1873.

Claim.—1. The application, to corrugated-metal revolving shutters, of one or more strips or lengths of soft and pliant material, disposed in such manner as to act as a cushion between the coils of the shutter, substantially as and for the purpose described.

2. In combination with the grooves in which the shutter works, a lining formed of strips of leather or its equivalent, applied as shown and described.

137,596.—*Invalid-Bedstead.*—CHARLES M. CLINTON and EDWARD J. MORGAN, Ithaca, N. Y. Application filed February 24, 1873.

The jointed thigh and leg planes are also longitudinally divided, and are connected by links to a rock-shaft so that either part can be elevated or depressed. The leg-planes are also connected by links to a cross-rod near the front of the bed-frame, so that when elevated they will remain in a horizontal position. A supplementary double-inclined plane is also used to lengthen the leg-planes. The rock-shaft is combined with a spring-lever and a perforated sector-plate for adjusting the position of the thigh-planes. The thigh and leg planes are arranged on a tilting-frame, which is adjusted by a spring retaining-pin and a perforated sector-plate. The pivoted back-plane is adjusted by means of a curved rack-bar and a spring-catch.

Claim.—1. The rock-shaft C for adjusting the thigh-planes F F', in combination with the spring-lever C^2 and sector-plate L for holding said thigh-planes at any desired adjustment, substantially as described.

2. The rock-shaft C provided with the actuating-lever C^2, arm C^1, and detachable links *c*, in combination with the longitudinally-divided thigh-planes, whereby either or both of said planes may be adjusted, as described.

3. The longitudinally-divided thigh-planes and links A, in combination with the divided leg-planes for adjusting said leg-planes, as described.

4. The double leg-plane J H, in combination with the parallel links or rods *j* and set-screw J' for effecting the extension of the leg-plane, as described.

5. The tilting-frame B, in combination with the sector-plate D or rack and spring retaining-pin for holding the tilting-frame, as described.

6. The adjustable back-plane E, in combination with the pivoted rack E' and latch K' for holding the back-plane, as described.

137,597.—*Fan-Fly Attachment for Cylinder-Presses.*—PATRICK A. COTTER, Boston, Mass. Application filed March 14, 1873.

As the paper emerges from between the friction-rollers and the cylinder, the upper fan blows it down upon the rollers, and it is fed down to the table. When its edge strikes the table the lower fan, which has an intermittent motion, causes the paper to spread out.

Claim.—1. The fan-fly attachment above described, its essential features being the friction-rollers A A A and the two fans B and C, when constructed and operating substantially as described.

2. The combination of the friction-rollers A A A and the fan B, when they act as a substitute for the carrying-tapes of a cylinder-press, in the manner described.

3. The combination of the intermittent fan C and the table E, when the fan acts as a substitute for the fly of a cylinder-press, in the manner described.

137,598.—*Heating-Furnace.*—ELIAS W. CRANE, Roselle, N. J. Application filed September 18, 1872.

A pipe leads from the floor of an apartment to the smoke-flue of a heating-furnace in the apartment below. A branch from such pipe connects with the throat of the ash-pan of the furnace. By means of a damper within the pipe, and another within its branch, the foul air drawn from the room above is conducted, in whole or in part, into either the ash-pit or the smoke-flue of the furnace, as may be desired.

Claim.—In combination with the air-heating furnace A, the ventilating-pipes C F provided with dampers E G, so that the flow of exhaust air may be conducted wholly or partially into the ash-pit B or flue H, as required.

137,599.—*Addressing-Machine.*—FRANCIS A. DARLING, Fayetteville, N. Y. Application filed January 6, 1873.

Upon depressing the treadle the vertical bar moves downward, carrying with it the large wheel, the movable arm, the prismatic block, and the chain having the address-plates, while a segment, turning loosely on its shaft, meshes with the fixed arm, thus causing a pawl on the segment to turn the prismatic block one-quarter around. Upon releasing the treadle a spring restores the parts. The address-plates of metal are sprung into links of the chain.

Claim.—1. The combination of the reciprocating bar B, a spring, *d*, movable arm A, ratchet-and pawl mechanism, the segment F, and treadle C, fixed bar *c*, or other equivalent means of reciprocating the bar B, substantially as specified.

2. In combination with the elements of the first claim, the wheel D, chain G, and block E on arbor *i*, substantially as specified.

3. In combination with the chain G, the printing or address plates *p*, having their ends bent and inserted or sprung into the slots of the links thereof, as specified.

137,600.—*Furniture-Spring.*—WILLIAM T. DOREMUS, New York, N. Y. Application filed March 15, 1873.

The case is made in two parts. Upon the under side of the upper part are formed one or more rigid projections, and centrally across the upper plate extends a rigid bar. Between the bar and the projections rubber springs are interposed, which project beyond the rigid parts. The lower case or part has a recess to receive the projections, bar, and rubber springs, and the two parts are secured together by a bolt. The rubber blocks are surrounded on their open sides by metallic bands to keep them from bulging out.

Claim.—1. An improved spring formed by the combination, with each other, of the case A B, made in two parts oscillating upon each other, the cross-bar D, the rigid blocks or projections C, and rubber blocks E, substantially as herein described.

2. The combination of the open bands F with the parts A B of the case, the cross-bar D, and the rigid blocks or projections C, and rubber blocks E, substantially as herein shown and described.

137,601.—*Machinery for Embossing Spool-Heads.*—LUCIUS H. DWELLEY, South Boston, Mass. Application filed August 3, 1872.

Automatic machine for embossing the heads of spools, whereby the spools, being placed in a suitable receptacle, may be taken therefrom in succession, carried forward to the embossing apparatus, embossed, and discharged from the machine without the aid of manual labor.

Claim.—1. The combination of the hopper H, the arms *m m'*, and their actuating mechanism with the chute n^1, substantially as and for the purpose set forth.

2. The slider *r*, in combination with the table *q* and the centering-mandrels, substantially as and for the purposes set forth.

3. The combination of the chute n^1, pivotal mandrels C D, and embossing-wheel *e*, substantially as set forth.

4. The combination of the chute n^1, table *q*, slider *r*, pivotal mandrels C D, and the embossing-wheel *e*, substantially as described.

5. An organized automatic machine for embossing the heads of spools, consisting of the hopper H, vibrating arms *m m'*, chute n^1, table *q*, slider *r*, pivotal mandrels C D, and the embossing-wheel *e*, arranged and operating together substantially as above set forth.

137,602.—*Folding Ironing-Table.*—WILLIAM EDWARDS, Cleveland, Ohio. Application filed October 2, 1872.

A folding ironing-table so hinged and braced that a part of the leg at one end may be turned down while a shirt or other garment is being slipped on, the table still standing firm.

Claim.—The slotted leg B, slotted brace E, hook-brace F, reach C, folding leg D, and brace G, in combination with the ironing-board A, as shown and described, and for the purpose set forth.

137,603.—*Clock-Escapement.*—CHARLES FASOLDT, Albany, N. Y. Application filed November 4, 1872.

The pendulum receives impulse from the escapement indirectly through a gravity-arm, so that a surplus power may be imparted to the clock without increasing the oscillations of the pendulum. The impulse-wheel is controlled by the pinion of a section-wheel having two or more teeth or pronga, which escape past an anchor whose vibrations are caused by the movement of the pendulum. The number of the teeth or pronga governs the number of pendulum vibrations to each impulse.

Claim.—1. The combination of the escapement-wheel A, section-wheel C, and lever D with each other, when they are all mounted upon separate arbors, as set forth.

2. The gravity-lever G pivoted to an arm of the lever E, to be operated by the escapement-wheel A, substantially as herein shown and described.

3. The lever E provided with the pin *s*, which serves as a support for the lever G in its neutral position, as set forth.

4. The combination of the pivoted gravity-arm G with the vibratory lever E provided with a pin or equivalent stop, *s*, and an arm, *c*, the fork *j*, lever D, section-wheel C, and escape-wheel A, as shown and described, for the purpose specified.

137,604.—*Culinary Boiler.*—SAMUEL S. FITCH, New York, N. Y. Application filed January 27, 1873.

In the shallow chamber which extends horizontally into the vessel from one side, and which has a door on the outside, heated bars of iron are placed to heat the contents of the vessel.

Claim.—The improved manufacture of culinary boiler or vessel A and shallow chamber D, arranged as represented, and with the latter to open through the side of the former, all being as set forth.

137,605.—*Stop Mechanism for Warping-Machines.*—GEORGE S. FOLLENSBEE and THOMAS C. ENTWISTLE, Lewiston, Me. Application filed January 24, 1873.

When a wire drops from a broken warp-thread it comes in the path of a rod on a vibrating arm and stops the arm, thereby causing a sliding and vibrating arm to slide toward and turn a lever, which releases a spring shipper-rod. The sliding arm is vibrated by a bar (reciprocated by a cam) having two arms forming a double incline, between which the end of the sliding bar is held as long as the threads remain unbroken, but on the dropping of a wire the end of the sliding bar runs up one of the inclines, and is thereby forced forward to actuate the shipper-bar.

Claim.—1. The combination, with the lever G and shipper-bar, of the vibrating and sliding bar F and operating-arms *d d'*, or their equivalents.

2. The combination, substantially as described, of the reciprocating bar P and its arms *d d'* having between them a recess, *e*, with the sliding bar F, arm E, and rod A.

137,606.—*Grain-Drier.*—EDWIN S. FORGY, Dayton, Ohio. Application filed February 15, 1873.

The zigzag placed within the casing is made to vibrate by means of the eccentric-rod, which is supported on eccentric-journals in the boxes on the sides of the casing.

Claim.—An apparatus for drying grain and similar material, consisting of the case A, zigzag D, stove B, pipe C, and eccentric-rod F, when the same are arranged to operate as and for the purpose described.

137,607.—*Saw-Set.*—CYRUS E. GRANDY, Stafford Springs, Conn., assignor to himself, ZIBA B. GRANDY, and WILLIAM D. HEALD, same place. Application filed February 21, 1873.

The combination is novel mainly in virtue of the guide, a bar with an overhanging lip, movable and adjustable on the handle, for maintaining connection of the tool with the saw.

Claim.—The hinged and spring-retracted die-bar B D, the cam-lever E, link F, sliding guide H, and gage-screw I, combined and arranged in connection with stock-bar A, as described, to form a saw-set for band-saws.

137,608.—*Horse-Collar.*—WILLIAM GUILFOYLE, New York, N. Y. Application filed March 1, 1873.

The perforations of the covering metallic plate are to allow the under part of the collar to be chambered out, and lifted from the sores and scalds upon the shoulders of the horse by stitching through the leather pad. Suitable trace-fastenings are likewise secured to the plate.

Claim.—1. The metallic perforated shoulder-piece B, with projecting rim *b* and eyes *g*, substantially as described.

2. The trace attachment C, in connection with wire piece *d*, for the placing on of the harness and traces, as set forth.

137,609.—*Adjustable Brace-Coupling.*—CYRUS M. HALL, Yates City, Ill. Application filed March 8, 1873.

Curved braces secured together in the center by a loose ring, and turning upon the end fastening so as to permit the movement of either section independently of the other.

Claim.—The combination of the brace-rods A A bent, as described, to form the bails *a a*, and outwardly-curved ends *b b*, the loose ring B, and the bolt or swivel-joints C C, to form an adjustable brace-coupling, as herein set forth.

137,610.—*Child's Chair.*—JAMES F. HARRIS and EDWARD D. CHILDS, Charlestown, Mass. Application filed February 4, 1873.

The seat is made reversible, and the curved front legs form the rockers when used as a rocking-chair. The foot-board has a pin on each end that slides in angular slot-holes made in the curved front legs.

Claim.—A combined rocking-chair and high chair, constructed with the rockers *a a*, reversible seat *d*, foot-board *i*, pins *k k*, and angular slot-holes *l l*, or their equivalents, and the brace *n*, as and for the purpose set forth.

137,611.—*Wheel-Plow.*—JOAB H. JANES, HARVY TUCKER, and TILGHMAN D. TERRY, Knobnoster, Mo. Application filed February 27, 1873.

Claim.—1. The arrangement of the axle A, beam C with caster-wheel D and seat E, tongue K, and plow-frame G, all substantially as shown and described, and for the purposes herein set forth.

2. The arrangement upon one axle, A, of the plow-frame G and drum or roller L, substantially as and for the purposes herein set forth.

137,612.—*Wash-Boiler.*—PHILIP KRUMSCHEID, Boston, Mass. Application filed March 15, 1873.

A wash-boiler constructed with end pipes or conductors, with perforations at their upper ends and flanges at their lower, with projecting sides, in angular form, which serves to support an adjustable cover, which has a center opening, and is covered on both sides by a cover attached at a sufficient distance to allow a free circulation of water or steam.

Claim.—The side plates or flanges D, and the detachable plate E provided with a lower cap-plate, F, and an upper cap-plate, G, in combination with the flanges C^2 of the tube-plates C, and with the boiler A, substantially as herein shown and described.

137,613.—*"Knock-Down" Chair.*—CHARLES R. LONG, Louisville, Ky., assignor to LONG & BROTHERS, same place. Application filed February 21, 1873.

The back rail is beveled to enter the oblique notches in the back post. The beveled face is also notched in a half-round form to receive the round extension of the seat-stretchers. The seat-frame and back are combined by the joint thus formed.

Claim.—The back rail A with bevel L and half-round notches M, the stretchers C with tenons N, and the posts B with oblique notches P, combined to form a joint in a knock-down chair, as and for the purpose described.

137,614.—*Harvester.*—CHARLES N. MCCANDLISH and JOHN C. NAGLEY, West Rushville, Ohio. Application filed November 30, 1872.

The caster-wheel for supporting the tongue is made adjustable by means of a pivoted link and perforated base.

Claim.—The described means for connecting the tongue A and wheel E, consisting of the yoke-held plate B, the pivoted arm C, the pivoted bars D D, and the pivoted bar F, constructed in all respects substantially as and for the purposes set forth.

137,615.—*Process of Purifying Carbonic-Acid Gas.*—ASA P. METLERT, New Britain, Conn. Application filed November 4, 1872.

The carbonic-acid gas is passed through a weak solution of acetate of lead having the deutoxide of lead in solution.

Claim.—The method of purifying carbonic-acid gas by the use of deutoxide of lead, substantially as described herein.

137,616.—*Last.*—WILLIAM J. B. MILLS, Philadelphia, Pa., assignor to MILLS SHOE-MACHINE AND MANUFACTURING COMPANY, New York, N. Y. Application filed September 7, 1872.

Improvement on patent No. 126,234. The improvement consists of a heel-piece secured to the last, covered in said patent, and a detachable piece at the toe.

Claim.—1. The combination, with the sewing-last D, of a detachable block, A.

2. The combination, with the sewing-last D, of a heel-piece, B,

137,617.—*Car-Coupling.*—DEMCY C. MORRIS, New Sharon, Iowa. Application filed March 1, 1873.

The button is to prevent accidental uncoupling.

Claim.—The bumper-heads A having transverse notches or grooves a^1, and longitudinal notches or grooves a^2 formed in the upper sides of their outer ends, the link B having arms b' formed upon one end, and the buttons C in combination with each other, substantially as herein shown and described.

137,618.—*Sewing-Machine.*—JOHN O'NEIL, New York, N. Y., assignor to himself and R. A. SCHONEMAN, same place. Application filed January 6, 1873.

Makes chain-stitch. The rock-shaft is provided with a hook and with feed-operating cams, and derives its motion through the devices enumerated, operated through the vibrating needle carrying-arm, to which they are connected by the connecting-rod.

Claim.—The arrangement of the bell-crank T, connecting-rod U, slotted block W, slotted arm V, and connecting-link X with the needle-arm and the rock-shaft, for operating the latter in the manner described.

137,619.—*Door and Gate Spring.*—CHARLES N. OWEN, Salem, Ohio. Application filed February 20, 1873.

Upon the end of the fixed bracket, which is attached to the gate, are formed serrations, and above this serrated disk is an intermediate stationary serrated disk for adjusting the tension of the coil spring inclosed within the inverted cup attached to the chair-arm of the door-spring. Thus the spring is entirely inclosed, and, with its adjusting devices, is protected from the weather.

Claim.—The combination of the spring-inclosing cup or case B, chain-arm B', stationary bracket or disk A', and interlocking spurs on the stationary bracket, and intermediate stationary disk C for adjusting the tension of the spring on the chain-arm B', substantially as described.

137,620.—*Draft-Faucet for Soda-Water Apparatus.*—JAMES PATTERSON, Philadelphia, Pa., assignor to CHARLES LIPPINCOTT & Co., same place. Application filed December 2, 1872.

By turning the spindle the flexible diaphragm is first partially relieved, thus permitting a small quantity of soda-water to issue through the central passage, and then wholly relieved through the raising of the nut holding its outer portion by a pin on the spindle, allowing a large body of the water to pass through the chamber and nozzle, the flow through both passages being cut off simultaneously on reverse movement of spindle.

Claim.—1. The combination, with the passages *b* and *d* and chamber *c*, of the elastic diaphragm A and the slotted nut *f*, spindle B and its pin *x*, or their equivalents, whereby the diaphragm, when raised, uncovers the openings successively, but when depressed closes them simultaneously, substantially as and for the purpose set forth.

2. The combination of the said diaphragm and its seat, slotted nut *f*, spindle B and its pin *x*.

137,621.—*Manufacture of Iron and Steel.*—JOHN PEDDER and GEORGE ABEL, Pittsburg, Pa. Application filed March 21, 1873.

Manufacturing iron and steel direct from the ore, by the introduction of carbonaceous gases from one chamber, in which they are generated or evolved under heat, into another chamber, in which are inclosed the ore or metallic oxides, the latter chamber being practically closed against the introduction of any but the carbonaceous gases.

Claim.—The process of reducing metallic oxides by inclosing them, with suitable fluxes, in a case which shall be infusible and incombustible at a reducing heat, and while so inclosed subjecting them, at a reducing temperature, to the action of carbonaceous gases or vapors, or both, which gases or vapors are evolved or generated in a separate case or retort and introduced into the ore-case, substantially as set forth.

2. The combination of cases *a* and *d*, the one containing ore with suitable fluxes, and the other any suitable carbon, and a suitable perforated diaphragm, *b*, for closing the open end of the ore-case, such cases being suitably constructed for admitting, at pleasure, the gases or vapors from the one into the metallic contents of the other, substantially as set forth.

3. In the manufacture of iron and steel, charging the cases of reduced oxides so made into a bath of molten metal in a furnace, retort, or crucible, melting the same with such molten metal, and working up or drawing off the resultant product, substantially as set forth.

137,622.—*Dried-Fruit Loosener.*—CORNELIUS RAGAN, Waterloo, Iowa. Application filed February 8, 1873.

A flat spiral blade having a chisel or wedge-shaped point.

Claim.—As an article of manufacture, a fruit-loosener consisting of a flat spiral blade having a chisel or wedge-shaped point slightly inclined from a plane perpendicular to that of the axis of tool, as and for the purpose described.

137,623.—*Hinge.*—ANDREW RANKIN, Philadelphia, Pa. Application filed February 27, 1873.

Two steel washers are interposed between the eyes of the hinge, and each one is secured by a projecting hook to its respective leaf, so that it can only revolve when the leaf does. There is then no friction of parts on operating the hinge, except upon the two steel washers.

Claim.—The hard-steel rings *c* and *c'* interposed between the two hubs of the hinge and connected one to each half of the hinge, all as and for the purpose herein set forth.

137,624.—*Medical Compound for Liniment.*—WILLIAM E. ROSE, Hornellsville, N. Y. Application filed December 11, 1872.

Oil amber, tincture capsicum, spirits turpentine, laudanum, beef-gall, oil hemlock, oil sassafras, tincture lobelia, oil lemon, alcohol.

Claim.—The combination and specified proportions of the same, as substantially shown, and for the purpose herein described.

137,625.—*Breech-Loading Fire-Arm.*—CHRISTIAN SHARPS, Philadelphia, Pa. Application filed July 14, 1871.

Claim.—1. The curved cam-like projection *q* of the breech-piece, arranged to act upon and lift the hammer to the position of half-cock when the said breech-piece is opened, all substantially as specified.

2. The firing-pin K, so combined with and controlled by a cam-slot, *l*, dog *m*, or equivalent device, that it shall be drawn back by the same into the breech in the act of opening or closing the latter.

137,626.—*Sawing-Machine.*—CHARLES H. SMITH, Faribault, Minn. Application filed February 8, 1873.

The sawing mechanism, together with the engine which drives it, are mounted upon a car which is moved from one wood-pile to another along lines of railway.

Claim.—1. The wood-holding triangles pendent between the saws and preventing the wood from falling or being thrown out, as described.

2. The combination of the chutes T with the saws and the elevator, substantially as specified.

3. The relative arrangement of the wood-rack, endless carrier, saws, and elevator with the truck-frame or movable platforms A, substantially as specified.

137,627.—*Shipping-Can Shield.*—HORATIO M. SMITH, Chicago, Ill. Application filed November 16, 1872.

Claim.—A shipping-can provided with an outer shield, consisting of paper, pasteboard, or tar board, substantially as and for the purposes specified.

137,628.—*Wardrobe-Bedstead.*—JACOB SMITH, Chicago, Ill. Application filed January 30, 1873.

The folding frame is attached to a pivoted rod having an elevating-spring. The mattress is held in place, when the bed is inclosed in the case, by a slat which is hooked to one side of the frame, and engages, by a spring-catch, with the other side of the frame.

Claim.—The combination of the fastening-slat D, constructed as described, with the folding case S A B, rod E, spring F G, cross-slat C, skirting L, fastening N, and bottom I J, as and for the purpose specified.

137,629.—*Wheel for Vehicles.*—ORLANDO D SPALDING, Mankato, Minn. Application filed October 26, 1872.

Claim.—The arrangement, on each side of hub and within shells D, of a series of loose bearing-rollers, F, without journals, in contact with each other, and moving freely with the axle, as and for the purpose set forth.

137,630.—*Machine for Turning and Cutting Wire.*—CHRISTOPHER M. SPENCER, Hartford, Conn. Application filed February 14, 1873.

The wire is fed from a coil into a stationary tube, which has a sleeve sliding over it that closes the split end of the tube onto the wire. A hub, supported in bearings, revolves about the tube and carries a transverse slide with a tool which is fed to and from the wire by a lever and slide-bar running along the hub.

Claim.—1. The combination of hollow stationary chuck D, reciprocating sleeve M, rotating hub or spindle H, provided with carriage B, with slide O, toggles K P, and the tool T.

2. The combination of hollow stationary chuck D, reciprocating sleeve M, and rotating hub or spindle H, provided with carriage B, slide O, and tool T, with mechanism for reciprocating the said tool, substantially as shown and described.

137,631.—*Machine for Turning Heads of Bobbins.*—CHRISTOPHER M. SPENCER, Hartford, Conn. Application filed January 7, 1873.

The rest which slides along the bed has two uprights—one end of the work revolves in one, the other carries a drill or facing-tool, which is moved to and from the work by a cam acting on the rest. A transverse slide in the rest, which carries two tools, one for shaping, the other for cutting, of the work, is moved forward by a cam and back by a spring.

Claim.—1. In combination with the carriage B capable of endwise movement on the bed H, and provided with the rest X and drill P, the transverse-sliding table Q with means for reciprocating the same, and provided with its tools.

2. In combination with subject-matter of first claim, the cams L and T, stop *g*, and shaft D.

3. The combination of slide B provided with the drill P, and transverse slide Q provided with the tools H and K, cams L and T, stop *g*, shaft D, feed-nut *w*, and feed-shaft *b*.

137,632.—*Automatic Draft-Regulator for Stoves and Furnaces.*—ALFRED W. SPRAGUE, Quincy, and JAMES M. OSGOOD, Somerville, Mass.; said OSGOOD assigns to said SPRAGUE. Application filed August 16, 1872.

Claim.—1. A wheel or portion of a wheel chambered in such a manner as to contain a column or mass of mercury or other fluid, or any substance acting as a fluid, and so connected with the damper or valve of a heating apparatus that the expansive force of air or gas, displacing the fluid, may cause the said wheel to turn, thus opening or closing, as the case may be, the said damper or valve.

2. The combination and arrangement of the space *f*, partition *g*, passage A, and hollow axle *e*, substantially as and for the purposes hereinbefore specified.

3. The arrangement of the hollow axle *e* with the arm *l* and weight *m*, as combined with the wheel *c* and its internal arrangement, substantially as and for the purpose above set forth.

137,633.—*Wagon-Brake.*—WILLIAM B. STANLEY, Groveton, N. H. Application filed December 9, 1872.

A novel arrangement of rods and chains to connect the hand-lever with the brake-levers.

Claim.—The rods A A, provided with screw and nut at one end and chain at the other, combined with levers G G and extensible reach, as and for the purpose described.

127,634.—*Fruit-Drier.*—JOHN STEVENSON, Sparta, Ill. Application filed October 19, 1872.

Two separate and communicating chambers, one having a series of superposed open-frame supports for trays, and steam-pipes arranged beneath the open frames, the other chamber having a steam-coil for heating. The trays are moved by traversing cords and hooks.

Claim.—The fruit-drier herein described, consisting of the air-heating chamber A, drying-chamber B, chimney C, steam-pipes F G, superposed open frames D, trays E, and traversing cords and hooks *d*, all constructed and arranged to operate as set forth.

137,635.—*Manufacture of Acid Phosphates.*—HENRI STORCK and FARNHAM MAXWELL LYTE, Asnières, near Paris, France. Application filed February 27, 1873.

In the manufacture of acid phosphates, the residuum (consisting of phosphates of iron and alumina together with some phosphate of calcium) is treated with carbonate of soda to convert the iron, &c., into oxides, and then with caustic soda forming soluble aluminate of soda, the iron remaining insoluble; secondly, the residuum is treated with hydrochloric acid and a salt of lime or barium, concentrated to 44° Baumé, when the acid phosphate crystallizes out.

Claim.—1. The method of treating the residues hereinbefore described, as and for the purpose set forth.

2. The method of producing soluble acid phosphates by attacking earthy phosphates, especially phosphate of calcium, with properly-diluted phosphoric acid, subsequently precipitating the earthy matter by means of alkaline sulphates, (as, for instance, by sulphate of ammonium,) and the extraction of the sulphuric acid contained in the residual liquor by treatment with the phosphate of barium, lead, or strontium, or the carbonates or other suitable salts of those bases, substantially as and for the purposes hereinbefore specified.

137,636.—*Recovering Fatty and Coloring Matter from Waste Wash-Liquors.*—JOHN THOM, Chorley, and JOHN STENHOUSE, Pentonville, London, Great Britain. Application filed February 11, 1873.

The waste soap-liquor is treated with a solution of muriate of lime, and milk of lime added until free lime remains in the mixture. After mixing thoroughly, and allowing to settle, the supernatant liquor is drawn off. The precipitate, containing the fatty and coloring matter from the waste soap-liquor, is then treated with an acid (muriatic) sufficient to decompose the fatty compounds, but not the coloring-matter. The whole is then filtered through flannel, the fatty and other matter left on the filter are heated to melt and agglutinate the colored fatty substance; then cooled and pressed in bags to remove any watery solutions. The substance removed from the bag may be further heated to remove any remaining water, (not exceeding 212° Fahrenheit, so as to decompose the coloring-matter.) The color, (if too much acid has been added in the previous treatment will be supplied with a base,) combined with the fatty matter, (the coloring-matter being insoluble, or nearly so,) may be treated by hydrocarbons to extract the fatty matter, or the same may be separated by heat and pressure.

Claim.—The within-described process of recovering both the coloring and fatty matter from waste wash-liquor—that is to say, first treating the matter so as to decompose the fatty parts, forming a combination of the coloring-matter with a suitable base, and then separating the fat from the coloring-matter by pressure or by the use of a solvent, as set forth.

137,637.—*Molder's Draw-Spike.*—ROBERT A. THOMPSON, Beaver Falls, Pa. Application filed August 31, 1872.

An ordinary molder's draw-spike with a ring-head with one part of the ring detached.

Claim.—A molder's draw-spike having a spring-hammer head, substantially as described, and for the purpose specified.

137,638.—*Press for Printing Fabrics.*—HENRY H. TOWNSEND, Milton Mills, N. H. Application filed January 17, 1873.

The cover is wound upon a roller attached to the side of the press, said roller being provided with a pawl and ratchet. The cloth is passed under the platen and up against the card-roller which holds the cloth while being stretched by turning the first roller backward.

Claim.—The table-cover-printing press provided with the toothed roller E, the winding shaft or roller B, their ratchet-wheels *h n* and retaining-pawls *k p*, and the guide-roller C, or such and the roller D, all arranged substantially as and to operate as and for the purpose specified.

137,639.—*Compositor's Stand.*—FRANCIS VALLEE, Philadelphia, Pa. Application filed February 20, 1872.

The parts made of cast-iron are so constructed as to be readily removed and packed for transportation.

Claim.—1. A stand, consisting of the legs A A, B B, bars D D', G G, and K K, all constructed and arranged substantially as described.

2. The legs composed of T-shaped iron, in combination with runners K of L-shaped iron.

137,640.—*Sewing-Machine.*—GEORGE C. WALTERS, Philadelphia, Pa. Application filed December 12, 1872.

The looper carries a thread which is laid in the hook of the needle, and the stitch formed, is that known as the chain. The feeding-plates, pivoted as described, move together and alternately grasp the material to carry it forward and release it preparatory to moving back over it for a new stitch.

Claim.—1. The feed for sewing-machines consisting of two plates oscillating from a point or points above the work, and between which the work may be clamped and carried independently of the needle, as set forth.

2. The combination of the pivoted bar *p* carrying the clamping-plate F with a sliding rod, J, and guided cross-head r^3 operated by a cam on the driving-shaft.

3. The combination of the bars *p* and *p'* carrying the clamping-plates with the jaws or collar *s*, rod L, and operating arm or lever K.

4. The combination of a recessed work-plate and the clamping-plates F F', oscillating from a point or points above the work-plates, as set forth.

5. The combination of the rotating crank A', vibrating arm *j*, and looper D, operating as described.

137,641.—*Press.*—WARREN E. WARNER, Syracuse, N. Y. Application filed March 1, 1873.

A screw and lever, and nut for actuating it, moving in a stationary guide formed in one piece with the cross-head.

Claim.—1. The combination of the stationary guide with the screw, and the lever and nut for actuating it, and with the cross-head, substantially as specified.

2. The arrangement of the sockets with nuts M and the round heads N of the bars F, whereby the latter roll together and transmit the force directly from one to the other in the last part of the pressing operation, substantially as specified.

137,642.—*Car-Coupling.*—JOHN P. WHIPPLE, Whitewater, Wis. Application filed February 15, 1873.

The pins prevent accidental uncoupling.

Claim.—The combination of the pins J and their locking-pins with the bumpers A and hook B, substantially as herein shown and described.

137,643.—*Musical Instrument.*—JUSTIN WHITNEY and HORACE W. WHITNEY, Boston, Mass. Application filed February 1, 1873.

The double-tongued vibrating hooks are made of wire; they are also supported by a stay attached to the central wire, and may be weighted at the intersection of the supporting-bar. The bridge is constructed in parts to break up its tone C.

Claim.—1. The metal plate or bar A' B' for supporting the hooks, arranged in sections, adapted for one or more hooks, substantially as specified.

2. The double hook and supporting-bar, made of wire and connected together, substantially as and for the purpose described.

3. The middle support G, combined with the middle leg of the double hook and the sounding-board, substantially as specified.

4. The combination of a weight or load, H, with the bow-end of a double hook, substantially as specified.

5. The sounding-board, provided with slot I at the base end, as and for the purpose set forth.

137,644.—*Saw-Sharpening Device.*—CHARLES WILLARD, Bartonsville, Vt. Application filed February 15, 1873.

The emery-block is adjusted to the teeth by the screw. The saw is revolved at full speed, and the crank turned, which moves the emery-block to and fro across the teeth.

Claim.—1. A saw-sharpening device in which an emery-block runs back and forth during the operation, and the saw continually revolving, substantially as herein set forth.

2. The combination of the screw D, nut *b* with flange *d*, and the groove in the under side of the emery-block G for setting said block, substantially as herein set forth.

3. The combination, with the stationary bed-plate A and sliding table C, of the arm or pitman H, wrist-pin *e*, disk *f*, shaft A, and crank J, substantially as and for the purposes herein set forth.

4. The combination of the bed-plate A with arm B and ways *a*, the sliding table C, screw D, nut *b* with flange *d*, emery-block G, crank J, disk *f*, and arm H, all constructed and arranged substantially as and for the purposes herein set forth.

137,645.—*Bee-Hive.*—ROBERT H. WOODSIDE, Coultersville, Ill. Application filed August 30, 1872.

Fixed pins prevent the complete closing of the hinged top of the hive, that the bees may not be crushed; and the moth-entrance is under the inclined woven-wire bee-entrance.

Claim.—1. The combination of the hinged cap D having the flange c^2 with the stud c^3, as described.

2. The combination of the netting entrance-way c^1, the moth-entrance *e* beneath it, and the moth-trap E, as described.

137,646.—*Nut-Lock.*—JOHN MCCALMONT ALLISON, Salina, Pa. Application filed February 15, 1873.

In the face of the outer nut a recess or cavity is formed of sufficient width and depth to receive the entire body of the inner or main nut, thus allowing both nuts to be screwed down to the same base.

Claim.—A nut with a cavity or recess in its face corresponding with the width and depth of a contrarily-threaded nut, so as to be screwed over and down to the same base with the inner nut, substantially as shown and described.

137,647.—*Shutter-Fastening.*—ELLEN D. ANDERSON, Frederick, Md. Application filed November 20, 1872.

A telescopic lock-bolt is formed of a round sliding bar, a sliding tube, and an auxiliary tube, the first two, having each an eye, through which a rod or fastening-pin passes, while the last slides within the main tube, all the parts being so constructed that they form a telescopic joint. There are also two notched brackets, one attached to the inside of each shutter, each consisting of a horizontal plate, a perpendicular notched flange, and a rod, made fast to the shutter at its upper end; the lock-bolt at its shortest length being dropped in an end notch of each bracket securely locks the shutters closed; in like manner, dropped in the other end notches, at its extreme length, it locks the shutters wide open, or at intermediate length, dropped in the proper notches, serves to bow the shutters in desired position.

Claim.—A shutter-fastener, consisting of the two notched brackets D D, and telescopic lock-bolt E, constructed and applicable substantially as described.

137,648.—*Handle of Pocket-Knives.*—JOHN W. AYERS, West Meriden, Conn. Application filed March 12, 1873.

The outer scale of the handle is formed with recesses of dovetail-form, and the inner one has corresponding perforations countersunk upon the inside so that a molten metal poured through the perforations of the inner scale will flow into the recesses in the outer one, and when cool firmly unite the two parts together. The bolster is also united to the scale in the process of casting, a portion of the metal running through a perforation in the inner scale.

Claim.—1. The method herein described of securing the outer or covering scale to cutlery-handles—that is, constructing the covering-scale with a groove or recess of substantially dovetail-form upon the inside, and the metal scale with a corresponding perforation, one or more, so that molten metal poured in to fill the said recess and perforation will unite the covering and metal scale, as set forth.

2. A bolster for the blades of pocket-cutlery, formed upon the scale, the scale perforated beneath the bolster, so that the metal which forms the bolster, flowing through the said perforations, will unite the bolster to the handle.

3. The method herein described of uniting the bolster and covering-scale—that is to say, by forming a recess, *b*, at the bolster end of the scale, so that the metal of the bolster, in the process of casting, flows into the said recess, and secures the scale at the same time of forming the bolster.

137,649.—*Cultivator.*—LORENZO BALDWIN, Stone Mills, N. Y. Application filed November 23, 1872.

A frame provided at the sides with bolts made to receive slotted arms of interchangeable harrow and cultivator, and to render them adjustable; to the forward part of the frame is secured a hoe-blade, fastened to the frame by rigid arms; in the rear of the hoe-blade is a hole into which a hook on the harrow or cultivator is inserted; in front of the hoe-blade is secured a caster-wheel for adjusting the depth of the hoe-blade.

Claim.—The combination of the frame and its blade C and adjustable wheel E, when fitted for the interchangeable plow and harrow, substantially as specified.

137,650.—*Refrigerator and Water-Cooler Combined.*—JAMES S. BATEMAN, Baltimore, Md. Application filed March 5, 1873.

A chest is divided into separate compartments by a conducting partition. One compartment contains a water-cooler supporting a body of ice, which, in melting, passes through a perforated plate into the cooler. Secured in the upper portion of the other compartment is an inclined plate holding a cake of ice. The water from the ice passes through a lateral opening in the partition, and then down the sides of the partition into the water-cooler.

Claim.—The chest A, divided by the conducting-partition B into the chambers C and C', having, in combination the inclined plate *c*, water-cooler D, perforated plate *b*, and tray E, substantially as and for the purpose herein set forth and described.

137,651.—*Steam-Injector.*—SAMUEL BENSON and JAMES BENSON, Centralia, Ill. Application filed February 21, 1873.

The steam and water nozzles are adjustable in such manner that the amount of steam or water admitted is regulated according to the necessities of each case.

Claim.—1. In an injector or steam-pump of the class herein referred to, the combination of an adjustable water-nozzle and one or more adjustable steam-nozzles, for the purposes set forth.

2. The chamber H, having pipes A, K, and C, and nozzle-holder I, in combination with the stationary steam-nozzle E, one or more adjustable steam-nozzles, D, and an adjustable water-nozzle, G, all substantially as and for the purposes herein set forth.

137,652.—*Governor for Steam-Engines, &c.*—JAMES M. BOTTUM, New York, N. Y. Application filed January 17, 1873.

A cylinder with one or more wings attached to its interior, between which freely pass the wings on a rotating shaft, is filled with oil or other liquid, and the shaft is rotated by connection to any part of the engine. Its wings pass through the oil without moving the cylinder, unless the motion is excessive, when the centrifugal motion imparted to the oil acts on the wings of the cylinder which connects with the throttle-valve.

Claim.—The winged shaft I J and winged cylinder C H combined and arranged to operate substantially as herein described, a rotary movement being communicated from one to the other through the medium of liquid contained in said cylinder.

137,653.—*Filter.*—JOSEPH R. BROWN and WILLIAM A. FOSKETT, New Haven, Conn. Application filed March 12, 1873.

A cylindrical chamber having a perforated cylinder arranged therein of less diameter than the main cylinder, and so as to leave a space between the two and the exterior of the inner cylinder, covered by a coat of felt or similar material, through which the water will pass under pressure, and the main cylinder provided with an inlet to admit the water into the space between the two cylinders, and with an outlet from above or within the internal cylinder, so that the water passing through the filtering material will flow freely to the outlet.

Claim.—The herein-described filter, consisting of the cylinder A, the perforated cylinder H, supported within the cylinder A and so as to leave a space between the two, which space is filled, or partially so, with felt or other filtering material, and with a chamber, C, above the cylinder H, a main inlet, D, and outlet F, a cleansing-inlet, S, an outlet, U, provided with cocks to cut off or open the flow, substantially as set forth.

137,654.—*Balanced Valve.*—NELSON H. BUNDY, New York, assignor to himself and ALEXANDER F. WEAVER, Brooklyn, N. Y. Application filed October 16, 1872.

Combines with a slide-valve, sealing-plate, and packing-ring, with a spring with four arms having forked ends that bear upon the packing-rings on the back of the sealing-plate. A set-screw bearing upon the center of the springs adjusts the tension.

Claim.—The combination of the slide-valve B, the sealing-plate E, the packing-ring G, and the spring I having forked ends, and being arranged in relation with said ring G, and a follower, *f*, substantially as and for the purposes herein set forth.

137,655.—*Gas-Works Hydraulic Main.*—PETER T. BURTIS, Chicago, Ill. Application filed November 18, 1872.

Claim.—1. The combination of the separate hydraulic mains A with the gas-pipe C and tar-pipe E, in gas-generators where more than one bench of retorts is used, substantially as specified.

2. The combination of the cut-off valve D and pipe B with the main A and gas-pipe C, so that either bench or main can be thrown out of use without interrupting or interfering with the gas-pipe or the other benches, substantially as described.

3. The expansion-joint F, in combination with the gas or tar pipe for equalizing the expansion or contraction of such pipes as different sections are brought into or thrown out of use, substantially as set forth.

4. The siphon S, in combination with the main A and tar-pipe E, substantially as and for the purposes specified.

137,656.—*Picture-Mounting Machine.*—EDMUND B. CHRISTMAS, Mansfield, Ohio. Application filed January 15, 1873.

The invention provides for mounting photographic pictures automatically, and consists chiefly in the special construction of the parts indicated in the several clauses of claim.

Claim.—1. The tray P provided with the card-receiver R, presser-roller T and gummer-roller V, substantially as shown and described.

2. The guides C provided with the hinged inclines D, in combination with the presser-roller T, substantially as shown and described.

3. The recess *d*, having one end vertical and the other inclined, in combination with the guides C provided with the inclines D, substantially as shown and described.

4. The box W provided with the perforated rack X, presser-foot *b'*, standard *c'*, and gum-roller V, substantially as shown and described.

5. The toothed stripe O provided with the arms *w*, connected by an elastic cord or spring, substantially as shown and described.

6. The platform H, in combination with the stripe O, substantially as shown and described.

7. The platform H, in combination with the sill *k* and stripe O, substantially as shown and described.

8. The platform H, in combination with the rack L, substantially as shown and described.

9. The combination of the card-receiver R and rack L, substantially as shown and described.

10. The combination of the tray P with the rack L, substantially as shown and described.

11. The guides C provided with the inclines D, in combination with the recess *d* and presser-roller T, substantially as shown and described.

12. The guides C provided with the inclines D, in combination with the rack L and presser-roller T, substantially as shown and described.

13. The frame I provided with the screw-bolts I and springs *m*, stripe O, bumper-springs *x*, substantially as shown and described.

14. The frame I, in combination with the rack L and tray P, substantially as shown and described.

15. The frame I, in combination with the rack L, tray P, and gummer-roller V, substantially as shown and described.

137,657.—*Vehicle.*—GEORGE COFFER and WILLIAM M. BERNARD, Dixon, Cal. Application filed August 23, 1872.

Within a metallic drum, having flanges upon the sides of its inner periphery, is arranged a half-cylinder having flanges which move within the flanges of the drum. To this inner half-cylinder is attached the tongue. Power being applied, the tendency is to continually keep the weight of the half-cylinder acting as a moving force.

Claim.—The drum A with its flanges B C, in combination with the bed D, constructed with the flanges *f f* and tongue G, all constructed, arranged, and operated as set forth.

137,658.—*Folding Table.*—STEPHEN V. CORNELL, New Haven, Conn. Application filed February 6, 1873.

A folding table hinged at its center to fold and supported by a center leg with an elastic brace, having an arm or brace resting in a notch at each end and on a spiral spring which forces into its position for the support of the legs at the end of the table.

Claim.—In a folding table, the combination of the divided top A and B hinged together at the center, the legs C C hinged at the extreme ends, the braces D, one end of which is hinged to the table, the other resting in a notch, *f*, in the leg, and a spring between the said brace and table-top, the central leg F hinged to one part of the top, the flexible brace G attached to the leg, and the other part of the top with a locking device, H L, all as specified.

137,659.—*Construction of Breakwaters.*—DAVID CUNNINGHAM, Dundee, Scotland. Application filed March 26, 1873.

Claim.—The employment, in connection with concrete or other blocks for building breakwaters, sea-walls, and other subaqueous or marine works, when the same are constructed with hollow spaces formed therein, substantially as described, of air-tight covers or doors for closing said spaces in order to retain the air therein during the transportation or moving of said blocks to their place of deposit, under the arrangements herein shown and set forth, or any mere modification thereof.

137,660.—*Interfering Attachment to Horseshoes.*—HAMBILTON S. DAVIS, Camden, N. J. Application filed March 14, 1873.

The guard is fastened to the hoof by the same nails that secure the shoe.

Claim.—The elastic pad A having inner and outer flanges *a b*, and adapted to the shoe, as set forth.

137,661.—*Washing-Machine.*—PHYLEMAN A. DOWNER, Baldwin, Iowa. Application filed November 2, 1872.

On a common wash-tub is arranged a transverse bar, which is held by bolts and screws. Attached to the under side of the bar are two rectangular brackets with depressions at the bottom for the journals of a large roller. One journal is extended through a slot in the tub and formed into a crank. Two flat springs are on the transverse bar; at the end of each one depends a rod, and to these are attached links which bear the journals of two smaller and upper rollers.

Claim.—1. In a washing-machine, having the yoked rollers F connected to the vertical rods *g*, the flat springs H arranged on top of the transverse bar B and acting against said rods, substantially as specified.

2. The rectangular frame-like brackets D secured to the under side of the bar B, and constructed with the depressions *b*, in combination with the washing-cylinder E, substantially as specified.

137,662.—*Governor.*—JAMES B. DUFF, New York, N. Y. Application filed November 8, 1872.

Two rotary or centrifugal pistons are arranged on a horizontal shaft in a case with a partition between them, to operate the piston of a governor at right angles to said pistons. The object of the partition is to prevent the currents of liquid created by the rotary pistons from counteracting each other, and thereby the regularity and durability of the governor are increased.

Claim.—1. The combination of two or more rotary, centrifugal, or turbinate pump-pistons with a governor-piston or its equivalent, substantially as described.

2. In combination with a governor-piston or its equivalent, two or more rotary, centrifugal, or turbinate pistons mounted on the same shaft or on separate shafts, with a stationary or movable partition intervening between them, substantially as and for the purpose set forth.

3. The arrangement of one or more rotary, centrifugal, or turbinate pump-pistons working in conjunction with a governor-piston or its equivalent, and mounted on a shaft extending through one of the heads of the pump-cylinder, and carrying a pulley for imparting motion to the pump piston or pistons, substantially as described.

137,663.—*Wash-Boiler.*—CHARLES H. DUNBRACK, Jacksonville, Ill. Application filed March 7, 1873.

A wash-boiler with an interlining or partition to control the steam and water, with a rack suspended from its upper edge, on which the clothing to be washed is hung.

Claim.—The combination of the boiler A and casing B with the rack F, arranged substantially as and for the purpose specified.

137,664.—*Hand Printing-Press.*—WALTER DUNKERLY and WILLIAM H. DUNKERLY, Jr., Woonsocket, R. I. Application filed December 14, 1872.

The platen is hung to the end of a bent lever, from which a spring-rod also extends to carry the ink-roller from the reservoir over the distributing-table and type. Arms connect lever H to a lever, E, from an arm of which a rod connects it to the prime lever.

Claim.—1. The combination, with the platen D having the pivoted arms D', of the lever E having the curved side arms E', connecting-rod F, connecting-arms H, and elbow-lever G, constructed and arranged as specified.

2. The convex ink-plate B having at its upper end the ink-saucer *k*, and attached to the frame A, substantially as specified.

3. The elastic adjustable rod H' and flanged brackets *h* with inking-roller A', in combination with the convex ink-plate B and lever E, substantially as and for the purpose specified.

137,665.—*Shuttle for Sewing-Machines.*—CHARLES W. ELLIS, Bridgeport, Conn. Application filed January 20, 1873.

When the latch is elevated a portion of its lower end serves as a brake and holds the bobbin from turning; then the thread is laid about the latch, as shown, is prevented from falling too low by the spur, is then laid in the hook, then drawn under the tension-plate and into the slotted eye in the case, and then the latch is closed into the shuttle.

Claim.—1. In a sewing-machine shuttle, the swinging latch provided with the stop or brake *e*, in combination with the bobbin.

2. The swinging clamp or latch *e* provided with the hook e^2 spur b^1, and notch *f'*, and arranged with reference to the wall of the shuttle having the slotted eye, substantially as described.

137,666.—*Turbine Water-Wheel.*—WILLIAM H. ELMER, Berlin, Wis. Application filed January 13, 1873.

Gates are made to slide around the wheel, and are held in place and operated by two annular rings, one at the top and the other at the bottom. The rings have notches in their inner circumference at equal distances apart, in which lugs are placed. These gates hang loose in the rings, so that the water will hold them tight against the wheel, and in case an obstruction gets into one of the gates it will open out away from the wheel and allow the others to shut.

Claim.—1. The gates B B pivoted or hinged between and sliding with the rings C C, and working independent of each other upon their pivots, as and for the purpose set forth.

2. The buckets D D, constructed as described, and laid out according to the forms, in the manner and for the purposes herein set forth.

137,667.—*Elevated Way.*—HENRY W. FARLEY, Oswego, Ill. Application filed March 8, 1873.

The cable is supported by transverse and longitudinal plates firmly attached to it. Motion is imparted from the driving-wheel, between which and a set of under rollers the plates are grasped. The axes of the bearing rollers are inclined to furnish requisite space for articles in transit.

Claim.—1. In combination with the cable A the plates B and C, when relatively arranged, substantially as and for the purpose specified.

2. In combination with the carrier as a whole the supporting-rollers D and driving-wheels G, when relatively arranged substantially as and for the purpose shown.

137,668.—*Stirrup.*—JOHN S. FEE, Rockford, Ind. Application filed July 26, 1872.

Claim.—The wood stirrup described, consisting of the stirrup-wood B, rivet D', wooden round E, and metallic caps A binding the ends of the stirrup-wood, and provided with apertures *d'* to receive the ends of the round, substantially as specified.

137,669.—*Machine for Cutting Coal.*—SAMUEL FIRTH, Leeds, England. Application filed June 5, 1872.

The machine, mounted on wheels and moving on rails, has double-headed picks and cutters connected with and operated by the engine. One of the points of the pick cuts from the face of the stratum, and the other increases the depth of the groove.

Claim.—1. The frame *a* made of wrought-iron in the form shown, or substantially in the same form, and forged in one piece, as herein set forth.

2. The double tappet *d* operating in combination with the piston-rod and distributing-valve, substantially as specified, for the purpose set forth.

3. The double tappet *d*, stop *k*, and forked piece *j*, in combination with the distributing-valve, as herein specified, for the purpose set forth.

4. The sockets *n* fitted to slide on the shafts *o*, and in combination with the forks *p*, shaft *q*, lever q^2, link *r*, nut r^1, shaft r^2, and handle r^4, for adjusting and holding the said picks, as herein set forth.

5. In a machine for cutting coal or other minerals, the aforesaid wrought-iron frame *a* mounted on wheels *b* and carrying the above-described operating and adjusting contrivances arranged upon the said frame in combination together, and with the picks or cutting implement shown, substantially as herein set forth.

6. The double-pointed picks m^1 m^2, constructed as described, and arranged relatively to each other, as and for the purpose set forth.

137,670.—*Lamp-Chimney Cleaner.*—ROBERT G. FORSYTH, Oakland, Ill. Application filed February 15, 1873.

A lamp-chimney cleaner, constructed by attaching wires to the end of the handle with a turn at their upper ends, forming springs and reversing the wires, (to point down,) and bent to the shape of the chimney to hold the covering or cloth to be used in the cleaning.

Claim.—The arrangement of the handle A, the springs B, the coils *b*, and the plate *a*, substantially as specified.

137,671.—*Currier's Tool.*—CHARLES A. GARDNER and JOHN A. ENOS, Peabody, Mass. Application filed September 16, 1872.

The stock is provided with a tongued and grooved inclined plane, one part of the stock sliding into the other, holding the blades firmly and being adjusted and held in position by a nut and screw at the end of the stock.

Claim.—A currier's knife in which the parts of the stock are fitted together with a tongued and grooved joint formed as an inclined plane, which is tightened and held in position by a nut and screw at the end of the stock.

137,672.—*Beam and Rollers for Looms.*—GEORGE L. GARSED, Wilmington, Del. Application filed March 12, 1873.

To avoid the effects of the shrinking and warping of the wooden portion of the beam, the heads are attached rigidly to the shaft, and the roll is constructed of several longitudinal sections or strips of wood or in one cylindrical piece, held in position by a

radial shoulder or dog in the recess of each head, into which the ends of the stripe or of the cylinder are inserted. By this means the roll is not held by direct contact with the shaft.

Claim.—The shaft and its heads secured thereto, provided with recesses and with dogs to retain in position the beam or roll formed from one or more pieces, substantially as described.

137,672.—*Spring-Mattress.*—HENRY A. GASTON, San José, Cal. Application filed November 5, 1872.

An upper and lower frame are supported by double-coiled springs, the latter having a clevis termination which is clasped to the under side of the slat. The upper frame is prevented from vibratory motion by guide-rods at each corner.

Claim.—The combination of the upper and lower frames, the double-coiled springs with a clevis-termination, and the guide-rods *c*, constructed as described, and for the purposes set forth.

137,674.—*Lathe-Chuck.*—SAMUEL C. GOODSELL, Westville, Conn. Application filed January 2, 1873.

Claim.—1. The combination, with the chuck-head and the adjusting-nut, of the tail-screw screwing into the adjusting-nut, and the griping-jaws with inclined surfaces working against correspondingly-inclined surfaces in the chuck-head, and mounted on a pin or pins on the tail-screw, under the arrangement and for operation substantially as set forth.

2. In combination with the chuck-head having outwardly-inclined faces, as described, the tail-screw, removable from the front of the chuck-head, as described, and the griping-jaws mounted on said tail-screw, substantially as set forth, so as to be removable from the chuck-head bodily with the tail-screw, and at the same time to be readily adjusted to or detached from said tail-screw, for the purposes stated.

3. The combination, with the chuck-head, of the adjusting-nut, screw-threaded internally to receive the tail-screw, and provided with a shoulder or abutment, against which the chuck-head rests, the two being connected and held together substantially as herein shown and set forth.

137,675.—*Spring-Cot.*—THOMAS JEFFERSON GRIFFIN, Brooklyn, N. Y. Application filed February 21, 1873.

Double lever-springs sustain the slats. The legs are pivoted and held in place by pivoted braces. A wire frame, pivoted to the side rails, holds in position the head-board having grooved ends.

Claim.—1. The springs C C, constructed as herein described, and used in combination with the cross-rods B B and the slats D D, as and for the purpose set forth.

2. The combination of the rails A A, cross-rods B B, slats D D, springs C C, pivoted legs E E, and pivoted braces G G, all constructed substantially as described.

3. The combination of the rails A A, the pivoted frame I of spring metal, and the head-board H provided with a groove at each end, all as shown and described.

137,676.—*Recording Apparatus for Vehicles.*—ALFRED GUEBHARD and ALFRED PIERRE TRONCHON, Paris, France. Application filed July 9, 1872.

A drum or fillet, driven by clock-work, receives a record from a pencil so connected with the body of the vehicle as to give a strong and irregular line when the vehicle is moving, and a light and smooth line when it is at rest. By means of a screw-movement the pencil is carried in oscillating lines to and fro across the drum or fillet.

Claim.—The mode of tracing screw-lines on the paper band by means of the grooves *f f* on the cylinder L, operated through mechanism from the axle of the cylinder G, as shown and described.

137,677.—*Bed-Lounge.*—GEORGE HAETZELL, Philadelphia, Pa. Application filed March 1, 1873.

To the front part of the head-rest is pivoted a swinging arm that forms the head-rest to the hinged part of the sofa when unfolded. To the sofa-back is hinged a cushion or pillow that covers the head-rest of the main part of the sofa.

Claim.—In a bed-lounge, the combination, substantially as described, of a fixed arm, A, a supplementary arm, B, pivoted to the same, and a hinged cushion or pillow, D.

137,678.—*Skate Heel-Plate.*—GEORGE HAVELL, Newark, N. J., assignor to STEVENS, ROBERTS & HAVELL, same place. Application filed February 5, 1873.

The heel-plate has a transverse slot into which the ears of the base of the button fit, and are riveted underneath, outside of the runner-knees.

Claim.—The combination of the lugs *b* to which the button C is attached, with the plate A, said lugs resting in a slot or recess in the plate, and secured in same, as and for the purpose set forth.

137,679.—*Extensible Ladder.*—JOHN C. HEARNE and DUSTON ADAMS, Pleasant Hill, Mo. Application filed March 1, 1873.

A folding extensible ladder. The ropes C limit the extensibility, and rope E is used for raising and lowering.

Claim.—The combination of the two lazy-tongs frames A, cross-bars B, ropes C, rope E, and suspending-hooks or other devices D, the rope E being attached to the lower cross-bar, passing up over the top one, or through an eye, and down again, all substantially as specified.

137,680.—*Apparatus for Cleaning Privies and Sinks.*—ANGIER M. HOUSE, Washington, D. C. Application filed April 1, 1873.

Four or more valves are arranged in a pipe, and to this pipe between the two center valves is attached a force and suction pump, that the elevation of the piston shall cause two of the valves to open, and the lowering of the same shall cause the other two valves to open and close the first.

Claim.—The pipe C provided with valves C^1 C^1 and C^2 C^2, arranged as described, in combination with the pump A, substantially as and for the purpose specified.

137,681.—*Jump-Seat for Wagons.*—CHARLES H. HOWELL, Middletown, Del., assignor of one-half his right to HENRY D. HOWELL, same place. Application filed October 31, 1872.

Claim.—The combination of the box A, seat B with slots *a*, bars C with ears *b d*, bars E, and legs D G, all constructed and arranged substantially as and for the purposes herein set forth.

137,682.—*Sash-Holder.*—ROBERT B. HUGUNIN, New York, N. Y. Application filed April 1, 1873.

As an improvement on former patents, two self-adjusting friction-surfaces on an independent piece, one end of which works in a socket on the outside lever, are combined with a rubber roller and a surface-plate of peculiar construction. Projections are formed, both on the plate and the lever, to prevent the latter from opening out too far, and the lever has a lapping-end fitting on a corresponding projection of the plate. There is also a flat steel spring pressed under the hinge-pin and over a projection on the plate, without other fastening, the whole forming a sash-holder allowing the very freest working of the rubber roller, without liability to bind unduly in any direction.

Claim.—1. The self-adjusting friction-surfaces C and C', being on an independent piece, the upper end working in a socket in lever B, in combination with a roller, lever, and spring, all arranged substantially as and for the purposes specified.

2. The projections I and I' on plate A, and the projections I'' and I''' and M and M' on lever B, combined as and for the purposes specified.

3. The lapping-end K on lever B, in combination with projection L on plate A, for the purposes specified.

4. The combination of spring G, pin F, and holding-projection H on plate A, as and for the purposes specified.

137,683.—*Barrel-Cover.*—GEORGE HUNT, Wawayanda, N. J. Application filed March 14, 1873.

The cover has a rim with a strengthening-cleat on the under side and a handle on the upper side.

Claim.—As a new article of manufacture, the cover A provided with the rim B, the central cleat C secured to its lower side, and the knob D placed upon the upper side and center of said cover and connected with said cleat by means of a screw or rivet, substantially as and for the purpose specified.

137,684.—*Horse-Power.*—HALL M. IRWIN, Davidson College, N. C. Application filed December 27, 1872.

Slats or foot-blocks having a double-diamond shape, so that the upper section of each block assists in supporting the adjoining block when they are traveling between the rollers.

Claim.—The frame A, rollers B B, band C, and slats D D provided with double-diamond-shaped blocks D' D', when the whole is constructed and arranged to form a horse-power, substantially as described.

137,685.—*Reversible Knob-Latch.*—CHARLES S. JENNINGS, Meriden, Conn., assignor to THE PARKER & WHIPPLE COMPANY, same place. Application filed March 21, 1873.

The hub or follower is constructed with a hook upon its rear side, which passes over a segmental flange on a pivoted lever or shoe. The said lever or shoe is provided with a spring, which serves to draw the follower and latch-bolt back into position when the latter is drawn out for the purpose of reversal.

Claim.—The follower A, constructed with the hook *a*, combined with the shoe F, constructed with the segmental flange *f*, and arranged and operating together substantially as specified.

137,686.—*Ruffling or Plaiting Attachment for Sewing-Machines.* ALLEN JOHNSTON, Ottumwa, Iowa. Application filed March 22, 1873.

The number of teeth on the ratchet-wheel equals the number of stitches made in the fabric during one rotation of the wheel, and during one rotation of the wheel but one plait or gather is laid. The depth of this plait may be regulated by means of stops, between which slides a block attached to the pitman.

Claim.—1. In a ruffling or plaiting attachment for sewing-machines, the combination, with a vibrating arm, deriving its movement from the needle arm or bar of the sewing-machine, and ratchet-wheel operated by said arm, substantially as set forth, of a crank pin or arm fixed to said ratchet, and a pitman jointed at one end to said crank pin or arm, and connected at the other end with the reciprocating gathering or plaiting blade, substantially in the manner and for the purposes shown and described.

2. The combination of the pitman deriving its movement from the ratchet-wheel and its crank, as described, with a block or slide arranged and held in or on the reciprocating gatherer proper and between two stops or abutments, the rear one of which is adjustable toward and away from the other, as and for the purposes set forth.

137,687.—*Automatic Fan.*—FREDERICK W. JONES, Orangeburg, S. C. Application filed February 17, 1873.

To the crank-handle of the motor fan-connections, operating reciprocally in opposite directions, are attached.

Claim.—The arrangement of the crank *f*, pitmen D D, levers E E, and brushes G G with the stationary arm H, weight C, and operative mechanism, and the portable box or case A adapted to be hung up in any desired place, as and for the purpose specified.

137,688.—*Belt-Machine.*—JAMES O. JONES, Brooklyn, assignor to himself and ADOLPH STARKE, New York, N. Y. Application filed December 27, 1872.

When a long bolt is to be headed the end of the wedge-bar operating the cutter is removed, and the cutter remains stationary. The stationary die-holder is fastened by a bolt passing through an elongated slot, that admits of its being adjusted for different dies.

Claim.—1. The block *k'*, spring 5, and clamping-screw 4, in combination with the block *k*, wedge-bar *h*, and jaws 6 *i*, substantially as set forth.

2. The removable wedge-block *p* and the slide-bar *q*, in combination with the cutter *c*, shear *n*, and clamping-jaws 5 *i*, constructed and operating substantially as set forth.

137,689.—*Button-Hole Sewing-Machine.*—GUSTAV KALLMEYER, Bremen, Germany. Application filed February 25, 1873.

The devices mentioned in the third clause move a ratchet secured to a grooved cam, which, by a link, is connected with and moves laterally the reciprocating plate in which the needle-bar operates. The check mentioned in the second clause is carried by the link, and is arranged to govern the length of the slot in the link so that it will have more or less play before engaging the stud, and so move the reciprocating plate either to stitch the side of the hole or far enough to finish off the end. The jointed thread-carrier places a third thread under the needle-thread on the surface of the material, and to do so has peculiar movements imparted to it. The material is held in a clamp which spreads the button-hole, and the clamp and material are moved by a feeding device of usual form. The shuttle-thread is held positively to draw the stitch to the edge.

Claim.—1. The combination of a needle moving alternately in parallel vertical planes, substantially as described, and a shuttle moving substantially in a horizontal plane with the thread-guide having the compound motions described, for the purpose of introducing a third thread into the stitch formed by the interlocking of the needle and shuttle threads, substantially in the manner described.

2. The combination of the slotted link *h* and the stud *i*, with the adjustable chock or wedge *k*, for regulating the lateral movement of the shifting-plate and the width of the button-hole stitch, substantially as described.

3. The combination of the stud g^2 on the needle-lever a^2, with the slotted rocking lever g^3, spring-catch g^4, and the adjustable pawl g^1, substantially as described.

4. The combination of the reciprocating plate *f* with the jointed thread-carrying arm N, by means of the stud n^2, whereby the jointed arm n^1 is swung in a plane parallel to the plane of motion of the shifting-plate *f*.

5. The combination of the jointed thread-carrying arm N, by means of the rectangular lever *p* provided with the tripping-toe p^1, with the needle-lever a^2, whereby the jointed arm N, carrying the thread-guide *n*, is swung in a plane at a right angle from the plane of motion of the shifting-plate.

6. The pivoted jointed thread-carrying arm N, operated in one direction by the pin n^2, and in the other by the lever *p*, the needle-bar, the toe p^1, and spring p^2, substantially as described.

7. The thread-presser *e*, constructed as described, and adapted to hold the shuttle-thread against the race-face, for the purpose set forth.

8. The jaws R, provided with the slot r^2 and stud s^2, in combination with the lever *s* with its eccentric hub s^1, whereby the jaws may be laterally distended while holding the fabric, substantially as and for the purpose set forth.

137,690.—*Folding Bedstead.*—JOSEPH L. KILLGORE, Wilmington, Del. Application filed March 27, 1873.

The corner-posts are hinged to the end rails so as to be folded laterally against the same. The side rails are detachable, and all the parts are held by braces.

Claim.—1. The bed-posts A A, hinged to the ends of the end rail B of a bedstead, to be folded laterally against the same, substantially as described.

2. The combination of the end rail B, hinged posts A A, and braces *a a*, with the detachable side rails C and braces *b*, substantially as described.

137,691.—*Lawn-Mower.*—SIDNEY D. KING, Middletown, N. Y. Application filed November 16, 1872.

A reel, driven by bevel-gear from the supporting-roller, has a balance-wheel on each end of its shaft to enable it to clear the reciprocating cutters, which are placed under it.

Claim.—1. The balance-wheels J, in combination with and attached to the reel of a lawn-mower, substantially as specified.

2. The combination of the roller A, spur-wheel E, ratchet F, pawl G, pinion *g*, shaft *g'*, reel I, and cutters M, substantially as specified, and for the purpose set forth.

137,692.—*Obtaining Sulphur, Sulphuric Acid, and Sulphurets of Sodium and Potassium from Gas-Lime, &c.*—JULIUS KIACHER, New York, N. Y. Application filed September 21, 1872.

The gas-lime is heated to 300° Fahrenheit in a closed retort, and steam at 600° Fahrenheit passed over it, evolving sulphureted hydrogen, which passes to a leaden chamber, and is there ignited with atmospheric air to produce sulphurous acid; it is then mixed with nitric-acid vapors, when the reaction produces sulphuric acid. The gas-lime is mixed with clay, loam, or sand, and subjected to heat, when the silica or alumina unites with the lime and with oxygen, forming silicate of lime, &c., and liberating the sulphur. To produce the sulphuret of sodium or potassium the gas-lime, &c., is mixed with caustic soda or potassa, and allowed to stand until the reaction takes place.

Claim.—1. The union of heated refuse or gas-lime or gas-iron with superheated steam, whereby sulphureted hydrogen is evolved, for the purpose of manufacturing sulphuric acid, substantially as set forth.

2. The flowers of sulphur or lac sulphur, produced from gas-lime, combined with loam, sand, or clay, or their equivalents, in the manner and by the means substantially as described.

3. Sulphuret of sodium or of potassium produced from gas-lime by subjecting the same to the action of caustic soda, or other alkali or salt, in the manner substantially as described.

137,693.—*Toy Perambulator.*—JOSEPH S. KRINKS, Bridgeport, Conn., assignor to EDWARD R. IVES and CORNELIUS BLAKESLEE, same place. Application filed February 21, 1873.

To imitate, by an automatic propeller, the movements of the common perambulator.

Claim.—The herein-described perambulator, consisting of the seat or frame A and the figure thereon, having the axle B at the rear and the levers G G' upon opposite sides, the lower ends connected to a crank, the upper ends in the hands of the figure, and combined with clock-work H to cause the said cranks to revolve, all substantially as set forth.

137,694.—*Safety-Guard for Railroads.*—CHARLES LATIMER, St. Joseph, Mich. Application filed May 4, 1871.

A permanent car-replacer combined with the track at bridge-entrances and curves to avert accidents in case of the train leaving the rails.

Claim.—1. The platform B provided with the guides C, in combination with the lifters E and F, substantially as shown and described.

2. The guide-rail D, for the uses and purposes substantially as shown and described.

3. The platform B provided with the guides C, in combination with the lifters E and F and guide-rail D, substantially as shown and described.

137,695.—*Thrashing-Machine.*—DAVID LIPPY and JOHN S. BLYMYER, Mansfield, Ohio. Application filed June 13, 1870.

Cylinder in place of the usual concave, mounted so that it may revolve slowly or be held stationary at will; rear ends of separator-bars supported on friction-rollers, with hinged beaters linked to and operated by said bars to shake up the straw and release the grain therefrom; shaker-bars, having a lateral and longitudinal motion, connect the front bottom board under the thrashing-cylinder with the rear one under the shaker, both operating together; band-cutter composed of sickle-bars arranged at the side of the table.

Claim.—1. The combination, in a thrashing-machine, of the revolving-cylinder B and the loose cylinder C, arranged to operate substantially as described.

2. The cylinder C, arranged loosely in its bearings and disconnected from the operating mechanism, whereby it is permitted to receive an incidental motion from the friction of the straw as it is fed into the machine, and may also be clamped fast and adjusted so as to bring different parts of its periphery into operation, substantially as described.

3. In combination with the revolving cylinder B, the feed-board D having dividing-plates *b*, substantially as and for the purpose specified.

4. The reciprocating rakes C having their rear ends supported on friction-rollers, substantially as described.

5. The beaters *d*, linked to and carried by the rakes C, substantially as described.

6. In combination with rakes *c*, the vibrating bars *e*, constructed, arranged, and operating substantially in the manner and for the purpose specified.

7. The bottom boards F and F', connected and arranged substantially as described, whereby both are operated together and by the same means or driving-power, as set forth.

8. The toothed bar *u*, arranged to vibrate on its axis in a vertical plane, and also horizontally, substantially as herein described.

9. The band-cutter K, consisting of the series of stationary cutters and the series of reciprocating cutters, arranged on the feeding-table and operated from the mechanism of the machine, substantially as described.

137,696.—*Machine for Washing Paper Stock.*—GEORGE L. LOVETT, Fitchburg, Mass. Application filed October 2, 1872.

The buckets are fixed, and revolve with the wire cylinder, raising the unclean water, which is forced into the drum, and emptying it into the fixed hollow shaft, from out of which it flows.

Claim.—The cylinder A, having the opening *a*, in combination with the revolving washer C provided with the buckets B, substantially as shown and described.

137,697.—*Gang Plow.*—GEORGE W. MANUEL, Napa, Cal. Application filed September 20, 1872.

A wheel-plow mounted upon a frame. To the under side of the frame is secured a crank-axle supported by vertical brackets attached to the hounds or beams of the plow-frame. In the ends of the crank-axle are made holes, through which the axle supporting the driving-wheels is passed. The land-side wheel is provided with a crank-arm, through the end of which the axle passes, and is secured by a set-screw. On the land-side a lever is set in notches of a curved rack, and is adjusted to correspond to the lever on the opposite side.

Claim.—In a gang-plow, of substantially the described construction, the lever *m*, adapted to slide in notches of its rack, in combination with the lever *m'*, adapted to be moved forward and backward, and the connecting-parts, arranged as described, for the purpose set forth.

137,698.—*Apparatus and Process for Rendering Lard.*—WILLIAM C. MARSHALL, New York, N. Y. Application filed January 21, 1873.

The raw lard is first cooked and then passed through suitable

cutters or crushers into a tank, where the process of rendering is completed.

Claim.—The within-described process for rendering lard by first cooking the raw lard, then passing it through a crushing or cutting apparatus into the rendering-tank, where the same is again cooked, substantially as set forth.

137,699.—*Apparatus for Treating and Drying Animal Matter.*—WILLIAM C. MARSHALL, New York, N. Y. Application filed January 21, 1873.

The scraps of lard are exposed to the action of heat by being spread upon the surface of steam-coils arranged side by side in a close chamber.

Claim.—1. The within-described process of treating scrap of lard obtained from lard-presses by exposing the same to the heat of steam-coils arranged in a closed chamber, substantially in the manner herein set forth.

2. The arrangement of a series of steam-coils, B, at suitable distances apart, in a closed chamber, A, substantially in the manner and for the purpose herein shown and described.

137,700.—*Corn-Planter.*—ABDIEL C. MARTIN, Waddam's Centre, Ill. Application filed September 28, 1872.

A rectangular frame is supported at its rear end by a pair of wheels having a crank-axle, which can be clutched to the wheels, and thus be caused to rotate. The forward end of the frame is supported by runner-openers, upon which are mounted the seed-boxes. A slide containing an angular slot is placed between them, and is moved back and forth by the crank axle-tree and connecting-rod, thus intermittingly working the seed-slide.

Claim.—The dropping-slide I, in combination with the driving-slide E provided with the angular groove G and driven by a pitman, D, attached to the crank-shaft C, substantially as shown and described.

137,701.—*Rail Fence.*—JOHN W. MATHEWS, Kilbourn, Ohio. Application filed March 29, 1873.

The rails, at their ends, are halved into each other and notched to press horizontally against the halved post, and are thus held in line. The halved posts are held by outside braces, all four secured to the same base board. A third section of the post provides supports for removable bars. A cross-piece affords support to each rail, the upper cross-piece resting upon the leveled tops of the braces.

Claim.—In combination with the sill A, standards B B, braces C C, cap D, and cross-bar E, the rails G G', when the latter are notched to receive the standards and each other, the whole adapted for straight fence, corners, side-hill fence, and bars, substantially as and for the purpose specified.

137,702.—*Soda-Water Apparatus.*—JOHN MATTHEWS, New York, N. Y. Application filed March 21, 1873.

A rubber or soft-metal packing in a recess in the flange of a stop-cock, working against the lip on the bung of a soda-water fountain so as to form a perfect joint between the cock and the fountain. Also, a tapering tube formed of rubber or other elastic substance, with rings or collars in each end, either with or without weights to cause it to lie on the bottom of the fountain.

Claim.—1. The combination of a soft metallic or other packing, *x x*, in a recess in the flange of the stop-cock working against the lip *z z* on the bung of a soda-water fountain, as herein specified, so as to form a perfect joint between the cock and the fountain.

2. A tapering tube, B, formed of rubber or other elastic substance, with rings or collars in each end, either with or without weights, formed as herein specified, and for the purpose named.

3. The devices for securing the pipe or tube B to the cock A consisting of threads on the exterior of the tube and the interior of the projection of the cock, in combination with the lip *c* and the collar or ring *c*, so as to form a joint between the cock and the pipe, as and for the purpose herein specified.

137,703.—*Cultivator.*—JAMES R. MCDONALD, Nevada, Iowa. Application filed September 14, 1872.

A crank-axle for regulating the depth of the plows adjustably connected at middle portion with a slotted tongue.

Claim.—In a cultivator, the combination, with the adjustable pole, the plow-beams, and the pivoted brace-rod, of the adjustable axle bent upward at *a* to connect with the pole, and relatively downward and outward at A to receive the wheels, substantially as specified.

137,704.—*Gas-Retort Closing.*—GEORGE A. MCILHENNEY, Washington, D. C. Application filed February 20, 1873.

Lids and covers for closing retorts without the use of luting.

Claim.—1. A lid for gas-retorts in the form of a spherical segment, arranged to fit within the mouth of the retort in the manner shown and described.

2. In combination with a circular lid, A, a mouth-piece, B, having its front made of a circular form to receive the lid, and its back made of an irregular form to fit the retort.

137,705.—*Harvester-Cutter.*—WILLIAM MCKEEVAR, Staunton, Va. Application filed February 14, 1873.

V-shaped cutter-sections have their shanks cut away at each edge and bent around the rear edge to the under side of a flattened cylinder-cutter bar, to which they are locked by flattened rings slipped on the bar alternately with the cutter-sections, the shoulders of which abut against the front edges of said rings.

Claim.—1. A cutter-blade constructed with a bent shank, *b'*, and the side wings *b b*, as described, to enable it to be locked by sliding up spacers behind said wings, and to allow each knife to be removed without taking off any of the others.

2. The combination of cutter-bar A *a* and spacers C with the cutter-blades B *b b'*, as described, so that the cutters may be reversed to work in a right or left handed machine.

3. The combination, with cutter-bar A *a*, spacer C, and cutters B *b b'*, of the screw E working through a head, D, as described, to lock the cutters, in the manner specified.

137,706.—*Machine for Grinding Saws.*—DAVID M. MEFFORD, Norwalk, Ohio. Application filed March 21, 1873.

Claim.—In a machine for grinding long saws, the rest-gage F with its single set-screw C, when said gage is constructed of a width to bear only on a limited portion of the saw widthwise, and located directly over the center of the grinding-wheel B, which revolves in an opposite direction to the feed, as shown and described.

137,707.—*Stalk-Cutter.*—SAMUEL B. MILLER, Stanwood, Iowa. Application filed February 7, 1873.

The cutting-roller is hung in slotted pendent bearings, and so connected to a rock-shaft that it can be raised from the ground at pleasure by means of a lever extending from the rock-shaft, or pressed firmly upon the earth by means of a weighted lever projecting from the opposite side of the rock-shaft.

Claim.—1. The bar *d*, having lever A and arm *e* provided with rod *g*, in combination with cutting device, substantially as shown and described.

2. The combination of the lever *j*, weight *l*, bar *d*, arm *e*, rod *g*, and cutters, when all are arranged to operate substantially as shown and described.

137,708.—*Seeding-Machine.*—SAMUEL B. MILLER, Stanwood, Iowa. Application filed August 12, 1872.

A rectangular frame supported on wheels has a seed-box mounted upon the forward end, with graduated openings and seed-distributer in the bottom of the box. Drag-bars are pivoted beneath the frame, the forward ends of which extend beneath the seed-box, the rear ends carrying the cultivator or covering-teeth.

Claim.—1. The combination, with the frame A A A A, of the seed-box B, levers *g g*, bars *a a'*, vertical guide-braces F, and fastenings *r'*, constructed and operated substantially as set forth.

2. The semicircular shield *q*, in combination with the S-shaped shaft G, substantially as shown and described.

3. The feed-box B provided with adjustable plates *n* and *o* and semicircular deflector *q*, in combination with S-shaped shaft G, substantially as shown and described.

137,709.—*Spike-Machine.*—THOMAS O'CONNOR, St. Louis, Mo., assignor to ST. LOUIS RAIL-FASTENING COMPANY, same place. Application filed December 11, 1872.

The pivot-pin has a tapered shank fitting in a similar hole in the slide, and held in place by a nut screwed on the lower end of the pin. The upper portion of the pin, forming the pivot of the nipper-arm, is cylindrical.

Claim.—1. The pin E, having cylindrical body *e*, tapering shank e^1, nuts e^2 e^3, in combination with the carriages B D and nipper-arms C, as and for the purpose set forth.

2. The pin E, nut e^3, and spring E', in combination with the nipper-arm C, as and for the purpose set forth.

137,710.—*Nail-Plate Feeder.*—SAMUEL K. PADEN, Pulaski, Pa., assignor to himself and R. V. PIERCE, Buffalo, N. Y. Application filed January 13, 1873.

The plate is fed from the hopper by stubs on two gear-wheels, which strike it at the rear end as they come round. This advances it between frictional intermittingly-rotating disks, which complete the feeding. These gears and disks are rotated by a double-pawl mechanism, which is situated upon and derives its motion from the transversely-vibrating table that supports the hopper. The pawl mechanism can be adjusted to present the plate at any angle desired to the cutters.

Claim.—1. The horizontal gripers E E, arranged on a horizontal vibrator, B B^1, and biting upon the edges of nail-plate, as and for the purpose set forth.

2. A pair of horizontal gripers, E E, arranged upon shafts held together by a single spring, F, as and for the purpose set forth.

3. A hopper, C, closed on all sides, but open on bottom and top, combined on the rear end with rotary studs *l* on wheels L, and on the front with gripers E E, as described, so that the studs *l* start the plate while the gripers then draw it out of hopper.

4. The elastic arm G, having shaft G^1 journaled in uprights G^2 G^2, and the end bearing *g* provided with forwardly-projecting teeth, as and for the purpose described.

5. The flat spring H, applied transversely of the presser G and held at each end by a screw, A, as described, to allow said presser to rise itself and raise the spring between the screws.

6. The combination, with friction-disks E E, of the connected wheels I I and the ratchet-wheels I' I', having detents, as and for the purpose specified.

7. The vibratory double hook-bar J, having a hook, *j'*, at each end, combined with the ratchet-wheels I' I', as and for the purpose described.

8. The combination, with the double hook-bar J *j j*, of the levers K K, fulcrumed in vibrator B B^1 and pivoted in front on each side of the middle of said bar J, as and for the purpose set forth.

9. The levers K K made adjustable on bars *k k* and in upright B^2 toward each other, as described, to regulate the taper of nail.

137,711.—*Artificial Leg.*—B. FRANK PALMER, Philadelphia, Pa. Application filed March 14, 1873.

The cord which controls the toes is doubled, and the toe-piece strengthened by wires passing through it. Projections are formed on the sole under the heel and base of the toes, and cushioned with rubber. The ankle-joint is made of a curved or horseshoe form. The cords representing the heel-tendons are made of silk covered with chamois-skin. The wood composing the body of the leg is wound with thread soaked in shellac and then covered with enamel. The upper end of the leg is wound (to strengthen it) with small wire, which is then turned down smooth. A cap or socket, in which the end of the stump rests, is placed with its upper bearing-edges on an elastic cushion above the upper rim of the leg.

Claim.—1. The double toe-cord L, running in the pulley P, and attached at the rear and back of the leg, as described and shown.

2. The toe-piece C, strengthened as described, and forming a close joint with the foot, as shown.

3. The protuberances M N on the bottom of the foot, as and for the purpose described.

4. In combination with the protuberances M N, the elastic cushion *e e*, formed of rubber tubing, and arranged substantially as and for the purpose stated.

5. The ankle-joint O, made of a curved or horseshoe form, as represented, and placed for the bottom of the foot, with its ends projecting upward to receive the ankle-bolt, all as and for the purpose described.

6. The heel-tendon K, made of strands of silk covered with leather, as described.

7. The supplemental or auxiliary tendons J J, arranged, attached, and operating as set forth.

8. The covering of thread and gum shellac, for the purpose set forth.

9. The stump-socket E, made of leather, molded to conform to the stump, and resting by a shoulder on an elastic cushion about the upper rim of the leg, and fitting snugly, but so as to be easily withdrawn, in a recess of corresponding shape in the top of the leg, all constructed and arranged substantially as set forth.

10. The bowed joint G, constructed, arranged, and operating as described.

11. The confining band or hoop I, formed of wire wound tightly around the leg and turned off on the surface, as and for the purpose specified.

137,712.—*Recovering Tin from Waste Tin-Scrap.*—HENRY PANTON, New York, N. Y. Application filed March 31, 1873.

The scrap cut into fine chips is placed into a revolving cylinder so that mercury is constantly showered over it.

Claim.—1. The process herein described of utilizing waste tin-plate scraps by first reducing them to small chips by the means described; secondly, treating them with mercury in the manner explained; and, thirdly, converting the chips of iron, after such treatment, into steel, in the manner set forth.

2. The apparatus described for treating tin-scrap, consisting of the revolving vessel *a*, provided with the perforated diaphragms A and A' and side pipe *b*, so as to return the mercury and distribute it over the scraps, as described.

137,713.—*Manufacture of Gas.*—ROBERT H. PATTERSON, Hammersmith, England. Application filed March 26, 1873.

Alkaline sulphides, or sulphur finely divided and mixed with a substance which will permit the gas to pass freely, is used in the purifiers, especially in the first of the series. The first vessel is termed the "decarbonating-vessel;" the succeeding contain the alkali to be converted into sulphide. As soon as the gas passing from the "decarbonating-vessel" shows the presence of carbonic-acid gas the vessel is recharged; when the gas issuing from the vessels containing the alkali to be sulphureted shows the presence of sulphureted hydrogen the process of producing the sulphides is complete.

Claim.—1. The application and use, substantially as herein described, of alkaline sulphides—namely, sulphides of calcium, sulphides of sodium, sulphides of potassium, sulphides of ammonium, and also gas-liquor more highly sulphureted by the process hereinbefore described, employed in separate purifying-vessels—for the purpose of purifying coal-gas from sulphur in other forms than that of sulphureted hydrogen.

2. The process herein described for production alkaline sulphides from lime in purifiers, or a solution of soda, lime, potash, ammonia, or gas-liquor in washers or scrubbers, in connection with the purification of gas, to wit, by eliminating the carbonic acid in the first of the series of said vessels and the sulphur in its several forms in the succeeding vessels, whereby the lime or other alkaline substances in any number of said succeeding vessels can be converted into sulphides of said alkaline substances, and thereafter maintained in the form of sulphides as long as may be desired.

3. The method or system of employing a series of alkaline washers or scrubbers—namely, vessels containing gas-liquor or a solution of soda, of lime, of potash, or of ammonia, or of any or all of these substances in conjunction, in the manner hereinbefore described, whereby coal-gas is purified from carbonic acid in the first vessel or vessels of the series, and the sulphur existing in the gas in all forms is eliminated in the subsequent vessels of the series.

4. The employment of sulphur in a state of fine division in conjunction with a substance or substances suitable to form a porous material through which the gas may pass freely, or in combination with lime, or with potash, or with soda, or with lime, potash, and soda together, in solution or otherwise, in order to effect the purification of coal-gas from sulphur existing therein in other forms than that of sulphureted hydrogen, or of any or all of these substances in conjunction, substantially as described.

137,714.—*Portable Window-Platform.*—GEORGE H. PEABODY, Brooklyn, N. Y. Application filed December 24, 1872.

Claim.—A portable seat with connections C and D, buckle E, or other means of adjustment, and bar F, substantially as herein set forth.

137,715.—*Cotton-Chopper.*—WHITMAN PRICE, Mount Olive, N. C. Application filed October 28, 1872.

Claim.—1. In combination with shaft *l* the flanges *z* and chopping-hoes *c*, the flanges being provided with recesses for the reception of the enlarged end of the stems or arms of the hoes, in the manner shown and described, and for the purpose set forth.

2. The shovel-plow *v*, spring-shoes *w*, and arms *y*, in combination with the serrated bar *x* and key *y*, substantially as and for the purpose specified.

3. The shaft *l* and rods *r r'*, in combination with the perforated draw-bar *s* and tongue *t*, substantially as and for the purpose set forth.

137,716.—*Plow.*—WHITMAN PRICE, Mount Olive, N. C. Application filed September 25, 1872.

The land-side is slotted and receives between its double walls the wooden standard and handles, all being securely bolted together. The frame thus constituted receives interchangeably various shares and cutters.

Claim.—The plow provided with the wooden standard, and having its various parts constructed and arranged in combination therewith, as herein shown and described.

137,717.—*Pipe-Joint.*—TREAT T. PROSSER and GEORGE C. MORGAN, Chicago, Ill. Application filed February 24, 1873.

The wooden casing is made in two or more sections, and is provided internally with grooves exactly fitting the globular ends of the pipes. The casing is held in place by metallic rings tightly driven on.

Claim.—The pipes A, having globular ends *a*, in combination with the wood case B held in place by rings *b*, substantially as and for the purposes specified.

137,718.—*Flexible Supports for Mattresses, Seats, &c.*—COLLIN PULLINGER, Philadelphia, Pa. Application filed March 12, 1873.

Two fabrics are faced and seamed so as to form pockets. Into these pockets slats are inserted, and the whole complete forms a flexible covering for seats, mattresses, &c.

Claim.—As an article of manufacture, a flexible mattress support or seat for cars, chairs, &c., formed of two face-fabrics, A B, seamed at *b*, and provided with intermediate slats C, as described.

137,719.—*Car-Coupling.*—AUGUSTUS PURSELL, Williamsport, Pa. Application filed July 14, 1871.

Wedge-shaped plates journaled in the sides of the mouth of the draw-head for holding the link horizontally and at the desired height; also another wedge-shaped plate supported at its thick or rear end by or upon the upper division-plate, and at the front end upon inclined shoulders in the side walls of the mouth. When the pin is raised and the link withdrawn the rear end of the upper plate falls until it rests upon a ledge in the rear of the mouth of the draw-head, which so changes the position of the hole in the plate that the pin cannot pass through. Upon the entrance of the link the rear end of the plate is raised and the hole brought under the pin so that it falls through, and the coupling is thereby effected.

Claim.—1. In combination with the draw-head of a car-coupling, one or more gravitating and self-adjusting plates hung horizontally upon journals in the mouth of the draw-head, but capable of vertical motion, and constructed and arranged substantially as described, whereby a large preponderance of the weight is thrown in rear of the journals and the front of the mouth divided into two or more spaces, in the manner and for the purposes set forth.

2. The gravitating plate G, arranged in an inclined position, on supports for the front and rear ends, in the mouth of the draw-head, and operating in the manner and for the purpose set forth.

3. The combination of the horizontal gravitating division-plates and the inclined gravitating plate G, all arranged in the mouth of the draw-head in relation to one another, substantially in the manner set forth.

137,720.—*Tool for Capping Cartridges.*—JOSEPH L. RAUB, Meriden, Conn., assignor to CHARLES PARKER, same place. Application filed March 7, 1873.

Claim.—A pair of levers or handles, A B, pivoted together, one of the jaws constructed to take hold beneath the head and the other to bear upon the center over the cavity, so that by drawing the two handles together the primer will be forced into its seat in the head of the cartridge-shell, substantially as set forth.

137,721.—*Broom.*—FRANCIS REESE, Calera, Ala. Application filed March 17, 1873.

A broom constructed with one side of sufficient width of frame to receive the straw or corn, and its upper side covered with a projecting piece by which the material is held in place, and serves to attach an upright handle. The parts held together by screws, by which the corn, &c., may be removed and renewed.

Claim.—The combination of the plates A F, the cap piece B, and the binding-screws G G' with the sweeping portion of a broom, substantially as and for the purposes shown and described.

137,722.—*Blacking-Case.*—GEORGE H. RICE, Norwalk, Conn. Application filed October 3, 1872.

A case standing on legs has a hinged lid. Within the case, extending from end to end, near the top, is a foot-rest having slots for the edges of the soles of the boot to rest in when being blacked, and a hinged dirt-guard is in one end of the case. Attached to the bottom is a slide with a recess for holding a box of blacking.

Claim.—The foot-rest D provided with slots *b c*, in combination with the case A, dirt-guard E, and blacking-holder F, the whole constructed and arranged substantially in the manner herein shown and described.

137,723.—*Wood Fence.*—WILLIAM RILEY, Madison county, Miss. Application filed December 30, 1872.

The ends of the rails lap between two uprights, which up-

rights are held in their relative positions by battens below and above, inclined lateral rails or braces resting on the earth and pivoted above the fence, where a top rail presses them upon the fence in their centers and outward at their bases.

Claim.—The posts B B, battens *c c*, rails C C, diagonal brace-rods D D, and horizontal cross-tie rail E E, so combined and arranged as to form a fence without bed-plates, anchor-blocks, or any other equivalent device.

137,724.—*Corset.*—MARY RUSSELL, Union Bridge, Md. Application filed January 22, 1873.

The upper edge of the elastic gore at the breast is drawn down and hooked to its lower point.

Claim.—In a corset, the elastic breast-parts B B, in combination with the fastening devices *b* and *b'*, or their equivalents, as herein set forth.

137,725.—*Stage-Machinery.*—JAMES SCHÖNBERG, New York, N. Y. Application filed October 31, 1872.

A ready mode of scene-shifting by partially automatic apparatus.

Claim.—1. The rising and-falling pin *b* and lifter *c*, in combination with a scene-frame, constructed and operating substantially in the manner herein shown and described.

2. The arrangement of an eccentric foot on the scene-frame, substantially as and for the purpose set forth.

3. The post E, fitting in a corresponding socket in a carriage moving on guide-ways in the floor-timbers of the stage, said post being provided with pins *l o* to engage with the scene-frame, substantially in the manner described.

4. The sleeve *m* fitted on the post E and carrying a pin, *o*, to engage with a socket-piece, *q*, on the scene-frame, substantially in the manner set forth.

137,726.—*Bath-Tub Plug-Socket.*—ROBERT C SCHMIDZOUR, Brooklyn, N. Y. Application filed March 10, 1873.

A socket with a projecting, rounded, and corrugated rim or flange at its upper end is combined with the lining of a bath-tub, which is depressed into an annular groove or recess in the wooden casing of the tub. There is also an open tubular projection on the elbow-pipe, which is coupled to the lower end of said plug, and it serves to receive the lower end of the overflow-pipe and to simplify the connection of such pipe with the main discharge.

Claim.—1. The plug-socket valve C, provided with a rounded corrugated flange, *a*, and combined with the recessed casing A and depressed lining B, and with the packing introduced between the flange and the lining, substantially as described.

2. The elbow discharge-pipe E of the bath-tub, provided with a tubular projection, *d*, and aperture for the reception of the overflow-pipe F, substantially as described.

137,727.—*Hot-Air Furnace.*—MAURICE D. SEWARD, Normal, Ill. Application filed July 23, 1872.

Claim.—1. The above-described construction and arrangement of furnace, having the two long and narrow air-chambers E, arranged in relation to and in combination with the two exterior descending flues H, the interior or central flue or fire-passage S, the ash-pit F, air-chamber F, and fire-chamber A, substantially as set forth.

2. The arrangement of the pipes C and L in connection with the two dampers B and D, thus giving four different drafts, substantially as set forth.

137,728.—*Furniture-Caster.*—CEVEDRA B. SHELDON, New York, N. Y. Application filed March 29, 1873.

The friction-balls confined in a cup-shaped ring, heretofore patented to this party, are arranged in novel combination with the upper plate of the horns of an ordinary furniture-caster and surrounding the stem of the same, this construction bringing the friction-balls in close contact with both the stem and plate, preventing sliding, and insuring the more equal distribution of strain upon the caster.

Claim.—The socket B, provided at top with the gimlet pointed wood-screw C, and at bottom with the internal annular recess *n*, in combination with the plate *f* of the horns *b*, stem *e*, and balls *d*, the latter being arranged in the cup-shaped annular recess, so as to be in close contact with both the stem *e* and plate *f*, as and for the purpose specified.

137,729.—*Windmill.*—ELIJAH S. SMITH, Good Hope, Ill. Application filed February 15, 1873.

This windmill, having no tail or guide-fan, under the influence of the wind, will necessarily swing to the leeward and receive the wind upon the opposite side from the ordinary wind-wheel. The brake-wheel is held in such relative position to the sails by means of a connecting-spring that the sails, when in their natural position, are exposed to the force of the wind, and they consequently revolve and give motion to the shaft and its connections.

Claim.—1. The combination of the brake-wheel, and mechanism for operating it, with sails adapted to be turned by the force of the wind, out of the wind, when the brake-wheel is held, substantially as described.

2. The combination of a brake-wheel, its operating mechanism, and fans adapted to be turned out of the wind, by the force of the wind, when the brake-wheel is held, with a spring adapted to draw the sails into the wind, substantially as described.

3. The combination of a float, and suitable connecting mechanism, with the brake-wheel, sails arranged as described, and the spring for drawing the sails into the wind, as described, for the purpose set forth.

4. The combination of the standard, of the revolving box, the vertically moving pump-box, and the revolving sleeve and connecting-rod, as described.

5. The combination of the brake and lever, and the connecting-rod, arranged as described, for the purpose set forth.

6. The windmill described, consisting essentially of the standard A, revolving box B, cross-bar C, shaft D, and wheel E F, brake-wheel H, spring I, brake J, lever K, and pitman L, with their connecting-parts combined and arranged as described.

137,730.—*Circuit for Electro-Magnets.*—JOHN E. SMITH, New York, N. Y. Application filed March 15, 1873.

Armature-lever near completion of its stroke brings a resistance into circuit, thus weakening force of current through magnet and lessening spark at circuit-breaker.

Claim.—The combination of a resistance coil or medium, and a circuit-breaking spring or lever with the armature-lever, or part or parts set in motion by an electro-magnet, the whole being arranged substantially as specified, whereby the resistance is brought into the circuit only as the armature completes its movement toward the magnet, and remains in the circuit until the latter is interrupted, essentially as and for the purposes herein set forth.

137,731.—*Milking-Pail.*—HENRY SPRINGER, Brady township, Mich. Application filed August 7, 1872.

To the spout of a milking-pail a receptacle is attached, the bottom of which is depressed below the spout and retains a portion of milk and froth to prevent spattering while milking.

Claim.—The receptacle *d*, when provided with a bottom, *e*, constructed to retain sufficient milk to prevent spattering, in combination with a spout, *c*, located at the side, substantially as specified.

137,732.—*School-Desk.*—MILAN C. STEBBINS and EDWIN J. PIPER, Springfield, Mass.; said STEBBINS assignor to said PIPER. Application filed February 25, 1873.

The desk is provided with a drawer having a secondary shelf attached beneath the bottom and a ledge on the front of the drawer for pens and pencils. About midway to the floor a book-shelf is placed.

Claim.—An improved school-desk having a drawer, B, therein provided with a secondary shelf, *c*, or atlas-case *b'*, and provided also with a ledge or pen and pencil rack, *c*, and having also the book-shelf F arranged below, all constructed and arranged substantially as described.

137,733.—*Grate for Stoves and Fire-Places.*—WILLIAM B. SUTOR, Indiana, Pa. Application filed September 21, 1872.

The supplemental rear grate, operated by the bell-crank, performs the office of a damper.

Claim.—The combination of the grate, the damper, and the perforated tile, operating together as and for the purpose described.

137,734.—*Fertilizing-Distributer.*—HUGH M. SWEENEY, Worcester, Mass., assignor of one-half his right to OTIS N. POND, same place. Application filed January 6, 1873.

A laterally-placed cylindrical chamber, on a tank supported by carriage-wheels, has on it a spindle with agitating arms actuated by gearing from one of the carriage-wheels. In this chamber manure and water are mixed and received into the tank; thence projected, through a strainer, to the ground as a fertiliser.

Claim.—The combination of the mixing-chamber *a*, revolving arms *c c c*, shaft *b*, tank *m*, strainer *t*, sprinkler or outlet *r*, driving-shaft *l*, and the gears *d e f g*, shaft *i*, or their equivalents, as and for the purpose herein shown and described.

137,735.—*Suspension-Hook for Eye-Glasses.*—WILLIAM S. TAPPAN, Washington, D. C. Application filed March 14, 1873.

The hook is made of a single piece of metal, and both ends form hooks which overlap each other. It requires two positive motions to connect or disconnect an object.

Claim.—A suspension-hook formed of a single piece, either end forming hooks which overlap each other, substantially as and for the purposes set forth.

137,736.—*Fertilizer-Spreader.*—JOHN W. THORNBURG, Woodstock, Va., assignor of one-half his right to LEONIDAS H. MCGINNIS, same place. Application filed November 9, 1872.

Two hoppers, one placed above the other and mounted on a pair of wheels which carry a cog-gear, giving motion to a distributing device. The fertilizing material is first sifted into the upper or receiving hopper, and from that received into the distributing-hopper, and from thence spread upon the ground.

Claim.—1. In a fertilizer-distributer the vibrating discharge-hopper B, having the arms B^2, studs B^3, ratchets B^1, and studded shaft *b*, arranged to impart a vertical motion to said hopper, substantially as and for the purpose set forth.

2. The combination of the removable hopper G, and vibrating discharge-hopper B, substantially as specified.

3. The slide or feed board D, racks F, and pinions F^2, combined and arranged with the hopper B, substantially as described.

137,737.—*Steam-Crane.*—DAVIS TILLSON, Rockland, Me. Application filed December 3, 1872.

A steam engine and crane mounted upon a platform-car in such manner that the engine shall operate the crane to load and unload the same car and move the car from place to place when the crane is not in use.

Claim.—1. The mast D and horizontal drum N combined with the platform-car by means of the grooved annular plates P and friction-balls *q*, substantially as described, for the purpose specified.

2. The sheave-cap R and mast cap E, constructed as described, and combined to operate in connection with each other, substantially as herein set forth, for the purpose specified.

3. In combination with a platform-car, supporting a steam-engine by which it is moved from place to place, a crane or derrick adapted for operation from the engine by means of the windlass, the winches, the hoisting-rope, the carriage, the mast-drum, and the turning-ropes, as herein described, for the purpose specified.

4. The mast of the derrick or crane supported upon the platform-car by means of the metal cap E, the wooden stays F, and metal tie-rods G, substantially as described, for the purpose specified.

5. The combination of the adjustable metal tie-rods G with the wooden mast-stays F, substantially as described, for the purpose specified.

6. The boom J constructed as described and supported upon the mast and drum N, substantially as set forth, for the purpose specified.

7. The derrick or crane mounted upon the platform-car and adapted to load and unload the same by means of a steam-engine mounted upon the car, substantially as described, for the purpose specified.

8. The boom of the derrick adapted for operation from the winched U' by means of the ropes T' and drum N, substantially as described, for the purpose specified.

9. The boom combined with the sheave-cap R by means of the adjustable rods X, substantially as described, for the purpose specified.

10. The hood Y in combination with the sheave *t* and its cap, substantially as described, for the purpose specified.

11. The boom-carriage constructed and operating as herein described, for the purpose specified.

12. The windlass and winches, together with their operating mechanism, combined with the hoisting and turning ropes in the manner described, for the purposes specified.

13. The rope W' arranged for operation in the manner described, for the purpose specified.

137,738.—*Cabinet Chair and Secretary Combined.*—CONSTANT S. TREVITT, Washington, D.C. Application filed November 2, 1872.

To one of the arms of the chair is hinged a desk-leaf support, to which is pivoted the desk-leaf. To the inner side of the arm of the chair is arranged a spring-catch to hold the desk-leaf support when in position for use of the desk. Beneath the support is an inkstand that is covered by the hinged support when not in use, and in the other arm of the chair is a hinged or pivoted receptacle for pens. Underneath the seat of the chair is a series of drawers provided with a catch or hook, a stop, and a central handle.

Claim.—1. In a combined chair and writing-desk, the support L, hinged as described, in combination with the desk-leaf M pivoted thereto, as and for the purpose described.

2. The spring-catch N located and arranged as described, in combination with the hinged platform or support L, as and for the purpose described.

3. The hinged pen-receptacle Q arranged and inclosed within the chair arm, as and for the purpose described.

4. The chair-drawers having the catch G H, stop I, and central handle F, arranged as and for the purpose described.

5. The inkstand O arranged as described, in combination with the hinged support L, as described.

6. The combination in a chair and writing-desk of the pivoted leaf M, the hinged support L, spring-catch N, inkstand O, and pen-receptacle Q, the several parts being constructed and arranged for use as described.

137,739.—*Carpet-Stretcher.*—OLIVER VANORMAN, Fond du Lac, Wis. Application filed February 26, 1873.

A movable slide is combined with the bed-piece and has cogs upon its upper side and teeth affixed to the under side of its arm or projecting end. Standards arise from the bed-piece that support a segment of a cogged wheel that engages with the cogs on the slide. The segment-frame has a lever-arm to operate it. A dog is attached to bed-piece and engages with the notches of the slide to hold it in a desired position. An extension-bar is attached to the rear end of the bed-piece.

Claim.—The combination of the bed-piece A, the movable slide B with sectional teeth F, the ratchet C, together with the standard D and dog E, also the extra bar or slat *i*, as and for the purposes specified.

137,740.—*Basement-Floor.*—ELEAZAR S. VAUGHAN, Flatbush, N. Y. Application filed February 5, 1873.

Claim.—1. The tiles B, constructed so that when laid they form water ways or channels *b* all around them below their upper edges, substantially as and for the purpose herein set forth.

2. The combination, with the tiles B, reduced around their edges to form grooves or channels, as described, of the waterproof layer C and upper stratum D of concrete or other weighty material, essentially as specified.

3. The inner side walls G, laid in and coated with asphaltum A H, in combination with the floor-layers C D E and base-tiles B, constructed to effect drainage, as described.

137,741.—*Machine for Rolling Scythes.*—HERVEY WATERS, Northbridge, Mass. Application filed February 13, 1865.

Three pairs of rolling-dies for rolling scythes—one pair at each end of the rolls outside the bonaings, and one pair between the housings—to be used successively in the reduction of the bar to the proper shape.

Claim.—A suit of roller-dies, made and operating substantially as described.

137,742.—*Apparatus for Converting Iron into Steel.*—JAMES WEBSTER, Birmingham, England. Application filed October 24, 1872.

The retorts are provided with inlet-pipes having mixing-nozzles for the admission of air and gases, and stand or outlet pipes to conduct the waste gases to a receiver, from whence they may be taken and utilised. The nozzle consists of two cones; the gas, passing through the inner, draws in air through perforations in the outer cone.

Claim.—1. The described furnace, having the retorts A B, pipes M N O, and nozzles C D, arranged as described, for the purpose set forth.

2. The improved nozzle shown in Figs. 7 and 8, Sheet 3, for admitting, regulating, and mixing the gases into the retorts, as herein described.

137,743.—*Metallic Lathing.*—CHARLES WELDING, New York, N. Y. Application filed March 5, 1873.

Claim.—A metallic lath with the flanged edges corrugated, for the purposes and substantially as specified.

137,744.—*Earth-Auger.*—ICHABOD M. WEST, Summit, assignor of one-half his right to HENRY A. IDDINGS, Crete, Neb. Application filed February 18, 1873.

Claim.—1. The sectional helices F formed with sleeves or collars G, the adjoining ends of which are connected by lap or rabbet joints for forming a continuous worm, as herein set forth.

2. The well-augur herein described consisting of the angular stem A, point B, stationary wing C, detachable cutter E, and worm or helix formed of a series of separate and detachable sections, F G, connected and relatively arranged with each other in the manner specified.

137,745.—*Button-Hole Cutter and Punch.*—AUGUSTUS L. WHITNEY, Fitchburg, Mass. Application filed February 21, 1873.

The punches and cutter are attached to a revolving sleeve, a suitable locking mechanism detaining the cutter or punches in position for its proper action. An adjustable gage, in combination with the sealed blade, determines the length of button-hole.

Claim.—1. In combination with the cutter, one or more punches, *q r*, the punch or punches and the blade being attached to the sleeve *g*, substantially as shown and described.

2. The combination of the screw-stop *p* in the shank with the sealed knife-blade, substantially as and for the purpose set forth.

137,746.—*Process and Apparatus for Extracting the Juices of Sugar-Cane, &c.*—GEORGE WILKINSON, ANTOINE L. POSSOZ, JEAN P. LAFARGUE, and AUGUSTE E. DUTHEIL, Paris, France. Application filed March 26, 1873.

The cane, in the form of chips, is fed continuously through vats provided with screws which carry them back and forth. The liquid to form the extract is applied so as to become constantly stronger, the fresh liquid being applied to the nearly-exhausted chips.

Claim.—1. The mode herein described of extracting the saccharine matter of cane and other saccharine substances, by subjecting the same, when suitably prepared or divided, to the action of heated saccharine juice, followed by washing in a mixture of dilute juice and pure water, said operations being conducted in apparatus substantially such as specified, and in the manner set forth.

2. The combination of two or more macerators, substantially such as described, into and through which the prepared cane or other saccharine substance is successively passed, as set forth, the liquids with which said substance is treated during its passage through said macerators being obtained and supplied to and discharged from said macerators substantially in the manner specified.

3. An apparatus for extracting the juices of sugar-cane and other saccharine vegetable substances, the parts of which are constructed, combined, and arranged for operation substantially as herein shown and set forth.

137,747.—*Preparing Gold for Dentists.*—RICHARD S. WILLIAMS, New York, N. Y. Application filed December 18, 1872.

Two or more sheets of plain foil with an outer sheet of frosted gold are rolled into a cylinder over a mandrel, and the lapping edge of foil caused to adhere by passing it over the flame of an alcohol-lamp. The frosted gold, by its greater stiffness, will prevent the several folds forming the coil from adhering.

Claim.—1. Gold for dentists' use, consisting of sections cut from rolls composed of plain and frosted gold foil, when the ends of such sections are not compressed or consolidated, as herein shown and described.

2. Rolls of gold for dentists' use, composed of sheets of plain and frosted gold foil, as described, with the edge connected, as specified, so as to adhere to the gold and prevent it from unrolling.

137,748.—*Device for Adjusting Millstones.*—ALEXANDER W. WINALL, Cincinnati, Ohio. Application filed March 17, 1873.

The bridge-tree is suspended and rendered simultaneously adjustable at each end.

Claim.—In combination with the bridge-tree K, the threaded rods N, worm-gear O, shaft P, and worms Q, substantially as and for the purpose specified.

137,749.—*Apparatus for Molding Cigars.*—THOMAS J. WINSHIP, Montreal, Canada. Application filed February 24, 1873.

A series of leaves or plates are arranged one above another, the dies being formed on one side and the matrices on the other, the leaves sliding upon end rods which are joined by a cross-bar at the top. The leaves are provided with pivoted handles and pins at each end, which serve to secure them together either at the bottom of the press, when filled with cigars, or suspended at the top when empty.

Claim.—The combination of the leaves, provided with handles and pins, as described, with guides *g* and cross-bar A, all constructed and arranged to operate as described.

137,750.—*Manufacturing Illuminating-Gas.*—WILLIAM C. WREN, Brooklyn, N. Y. Application filed March 11, 1873.

Illuminating-gas is manufactured from hydrocarbons by carrying the fluid, when vaporized, over a sufficient surface to decompose it. The vapor must not be allowed to cool at any part of the passage. The end of the retort is closed by a cap having a A-shaped projection fitting into a V-shaped groove on the face of the retort, and a lip projecting into the chamber. A siphon passes through the lid into the retort for conveying the petroleum into the same.

Claim.—1. A compound retort divided longitudinally, so that one or more of the sections shall project beyond and be longer than the others, as described.

2. The compound retort, as described, in combination with the lid K to close the chamber W, as described, with the lid L to close the chambers S T U, as described.

3. The A-shaped projection N in combination with the lips O on the covers, and the grooves P on the faces of a compound retort, as described.

4. The combination of two or more covers for one end of a compound retort, as described.

5. The siphon M with the projection through the cover L and into the chamber S, for the purpose as described.

6. The siphon projecting as shown, in combination with the lid K and lid L and compound retort, as and for the purpose described.

137,751.—*Hay-Loader.*—THOMAS P. DAVIDSON and ALF PARVIS, Liberty, Ind. Application filed February 5, 1873.

An endless-chain elevator is assisted by toothed bars operated by cranks, separately driven by cord and pulleys from the supporting-wheels.

Claim.—The combination of the endless carrier *d's* and the rakes H H connected to and operated by the crank-shafts G G, substantially as set forth.

REISSUE PATENTS.

5,347.—*Loom for Weaving Pile-Fabrics.*—SUSAN C. DAVIS, New York, N. Y., administratrix of EZEKIEL K. DAVIS, deceased. Patent No. 86,651, dated February 9, 1869. Application filed March 21, 1873.

Claim.—1. In combination with a wire-carrier oscillating upon an axis parallel to that of the lay, but not coincident with it, a reciprocating carriage provided with a latch traveling upon the wire-carrier and operating to withdraw the wires successively from the pile and return them to the shed without, in the meantime, becoming disengaged from the wire.

2. The combination, with a wire-carrier oscillating upon an axis parallel to that of the lay, and a reciprocating carriage provided with a latch, traveling upon such carrier, of a plate arranged to raise the latch and sustain it while passing over the heads of the wires.

3. In combination with a latch to draw the wires from the pile, having a reciprocating movement longitudinally and transversely, a plate or its equivalent placed so as to release the latch from the inserted wire and support it while passing from one side to the other of the row of wires.

4. In combination with the wires and reciprocating carriage, an automatically-adjustable pin, supporting the end of the wire drawn from the wire-box, and which is retracted through the side of the wire-carrier as the carriage approaches, so as not to interfere with its movements.

5. In combination with the wire-carrier A, the carriage C, latch *f*, spring *g*, lever A, spring *i*, and plate J.

6. The sliding shuttle-box H, combined with arms *x x*, rocker-shaft *t*, lever *u*, and cam-plate J.

7. The cams K L and gear O arranged on a sleeve surrounding the shaft *c*, in combination with said shaft, cams P Q, and operating-gear and heddles.

5,348.—*Band-Comb.*—CHARLES HORACE NOYES, Orange, N. J.—Patent No. 106,861, dated August 30, 1870. Application filed March 10, 1873.

Claim.—1. A head-band constructed with openings *c*, and provided with a comb or comb-teeth for holding said band on the head, substantially as described.

2. In combination with a head-band constructed as above described, a ribbon or other ornamental material interwoven with said openings, substantially as and for the purpose specified.

5,349.—*Billiard-Table Cushion.*—GEORGE D. SHARP, New York, N. Y.—Patent No. 26,128, dated November 15, 1859. Application filed March 10, 1873.

Claim.—1. A cushion for billiard-tables, composed wholly of India rubber or other analogous elastic material, having formed or molded within it an open air-space, chamber, or cavity, its entire length, in its configuration conforming substantially to the shape of the cushion, in the manner and for the purpose herein set forth.

2. In a cushion for billiard tables, the combination of the open air-space, chamber, or cavity E, cushion D, and facing F, in the manner and for the purpose herein described.

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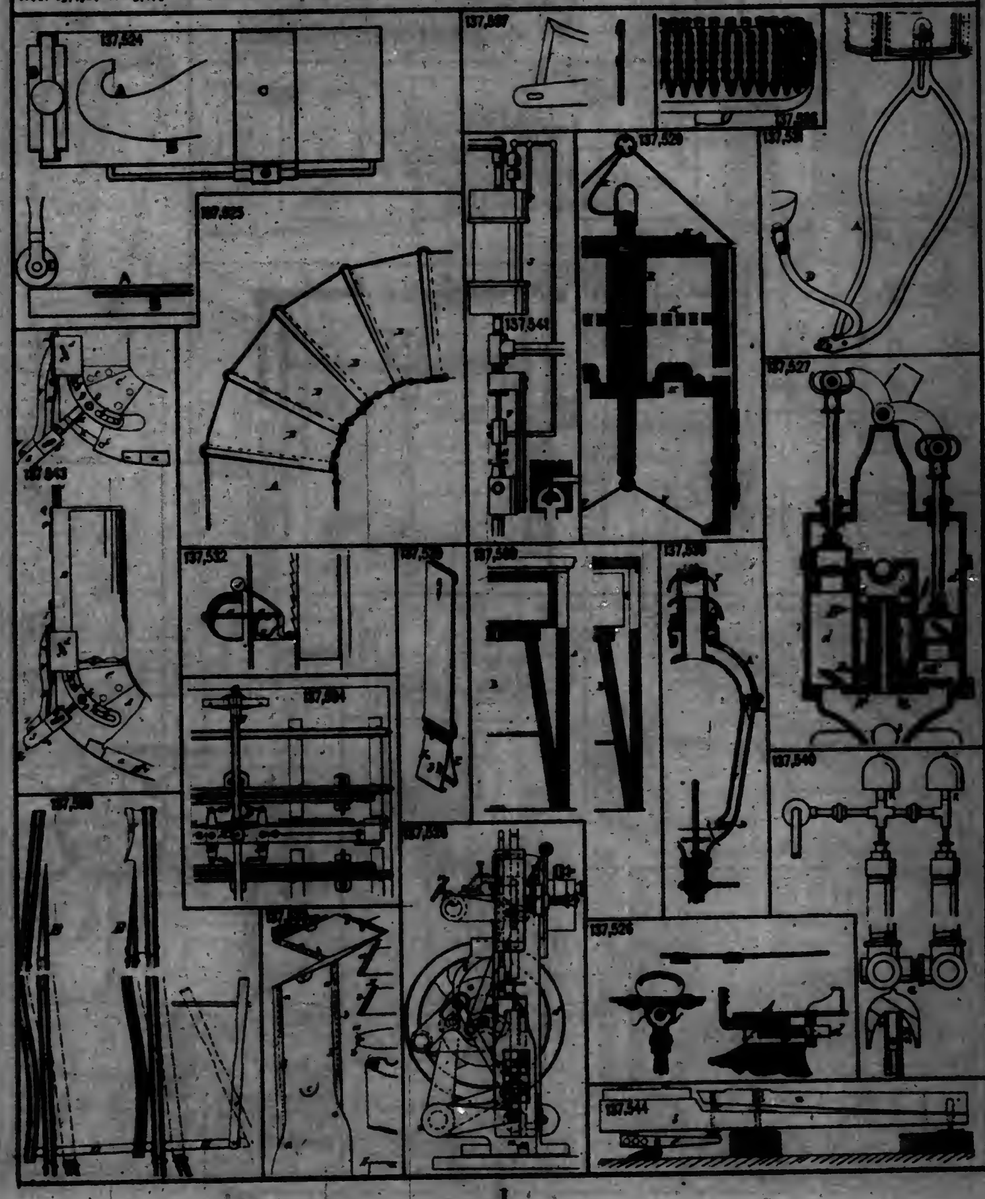
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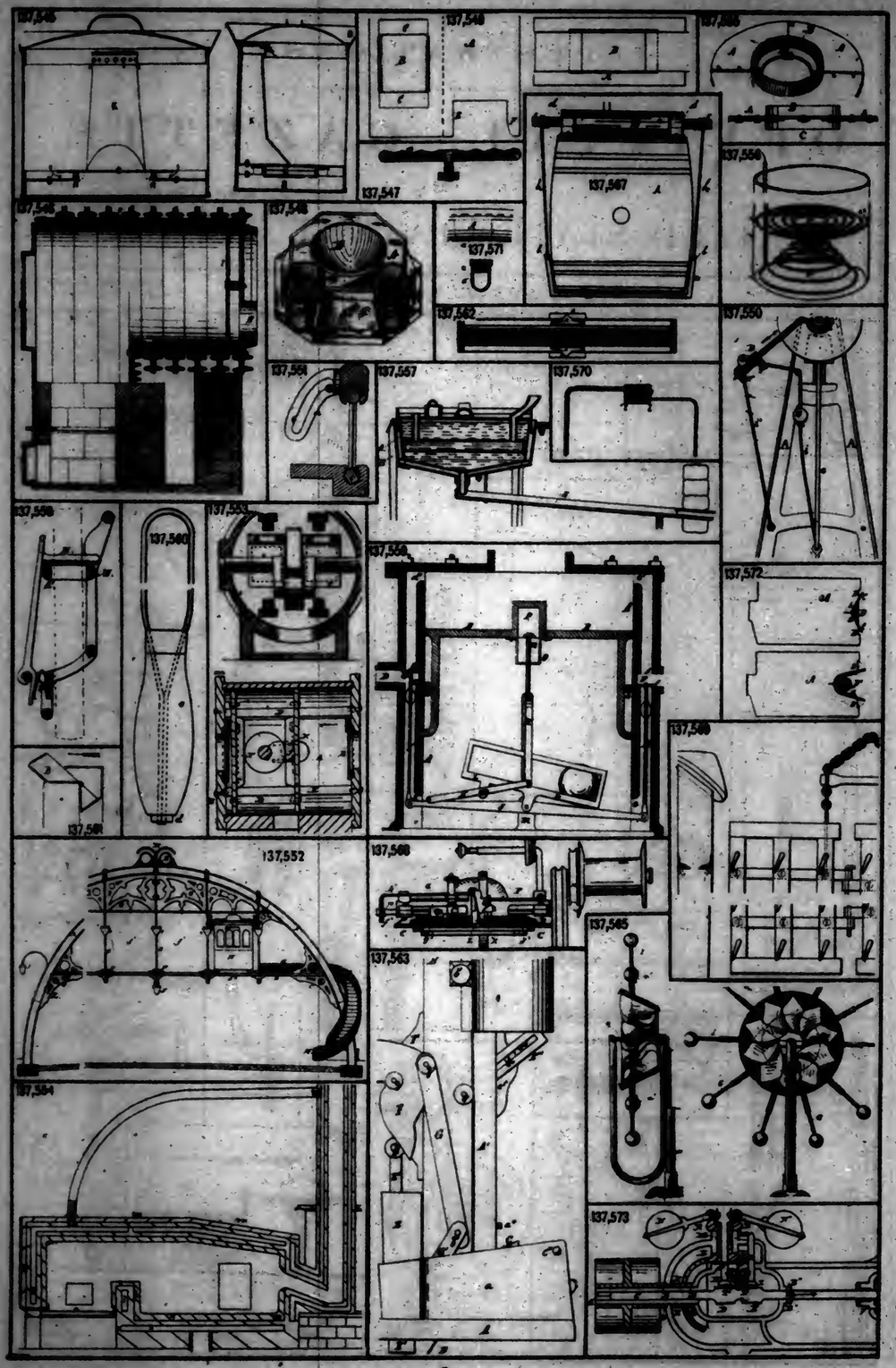
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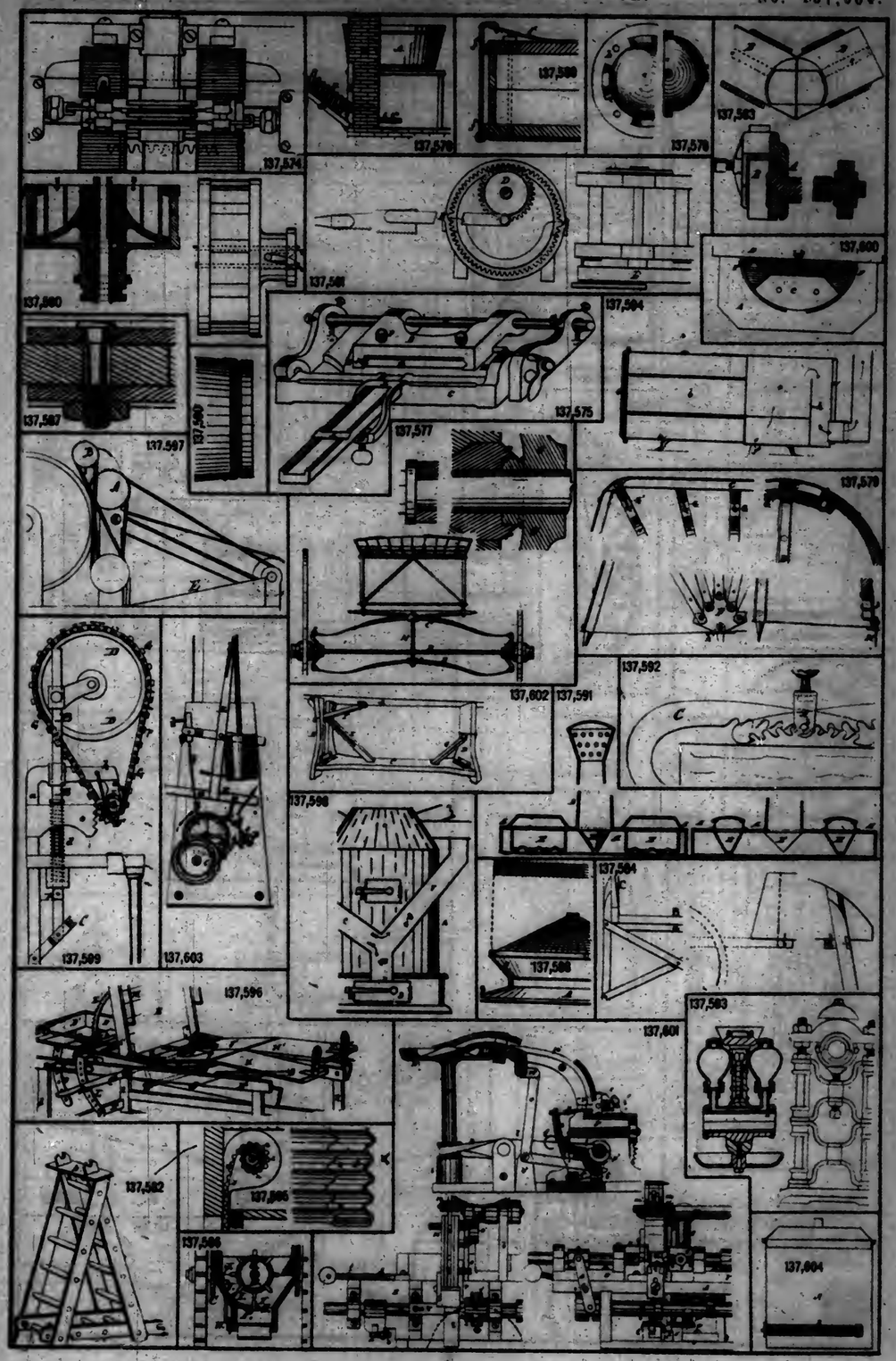
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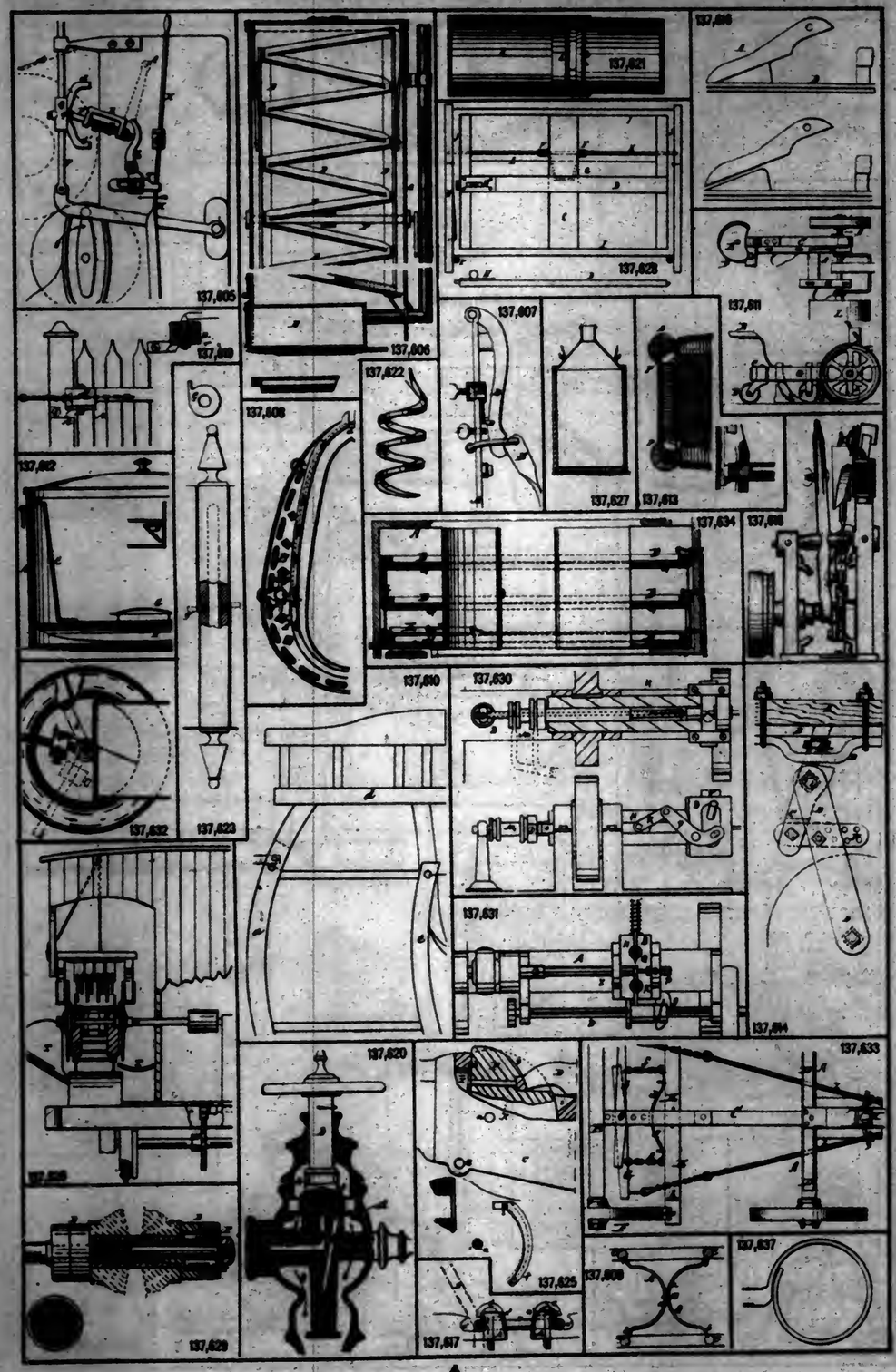
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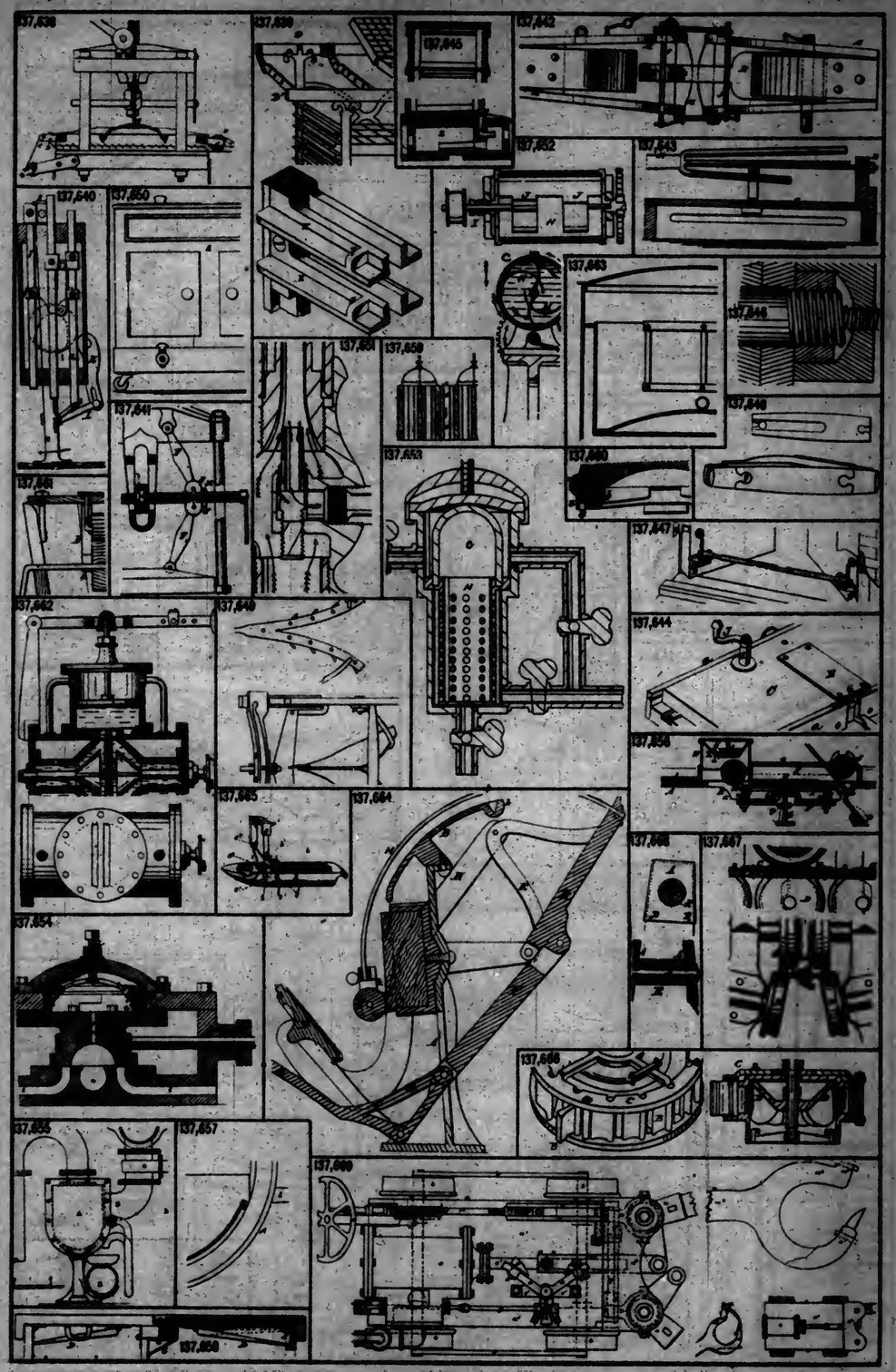
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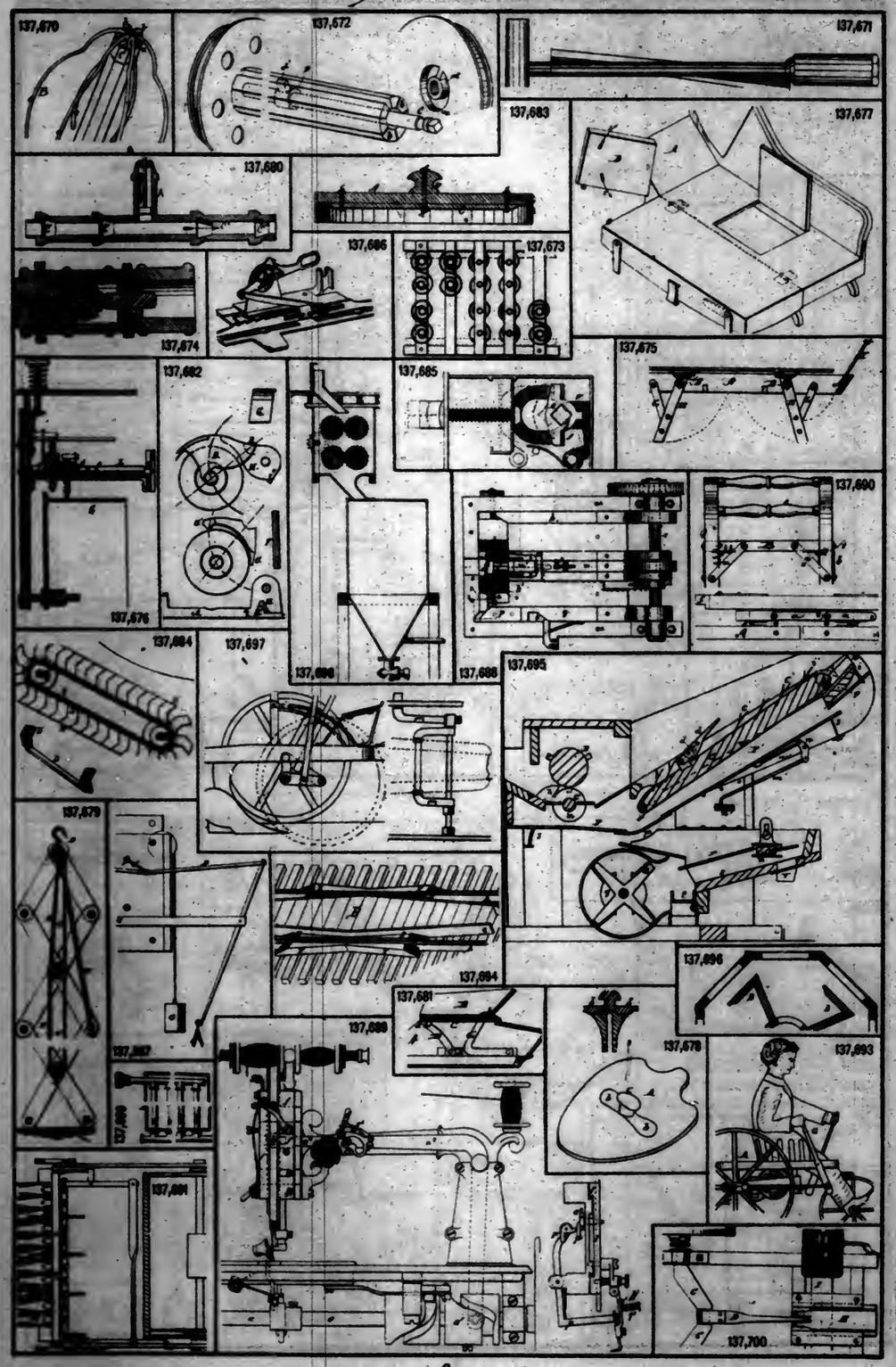
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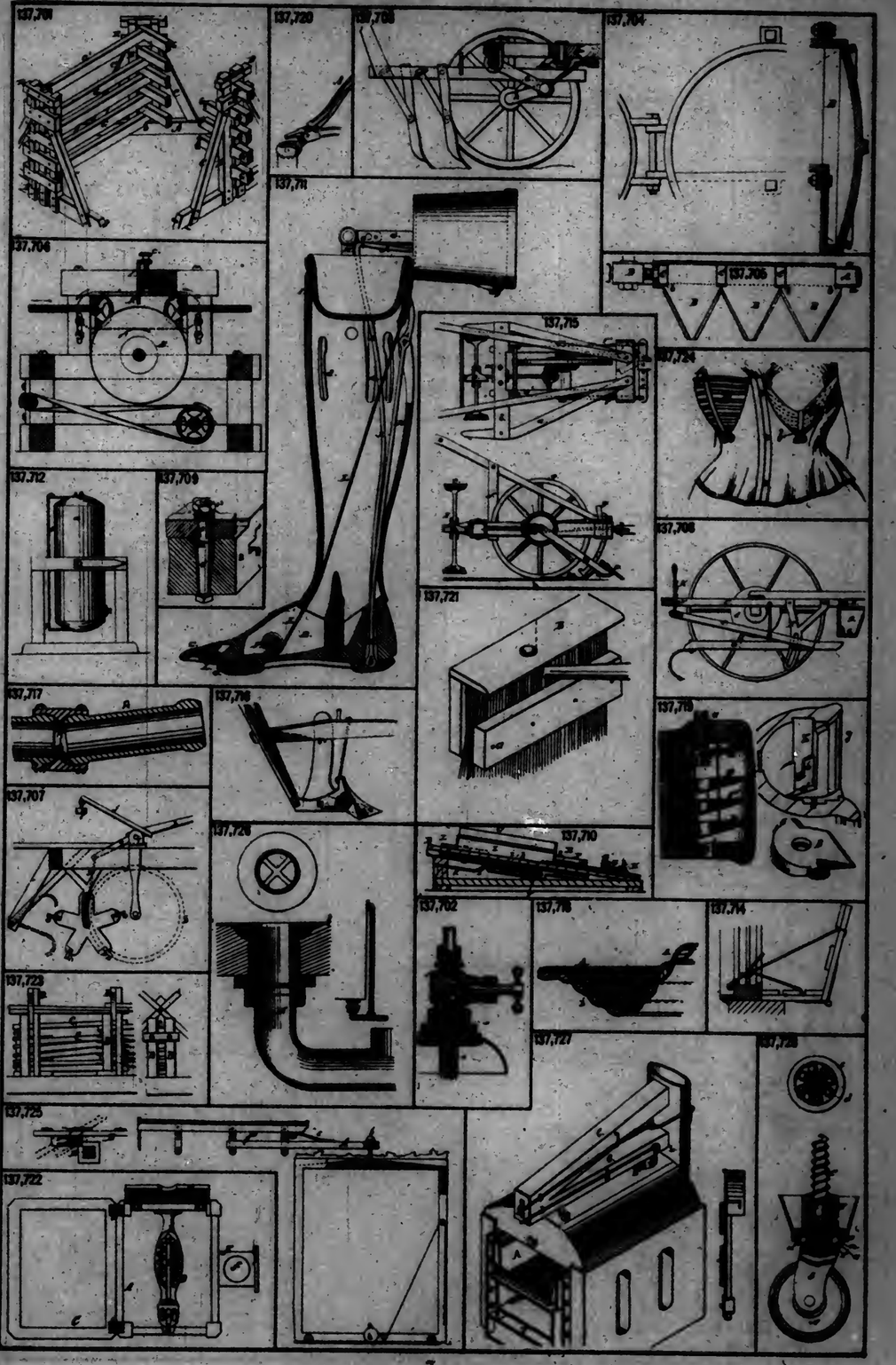
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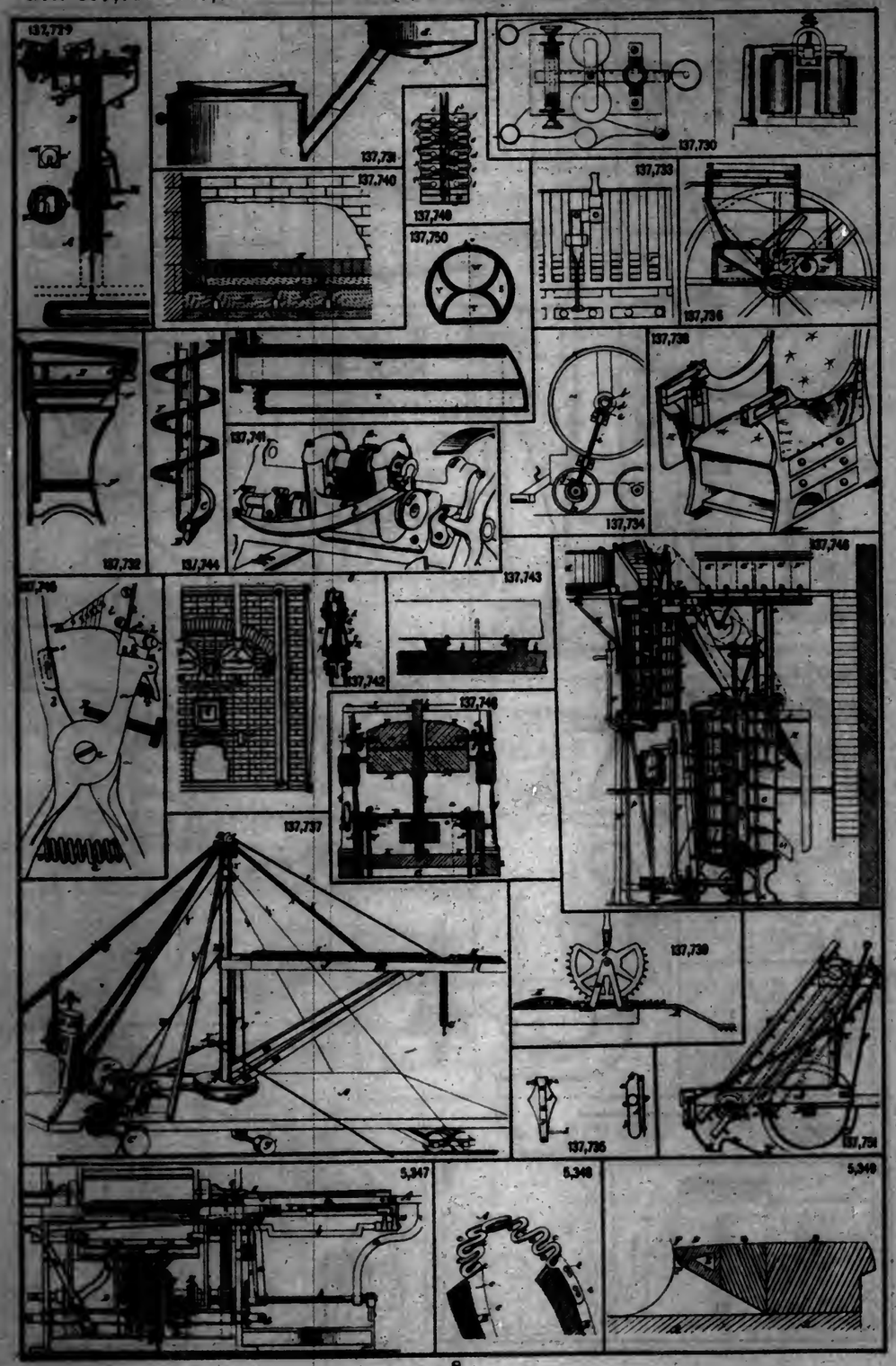
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COMMISSIONER'S DECISIONS.

LYNCH AND RAFF *vs.* DRYDEN AND UNDERWOOD.—*Interference.*

[*In the matter of the interference between the reissue application of E. P. Lynch and H. R. Raf and the patent of W. A. Dryden and reissued patent of F. J. Underwood, for* CULTIVATOR. *Appeal from the decision of the Examiner of Interferences.—Decided April 22, 1873.*]

The proceedings upon an interference should be suspended whenever it is ascertained that the supposed invention which is in controversy is not patentable.

The Examiner of Interferences is authorized to dissolve an interference when he finds that the invention in controversy is not patentable.

Where there is reason to presume that the question of patentability has not been definitely settled, he may dissolve the interference and remand the case to the Examiner in charge for further consideration.

Rule 59 explained.

To render a combination patentable two things are requisite, a novel assemblage of parts exhibiting invention, and the co-operation of all the parts in producing a useful result.

A split tongue or frame in a walking-cultivator neither modifies the operation of a curved or raised axle therein, nor that of two beams hinged to said axle so as to be moved laterally or vertically independently of each other; neither is its own action modified by them, and there is no legitimate combination between them.

There being no difficulty in the way of substituting a split tongue for a straight one in a walking-cultivator, and no invention required to make it, the substitution was held not patentable.

LEGGETT, *Commissioner:*

This is a motion on the part of Underwood for the dissolution of the interference, based on the ground that so much of the alleged invention of Lynch and Raff as has been placed in interference is not patentable. The subject-matter involved is embodied in the eighth claim of their application, as follows:

"The combination, in a walking-cultivator, of the following instruments, to wit: A split tongue or frame, an arched or raised axle mounted on wheels, and two beams hinged thereto in such a manner as to permit them to be moved vertically and laterally independently of each other, substantially as described."

In behalf of Lynch and Raff a question of jurisdiction is raised. It is contended that there is no authority in the rules for entertaining a motion to dissolve the interference at the present stage of proceedings upon the grounds of this motion, the testimony having been taken and the case having gone to issue upon the merits. In other words, it is maintained that, the case having passed from the jurisdiction of the Primary Examiner, who is assumed to have adjudged the subject-matter patentable, the question of patentability is not one to be opened before any other tribunal, or before him except upon newly-discovered evidence, or such other ground as would be sufficient to warrant a new trial.

Rule 59 provides for the dissolution of an interference whenever it is found that "no interference in fact exists." With respect to what tribunal may find this, it is only provided that "a motion for a dissolution of an interference on the ground that it was improperly declared, if made before the taking of testimony, will be heard by the Primary Examiner who declared the interference." It was assumed that cases in which the proceedings upon the merits would reach the stage of exclusive jurisdiction of the Examiner of Interferences before the question of the patentability of the subject-matter should be raised would be of so infrequent occurrence that no more definite provision than that quoted would be necessary. The rule, however, does not confine the hearing of such a motion exclusively to the Primary Examiner. It only provides that it shall be heard by him if made before the evidence has been taken. In *Lloyd* vs. *Emerson*, Off. Gaz., vol. 2, p. 674, I authorized the Examiner of Interferences to suspend proceedings in any case if it should be manifest from the record, as it was in that case, that the interference had been improperly declared, no patentable subject-matter being involved in interference. This course is

necessary because, whenever it becomes obvious from the record that a patent cannot legally issue upon the subject-matter involved, for want of novelty, it is idle to proceed with a controversy respecting it. It is also analogous in principle to proceedings in courts in some cases, and is sufficiently authorized by implication from the rule above quoted. A motion of this kind, at this stage, is similar, for instance, to a motion to dismiss a suit for want of jurisdiction of the *subject-matter*. It assumes that the subject-matter is not patentable, and therefore that there is no interference over which the Examiner can properly take jurisdiction. A plea to the jurisdiction of the subject-matter may be made at any stage of an action, even on appeal to a superior court, when it goes to the question of the jurisdiction of the court below, and was not entered there. *Gormly* vs. *McIntosh*, 22 Barbour, N. Y., p. 271, and cases therein cited.

The practice of the Office, to be sure, contemplates that the question of the patentability of the subject-matter of an interference shall be decided before an interference is declared. But if it has not been, then it must be before the interference can go on. It is only in cases where the facts of the record are such as might justify a presumption that it had not been, that the Examiner of Interferences has been instructed to dissolve the interference and let the question go back to the Primary Examiner. Such cases will be exceptional. When they do occur, however, it would be mere martinetism to ignore their defects simply because they have happened regularly, in due order and method. I have no question as to the legality and propriety of the practice indicated in such cases.

The issue upon the present motion is whether the references which have been cited by the Examiner do not fully anticipate the claim above quoted. None of the elements of the claim were invented by Lynch and Raff. If, however, they constitute a legal combination, and are not to be found embodied in combination as here shown, then of course the subject-matter of the claim is patentable.

The patent of P. Coonrod, granted December 24, 1867, shows the parts embraced in the claim, except that the tongue he uses is not a split tongue. Split tongues are, however, old. They are used upon straddle-row cultivators to prevent the horses from treading on the corn. This is all the purpose they serve. Coonrod's cultivator, with its ordinary straight tongue, will operate to cultivate corn precisely as applicant's does, because the form, number, and arrangement of the parts are precisely the same, except the *form* of the tongue. That is different; but it is evident that the modification does not produce a new combination, as alleged, because it does not at all affect the operation of the other elements of the claim. The modification of the tongue constitutes an improvement in the tongue itself, because it keeps the horses so far apart as to prevent them from stepping on the growing corn. It operates on the horses, and not in any different manner in conjunction with the wheels and axle and the plows from an ordinary tongue. If the tongue were made in some improved form, elongated, for instance, to prevent the horses from biting off the stalks of corn, as they frequently do when being used in cultivating, that would be a corresponding improvement. Because of such improved form, such a tongue could not properly be claimed in combination with the parts of a cultivator named. Again, suppose an improved whiffletree and neck-yoke and linchpin should be used, which in themselves respectively possess some special advantages. It is obvious that they could not properly be claimed in combination with the wheels, or axle, or plows of a cultivator, if used in their ordinary independent relations to one another; because, however advantageous it might be to apply all three to a cultivator, they do not operate in combination. The advantages resulting from their use are due to each independently of the others. This is just as true of the split tongue here claimed. The alleged combination of parts which constitutes the subject-matter of this interference is, therefore, not a legal one, because it is not new, in view of the patent of Coonrod. The remarks of Commissioner Fisher in *ex parte* John Underwood, C. D. 1870, p. 52, respecting combinations, are applicable to this case; also *ex parte* David Eznor, C. D. 1871, p. 242.

Neither courts nor Commissioners have ever attempted, I believe, to give an authoritative definition of a patentable combination, intended to be of universal application, broad enough to include all that is legitimate and narrow enough to exclude all else. Certainly I shall not attempt to give such a definition. It would seem, however, from the decisions of the courts respecting combinations, cited in the cases above referred to, that two things are always essential: First, a novel assemblage of parts exhibiting invention; second, that the parts shall co-operate in the production of a useful result. By the term co-operate as here used, the courts do not mean merely acting together or simultaneouly, but acting to one common end, to a unitary result. Each and every part must have its sub-function to perform, and each must have a certain relation to and dependence upon every other, and all must act in producing the result. Invention must be exhibited in the sense that some difficulty or obstacle had to be overcome requiring more than ordinary mechanical judgment. In the case under consideration all the elements of the combination claimed are old—all except the split tongue have been used in exactly the same relations before. The split tongue was old—had before been used on cultivators and in numerous other analogous positions. The invention, if any was exercised, consisted in substituting the well-known split tongue for the well-known straight tongue. In making the change there was no obstacle to overcome, no difficulty in the way, and neither ingenuity nor skill required. To call such substitution invention would require a degree of liberality to the applicant that would be oppressive to community, for certainly the farmer should not at this late day be prohibited from using so old and common a thing as a split tongue upon any farming utensil to which his taste or convenience may lead him to attach it.

Again, the combination claimed is faulty from the fact that the parts composing it do not co-operate in the sense required. The relation of the tongue to the other parts is such that they are in no way affected by the circumstance as to whether the tongue is split or not. Their operation is exactly the same, and they produce exactly the same result with a straight tongue as with the split. The axle, wheels, plows, &c., have no influence in securing the benefits arising from the use of the split tongue; neither does the *split* of the tongue have the remotest bearing or influence upon the functions of the other parts; neither do the parts in any proper sense co-operate in producing a unitary result. The split tongue tends to keep the horses from treading upon the corn. This it does without the aid of any of the other parts, and here the peculiar function of the split tongue ends. It would do exactly the same with any other cultivator, whether walking or riding, whether the plows are attached or detached, and whatever might be the shape of the axle.

It is argued that many precedents may be found for such claims in reissues. I have no doubt of that fact. No section of the patent act has been so abused as the one relating to reissues. It is also true that many arrangements of parts having no working relations to each other, and no elements of co-operation, have been patented as combinations, but clearly without authority of law, and improperly; hence they cannot serve as controlling precedents.

The decision of the Examiner of Interferences is reversed, and the interference is for the present suspended, and the application will be returned to the Examiner for further examination upon the matters herein discussed.

S. B. SEXTON.—*Extension.*

[*In the matter of the application of Samuel B. Sexton for extension of Letters Patent for* IMPROVEMENT IN HEATING-STOVES, *granted April 19, 1859, reissued December 3, 1861, and again in two divisions, Nos. 1,621 and 1,622, February 16, 1864, No. 1,621 being again reissued September 27, 1864, and February 12, 1867.—Decided April 18, 1873.*]

A patentee who has licensed others to work his invention is to be charged the same royalty on what the firm to which he belongs has manufactured that his licensees have paid him, and need not account for any further profits.

Where the invention which the patentee is entitled to claim under his patent exceeds in value the amount he has received from it, it will be extended, although all the claims are required to be withdrawn but one, and the limited invention covered by that has been sufficiently remunerated.

When a claim which is allowed to remain on extending a patent defines the invention by reference to another which is required to be disclaimed, the latter will be understood to remain valid so far as it is connected with and embodied in the other.

Every invention which was claimed in an application rejected previous to the act of 1870 must now be considered as abandoned, and if claimed in a patent issued upon an application filed after the one rejected, must be disclaimed before the patent can be extended.

Claims in a reissued patent which embody, though only by way of reference, a feature not shown in the application for the original, must be disclaimed before the patent will be extended.

Claims which are clearly functional, and claims to illegitimate combinations, must be disclaimed, as well as claims to old devices, before a patent will be extended.

A heating-stove containing a suspended magazine and a grate of larger dimensions under it, with a free space above for burning the gases, is patentable, although a furnace of the same structure, employed for heating boilers, and surrounded with water, has been known before.

A claim for "increasing the combustion," "and also insuring a more brilliant illumination," by the manner of constructing a stove as specified, is a functional claim.

A claim for the "adaptation of a fire-place stove" for use with certain other specified elements in it is a functional claim.

There is no legitimate combination between a fire-place stove with diving-flues and a suspended magazine, and a claim for such a combination cannot be sustained.

There is no legitimate combination between a cold-air chamber and a stove having a suspended magazine.

A rejected application is a bar to a new one by the same party for the same invention, unless the second was filed as a renewal or continuance of the first.

The law providing for the division of a patent upon a reissue applies only where there are distinct inventions to be embodied in them, not to the mere application of the same invention to different machines of the same generic class.

Doubted whether a patent should be divided on a reissue so as to embrace in one division the employment of an invention in a fire-place stove, and in the other the use of it in an outstanding stove.

The abuse of the privilege of reissuing patents, by unduly expanding their scope, condemned.

Godfrey vs. *Eames*, 1 Wall., 317, and *ex parte* Shunk, Com. Dec. 1870, p. 10, commented on.

THACHER, *Acting Commissioner:*

The petitioner seeks the extension of reissues No. 1,622 of February 16, 1864, and No. 2,476 of February 12, 1867. The first relates to a fire-place heating-stove, and the second to an outstanding heating-stove, as they are respectively denominated by the trade.

It is set forth in the petitioner's statement with considerable stress that he was the first to combine in a heating-stove the following elements: First, a fuel-magazine suspended above the fire-grate; second, an area of grate-bars and fire-bed of greater diameter than the magazine; and, third, a series of projecting illuminating-windows in such a manner as to radiate heat and light from the combustion taking place between the lower edge of the magazine and the inner sides of the combustion-chamber.

From this combination of elements—which it appears to be true Sexton was the first to produce—a number of substantial advantages result in base-burning stoves. The novelty and utility of *this* invention are fully established upon a careful review of the state of the art prior to the grant of Sexton's original patent, and if his claims were limited to this combination there could be no hesitation in granting him an extension.

The testimony, which it is to observed relates to the invention in general, as embodied in this combination, rather than to the particular combinations embodied in the claims of the two reissued patents under consideration, shows that the patentee's improvements are of great value and importance to the public.

Beyond question their value is much in excess of his remuneration, as shown by his statement of profits, which is in due form and appears to be correct.

Not having made a close monopoly of his invention, he is entitled to manufacturer's profits, and so has charged the patents only with such portion of the profits received from his own manufacturing firm as the usual royalty received from others would amount to. Such a course was approved by the Commissioner in a former case, for the same reason, and is regarded as proper in this. (Lewis Miller, Off. Gaz., vol. 1, p. 431.)

Applicant's diligence in introducing his invention and seeking profit from it has been unexceptionable, and the abstract of title shows he has a sufficient interest in the extended term to warrant the grant of an extension. Upon a careful consideration of the whole case, the only questions arising as to the propriety of granting the extension sought relate to the validity of

the claims of the reissued patents. The keen and vigorous opposition of the remonstrant, as might have been expected, is addressed almost exclusively to this matter, as the most vulnerable point for attack.

Referring to the combination of the elements above mentioned, the petitioner says in his statement: "The principles cited above are embodied in both the patents sought to be extended, and the distinctive feature of difference consists only in the application of said principles to a fire-place stove and an outstanding stove."

It may be questioned whether the application of an invention in one class of heating-stoves, and the application of the same invention, in the same way and with the same method of operation and results, in another class of heating-stoves, furnishes the proper basis for the division of a patent in reissuing.

The first claim of reissue No. 1,622 shows that this point was overlooked when this patent was granted. The law contemplates, not that the same entire invention shall be merely applied to different machines of the same generic class in order to warrant separate patents upon reissue, but that distinct parts of the invention itself—in other words, distinct inventions—shall be embodied in the respective reissued patents. The words of the statute are that the Commissioner may "cause several patents to be issued *for distinct* and *separate parts* of the thing patented." Some of the claims in the patents before me differ only in that the parts recited are in one case embodied in an outstanding stove, and in the other in a fire-place stove. These parts accomplish the same purpose in both stoves, and should not appear as subject-matter exclusively for claims in two patents.

These claims, however, are subject to other grounds of objection upon which they must be disposed of.

The claims of reissue No. 2,476 are as follows:

"1. A stove for warming or heating purposes, constructed with a fuel-magazine supported free from the grate, and a combustion-chamber having a grated fire and air-supplying bed of a greater diameter than the fuel-magazine, so arranged and constructed that the fuel can spread out laterally and form a conical pile, and burn in thin layers out to the wall of the stove, so that the inflamed gases may burn in a free space as they are evolved from the entire outer surface of the incandescent conical pile of coals, and so that air shall be supplied in a direct manner through the grate in said free space, substantially as and for the purposes described.

"2. In combination with the subject-matter of the first claim, constructing the combustion-chamber A with projecting window-frames or door-frames, substantially as and for the purposes described.

"3. A stove for warming or heating purposes embracing the features of construction mentioned in first claim, and the additional feature of the gas or products of combustion, circulating apartment above and around the upper portion of the magazine, substantially as and for the purposes described.

"4. A stove for warming and heating purposes wherein the spreading of the coals in a lateral direction from the lower end of the magazine is wholly unobstructed all around and out to the wall of the stove A, and at the same time the combustion-chamber proper is formed by the outer wall of the stove, and the products of combustion circulate underneath and around the magazine, in combination with illuminating doors or windows in the said outer wall, said windows or doors being located above the grate and above the upper magazine of the lining of the wall, substantially as and for the purposes described.

"5. The combination of the fuel-supply magazine H, which has its lower end free from the grated fire-bed G, and an unobstructed space below it, where the fuel may spread out laterally and burn in a conical pile and in thin layers to the outer wall of the stove, with a stove, A, which has illumination doors or windows in its wall above the lining, all in such manner that the fire can be kindled through the apertures which are covered by the doors or windows, substantially as set forth.

"6. The combination of the unobstructed free space F out to the wall of the stove above the lining, the illumination windows or doors in wall A, and gas-circulating space p around the circumference of the magazine, substantially as described.

"7. In a coal-supply magazine stove, I claim the extended grated surface of the fire-bed outside of reservoir or magazine, in combination with the free space around the magazine of a base-burning stove, substantially as described.

"8. Increasing the combustion and the consequent heating effect of the coal, and also insuring a more brilliant illumination of the wall of the stove, by constructing, arranging, and combining the combustion-chamber proper, the magazine, and the grated fire-bed, all substantially in the manner herein specified."

If the first claim were to be construed broadly it would be regarded as met by the English patent of Grant, No. 13,298, of 1850. The terms of the claim are exactly answered except the word "stove." Grant's device is not a stove. It is a heating-furnace for boilers, and is within and surrounded by the water of the boiler. The parts it exhibits, which are embodied in this claim, would not obviously appear applicable to a heating-stove. Their use as shown in a steam-boiler would scarcely suggest such an application of them. It required some modification and invention to adapt them to a stove. Their adaptation, therefore, constituted an improvement in heating-stoves such as probably warranted a claim for them. But it is not necessary to rest the disposal of this claim upon this possibly doubtful premise. It is met by a more formidable objection. It is completely answered by the rejected application of the inventor filed March 26 and withdrawn April 30, 1856. Upon this point it is proper to observe that it has always been the practice of the Office to reject a subsequent application upon a prior one of the same applicant, showing the same invention, unless the subsequent application has been made as a renewal or continuation of the prior one. I have carefully examined authorities on this point, and conclude that such was not the case in this instance. The application upon which the original patent of 1859 was granted was an independent one, referring to a different stove, claiming an invention not to be found in the prior rejected application, and not filed until nearly three years after the latter was withdrawn. It was therefore in no sense a continuation of the first, or so intended to be.

The case of *Godfrey* vs. *Eames*, 1 Wall., 317, is relied on principally to support a different view. In that case the first application was withdrawn for the express purpose of making a new one, which was filed simultaneously with the withdrawal, and although the model and drawing were changed somewhat, the essential features remained the same, the new claim was in substance like the old, and with equal propriety could have been based upon the old record. The two applications were very properly held to be continuous. But the decision must be construed in connection with the facts in the case, which have been shown to be different in the present instance. The two cases, therefore, are not parallel, and the terms of the decision do not appear to me broad enough to include both. I am aware that a seemingly different conclusion was reached in the extension of *Christian Shunk*, C. D. 1870, 10. It appears, however, from the statement of the case, that the circumstances were the same as in *Godfrey* vs. *Eames*—that is, the withdrawal of the first application and filing of the second were simultaneous. The decision hinges on this fact. But, as already shown, the circumstances in this case were very different; hence the *Shunk* extension furnishes no precedent for such construction of *Godfrey* vs. *Eames* as is now urged in behalf of applicant, and is not in conflict with the opinion expressed above.

The claims embracing elements of the earlier invention I believe to have been erroneously admitted upon reissue, and they must consequently be refused extension. There is an additional reason at this time for their refusal. Congress has expressly recognized the class of old rejected and withdrawn cases in the Office as *pendente lite*, embodying claims not finally adjudicated, and presenting the proper channel for securing rights, not to be held as abandoned except upon proof of the fact. So they were regarded by the Office, for some of them were from time to time revived and allowed to go to patent, and the act of Congress of 1870 confirmed the propriety of such practice. It provided, section 35, that this class of cases must all be renewed within six months from the date of its passage; otherwise they should be regarded as abandoned. Sexton's application of 1856 was never renewed or expressly abandoned. Such claims, therefore, as might have been based upon that application by renewal are now abandoned to the public by express legislation. So far as the present claims are met by that application, therefore, they are the property of the public and cannot be extended. The third and seventh claims, in addition to the first, are thus met, and must be disclaimed.

In the fourth, fifth, and sixth claims an element has been introduced that is not to be found in the original patent. It is new matter, and should not have been admitted even in the specifications, without at least some hint of its existence in the original patent. The rule excluding new matter in reissues should be strictly enforced. Although the evil may not be apparent pending the application, the intent and effect of incorporating new matter in the slightest degree are almost uniformly to unduly expand the scope of patents. Such is the result of the ostensibly casual and unimportant reference to a "lining" in the specifications of these patents. All matter referring to this suppositious "lining" has been unwarrantably interpolated. The violation of the law is glaring when the "lining," though not actually claimed, is embodied in claims as a material element for the determination of the location of parts, and consequently of the nature and scope of the claims.

The eighth claim seeks to cover a result or function. It cannot be construed to signify simply the combination of the elements named in it. Its meaning is doubtful, and it should not have been allowed as it stands. I am unwilling to seem to sanction such practice by permitting it to be extended.

The second claim is the only one in this patent which I find to be valid. If it were the only one capable of being legally based upon the actual invention, there would be a question as to whether the remuneration of the inventor, which has been over $22,000, has not been adequate. But I think the scope of the invention is somewhat broader than this claim indicates, and the patent may be corrected by reissue. It covers the combustion-chamber and projecting windows, "in combination with the subject-matter of the first claim." Each claim should be drawn complete in itself. The first claim here is invalid and must be disclaimed, yet it is a part of the second, which is made up of both and is valid. This involves difficulty, or at least is somewhat awkward. It will of course have to be understood that the first claim of itself, as an independent claim, is stricken from the patent, but as connected with and embodied in the second it remains.

Reissue No. 1,622 presents nine claims as follows:

"1. The adaptation of a fire-place stove which has diving-flues for use with a fuel-magazine which has an unobstructed space between its lower end and the grate, substantially as and for the purpose set forth.

"2. A fire-place stove which has diving-flues constructed with the reduced portion A′, enlarged portion A, reverberating-plate A″, gas-space g, projecting window and door frames ζ, and fuel-supply magazine H, substantially as and for the purpose set forth.

"3. A fire-place stove with diving-flues and kindling-apertures ζ ζ, in combination with a fuel-supply magazine which has a free unobstructed space below and out to the interior surface of the part A, between itself and the grate G, substantially as and for the purpose set forth.

"4. In combination with a fire-place stove which has diving-flues, I claim a fuel-supply magazine which has a free unobstructed burning-space below it and out to the wall of the stove, substantially as described.

"5. The combination of the fuel-supply magazine, which is arranged to have a space between its lower end and the grate G, with a fire-place stove which has a contracted part, A′, in which the gases circulate in contact with and over the cover of the fuel-supply magazine, and from which the gases pass into diving-flues, and thence under or around the ash-pan and up to the draft or exit-flue, substantially as and for the purpose set forth.

"6. The chamber A A′ A″, with door I, in combination with the internally-located fuel-supply magazine H, which is free from the grate and has a removable cover, substantially as and for the purpose set forth.

"7. A fire-place stove which combines in its construction a burning base-surface, G, of larger diameter than the fuel-magazine, a magazine, H, and diving-flues, substantially as and for the purpose set forth.

"8. A cold-air chamber combined, in any manner substantially described, with a stove having a fuel-supply magazine, H, for the purpose set forth.

"9. The combination of the main chamber A, fuel-supply magazine H, flues B E B′, and damper *b*, substantially as and for the purpose set forth."

The first is for "the adaptation of a fire-place stove" for use with one of the elements of the patentee's invention, viz., the fuel-magazine. The magazine is placed in the fire-place stove in the same position, for the same purpose, and accomplishes the same results as in the outstanding stove in Sexton's rejected application of 1856. The subject-matter of the claim is therefore anticipated, so far as it can be said to embody any invention. Besides this it is purely functional, and for that reason never should have been allowed.

The fourth claim covers the alleged combination of the fuel-magazine with a fire-place stove having diving-flues. The flues have no such relation to the magazine as in any legal sense to be regarded as in combination with them. An outstanding stove *having legs* might with just as much propriety be claimed in combination with the magazine. The claim does not cover a valid combination. The magazine is shown in the same relative position in the application of 1856, which is a full answer to this claim.

The eighth claim covers a cold-air chamber combined with a stove having a magazine. Air-chambers have been used since 1850 at least (see patent of Gosnell, April 2, 1850) with stoves not having fuel-magazines. It is impossible for me to perceive what connection there is between the magazine and the air-chamber to render this claim a valid one for the alleged combination. No new result is produced, and, as remarked of the fourth claim, the stove-legs or any other part disconnected and independent in position and operation might as well have been assumed to be in combination with the air-chamber. The claim was improperly granted, because it covers no patentable combination, and is met by the patent cited, showing a stove without a fuel-magazine.

The history of this case exhibits a manifest and, I am glad to say, uncommon perversion of the remedy designed to be provided by law in reissues. The original patent has been boldly expanded from time to time, so as actually to keep pace with the progress of the art as

developed by time and experience, and to preserve apparently a controlling monopoly of a large and popular class of heating-stoves. From a single modest claim covering an actual invention, accompanied with a truthful disclaimer of the invention of "any of the parts of this stove separately considered," have arisen (through the fault of some Examiner, it must be acknowledged) seventeen claims, most of which are broader than the invention, and scarcely one of which was not manifesty dictated in some measure by the progress of the art as developed by other inventors.

Such practice cannot be too strongly condemned. While a generous liberality should be shown to inventors, so as to afford ample protection for everything rightfully their own, an unwarrantable expansion of patents is a gross violation of lawful privilege, and the infliction of a great wrong upon other inventors and the public generally. As it is made the duty of the Commissioner in extensions to examine the whole case *de novo*, I am necessarily compelled to restrict these patents to what lawfully may be secured under them before granting the extension sought.

The patents will be extended—provided the fees are duly paid—upon the disclaimer of the first, fourth, and eighth claims of reissue No. 1,622, and all except the second claim of reissue No. 2,476.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

T. J. W. ROBERTSON *vs.* SECOMBE MANUFACTURING COMPANY.

[*In Equity.—Before Blatchford, J.—Decision rendered February* 27, 1873.]

ROBERTSON'S PATENT FOR HAND-STAMP—FUNCTION OF REISSUES—INVENTION AS RELATED TO THE STATE OF THE ART.

The claims of the patent for an improvement in hand-stamps, granted to T. J. W. Robertson, September 22, 1857, and reissued December 12, 1871, which are in these words, viz: "1. In combination with a handle and a series of printing-wheels, or their equivalents, for printing dates, a fixed type-form or printing-die, for dating purposes, substantially as described; 2. A hand-stamp having a permanent inscription form or die, provided with an aperture through which the type-wheels work, when so arranged that the said type-wheels may be turned, for changing the dates, without shifting the fixed form or die, substantially as specified; 3. A hand-stamp having a series of type-wheels provided with holes to receive a locking-pin, E, substantially as specified," held to be valid.

Robertson's invention, by which a permanent type-form is combined with a handle, and with type-wheels so arranged as to be capable of making as many impressions as may be desired, is not anticipated by a combination of type-wheels for numbering with a fixed type-form for dating and printing, but which, having no handle, is incapable of use as a hand-stamp, and which requires the material to be pressed down upon it from above.

Nor by a combination of type-wheels for numbering, (requiring the change of one or more type-wheels at every stroke,) combined with type-forms for dating and printing.

It is entirely within the purpose and scope of a reissue to put in the specification a fuller statement than may have been found in the specification of the original patent, of the state of the art, of the nature of the improvements developed by the patentee's arrangement, and of the advantages secured by the use of such improvements.

The presence of a comma in a reissue disregarded, when shown by the context to be a clerical error.

Three type-wheels having been used in a hand-stamp to print the month and the day of the month, it would be obvious, if desired, and would be no invention, to add a fourth wheel to print the year, or to use the third wheel for this, putting all the days of the month on one wheel.

A paper discredited as a part of a caveat, when the same had been indorsed by the Commissioner of Patents, after full investigation, as forming no valid part of such caveat.

[*F. H. Betts*, for complainant.

Nelson Orose, for defendant.]

BLATCHFORD, *J.*:

This suit is brought on reissued letters patent granted to the plaintiff December 12, 1871, for an "improvement in hand-stamps," the original letters patent having been granted to the plaintiff September 22, 1857, and extended for seven years from September 22, 1871. The reissued letters patent are granted for twenty-one years from the 22d of September, 1857. The specification says:

"My invention relates to the construction of stamps for producing an impression, such as a postmark or other analogous device, a part of which requires to be frequently changed, such as the date, and part requires to remain the same, as the name of the post-office. In order to give such stamps any considerable utility, the impression must be readily made, and that part of the type which requires frequent change must be always on hand. This result I secure by combining in a hand-stamp fixed type for producing that part of the inscription designed to be always the same, and a series of combined changeable types bearing the necessary characters to allow of any desired change, which shall be connected with and form part of the stamp. These types are connected and arranged to revolve in substantially the same manner as the combined types used in book-paging machines, but differing therefrom in having an arrangement by which the desired inscription may be printed repeatedly, without changing at each impression.

"Prior to my invention dating-stamps were made with loose types; book-paging machines were used with combined types in the form of wheels and chains; and machines for printing tickets, &c., had type-wheels combined with permanent inscription-forms. But these last machines were so made as to produce the impression only on the under surface of the materials, and to change the type-wheels at every stroke. So far as I am aware, no dating-stamp was ever made, previous to mine, with wheel-type or its equivalent, nor a fixed inscription plate or form combined with such type in such a manner that the latter could be readily turned without changing the relative positions of the said wheels and permanent inscription, and yet be capable of printing simultaneously the combined inscriptions in a small space, as is necessary in canceling revenue-stamps; nor could an impression be readily made by such machines on the upper surface of the paper.

"My invention, therefore, consists, mainly, in the construction of a stamp in which combined changeable dating-type are used, in combination with a fixed inscription-form or printing-die, and in so arranging these parts in connection with a stem or handle that the dating-types may be easily changed and thoroughly secured, and that the impression may be readily made in a small compass on the upper surface of the material."

The specification then describes the construction and arrangement of the parts of the stamp, with references to three figures of drawings annexed. There is a handle, to the bottom of which is attached a metallic forked shank. To the bottom of this shank is attached a metallic ring, said ring being secured to the shank by means of screw-bolts. The lower part of the shank is also notched, in order to receive the ring and form a front bearing for it; but it is stated that various other methods may be adopted, at the pleasure of the maker, for attaching the ring to the shank, and that, when the stamp is intended for a letter-stamp, the name of the post-office may be engraved on the face of the ring. A shaft passes horizontally through the shank. On this shaft are placed three type-wheels, which revolve independently of each other on the shaft. It is stated that the faces of these type-wheels may be provided, respectively, with "the names of the months, of the year, and also ten numerals." The shaft is arranged at such a distance from the face of the ring that the three type-wheels may be turned so that the types upon said

wheels will come in line or form a horizontal plane with the types on the ring, and thus when the face of the stamp is inked over by any suitable inking device, and the stamp duly pressed upon a letter or other suitable substance, an impression will be left thereupon of the types contained on the ring, and also of those types of the three type-wheels that are in line with the types on the ring. Only one line of types upon the type-wheels can simultaneously come into a horizontal plane with the types on the ring, the remaining types being distributed around the peripheries of the type-wheels so that they cannot touch the paper on which the impression is to be made. A lock-pin passes horizontally through the shank, and also through the three type-wheels. The object of this pin is to lock the type-wheels, so that when any one line of types has been turned and brought into a horizontal plane with the types upon the ring, such line of types will be held fast and prevented from getting out of place. By removing the pin the combination of letters on the type-wheels may be changed at pleasure. The stamp shown in the drawings has the face of its ring made in circular form; but it is stated to be obvious that the shape of the ring may be changed to suit the pleasure of the purchaser, without changing the general construction of the stamp. It is also stated that the type-wheels and ring may be engraved with any suitable letters or figures, and that the device is particularly useful for stamping letters, tickets, &c., where the words or numbers have to be frequently changed. It is also stated that, instead of the pin for locking the type-wheels, small springs may be used, one end of each being attached to the shank, and the other end pressing into the interstices between the lines of types upon the type-wheels, and so made as to prevent accidental movement of the wheels in either direction; and that, although either the pin or springs may be used separately for locking the type-wheels, the patentee would prefer to use them in combination, as the springs may hold the day-wheel in position when the month-wheel is being turned, which the pin will not do, and when the wheels are properly arranged the pin may be screwed fast, and the wheels much more securely locked than by the use of springs alone.

The claims are as follows:

1. In combination with a handle and a series of printing-wheels, or their equivalents, for printing dates, a fixed type-form or printing-die, for dating purposes, substantially as described.
2. A hand-stamp having a permanent inscription form or die, provided with an aperture through which the type-wheels work, when so arranged that the said type-wheels may be turned, for changing the dates, without shifting the fixed form or die, substantially as specified.
3. A hand-stamp having a series of type-wheels provided with holes to receive a locking-pin, E, substantially as specified.

The Patent Office, in examining the question of the novelty of the invention, on the application for the extension of the patent, which was opposed, referred to the English and American patents on the subject. There is an English patent of C. M. Hannington, in 1831, which has a series of type-wheels pivoted on a shaft, and entering an opening in a plate, which plate has engraved or formed upon it, on one side of the opening, the date, and on the other side, in a semicircular form, "two pence." The type on the type-wheels are figures or numbers. The article to be stamped is pressed down on the type by screw-pressure. The object of the device is described as being for producing government, commercial, or law stamps, numbering documents, and stamping fabrics with numbers and date to prevent fraud. It was a combination of type-wheels for numbering, with a fixed type-form for dating and printing, but it had no handle, and was not a hand-stamp, and the impression was made on the under surface of the material. On an examination of all the prior patents, the Patent Office arrived at the conclusion that type-wheels for numbering and lettering were old; that type-forms for stamping or printing the name of a post-office or other matter were old; that type-forms combined with ordinary type for dating were old; and that type-wheels for numbering, (requiring the change of one or more type-wheels at every stroke,) combined with type-forms for dating and printing, were old. The conclusion of the Patent Office was that there was novelty in using the type-wheels for dating purposes, in combination with a fixed type-form for impressing the name of a post-office or other matter, and a handle, and that this was a substantive improvement, in view of the numerous applications made and patents granted subsequently to the date of the Robertson patent, embracing such combination. The use of a handle for holding the entire apparatus enables the impression to be made by pressing the handle downward perpendicularly, carrying with it the apparatus, and enables this to be done by the hand with great facility and rapidity, resulting in having the impressions made on the upper side of the material, thus dispensing with the use of mechanical pressure to press the material down upon the type; and combined with this is the facility of changing the date, when required, by turning the type-wheels without moving or shifting the fixed plate, while as many impressions of the same date as are desired can be had, and an impression from fixed type in connection can be had at the same time. No apparatus presenting these combined features is shown to have existed before the invention of Robertson. The utility, and hence the patentability, of this new combination is shown by the extensive demand for and use of stamps containing these combined features.

There is no foundation for the claim that the plaintiff abandoned his patent after it was issued to him. It is shown that he used every effort within his power to introduce the invention into use, and it is not shown that he ever acquiesced in the infringement of his patent.

It is urged that the reissued patent is not for the same invention as the original patent, and that there are material variations between the specifications of the two patents. The drawings of the original patent and of the reissue are identical. The description of the construction and arrangement of the apparatus, with the references to the drawings, is the same in the two specifications. The specification of the reissue contains a more full statement than the specification of the original patent did of the state of the art, of the nature of the improvements developed in the patentee's arrangement, and of the advantages secured by the use of such improvements. This is entirely within the purpose and scope of a reissue.

It is contended that the specification of the reissue describes a year-dating wheel not found in the specification or drawings of the original patent, and which is found in the defendant's stamp. The drawings in both

patents show three type-wheels, one of which appears to have on it the names of the months in succession; another the three figures 1, 2, 3 in succession; and the third one the nine figures 1, 2, 3, 4, 5, 6, 7, 8, and 9, and the cipher 0, in succession. By the use of the three type-wheels any day of any month can thus be stamped. The specification of the original patent says: "The faces of these type-wheels may be provided, respectively, with the names of the months, of the year, and also the ten numerals." It also says: "The type-wheels and ring may also be engraved with any suitable letters or figures."

"The faces of these type-wheels may be provided, respectively, with the names of the months, of the year, and also ten numerals." The document which reads thus is a printed paper annexed to the reissue patent, under the seal of the Patent Office. It also says: "The type-wheels and ring may also be engraved with any suitable letters or figures." In the course of the testimony of one of the witnesses for the defendants, it is stated that a printed copy of the reissued patent is put in evidence. Such printed copy is then copied in writing, and in such written copy the following language is found: "The faces of these type-wheels may be provided, respectively, with the names of the months, of the year, and also the ten numerals." It is contended that the patentee intended, by inserting a comma after the word "months," to introduce into his reissued specification the suggestion that a type-wheel with a succession of figures upon it for the years could be used; that the specification of the original patent has no such comma, and no such suggestion; and that therein there is a fraudulent interpolation. This view is not sustainable. There is nothing to show that the interposition of the comma was not an accidental or an arbitrary punctuation, and everything in the context and language shows that it was. Three type-wheels, and only three, are shown or described. One has the months on it; and if another has on it the years, and the third has only the ten numerals, only nine days in any month could ever be represented. There is no suggestion in this connection of four wheels, or that the third wheel shall have on it all the days of the month. The expression "the names of the months of the year" is a sensible expression. The expression "the names of the year" is a meaningless expression. The fact that in all respects the descriptive part of the specification of the reissue seems to follow the language of the descriptive part of the specification of the original patent; and the further fact that in the specification annexed to the original patent the words "the ten numerals" are found, while in the printed specification annexed to the reissued patent, under seal, the words are "ten numerals," and not "the ten numerals," would indicate that the use of the comma after the word "months" is a clerical error, and purposeless and improper. There was no need of making any suggestion of the use of a wheel for the years. The use of such a wheel in the patentee's combination was obvious, if desired, and was no invention; whether added as a fourth wheel or made one of three wheels by putting all the days of the month on one wheel. The suggestion in both specifications that the type-wheels could be engraved with any suitable letters or figures covered the use of one of them for the years. It is well known that at the date of Robertson's patent, in 1857, it was not common in the United States to put on a post-office stamp, for which, from his specification and drawings, his stamp would seem to have been especially designed, the figures of the year, or anything but the name of the month and the figure or figures of the day of the month, and the name of the post-office, as shown in the specification and drawings of the patent. Everything tends to show that the use of the comma after the word "months" is not one to which any meaning or effect can be attached.

The claims of the reissue are fully warranted by what appears in the text and drawings of the specification of the original patent. It is urged that the original specification says nothing as to printing "dates" or as to "dating" purposes, and that that is made a prominent feature in the specification and claims of the reissue. But the original specification states that when the stamp is intended for a post-office or letter stamp—that is, a stamp to stamp on a letter in a post-office the name of the post-office and the month and day of the month—the name of the post-office is to be on the fixed ring, and the type-wheels are to have the names of the months and the numerals which are to make the days of the month; and that the usefulness of the device consists particularly in the facility of changing the impression to be made by the type-wheels—that is, the month and day—which is the date. The drawings show all this. A month and a day of such month make a date, although no year is added. The addition of the year makes a more full date, and so does the addition of the hour and minute of the day. But month and day are in common parlance a date.

The principal defense set up in this case is that the improvements claimed by the plaintiff in his reissued patent were previously invented by one Marcus P. Norton, of Troy, New York. So far as regards the contents of a caveat filed in the Patent Office by said Norton on the 21st of June, 1855, it is sufficient to say that the improvements claimed by the plaintiff are not found on that caveat. So far as regards the contents of the paper called "an additional caveat," and purporting to be dated August 21, 1855, and set up in the answer as having been filed in the Patent Office on the 25th of August, 1855, in, and with, and as a part of the said caveat filed June 21, 1855, it is sufficient to say that, after due notice to said Norton, and a trial had before a commission appointed by the Commissioner of Patents, the said paper was, in September, 1871, adjudged by the said commission to be fraudulent, and to have been surreptitiously introduced into the caveat file of said Norton filed June 21, 1855, and that thereupon the Commissioner of Patents indorsed on said paper a memorandum, signed by him, that said paper does not form a valid portion of said caveat.

There remains the evidence as to prior existence in fact, as completed inventions made by Norton, of the plaintiff's improvements. As to this the burden of proof is on the defendants, and they do not establish the fact satisfactorily. Norton's own evidence is, manifestly, not to be relied upon. The circumstances attending the taking of his deposition in this suit, the contradictions in sworn statements he has made at different times regarding the alleged caveat, and the manner in which, as shown by the record, he caused witnesses to testify in *ex parte* depositions to matters of which they had no recollection, make it impossible to rely on his testimony.

But the evidence of Norton and that of the other witnesses for the defendants shows nothing done by Norton prior to the plaintiff's invention which amounted to more than an unsuccessful experiment. The plaintiff made the first successful practical working machine.

The infringement of the patent is admitted. There must be a decree for the plaintiff for a perpetual injunction, and an account of profits and an ascertainment of damages and costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

23,996.—*Surgical Splints.*—Granted to DAVID AHL, May 17, 1859. Hearing April 30, 1873.

24,009.—*Machines for Upsetting Tires.*—Granted to CHAUNCEY L. CROWELL and ROBERT SMITH, May 17, 1859. Hearing April 30, 1873.

24,022.—*Sewing-Machines.*—Granted to JOSHUA GRAY, May 17, 1859. Hearing April 30, 1873.

24,034.—*Railroad Frogs.*—Granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864. Hearing April 30, 1873.

24,046.—*Machines for Rolling Fabrics.*—Granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872. Hearing April 30, 1873.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.*—Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,098.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,102.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Heddles to Tin Pulls.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABRATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHENELY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. MARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Slats.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, uly 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODSS and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,650.—*Improvement in Steam-Boiler Furnaces*, granted to JONATHAN AMORY, April 19, 1859; reissued August 29, 1865, numbered 2,057.

Claim.—The method of increasing the combustion and protecting the combustion-curves, substantially as described.

23,665.—*Improvement in Cooking-Range*, granted to BENJAMIN WELLS DUNKLEE, April 19, 1859.

Claim.—The arrangement of the two induction-flues A B, the gage-throats, their plates or bars, and the flues around and between the two ovens, a single damper and its opening being placed over the middle flue, and with respect to the two flues, as specified.

23,703.—*Improved Machine for Making Drain-Pipes*, granted to BRADFORD S. PIERCE and MASON K. PIERCE, April 19, 1859; reissued February 28, 1865, numbered 1,897; reissued January 14, 1868, numbered 2,841; reissued April 27, 1869, numbered 3,413.

Claim.—1. The case, in combination with the core, and with the core-socket, when the latter is constructed and operates in the manner herein described.

2. In a mold for molding drain-pipe, a core-socket and a case constructed, arranged, and combined in the manner described, so that the core-socket shall constitute a working portion of the mold during the whole of the molding process, substantially as and for the purposes set forth.

3. The combination, with the core and core-socket, of suitable mechanism for removing the core through the core-socket, from the finished pipe, without injury to the latter, substantially in the manner and for the purposes described.

4. The arrangement of the mold-case and core upon a suitable platform or base, in the manner described, so that the pipe can be molded and the core discharged therefrom without changing the position of the pipe and mold-case, substantially as set forth.

5. The arrangement of the mixing apparatus and of the core-relieving devices above the platform which conveys the molds, in the manner and for the purpose substantially as specified.

6. The combination of the case, core, and core-socket with the perforated revolving disk, substantially as and for the purposes described.

23,707.—*Improvement in Harvesters*, granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, numbered 2,230; reissued March 26, 1872, numbered 4,824. Division A.

Claim.—1. The combination of the finger-beam in a harvesting-machine with the outer end of the bar by which it is supported and drawn by means of two hinge-joints, one having a vertical and the other a horizontal axis arranged at or near the shoe, which supports the heel or inner end of the finger-beam, whereby the finger-beam and cutting apparatus can not only be conveniently folded vertically to the side of the machine, but also horizontally to a position or line at a right angle, or nearly so, to the working position of said beam or cutting apparatus, substantially as and for the purposes stated.

2. The combination, with the finger-beam and bar F, of the hinged forked plate G, substantially as and for the purposes set forth.

3. The combination, with bar F and hinged plate G, of the holding-pin, substantially as and for the purposes set forth.

4. The combination, with the hinged plate G and bar F, of the bearing-ring H and supporting-hook *b*, substantially as and for the purposes set forth.

5. The combination, with the horizontally-folding finger-beam, of the jointed connecting or pitman rod J, as shown and described.

23,707.—*Improvement in Harvesters*, granted to SAMUEL RAY and MOSES R. SHALTERS, April 19, 1859; reissued April 17, 1866, numbered 2,230; reissued March 26, 1872, numbered 4,226. Division C.

Claim.—1. The combination of the forked connecting-arm, the shoe having its forward hinge-ear in front of the line of cut, and a stiffening-lug on the shoe and near to the hinge-ear, whereby the finger-bar is stiffened, and at the same time a free and unobstructed space is left between the finger-bar and connecting-arm, substantially as and for the purposes described.

2. The combination, with the driver's seat in a harvesting-machine, of a spiral-spring support and a tubular spring-guide stand, whereby the seat is prevented from turning and the elasticity of the seat preserved, for the purposes stated.

3. A slotted tubular-spring support, in combination with the driver's seat and the frame which supports it in a harvesting-machine.

23,716.—*Improvement in Stoves*, granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, numbered 1,242; and again reissued February 16, 1864, numbered 1,632.

Claim.—1. The adaptation of a fire-place stove which has diving-flues for use with a fuel-supply magazine which has an unobstructed space between its lower end and the grate, substantially as and for the purpose set forth.

2. A fire-place stove which has diving-flues, constructed with the reduced portion A^1, enlarged portion A, reverberating-plate A^2, gas-space *g*, projecting window or door frames *i*, and fuel-supply magazine H, substantially as and for the purpose set forth

3. A fire-place stove with diving-flues and kindling-apertures *i i*, in combination with a fuel-supply magazine which has a free unobstructed space below and out to the interior surface of the part A, between itself and the grate G, substantially as and for the purpose set forth.

4. In combination with a fire-place stove which has diving-flues, a fuel-supply magazine which has a free unobstructed burning-space below it and out to the wall of the stove, substantially as described.

5. The combination of the fuel-supply magazine, which is arranged to have a space between the lower end and the grate G, with a fire-place stove which has a contracted part, A^1, in which the gases circulate in contact with and over the cover of the fuel-supply magazine, and from which the gases pass into diving-flues, and thence under or around the ash-pan and up to the draft or exit flue, substantially as and for the purpose set forth.

6. The chamber A A^1 A^2 with door I, in combination with the internally-located fuel-supply magazine H, which is free from the grate and has a removable cover, substantially as and for the purpose set forth.

7. A fire-place stove which combines in its construction a burning-base surface, G, of larger diameter than the fuel-magazine, a magazine, H, and diving-flues, substantially as and for the purpose set forth.

8. A cold-air chamber combined in any manner, substantially as described, with a stove having the fuel-supply magazine H, for the purpose set forth.

9. The combination of the main chamber A, fuel-supply magazine H, flues B E E^1, and damper *b*, substantially as and for the purpose set forth.

Disclaimer filed April 18, 1873.

Disclaims first, fourth, and eighth clauses of claim, as above set forth.

23,716.—*Heating-Stove*, granted to SAMUEL B. SEXTON, April 19, 1859; reissued December 3, 1861, numbered 1,242; reissued February 6, 1864, numbered 1,632; reissued September 27, 1864, numbered 1,774; reissued February 12, 1867, numbered 2,476.

Claim.—1. A stove for warming or heating purposes constructed with a fuel-magazine supported free from the grate and a combustion-chamber having a grated fire and air-supplying bed of a greater diameter than the fuel-magazine, so arranged and constructed that the fuel can spread out laterally, and form a conical pile, and burn in thin layers out to the wall of the stove, so that the inflamed gases may burn in a free space as they are evolved from the entire outer surface of the incandescent conical pile of coals, and so that air shall be supplied in a direct manner through the grate into said free space, substantially as and for the purposes described.

2. In combination with the subject-matter of the first claim, constructing the combustion-chamber A with projecting window-frames or door-frames, substantially as and for the purposes described.

3. A stove for warming or heating purposes embracing the features of construction mentioned in my first claim, and the additional feature of the gas or products of combustion, circulating-apartment above and around the upper portion of the magazine, substantially as and for the purposes described.

4. A stove for warming and heating purposes wherein the spreading of the coals in a lateral direction from the lower end of the magazine is wholly unobstructed all around and out to the wall of the stove A, and at the same time the combustion-chamber proper is formed by the outer wall of the stove, and the products of combustion circulate underneath and around the magazine, in combination with illumination doors or windows in the said outer wall, said windows or doors being located above the grate and above the upper margin of the lining of the wall, substantially as and for the purposes described.

5. The combination of a fuel-supply magazine, H, which has its lower end free from the grated fire-bed G, and an unobstructed space below it, where the fuel may spread out laterally and burn in a conical pile, and in thin layers, to the outer wall of the stove, with a stove, A, which has illumination doors or windows in its wall above the lining, all in such manner that the fire can be kindled through the apertures, which are covered by the doors or windows, substantially as set forth.

6. The combination of the unobstructed free space F out to the wall of the stove above the lining, the illumination windows or doors in wall A, and gas-circulating space *p* around the circumference of the magazine, substantially as described.

7. In a coal-supply magazine-stove, I claim the extended grated surface of the fire-bed outside of reservoir or magazine, in combination with the free space around the magazine of a base-burning stove, substantially as described.

8. Increasing the combustion and the consequent heating effect of the coal, and also insuring a more brilliant illumination of the wall of the stove, by constructing, arranging, and combining the combustion-chamber proper, the magazine, and the grated fire-bed, all substantially in the manner herein specified.

Disclaimer filed April 18, 1873.

Disclaims all of the above claim except the second clause thereof.

23,735.—*Improved Double-Seaming Machines*, granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859.

Claim.—The combination of the disks E and D and the burring-pulley H, the planing-down pulleys I, the double burring-pulleys K, and the finishing-pulley L, in the manner and for the purpose substantially as above described.

23,736.—*Improved Machine for Corrugating Sheet Metal*, granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., April 19, 1859.

Claim.—The arrangement of the upper and lower heads, the forming-rollers H H, together with the rollers which support the cylinder to be corrugated, at the requisite angle, substantially as above described.

DISCLAIMERS FILED.

23,716.—SAMUEL B. SEXTON, Baltimore, Md.—*Improvement in Stoves*, granted April 19, 1859; reissued December 3, 1861, No. 1,242; again reissued February 16, 1864, No. 1,632. Disclaimer filed April 18, 1873. Disclaims:

"Everything claimed in the first, fourth, and eighth clauses of the said claim."

23,716.—SAMUEL B. SEXTON, Baltimore, Md.—*Improvement in Stoves*, granted April 19, 1859; reissued December 3, 1861, No. 1,242; again reissued February 16, 1864, No. 1,632; again reissued September 27, 1864, No. 1,774. Disclaimer filed April 18, 1873. Disclaims:

"Everything included in my said claim, except the parts and combinations specified in the second clause thereof."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 15, 1873.]

6,586.—*Parlor-Stove.*—WILLIAM DOYLE, Albany, N. Y. Application filed March 12, 1873.

6,587.—*Glass Dishes and Nappies.*—JAMES HORNE, Bellaire, Ohio. Application filed April 3, 1873.

6,588.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed April 8, 1873.

6,589.—*Badge.*—HERMANN A. OESTERLE, Philadelphia, Pa. Application filed March 21, 1873.

6,590.—*Carpet.*—JOHN POWELL, Kidderminster, England, assignor to HENRY JECKS DIXON & SONS, same place. Application filed March 19, 1873.

6,591.—*Carpet.*—JOHN POWELL, Kidderminster, England, assignor to HENRY JECKS DIXON & SONS, same place. Application filed March 19, 1873.

6,592.—*Coffin-Handle Socket.*—JAMES S. RAY, East Haddam, Conn. Application filed March 24, 1873.

6,593.—*Back Cross-Strap Mountings for Carriages.*—ANSON SEARLS, Newark, N. J. Application filed January 6, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date April 15, 1873.]

1,211.—*Frillings, Gimps, Ribbons, &c.*—FREDERICK BROWETT & CO., Coventry, England. Application filed October 26, 1872.

1,212.—*Lubricating Compound.*—GERDOM, COOK & CO., New York, N. Y. Application filed September 26, 1872.

1,213.—*Kiln-Dried Corn-Meal.*—KIPE & TOWNSEND, Chadd's Ford, Pa. Application filed April 2, 1873.

1,214.—*Liniment.*—MERCHANT'S GARGLING OIL COMPANY, Lockport, N. Y. Application filed December 23, 1872.

1,215.—*Liniment.*—MERCHANT'S GARGLING OIL COMPANY, Lockport, N. Y. Application filed December 23, 1872.

1,216.—*Pile Remedy.*—JOHN P. MILLER, Baltimore, Md. Application filed March 25, 1873.

1,217.—*Prints.*—JAMES R. OSGOOD & CO., Boston, Mass. Application filed March 27, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date April 15, 1873.]

ORIGINAL PATENTS.

137,752.—*Butter-Package.*—JOHN ANDREWS, Cleveland, Ohio. Application filed March 24, 1873.

The package is constructed of two pieces of thin material, one forming the sides and another the top and bottom, and the two attached by a pin in the back fold of it, to secure the parts and form a door or cover.

Claim.—The herein-described butter-package, consisting of the strip, Fig. 4, of which the top and bottom A B of said package are made, and a corresponding strip constituting the sides E, F, G, and H of said package, arranged and combined in the manner as and for the purpose set forth.

137,753.—*Sash-Weight.*—PETER ASHEN, Philadelphia, Pa. Application filed March 3, 1873.

Two holes, both beveled from the same side, are cast in the upper end of the weight, and the upper one is prolonged into a recess which extends to the top of the weight. The rope is knotted and passed through one hole, with the knot resting in the countersunk hole, and then returned through the other hole. When the weight is suspended the cord falls into the vertical groove. This arrangement of the holes allows the cord to be in line with the longitudinal center of the weight, which must then hang perpendicularly. Neither the knot nor the cord can touch the sides of the weight-box and become worn.

Claim.—The combination of the holes B and A, beveled from the same side, and the vertical recess above the latter, all arranged as described, and for the purpose herein set forth.

137,754.—*Water-Elevator.*—JARED A. AYERS, Mystic River, Conn. Application filed September 7, 1872.

Within a well or cistern are suspended two oscillating water-chambers, which have in their bottoms valves opening upward. From an air-reservoir, into which air is compressed by an air-pump, leads a pipe which divides into two pipes that lead to the tops of the water-chambers. The chambers are also provided with air-escape and ascending-water pipes, both of which pass between bars and a rod attached to the oscillating frame that supports the chambers. Both chambers being filled with water, and the compressed air admitted to one, the water in that chamber will be forced up the water-pipes until the weight of the full chamber preponderates, when it descends and the other rises. The chambers thus alternately discharge their contents, and as they swing back and forth their pipes are compressed between the bar and rod of the frame.

Claim.—1. The self-acting oscillating pumping apparatus D E operated by compressed air, substantially in the manner described.

2. The combination of an air-pump, a reservoir for compressed air, and an automatic continuously-acting water-pump, constructed substantially in the manner herein described.

3. The combination of a reservoir of compressed air with an automatic continuously-acting pump and delivery-cocks, by the arrangement of which the action of the pump is controlled, as herein described.

4. A self-acting pumping mechanism, constructed substantially in the manner described, in combination with a delivery-cock, so that its action can be started by opening the delivery-cock and stopped by closing it through the intervention of the inclosed water, substantially as herein specified.

5. The arrangement of the water-chambers with their supply and waste-air pipes in such a manner that the motion of the water-chambers opens and closes the communication through the pipes, substantially in the manner specified.

6. The latch V with its yielding spring X, or its equivalent, to allow a certain force to detach the chamber E, substantially as described.

137,755.—*Hoe.*—HARRY R. BARNES, Rock Stream, N. Y. Application filed September 16, 1872.

The hoe-blade is divided into a series of sections, set or swaged so as to form a concave under surface for all of the divisions. The blade of the hoe is bent at an obtuse angle at the base of the divisions, so as to bring the divisions nearly into a horizontal position when in ordinary use.

Claim.—As a new article of manufacture, the single-bladed hoe, having teeth on its cutting-edge struck up or corrugated, as described, when said teeth are turned or deflected inward from the blade of the hoe so as to stand at an angle thereto, and but slightly inclined from the surface of the soil, and be thereby self-entering at the drawing movement, and when said teeth have their edges made plain and straight from point to base, for the purpose of grinding, as herein shown and described.

137,756.—*Saw-Set.*—JAMES BEGBIE, Philadelphia, Pa. Application filed January 4, 1873.

The support for the edge of the saw is adjustable to teeth of different sizes. An adjustable spur on the support enters between the teeth to regulate their positions, and a gage supports the saw on the side. The dies are interchangeable with others having either more or less of bevel, and a projection from the stock may serve either as a handle or as a stake to fix the device upon the table.

Claim.—1. In combination with an implement for setting saws, the detachable handle, the rod by which the implement may be secured to the work-bench, and the nut, as and for the purposes described.

2. The combination of the setting-stake G upon which a scale is marked, the vertically-adjustable gage A, and the beveled steel plate F attached to the said setting-stake, all operating together as and for the purposes set forth.

3. The setting-stake G, the vertically-adjustable gage A, and the horizontally-adjustable transverse gage *k* provided with a tooth or projection to fit over the points of the saw-teeth, all operating together as and for the purposes described.

4. The pivoted handle B, to which bits of different sizes may be adjusted, the body of the implement provided with a longitudinally-adjustable guide, *i*, and the stake-post G, to which is attached a beveled steel plate, all operating together, as described.

137,757.—*Machine for Threading Nuts.*—ORLANDO P. BRIGGS and LEWIS W. BRIGGS, Chicago, Ill.; said ORLANDO P. BRIGGS assignor to said LEWIS W. BRIGGS. Application filed December 5, 1872.

A series of rotating shafts are carried around, over, and with a series of gripers for holding the taps. On the lower ends of the shafts are the nut-holders, which rotate the nuts upon the taps to cut the threads in the former. The nuts are received from a tilting trough, and they are permitted to leave the tap, when finished, by falling alternately upon two sets of gripers, which retreat alternately from their hold upon the tap.

Claim.—1. The receptacle T^1, arranged to automatically place the nut-blank upon the tap, as described, in combination with disk O and cam-rim F^2, as specified.

2. The combination, with disk O having grooves R and R^1, lugs *r*, *s*, and *t*, of the gripers s^1 s^1 and d^1 f^1, arranged to seize and release the tap, as specified.

3. The series of revolving mandrels N, each provided with the adjustable washer n^1 and disk N^1, adapted to receive and turn the nut-blank, as described.

4. In combination with said mandrels, the primary shafts K and the gear-wheels to rotate said shafts, the levers M and cam M^1 for automatically elevating said mandrels to receive the nut-blank, as specified.

5. In combination with the subject-matter of the third claim, the springs G^2 and arc H^2, for depressing the mandrels upon the nut-blank, as described.

6. In combination with the gripers s^1 s^1 and d^1 f^1, the eccentric shafts A^1 carrying the wheels *n* n^1, for graduating the throw of the gripers, as described.

7. The revolving disk O, carrying the series of thread-cutting taps, in combination with the revolving mandrels and mechanism to rotate the latter, as specified.

8. In combination with the subject-matter of the seventh claim, the tank G, tubes J, primary reciprocating and rotating shafts K, and shaft A^1, as specified.

137,758.—*Sawing-Machine.*—ORLANDO W. BROCK, Etna, Ohio. Application filed March 3, 1873.

A system of levers put in motion and a fly-wheel, which in turn operates the saw.

Claim.—1. The combination of saw-bars C, C', B, and H, connecting-rod E, and balance-wheel F, all operating together, as described.

2. The combination of lever K, rod L, straps N N, cross-bar O, rocking-bar P, post R, connecting-rod S, and gear T, as and for the purposes described.

137,759.—*Hydrodynamic Steam-Engine.*—WILLIAM BURNETT, San Francisco, Cal. Application filed August 24, 1872.

Claim.—1. In a hydrodynamic steam-engine, the method of propelling an inclosed wheel in an inclosing-case by means of a body of water within the case forced circumferentially around it in a continuous rotary current by a jet or jets of steam, substantially as described.

2. In combination with wheel B and case A, the partition C, forming the channel D within the case A for preserving the circumferential direction of the operating-current, constructed and operating substantially as hereinbefore set forth.

3. In combination with case A and steam-chamber E, the rigid plate F' forming the jet-channel, substantially as and for the purpose set forth.

4. The combination of the hood N with the exhaust-pipe G and case A, substantially as and for the purpose set forth.

137,760.—*Tobacco-Plant Cutter.*—JAMES N. CADY, South Hannibal, N. Y. Application filed December 14, 1872.

The blades of the shears are turned upward so that the operator can stand upright, holding the shears nearly parallel to the body while cutting off the stalks of tobacco. The ends of the blade have oblique ends pointing outward, so that a sort of guard is furnished to prevent the cutting-edges from being dulled by catching dirt or gravel between them.

Claim.—The improved instrument for cutting tobacco-plants, having the curved blades A B with oblique ends pointing outward and the upper blade beveled and separated from the lower blade, substantially as and for the purpose herein specified.

137,761.—*Supporter for Men's Drawers.*—ELIAS R. CLEAVELAND, Boston, Mass. Application filed November 23, 1872.

A strip of spring metal is made elliptical in form, and with a hook at one end to which the drawers are attached. On the inside of the lap *b*, and near the other end, teeth are struck which secure it more firmly to the waistband of the pantaloons.

Claim.—The elastic metallic supporter hereinbefore described, consisting of the back-plate *a*, lap *b*, teeth *c*, and hook *d*, all constructed and operating in the manner specified.

137,762.—*Manufacture of Horseshoe-Nails.*—HARLEY D. COWLES, Montreal Canada, assignor to himself and JAMES TERRY, Terryville, Conn. Application filed January 22, 1873.

The strips or double nail-blanks are cut from a rolled plate having thickened edges or margins of which to form the heads, and an intermediate portion reduced in thickness and shape to, or nearly to, what is required in the finished nail.

Claim.—The improvement in the art of making horseshoe-nails herein described, which consists of cutting the plate into strips of double nail-blanks, then staving up the heads thereon, and afterward dividing said double blank by cutting, substantially as set forth.

137,763.—*Scythe-Rifle.*—WILLIAM H. DANIELS, Bryan, Ohio. Application filed February 28, 1873.

Two forms of rifle are attached to a common handle.

Claim.—A compound tool, consisting of a tubular polygonal rifle, A A^1, and a cylindrical rifle, B B^1 *b*, substantially as shown and set forth.

137,764.—*Land-Pulverizer.*—THOMAS R. DENBY, Carlinville, Ill. Application filed February 3, 1873.

A land-pulverizer consisting of two revolving harrows pivoted in an independent and adjustable frame; the frame is then pivoted in side bars. The front part of this frame is faced with iron for use as a leveler. In the rear of the harrows are secured two land-rollers of the usual form.

Claim.—The arrangement of the oscillating iron-faced leveler-frame A', the harrow-cylinders D D, the lever I, bars H H, and rollers B B, as and for the purposes herein set forth.

137,765.—*Hydraulic Jack.*—RICHARD DUDGEON, New York, N. Y. Application filed February 12, 1873.

The cavity in the lower end of the pump-head is made of larger internal diameter than the pump-plunger, so that when the latter is depressed sufficiently to open the egress-valve the lower end of the side passages in the pump-plunger communicates with the upper part of the enlarged cavity, allowing the liquid to pass in a backward direction around the plunger-packing into side passages to the reservoir.

Claim.—1. The combination and arrangement of the pump-plunger, constructed with longitudinal passages, the pump-barrel, and the reverse-passage, substantially as before set forth.

2. The combination and arrangement of the pump-plunger, the pump-barrel with its reverse-passage, the egress-valve, and the guard thereof, substantially as before set forth.

137,766.—*Manufacture of Sweet Biscuits.*—HENRY EVEN, Pekin, Ill. Application filed March 3, 1873.

Flour, water, eggs, and yeast are mixed into a sponge and allowed to rise, after which there is added butter, sugar, and salt, and the whole mixed together and again allowed to rise. The dough is then made into biscuit, which, when light, are baked. When these are cool they are split and thoroughly dried.

Claim.—The dried sweet bread or biscuit, composed of the ingredients in the proportions named, and treated in the manner substantially as described.

137,767.—*Saw-Swage.*—WILLIAM FERGUSON, Canton, Ohio, assignor to himself, THOMAS A. LATHROP, and THOMAS H. REEVES, same place. Application filed March 21, 1873.

A rectangular die-block, with dies on two or more of its sides, fitted in a slot in the end of the stock and held in place by shoulders in the slot and by an external band.

Claim.—The combination of a swage-stock having a recess in it, and shoulders *c* therein, the clamping ring or band, and a removable and reversible die-block with dies therein, as and for the purpose described and represented.

137,768.—*Cart-Loading Apparatus.*—BENJAMIN G. FITZHUGH, Frederick, Md. Application filed September 7, 1872.

The loaded cart is automatically released as the full car reaches the top of the incline, and the dumping is then effected by the continued revolution of a shaft, effected by means of a crank-handle, bringing the curved ends of the car under the shaft and its wheels against the stops; in this position the operating-ropes, being inclined from the shaft to the rear of the car, readily tip it.

Claim.—1. In a cart-loading apparatus in which the loading cars are arranged and operated alternately upon inclined railway tracks, a loaded cart connected, as described, to the operating mechanism, to raise and lower at the same time the loaded and empty car by the motion of the horse away from the loader.

2. In a cart-loading apparatus, the combination and arrangement of double railway tracks with their separate cars, winding and unwinding shaft C, and winding and unwinding pulleys M M', when the latter are arranged to be operated by a single connecting-shaft, and by the movement of a loaded cart, essentially as described.

3. The detaching device of the cart, in combination with a long and short rope, *a a'* *b b'*, of the winding and unwinding shaft C of the loader, essentially as and for the purpose described.

4. In a cart-loading apparatus, the combination and arrangement of the hinged adjustable sections E of the railway tracks with the fixed sections D and the bracing-chains G, essentially as and for the purpose herein described.

5. The detent S of the fixed section D of the frame, in combination with a rack, U, on the car, to automatically lock and hold the car after being brought to a position to be dumped by hand, essentially as described.

6. The combination of the curved stop *f* at the forward terminus of the rails with the pins or catches *g* of the car, automatically interlocking to hold the car in position while in the act of dumping, essentially as described.

7. In combination with the railways and the cars elevated thereon, as described, by the pulley-ropes, the crank-shaft connected by sprocket-wheels and belt with the operating-shaft for dumping the loaded car by hand and leaving it in position to descend by its weight, as described.

8. In combination with a railway track and a dumping-car, operated as described, the arrangement of the operating-shaft C to form a stop for the car, and hold it to the track while dumping, substantially as described.

9. The ropes L^2 of the operating-shaft C, connected with the car at the top thereof, and in the rear of the truck-wheels L, to operate in connection with the shaft C to dump the car when arrested, as described.

10. The two separate hand-operating loading-machines, constructed as described, united together to form a double loading-machine, by means of the disks *n* on the operating-shafts, as described.

11. The cart-loading apparatus, having its several parts constructed and arranged for joint operation, substantially as herein set forth and shown in the drawing.

137,769.—*Machine for Turning Carriage-Axles.*—HAMLET E. FORREST, Boston, Mass., assignor to himself, HORATIO BOOTHBY, same place, and JOHN H. LEAVITT, Portland, Me. Application filed February 25, 1873.

A lathe with a transversely-reciprocating slide, on which are three cutters, placed obliquely to impart a shear-cut, and of the shape and size required to turn, without lateral movement of the slide, the journal, re-enforce, and shoulder or collar.

Claim.—As a mechanism for finishing axle-blanks, the combination of two or more cutters, C C^1 C^2, formed and arranged as described, and to operate in manner and for the purpose set forth.

137,770.—*Door and Gate Spring.*—JOHN T. FOSTER, Jersey City, N. J. Application filed February 27, 1873.

The plug which holds the end of the spring is furnished with a large screw-thread, which takes upon the coil of wire composing the spring proper. Through the square shoulder of the plug, above the screw-threads, are bored two holes at right angles to each other. Upon a plate attached to the gate-frame is a fixed pin, and this serves to adjust the spring by passing through the holes in the square part of the plug after the requisite torsion has been given it.

Claim.—1. For use in a door and gate spring, a plug provided with screw-threads so as to fasten the ends of a coiled spring to the plug by screwing them thereon, substantially as set forth.

2. In combination with the elements above, a fixed pin for adjusting the plug by means of holes through the same, substantially as and for the purpose set forth.

137,771.—*Corn-Husking Thimble.*—GEORGE W. GASH and CHARLES L. OWENS, Clinton, Ill. Application filed October 21, 1871.

The bead or flange on the lower edge of the thimble serves to keep it in place in the tips of the fingers and thumb of a glove, and the blade for cutting and loosening the husks on the corn.

Claim.—As an article of manufacture, a husking-thimble provided with a blade for cutting the husks on the corn and an outward bead or flange around its lower edge, for the purpose set forth.

137,772.—*Awning.*—GEORGE W. GERAU, Brooklyn, N. Y. Application filed September 7, 1872.

The awning is so arranged that, by means of an outer side wing held open by a brace and an inner side wing fastened back, the air blowing from the side will be directed into the room.

Claim.—1. The brace D, combined with the side wing *b* of an awning, substantially as set forth.

2. The awning provided with the inner wing or wings E and with the opening side wings *b b*, substantially as herein shown and described.

137,773.—*Machine for Winding Wads.*—ALFRED CHARLES HOBBS, Bridgeport, Conn. Application filed November 30, 1872.

A strip of paper is wound upon a mandrel under pressure of a compressing-roll hung in the end of a lever, which, vibrating as the wad increases to a given size, trips a lever which separates the friction-disks of the driving-shaft and applies a brake to stop the machine.

Claim.—1. A wad-winding machine, operating substantially as herein described, so that it automatically stops as soon as the wad attains the required size, as specified.

2. The roller G on a sliding bar, E, operating by means of the vibrating arm *p*, sliding bar H, and tappet *r*, or their equivalents, in connection with the lever D, mandrel B, substantially as herein specified.

3. The combination of the spindle B and its friction-disk *c*, the driving-shaft C and its friction-disk *d*, and the lever D and its projection *f*, the vibrating lever *p* and its accessories, substantially as and for the purpose herein specified.

4. The wad-stripping sleeve *w*, in combination with the spindle B, substantially as herein specified.

137,774.—*Broom-Protector.*—GEORGE HUNT, New York. N. Y. Application filed March 15, 1873.

A broom constructed in ordinary form, with corrugated strips passing from the top to near the center of the broom and the binding-wire fitted to the corrugations, and a binding-strip attached to it by braces which adjust it to the broom and for moving it up or down for its support.

Claim.—The broom-protector herein described, composed of the belt E, straps F F, wire-fastening H, and wire braces L, when used in combination with the broom A, constructed and operating for the purpose set forth.

137,775.—*Safety-Paper for Bank-Notes, &c.*—JOHN JAMESON, Gateshead, England, assignor to HIRAM A. TUCKER, New York, N. Y. Application filed August 19, 1870.

A design printed so that by the use of chemical inks the design shall either be changed in color or obliterated, or, being invisible, or nearly so, shall be rendered visible at the parts written upon.

Claim.—A safety-paper provided with a design or designs produced by the process and in the manner substantially as described, whereby the character of the ink employed is indicated by the discharge, change, or development of color of the same, substantially as and for the purposes set forth.

137,776.—*Gang-Plank.*—FRANK G. JOHNSON, Brooklyn, N. Y. Application filed August 28, 1872.

Combination of levers, having casters or rollers in one extremity, with a gang-plank having eyebolts for guides for the operating-rope, whereby the weight of the plank is thrown upon the rollers upon pulling the rope in either direction, and the plank thereby conveniently and easily moved as required.

Claim.—The combination of the levers C C and hauling-ropes F F and E E with the gang-plank A, substantially in the manner and for the purpose set forth.

137,777.—*Self-Acting Spinning-Jack.*—JOSEPH E. KNIGHT, Hyde Park, Mass. Application filed March 6, 1873.

The arm of the "Brothers" jack, which is operated by an arm on the carriage to disengage the running-out mechanism, is made in two parts, one adjustable on the other, to enable the time of such operation to be varied, said adjustable part carrying the pin which is engaged by the catch which holds the carriage in position at the end of its outward run, and said catch being arranged on the carriage-arm, which operates the disengaging-arm first above referred to.

Claim.—In a jack the extension arm A, composed of the two parts *a b* provided with the stud *c*, and constructed, arranged, and connected as described, in combination with the carriage-arm B provided with the lever-catch A, arranged upon it as set forth, all being disposed and to operate together, substantially as specified.

137,778.—*Weight-Hook for Knitting-Machines.*—CHARLES H. KOSKEL, Buffalo, N. Y. Application filed December 26, 1872.

By moving the regulator up or down the hooks may be contracted or expanded, and thus adapted to be applied to varying widths of work being knit.

Claim.—The combination of the thimble B, hook A, elastic hooks C, and regulator D, substantially as and for the purposes set forth.

137,779.—*Dining-Table.*—ABEL LAND, Hillsdale, Mich. Application filed April 7, 1873.

The table is made so as to form a straight table or curved, by means of the extension bars and angular detachable leaves. The legs and other parts can be detached and all packed within a small compass.

Claim.—1. The construction and combination of parts herein described, whereby a convertible, straight, and curved extension-table is produced, as specified.

2. In an extension-table, the hinged pieces D having beveled ends, as described, in combination with the cord *s* and windlass *i*, when arranged and operated as herein set forth.

3. The combination, in an extension-table, of removable and adjustable legs, the detachable cross-pieces C' C', and the permanent parts A A, constructed as described, whereby the parts may be packed in the smallest compass, as and for the purposes set forth.

137,780.—*Skate.*—JOHN T. LARKIN, Halifax, Nova Scotia. Application filed November 8, 1872.

The heel-plate is secured by the rear end being bent down and riveted to the runner, and by the pivot which holds it together with the sliding foot-plate and lever. A plate, having flanged edges, holds the foot-plates together in place, and has upon its rear face a curved line of teeth to fasten into the boot-heel.

Claim.—1. The heel-plate C, secured both by the pivot-post C^1 and the rear lip C^2, and arranged over the lever H and slide F, so as to serve, relatively to the boot-heel and to the other parts of the skate, as herein specified.

2. The longitudinal inverted trough-piece G *g*, arranged relatively to the plates E and F and set-screw and nut M M', and provided with teeth adapted to act against the front face of the boot-heel, as specified.

137,781.—*Boot.*—GEORGE S. LEE, Worcester, Mass., assignor to himself and PEABODY WEST, same place. Application filed February 18, 1873.

The edges below the transverse cuts are turned out, sewed from the outside, and covered with a saddle-piece. Above these cuts the edges are lapped and sewed.

Claim.—An improved boot, the side seams of which are formed as described—that is to say, with the lower turned-out edges *a b* covered by braces or saddles D, and the upper lapped edges *e f*, substantially as shown and set forth.

137,782.—*Cultivator.*—AUGUSTUS LEONARD, Newell's Run, Ohio. Application filed August 30, 1872.

The side beams are rigidly attached in front to the central beam, depending upon their elasticity for the lateral movement in rear to adjust them to a greater or less width. This movement is controlled by the handles pivoted to bars sliding through a mortise in the central beam and held in any desired position by a retaining-pin.

Claim.—1. The combination of the central beam, the side beams, the sliding bars, and the pivoted handles, the handles being connected to the sliding bars at their front ends, substantially as described.

2. The machine described, consisting of the central beam A and the side beams B, united thereto as described, the handles C C, standards *c c*, tie-bars *c'*, sliding bars D D, with holes, as described, and the securing-pin in the central beam, as set forth.

137,783.—*Piston-Rod Packing.*—THOMAS LORD, Providence, R. I., assignor to himself, JOSEPH KELLY, and HENRY J. PAINE, same place. Application filed January 20, 1873.

A stuffing-box having a hinged joint to allow the vibration or irregularity of the piston-rod; the box made of three sections and a double conical hollow plug with a lead socket rounded out on the inside for the purpose of allowing lateral motion to the entire packing and preventing the leakage of steam.

Claim.—1. The combination, with the part A, of the socket piece C, conical packing-cup D, plate E, and packing-piston K, substantially as and for the purpose set forth.

2. The hinged bolts F, in combination with the body of the stuffing-box, and the packing piston or gland, substantially as and for the purposes set forth.

137,784.—*Bottom for Sofas, &c.*—ISAAC MASON, Brooklyn, N. Y. Application filed February 27, 1873.

Strips of webbing stretch across the frame of the bottom at right angles to each other, and narrower strips of rolled iron are secured under each strip of webbing.

Claim.—The combination and arrangement of the fibrous strips B and metal supporting-strips C, arranged relatively to each other and to the frame A, and adapted to yield their united support to the superincumbent material, in the manner herein specified.

137,785.—*Automatic Fan.*—HAMILTON T. MCCORMICK, Selma, Ala. Application filed September 24, 1872.

The fan-hanging apparatus is made instantly adjustable to shorten the stroke and increase the speed.

Claim.—In an automatic fan the combination of the operating motor with the elbow-lever B, pendent arms D, lifting-frame N, cross-bar E, lever I, and ratchet-bar H, constructed and arranged to actuate a fan, substantially as specified.

137,786.—*Hook Attachment to Bands of Fire-Arms.*—IRA MERRILL, Springfield, Mass. Application filed December 24, 1872.

Guns may be readily hooked together for stacking.

Claim.—The combination of the hook C with a ring or swivel attached to the gun, substantially as and for the purpose herein set forth.

137,787.—*Fruit-Press.*—OLIVER METCALF, Mitchell, assignor to JOSEPH HARLAN, Lexington, Ind. Application filed December 20, 1872.

An interior perforated cylinder is located in the center of the crushed mass, and an interior exit is allowed for the juice.

Claim.—1. The inner perforated tube D, provided with a projection, *a*, at its lower extremity, for leading off the expressed juice to a proper receptacle, substantially as shown and described.

2. The device for attaching the piston F to the rod G, consisting of a detachable branch, P, and the hooked form of both branches at their lower extremities, substantially as shown.

3. In combination with the elements of the above-described press, the slotted base A, constructed substantially as shown, and for the purposes set forth.

137,788.—*Sink-Drain.*—GEORGE R. MOORE, Philadelphia, Pa. Application filed January 24, 1873.

The sink is made with a depression for sediment to settle in, and in this is arranged the stench-trap, and a splash-check hung to swing easily, so that it may be closed by a rapid current through the passage from the strainer and prevent choking up of the pipes. The outlet-pipe is provided with a valve operated by a handle extending through the floor of the sink.

Claim.—1. The splash-check or automatic valve H, substantially as and for the purpose herein set forth.

2. The clamp or coupling E, for the purpose herein set forth.

3. The arrangement of the valve G lower down than the strainer A and in immediate connection with the drain-pipe C, and operated through an opening in the cover M, all substantially as and for the purpose herein set forth.

4. In combination with the depression B, the strainer J with its solid upper part, whether made in one piece or not, as a device to operate in conjunction with I or its equivalent in performing the functions of trapping and of keeping back grease, as herein set forth.

5. The arrangement and combination of the several parts A B C K, as herein shown.

137,789.—*Elevator.*—WILLIAM A. MORRISON, Cambridge, Mass. Application filed March 6, 1873.

The shafts have eccentrics at their ends to press against tongues of guides when the cross-head, to which, at their other ends, they are attached by cranks, becomes depressed through the breaking of hoisting-rope, (fastened to lever L and connected by rod to the cross-head,) and thus arrest the descent of the elevator. The balance-weight aids in stopping elevator by further depressing the cross-head (with which it is connected by lever I) in case of breakage of hoisting-rope.

Claim.—The eccentrics E, the shafts D, cranks F, and cross-head G, arranged together and applied to the lifter-rope, or its rod, of the elevator, and to the vertical tongues of the guides, substantially in manner and to operate as set forth, in combination with the lever I, balance-weight W, and line K, arranged and combined, as set forth, with the elevator lifting rope or chain or rod H thereof, all being as, and to operate essentially as, specified.

137,790.—*Photographic Sky-Light.*—CHARLES D. MOSHER, Cook county, Ill. Application filed March 9, 1872.

An adjustable sky-light for photographic galleries, arranged so that the angle of inclination can be varied irrespective of the pitch of the roof. It is managed by a windlass and blocks, and has folding sides to exclude the weather.

Claim.—1. The adjustable sky-light A, in combination with roof B, when so arranged that the upper end of said sky-light may be raised above or be depressed below the line of junction with said roof, in manner set forth.

2. The combination of upright frame C, placed upon roof B, with sky-light A, for the purpose indicated.

3. The combination of cable D, adjustable sky-light A, and upright frame C, substantially as described.

4. The windlass E and cable D, in connection with short cables *d d* and blocks and cable-fastenings *a a* and *b b*, for the purpose and as herein set forth.

5. The adjustable folding sides G G, when used for the purpose and in the manner described.

6. The bars *f f*, forming stiffening-frame for and used in combination with folding sides G G, as set forth.

137,791.—*Egg-Carrier.*—EDWARD L. MUELLER, St. Louis, Mo. Application filed February 12, 1873.

One end of the strip forming the side walls of the egg-pockets is bent at right angles consecutively to form not only the four walls but a connecting-piece, by which each series of pockets may be secured to the corresponding side strip.

Claim.—An egg-carrier formed of a series of strips having one portion of each bent at right angles and folded, as shown and described, in connection with diaphragm c^1, for separating one series from another.

137,792.—*Machine for Bending Tube-Sockets.*—WILLIAM L. NEWSHAM, Philadelphia, Pa., assignor to MORRIS, TASKER & CO., same place. Application filed December 31, 1872.

To the plunger is pivoted the mandrel, which is forced down by the former upon the metal to bend it in the center to trough shape. Two side-benders, one on each side, descend in different times and bend the skelp around the mandrel, the edges lapping each other. The plunger in rising brings the mandrel to an inclined position, which permits the socket to slide therefrom.

Claim.—1. The combination of the articulated mandrel D, die C, and slide E, operated by means of the cam H, or other suitable mechanism, in such a manner that by the downward movement of the slide the skelp is pressed by the mandrel into the die, and bends the middle part of the skelp, and in the upward movement of the same, after the completion of the bending process by the other dies, the mandrel is tilted to discharge the socket from the mandrel, substantially as described.

2. The combination of two movable dies, C^1 and C^2, for bending the outer portions of the skelp, in combination with the die C and mandrel D, either movable or stationary, the said dies moving one a little in advance of the other and in different planes with each other, and at angles with and above the horizontal plane of the lower die C, substantially in the manner set forth.

137,793.—*Windmill.*—WILLIAM D. NICHOLS, Batavia, Ill. Application filed October 3, 1872.

A transverse shaft near the pivot and at right angles to the axis of the wind-wheel, carrying at each end a blade or vane, these blades being of unequal width and radiating from the shaft at different inclinations. The mill is operated tail to the wind, the vane for holding the wheel in the wind being dispensed with, and the wheel kept in the wind by its own surface. The transverse shaft above mentioned is weighted so as to keep the blades in a position to exhibit equal vertical surface to the wind and thus balancing each other. When the wind blows strong enough to raise the weight the lesser blade goes out of the wind and the larger blade comes into the wind, and, offering a broad surface, turns the mill upon the pivot and brings the wind-wheel more or less out of the wind.

Claim.—1. The wind-wheel C, in combination with the transverse weighted shaft E carrying the vanes F F', constructed and operating substantially as specified and shown.

2. The combination of the shaft E, vanes F F', bell-crank *e*, hollow pump-rod H, rod *f*, lever K with universal joint J and weight G, substantially as and for the purpose specified.

137,794.—*Horseshoe Attachment.*—PATRICK H. O'NEILL, St. Louis, Mo. Application filed December 19, 1872.

Claim.—1. A heel-strap with upper and lower padding, as and for the purpose set forth.

2. The toe-strap formed with branch side straps, as and for the purpose set forth.

3. An improved horseshoe attachment, consisting of toe-strap B, branch-straps b^1 b^1, ankle-strap C, loop b^4, and double-padded heel-strap D, as herein shown and described, as and for the purpose set forth.

137,795.—*Rotary Steam-Engine.*—LA FAYETTE PARKER, Davenport, Iowa. Application filed January 20, 1872.

Two parallel steam-chambers, with revolving pistons, are combined with sliding abutments and a valve, which are actuated by pivoted levers and a cam on the shaft. The pistons are provided with packing-pieces on all four sides set out by springs.

Claim.—1. The arrangement of two parallel steam-chambers, *b b*, in a combined cylinder, *a a*, with cut-offs *f g* and pistons *e d*, attached on opposite sides radially to shaft *c* by hubs 10 10 in each steam-chamber, constructed and operated substantially as shown and described.

2. The arrangement of hub 10, shaft *c*, cylinder *a a*, and pistons *e d*, constructed substantially as shown.

3. The arrangement of cam *l*, rock-lever 12 and *m*, rod *r* to operate cut-off *f*, substantially as shown.

4. The arrangement of cut-off *g* in steam-passage 2 with piston *e*, to operate substantially as shown.

5. The arrangement of packing-bars *t* and spring *t'* with pistons *e* and *d*, substantially as shown and described.

137,796.—*Steam Pump and Condenser.*—ELI REESE, Mahanoy City, Pa. Application filed February 5, 1873.

The exhaust-steam from the engine is condensed in a vessel partly from the column of water in the discharge-pipes and partly with water from the suction-pipes, giving the pump the benefit of the water so lifted by the vacuum formed in the vessel or condenser, and assisting the pressure in the steam-cylinder by the vacuum on the opposite side of the piston.

Claim.—The condenser A, exhaust-steam inlet B, spray-discharge pipe C, blow-pipe G, suction pipe D, and pump connecting-pipes E E, all constructed and arranged for operation as and for the purpose specified.

137,797.—*Music-Leaf Turner.*—ANTHONY ROSENFIELD, San Francisco, Cal., assignor to himself and HENRY POLLEY, same place. Application filed August 17, 1872.

The series of disks carrying the turning-arms is provided with a slot, in which works the retaining and freeing rod.

Claim.—The uprights B B of the frame provided with slots C C, in combination with the lower sliding pin D with beat-end, and upper sliding pin D', as and for the purpose set forth.

137,798.—*Loom Picking Mechanism.*—LESTER E. ROSS, Providence, R. I. Application filed November 5, 1872.

The picking-stick is placed upon a rocker and is put in position by a cam which operates a lever having a loose connection with the toe of the rocker. The stick is actuated in the picking movement by two coiled springs attached at one end to the frame below and at the other end to the rocker, one on each side, at or near the toe; or the springs are attached to a rocking bar on the frame.

Claim.—1. The combination of the rocker *j* and its supporting-beam with the lever *i* and cam A and actuating-springs, all constructed and arranged as described.

2. The combination of the rocker *j*, the actuating-springs *l*, and the rocking bar *m*, as described.

137,799.—*Lasts for Boots and Shoes.*—WILLIAM H. ROUNDS, Campello, Mass. Application filed February 24, 1873.

Nails having shoulders or flanges and of the same size above side flanges are permanently secured to the face of the last. The sole of the shoe is attached by a blow of the hammer over each of the nails.

Claim.—A last having its bottom provided with projecting pins *b*, constructed of the same size, above the flange *c*, and over which the inner sole is to be forced or driven, substantially as and for the purpose set forth.

137,800.—*Hot-Air Furnace.*—BENJAMIN C. SAYRE, Montrose, Pa. Application filed February 15, 1873.

Both the outer casing and the cylinder above the fire-pot have double walls. The products of combustion pass between the two walls of the combustion-chamber. The combustion-chamber and the upper portion of the casing may be turned about, the lower portion of the furnace remaining stationary.

Claim.—1. The double-wall casing, composed of two horizontal sections, D E, connected by a perforated ring, *g*, and combined with a fire-pot, B, and a flue-drum, G, the section E and drum G being adjustable, substantially as described.

2. The drum G, mounted on the fire-pot B, and composed of double walls with a flue-space, *i*, between them, the inner wall communicating through the orifice *k* with the combustion-chamber, and the outer wall communicating with the escape-flue *i'*, in combination with an external casing, D E, substantially as described.

137,801.—*Binding-Screw.*—FRANK SHURZ, Paloma, Ill. Application filed December 11, 1872.

The head of the screw is provided with ratchet-teeth, in which a spring-pawl fastened to the post catches and prevents the screw from turning back.

Claim.—The thumb-screw A provided with ratchet-teeth and a spring-pawl, substantially as shown and described.

137,802.—*Garden-Hose Holder.*—HENRY C. SMITH, Cleveland, Ohio. Application filed August 7, 1872.

To the upper end of a rod is pivoted a semicircle having a flange and an ear with a lip and set-screw for clamping a hose-pipe. The semicircle has a slot with a set-screw through it entering the rod, by means of which the hose-pipe may be fixed at any desired angle. By means of slides and a set-screw the rod is connected with another rod, and may be elevated or lowered, as desired.

Claim.—The rod A, foot-piece B, rod C, slides D D, semicircle E with slot I and set-screw J, flange F, and lip and set-screw G, all constructed, combined, and arranged substantially as shown and described, for holding a garden-hose pipe, H, as and for the purpose set forth.

137,803.—*Meat or Fruit Press.*—LA ROY S. STARRETT, Athol Depot, Mass., assignor to ATHOL MACHINE COMPANY, same place. Application filed December 16, 1872.

The screw and the bridge or yoke through which it passes can be removed without disturbing the follower, and the follower itself be separately lifted out of the receptacle, which is conveniently accomplished by grasping a knob, suitably fastened to the follower.

Claim.—The bottom A A^1, having the upright cheeks A^2, in combination with bridge C, screw D, handle D', follower E, and receptacle B, constructed and arranged substantially as and for the purpose specified.

137,804.—*Combined Rave and Fender for Sleighs.*—SAMUEL M. STEWART, Rochester, N. Y. Application filed December 20, 1872.

Claim.—As a new article of manufacture, a combined rave and fender for the runners of sleighs, made as herein described—that is, of a single piece of wood, steam-bent, with its front end *a* curved to form a rest for the runner, as specified.

137,805.—*Broom-Corn Duster.*—JAMES L. STRANAHAN, Chicago, Ill. Application filed March 7, 1873.

A brush-broom constructed in ordinary form, with a connecting stick in its center, to which the corn is attached, over which is fitted the handle by an enlarged opening in its lower end.

Claim.—The combination of the brush A, stick B, and socket-handle C, arranged as described, for the purpose set forth.

137,806.—*Man-Hole Lid for Boilers.*—ROBERT TIFFETT, Harrisburg, Pa. Application filed January 17, 1873.

The lower lid is rabbeted to hold a hollowed plate, which supplies the place of the ordinary flange, the whole secured to the boiler by means of a yoke, bolt, and nut.

Claim.—1. The detachable rabbet-plate A, or its equivalent, in combination with the man-hole lid B, the parts being applied substantially as and for the purpose herein set forth.

2. The combination of the yoke N K, the lid B, rabbet-plate A, handles S, and bolt W, all constructed and arranged to operate substantially as and for the purpose herein set forth.

137,807.—*Collar Button or Stud.*—JAMES I. WADDELL, Annapolis, Md. Application filed February 8, 1873.

Claim.—A neck-tie fastener, composed of a stud or button grooved or dovetailed transversely of its outer disk and a wedge-shaped piece, *b*, having a spring, *c*, attached thereto, constructed and arranged substantially as and for the purpose set forth.

137,808.—*Automatic Signal for Railroad Crossings.*—RICHARD WALKER, Milford, Mass. Application filed August 30, 1872.

The signal-bar, standing normally in a vertical position, is connected, by levers and rods, with a tripping-lever near the railroad track at a suitable distance from the crossing road, so as to be operated by an approaching train and thrown into a horizontal position across said road, in which position it is held by a locking slide-bar. As the train passes the crossing road another tripping-lever throws the signal-bar back to its vertical position.

Claim.—The combination of the lever *e*, rod *u*, bar *r*, springs *s*, arms *q y l*, spring *o*, lever *k*, chain *h*, pulley *b*, lever *x*, and signal *c*, all arranged and operating substantially as described.

137,809.—*Thrashing-Machine.*—ANDREW WEMPLE, Chicago, Ill. Application filed June 15, 1872.

Improvement on 126,117. Conical thrashing-plate with projecting teeth, revolving horizontally in a concave hood, through which grain is fed. Straw carried up by an inwardly-inclined belt and delivered to an off-beating belt, arrangement of fans, and sieves, as claimed.

Claim.—1. The combination of the thrashing-plates D and G and fan-rods Y with the feed-table or opening E and tables F, substantially as specified.

2. The combination of the fan H with a separating-chamber and the thrashing-plates D and G and their case, substantially as and for the purposes specified.

3. The carrier O, in combination with a separator, substantially as and for the purpose specified.

4. The combination of the sieve K, inclined carrier O, and carrier Q, substantially as described.

5. The combination of the rods M and L, sieve K, and wind-board I with the carriers O and Q in a separator, constructed substantially as specified.

6. The back board P, when located and operating substantially as and for the purpose specified.

7. The blast-fan H, in combination with the separator Z', constructed and operating substantially as specified.

137,810.—*Connecting-Post for Electrical Apparatus.*—THOMAS WISHART, Clayton, Del., assignor of one-half his right to SOLOMON J. GANMAN, same place. Application filed March 3, 1873.

Center plug sliding in hollow post, combined with spring, substituted for screw-post.

Claim.—The connecting-post for electrical instruments, formed by the combination of a chambered post, an interior plug, and a spring, substantially as described.

137,811.—*Gas-Retort Furnace.*—WILLIAM C. WREN, Brooklyn, N. Y. Application filed April 3, 1873.

The parts of the furnace are so made that they can be put together and taken apart at pleasure; and the fire-pot with the flues and the arch are combined in such a manner as to give the greatest heat with the smallest consumption of fuel.

Claim.—1. The bottom, side, end, and top plates J B C F D G H, for the purpose as described.

2. The combination of the flues *e e e* with the fire-pot and oven, together with the outside frame, in the manner and for the purpose as described.

137,812.—*Harvester.*—GEORGE W. N. YOST, Corry, Pa., assignor to "ACME MOWER AND REAPER COMPANY," New York, N. Y: Case A. Application filed September 16, 1872.

The removable sleeve containing the bearings of the crank-shaft is kept from moving endwise by wheels on the shaft, and its rotation prevented by a rib thereon engaging with a groove in the frame.

Claim.—The arrangement of a detachable bush-holding journal-bearing sleeve within the main frame of a mowing or reaping machine, when held therein by gear-wheels on the axle within such sleeve, and prevented from revolving by a spur, substantially as described.

137,813.—*Harvester.*—GEORGE W. N. YOST, Corry, Pa., assignor to "ACME MOWER AND REAPER COMPANY," New York, N. Y. Application filed September 23, 1872.

The coupling-arm is hinged to the neck of the main frame by means of a loop fitting in a circumferential groove thereon, and the joint is strengthened by slipping over it a slotted sleeve, which also forms a shield for the crank-wheel.

Claim.—The combination of a tubular metal crank-wheel shield with the loop of a connecting-bar over the end of the main frame of a mowing or reaping machine, substantially as described.

137,814.—*Harvester.*—GEORGE W. N. YOST, Corry, Pa., assignor to "ACME MOWER AND REAPER COMPANY," New York, N. Y. Application filed September 23, 1872.

The coupling-arm and brace-bar are hinged to the main frame upon axes at right angles to each other, and united by a combined screw-joint and flexible connection, whereby free movement on the hinges is permitted.

Claim.—The arrangement of the screw-socket joint with the elastic joint at the junction of and between the connecting-bar hinged to the main frame on a journal at a right angle to the main axle, and the brace-bar hinged to the main frame on a journal parallel with the main axle of a mowing-machine, substantially as described.

137,815.—*Harvester.*—GEORGE W. N. YOST, Corry, Pa., assignor to "ACME MOWER AND REAPER COMPANY," New York, N. Y. Application filed September 23, 1872.

The removable sleeve containing the bearings of the crank-shaft is held in place by an oil-cup, which also performs the office of a set-screw.

Claim.—The combination of an oil-cup with the main frame and the journal-bearing sleeve of mowing or reaping machine, substantially as and for the purpose described.

137,816.—*Seat for Harvesters.*—GEORGE W. N. YOST, Corry, Pa., assignor to "ACME MOWER AND REAPER COMPANY," New York, N. Y. Application filed September 23, 1872.

The seat-supports are hinged to the sides of the main frame and rest upon pivoted eccentrics, by the rotation of which the seat may be raised or lowered.

Claim.—1. The combination of adjustable cams with an operator's seat hinged to the main frame of a mowing or reaping machine, substantially as described.

2. The combination of adjustable cams with foot-rests attached to an operator's seat hinged to the main frame of a mowing or reaping machine, substantially as described.

137,817.—*Mowing-Machine.*—GEORGE W. N. YOST, Corry, Pa., assignor to "ACME MOWER AND REAPER COMPANY," New York, N. Y.—Case B. Application filed September 16, 1872.

A lifting-lever, journaled on the inner end of the main axle, is connected by one chain to the coupling-frame and by another, somewhat shorter, to a rolling-lever journaled on the coupling-frame, and having its lower end bent at right angles, so as to press upon the inner projecting end of the finger-bar. Thus, when the lifting-lever is drawn back, the outer end of the finger-bar is first raised, and then the coupling-frame and finger-bar are lifted together.

Claim.—The arrangement of a finger-bar lever, hinged horizontally on the connecting-frame, on the outer side of and rocked at a right angle to the rolling direction of a main driving-wheel, laid on the inner end of the finger-bar, between the finger-bar hinge and the main frame, and worked by a lifting-lever on the outer end of the main axle of a mowing-machine, substantially as described.

137,818.—*Heating-Stove.*—WILLIAM R. AKERS and JAMES E. JOHNSON, Malcolm, Iowa. Application filed February 21, 1873.

Air enters the chamber through an orifice in the base of the stove, and thence is conveyed by means of a tube through the fire-chamber and the hot-air chamber to the smoke-chamber.

Claim.—The arrangement of the air-chamber B, the tube V, fire-chamber R, hot-air chamber N, and smoke-chamber P, substantially as specified.

137,819.—*Railroad-Rail Joint.*—FRANKLIN A. SEABERT and RICHARD ANTHONY, Kingston, Pa. Application filed August 30, 1872.

The spring fish-plate, by its elasticity, in connection with the longitudinal rib and groove in the nut, prevents the nut from turning.

Claim.—The fish-plate D, constructed as described, with its upper and lower edges bent inward, and with a central longitudinal rib, *a*, in combination with the grooves *b b* in the nut G, substantially as and for the purposes herein set forth.

137,820.—*Process of Using Anthracite-Coal Dust as Fuel in Furnaces.*—ALFRED BERNEY, Jersey City, N. J. Application filed April 9, 1873.

By a means of a forced blast channels are kept open through the mass of coal-dust. The fire is first started by bituminous coal. The grates are made with numerous openings, so as to evenly distribute the blast.

Claim.—1. The improved processes herein described for using anthracite-coal dust, slack, or screening, with bituminous coal or dust, as fuel to generate heat, the same consisting in adding or using anthracite-coal dust, slack, or screenings, with or without bituminous coal or dust, to the fire in furnaces, as described, so as to utilize the anthracite dust in generating heat.

2. The process of making artificial crevices by force of air in the use of anthracite dust, slack, or screenings alone, or in combination with bituminous coal or dust, or with anthracite coal, to generate heat, substantially as described, and for the purpose set forth.

137,821.—*Pruning-Shears.*—PETER BROADBOOKS, Batavia, N. Y., assignor of one-half his right to CHARLES N. GROVE, same place. Application filed March 15, 1873.

Two ordinary blades of a pair of pruning-shears are separated, and, by means of hooks and slots, are both united with a third cam-blade or rotating cutter. Thus several pairs of cutting-edges are afforded and blades are furnished, working at different angles to accommodate different-sized limbs.

Claim.—The combination of the blades A, B, and F, as described, A being furnished with hooks and B and F with perforations, whereby the blades B and A may be used either with or without the blade F, all substantially as herein shown and described.

137,822.—*Water-Wheel Gate.*—JOHN M. BURGHARDT, Great Barrington, Mass. Application filed July 13, 1872.

Stationary chutes are attached to the curb, and movable chutes or tongues project from the plate of the gate and pass through the water-apertures in the curb. The movement of the gate is limited by these apertures, and when it is turned in one direction the movable chutes come in contact with the stationary chutes and thereby cut off the water. By an opposite movement the water-apertures may be made of any desired size.

Claim.—The stationary curb A, having apertures H, chutes E, face D, and center F, combined, as described, with rotary gate having plate I with movable chutes C, arranged as and for the purpose described.

137,823.—*Hose and Pipe Coupling.*—THEODORE E. BUTTON, Watertord, N. Y., assignor to himself and L. BUTTON, same place. Application filed January 11, 1873.

To one of the pipes to be connected is hinged a screw-nut made in two parts, each part being hinged to opposite sides of the pipe. A binding-ring, made to fit the outside of the nut, holds the two parts together.

Claim.—The combination, in a pipe or hose coupling, of the hinged sectional screw D and binding-ring F, substantially as and for the purpose hereinbefore described.

137,824.—*Button.*—MARY P. CARPENTER, New York, N. Y. Application filed February 8, 1873.

The button has an eye made of a piece of wire bent into proper form, having its ends flattened and pointed and a screw-thread cut upon them.

Claim.—1. A button eye made of a piece of wire bent into proper form, and having its ends flattened upon their inner side and pointed, and a screw-thread cut upon them above the taper, substantially as herein shown and described.

2. An improved button, formed by the combination of a head, A, having a screw-hole formed in it with the open-shanked eye B, constructed substantially as herein shown and described.

137,825.—*Cotton-Stalk Knocker.*—MARVELL M. CARRUTH, Helena, Ark. Application filed December 31, 1872.

A rectangular frame is mounted upon two wheels, and upon the rear end of the frame a revolving knocker is attached, and this knocker receives motion from the bearing-wheel by means of an accelerating pulley and band.

Claim.—The shaft H and pulleys G I mounted in the upper ends of the vertical bars D of the frame, the revolving knocker and its pulleys arranged at the lower ends of said bars, said parts being connected with each other and the driving-pulleys E by belts F J, as shown and described, for the purpose specified.

137,826.—*Boiler-Tube Scraper.*—JOHN B. CHRISTOFFEL, Williamsburg, N. Y. Application filed February 15, 1873.

A series of spiral plates attached at their ends to two collars, having pins on them for that purpose, which plates are compressed or extended by the action of spiral springs operating upon the said collars.

Claim.—1. The springs C, notched and combined with the radial pins and movable collars, as described, to hold said springs firmly to rod A, but allow them to readily contract and expand thereon.

2. The combination, with springs C secured as set forth, of the inner stops D D, the outside washers E, and the springs F, arranged and applied as set forth.

137,827.—*Manufacture of Corrugated-Metal Shutters.*—ALEXANDER CLARK, London, England. Application filed March 26, 1873.

To gradually change the dimensions of the corrugations to admit of close coiling, the corrugating-cylinder is placed concentrically within a curved guide and co-operates with sets of loose dies or teeth, each set being of less dimensions than the preceding one, which teeth are successively drawn in by the teeth of the cylinder and carried around between it and the guide.

Claim.—1. Metallic revolving shutters, provided with the corrugations of each convolution, varying in dimensions, substantially as and for the purpose hereinbefore described.

2. The method of passing successive portions of sheet metal between corrugating-dies upon one another, and without changing the corrugating-roll, as and for the purpose set forth.

3. A series of sets of corrugating-dies, D, a corrugating die-roll, C, and a curved table B, combined as and for the purpose described.

137,828.—*Invalid-Bedstead.*—OSCAR G. COSBY, Richmond, Va. Application filed February 21, 1873.

The mattress-frame is mounted on vertical-toothed slides, and raised and lowered by means of cog-wheels, shafts, and cranks. Above the mattress-frame is arranged the canvas-frame, having jointed rollers so that the head-section can be adjusted at any desired inclination. The canvas has an opening under which to place a vessel, which, when used, is placed on the mattress, which is lowered a suitable distance.

Claim.—The frame B mounted at each end in a vertical-toothed slide, and the canvas M having jointed rollers combined with mechanism, substantially as described, and for the purpose set forth.

137,829.—*Cloth-Measuring Register.*—SAMUEL CROCKER, Port Allen, Iowa. Application filed January 11, 1873.

At the extremity of a yard-stick or other measuring-scale a spring registering-wheel is so arranged as to move one tooth and carry the index one unit at each touch of the thumb as the measure is effected. A supplementary adjustable index, being set to the number of yards desired to be measured, forms a stop to the register when that number is actually measured.

Claim.—An improved cloth measure and register, formed by the combination of the base-plate A, pivot B, double ratchet-wheel C, top or scale-plate D, ratchet-wheel E, stop F f', scale G g^1 g^2, mainspring H, lever-pointer I, adjustable bar J, and spring-catch K L with each other, said parts being constructed and operating substantially as herein shown and described.

137,830.—*Dovetailing-Machine.*—THOMAS CULLEN, Blackstone, Mass. Application filed February 8, 1873.

A series of laterally-adjustable saws are arranged in a reciprocating frame, and act in connection with a table having a longitudinal, lateral, and partially-rotating movement.

Claim.—1. The combination, with the feeding-carriage J' and table A^1, of ways G^1, arranged to feed the work longitudinally and obliquely, in the manner described.

2. The combination of the stops E^1 E^2 and stop-pins E^4 with the carriage J', arranged substantially as specified.

3. The combination of the bars C D E G J N and the rods F, in the manner described.

4. The saws connected to the slotted bars C by the swiveled studs B, substantially as specified.

5. The combination of the stops Y, bars G, cross-bar N, pin O Q, face-plate K, and adjusting-screw R.

6. The combination of the plate L' and bars M' with the work-table, the oscillating carriage I', and the carriage J', substantially as specified.

137,831.—*Bee-Hive.*—SAMUEL T. DAVIS, Millersville, Pa. Application filed December 12, 1872.

Separate frame-cases slide in endwise in grooves, and have glass ends, glass window at one side, the other side woven wire, a horizontal bar on top, and a diagonal bar on the wire side, these bars having each a line of holes registering with or covering holes in the frame to shut the bees in or out. At the further or porch end a slide in the frame-case is operated by a pin passing through a slot in the hive-wall.

Claim.—1. The arrangement, in a bee-box, of the removable sections H H', provided with top and side slide-valves *k* A, sliding frames I, together with the glass side and door L E, bee-door and stem *m p*, all substantially constructed and operated in the manner and for the purpose specified.

2. A bee box or hive, when it is provided in front with slits *d d* for the projecting stem *p* of the section-doors *m*, drone-outlets *s s*, and drone and moth inlets *n n* leading to the drawer *f*, with their valved passages, all arranged substantially in the manner and for the purpose described.

137,832.—*Metallic Sky-Light.*—GEORGE E. DAYTON, Baltimore, Md. Application filed March 17, 1873.

An improvement upon the "Hayes" patents, by which the rabbet is dispensed with, fastening-wires being substituted, which perforate the polygonal cap and are bent down and soldered. The ridge-bar is of the form of a rhomboidal tube, capable of being altered in shape by pressure to accommodate it to different pitches of roof. The sash-bar J permits the sky-light to be opened. The cross-bar K prevents leakage between two successive panes.

Claim.—1. The glass-support bar B, made flat on top, as described, to avoid the necessity of a rabbet.

2. The fastening-wires applied to cap F, as and for the purpose set forth.

3. The ridge-bar G, constructed without rabbet and adapted to different pitch of roof, as specified.

4. The flashing I turned up on edge to form a gutter, *i*, and applied to the wooden curb H, as and for the purpose described.

5. The opening sash-bar J, constructed and applied, in connection with the glass-supporting bars, as and for the purpose set forth.

6. The cross-bar K, constructed, arranged, and applied between the bars B^2 B^2 and the two lengths of glass, as and for the purpose specified.

137,833.—*Construction of Houses.*—DAVID L. EMERSON, Oakland, Cal. Application filed December 16, 1872.

The walls are each braced by vertical rods or plates and by anchors passing through them, the plates and anchors being connected by strap-iron, which is also worked through the courses. The several walls are united and bound by horizontal tie-rods secured to vertical plates at the corners. Object—an earthquake-proof house.

Claim.—1. A structure composed of plane walls of masonry, wherein each wall is separately tied and braced, substantially as set forth, and is united to the adjacent wall by having the ends of its horizontal tie-rods joined to a vertical brace situated within or exterior to this adjacent wall, in the manner substantially as described.

2. The combination formed by the arrangement of the strap-iron with the uprights.

3. The combination and arrangement of the strap-iron with the anchors.

4. The combination and arrangement of the strap-iron, anchors, and uprights.

5. The combination and arrangement of the brace *s''*, or its equivalent, with the uprights and rods, or with one or more of either separately.

137,834.—*Bee-Hive.*—CHARLES FINN, Des Moines, Iowa. Application filed February 13, 1871.

An improvement on Patent No. 102,526, May 3, 1870, consisting of a double-wall bee-hive, the outer wall formed of a series of uprights lined with paper, the inner wall composed of alternate layers of wood and paper, the space between the walls to be filled with straw or its equivalent.

Claim.—The combination of the inner wall A A, when composed of alternate layers of wood and paper, substantially as described, the paper C, and the series of uprights B B, in the manner and for the purposes set forth.

137,835.—*Manufacture of Glue.*—OSCAR S. FOLLETT, Mont Clair, N. J. Application filed March 31, 1873.

The glue cake or jelly is placed in a close box or chamber with a water-absorbent, such as chloride of calcium.

Claim.—1. The process herein described for drying glue, the same consisting in inclosing it in a chamber with a water-absorbent material, substantially such as herein described.

2. The apparatus herein described for removing water from glue, consisting of a closed chamber, a series of removable frames for supporting the glue-cakes, and a series of boxes or trays for containing chloride of calcium or other hygrometric substance.

3. The method herein described for aiding in eliminating the water by forming perforations in the cakes of glue, as set forth.

4. The combination of a closed chamber, provided with frames for supporting the glue and trays or boxes for containing a water-absorbent material, with device for either heating or cooling the interior of the chamber so as to maintain a regulated temperature in the chamber, as set forth.

5. The improved article of glue in plain or perforated sheets.

137,836.—*Turbine Water-Wheel.*—JOHN C. GREEN, Flanders, N. J. Application filed December 21, 1872.

Each gate spindle or shaft has a head-piece with arms on opposite sides of the axes, a tooth between said arms, and a toothed segment of about four teeth immediately below the tooth which is larger and longer than the teeth of the segment. In connection with the head is arranged a disk having two notches with a toothed segment to each notch, placed diametrically opposite each other. The segments on the disk gear with the gates as they come to them, and open and close them successively, according to the way the disk is turned. The arms of the gate-spindle come against the face of the disk and prevent the gates from being turned too far.

Claim.—The combination of the disk N, having one or more notches, and toothed segments Q, as described, with the gates having arms J K, tooth L, and a toothed segment, M, substantially as specified.

137,837.—*Carving-Machine.*—HENRY GRUBENBECHER, New York, N. Y. Application filed October 26, 1872.

The pattern and work are fastened to a pantograph-frame and applied to a revolving guide-point and a cutting-tool which copies the pattern.

Claim.—1. The plate G that holds the block and pattern combined with a jointed frame, D, balanced in a horizontal position by weights or springs, as and for the purpose described.

2. The combination with plate G, supporting both block and pattern, of the tool *a* and pin *b*, operating therewith, as and for the purpose set forth.

3. A block and pattern-plate, G, provided with the brackets *t u v*, having centering-pins *w*, of which the middle one is swiveled, as and for the purpose specified.

137,838.—*Hot-Air Furnace.*—JOHN D. HALL, Brooklyn, N. Y., assignor to MARY E. J. HALL, same place. Application filed February 13, 1873.

The upper portion of the radiator or combustion-chamber is but a short distance above the surface of the burning fuel, and this radiator, in connection with the perforated sides D of the fire-pot, forms a lateral passage for the products of combustion, except when the damper E at the rear being open, the draft is direct. The central elevated portion of the grate within the upwardly-contracted portion of the fire-pot has a reciprocating motion.

Claim.—1. A hot-air furnace radiator or combustion-chamber A having its upper central portion brought down near to and about parallel with the surface of the fire and its sides or perimeter sufficiently extended laterally to admit of the formation of a horizontal smoke-flue therein by means of the plates D, substantially as set forth.

2. The combination of the lateral draft-plates D and the damper E with the herein-claimed radiator, substantially as shown and described.

3. The combination of the herein-claimed radiator with a fuel or feeding magazine, B, substantially as described.

4. The combination of a fire-grate, M' M'', having an elevated vibrating central part, M, with the radiator A, substantially as shown and described.

5. The combination of the upwardly-contracted fire-pot K with the herein-described radiator.

137,839.—*Coffee-Roaster.*—JAMES HART, Kekoskee, Wis. Application filed March 1, 1873.

As none of the volatile oils which give aroma to the coffee can escape, the roasted beans gradually absorb the same again.

Claim.—The coffee-roaster A, consisting of two shells joined by flanges *a* having opening *b*, cover B, and handle connection C, and lug *c*, substantially as and for the purpose described.

137,840.—*Manufacturing Matches.*—OLIVER H. HICKS, Baltimore, Md. Application filed March 7, 1873.

Dip in paraffine, or other equivalent, after the head or friction portion has been applied.

Claim.—A match, constructed substantially as herein described—that is to say, by dipping it in paraffine or other equivalent, after the head or frictional portion has been applied, substantially as and for the purpose specified.

137,841.—*Door-Bolt.*—ADOLPH G. HOFSTATTER, New York, N. Y. Application filed March 8, 1873.

A semi-cylindrical plate is interposed between the bolt and central or slotted keeper, and arranged to be moved so as to close the slot in the said keeper, and thus lock the bolt when it is thrown forward.

Claim.—The semi cylindrical plate E in combination with the plate A, bolt B, and keepers C D, of an ordinary slide-bolt, substantially as herein shown and described, and for the purpose set forth.

137,842.—*Corn-Sheller.*—FRANKLIN HOLLEN and AMOS C. HOLLAND, Marion, Ill. Application filed February 15, 1873.

The ear of corn is drawn across the fluted bars of the grate, the sharp edges of which remove the kernels from the cob, the box keeping the kernels from flying about and guiding them into a receiving bag or vessel.

Claim.—1. The shelling-grate B formed of a series of transverse bars fluted or grooved upon their upper sides to form sharp or cutting edges, as specified.

2. The combination of the box A a', shelling-grate B, bars C, short legs E, and adjustable long leg F, with each other, substantially as herein shown and described.

137,843.—*Cooking Apparatus.*—CORNELIUS HOOD, Seneca Falls, N. Y. Application filed February 12, 1873.

Steam and odors pass through the condensing-chamber and the central tube to the exit-flue of the heater on which the vessel is placed, or a pipe leading from the top of the vessel may connect with a section of pipe fixed in a stove-lid.

Claim.—1. In a culinary boiler or steaming apparatus, the combination of the condensing-chamber D provided with a removable top, c, and pipe E, the detachable tube A provided with a valve or stopper, a, and the exit-pipe B, all constructed and operating together as and for the purposes described.

2. A stove-cover provided with an aperture, as described, when combined with a tube connected with a boiler or other culinary vessel.

137,844.—*Crayon-Holder.*—ANDREW F. HOWARD, Waltham, Mass., assignor to ZENAS PARMENTER and AMORY H. WALKER, same place. Application filed March 29, 1873.

The slitted tapering end of a metallic cylinder is compressed by a tapering collar to clamp the projecting crayon introduced through the opposite end, which is closed by a cap.

Claim.—The improved article of manufacture or port-crayon, composed of the tapering and slitted tube A, the thimble or cap C, and the tapering or tubular collar B, constructed and arranged essentially as shown and described, the crayon receiving-mouth in such port-crayon being at the upper end or part of the article, as set forth.

137,845.—*Grain-Basket.*—HORACE C. JONES, Dowagiac, Mich. Application filed December 6, 1871.

One series of staves extending from side to side across the bottom, each stave overlapping each succeeding stave in such manner that each stave forms a portion of the inner and a portion of the outer surface of the sides of the basket. Two strengthening-staves are applied to either or both the outside and inside of the basket.

Claim.—1. A basket constructed of one series of staves, B, extending from side to side across the bottom, each stave overlapping each succeeding stave in such manner that each stave forms a portion of the inner and a portion of the outer surface of the sides of the basket, as and for the purposes set forth.

2. The staves C C, in combination with the lapped staves B, substantially as described.

137,846.—*Grain-Basket.*—HORACE C. JONES, Dowagiac, Mich. Application filed February 4, 1873.

The lining or inside series is composed of a series of short staves, which overlap one another, each alternate stave of such series terminating under the bottom hoop and the others extending beyond such point and terminating just within or near said hoop. The outside series extends from the top on one side across the bottom to the top on the other side.

Claim.—The stave basket, having an inside lining, A, composed of a series of short staves which overlap each other along one of their edges, each alternate stave of such series terminating under the bottom hoop B and the others extending beyond such point and terminating just within or near said hoop, in combination with an outside series of staves extending from the top on one side across the bottom to the top on the other side, substantially as described.

137,847.—*Wash-Board and Rubber.*—CHARLES KREBS, Wilmington, Del. Application filed February 1, 1873.

An elevated corrugated surface, at the upper part of which is a tube with openings connected with flexible pipe. The rubber is journaled to jointed shafts that are pivoted between the ends of the wash-board.

Claim.—1. In a combined wash-board and reciprocating rubber, the shaft D journaled between the ends of the corrugated portion A, and having its extremities bent, as shown and described, in combination with the reciprocating rubber E', and with the arm or shaft E having its ends bent and jointed to the shaft D, substantially as and for the purpose specified.

2. The combination, with the wash-board A, of the tubes B and C, constructed and arranged substantially as specified, to permit of a continuous flow of clean water over the surface of the board.

137,848.—*Handle for Sheet-Metal Ware.*—J. WARREN LAMB, Troy, N. Y. Application filed January 3, 1873.

Claim.—An inclosed handle for sheet-metal ware, having its base grooved for the reception of the edge of the vessel, and rigidly attached thereto, substantially as described.

137,849.—*Filter for Cane-Juice, Oils, and other Dense Liquids.*—ARCHIBALD K. LEE, Galveston, Tex. Application filed April 5, 1873.

The filters of different-sized meshes are connected to the removable kettle. The kettle is surrounded by a steam-chamber, from which a series of coils pass beneath the bottom of the lower filter to preserve an even temperature at the point where greatest liquidity of the material to be strained is required.

Claim.—1. The steam-pipes C C, arranged in connection with a strainer or filtering surface, as to operate substantially as described.

2. The vessel A, having a steam-chamber, B, formed as shown, and the pipes C C, the whole being combined and arranged to operate substantially as described.

3. In combination with the vessel A, the independent kettle D, having at its lower section a straining or filtering surface, E, the whole being constructed and arranged as to permit of the kettle being removed at pleasure, whereby a series of kettles can be used in connection with the same vessel, as and for the purpose specified.

4. The vessel A, kettle D, strainer E, having close meshes or small openings, and the coarse strainer F, the whole being so combined and arranged as to operate substantially as described.

137,850.—*Machine for Cutting and Perforating Cigars.*—JACQUES LEVY, THEODORE LEVY, and ARMAND LEVY, New York, N. Y. Application filed March 8, 1873.

The form-block containing the cigar-"bunches" is placed beneath a series of notched perforators attached to a cross-bar having guides at each end working upon slides and held up by spiral springs. The perforators are depressed by a treadle-movement beneath the table, and enter the cigar-forms in the block, which is held in place by a clamp-lever and adjustable plates. A blade acts in connection with a guide-roller to cut off the tuck.

Claim.—1. The needle-bar C having cylindrical guides d and ears e, in connection with standards B, springs D, and bolt treadle-connection f h i, substantially as described.

2. The notched cigar-perforators E, for the purpose specified.

3. Adjustable plates H having guides K, nuts n set by bolts l, and wheels m, substantially as set forth.

4. The clamp-lever I moving in recess p of table A, producing the rigid position of form-blocks G, substantially as described.

5. The blade F with guide-roller q at front edge of table, operating in combination with form-block G for cutting off tucks, as specified.

6. The combination of the cigar-perforators E, bar C, standards B, springs D, treadle mechanism form-blocks G, adjustable plates H, lever I, and table A, as shown and described.

137,851.—*Paper-File.*—CHARLES D. LINDSEY, Cincinnati, Ohio. Application filed August 10, 1872.

The paper is forced onto the paper-fasteners, supported on tongues, which are adjustable longitudinally on the base-plate by an upper spring-seated plate, J.

Claim.—A paper-file, consisting of frame A B C, plate D E, tongue-plates k i n, spring K, finger L, and thumb-piece M, each constructed and arranged substantially as described.

137,852.—*Machine for Grinding Horseshoe-Calks.*—JOHN LITTLE, Newburg, N. Y. Application filed February 24, 1873.

The grinding and cutting wheels are attached to same shaft, which is capable of adjustment to any desired position.

Claim.—The portable compound machine, consisting of the grinding-wheel A and cutter Y, arranged on the same shaft, and capable of being adjusted to any desired position by the means substantially as herein shown and described, and for the purpose set forth.

137,853.—*Station-Indicator.*—JAMES K. MAGIE, Canton, Ill. Application filed January 18, 1873.

A pin-wheel strikes a stop on track and its shaft gears with a vertical shaft, on which is fixed the four-lobed cam, which, in turning, forces asunder spring push-plates until their points pass the tips of the cam's lobes, when springs draw them together again, and the spoke of the pin-wheel having cleared the track this wheel completes its quarter-turn by the action of the spring. The vertical shaft gears with an upper horizontal shaft, on which is the name-strip. To prevent the springs carrying the cams too far arms are applied to the shaft and stop-blocks on the frame for said arms to strike against. That the arms may move on again, they are pivoted to the shaft so as to rise and fall, and an incline, also pivoted, is placed in front of each.

Claim.—The combination, with a railway-indicator apparatus, of pivoted arms M and two stops, N, and inclines O, the stops having a notch, P, in the lower part, the inclines being arranged relatively thereto, and pivoted as described.

137,854.—*Composition Paint-Oil.*—JAMES MCGAFFERTY, New York, N. Y. Application filed February 21, 1873.

Claim.—A prepared paint-oil formed of resin, oxide of manganese, linseed-oil, refined petroleum-oil, and liquid rubber, applied together in the manner and proportions specified.

137,855.—*Coal-Stove.*—HEINRICH MEIDINGER, Carlsruhe, Germany, assignor to himself and FREDERICK GUTZKOW, San Francisco, Cal. Application filed November 25, 1872.

The lower part of the fuel-chamber has a crescent-shaped throat-plate connecting with a bottom piece having a mouth-piece. The door and the mouth-piece are connected by a hinge so that the former can slide.

Claim.—1. The fuel-chamber A provided with the crescent-shaped plate d, or equivalent device, which forms a throat or contraction in its lower part, as set forth.

2. The bottom piece C, made in one piece with the plate d, and provided with the mouth-piece b, as shown.

137,856.—*Motive Power.*—GUSTAVUS MEYER, New Richmond, Mich. Application filed March 15, 1873.

Adjustable lever, in three parts, suspended by fulcrum-hook, operated by ropes connected with rocking-chair, alternate motion of which furnishes the motive power.

Claim.—1. The adjustable lever A B C F G, constructed substantially as herein shown and described.

2. The combination of the adjustable lever A B C F G, fulcrum-hook D, ropes H, guide-pulleys I and J, and rocking-chair K with each other, substantially as herein shown and described, and for the purpose set forth.

137,857.—*Trimming.*—WELWOOD MURRAY, New York, N. Y.—Case A. Application filed March 1, 1873.

The fabric is plaited into bias box-plaits and then folded on a longitudinal line to form two flounces of plaiting.

Claim.—As a new article of manufacture, the trimming composed of a bias box-plaited strip of plain lace or other suitable goods, with the edges trimmed with figured lace or other trimming, and folded, substantially as represented in Figs. 1 and 3.

137,858.—*Trimming.*—WELWOOD MURRAY, New York, N. Y.—Case B. Application filed March 1, 1873.

Claim.—As a new article of manufacture, the trimming composed of plaited ruching of net, whether known as illusion, Mechlin, bobbin, or Brussels net, combined with plaited and pointed muslin, substantially as described and represented in the drawing.

137,859.—*Artificial Stone.*—ADOLPH OTT, New York, N. Y., assignor to THOMAS F. WELLS, same place. Application filed March 27, 1873.

Claim.—The compound for and process of manufacturing artificial stone, composed of hydraulic cement, silex or minerals containing silex readily soluble in alkalies, lime, and dolomite, substantially as described, and in the proportions set forth.

137,860.—*Car-Coupling.*—DANIEL O. PENDER, Palmyra, Mich. Application filed February 20, 1873.

The coupling-hook is raised by the crank-shaft and sustained by a spring acting on the cam until its end is struck by the entering link.

Claim.—The crank-shaft E, having cam G and arm F and spring C, in combination with the trip-bar D of the draw-head, as described, and for the purpose set forth.

137,861.—*Cutter for Tonguing and Grooving Lumber.*—DANIEL PERRIN, McGregor, Iowa. Application filed December 14, 1872.

The side-cutting tools are combined with the cutter to form the tongue, and are joined together behind a suitable cutter to form the groove and clear both of the fuzz or splinters.

Claim.—The cutters C, made of equal breadth with, and of half the depth or thickness of, the cutters A B, to adapt them to be used in pairs, as herein shown and described, and for the purposes set forth.

137,862.—*Wheelbarrow Dumping-Car.*—HENRY J. PETERS, Quebec, Canada. Application filed January 11, 1873.

Claim.—The shell A of a dumping-car, constructed of a flat basin-like shape, and provided with suitable ears g, guide-segments e, bolsters B, caps h, and pivots f, as described, so that it requires no turning of doors at the sides, but merely a dumping.

137,863.—*Thrashing-Machine.*—CHARLES M. POWERS, Ridgewood, N. J. Application filed February 8, 1873.

Grain separated from the straw by means of a vertical beater and a stationary corrugated and perforated bed, through which the grain passes to the sieves, while the straw is carried off by an endless apron.

Claim.—1. A machine for thrashing grain, having a stationary bed and a vertical beater for beating out the grain, in combination with one or more endless aprons, arranged substantially as described.

2. The pin-wheel K, lever N, and transverse bar M, arranged in combination with the beater F, substantially as and for the purposes described.

3. The sieves T and fan U, in combination with the bed C and beater F, as and for the purposes described.

4. In combination with the beater F, bar M, lever N, and wheel K, the spring S, as and for the purposes described.

137,864.—*Animal Cage-Trap.*—SYLVESTER W. RICE, Roseburg, Oreg. Application filed February 1, 1873.

The tilt-lever plates, in connection with the adjacent end plates, admit of entrance at either end of the trap, which is also provided with a self-closing door to prevent return of the animal.

Claim.—The trap composed of the treadle B, which carries the perforated plates g and h, and which is arranged within a box, A, having the plates i j, to operate substantially as described.

137,865.—*Motor-Engine.*—THOMAS D. RICHARDSON, North Providence, R. I. Application filed December 16, 1872.

The conduit from the supply-pipe gradually diminishes in size until its top and bottom meet and entirely surrounds the wheel. Water is admitted from the conduit to the middle of the wheel through curved ports at regular distances apart. The buckets of the wheel are concavo-convex in form, being highest in the middle. The water is discharged from the extremities of the buckets into the surrounding case, whence it escapes by the waste-flume.

Claim.—1. The wheel E, with its concavo-convex buckets x x, arranged as shown.

2. The diminishing conduit D, with its series of ports F F, and surrounding the circumference of a wheel, for the purpose of discharging water or steam upon the same.

3. The combination of the diminishing conduit D with its ports F F, the wheel E with its concavo-convex buckets x x and axle G, the case A with its feed-pipe B, and waste-pipe C, all made and used substantially as described.

137,866.—*School Desk and Seat.*—JOHN B. SHERWOOD, Chicago, Ill. Application filed March 19, 1873.

The folding seat-arm is supported by a three-plate hinge. The plate attached to said arm rotates between the standard-plate and a cap-plate and strikes against rubber buffers dovetailed into projecting lugs, and the cap-plate is screwed fast to the standard plate, and kept from rotating by means of pins projecting out from said lugs.

Claim.—A hinge or joint for folding seats for school-desks, consisting of the standard-plate J, arm-plate I, and cap-plate F, when constructed and combined as and for the purpose set forth.

137,867.—*Refrigerator Water-Cooler.*—THOMAS SMITH, Brooklyn, N. Y. Application filed March 15, 1873.

A rectangular hollow casing surrounding the ice-chamber and having an inclined bottom, beginning at the highest point of the partition and running along the sides of the ice-chamber until it reaches a point below the starting-point, where there is an outlet for the liquid.

Claim.—In combination with the ice-chamber of a refrigerator, a cooler, C, having an inclined bottom, and funnel d and faucet e, as shown and described.

137,868.—*Cradle.*—DAVID SOUDER, Houston, Ohio. Application filed March 8, 1873.

Two frames crossed and pivoted at their center with bars across their ends, from which, by straps, is suspended the frame to which is attached the sacking bottom for the cradle, and made to adjust in its tension by holes, which are fitted to the holding-screw on the cross-bars.

Claim.—The combination of folding frame A with bottom frame B by means of buttons g and adjustable bands h, constructed substantially as and for the purpose described.

137,869.—*Stilt.*—GEORGE J. STEVENS, Charlestown, Mass. Application filed February 12, 1873.

To the usual foot-rest, sliding up and down the pole, is attached a toothed cam-wheel for adjusting said rest to any height desired.

Claim.—As an improved article of manufacture, the above-described stilt, consisting of the standard A, step B, sleeve C, braces D D, and cam E, the whole being formed, arranged, and operating together, in the manner as shown and described.

137,870.—*Plow.*—STEPHEN L. STOCKSTILL, Medway, Ohio, and HENRY D. KUTZ, Harrisburg, Pa. Application filed September 7, 1872.

Claim.—The plow-beam, provided with perforated ears a a, and the pin b formed on the end of the axle C, the sleeve c, and set-screw d, all arranged as shown and described, for the purpose of allowing vertical adjustment of the axle, as specified.

137,871.—*Convertible Freight-Car.*—WILLIAM WORSLEY, Little Falls, N. J. Application filed November 11, 1871.

Detachable sections forming a hopper-shaped floor are arranged in combination with a spout, through which the grain is discharged.

Claim.—1. The V-shaped detachable sections A B applied to a grain-car, substantially as and for the purpose described.

2. The nozzle E, combined, as described, with swiveled elbow-spout, so that the grain may be discharged on either side of the car from the same nozzle.

137,872.—*Vulcanizing Rubber-Coated Articles.*—ANDREW ALBRIGHT, Newark, N. J. Application filed February 8, 1873.

Buckles, harness-trimmings, and the like are coated with the compound to form hard rubber and suspended in the vulcanising-chamber.

Claim.—The process of vulcanising rubber-coated harness and carriage-trimmings by the direct action of steam or dry heat on separately-supported articles, substantially as described.

137,873.—*Manufacture of Rubber-Coated Harness-Trimmings.*—ANDREW ALBRIGHT, Newark, N. J. Application filed March 25, 1873.

The article to be coated, surrounded by the coating material, is placed in the die, which is so constructed that the pressure is applied equally on all sides; the coating material being compressed against the article, any extrusion of material avoided, and the use of cutting-edges on the dies dispensed with.

Claim.—1. The die A B, constructed substantially as described, for pressing and finishing composition-coated harness or carriage-trimmings without leaving any refuse material in them, as set forth.

2. The compound die C D E, constructed substantially as described, for pressing and finishing composition-coated harness and carriage-trimmings without leaving any refuse material in them, as set forth.

137,874.—*Hub for Heavy-Wheeled Vehicles.*—JAMES J. ANDERSON, Indianapolis, Ind., assignor of two-thirds his right to GARRETT H. SNOVER and GEORGE W. MILLER. Application filed January 16, 1873.

Claim.—The combination, with the arms a d arranged on both sides of the spokes e f, of the clamping-bands m n, arranged to clamp the arms at the bases thereof, as shown and described.

137,875.—*Magnetic Chuck for Lathes and Planers.*—JAMES ARCHIBALD JAQUES, Tottenham, JOHN THOMAS OAKLEY, Grange Road, Bermondsey, and LOUIS STERNE, Westminster, England. Application filed December 17, 1872.

The face-plate of the chuck is in two parts, and these are confined to the back plate by two pillars, around which are coils of insulated wires. Two grooved brass bands extend around the casing, but are insulated from it by rubber, and into their grooves are inserted contact-points on springs that conduct the current from the wires of the battery to the wires and coils inside of the casing, the effect of the current being that of converting the plates into powerful magnets.

Claim.—1. Constructing magnetic chucks for lathes in the manner herein set forth.

2. Constructing the beds or tables of planing, drilling, slotting, and surfacing machines as herein set forth, and adapting thereto electro-magnets, so that articles of iron or steel placed thereon to be operated upon may be securely held while under operation, as above described.

137,876.—*Exercising-Machine.*—SAMUEL M. BARNETT, New York, N. Y. Application filed February 8, 1873.

To a rectangular frame is attached flexible stirrup-straps for exercising the legs, flexible pulling-straps for the arms, and an index with lifting-straps for the development of the whole body.

Claim.—1. The truncated pyramidal frame provided with elastic straps *l* and handles, suspended from the cross-bar *m*, as set forth.

2. The elastic straps *r*, stirrups *s*, and hand-rail *u*, as and for the purposes set forth.

3. The metallic loops *n*, stirrups *r*, and cross-pins *o*, in combination with the India-rubber spring-straps having loops at their ends through which the pins *o* pass, as set forth.

4. The scale-bars *g*, handles *h*, and India-rubber springs *k*, connected to the platform *d* by the joint-pins *f*, as set forth.

137,877.—*Fishing-Torch.*—SETH BARTHOLOMEW, Sturgis, Mich. Application filed March 7, 1873.

The perforated cresset, adapted for holding fragments of brick, is surrounded by a series of concentric deflectors. A concave shield is interposed between the torch and supply-reservoir.

Claim.—1. The foraminous funnel or cresset A, adapted for holding broken brick, and having one or more deflectors, G, for the purpose set forth.

2. The combination of the downwardly-tapering and perforated shell A, axial rod B, bottom C, cap E, and nut D, constructed and arranged substantially as described, to constitute a casing of the form represented, adapted for the reception of broken brick or other suitable absorbent, to retain the oil.

3. The convex-faced shield N, interposed between the open lamp or cresset and the reservoir, to deflect the flame and heated gases out of contact with the latter.

137,878.—*Combined Heater and Filter.*—WILLIAM T. BATE, Norristown, Pa. Application filed July 31, 1872.

This invention filters the water before it enters the heater. Passing through the heater it is again filtered by the second filter before it enters the boiler, the water in both cases entering from the bottom of the respective filters. Each filter is so arranged that when they become muddy the sediment or mud is blown out by steam.

Claim.—The combination of a feed-water heater, filters B B′, and pipes or passages arranged to conduct the water through a filter both before and after it has passed through the heater, substantially as described.

137,879.—*Horse-Collar.*—EDWARD BATWELL, Ypsilanti, Mich. Application filed March 25, 1873.

The "throat" is strengthened or braced by a metallic plate to preserve shape of the collar and to prevent closing on the horse's shoulder.

Claim.—A plate, *a*, constructed as described, and attached to the inner lower end of a horse-collar, as and for the purpose set forth.

137,880.—*Whip-Socket.*—LORENZO D. BENNER, Boston, Mass. Application filed February 27, 1873.

To the lower end of a bent lever, which is pivoted within the whip-socket, is secured a notched latch. The whip, being inserted, presses back the lower end of the bent lever and the latch, the latter passing through a slot in the whip-socket, engaging with it, and securing the whip in place. The latch may be locked in place, if desired.

Claim.—1. A metal whip-socket, having the pivoted bar *c* with its flange *d*, the notched latch *e* being jointed to said bar, and securing it and through it the whip in position, substantially as described.

2. In combination with the pivoted bar *c* and its latch *e*, the bolt *f*, operated by a key, *m*, or other device, substantially as shown and described.

137,881.—*Hose-Pipe Nozzle.*—BAYARD A. BERRYMAN and ALANSON B. WAKEFIELD, St. Louis, Mo. Application filed March 17, 1873.

The interior of the hose-nozzle is formed with spiral creases, and has screwed upon the outer end a smooth-bore tip to impart a rotary motion to the water passing through the nozzle, which enables the water to be forced in a solid stream from the nozzle.

Claim.—1. The barrel A formed with spiral creases *a*, as and for the purpose set forth.

2. The barrel A having spiral creases *a*, in combination with the smooth bore tip C, as and for the purpose set forth.

3. The combination and arrangement of the barrel A, spiral creases *a*, and tip C with the chamber B, as and for the purpose set forth.

137,882.—*Railroad Frog.*—GEORGE W. BILLINGS, Chicago, Ill. Application filed October 8, 1872.

The spring-rail is re-enforced by a long elastic strip of angle-iron. The rails are held to the bed-plate by hooks headed beneath the bed-plate. The housing for the spring which returns the spring-rail has wings at the sides, which give an extended bearing on the rail at that point.

Claim.—1. The hooked rivet O, in combination with the rails and bed plate or plates G, as and for the purpose set forth.

2. A railway frog, consisting of the re-enforced spring-rail E, section B, stop J′, guide-bar J, in combination with the spring *c*, winged housing L, and rod or bolt K, substantially as and for the purpose set forth.

137,883.—*Sash-Fastener.*—GEORGE W. BISHOP, Saratoga Springs, N. Y. Application filed April 4, 1873.

A pivoted spring stop or fastener is locked, both when thrown forward and when withdrawn, by means of a double cam or eccentric tumbler, which is easily inserted in the case-opening when the spring-stop is removed. The stop is operated by a lever, which is close to the face-plate of the case, and works upon the stop through an arm which passes through a slot in the case.

Claim.—1. The tumbler H having double eccentrics, as shown, in combination with the lever B, the several parts being so arranged that said tumbler can only be attached and detached by the removal of said lever, substantially as specified.

2. In combination with the slotted plate A and lever B, the lever D with its projections, constructed and adapted to operate substantially as and for the purpose described.

137,884.—*Blast-Furnace.*—JAMES G. BLUNT, Leavenworth, Kans. Application filed April 5, 1873.

Surrounding the hearth are several combustion-chambers, into which the tuyeres deliver the blast at the base. Above the tuyeres are a series of jet-pipes for the introduction of hydrocarbon-gas and steam, the steam having been previously superheated in a coil of pipe located at a point of the combustion-chamber corresponding to the fire-bridge.

Claim.—1. The combustion-chamber D, in combination with the stack B, the bosh E, and hearth C, substantially as herein described, and for the purpose set forth.

2. The superheater *n*, in combination with the combustion-chamber D, the gas-pipe *b*, and tuyeres *a*, substantially as herein described, and for the purposes set forth.

137,885.—*Manufacture of Steel.*—JAMES G. BLUNT, Leavenworth, Kans. Application filed April 5, 1873.

Above the roof of the puddling-hearth, and communicating therewith by a series of flues, is a chamber containing a coil of pipe for heating the air-blast, which is delivered into the combustion flue or chamber at a point near the pipes, admitting the hydrocarbon-vapor and steam, the steam having been previously superheated in a coil of pipe located at a point corresponding to the fire-bridge. Passing through the furnace and surrounding the puddling-hearth is a pipe for introducing petroleum-vapors directly into the molten metal.

Claim.—1. The gas-pipe H and connections, in combination with the oven A, substantially as shown, and for the purposes set forth.

2. Superheater *m*, in combination with the combustion-chamber B, the gas-pipe C, and air-flues *b b*, substantially as shown, and for the purposes set forth.

3. The heating-chamber E, in combination with the oven A, the air flues or pipes *b b*, and the stack *f*, substantially as shown, and for the purposes set forth.

4. The process of manufacturing steel from pig or cast iron, the same consisting in boiling or puddling the iron to a point at or near what is known as "coming to nature," and then recarbonizing and converting the same into steel by means of petroleum-vapor or hydrocarbon-gas, substantially as set forth.

137,886.—*Manufacture of Sheet-Metal Vessels.*—JOHN G. L. BOETTCHER, Brooklyn, N. Y. Application filed January 30, 1873.

Claim.—The heads B B, formed with a groove, as shown, the inner wall *b* being vertical and the outer wall *c* inclined or V-shaped to receive the flange *a* of the vessel A, the whole being confined in place by solder, as herein set forth, for the purpose specified.

137,887.—*Turn-Table.*—ALFRED P. BOLLER, Orange, N. J. Application filed June 13, 1872.

The main carrying-girders are in pairs, to allow of the passage of the suspension-bolts between them, thus avoiding cutting and weakening the flanges. The shaft of the operating-pinion is supported in a vertical sleeve secured between a pair of channel-bars, which are bolted to the sides of the girders and braced by diagonal plates. The sleeve is further braced by stiffeners of angle-iron to aforesaid diagonal plates.

Claim.—1. The combination of double girders D D, beams M M, diagonal braces G G, and trucks F F F F, substantially as herein shown and described, and for the purpose set forth.

2. The sleeve I, shaft J, pinion K, secured to beams M M, forming a part of the structure of a turn-table, with angle or T iron braces H H, as and for the purposes herein described and shown.

137,888.—*Soldering-Machine.*—WILLIAM D. BROOKS, Baltimore, Md., assignor to MARY C. BROOKS and GEORGE D. BROOKS, same place. Application filed January 17, 1873.

The body to be soldered is clamped upon the hollow cylinder, wire solder placed along the seam, melted by a series of blow-pipes, and cooled by a horizontal air-pipe. The supply of gas and air is regulated by a three-way cock, operated by a single and double slotted bar and hand-slide.

Claim.—1. The hollow cylinder B, connected with the frame A by a small intermediate neck, *a*, and in contact therewith at no other point, as described, so that a minimum of the heat which the former receives from the blow-pipes will be lost by transmission to the latter.

2. The combination, with cylinder B that holds the can-body which is being soldered, of an air-pipe, J, arranged horizontally to force a current of cold air across the soldered seam of can, as and for the purpose specified.

3. The can-holding cylinder B, slotted at its top surface under the line of seaming, as described, to prevent the heat from being conducted too rapidly from the can-seam to the cylinder, and thus producing an imperfect joint.

4. The combination, with the cocks of air and gas pipes, of the single and double slotted bars M N and the hand-slide O, arranged to operate as and for the purpose described.

5. The air-pipe K and three-way cock L combined with burner, blow-pipes I g¹, and cooling-pipe J, as and for the purpose set forth.

137,889.—*Compressed-Air Motor.*—HENRY BUSHNELL, New Haven, Conn. Application filed February 21, 1873.

A jacket surrounds the cylinder, forming an annular chamber, into which air is forced by a suitable pump. A tube leads from this chamber, through a pressure-valve, to the exhaust-passage. The pressure is graduated so that the air will be compressed in the chamber until the desired degree of heat is obtained, when the heated air passes into the exhaust-passage, preventing the formation of ice in the exhaust.

Claim.—1. In a motor employing a compressed gaseous medium, the injection of heated air or its equivalent into the exhaust-passage from the said motor, substantially as and for the purpose described.

2. In combination with the cylinder A and its exhaust-passage N B, the air-pump E and pressure-valve H, substantially as and for the purpose specified.

3. In combination with the cylinder A and its exhaust-passage N B inclosed by a jacket, C, a valve, *f*, opening from the chamber formed by the said jacket into the valve-chamber *b*, substantially as and for the purpose specified.

4. In common with the cylinder A and its exhaust-passage N B inclosed by a jacket, C, a passage, L, leading from the chamber formed by the said jacket to said exhaust-passage, substantially as and for the purpose specified.

137,890.—*Tinner's Stove for Heating Soldering-Irons.*—CEPHAS A. BUTTLES, Milwaukee, Wis. Application filed August 21, 1872.

The opening for the reception of the soldering-irons in the front. The grate-bars and ash-pan placed transversely across the stove, and the double damper.

Claim.—1. The hearth F, constructed and applied substantially as and for the purpose set forth.

2. In a tinner's stove having an opening for the soldering-irons in the front, the application of the ash-pan transversely across the stove, with its opening at the side thereof, substantially as and for the purposes set forth.

3. In a tinner's stove having an opening for the soldering-irons in the front and an opening for the ash-pan in the side, the grate G, having its bars arranged transversely of the stove, or in line with the opening of the ash-pan, for the purpose of supporting and holding the soldering-irons in place, and at the same time facilitating the raking of the fire, substantially as set forth.

4. The ash-pan having its ends inclined, with the ledge *j* and projections *l*, to hold the door *k* in place, substantially as and for the purposes set forth.

5. The two-plate damper *r r′*, in combination with the double flue of a tinner's stove, substantially as described, for the purposes specified.

137,891.—*Horseshoe.*—MOSES C. CLARK, Manchester, N. H. Application filed February 3, 1873.

Claim.—1. Providing the common or ordinary horseshoe with a removable adjustable metal plate or pad, arranged between the two sides of the shoe, to support and protect the frog of a horse's foot, substantially as described.

2. In combination with the common horseshoe, a pad with two plates of metal, with India rubber or other cushion between the plates.

3. In combination with the metal plates or pads, two or more grooves in the inside corners of the heels of the shoe, to receive the edges of the plates, substantially as described.

137,892.—*Pigeon-Hole.*—CHARLES J. CLEMENTS and EDWIN P. FOWLER, New York, N. Y. Application filed March 12, 1873.

The partitions are united by means of a central grooved support of the same length as the partitions. A screw-rod passes through a hole in the center of the support and is fastened by a nut on one or each end. A washer is placed on each end of the rod before it is screwed up, and said washer has four points or teeth, one of which enters each of the four partitions. By unscrewing the desired number of rods both the lateral and the vertical sections or partitions may be removed.

Claim.—1. The sections B B, constructed to be used in combination with the support C, so that the sections, both vertical and lateral, may be removed as desired, substantially as and for the purpose specified.

2. The supports C, provided with grooves and central perforation *a*, for the purposes herein set forth.

3. The combination of the sections B, support C, and washer D with points or teeth *b*, and the whole united by a screw-rod and nut, substantially as and for the purposes herein set forth.

137,893.—*Corset.*—MORITZ COHN, New York, N. Y. Application filed January 30, 1873.

Claim.—A corset having the pockets for the reception of the bones formed in the weaving and varying in length relatively to each other, as desired, substantially in the manner and for the purpose set forth.

137,894.—*Plow.*—THOMAS L. COTTEN, Water Valley, Miss., assignor to MARTHA J. COTTEN, same place. Application filed January 29, 1873.

The subsoil-plow identical with applicant's patent of July 19, 1870, but having a saddle attached to the rear bar adjustable as to height, and arranged to carry a variety of shovels or plows.

Claim.—In combination with the device embraced in my patent of July 19, 1870, the slot and openings E in the standard D, saddle H, and bolts and nuts *c c* and A A, the whole being so constructed as to permit of the mold-board or blade being secured and adjusted substantially as described.

137,895.—*Fire-Extinguisher.*—GRITT A. COX, Jeffersonville, assignor of two-thirds his right to E. M. GARDNER, Bedford, Ind. Application filed December 14, 1872.

Secured to the two chambers by means of tubes is a mixing-chamber, divided by a diaphragm into two divisions. The diaphragm is secured to the upper part of the mixing-chamber and extends down half-way to prevent the union of the two liquids that may splash up from their respective chambers during transportation. Small air-tubes extend up into each chamber, which allow gas to escape upward so as to not interfere with the descending current of alkali through the connecting-tubes.

Claim.—1. The two holding-chambers A A′, in combination with the mixing-chamber D, when provided with the diaphragm E, the parts being arranged to operate substantially as set forth.

2. The combination of the chambers A A′ D D′, air-tubes B B′, tubes C C′, diaphragm E, and coupling F, when all are combined to operate substantially as shown.

137,896.—*Hobby-Horse.*—JESSE A. CRANDALL, Brooklyn, N. Y. Application filed January 30, 1873.

The seat is loosely hung upon crank-shaped levers, between two horse-like frames, the necks and tails of which, being pivoted, move with the swing of the seat. Reins attached to the neck-pieces assist the joint action of the whole.

Claim.—1. The frame A, when constructed with a circular socket for the reception of the circular lower end of a vibrating neck-piece, B, substantially in the manner herein shown and described.

2. The combination of the vibrating tails C C with the movable seat E, crank-rods *e*, and vibrating head and neck pieces B B, all arranged to operate substantially as herein described.

137,897.—*Shoe Pegging and Trimming Machine.*—ROBERT E. DRAPER, Enfield, N. C. Application filed December 12, 1872.

The vertically-moving carriage is slotted longitudinally that the follower may have free horizontal movement. The awl and driver are adjusted upon the lower end of a vertical stem which is attached to a standard rising from and supported by the follower. A knife is attached to the follower for trimming the edge of the sole as the pegging or nailing progresses. The shoe-carrier, by means of suitable mechanism, is enabled to present the entire outer surface of the sole to the action of the pegging mechanism.

Claim.—1. In a machine for pegging shoes, an up-and-down-moving carriage, B, containing a horizontally-reciprocating follower, C, to which the awl and the hammer or pegger are attached, whereby said implements are made to follow the contour of the sole of the shoe, as herein set forth.

2. The combination of the carriage B with projection *v*, follower C with projection and roller *w*, the springs *d d*, and the cam L, whereby the implements attached to the follower are moved up and down and back and forth at the proper times, for the purposes herein set forth.

3. The combination of the bevel-gears G H, shaft *l*, pinions *m n p*, and cogged shoe-carrier I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

4. The combination of the bevel-gears G H, shaft *l*, pinions *m n p*, cogged shoe-carrier I with buttons *s s*, and the horizontal plane or table J having semicircular groove *r* and diametrical groove *t*, all substantially as and for the purposes herein set forth.

5. The combination of the stem K carrying the awl *z* and pegger *y*, the horizontally-reciprocating follower C, and the up-and-down-moving carriage B, all substantially as and for the purposes herein set forth.

6. The knife *f′* provided with a ball, *h′*, and attached to the follower C, substantially as and for the purposes herein set forth.

137,898.—*Loom.*—JOHN C. DUCKWORTH, Mount Carmel, Conn., assignor to himself, GEORGE DUCKWORTH, WILLIAM DUCKWORTH, and JAMES DUCKWORTH, assignors, by mesne assignments, to GEORGE CROMPTON, Worcester, Mass. Application filed February 15, 1867.

Claim.—1. In combination with the shifting shuttle-box rod and its lifting mechanism, the hook attached to said rod and the releasing-catch with its spring and connections, substantially as described, whereby the shuttle-boxes are lifted by a positive connection, which is disconnected whenever the shuttles or the boxes meet with obstruction to their upward movement to save breakage.

2. The arrangement of the double series of hooked jacks, in combination with the double lever or rocking arm, which gives motion to the stepped cam which controls the shuttle-boxes, said arrangement being and consisting of bringing the hooked ends of both series of jacks into line with each other, side by side below the pawl, so as to be operated by one pawl acting in one direction, substantially as hereinbefore described.

3. The combination and arrangement of the long upright side levers, one for each leaf of heddles and their respective leaves of heddles, with a series of hooked jacks attached to the upper part of the upper arms of said upright heddle-levers at one end of each jack, said jacks being arranged horizontally, or nearly so, and each jack having a hook on its upper edge and a hook on its lower

edge suitable to receive the knife or bevel edges of the reciprocating blades of the lifters and depressors, substantially as described.

4. In combination with said series of upright heddle-levers, one for each leaf of heddles hung in the middle at the side of the loom, and connected at each end with its leaf of heddles, the series of hooked jacks, constructed and arranged with respect to the levers as herein before described, and a pair of reciprocating knife or bevel edged blades, one above said jacks and the other below, and which move in opposite directions to each other in planes horizontal and parallel, or nearly so, for the purpose of lifting or depressing the heddles, the combination and arrangement being substantially as herein before described.

5. In combination with the leaves of heddles, long upright heddle-levers, and the hooked jacks, a pair of reciprocating parallel blades, commonly called lifters and depressors, when one of them is free to yield and move away from the other in case of obstruction by a jack getting caught between the blades, substantially as described.

6. The horizontal hooked jacks, when hinged to spurs or projections from the upper parts of the upper arms of the upright heddle-levers at the side of the loom, in combination with said heddle-levers and their respective heddles, substantially as described.

137,899.—*Torsion-Spring for Vehicles.*—RICHARD DUDLEY, Erie Pa. Application filed October 5, 1872.

The rocker-plates, which are confined in the curved cups, are grooved on top, that the springs may be kept in place. The bearings of the rocker-plates are so constructed, in combination with the cups, that the rocker may have lateral movement, which accommodates it to the surging of the vehicle and secures an easier motion.

Claim.—1. The curved cups B B and rocker-plates C C, so combined and arranged as to allow a lateral motion to the rocker in the cups and at its base, substantially as described.

2. The rocker-plates C C, having grooves *c c* on their convex heads, in combination with the lateral lever-arms A' A' of the spring, the whole being so arranged as to operate substantially as described.

137,900.—*Pen-and-Pencil Case.*—FREDERICK EGGELL, Buffalo, N. Y. Application filed October 7, 1872.

Rotating sleeves expose the names of the day and month through openings in a sleeve fixed upon the case, while the date of the month is exposed through an opening in a third sleeve.

Claim.—The stationary sleeve C having slots or opening *c*[1] and *c*[2], and secured to the pen-and-pencil holder A, as described, when combined with the sleeves *d d'* and B, substantially as and for the purpose shown.

137,901.—*Mold for Casting Molds.*—JOSIAH S. ELLIOTT, Chelsea, Mass., assignor to UNION STONE COMPANY. Application filed April 19, 1872.

Mold so constructed that a longitudinal half of the model can be reversed in the mold-frame and a complete mold made, in which articles can be cast.

Claim.—1. A mold for forming molds of soap-stone mixture or other similar material, in which the same model is used to form both faces of the soap-stone mold, substantially as specified.

2. The blocks A and D with their holes and pins, substantially as described, for the purpose specified.

3. The fac-simile or model *x*, arranged as described, in relation to the blocks D and A, so that it may be withdrawn from the soap-stone, substantially as and for the purpose described.

137,902.—*Wash-Boiler.*—WILLIAM EXNER, Harper's Ferry, W. Va. Application filed March 22, 1873.

A wash-boiler constructed with a closely-fitting conducting device to its ends and top, with openings at its end, with the opening at its bottom covered with side openings, and a valve under it to regulate the flow of water.

Claim.—The steam-washer, consisting of the casing A and the close-fitting current-washer D, having the tapering spouts E, with plane inner walls *a* extending entirely across the casing, the opening *a*, and the valve V, as described.

137,903.—*Welt-Edge Burnishing-Tool.*—MYRON J. FERREN, Stoneham, assignor to HENRY E. TOWNSEND, Boston, Mass. Application filed March 8, 1873.

A wheel with several arms, having peripheral grooves of varied form or size, is pivoted and clamped between two plates. A screw serves to tighten the plates or to loosen them, that the wheel may be held tightly in position or turned as required.

Claim.—1. A hand-tool for shaping and burnishing welt-edges, having the peripheral groove or grooves, substantially as shown and described.

2. In a tool for burnishing welt-edges, the adjustable wheel *f*, having the arms *h i k* with the respective grooves *o*.

137,904.—*Towel and Clothes Rack.*—LAUREN M. FITCH, Morrisville, N. Y. Application filed March 12, 1873.

A clothes rack constructed with the bar-holder in a single piece, with a back plate to attach it to the wall, with arms held by a wire connected with it and the arms having a slot, by which its end is passed under a detent, and when not in use to be dropped down out of the way.

Claim.—The plate A, made in one piece, with the back plate *a*, for attaching it to the wall, and the lugs *b*, the arms B having the slots *b* formed near their ends, all constructed and arranged as specified.

137,905.—*Gas-Burner.*—ELISHA FOOTE, Yonkers, N. Y. Application filed March 1, 1873.

Fitting, gas-tight, in each tip is a plug, through the center of which a deep orifice is formed for the issue of the gas. Above the plug is an expansion-chamber.

Claim.—1. A gas-burner composed of the several parts, and constructed substantially as shown, for the purposes specified.

2. The expansion-chamber A, constructed substantially as described, and with its center in the same straight line with the central line of the deep orifice.

3. The deep orifice B, when used in connection with a tube of larger size leading thereto and concentric therewith, as shown.

4. The several combinations hereinafter specified, to wit: First, the separate jets and deep orifices; second, the separate jets and the expansion-chambers, as above described; third, the separate jets, deep orifices, and expansion-chambers; and fourth, the deep orifices and expansion-chambers, all substantially as described.

137,906.—*Flour-Sieve.*—JOHN T. FOSTER, Jersey City, N. J., assignor to HARRY T. FOSTER and LUCIEN MILLS, same place. Application filed February 5, 1873.

Claim.—1. A flour sifter and strainer, consisting of a removable sieve, in combination with a bowl or dish so as to sift the flour into the bowl from the outside of the sieve instead of from the inside, as ordinarily, substantially as described.

2. The removable concave sieve A, having rings or hooks *a a*, in combination with the bowl B provided with pins *b b*, and bail C, substantially as shown, and for the purpose as set forth.

137,907.—*Reversible Cuff.*—LAVINIA H. FOY, New Haven, Conn. Application filed December 18, 1872.

Claim.—1. A reversible cuff, provided or made with one or more elongated slots or openings, *b*, for the insertion of the button, substantially as and for the purposes set forth.

2. The combination, with a reversible or other cuff, of a wedge-shaped slot, for the insertion of the button, as and for the purposes set forth.

3. The combination, with a reversible cuff, of a slot, *b*, for the insertion of the button, the edges of which are united in or near the center, substantially as and for the purposes set forth.

4. The combination, with a reversible cuff, of a slot, *b*, for the insertion of the button, the edges of which are united or connected at the center to form two wedged-shaped sections, substantially as shown in Fig. 4 of the accompanying drawing.

5. The combination, with a reversible cuff, of two slots, *b b*, for the insertion of the button, relatively arranged as shown in Fig. 5 of the accompanying drawing.

137,908.—*Screw-Wrench.*—DAVID FRANK, Allentown, Pa. Application filed March 21, 1873.

Two pinions are connected to the movable jaw and mesh into the teeth of each other and teeth arranged on the stationary jaw. When the pinions are in gear they are locked and hold the movable jaw in the desired position. They are thrown out of gear by means of a thumb-piece, and the movable jaw is then free to move.

Claim.—1. The combination, with the toothed shank A with jaw B, and the sliding case D with jaw E, of the stationary revolving pinion G and the movable revolving pinion G', as and for the purposes herein set forth.

2. The combination of the lever H, arms *d d* carrying the pinion G', and the spring I for moving the pinion G' up and down in the sliding case D, substantially as and for the purposes herein set forth.

137,909.—*Bed-Bottom.*—CAMILLE GENSE, Fouilloy, assignor to GUILLAUME PROSPER LANIER, Paris, France. Application filed March 21, 1873.

The slats are sustained by flat springs attached by flexible connections and fastened to a head and foot bar.

Claim.—A bed-bottom consisting of the longitudinal bars *i*, flat springs *f*, flexible connections *h*, and transverse stripe *j*, all combined as specified.

137,910.—*Railroad-Track Wrench.*—PIERRE L. GIBBS, Chicago, Ill. Application filed February 5, 1873.

Projections are formed on the interior of the circular socket A, whereby the wrench can be used for various-sized nuts.

Claim.—The circular socket A, furnished with the internal projections *a a*, substantially as and for the purpose specified.

137,911.—*Apparatus for the Manufacture of Starch.*—COLGATE GILBERT, Buffalo, N. Y. Application filed November 25, 1872.

Provides a series of adjustable supports, so that the table may always stand level, insuring a clear and uninterrupted flow of the liquids.

Claim.—In a starch-mill table or separator, the adjustable support C with the screw D and nut E, in combination with the timbers F or their equivalent, as and for the purpose hereinbefore fully set forth.

137,912.—*Starch-Mill.*—COLGATE GILBERT, Buffalo, N. Y. Application filed November 25, 1872.

The lead lining is set tightly around the stone and the metallic band put on hot, so that in cooling it will contract, forcing itself into the lead and clamping the lead against the stone. The lead lining covers the entire rim and gutter, preventing the escape of liquid.

Claim.—The lead (or its equivalent) lining *b*, arranged in and on the gutter C, and passing up between the band *a* and bed-stone A, as and for the purpose hereinbefore specified.

137,913.—*Bridle-Bit.*—CHARLES L. GINKINGER, Sterling, Ill. Application filed December 11, 1872.

The bit is cast in one piece with cheek-rings, by which the reins can be secured at varying distances from the horse's mouth to make a leverage.

Claim.—The "bar"-bit, having the mouth-piece B and loops C D E F, the whole being formed and arranged and constituting a single piece of casting, as and for the purposes set forth.

137,914.—*Carriage.*—LOUIS GLESENKAMP, Pittsburg, Pa., assignor of one-half his right to COLUMBUS WEST, same place. Application filed February 24, 1873.

The carriage presents a front protected by an extended top, the front having five sides in front of the door, in which glass may be placed.

Claim.—In close carriages, the pentagonal front, composed of the parts A, B, C, D, E, and F, in combination with the extended top H, substantially as and for the purpose set forth.

137,915.—*Plow.*—RICHARD B. GROUND, Edwardsville, assignor of one-half of his right to CHANCY G. SAUNDERS, assignor, by mesne assignments, to NELSON D. SWEENEY, Marine, Ill. Application filed June 27, 1872.

The axle of the wheel attachment is pivoted to the controlling-lever, and the plow is attached to said lever by a slotted connection, so that the plow may be adjusted in height to regulate the depth of cut.

Claim.—A plow in combination with the sulky attachment A F, clamp composed of the bolts *a b* and slotted plate *c c'*, slotted lever B *b'*, lock-lever E, elevated bar D, and perforated arc C, all the parts being constructed and arranged substantially as and for the purpose specified.

137,916.—*Torpedo for Oil-Wells.*—ALEXANDER HAMAR, Philadelphia, Pa. Application filed March 22, 1873.

Claim.—1. The combination, with a torpedo constructed and entirely closed, substantially as described, of the needle F, whereby the charge is ignited by perforating the cover of the fulminate-tube, as set forth.

2. In combination with the above, a spring for supporting the needle, substantially as described, for the purpose set forth.

137,917.—*Extension Table.*—EPHRAIM HAMBLOER, Detroit, Mich. Application filed February 8, 1873.

Each side of the table is provided with double leaves hinged together and supported by sliding extension supports, and a cross-brace is pivoted to the extension supports. One or both leaves may be raised.

Claim.—1. The extension bracket E, provided with leg F and brace G, for the purposes specified.

2. The arrangement of the table A with the leaves C D and bracket E, constructed and combined to operate substantially as and for the purposes described.

137,918.—*Corn-Husking Glove.*—PERRY N. HARTS, French Grove, Ill. Application filed October 24, 1872.

Metallic plates provided with rows of teeth are used on the thumb, fore and little fingers of the left hand, in connection with a common husking-pin in the right hand.

Claim.—The plate E having teeth *a*, plate G having teeth *g*, and plate H having the toothed pin A when secured to leathers, and arranged for operation on the left hand, in the manner substantially as and for the purpose specified.

137,919.—*Nut-Lock.*—MATHEW HAYS, Binghamton, N. Y. Application filed March 17, 1873.

A right and left hand thread is formed on the bolt. Two nuts are employed and turn in opposite directions. A rubber washer is placed between them and a pin passed through.

Claim.—The combination and arrangement of the bolt A and the nuts B and C, rubber washer E, and key-pin D, substantially as herein described and shown, for the purpose set forth.

137,920.—*Clamp for Paper-Cutting Machines.*—EZRA T. HAZELTINE and CHESTER PARK, Warren, Pa., assignors to RACHAEL DELIA HAZELTINE, same place. Application filed October 29, 1872.

Concave standards at either end of a table, screw threaded on their inner surfaces and placed opposite each other, forming parts of a circle, in which a combined screw and beveled gear engages, operating a clamp in an upward and downward motion.

Claim.—In a machine for cutting paper, the horizontal shaft *b* carrying the two bevel-wheels *c c*, and having its bearings in the journals *a a* rising from standards passing through and forming the axis of the combined bevel and worm wheels D D and carrying the clamp C, as set forth, said combined gear and worm wheels working in the segmental racks of the vertical standards B B B B, as shown, and all combined and arranged as and for the purpose specified.

137,921.—*Automatic Grain-Weigher.*—JOHN W. HILL, Dayton, Ohio. Application filed June 3, 1872.

From the short arm of the scale-beam of a grain-weigher is suspended an oscillating scale-pan divided into two compartments, which, in the process of weighing, are alternately brought into position to receive grain flowing from a stationary spout. When one compartment is filled the pan sinks, and in sinking lifts a latch, thus allowing the pan to tilt so that the grain will flow from the filled compartment and the empty one be brought directly under the spout. The sinking of the pan also works a valve to check the flow of grain from the spout until the weight is discharged from the filled compartment, and the pan rises with the other compartment, latched in position to receive its load.

Claim.—1. The combination of the oscillating pan hung upon the suspension-rods C C' of the beam of the balance, fixed catches on said pan, gravitating detents on the suspension-rods, and fixed brackets F, substantially as specified.

2. In combination with the foregoing elements, the stirrups *e'* and the shoulders *f*[2] on the catches, substantially as and for the purposes set forth.

137,922.—*Driving-Gear for Hand-Cars.*—JAMES D. HINCKLEY Adrian, Mich. Application filed November 13, 1872.

Two reverted cranks are secured to the spur-gear.

Claim.—The combination of the brakes G G' and levers H H' with the reverted cranks C C' and gear-wheel D, the wrist-pins of the cranks being secured to opposite faces of the gear-wheel, as described, for the purpose set forth.

137,923.—*Swage for Forming Horseshoes.*—DAVID F. HOFSTATTER and WILLIAM H. SHAW, New London, Ohio. Application filed February 12, 1873.

A block of metal having a flat base from which a square shank projects for insertion in the hardy-hole of the anvil, with a top, in part rounded and in part flat, the end of the swage adjoining the flat portion of its top being also rounded.

Claim.—The herein-described horseshoe swage, having a top transversely rounded or convex at A, flat at A[1], and a rounded or convex end, A[2], and the projecting shank B, substantially as and for the purpose specified.

137,924.—*Mechanical Movement.*—EUGENE C. HOPPING, Madison, N. J., assignor of one-half his right to E. A. ELY, same place. Application filed April 10, 1873.

Rotary motion of pawl-and-ratchet mechanism is transmitted to the pitman and connections with the cutter-bar, which receives a reciprocate motion.

Claim.—The combination, with a crank or rotary device, A, of pitman C, cross-head D sliding on fixed guides E, swiveling-pin F, connecting-rod G, bell-crank H turning on a fulcrum of an oscillatory support, I N, connecting-rod M, and a reciprocating device, K, carried upon the oscillatory support I N, substantially as and for the purpose specified.

137,925.—*Table-Leaf Support.*—HENRY IMHOF, Lockport, N. Y. Application filed November 29, 1872.

The fly is attached to a metallic yoke, having projecting arms for attachment to a board which is to be affixed to the frame of the table. The yoke has also a curved seat to receive the projection on the end of said board.

Claim.—In a table-leaf support, the yoke C formed with the arms *b b* and curved seat, and with pin or screw openings at right angles to each other, as set forth, in combination with the fly A and board D, having the projection *c*, all constructed as herein shown and described.

137,926.—*Harrow.*—DAVID L. JAQUES, Hudson, Mich. Application filed June 29, 1872.

A harrow constructed in the form of a triangle and provided with side bars, which are pivoted to the main bar by means of swivel-bolts, constructed with enlarged heads.

Claim.—The harrow tooth-bar C provided at its forward end with the swivel-bolt A, and furnished with an enlarged head, A', adapted to fit in a recess, *j*, formed in the bar A, substantially in the manner as set forth.

137,927.—*Breech-Loading Fire-Arm.*—ALPHONSE ETIENNE JARRE and PIERRE JOSEPH JARRE, Paris, France. Application filed July 20, 1872.

Fire-arm having a plurality of barrels or bores caused to traverse laterally on the movement of the hammers so as to bring the cartridges successively into position, and pivoted to a block having trunnions which work in grooves in the frame or stock, so that the barrels may be turned or folded away from the hammer and into a form convenient for being carried.

Claim.—1. The combination of the sliding block A and the stock, having an opening, C, adapted to receive the rear portion of the block, which projects from the said opening and beyond the end of the stock, as set forth.

2. The combination with the block A of the block B, pivoted to the block A, and having trunnions *b b'* adapted to recesses *r r'* in the stock, for the purpose set forth.

3. The block A, hung to a yoke, P, which is pivoted to a sliding and turning block, B, substantially as set forth.

4. The combination, with the stock of a fire-arm, of an automatically-sliding block, A, secured to the stock, substantially as described, so that, without being detached from the stock, the block may be turned to a position to expose the entire rear edge, as set forth.

137,928.—*Stove-Pipe.*—LOUIS JURGENS, Prescott, Wis. Application filed February 8, 1873.

The doors are provided on their inner surfaces with a depression, which fits within the orifice in the pipe.

Claim.—1. The door *a*, having the central depression *x*, in combination with a stove-pipe, as described, for the purpose set forth.

2. The arrangement of doors shown in Fig. 1, as and for the purpose set forth.

137,929.—*Grain-Drill.*—JOHN F. KELLER, Hagerstown, Md. Application filed February 27, 1873.

To change the drills from single to double ranks, they are attached alternately at their front ends to two lateral bars swinging on longitudinal axes, placed on one edge. On each there is a segmental pinion worked by a double-edged rack between them, this last being pivoted to a lever leading to the rear. This motion brings into a line or separates the points of attachment of the drills.

Claim.—The rocking bars D D provided with cogged segments, in combination with the double sliding rack-bar H and lever I and

the grooved metal standard J upon the frame A, as and for the purpose set forth.

137,930.—*Fish-Trap.*—CHARLES E. KETCHAM, Washington, D. C. Application filed February 25, 1873.

The ordinary pound-net has here an outside wire guard or fence to prevent its destruction by predaceous fishes, which bite at the gilled captives and cut the net into holes, through which the live fish escape.

Claim.—1. A protective wire screen or net, E, in connection with the ordinary net-pound A of a fish-trap, both being arranged with relation to each other in the manner and for the purpose specified.

2. The gate *f*, in combination with the mouth *a* of an ordinary fish-trap, and a protective wire screen or net, E, the whole being arranged and operated in the manner and for the purposes specified.

137,931.—*Potato-Digger.*—DAVID M. KING and GEORGE E. KING, Mantua Station, Ohio. Application filed February 4, 1873.

The share is supported on the rear end of a rectangular frame, which rests on bearing-wheels. A double set of fingers project rearwardly from the share, and are caused to vibrate in a vertical plane alternately by means of a set of cog-gears put in motion from the bearing-wheels.

Claim.—1. The cutter-stock C having the angle-piece *c'* combined with a standard, H, having the angular recess A^1, as and for the purpose specified.

2. The convex plate D applied to the teeth E and thin steel plate C to form a stop for the one and a stiffener for the other, as described.

3. The tooth E having end-threaded shank, the nut G, and the shaft F having notch *f* on front side, combined to form a rigid fastening that will also admit of ready removal, as set forth.

4. The two reversely and vertically moving sifters E F, applied directly in the rear of the shovels of a potato-digger, to operate as and for the purpose described.

5. The combination, with cutter-stock C and brace-stop D, of a standard, H, having the bearing-plate A, arranged in the manner described.

6. The standards H in a potato-digger, constructed with a concavity and a removable side, H', for receiving and protecting the arms J and rod K, in the manner set forth.

7. The vine-moving lever I' having the convex curve *p* applied on the standard H, as and for the purpose described.

8. The slotted standard H combined with clamp-screw pivot A^7 and clamp-bolt A^8, as and for the purpose set forth.

137,932.—*Machine for Boring Blind-Stiles.*—LEVERETT G. KIRKHAM, Derby, Conn. Application filed May 22, 1872.

An adjustable jointer is affixed to the bed which carries the boring-tools, and indicates the point at which the next hole is to be bored.

Claim.—In combination with one or more bits, E, and a support, I, to hold and present the stile to the bits, the stationary punch or pointer F adjusted relatively to the bit, substantially as and for the purpose specified.

137,933.—*Cultivator.*—JOHN M. KNOX, Rensselaer, Ind., assignor to himself and IRA C. KELLY, same place. Application filed August 6, 1872.

In the plows attached to any wheel-cultivator the standard enters a slight mortise in the under side of the beam, and is secured by links and clamp-hooks. Upright posts rise from the rear end of the beam and engage spring-levers extending backward from the cultivator-frame, for the purpose of regulating the depth of the plows, or by means of a spring-catch to hold them above the surface of the ground.

Claim.—1. The combination, with the beam G and standard G', of the saddles x^3 *y*, hook *x*, stirrup x^1, and links x^2 *z*, as described, for the purpose set forth.

2. The combination of the pivoted beam G with the post I, having the spring-catch, and the end bar J, as shown and described, for the purpose set forth.

137,934.—*Compound for Gas-Retorts.*—GEORGE F. KREISCHER and LUCIEN A. TARTIERE, New York, N. Y. Application filed March 28, 1873.

Ground fire-brick, clay, Teil hydraulic lime, carbon.

Claim.—A compound made of the ingredients herein described, and mixed together substantially as and about in the proportion herein set forth.

137,935.—*Compound for Preventing Incrustation in Steam-Boilers.*—JACOB J. LAVO, Wyandotte, Kans., assignor, by mesne assignments, to UNITED STATES CHEMICAL COMPOUND COMPANY, same place. Application filed August 23, 1872.

Claim.—The compound hereinbefore described, consisting of lye, oil, and sugar, when produced by boiling together the lye and oil to form a saponaceous liquid, and then adding the sugar, or its equivalent, in about the proportions specified.

137,936.—*Bed-Bug Trap for Bedsteads.*—CONSTANTINE LEGAL, Pittsburg, Pa. Application filed February 10, 1873.

To the head and foot boards of the bedstead are attached bifurcated upright standards, which are adjusted vertically by suitable screws. These uprights, at their tops, enter into holes in blocks which are adjustable horizontally on the under side of the cover, which is thus suspended over the entire bedstead. The cover has on its upper side suitable troughs to contain some liquid.

Claim.—1. The independent bifurcated uprights F F', slotted and adjustable on screws f^3, combined with cover D, foot-board a^2, and head-board a^3, as and for the purpose described.

2. The blocks E, having dovetailed grooves, and the tongued guide-pieces F' movable in ways G, combined with the cover D and uprights F, as and for the purpose set forth.

137,937.—*Shedding Mechanism for Looms.*—JOHN LOMAS, Kellyville, Pa. Application filed May 31, 1872.

The heddles are connected to vertical-sliding jacks, each having two shoulders on the opposite edges, against which the reciprocating knives or bars operate, one pair of shoulders being arranged for the shedding movement, the other for bringing the jacks into line. The actuating knives or bars are carried on sliding frames operated by duplex cams, arranged at right angles to each other, and the frames are connected by a strap over a loose pulley, so that the raising of one tends to lower the other. The pattern-cylinder is reversed by means of a vertically-sliding pawl, which is so connected with the driving-pawl that the latter is carried out of gear with the ratchet by the same movement of the workman which operates the former.

Claim.—1. The jacks having shoulder *h* h' *i* i', in combination with frames G G', and with the cams E E', arranged at right angles to each other, all operating as set forth.

2. The frames G G', operated directly by the cams E E', and maintained in contact therewith by means of the coupling-strap, or its equivalent, as described.

3. The combination, with the cylinder K and pawl Q, of the ratchet-wheel S, pawl R, and cords *t* and *u*, all arranged and operating substantially as and for the purpose set forth.

137,938.—*Smelling-Bottle Stopper.*—ENOS F. MARBLE and REUBEN W. GLIDDEN, Attleborough, Mass., assignors to WHITING MANUFACTURING COMPANY, New York, N. Y. Application filed January 15, 1873.

A perforated cap for smelling-bottles, consisting of a chambered top provided with a stopper, which may be withdrawn by unscrewing the cap without entirely removing it.

Claim.—A smelling-bottle provided with a perforated cap, *a*, containing a chamber, *c*, into which the odor is admitted by screwing the cap up without removing the same from the bottle, and which is closed by screwing the cap down.

137,939.—*Stone-Crusher.*—HENRY R. MARSDEN, Leeds, England, assignor to "THE BLAKE CRUSHER COMPANY" and ELI W. BLAKE, New Haven, Conn.—Case B. Application filed March 26, 1873.

The jaws are each provided with two sets of corrugations, the projections of the upper alternating with those of the lower, each jaw being constructed so that the projections of one fit into the depressions of the other. The lower set of corrugations will crush any pieces that escape through the upper.

Claim.—The faces of the jaws of a crushing-machine, constructed in two or more sections of corrugations, the sections being in the relative position to each other substantially as described.

137,940.—*Elevator.*—JOHN F. MARSH, Littleton, N. H. Application filed April 7, 1873.

At each landing is arranged an indicator, which is operated by the moving elevator, or its actuating device, to indicate the position of the elevator.

Claim.—The combination, with the elevator-car, of an indicating device or mechanism, substantially such as described, attached to some fixed or stationary part in the vicinity of the well or shaft in which the elevator-car moves, and connected with and operated by the elevator-car, or other moving part of the elevator apparatus, in the manner and by the means substantially as specified.

137,941.—*Device for Closing Bottles and other Vessels.*—JOHN MATTHEWS, New York, N. Y. Application filed April 10, 1873.

Claim.—1. The stem A, with smooth taper end *a*, and with or without the rings *b b*.

2. The combination of the rubber cap B and stem A, each of the form described and shown.

137,942.—*Corn-Sheller.*—ROBERT MCGRATH, La Fayette, Ind. Application filed July 8, 1872.

The sieves are so arranged under the sheller that the blast acts upon the whole surface of the sieve, and a sieve is arranged in a recess at bottom of the elevator for carrying up to regular sieves any grains blown over sieve.

Claim.—1. The combination and peculiar arrangement with the corn-sheller, consisting of the hopper *a*, toothed shaft *b*, and rod-cylinder *c*, of the sieves *k* and *l*, chutes *u* and *v*, plate *t*, and fan-blast *s*, substantially as herein set forth.

2. The arrangement of the perforated plate *o*, chute *p*, and recess *q* with the elevator *f*, as and for the purposes herein recited.

137,943.—*Window Frame and Sash.*—JOHN MCNAMEE, Philadelphia, Pa., assignor to himself and ENOCH W. CLOUD, same place. Application filed January 14, 1873.

The sash is suspended to the ends of the sash-cords by trunnions so as to be readily reversible. For this purpose the sash-stops are made retractable by means of eccentrics with arbors projecting from the casing, turned by keys.

Claim.—1. A window-sash suspended from or pivoted to the balancing-cords, in combination with adjustable ways at one or both sides of the frame, substantially as set forth.

2. The combination of the said adjustable ways with the eccentric spindles or equivalent device for operating the ways, as described.

3. The combination, substantially as described, of the trunnion *r*, secured to the sash, and having an enlarged outer end, with the plate *m* secured to the cord, and having a T-shaped slot adapted for the reception of the trunnion.

137,944.—*Apparatus for Heating Cranks.*—JAMES MILLER, New York, N. Y. Application filed February 17, 1873.

The cranks of large engines are placed in this box with their larger ends over a fire, and their smaller ends in another compartment, which is filled with water for keeping them cool; therefore only the larger ends become heated and expanded. The crank is then removed and fitted onto the shaft, where it becomes rigidly fastened by shrinking.

Claim.—1. The apparatus for warming cranks, when composed of a box, A, which contains the heating-apartment *b* and the cooling-compartment *d*, substantially as herein shown and described.

2. The metal frame C, applied, in connection with the apparatus for warming cranks, substantially as and for the purpose specified.

3. The chain D, arranged in combination with the crank to be heated and with a frame, C, and box A, substantially as set forth.

137,945.—*Nail-Extractor.*—DANIEL R. MORELAND and CLARK BLOCHER, Broad Ford, Pa. Application filed June 21, 1872.

The points of the jaws are made sharp to be driven into the wood around an embedded spike.

Claim.—The within-described nail and spike extractor, consisting of the handle A with jaw B and head *a'*, the pivoted jaw C with head *a*, and curved shank D with point *b*, all substantially as shown and described.

137,946.—*Combined Door-Plate and Letter-Chute.*—BERNARD MORNINGSTAR, Pittsburg, Pa. Application filed February 21, 1873.

A sliding chute fitted in an opening through the door, with its mouth covered by a door-plate hinged to its inner side, and both being jointly withdrawn before the plate is raised.

Claim.—The combination of the door-plate A A^1 A^2 A^3 *a a*, chute B B' *b b b' b'*, tube C, and bars D D, substantially as and for the purpose specified.

137,947.—*Thread-Cutter for Sewing-Machines.*—FRANCIS V. OBURG, Peoria, Ill. Application filed January 11, 1873.

The front plate of the head in which the needle slides is provided with a space and channel for receiving, and in which the shank of the cutting-blade is held when the front plate is in position.

Claim.—The front plate having the core-space *a*, with a downwardly-tapering channel, in combination with the knife B, having a downwardly-tapering shank, *c*, as specified.

137,948.—*Extension-Ladder.*—WILLIAM O'CONNOR, Berville, Mich. Application filed September 19, 1872.

In this ladder the extension may be above the platform or horizontally so as to form a staging.

Claim.—1. In combination with two ladders, A, the extension F, arranged as described, in order that it may be extended in any desired direction, substantially in the manner and for the purposes set forth.

2. The arrangement of the ladders A F, braces B G, adjustable feet C, and platform D, (the latter being provided with loops E and bolt *d*,) substantially as described, and for the purposes set forth.

137,949.—*Portable Fence.*—ALONZO W. OLDS, Green Oak Station, Mich. Application filed February 8, 1873.

The main post does not touch the ground, but is attached to an inclined sill which may be fixed at any angle to a transverse brace fastened to the upper part of the post. The rails may be held to this post by a batten, or may be secured thereto by other means.

Claim.—1. The combination of the sill A, brace B, posts C, and rails D, substantially as and for the purpose set forth.

2. The adjustable sills A, braces B, and the posts C, secured at their upper ends to the braces B, in combination with the ribs C' for fastening the rails D and preventing the wedging of the said rails and the lateral displacement of the posts C, as described.

137,950.—*Mortising-Machine.*—GEORGE F. OUTTEN, Norfolk, Va. Application filed March 18, 1873.

The mortising-tool, formed of steel plates, serrated on each edge, clamped together and held by a rod passing through their lower ends.

Claim.—The adjustable mortising-tool A, consisting of a series of blades, *a a*, serrated at each of their edges, and tapering in form from the middle, when the same are so constructed, arranged, and secured as to operate substantially as described.

137,951.—*Spring-Hinge.*—JOHN PALMER, Cincinnati, Ohio. Application filed September 24, 1872.

A wire spring is coiled around the pintle of an ordinary butt-hinge. The upper part of the pintle carries a pin which can be rotated over the teeth formed upon the upper surface of the hinge-eye. This pin and teeth serve as a pawl and ratchet to adjust the tension of the spring.

Claim.—The combination, in a spring-hinge, of the spring A, pintle B, stud *b* thereon, and ratchet-teeth *d* on one of the knuckles, to which the pintle is adjustably fastened, substantially as and for the purpose specified.

137,952.—*Machine for Cutting Leather.*—NAZARATH PAQUETTE, Summerfield, assignor of one-half his right to NELSON DAVIS, Ida, Mich. Application filed December 26, 1872.

The gage-bar is made adjustable. The shoe, upon the rear end of which the knife is supported, is beveled at its forward end, so that it will readily slide underneath the stock to be cut as the machine is moved forward, the stock being forced between two rolls up to the cutter.

Claim.—1. The guide-plate E, rollers H and J, shoe A, knife B, and gage-plate D, constructed and arranged as and for the purpose set forth.

2. The post G with its lever I and box *d*, in combination with the roller H, as and for the purpose set forth.

137,953.—*Steam-Generator.*—DAVID PARSELL, Saundersfoot, Wales. Application filed October 11, 1872.

A central main boiler is combined with a series of auxiliary boilers, and a side fuel-chamber with inclined bottom, and the main boiler with sloping grate-bars. Combined therewith is a heater and condenser, and a steam-drum over the whole, from which the steam is taken.

Claim.—1. The combination of the main boiler D with the series E F G and fuel-chamber A, as described.

2. In combination with the elements of the first claim, the heater H.

3. The generator described, consisting of furnace C, fuel-chamber A, the boilers D E F G, heater H, and condenser K, all combined and arranged as described, for the purpose set forth.

137,954.—*Clasp for Harness.*—MARTIN A. PENN, Washington, D. C. Application filed March 1, 1873.

A metallic clasp surrounding the ends of straps, and held in place by a slotted-head screw and nut.

Claim.—1. In bridles or harness, the within-described adjustable screw-rivet, consisting of the screw A provided with the slotted head *a*, and the thumb-screw B, substantially as and for the purpose shown.

2. In a harness halter or bridle, the combination of a slotted strap, S, with the slides C and adjustable screw-rivets B, substantially as and for the purposes herein set forth.

3. The combination of the swinging brow-band D, the slotted neck-strap E, and the screw-rivet rosette B', substantially as and for the purpose shown.

137,955.—*Folly.*—WILLIAM L. PERRY and ADONIRAM J. MATHEWS, Hartwell, Ga. Application filed November 30, 1872.

Claim.—The dovetail projections *a a* on the ends of the folly-sections A, in combination with the metal socket B having dovetail recesses at its ends to receive the projections *a a*, the wings *g g*, and spoke C, formed with a shoulder, *c*, the tire D, and the bolts E E, the whole being arranged, in relation with each other, as shown and described.

137,956.—*Bolt and Rod Cutter.*—SYLVESTER H. PERSTON, Worth, Pa. Application filed March 25, 1873.

A cutter is secured to the stationary arm by a bolt and flange. The lever is pivoted eccentrically, and is provided with an adjustable elbow-brace, which forms a stop to its movement.

Claim.—1. In combination with a bolt-cutter, the adjustable elbow-brace D, forming the stop E, substantially as and for the purposes herein set forth.

2. The lever A, provided with the flange *b*, aperture *c*, and stationary cutter C, in combination with the lever B pivoted eccentrically to the lever A, and its upper end forming the movable cutter D, all constructed and arranged substantially as and for the purposes herein set forth.

137,957.—*Tire-Tightener.*—WILLIAM D. G. QUIGLEY, Spring Valley, N. Y. Application filed October 19, 1872.

The jaws have grooves in which a hinged staple closes into an open-ended latch, and is held in position by a set-screw and nuts. The jaws and pads have grooved and flanged screws, into which are placed leather or other plates to adapt the device to spokes and fellies of different sizes.

Claim.—1. In apparatus for tightening the tires of carriage-wheels by forcing the fellies outward, the combination of the jaws A A having groove *u*, the staple B having hinge *x*, and the latch C having one open end, constructed and arranged substantially as specified.

2. In a tire-tightening machine, recessed jaws A having flanges or grooves *s* adapted to receive plates *y* of different thicknesses, substantially as and for the purpose herein set forth.

3. In a tire-tightening machine, the recessed pads G, constructed with holding-flanges, as described, and adapted to hold plates *f* of different thicknesses, substantially as and for the purpose specified.

137,958.—*Coffin-Handle.*—JAMES S. RAY, East Haddam, Conn. Application filed March 24, 1873.

A spring is secured in the socket, and serves, by resting against the ends of the handle-levers, to retain the handle in an elevated position. A slight push enables the ends to pass the spring and the handle to fall.

Claim.—The spring-rod D, secured transversely in the socket A, in combination with the pivoted arm B, substantially as and for the purpose herein shown and described.

137,959.—*Cotton-Cultivator.*—CORNELIUS F. REAMS, Raleigh, N. C. Application filed April 4, 1873.

A rectangular frame has within its sides two bearing-wheels, one of which is provided with cog-gears, which give motion to the revolving chopper. The forward barring-off plows, as well as the scrapers which return the soil to the roots of the plants after the chopper has thinned them out, are adjustable laterally.

Claim.—The bearing-wheels G G, arranged between the side frames A A and directly in rear of the adjustable scrapers P P, for the object specified, for operation in connection with shaft K,

pinion I, hoes L, and the rear hilling plows or wings S S, all arranged substantially as herein shown and described.

137,960.—*Towel-Rack.*—JOHN REARDEN, Brooklyn, N. Y., assignor to SAMUEL W. FOWLER, same place. Application filed March 17, 1873.

A towel-rack constructed with two uprights crossed at their center and pivoted with pieces across both ends, one for legs or supports, the other or upper one for the attachment of cords to control the form of it and hold the article to be exposed or dried.

Claim.—The towel-rack composed of the cross-bars A B, provided with suitable feet, the cross-heads C C, and flexible connections D D, substantially as herein described.

137,961.—*Baker's Oven.*—CHARLES ROBBINS, Charlestown, Mass., assignor to himself and JEROME A. ROBBINS, same place. Application filed February 27, 1873.

The products of combustion pass from the rear of the fire-chamber to the flue at the front; thence upwardly to the top, and through the top flue to the rear; thence downwardly at the rear to the entrance of the flue beneath; thence through this flue to the diving-flue at the corner, and through this corner-flue to the exit-flue at the bottom.

Claim.—1. In combination with the fire-pot and oven, located as described, the flues *u u*, extending from the fire-pot to the front flues *r r*.

2. The vertical escape-flues *s s* and bottom flue *t*, at the front of the structure, and arranged, with respect to the oven and fire-pot, substantially as shown and described.

3. The general arrangement and location of the fire-pot *a*, oven-flues *u u*, flue-chambers *i i*, vertical rear flues *v v*, and vertical front flues *r r*, substantially as shown and described.

137,962.—*Oil-Cloth-Printing Machine.*—CHARLES ROMMEL, Elizabeth, N. J., assignor to himself and WIENER H. TOWNSEND, New York, N. Y. Application filed March 8, 1873.

Coloring-rollers are arranged with boxes in a spider-frame in such manner that the requisite number of printing-blocks are successively colored, and the cloth is carried forward as soon as the printing of the blocks is completed. Shaft of printing-roller is connected, by pawl-and-ratchet arrangements, with the printing-bed and movable frame, which regulate the forward movement of the cloth and the return of the supporting-frame at the required time.

Claim.—1. The spider-frame D having arms *h* and slots *i*, in connection with ratchet-wheels *g*, pawls *f*, arms *e*, and wheels *d*, producing motion of frame D, substantially as set forth.

2. Coloring-rollers C, having mutilated pinions *r* and weighted boxes *q*, in connection with segments *t*, guide-pieces *m*, and springs *n*, for coloring printing-blocks, as described.

3. The connection of lever O and lug *p* of printing-roller B with pawl *f* to keep spider-frame D at rest for passage of finishing-block, as set forth.

4. The table-motion, produced by eccentrics *s*, pawls *t*, ratchet *u* and *u*¹, in connection with cloth-rollers F and F′ and movable frame G, substantially as described.

5. Eccentric cylinders H and H′, guiding clamp-levers *v* and *v*′, in connection with ratchet-wheels *u*² and *u*³, pawls *w*, frame G, and bed E to feed cloth, as set forth.

6. The combination of the parts of the foregoing clauses with printing-roller B and frame A, substantially as and for the purposes described.

137,963.—*Road-Wagon.*—CYRUS W. SALADEE, St. Catharine's, Canada. Application filed March 31, 1873.

The wagon-body is secured to the rear axle and front bolster. An independent spring-bottom is arranged within the body. The wagon-seat, having its front, bottom, and back made from one continuous strip of spring-steel, is secured to side springs, these springs being suspended outside of the body, and their ends have bearings upon links, which are secured to the under side of the wagon-body.

Claim.—1. In combination with road-wagon bodies A, the spring-bottom R, substantially as and for the purpose set forth.

2. The body A, having its rear end rigidly secured to the hind axle E, and the front end to the bolster F, thereby dispensing with perches, in combination with the seat J rigidly secured to the spring B suspended outside of the body A, substantially as and for the purpose set forth.

3. The links and bearings C D, with or without the connecting-rods C′, by which to secure and operate one or both ends of the springs B to the under side of the body A, all combined substantially as and for the purpose set forth.

4. In combination with a road-wagon wherein the seat-risers are secured to the side springs, the seat J, the front, bottom, and back of the end frames, made of a single strip of spring-steel or other equivalent material, constructed substantially as and for the purpose set forth.

137,964.—*Gas-Burner.*—IRA W. SEALER, Brooklyn, N. Y. Application filed February 5, 1873.

Longitudinal apertures are cut in the tip at right angles to the flame-slot. The inclination of the auxiliary flames to the burner is regulated by an adjustable collar moving upon the pillar.

Claim.—The pillar *a*, having adjustable collar *c*, in combination with the tip *b*, provided with the aperture *c*, substantially as shown and described.

137,965.—*Combined Seed-Separator and Drill.*—PARKINSON DODGE SHEPHERD, Telfair, Ga. Application filed April 12, 1873.

Devices for separating cockle, &c., from grain placed in hopper of drill.

Claim.—The combination, with the hopper and discharge-spouts of a grain-drill, of the cockle-seed attachment described, consisting essentially of the rollers, brushes, and chutes, arranged substantially as described, for the purpose set forth.

137,966.—*Mode of Forming Turned Seams.*—SAMUEL W. SHOREY Boston, Mass. Application filed March 5, 1873.

The edges of the material are first united by the wire staples of Shorey's patent No. 131,306, and then turned down upon them to flatten the seam.

Claim.—The improved mode of forming turned seams, consisting in uniting the edges by the staples, and turning and pressing the adjacent leather down upon said staples, substantially as shown and described.

137,967.—*Dress-Pattern.*—ELIZABETH P. SMITH, Chicago, Ill. Application filed February 10, 1873.

The larger pattern has different scales marked upon it, having figures, each with a corresponding perforation through which to mark the fabric according to the different measurements. The smaller pattern serves as a guide in drawing the lines between the dots thus made, by which the proper outline is obtained for cutting.

Claim.—The patterns for forming both the front and back of dress-waists arranged upon two separate sheets, with the scales and figures marked thereon, substantially as shown and described.

137,968.—*Revolving Fire-Arm.*—ORIS A. SMITH, Middlefield, Conn. Application filed September 27, 1872.

Combination of hammer having arranged therein a spring-stud, lever-catch, and cylinder, whereby the cylinder is locked in position and unlocked to allow it to be revolved as required. Also, combination of pintle arranged and operated by a spring to retain said pintle within the cylinder, and a bolt in the frame operated by a comparatively strong spring, which forces the bolt into the front end, and, thereby, the pintle from the rear end of the cylinder, whereby the same is conveniently removed from and replaced within the frame, as may be required.

Claim.—1. In combination with the hammer D and cylinder C, the lever E F and the stud *d* upon the hammer, operating together to release and lock the cylinder, substantially as set forth.

2. In combination with the cylinder C and its frame, the pintle *n* axially within the cylinder, and the bolt *s* in the frame, the said bolt and pintle together forming the axis upon which the cylinder turns, substantially as set forth.

137,969.—*Deodorizing Animal Matters for Fertilizers, &c.*—EDWARD C. C. STANFORD, Glasgow, Scotland. Application filed March 22, 1873.

Claim.—The process herein described of deodorizing solid or liquid matters by subjecting the same to the action of granulated charcoal, either alone or mixed with earthy matter, as described, the charcoal being afterward recovered and revivified for successive uses in the manner herein shown, for the purpose specified.

137,970.—*Cement-Lined Pipe.*—MELVIN STEPHENS, Brooklyn, N. Y. Application filed October 29, 1872.

Each section provided with concave and convex end, permitting a curved line of pipe being laid. Metal extends over convex end to interior to protect edge of cement lining. Strengthened at ends by a metallic ring applied edgewise.

Claim.—1. The sheet-metal cylinder *a*, lined with cement and provided with a short taper or cone, *c*, at one end, the sheet metal covering the taper or cone of the lining and extending to the inner surface, or nearly so, of the lining, substantially as and for the purpose set forth.

2. The thin metallic ring A applied edgewise to and combined with the metallic tube of the cement-lined pipe, for the purposes set forth.

137,971.—*Automatic Gate.*—GEORGE B. STEVENSON, Upper Sandusky, Ohio. Application filed January 25, 1873.

A bracket on the fixed post holds a perpendicular rod, on which one end of a bell-crank is pivoted, the operating rod or wire being pivoted centrally on said crank, and a pintle descending into the other end of said crank from a plate which shelters all these parts, and being bent at right angles is secured to the end of the gate below the crank-hinge.

Claim.—The elbow-lever H turning on the pivot h^3 attached to the plate I hung on the post D, with its front end perforated to receive the pintle i, which is attached to the corner of the plate J on the gate-post, and a pin, h^4, to engage with the rod F, substantially as shown, and for the purpose specified.

137,972.—*Gate-Hinge.*—JOHN H. STONE, Chapel Hill, Tex. Application filed March 10, 1873.

A comparatively strong and heavy bar swings at its inner end upon the pintle of the hinge. A rectangular strap forming three sides of a square is pivoted by a bolt to the outer end of the bar, and has its free end provided with a slot which allows it to pass over the inner end of the bar. This strap is turned outward, passed around the gate-post, and then bolted firmly to the inner end of the bar. Thus a gate may be hung or unshipped without cutting into the post with screws or bolts, and by simply unkeying the strap and passing it around the post.

Claim.—The combination of the bar A with the strap G having notches in its ends to receive said bar, the curled forks E F, the latter extending across and outside of the bar A, the pivot D, and removable pin G′, substantially as and for the purpose described.

137,973.—*Wood Pavement.*—HENRY M. STOW, San Francisco, Cal. Application filed December 13, 1872.

The spaces between the blocks are much narrower than usual in wood pavements, being formed by the interposition of strips of roofing-paper or small cords just sufficient to give elasticity under expansion and contraction from the weather. Coal-tar is applied in the usual manner.

Claim.—1. The method herein described of constructing wood pavements by interposing small cords or strips of paper between the rows of blocks for the purpose of forming narrow spaces between said rows, substantially as herein described.

2. A pavement composed of rectangular blocks separated by paper or cord, the same remaining and forming a part of the pavement, and the spaces filled with coal-tar, pitch, or some suitable cement, substantially as described.

137,974.—*Bread-Raising Apparatus.*—JOHN SUTTON, New York, N. Y. Application filed February 17, 1873.

Near the upper part of the case or chest is a rack for the reception of the pans of dough; under this a water-heater or pan, under which is arranged a lamp with an air-heater over it to concentrate the heat under the water-pan. Pipes are also used to convey the heat above the water-pan.

Claim.—1. The water-heater I, arranged above and in combination with the air-heater G and lamp F, and beneath the pan-support D, substantially as described.

2. The pipes *g*, extending from below through the heater and water-chamber and through the floor C, supporting the latter for operation, substantially as described.

137,975.—*Wheel-Plow.*—WILLIAM P. SWEENY, Marine, Ill. Application filed September 27, 1873.

On the release of the lever the plow is lifted from the ground by the forward progression.

Claim.—The beam of a wheel-plow in combination with caster-wheel A, lever B, a locking-latch attached to the lever, and a fixed notched arc, C′ *c*′, all arranged and operating substantially in the manner and for the purpose specified.

137,976.—*Dome for Stoves.*—AMMON TAYLOR, Newtown, Conn., assignor of one-half his right to HENRY G. CURTIS, same place. Application filed February 12, 1873.

Claim.—The herein-described dome, constructed to be set on and cover the openings in the top of a stove, when provided with the glazed openings E, substantially as set forth.

137,977.—*Railroad-Car Axle.*—THOMAS C. THEAKER, New York, N. Y. Application filed April 3, 1873.

The inner end of one of the divided axles is conical in form, and rotates within a socket formed as a part of its fellow axle, the two being secured by means of a ring and keeper. A collar is formed on one of the axles, and by transferring a washer from one side to the other of the collar the axle may be extended, if desired; the bearings also may be lengthened by means of a washer having a stop which engages in a groove in the axle, the washer being adjusted by an outside nut.

Claim.—1. A compound axle composed of two parts, one inserted in a tubular portion of the other so as to be capable of independent rotation therein, in combination with collar *b*, screw-cap *c*, and keeper *d*, constructed and arranged to operate substantially as described.

2. The compound axle composed of two parts, A and B, the part A being forged in one solid piece, with a tubular portion conical in form, except the two cylindrical ends, which constitute the bearings of the part B when inserted therein, and the said part B of corresponding form, fitting into the tubular portion of A, and the said two parts capable of rotating independently of each other, substantially as set forth.

3. In combination with a compound axle composed of two parts, one fitting within a tubular portion of the other and capable of independent rotation therein, the collar *b*, screw-cap *c* with its notches *i*′, and the clutch or keeper *d* with its tooth or teeth *i* and screw *j*, all constructed and arranged to operate substantially as described.

4. In combination with a compound axle composed of two parts, one fitting within the other, the collar *b*, screw-cap *c*, and the transferable washer *f*, to increase or diminish the extension of the axle by transferring it from one side to the other of said collar, substantially as described.

5. In combination with an extensible axle, the washer *g* with its internally-projecting tooth or stop, (fitting into a groove in the axle,) or equivalent devices to prevent said washer from turning, and the screw-nut *n* to extend or contract the journals to correspond with an extension or contraction of the axle, substantially as described.

137,978.—*Crosscut-Saw Handle.*—WILLIAM E. TRAVIS, Ypsilanti, Mich. Application filed February 18, 1873.

The clamp in which the saw is secured may be adjusted so that it will be in the same vertical line with the handle or form a right angle therewith.

Claim.—1. A detachable saw handle or tang, made so as to be adjustable, as described, to enable the operator to use the saw in different positions, substantially as set forth.

2. A detachable and adjustable handle or tang for crosscut-saws, wherein the handle A, nut B, coupling-bolt E, ferrule D, and jaw or clamp C are constructed and arranged to operate substantially as and for the purposes specified.

137,979.—*Stock for Millstone-Picks.*—FULLER TRUMP, Springfield, Ohio. Application filed March 8, 1873.

Claim.—1. A stock for securing the bit of a mill-pick consisting of a part, B, fixed to the handle, and a sliding part, C, bearing against the other face of the bit, said parts being respectively fitted with opposed inclined surfaces by which the parts are held in position griping the bit, substantially in the manner set forth.

2. The sliding piece C constructed with a projection, C′, to embrace the end of the bit, used in combination with the part B fixed to the handle; said parts being respectively formed with opposed inclined faces so as to compress the bit with a pressure due to the momentum of the handle and part B attached thereto, substantially as set forth.

3. The part B constructed with a recess to receive the bit on the surface at the bottom of the recess, and with overhanging lugs in combination with the movable part pressing the bit against the base of the recess by the action of opposed inclined surfaces, substantially in the manner set forth.

137,980.—*Combined Hanging-Basket and Bird-Cage.*—SAMUEL VANSTONE, Providence, R. I. Application filed March 24, 1873.

A bird-house constructed in the form of a cone provided with a door and ventilators; beneath the house is suspended a basket by means of wire hangers secured to the side of the house under the eaves, and beneath the basket is secured a pan for receiving the drip from the basket.

Claim.—The combination of the bird house or cage A, the basket B, and the pan C, the whole arranged in the manner substantially as described, for the purpose specified.

137,981.—*Faucet.*—HENRY VARWIG, Cincinnati, Ohio. Application filed August 20, 1872.

Improvement on Patent 116,396. A cap with a bayonet-joint replaces a screw-cap covering a spring-chamber in a ventidact.

Claim.—The combination of the detachable cap G′ with the valve-chamber G *g*, when the former is provided with the right-angular slots S S′ *s s*′, and the latter with the studs R R′, all constructed and arranged for operation as and for the purpose set forth.

137,982.—*Sad-Iron.*—JOHN J. VAUGHN and CHARLES J. BLANEY, Boston, Mass. Application filed March 29, 1873.

A sad-iron in ordinary form with a slot or mortise in its upper center, the handle attached to a sliding plate with a dovetailed tenon fitted to the slot, with a stop or detent on the point of the iron, and a spring in the back end to hold it in position.

Claim.—A sad-iron consisting of the base-section A having the tapering recess *a* and solid point B, and the handle-section C having the spring-catch *k* and tongue *e* tapering laterally from heel to front, and vertically in the opposite direction, substantially as specified.

137,983.—*Sewing-Machine Stand.*—RICHARD M. WANZER, Hamilton, Canada. Application filed January 13, 1873.

The machine is attached to a slab or weighted base, adapted for insertion in a recess formed in or on a table. The base is weighted so that the machine can be used as a hand-machine on any other table without fastening said machine thereto.

Claim.—The slab or weighted base C, carrying the operative mechanism A of a sewing-machine, and adapted for insertion into a recess, D, formed in or on the table B, as and for the purpose herein set forth.

137,984.—*Die-Rolling Machine.*—HERVEY WATERS, Northbridge, Mass. Application filed December 6, 1864.

The combination specified in the claim, and seen for the most part in the drawing, is designed to secure accurate matching of the revolving dies.

Claim.—The combination of the bed-piece A, housings *b b c c*, rolls *d d*, driving-gear *e*, driving-shaft *g*, driving-pinions *h h*, connecting-gears *i i*, and fast and adjustable boxes, when constructed and arranged substantially as shown and described.

137,985.—*Corset.*—AARON MOSES WEBER, Oshkosh, Wis. Application filed March 11, 1873.

Claim.—A corset closed at the back and open at the front or sides for lacing the same, and provided with the series of bones A, placed close together and running from top to bottom, and with or without the series of inclined bones A′, all arranged substantially as and for the purpose described.

137,986.—*Piston-Valve for Steam-Engines.*—GEORGE M. WEINMAN, Columbus, Ohio. Application filed January 21, 1873.

A main piston-valve has a chamber in its central portion, into which the steam is admitted and conducted by annular ports into the cylinder. A central exhaust-port is arranged in the lower side of the valve. Combined with the main valve is an auxiliary oscillating balanced cut-off valve operated by an arm and connecting-rod, and with suitable ports for reversing the main piston-valve.

Claim.—1. The valve D, when constructed in the form of a cylinder, and having in its central portion a chamber, into which the steam is admitted and from which it passes to the annular induction-ports F F, it also being provided with an exhaust-port, E, for the escape of steam from the cylinder.

2. The auxiliary valve C, when constructed with a beveled end and with steam-passages, substantially as and for the purpose set forth.

3. The combination and arrangement of the auxiliary valve C, the steam-induction ports B^1 B^1 B^4 B^4, and exhaust-ports B^2, substantially as and for the purpose set forth.

4. The combination of the cylindrical main valve D, auxiliary oscillating valve G, and steam-chest A, the parts being constructed and arranged substantially as and for the purpose set forth.

137,987.—*Revolving Horse-Rake.*—WILLIAM WELLS, Salem, Mass., assignor of one-half his right to ENOCH P. FULLER, same place. Application filed January 22, 1873.

A revolving rake, in two sections, is attached to and in rear of an axle by pivoting-rods, and operated by a system of levers,

the rear ends of which are pivoted to teeth eccentric to the rake-head.

Claim.—The rake-head *h*, suspended from the carriage A by the rods *l*, in combination with the rods *m* connected to the rake-teeth, as shown, the crank-arms *o*, angular arms *s*, and lever *q*, all constructed and arranged to operate substantially as described.

137,988.—*Gauntlet-Glove.*—ISAAC B. WHIPPLE, Gloversville, N. Y. Application filed February 21, 1873.

A purse or pocket on the gauntlet of a glove.

Claim.—A gauntlet-glove having a safety-pocket, B, formed on the outer surface of the wrist-piece or cuff, and upon the under or palm side thereof, the mouth of said pocket being provided with a suitable fastening device, all constructed substantially as and for the purpose set forth.

137,989.—*Swivel-Loop for Fire-Arms.*—ELI WHITNEY, JR., New Haven, Conn., assignor to THE WHITNEY ARMS COMPANY, same place. Application filed March 26, 1873.

Indicated by claim.

Claim.—The herein-described swivel-loop, consisting of the loop B, one end of which is headed, combined with the sleeve *b*, and secured into the lug against the said headed end, substantially as set forth.

137,990.—*Single-Tree for Horse-Cars.*—JOHN WILLS, Rock Island, Ill. Application filed March 25, 1873.

The single-tree is provided with a hook on which is a projection at right angle with the shaft. By turning the single-tree partly around this projection enters a corresponding slot in the draw-bar, and, being turned into place for service, is securely locked therein.

Claim.—The single-tree C provided with the hook D *d*, in combination with the pivoted bar B provided with opening *a b*, substantially as and for the purposes herein set forth.

137,991.—*Sheet-Metal Tubing.*—SAMUEL R. WILMOT, Bridgeport, Conn. Application filed March 1, 1873.

A peculiarity of this lock-seamed tubing, besides that of having been drawn through dies, is that the seam is drawn and consolidated in the direction of its folds as well as in that of its thickness.

Claim.—As an improved manufacture, lock-seamed, drawn, sheet-metal tubing, with joint or seam consolidated, and metal condensed, hardened, stiffened, and smoothed, as herein described, as results from drawing through a die or dies that impinge against, compress, consolidate, and draw upon all the exposed surfaces of the joint or seam and of the tube.

137,992.—*Manufacture of Sheet-Metal Tubing.*—SAMUEL R. WILMOT, Bridgeport, Conn. Application filed March 1, 1873.

An internal former and an external shell of corresponding shape separated by a space equal to the thickness of the metal, the shell abutting against a steel block having, in continuation of the shell, a smooth, tapered, but in cross-section cylindrical, hole; the former, at the end lying within the shell, being of like taper and cylindricity, but having also grooves converging into one, of peculiar shape, that bring the two edges of the metal together and force them to interlock; and, also, a terminal section that, with the walls of the hole at its smallest diameter, constitute a draw-die, that, besides drawing the tube in the manner common to other draw-dies, compresses and draws upon the seam in the direction of fold as well as in the direction of thickness.

Claim.—1. As an improvement in the art of manufacturing tubing of sheet-metal strips or skelps with interlocked joint or seam, the method of condensing and consolidating the joint or seam, and also the metal of the tube proper, by drawing the same through a die or dies that impinge against, compress, consolidate, and draw upon, all the exposed surfaces of the joint or seam, and of the tube itself, substantially as described.

2. An improved machine constructed, substantially as described, of formers, dies, and guides, organized so that as a strip of metal is drawn therethrough or between the same, to bend said strip into a tubular form, to turn its edges to interlock one with another, to close the seam thus produced, and to die-draw such locked-seam tube by pressure applied in every direction both to the seam and body of the tube circumferentially, inside and out.

3. The combination of the male former E and its overhanging plate or portion d with the female former F, and the tapering circular closing die H with its tapering core or extension of the male former E, essentially as herein set forth.

4. The combination with the tapering die H of the tapering section or portion *f*, having grooves *r r'* arranged to converge in a forwardly direction, substantially as specified.

5. The grooved tongue *n*, wing *w*, and jog *u*, in combination with the groove *o* in the section or portion A of the core, and the closing die H, essentially as described.

6. The combination, with the elements recited in the last preceding clause of claim, of the drawing-die I and its grooved core *k*, substantially as specified.

7. The sectionally-constructed core or core extension, composed of detachable sections *f*, *g*, *h*, *i*, and *k*, arranged in relation with each other and with the dies H I, essentially as described.

8. The detachable male former E, with its attached core or forward extension, in combination with a stop, *e*, arranged to resist the draft on said former E relatively to the tapering die H, substantially as specified.

137,993.—*Fire-Place Grate.*—JAMES M. WOODCOCK, Bridgeport, Ohio. Application filed February 7, 1873.

The lever G serves to agitate the grate-back both vertically and horizontally and to vibrate it. The lever E moves the grate-bottom horizontally, vibrates it, dumps it, and also, in connection with a pin, locks it in position.

Claim.—1. The inclined independent grate-back E provided with journals f^2 and combined with oblong slots *b* in bearing-bracket I or jambs B', as that the grate-back may be moved in a vertical or a horizontal direction, as and for the purpose specified.

2. The pivoted grate-back F, supported on oblong slots *b*, and provided with the pendent tenoned arm f^2, in combination with the lever G and fulcrum-bearing H, as and for the purpose specified.

3. The pivoted and laterally-movable grate-bottom D, provided at one end with pendent pin d^2, in combination with the lever E, fulcrum-bearing *c*, and side pin e^2, as and for the purpose specified.

4. The fire-place grate herein described, consisting essentially of the inclined pivoted fire-back F, the pivoted grate-bottom D, front C, and independent jambs B' or bearing-brackets I, combined and arranged as and for the purpose specified.

137,994.—*Bolt for Doors, &c.*—JOHN S. R. WRIGHT, Nichols, N. Y. Application filed October 19, 1872.

A vertical bolt, extending the whole length of the door, is pivoted at its lower end to an eccentric or cam lever; this elbowed lever is pivoted to the door near the bottom, and is furnished with a long handle, which, when lowered, projects the bolt upward, while the elbow part, pressing against a plate on the door-frame, relieves the strain upon the hinges, thus preventing sagging. A pin limits the movement of the lever when raised, and there is also provided a flanged plate to secure the door from being pried open at the bottom.

Claim.—1. The vertical bolt C and eccentric elbow-lever E attached to the door B, substantially as specified.

2. The flanged plate a^1, in combination with the eccentric elbow-lever E, door B, frame A, and bolt C, substantially as specified.

137,995.—*Jelly Glass.*—THEODOR A. ZELLERS, East Birmingham, Pa., assignor to THOMAS B. ATTERBURY and WILLIAM DOYLE. Application filed June 27, 1870.

The mouth of the glass is formed with a recess on the inside for supporting the cover, and a small part of the vertical rim of the glass is cut away to facilitate the removal of the cover.

Claim.—1. A jelly glass or tumbler provided with a recess or rabbet around the inside of its mouth to receive the edge of the cap or cover, as set forth.

2. In combination with the rabbet on the inside of the mouth of a jelly-glass, the break *c*, or its equivalent, made in the rim of the glass to facilitate the removal of the cover.

REISSUE PATENTS.

5,350.—*Wash-Boiler.*—JACOB DAVIS, Florida, Mass.—Patent No. 131,212, dated September 10, 1872. Application filed February 5, 1873.

A boiler has an elevated false bottom with a slot across the center that has a cap over it. The bottom has continuous ends that form tubes at the ends of the boiler, and have holes near the top for the ejection of the water and steam.

Claim.—1. The arrangement of the inclined bottom B with the slot *b'*, raised cover E, and plate F, as and for the purposes above described.

2. The construction and arrangement of the flues G as above specified, for the purpose of forcing the hot water through the holes *d'* upon the clothes.

3. A bottom, B, having slot *b'*, raised cover E, and plates D, with perforations *d'* at the top only, applied in combination with any suitable vessel, substantially as and for the purpose described.

5,351.—*Distilling Turpentine.*—ARCHIBALD K. LEE, Galveston, Tex.—Patent No. 131,550, dated September 24, 1872. Application filed April 8, 1873.

Steam is let into the jacket beneath the still, is superheated, passes into the coil within the still, and thence to a second and third perforated coil located within the reservoir and liquidising-chamber. On the pipe through which the vapors pass from the still to the separator is an egg-shaped or expanded joint for arresting and retaining the heavier vapors. The oil condensed may be drawn off. Any vapors given off in the liquidizing-chamber are conducted directly to the separator, from which the pyroligneous acid falls into a receptacle below from the worm; the turpentine is drawn through a series of vessels, where the water is separated, and the oil barreled without exposure.

Claim.—1. The still B, closed coil B', jacket C, and pipes C^2 C^3, when the same are combined as shown, and arranged in connection with a suitable furnace to operate substantially as described.

2. In combination with the coil B', the pipe G, the same being arranged to operate in connection with the still B, reservoir E, and liquidizing-chamber D^1, substantially as described.

3. The liquidizing-chamber D^1, having its interior wall surrounded with a perforated coil, F^2, and the revolving rake F, when the same are so combined and arranged as to operate substantially as described.

4. The chamber D^1, reservoir E, still B, valves D^2 and E^1, and the jacketed pipe E^2, the whole being constructed and arranged to operate substantially as described.

5. The vapor-pipe I, having an expanded joint, I^2, and cock I^3, when the same is connected with the still and separator in such manner as to operate substantially as described.

6. The separator H, vessel K, condensing-worm L^1, pipes L K^1, the same being so constructed, combined, and arranged as to operate substantially as described.

7. The condensing-worm L^1, vessels M N, and pipes M^1 N^1, the same being so constructed, combined, and arranged as to operate substantially as described.

5,352.—*Hasp for Trunk-Locks.*—LOUIS HILLEBRAND and DANIEL WOLF, Philadelphia, Pa., assignees of SAMUEL CROFT and JOHN C. SCHUELLERMANN, executors of CONRAD LIEBRICH, deceased.—Patent No. 10,862, dated May 2, 1854; extended seven years; reissue No. 4,170, dated November 1, 1870. Application filed February 12, 1873.

The two parts of the hasp are hinged together by means of solid trunnions on one part and recesses in the other part, the said trunnions being held into the recesses by a spring attached to the upper part of the hasp. The spring also serves to throw out and hold out the lower portion of the hasp, thereby preventing the catch from striking the edge of the trunk inclosing the lid.

Claim.—1. The combination, with a hinged trunk-hasp, of a spring attached thereto for operating the lower or hinged portion thereof, substantially as described.

2. The combination, with a hinged trunk-hasp, of a spring which is attached to the upper or fixed portion and throws out the lower or movable portion thereof, substantially as described.

3. The combination, with a hinged trunk-hasp, of a spring which serves to hold the parts together and also to throw out the lower or movable portion thereof, substantially as described.

4. The combination, with a hasp, of the solid trunnions *c* and recesses *b*, substantially as and for the purpose described.

5. The hasp-catch secured to a solid projection on the hinged portion of the hasp, substantially as and for the purpose described.

5,353.—*Oscillating Steam-Engine.*—AUGUST NITTINGER, Jr., Philadelphia, Pa.—Patent No. 106,860, dated August 30, 1870. Application filed September 27, 1872.

The valve-seat is made with a rounded concavity, into which the lower cylinder-head, with suitable ports, fits, and is held in place by springs and bolts to a plate with suitable ports in it for reversing the engine. The base plate is provided with uprights and catches to hold the reversing-plate in any position.

Claim.—1. The construction and arrangement of the bearings H, bolts *a*, nuts J, springs K, and the plate I, substantially as shown and described.

2. In combination with the above, the steam-chest A, base O, uprights N N', plate I, and the catches M, in the manner and for the purpose herein specified.

5,354.—*Windmill.*—WILLIAM I. TUSTIN, San Francisco, Cal.—Patent No. 97,136, dated November 23, 1869. Application filed January 16, 1873.

The wind-wheel and rudder are in two parts, connected together by a turn-table, so that the wheel can be turned about to stand at any angle to the rudder by means of a vertical rod, to which is attached an arrangement by which a person standing on the ground can easily shift the wheel.

Claim.—1. The table F with its projecting segmental rack *e*, turning on the flange *a*, in combination with the wheel E and rudder D, substantially as and for the purpose herein described.

2. The vertical connecting-rod I, wind-wheel E, and rudder D, in combination with the toothed wheel Q, pinion *g*, pulley G, endless cord, and weights P, substantially as and for the purpose above described.

3. The pulley G with its toothed pinion *g* and rudder-projecting lugs or pins *u*, the same being raised by means of the curved lever L, and operated by the endless cord *o* passing over pulleys N and O, and kept taut by the weight P, substantially as described, for the purpose herein set forth.

4. In connection with a windmill having a slewing-rudder for the purpose of adjusting the wind-wheel to the wind, the rod I, applied substantially as described, for changing the relative position of the wind-wheel and rudder from the ground, as set forth.

5,355.—*Corpse-Preserving Case.*—JOSEPH S. WATERMAN, Boston, Mass.—Patent No. 76,568, dated April 7, 1868. Application filed March 17, 1873.

Improvement on Patent No. 76,568, April 7, 1868.

Claim.—1. Making the ice-box B adjustable within the case A, so that it can be raised or lowered to increase or diminish the size of the corpse-chamber, for the purposes set forth.

2. The combination of the inclined metallic bottom *h* of the ice-box with conductors *k o*, when said conductors are covered with wood or its equivalent, substantially in the manner described, as and for the purposes set forth.

5,356.—*Jelly-Glass.*—WILLIAM DOYLE, Birmingham, Pa.—Patent No. 136,492, dated March 4, 1873. Application filed April 11, 1873.

Claim.—1. A jelly-glass adapted for the reception of a cap or cover of sheet metal or equivalent material, by leaving it substantially in the condition in which it comes from the molds, without being subjected to the ordinary finishing processes, as above set forth.

2. A jelly-glass adapted for the reception of a flanged cap or cover of sheet metal or equivalent material, substantially as hereinbefore described.

3. As an article of manufacture, a jelly-glass provided with a flanged cap or cover of sheet metal or equivalent material.

4. As an article of manufacture, a jelly-glass provided with a cap or cover of sheet metal or equivalent material capable of being secured to the glass without the use of cement, or of rubber bands or rings.

5,357.—*Smoothing and Fluting Iron.*—JOHN HEWITT, Pittsburg, Pa.—Patent No. 135,335, dated January 28, 1873. Division A. Application filed February 25, 1873.

An iron in two sections; when together for smoothing by the lower section, and when detached for fluting by the upper section; have corrugations for that purpose.

Claim.—An iron consisting of two independent sections, A and B, one having a plain and the other a fluting ironing-face, substantially as hereinbefore described.

5,358.—*Fluting-Iron.*—JOHN HEWITT, Pittsburg, Pa.—Patent No. 135,335, dated January 28, 1873. Division B. Application filed April 8, 1873.

The iron is constructed in the form of the ordinary sad-iron, but having face provided with fluting-ribs.

Claim.—A fluting-iron with corrugations extending the entire length of its ironing-surface, the contour of said iron being the same as the ordinary sad or smoothing iron, having a conform point, substantially as herein described, and for the purpose set forth.

5,359.—*Spring for Vehicles.*—CYRUS W. SALADEE, St. Catharine's, Canada, assignor of one-half interest to LEANDER DOBBINS, Erie, Pa.—Patent No. 132,603, dated October 29, 1872. Application filed April 4, 1873.

Upon the bolster of a car-truck are arranged torsional springs which have their ends bent to form a crank or lever; these cranks engage with other cranks which are rigidly secured to an equalizing-shaft, the latter being secured to the bed-plate of the truck. By this arrangement the body of the car rides evenly, although the weight is unequally distributed.

Claim.—1. In combination with bolster D and bed-plate D' of a railway-car truck, springs A A with the equalising-shafts B B, the latter carrying on their opposite ends the cranks C C, all substantially as and for the purpose set forth.

2. In combination with the lever ends of the torsional springs, cranks C, arranged and operating substantially as and for the purpose set forth.

3. The arrangement of torsional springs A in pairs, so that the bearings J and J' shall be on a parallel line with each other and with the edges of the bed-plate, as and for the purpose set forth.

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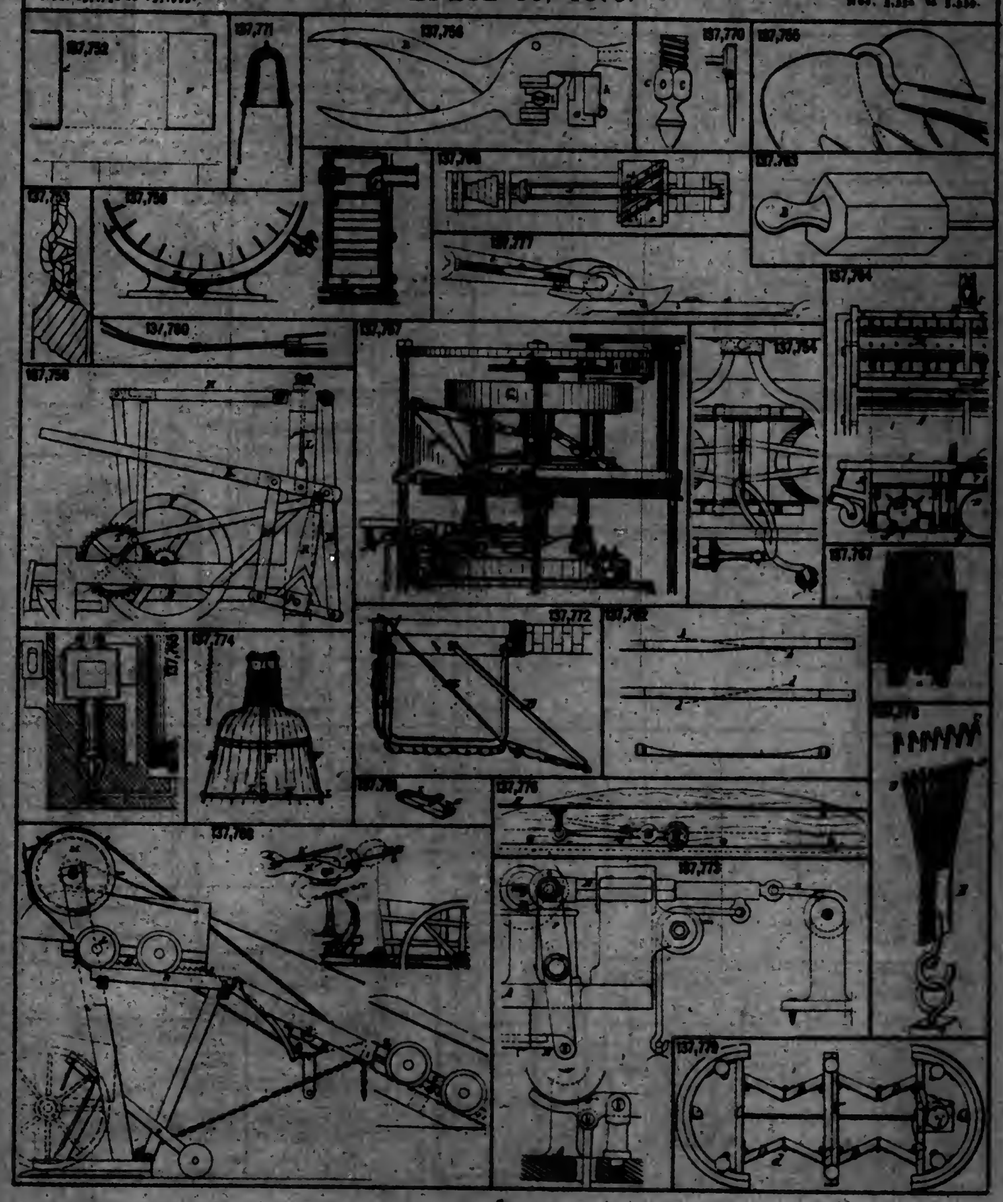
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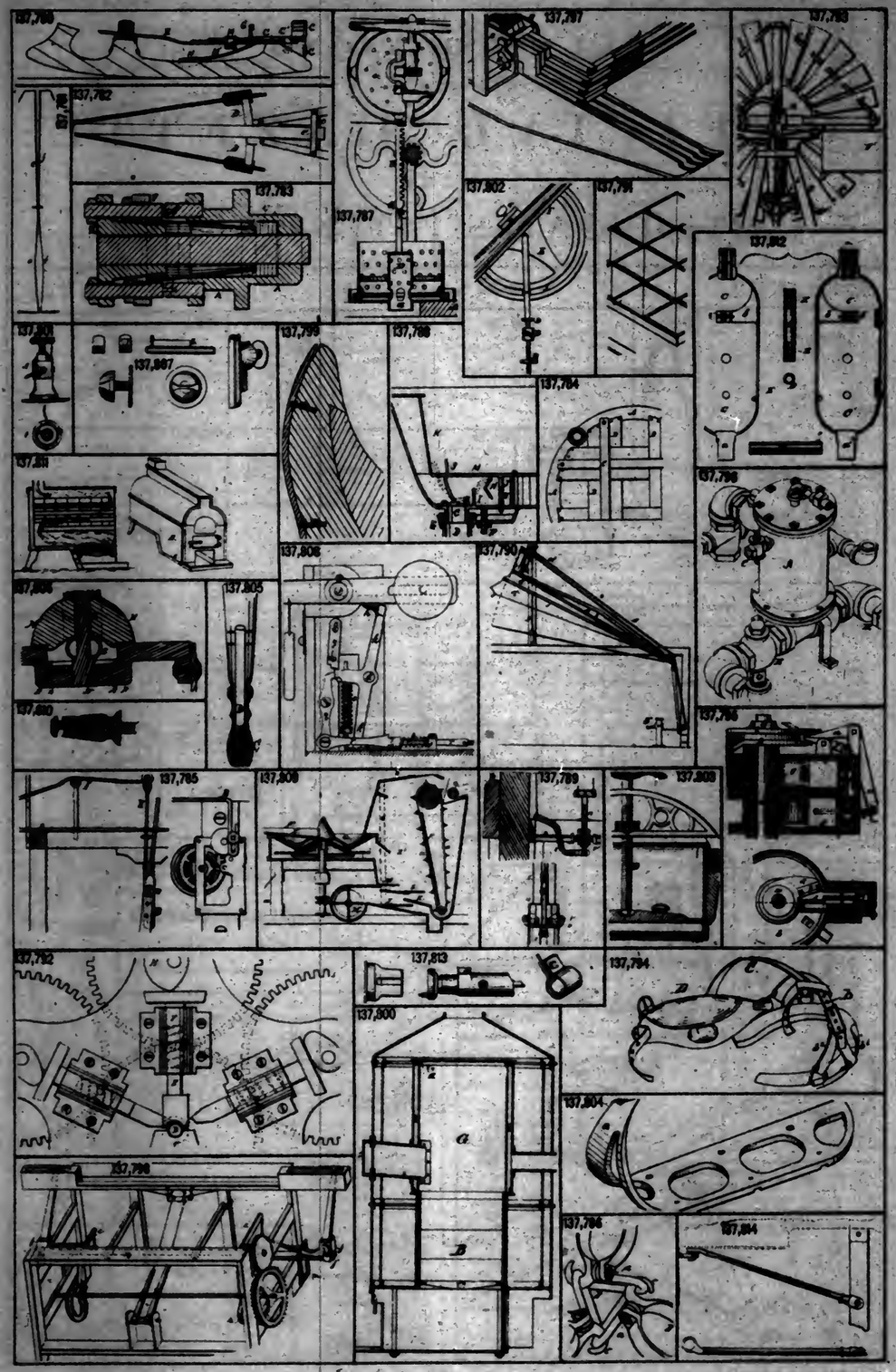
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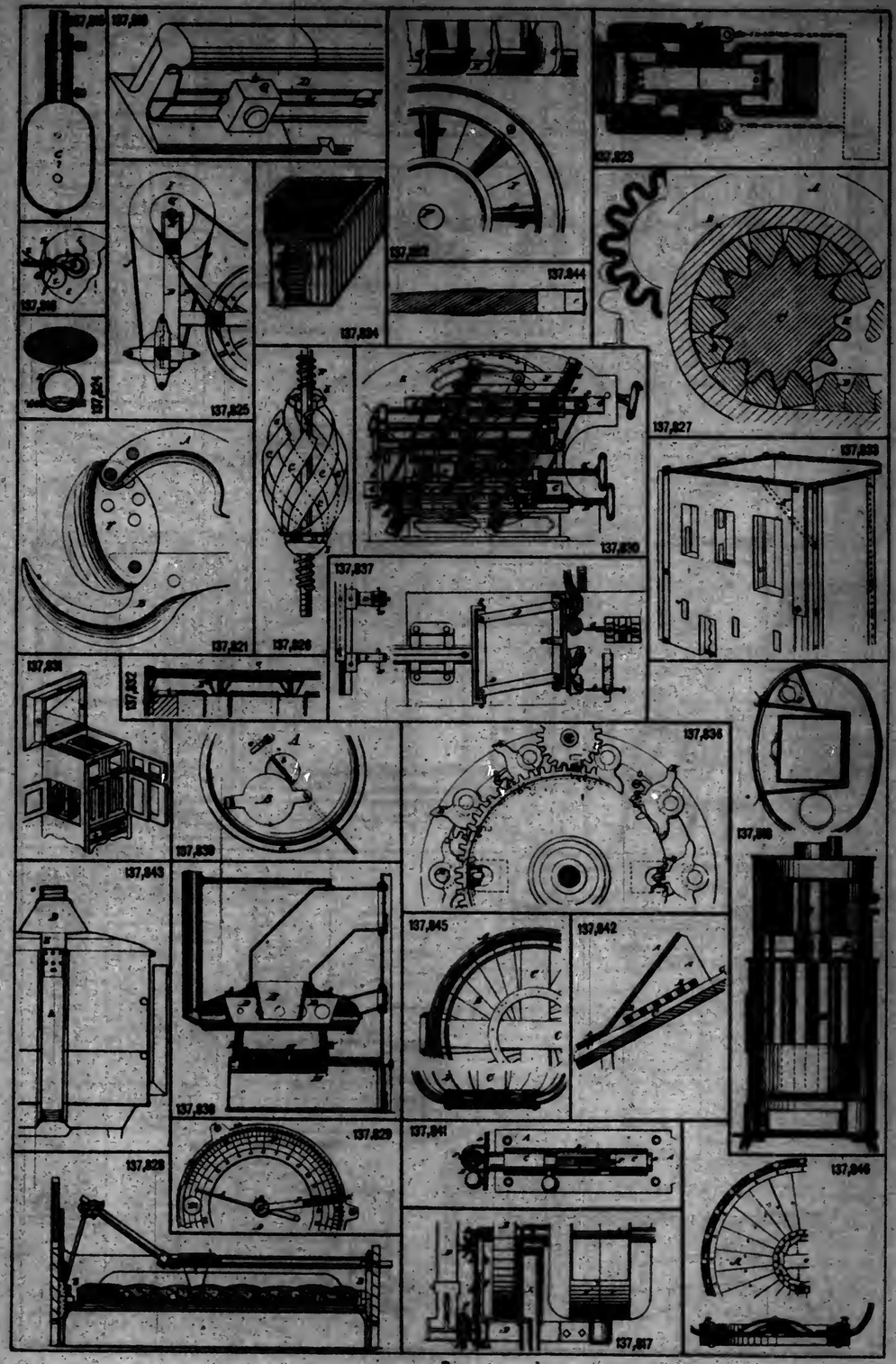


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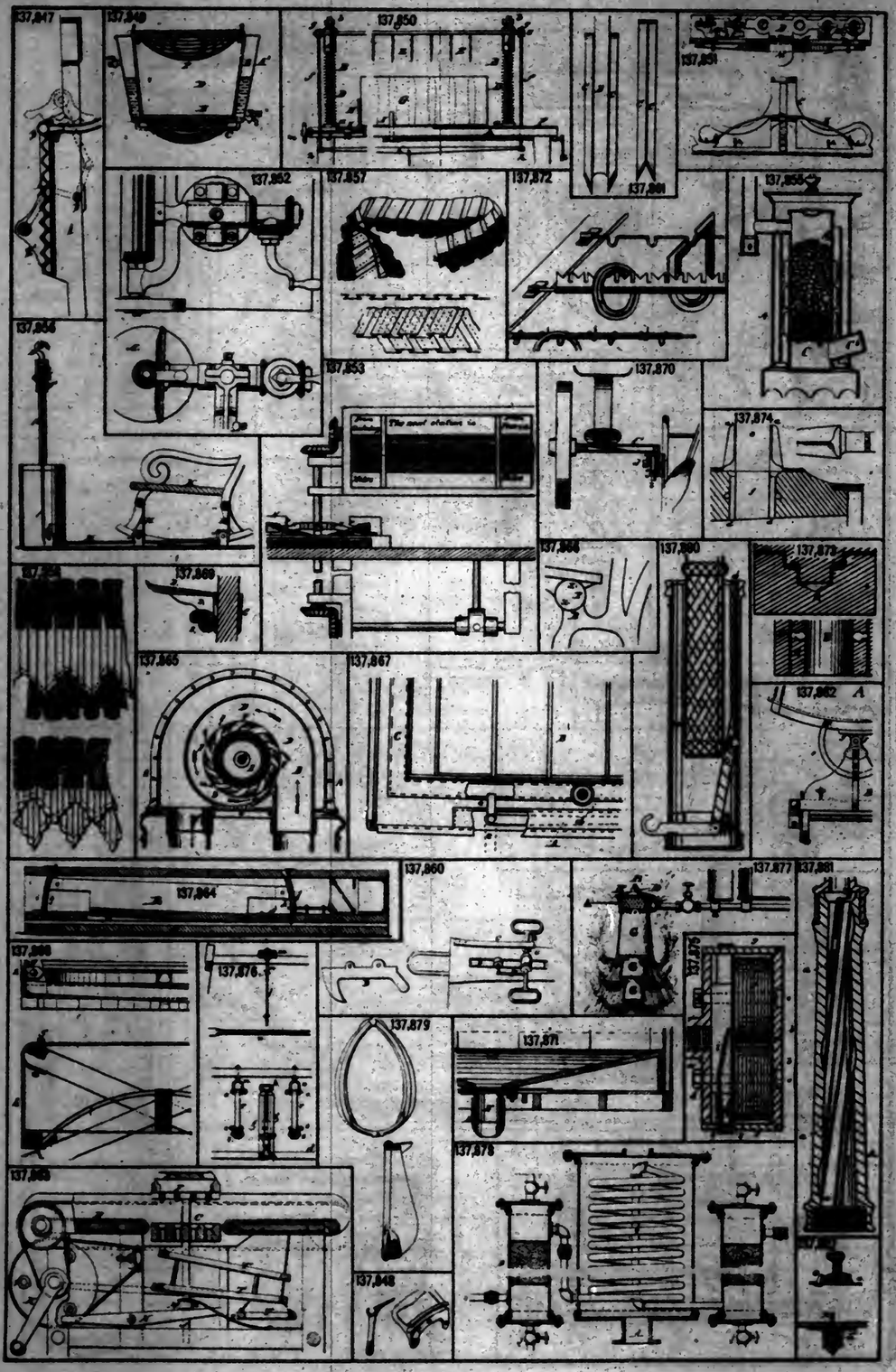
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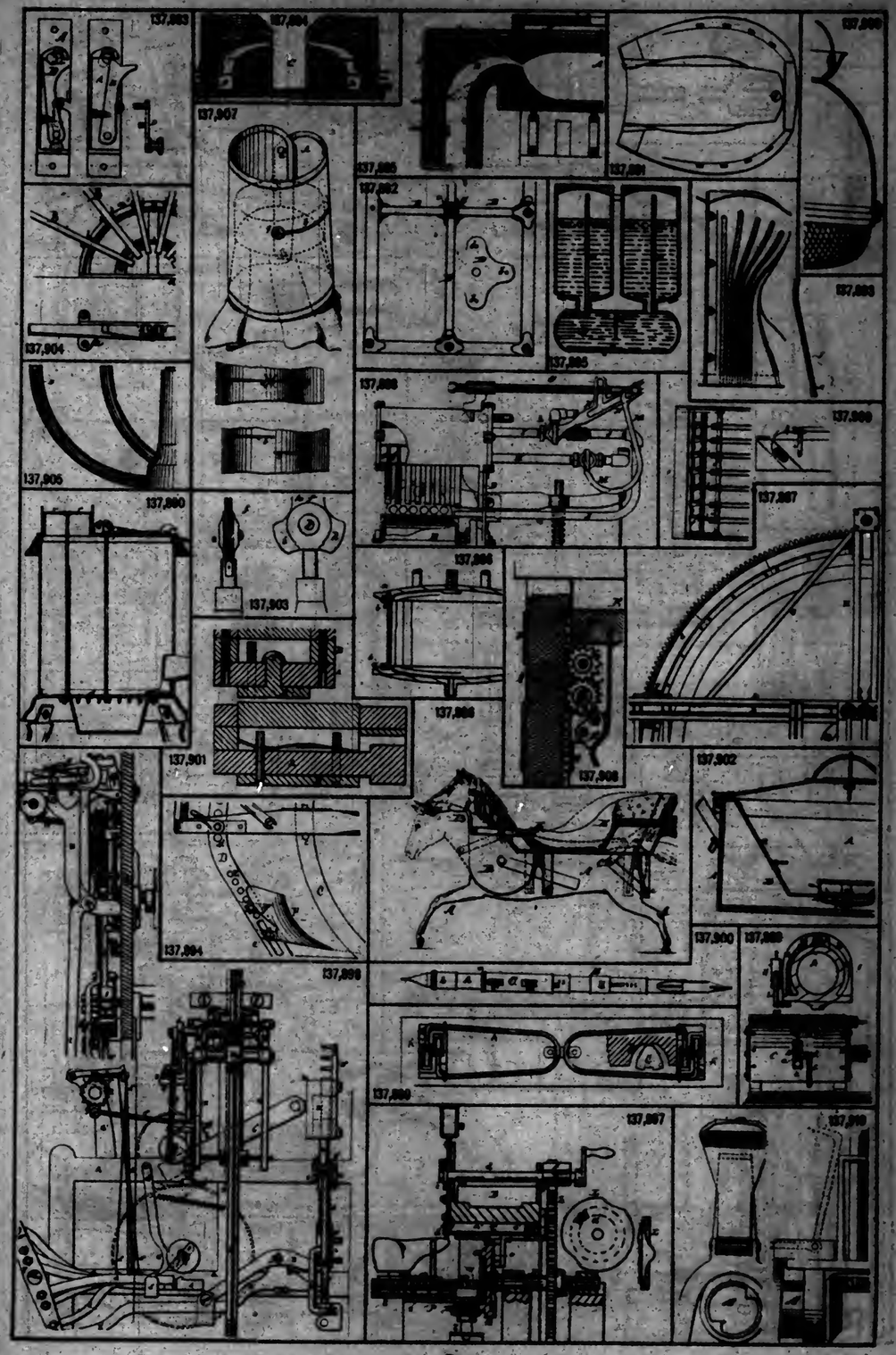


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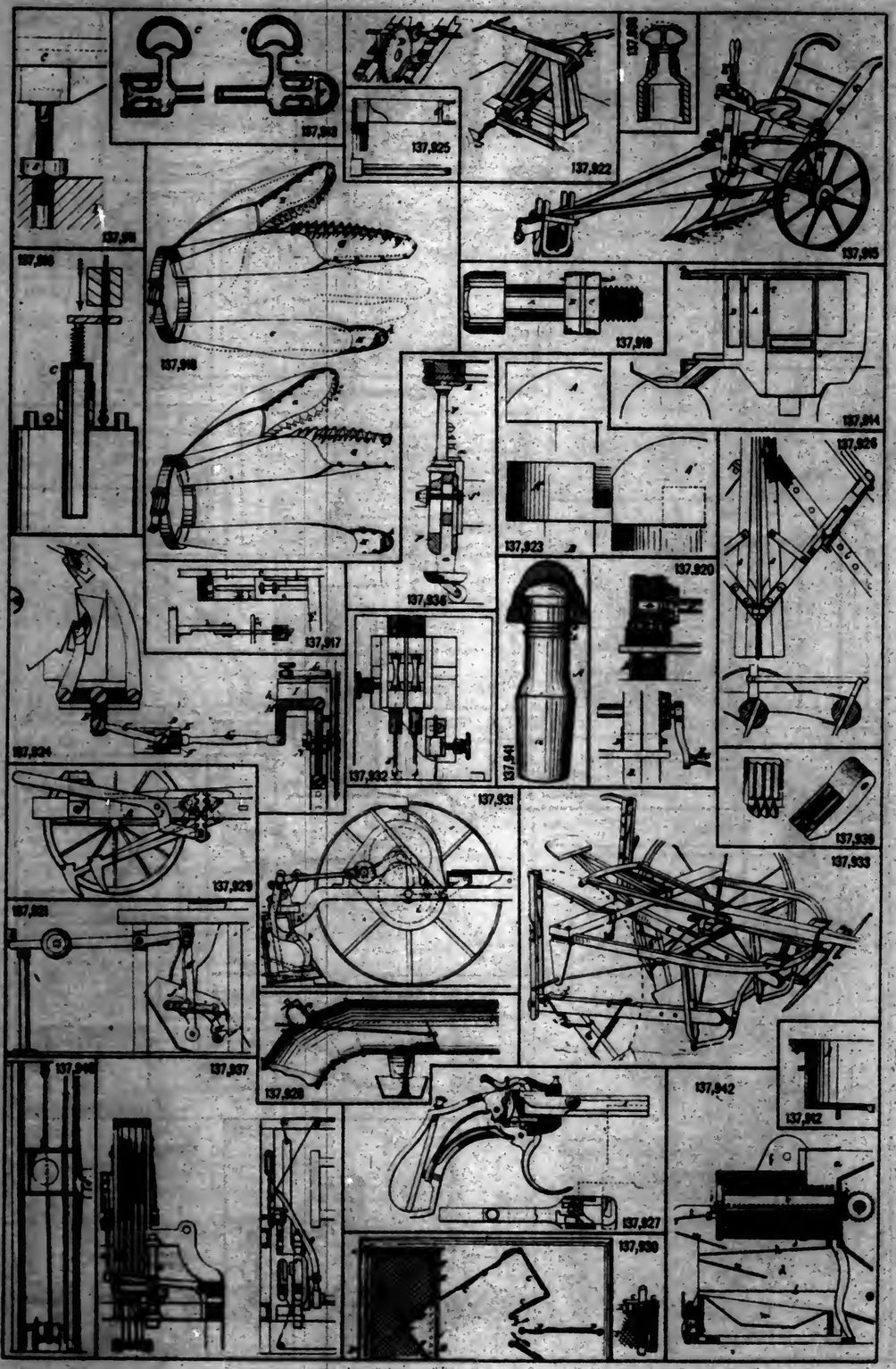
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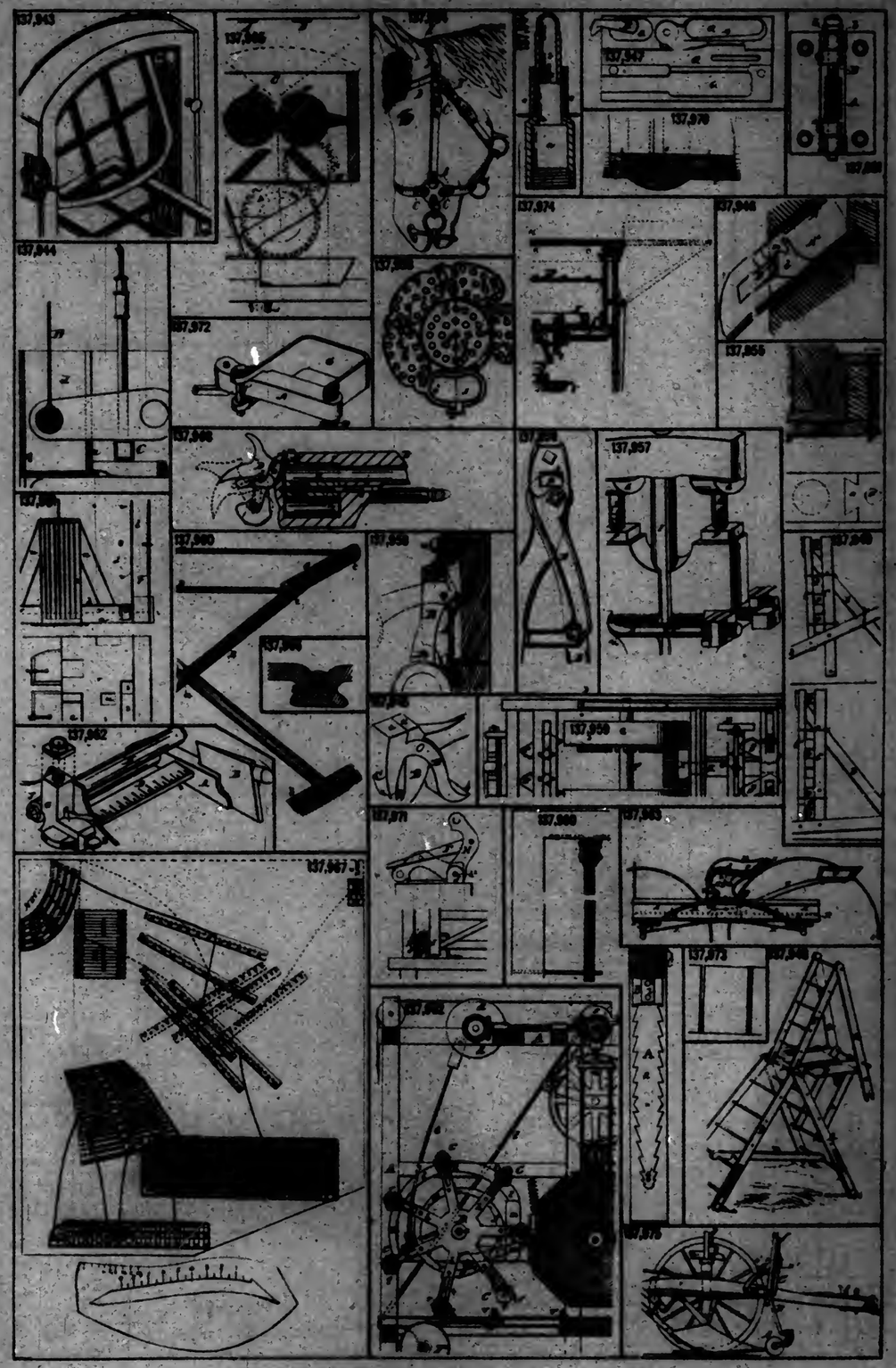
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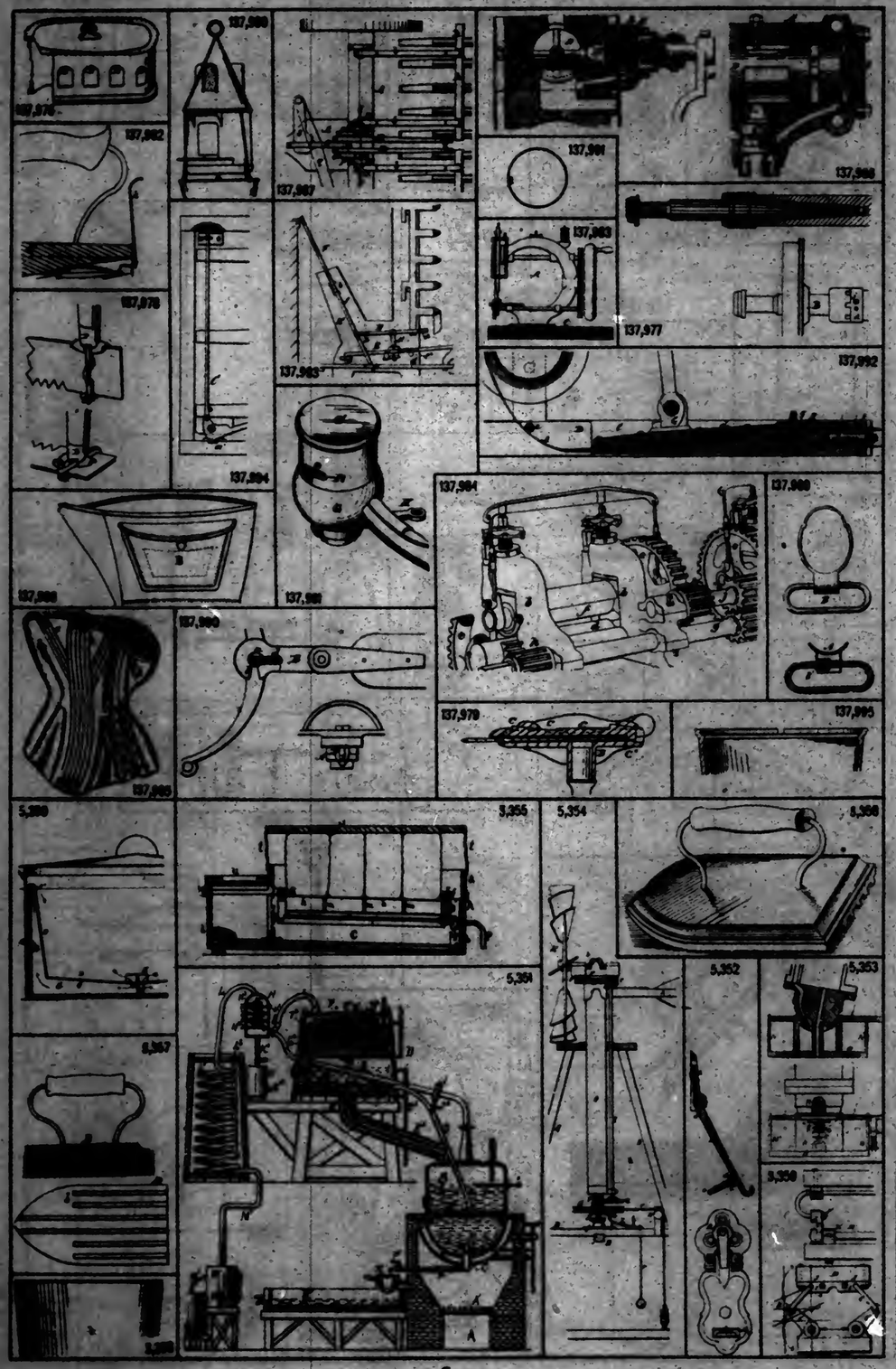
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COMMISSIONER'S DECISIONS.

WM. E. LOCKWOOD.—*Extension.*

[*Appeal from principal Examiner in the matter of the application of Wm. E. Lockwood for extension of patent No.* 23,771, *granted April* 26, 1859; *reissued, Nos.* 1,981, 1,982, *and* 1,983, *June* 6, 1865, *and No.* 5,259, *dated January* 29, 1873, *for* IMPROVEMENT IN COLLARS AND CUFFS, *Decided April* 22, 1873.]

Although there may be donbts as to the patentability of a supposed invention, and there has been a decision of the Circuit Court against it, yet, if an appeal has been taken from the decision, and is pending, and if the invention has created and supplied an extensive demand in market, and has been recognized by the public as one of great utility, a patent for it will be extended.

It would seem that a collar, specified as having a paper surface imitative of the textile face and fiber of a dressed linen collar, is the same thing as an embossed collar when the embossing is explained in the specification to mean a process by which the inequalities upon the surface of a linen collar are reproduced on the surface of a paper collar, and it is made to look like a linen collar.

The extension of a patent refused because there was no sufficient proof of the value and importance of the invention.

LEGGETT, *Commissioner:*

The invention shown in the original patent is a collar or cuff made of a suitable fabric inclosed between two layers of paper, upon which is impressed the counterpart of the figure and fabric of a linen collar or cuff, thus producing an exact imitation of the linen article. This is ornamented by perforations, by printing, and by interlacing ribbon in slits made for the purpose. The claims of the existing reissued patents are:

No. 1,981.—"An ornamental collar or cuff made of a fabric composed of paper and muslin, or of an equivalent fabric, ornamented by printing, or otherwise marking on the surface plain or colored devices."

No. 1,982.—"An ornamental collar or cuff made of a fabric composed of paper and muslin, or an equivalent fabric, ornamented by perforations, as set forth."

No. 1,983.—"An ornamental collar or cuff made of a fabric composed of paper and muslin, or of an equivalent fabric, ornamented by the interlacing of colored tapes or ribbons, as set forth."

No. 5,259.—"A collar having a paper surface imitative of the textile face and fiber of a dressed linen collar, as set forth."

There was a reissue, No. 1,980, granted June 6, 1865, with the following claim:

"An embossed collar or cuff made of a fabric composed of paper and muslin, or an equivalent fabric."

This patent and reissue, No. 1,981, were held by Judge Blatchford in *Union Paper Collar Co.* vs. *Van Deusen* et al., *Pat. Off. Gaz., vol.* 2, *p.* 361, to be invalid. The learned Judge said: "It is impossible to uphold either of these reissues. No. 1,980 is merely for embossing on a surface which imitates starched linen. * As like embossing had been done on starched linen, the result of producing such embossing on a smooth, white, polished, or enameled surface, representing that of starched linen, cannot be patented as an invention, when nothing is claimed as new in the appliance, machinery, or process for producing the embossing. A starched linen collar with its surface embossed existed before. There was nothing of patentable novelty in the idea that the imitative surface being provided it would be well to emboss it. The patent does not claim the invention of the imitative surface, or of any means of producing it. The fabric of paper and muslin was old. The same observations apply to No. 1,981. It is merely for printing plain or colored devices on a surface which imitates starched linen. * * Printing had been done before on a smooth, white, enameled surface, * and the surface imitating starched linen being provided there was nothing of patentable novelty in the idea of printing upon such surface. The invention of the imitative surface is not claimed, nor is any means of producing such surface claimed, and the fabric to be printed upon was old."

Precisely the same reasoning applies to the claims of reissues Nos. 1,982 and 1,983, provided, as the Examiner assumes, ornamental perforations and interlacing colored tapes or ribbons had previously been used in linen

collars or cuffs. This probably presents the adverse view of the validity of the patents Nos. 1,981, 1,982, and 1,983 in the strongest light. With respect to patent No. 1,983, no sufficient proof of the value and importance of the invention claimed is presented, and an extension must be refused for that reason. An appeal to the Supreme Court of the United States is pending upon reissue No. 1,981. No. 1,980 was surrendered, and No. 5,259 was issued in lieu thereof on appeal to the Board of Examiners-in-Chief, covering, as is alleged in argument, the "imitative surface"—the omission of claim to which the Court repeatedly referred to. In view of the interpretation placed upon the claim of patent No. 1,980, however, it is not clear that the imitative surface referred to in this claim is anything but the embossed surface which the Court held to furnish no ground for a reissued patent to Lockwood. The Court said the specification (No. 1,980) "defines the embossing to be a representation of embroidery, or of ornamentation whereby portions of the surface are depressed and portions are in relief. It describes a mode of effecting the embossing, * * whereby all projections, depressions, stitches, and marks on the original linen collar or cuff are reproduced, and the plain surface looks like starched linen." With that explanation "an embossed collar" (claim No. 1,980) and "a collar having an imitative surface," &c., (claim No. 5,259,) are the same thing. The reasoning of the Court, therefore, apparently applies with equal force to patent No. 5,259.

I shall not attempt to controvert the opinion of the learned judge who is so justly eminent in the department of patent law. On the other hand, an appeal having been taken to the Supreme Court, I am not disposed to be so far controlled by it as to cut off the remedy there relied on by refusing an extension. It is undeniable that Lockwood has produced articles which have created and supplied a distinctive and extensive demand in the market. They are recognized by the public as a definite class of products of great utility. Precisely the same things did not exist before. The additions to the Walter Hunt fabric which they exhibit are certainly important in connection with it, if not vital to the permanent popularity and usefulness of paper collars and cuffs. Whether or not Lockwood's devices as claimed are so different from what preceded them as to evince invention in their production, I think is a point upon which at least a reasonable doubt may be entertained, and I am inclined to hold that they are. If I am correct in holding the claims valid, the proof upon other points is sufficient to warrant the extension of patents Nos. 1,981, 1,982, and 5,259. These patents will therefore be extended upon compliance with the rules.

CARR *vs.* DAVIDS.

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Thomas Carr and the patent of G. B. Davids, granted December 14, 1869, for a* DISINTEGRATING-MILL.—*Decided April 24, 1873.*]

The right of an inventor to a patent will not be prejudiced by the existence of the invention abroad, unless it was patented or described in some printed publication before he originated it.

LEGGETT, *Commissioner:*

It is proved and admitted on the part of Carr that Davids made his invention in September, 1868. Carr obtained a patent for his invention in England, which was enrolled April 6, 1869. He introduces testimony to show that he made the invention in England long before that date, which testimony has been ruled out by the Examiner of interferences and the Board, in conformity with the established practice of the courts and the Office. (See *Howe* vs. *Morton*, 1 Fish., 595; *Brooks* vs. *Norcross*, 2 Fish., 661; *Bain* vs. *Morse*, 1 B. app., p. 222; *ex parte* Jno. Cochrane, Com'rs D. 1869, p. 60; *Tucker* vs. *Davis*, O. G., vol. 2, p. 224)

I do not find sufficient ground in the argument presented in behalf of Carr for a departure from this practice. The statute is explicit in declaring that any inventor may obtain a patent for his invention, provided it has not been patented or described in a printed publication in a foreign country before the date of his invention. Davids made the invention before it was so patented or described, and his right to a patent is clear.

No evidence of the date of an invention in a foreign country, other than that of a patent or a description in a printed publication, ever has been or can be received under the law. Inventions abroad are ignored by the statute until made to appear through one or the other of the channels named. Therefore Carr did not make the invention in contemplation of law till he patented it, April 6, 1869, and Davids preceded him. Without the light of controlling precedents, I should be unable to place any other interpretation upon the statute than that which constitutes the established practice of the Office in like cases.

The decision of the Board is affirmed.

JOHN B. WELPTON.—*Motion.*

[*In the matter of the application of John B. Welpton for the reissue of Letters Patent No. 125,237, for* IMPROVEMENT IN TUG-CLIPS, *granted him April 2, 1872.—Decided February 3, 1873.*]

Where, in answer to an application by A, reference is made to a rejected joint application of A and B, the affidavits of both that B had no part in making the invention are not sufficient to remove the objection.

An interference should be declared in such a case, and the question settled on testimony, or on formal concessions in accordance with the rules.

THACHER, *Acting Commissioner:*

It appears that in 1870 applicant joined with one Templeton in an application for a patent for an invention somewhat similar to the present. This application was finally rejected in February, 1871, since which nothing further has been done in prosecution of the case. The patent now sought to be reissued contained no claim to anything shown in the former application of Templeton and Welpton, and therefore no conflict at the time of its issue arose. In the present application for reissue a claim is made which the Examiner holds to be anticipated by the prior joint application.

Affidavits of both parties to the joint application have been filed, setting forth the fact that Templeton had no part in the invention of devices therein claimed or described, and motion is made that on this showing the application for reissue be relieved from the operation of the reference. I believe this would be wrong practice, which might in some cases prejudice the rights of third parties. The correct practice in cases of this kind, and one which is now well established in the Office, is to declare an interference with the prior joint application, when the rights of the respective parties may be settled by testimony as to the facts, or formal concessions in accordance with provisions of official rules.

The motion is denied, and the application is remanded to the Examiner with instructions to declare an interference with the rejected application.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

LEVI DECKER *vs.* THE NEW YORK BELTING AND PACKING COMPANY.

[*In Equity.—Before Blatchford, Judge.—Decided April 9, 1873.*]

A circuit court of the United States cannot through service of process in its district upon an officer of a corporation created under the laws of another State acquire jurisdiction over the corporation.

A corporation does not in consequence of appearing by attorney, and pleading to the jurisdiction of the court, waive the objection.

This was a motion for a provisional injunction in a suit in equity under reissued letters patent granted to Levi Decker, March 9, 1869, for improvement in cushions for billiard-tables.

It appeared that the defendant was a Connecticut corporation. Process had been served on one of its officers in the city of New York. The defendant had appeared by solicitors and filed a plea to the jurisdiction.

W. J. A. Fuller, for the plaintiff.
B. F. Lee, for the defendants.]

BLATCHFORD, *J.:*

The case of *The Commercial and Railroad Bank of Vicksburg* vs. *Slocumb*, (14 Peters, 60, 64, 65,) is a decisive authority that a corporation does not waive an objection to the jurisdiction of the court over it by appearing and pleading by an attorney to the jurisdiction of the court. That jurisdiction over a Connecticut corporation cannot be acquired by this court by service of process on one of its officers in this district, is settled by the cases of *Day* vs. *The Newark India Rubber Manufacturing Company* (1 Blatchf., C. C. R., 628) and *Pomeroy* vs. *The New York and New Haven R. R. Co.* (4 Id., 120.)

The motion for an injunction is denied for want of jurisdiction of the court over the defendants.

U. S. CIRCUIT COURT—DISTRICT OF CALIFORNIA, NINTH JUDICIAL CIRCUIT.

DAVID McKAY *vs.* JOHN B. WOOSTER *et al.*

[*In Equity.—Before Sawyer, Judge.—Decided April 7, 1873.*]

A patented article purchased from one who has unqualified authority to sell it becomes like other property, and the purchaser may use it as he pleases, without any liability under the patent.

Where the assignee of the entire interest in a patent for a specified territory sells the patented article therein, the purchaser is not restricted in his use of it to that territory, neither is he liable to the patentee for using it in the territory reserved.

Neither is he liable to one to whom the right for the territory reserved is sold by an assignment subsequent to the other.

Doubted whether an assignee of a territorial right under a patent could sell the patented article so as to authorize the use of it in territory the right to which had been sold to another before he purchased.

Doubted what the effect would be of a clause in a deed of a territorial right expressly restricting the right to sell for use so that only sales for use in the territory shall be made under it.

[*Holland and Spencer*, for complainants.
Churchill and Haight, for defendants.]

SAWYER, *J.:*

Bill to restrain infringement of patent.

The following facts appear from the stipulation of the parties filed in the case:

On February 26, 1867, a patent was duly issued to J. L. and G. W. Stevens, of San Francisco, for an "improvement in cases for transporting eggs."

In August, 1872, said patentees, by deed, granted and assigned to H. F. Billings, of Chicago, in the State of Illinois, "for, to, and in all the States and Territories of the United States east of the Rocky Mountains, all the right, title, and interest which they, the said John L. and George W. Stevens, had in and to the said letters patent, and the invention as secured to them by said letters patent, and all their rights, liberties, privileges, and franchises which they had or might acquire by or under the said letters patent," which said deed was duly recorded. Since said assignment said Billings has erected a manufactory for said patent cases for the transportation of eggs at Chicago, in the State of Illinois, and has manufactured, in accordance with the specifications of said patent, and he still continues to manufacture said cases; and he has sold and continues to sell the same "to the public, or to whomsoever desires or desired to purchase them, without any restriction or reservation whatsoever."

On the 17th of October, 1872, said J. L. and Geo. W. Stevens made a similar transfer of all their right, title, and interest in said patent and invention, in and to all the States and Territories lying west of the Rocky Mountains, to the complainant, David McKay, who thereupon entered upon the manufacture of said patent cases at San Francisco, and he has ever since continued to manufacture and sell the same for use in that portion of the United States lying west of the Rocky Mountains.

The defendants are commission merchants doing business at San Francisco, receiving goods consigned by merchants east of the Rocky Mountains and selling the same on commission. M. Evans & Co. are merchants doing business at Ames, in the State of Iowa, and a part of their business is dealing in eggs. Said Evans & Co., between the 17th of October, 1872, and the filing of the bill in this case, purchased in the usual course of business at Chicago, of said Billings, [illegible] any restriction or reservation on the part of [illegible] of said patent cases manufactured by him as aforesaid, filled them with eggs in the State of Iowa for the purpose of transportation, and shipped about [illegible] with eggs to defendants at San Francisco, who received them and sold the eggs on commission in the regular course of their business as commission merchants. [illegible] the use of the aforesaid cases in the transportation of eggs from the Rocky Mountains to San Francisco, the said complainant complained of, and the threatened

continuance of the practice, and further use and sale of the cases so received, the injuries sought to be restrained. Numerous other parties are engaged in similar transactions.

Under the view I take, the only question necessary to determine seems to be precisely the same decided by Shepley, Circuit Judge, in *Adams* vs. *Burke*, 4 Fisher's Patent Cases, 393, viz: "Does the purchase of a patented artice, *lawfully* manufactured, and *sold without restriction or condition*, within his territory by the territorial assignee of a patent right, convey to the purchaser the right to use or sell the article in another territory for which another person has taken an assignment of the same patent?"

The learned judge answers the question in the affirmative. This is the only case I have found in which the precise question has ever been considered. One would suppose that a question of so much importance, and so likely to arise, would long since have been presented to the Supreme Court and authoritatively determined, but it does not appear to have been done. It is insisted that the case cited is not correctly decided, and argued with a great deal of force, that since Lockhart and Seeley, in that case, and Billings in this, only purchased the right of the patentees in a limited territory, they did not themselves have the right to supply, either directly or indirectly, other territory than that purchased; that their right only extended to making, using, and vending *to be used* in the specific territory purchased; that, as they had themselves no right to use in other territory, their vendees could acquire no greater right than they themselves owned; that their purchase of the right to a specific territory necessarily limited their power to sell the machine to be used in that territory alone; that this limitation and restriction is necessarily implied in the sale, even without any express stipulation to that effect; that the patent under the fifth section of the act of Congress of 1836 in terms gives the patentee "the full exclusive right and liberty of making, using, and *vending to others to be used*" the said invention throughout the jurisdiction of the United States; that the eleventh section authorizes him to assign the whole or part of his interest for "any specific part or portion of the United States;" that when he assigns his entire interest for a specified part he assigns the right acquired under the fifth section of "making, using, and vending to others *to be used*" in that specific part, and "to be used as well as to make and use in that part *alone;*" that, therefore, when an assignee of a specific territory sells a machine in that territory the machine so sold is taken out of the monopoly as to that territory only, there being no power in the vendor to withdraw it from the monopoly as to other territory in which he has no monopoly or control, and that he can only dispose of his own share of the monopoly, or liberate therefrom to the extent of his own interest therein. This, it is argued, is the reasonable construction of the law, and the contract of assignment of the right of the patentee to a specific part of the territory authorized by the act. The consequences of a different view are also urged in support of the position taken, some of which, it is said, find a striking illustration in this case. Thus, it is argued that labor and materials being cheaper, and the other facilities for cheap manufacture being greater at Chicago than at San Francisco, the patent cases for transporting eggs can be made at a cost so much lower at Chicago than at San Francisco, that the purchaser of the Chicago manufacture could undersell the complainant in his own territory. Eggs also being so much cheaper east than west of the Rocky Mountains, large quantities are there purchased and sent to these western markets. The transportation of the patent cases costs nothing, because it is necessary in shipping to use boxes or cases of some kind, and these require no more room than others.

The freight is paid on the eggs as merchandise, and the greater security against breakage and the improved condition of the eggs brought in these cases more than compensate for their cost at Chicago. Those dealing in eggs, therefore, can purchase these patent cases at Chicago, ship them with eggs from any part of the United States east to parts westward of the Rocky Mountains, and after disposing of their contents sell them at half cost, or even give them away, and still make a remunerative profit on their transactions. There is no use for the cases for return freight. Thus the entire market west of the Rocky Mountains, including nearly one-third of the territory of the United States, can be wholly supplied, indirectly, through middlemen, at prices less than it is possible to make the article for here, by parties who have only purchased the territory east, to the utter loss or ruin of those who have purchased and paid for the territory west of the Rocky Mountains. So, again, it is said it may well be in the case of many inventions that some particular locality affords such facilities for cheap manufacture that the whole United States may be supplied from that point at prices that would defy competition in any other locality, so that it would only be necessary to purchase the right for the territory on which the factory is located in order, through middlemen, to practically enjoy a monopoly of the whole country.

It is easy to see that the result of supplying the whole country indirectly through the merchant, who is usually the seller to the consumer, is precisely the same as though the maker himself directly sells to the consumer.

It must be confessed that these arguments are entitled to grave consideration. Enough has been said in this, and in the case cited, to render it manifest that great practical inconvenience may result from either view.

In the absence of an authoritative adjudication, I should hesitate long before venturing to dissent from a well-considered decision of so learned, experienced, and eminent a jurist as Judge Shepley. But in this instance I can perceive no good ground for doubting the soundness of the proposition laid down in the guarded form in which it is stated in the case cited.

An important question not discussed by the learned judge may, however, arise as to when, or under what state of facts, a patented machine may be regarded as "*lawfully * * * * sold without restriction or condition within his territory, by the territorial assignee of a patent right.*"

In the case now under consideration it will be seen by reference to the stipulated facts that the assignment to Billings was made in August, 1872, while that to complainant was not made till October following. If

there is any conflict, therefore, in the rights claimed by the parties, the complainant's assignment, so far as the conflict is concerned, being subsequent in time, was taken in subordination to the prior grant to Billings—that is to say, he could only take by his assignment what was left after Billings' interest had been carved out. At the date of the assignment to Billings the patentees were still the holders of the entire interest under the patent. Had they at that time, at Chicago, sold one of the patented articles in question without restriction or condition, that undoubtedly would have been a lawful sale without restriction or condition, and the article so sold would have been taken out of the monopoly, and the purchaser, or any one deriving title through him, would have been entitled to use it till worn out in any part of the United States. The patentee himself could not by a subsequent assignment of his patent have limited the right of the purchaser already vested. The vendor being at that time entitled to the whole monopoly for the entire jurisdiction of the United States, it was competent for him to wholly emancipate the article sold by taking the entire royalty for the use in any part of the territory. And a sale without restriction or limitation would work such emancipation. In such case any party subsequently purchasing the right to any specific portion of territory would take that right subject to the use of the machine so sold at any point within the territory purchased. What the patentees could do with respect to one machine, they could do as to any number of machines in existence or to be brought into existence. What they could do themselves they could by contract authorize or convey the right to any other party to do. As the patentees themselves could *lawfully sell* these patented articles at Chicago *without restriction or condition*, so as to authorize the purchasers, or those claiming under them, to use the machines anywhere in the United States, they could convey the right to Billings to lawfully do the same. This authority to emancipate from the monopoly by an unrestricted sale was a part of their "right, title, and interest in the invention secured by the patent," that could be exercised and enjoyed at Chicago or other place east of the Rocky Mountains as well as elsewhere. The assignment to Billings is in the broadest terms. It is of "all the right, title, and interest which the said John L. and George W. Stevens had in and to the said letters patent, and the invention as secured to them by said letters patent, and all their rights, liberties, privileges, and franchises which they had or might acquire by or under said letters patent," "for, to, and in all the States and Territories of the United States east of the Rocky Mountains." There is no limitation of the power to vend within the territory. The patentees could lawfully make without restriction or condition, could use without restriction or condition, or could *vend without restriction or condition* anywhere within the specified territory, and all their rights they conveyed to Billings *without restriction or condition*, who thereupon stepped into the shoes of the patentees as to the territory sold. Had they intended to limit the right of vending "to vending to be used" by the purchasers within the territory sold only, they should at least have so specified the intention, and by some apt words restricted the right of use in the deed of assignment. This unrestricted assignment of the right to vend put it in the power of Billings to *lawfully* vend the patented article within his territory without restriction or condition, and thereby wholly emancipate from the monopoly the articles so sold. The complainant subsequently purchased his territory, and, whatever the terms of his grant, he could of course only obtain what was left of the franchise or monopoly. As the patentees, after their sale to Billings, could not object to sales by him without restrictions or conditions, their subsequent assignee cannot object. The latter's right is subject to the right of Billings and those who have lawfully purchased without restriction or condition from him. This is as far as it is necessary to go in this case. It is unnecessary now to consider the effect of an express limitation in the deed of assignment of the right to vend for the purpose of use only within the purchased territory, or how far the complainant, being a subsequent purchaser of territory, can lawfully vend without restriction or condition, so as to wholly emancipate the article sold from the monopoly, and enable the purchasers of the patented article of his manufacture to use it in the territory of Billings.

If there is any practical hardship in the construction adopted of the law and contract under it, and it should turn out to be the correct construction, then the patentee, when he desires to assign, must consider whether he can afford to do so without restriction, and the subsequent purchaser, when he wishes to buy, must determine whether he can afford to do so with the burden entailed upon his territory by a prior grant unlimited in the particulars indicated. There must be a decree for defendants. Let the bill be dismissed with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,094.—*Apparatus for Heating the Feed-Water of Steam-Boilers.* Granted to JOHN F. BROOKS, May 24, 1859. Hearing May 7, 1873.

24,098.—*Sewing-Machines.*—Granted to PETER S. CARHART, May 24, 1859. Hearing May 7, 1873.

24,102.—*Platform-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSE, May 24, 1859. Hearing May 7, 1873.

24,182.—*Machines for Channeling and Edging Soles of Boots and Shoes.*—Granted to MARTIN WESSON, May 24, 1859. Hearing May 7, 1873.

24,199.—*Gas-Regulators.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,200.—*Hydro-Carbon Vapor-Apparatus.*—Granted to E. HALL COVEL, May 31, 1859. Hearing May 14, 1873.

24,227.—*Cultivators.*—Granted to R. M. MELTON, May 31, 1859; reissued April 16, 1872. Hearing May 14, 1873.

24,257.—*Seats and Couches for Railroad Cars.*—Granted to THEODORE T. WOODRUFF, May 31, 1859. Hearing May 14, 1873.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT F. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABBATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHNEBLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, JR., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 16, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,683.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, JR., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 30, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread in Balls.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,750.—*Improvement in Animal-Traps*, granted to A. S. BLAKE, April 26, 1859.

Claim.—A trap having its spring D attached below the jaws *c c*, and the spring brought within or nearly within the diameter of the jaws, as and for the purpose herein shown and described.

23,771.—*Improvement in Ladies' Collars and Cuffs*, granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued June 6, 1865, numbered 1,980; reissued January 28, 1873, numbered 5,259.

Claim.—A collar having a paper surface imitative of the textile face and fiber of a dressed linen collar, as set forth.

23,771.—*Improvement in Ladies' Collars and Cuffs*, granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued June 6, 1865, numbered 1,961.

Claim.—An ornamental collar or cuff, made of a fabric composed of paper and muslin, or of an equivalent fabric, ornamented by printing or otherwise marking on the surface plain or colored devices.

23,771.—*Improvement in Ladies' Collars and Cuffs*, granted to WILLIAM E. LOCKWOOD, April 26, 1859; reissued June 6, 1865, numbered 1,962.

Claim.—An ornamental collar or cuff made of a fabric composed of paper and muslin, or an equivalent fabric, ornamented by perforations, as set forth.

23,792.—*Improvement in Gas-Pipe Cutters*, granted to JOSEPH E. STANWOOD, April 26, 1859.

Claim.—1. An improved pipe or round rod cutter, as provided, with a rotary cutting-wheel to operate in conjunction with the claw or pipe-rest, as specified.

2. The arrangement of the cutting-wheel carrier in a recess, C, formed in the claw-block B, in combination with the arrangement of the adjustable screws *d e*, and handle-rod F, with respect to the said recess and the cutter-wheel carrier, the whole being as specified.

23,795.—*Improvement in Pump-Boxes*, granted to FRANCIS STOCK and JOHN STOCK, April 26, 1859.

Claim.—The arrangement of the parts *j k l* of the box D, in connection with the bolts or rods *p p* and valve E, substantially as herein shown and described.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 22, 1873.]

6,594.—*Carpet.*—JOHN FISHER, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,595.—*Coffin-Handle.*—NEHEMIAH HAYDEN, Essex, Conn. Application filed April 12, 1873.

6,596.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,597.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,598.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,599.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,600.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,601.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,602.—*Carpet.*—HENRY HORAN, Newark, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,603.—*Reed-Organ Case.*—JOHN R. LOMAS, New Haven, Conn., assignor to BERNARD SHONINGER, same place. Application filed March 15, 1873.

6,604.—*Carpet.*—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,605.—*Carpet.*—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,606.—*Carpet.*—ELEMIR J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,607.—*Carpet.*—ELEMIR J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,608.—*Carpet.*—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,609.—*Picture-Frame.*—BURT H. SLUMBER and LORENZO PEARSON, South Bend, Ind. Application filed March 17, 1873.

6,610.—*Carpet.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,611.—*Carpet.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

6,612.—*Carpet.*—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 11, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date April 22, 1873.]

1,218.—*Soap.*—R. W. BELL & Co., Buffalo, N. Y. Application filed January 29, 1873.

1,219.—*Bourbon Whisky.*—DU VIVIER & Co., New York, N. Y. Application filed April 14, 1873.

1,220.—*Rye Whisky.*—DU VIVIER & Co., New York, N. Y. Application filed April 14, 1873.

1,221.—*Bourbon Whisky.*—DU VIVIER & Co., New York, N. Y. Application filed April 14, 1873.

1,222.—*Rye Whiskey.*—DU VIVIER & Co., New York, N. Y. Application filed April 14, 1873.

1,223.—*Hair-Dressing.*—EDWARD A. E. MEYER, Watertown, N. Y. Application filed April 12, 1873.

1,224.—*Cosmetic.*—MILLER BROTHERS, New York, N. Y. Application filed April 10, 1873.

1,225.—*Yeast-Powder.*—PRESTON & MERRILL, Boston, Mass. Application filed February 4, 1873.

1,226.—*Starch.*—PROCTOR & GAMBLE, Cincinnati, Ohio. Application filed March 31, 1873.

1,227.—*Cigars.*—SEIDENBERG & Co., New York, N. Y. Application filed April 12, 1873.

1,228.—*Mineral Water.*—ALONZO L. KANE, Milwaukee, Wis., doing business as THE SILOAM MINERAL-SPRING COMPANY. Application filed March 20, 1873.

1,229.—*Flour.*—JONES, WILLIAMS & FAXON, Boston, Mass. Application filed April 18, 1873.

1,230.—*Grinding-Mills.*—THE STRAUB MILL COMPANY, Cincinnati, Ohio. Application filed March 19, 1873.

1,231.—*Opera-Glasses, Field-Glasses, and other Telescopes.*—SUESFIELD, LORSCH & Co., New York, N. Y. Application filed April 18, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date April 22, 1873.]

ORIGINAL PATENTS.

137,926.—*Cooking-Stove.*—AMOS C. BARSTOW, Providence, R. I. Application filed March 14, 1873.

A horizontal sliding shelf placed at the side or rear of the stove or range and beneath the oven-flue, and so arranged as to be self-supporting in any position.

Claim.—1. In ranges or cooking-stoves, of whatever construction, but having a baking-oven with or without a warming closet, the arrangement of a shelf sliding in horizontal guides under the oven, so that it may be slid out for use, and back if not needed, substantially as herein shown and set forth.

2. A sliding shelf, arranged to run in horizontal guides or ways beneath or within the oven-heating flue, and formed with a lug or stop, or its equivalent, so located as to prevent the shelf from being drawn entirely out, and to arrest its outward movement at a point where it will still engage with its guides or ways to such an extent as to be self-supporting, substantially as shown and set forth.

137,927.—*Machine for Uniting the Selvages of Knit Fabrics.*—THOMAS BEVEN, Ward's End, Loughborough, assignor to JOHN MUNDELLA, Nottingham, England. Application filed November 4, 1872.

Two sets of points are used and the loops of one selvage are set up on each. As the points come together and one set laps the other, the loops of one selvage are transferred to the points which hold the other, and both are then fed to a sewing mechanism.

Claim.—The arrangement and combination of the two sets of points or holding instruments acting substantially as described, whereby parts of looped fabrics to be united are brought together for that purpose, as set forth.

137,928.—*Dredger.*—EPHRAIM B. BISHOP, San Francisco, Cal. Application filed August 15, 1872.

The conical screws are attached to the prow of a boat and are rotated through the gear-wheels. A central screw is placed below the two usual main screws, which cuts a passage for the keel of the vessel. A screw point or bit is attached to the front end of the screw C to open the way for it.

Claim.—1. The screw C placed below the plane and inclination of the screws A B, in combination with the screws A B, substantially as and for the purpose set forth and described.

2. The auxiliary screw-point or bit I, substantially as described, for the purpose set forth.

137,929.—*Turning-Lathe for Wood.*—CHARLES A. BLESSING, Philadelphia, Pa. Application filed February 7, 1873.

The material from which the article is to be formed is placed between revolving centers and operated upon by a revolving cutter which is secured in an oscillating frame.

Claim.—1. The vibrating frame E, cords or chains and weights *m' m'* and M' M', and cams N N, when the same are connected, combined, and arranged, as herein described, so that the weights constantly act to draw the frame forward, yet its approach shall be regulated, and at the proper time its return impelled, through the action of the cam, substantially as described.

2. The cams N N, shaft N^1, worm-wheel N^2, shaft O having worm O' and bevel-gear *o*, and the bevel-gear A attached to the shaft H, when the same are combined and arranged to operate substantially as described.

3. The shaft H, loose pulley and clutch P P^1, clutch P^2, lever R, spring S, chain S^1, weight T, and pawl-lever W, the whole being combined and arranged to operate substantially as described.

4. The pinion-shaft F, disk G, pawl-plates G' G', springs *g g*, and the tube E^2, having irregular surfaces *f f'*, when the whole is combined and arranged to operate substantially as described.

5. The knives or cutters D D', having their edges formed as shown in Figs. 1 and 3, and secured to the shaft C, to operate substantially as and for the purpose specified.

138,000.—*Trunk.*—MARTIN H. BLISS, Dalton, Mass. Application filed May 17, 1872.

The hinged section, when open, lies back upon the uppermost part of the trunk and brings the carved board, carrying the mirror, upright into position for use; when closed, it completes the face of the trunk-lid and engages with the hinged section to close the recess for the pigeon-holes.

Claim.—1. In the construction of a bureau-trunk, the hinged section a, carrying the carved board *b* and glass *c*, in the manner described, and for the purposes specified.

2. In the construction of a bureau-trunk, the hinged section a and the hinged lid C, when combined and operated together, to close and conceal the series of pigeon-holes 5 6 7 8, while at the same time adapted for independent uses—the first as a support for the glass *c*, and the second to form the writing-desk C C.

3. As an improved article of manufacture, the transformable piece of furniture described, when formed and adapted for the alternate uses of a trunk, bureau, and desk, in the specific manner set forth.

138,001.—*Capping Piano-Hammers.*—ISAAC BULLARD, Readville, assignor of one-half his right to JOHN B. WARREN, Boston, Mass. Application filed February 8, 1873.

Claim.—The method of attaching the caps to piano-forte hammers by means of an elastic cement, substantially as described.

138,002.—*Beer Attachment for Soda-Water Apparatus.*—WILLIAM R. CADY, Lowell, assignor to JAMES W. TUFTS, Medford, Mass. Application filed April 4, 1873.

Within the apparatus is a receptacle, into which the beer is admitted through an inlet pipe leading from the barrel or fountain and provided with a stop-cock, the beer being drawn by its own gravity from the bottom of the receptacle without foam. An auxiliary draft cock, connected with that portion of the inlet-pipe containing beer under pressure, may be employed, if desired, to produce a little foam at the top of the beer in the glass.

Claim.—1. The beer vessel or receptacle C, arranged within a soda-water apparatus, and provided with an outlet or delivery pipe, A, and draft-cock *i*, in combination with the inlet-pipe D leading from the barrel or fountain, and the cut-off or stop-cock E, all operating substantially in the manner and for the purpose set forth.

2. In combination with the above, the auxiliary pipe *l* with its draft cock *k* connected with the inlet-pipe D between the stop-cock E and the barrel or fountain, substantially as and for the purpose described.

138,003.—*Check-Hook for Harness.*—HIRAM A. CARLTON, Chelsea, Mass. Application filed August 14, 1872.

The hook is intended to be secured to the back-band of double harness, and in lieu of a saddle or pad.

Claim.—The said harness check-hook, made substantially as described, viz., of the hook, the slide, and the holding stud or button, arranged and combined essentially as set forth.

138,004.—*Loom-Temple.*—NATHAN CHAPMAN, Hopedale, Mass. Application filed March 31, 1873.

Claim.—1. The hinged trough H, in combination with the horizontal arm I and spring-bolt I^1, for locking the trough at its free end.

2. The stud E fastened in the stock D, in combination with the roller E' and the hinged cap F, provided with a lug for holding the roller on the stud and allowing it to be removed to clean and oil it.

3. The spring D^1, in combination with the stock D, when arranged to raise the rear end of the stock when it is pushed back and bring the notches D^2 against the cap of the rear stud, and lock the stock back.

138,005.—*Machine for Finishing Slate-Frames.*—JAMES H. COFFIN and GEORGE S. COFFIN, Danielsville, Pa. Application filed February 25, 1873.

The corners and edges of slate-frames are rounded without removal from the cutters in the complete process by the slot and pivot-screw.

Claim.—The frame G having rounded corner *a*, flanges *b b*, diagonal slot *d* with screw *e*, in combination with the cutter-head D and gage E, substantially as and for the purpose specified.

138,006.—*Making Rubber Stereotypes.*—GEORGE K. COOKE, New York, N. Y. Application filed September 2, 1872.

The sheet of rubber is clamped between a plate and a plaster cast of the type, and vulcanized over a suitable heating apparatus.

Claim.—The process, hereinbefore described, for producing flexible printing-forms from vulcanized-rubber composition by the combined agency of dry heat and pressure, applied substantially as specified.

138,007.—*Soluble Chocolate.*—JOHN CORELL, New York, assignor of one-half his right to GEORGE W. CLEMINSON, Brooklyn, N. Y. Application filed April 4, 1873.

Cacao-beans are roasted, then ground to an impalpable liquid paste and then mixed with uncrystallisable sugar.

Claim.—The new article of manufacture of soluble chocolate made in the manner and of the ingredients substantially as hereinbefore set forth.

138,008.—*Carriage-Door.*—JAMES CUNNINGHAM, Rochester, N. Y. Application filed August 11, 1871.

With the door and sash of a landau-carriage are combined slides, which hold the sash and are raised automatically by it from the interior of the door.

Claim.—1. The separate slides C C, combined with the sash B and door A, as herein described, said slides being operated automatically by the sash itself in raising or lowering, and the whole folding compactly with the body of the door, as specified.

2. The slides C C constructed with the bearings *c c* for holding the sash in a vertical position when lowered, and with the offset *d* to allow the sash to be set at an angular position when raised, as herein described.

138,009.—*Window.*—SAMUEL DARLING, Providence, R. I. Application filed August 21, 1872.

Layers of colored muslin, or its equivalent, are introduced between two thicknesses of glass, either fluted or plain, to give the effect of colored or stained glass.

Claim.—1. A window having two thicknesses of glass, with fine muslin or its equivalent between them, substantially as described.

2. A window having two thicknesses of clear glass, one or both fluted, with muslin between, substantially as and for the purpose set forth.

3. A window having one or more thicknesses of fluted arranged with colored glass, substantially as described.

138,010.—*Heel-Stiffening for Boots and Shoes.*—FRANKLIN E. DARROW and OSCAR E. WAIT, Rockport, Mass. Application filed January 13, 1873.

Claim.—A molded or shaped heel-stiffener made entirely of rawhide, and by means of heated dies, substantially as described.

138,011.—*Anti-Friction Journal.*—MELVILLE E. DAYTON, Syracuse, assignor of part interest to HAMILTON B. TOMPKINS and WILLIAM H. WIETING, New York, N. Y., and HENRY A. BRANCH, Hilladale, Mich. Application filed September 21, 1872.

The rollers upon the shaft are held in place by means of a yielding metallic box, made of a single coil of spring-steel, or by forming a plate of metal into a cylinder, the edges of which being so shaped as to interlap—the object being to keep the shaft, rollers, and box always in close contact.

Claim.—1. The yielding or adjustable case E, in combination with anti-friction rollers, substantially as described, and for the purposes specified.

2. In combination with the yielding case E, the adjustable jaws F F, substantially as described, and for the purposes set forth.

3. The solid annular guide M, constructed separately, substantially as described, and for the purpose set forth.

4. The spacing-strap X, with oblong perforations or open slots, substantially as described, and for the purposes set forth.

5. The spacing-straps with open slots, joined by connections *e e*, substantially as described, and for the purposes set forth.

6. In combination with the slotted spacing-strap X, the collar *d* upon the gudgeons *c* of the rollers B, substantially as described, and for the purpose set forth.

138,012.—*Piano-Forte Bridge.*—WILLIAM C. ELLIS, Worcester, Mass. Application filed September 10, 1872.

Glass or other solid plates are interposed between bridge and tuning-pin block to insulate the vibrations of the string.

Claim.—The bridge *a*, in combination with the block *b* and insulator *d*, substantially as specified.

138,013.—*Dumping-Cart.*—BENJAMIN G. FITZHUGH, Frederick, assignor to MATHIAS MARTIN, Baltimore, Md. Application filed August 23, 1872.

Claim.—1. The weighted automatic locking-lever F, having a fulcrum-bearing, E, in the body of the cart, and an arm or arms, *b*, which serve to lock the body with the shafts automatically and to maintain the lock, as described.

2. In combination with the lever F, arranged and connected with the body as described, the cord H, by which the body is dumped and brought up into position after being dumped, as described.

3. The cart having its supporting-wheels G, rear end D of the body C, axle-tree B, and shaft-hinges *a*, in such relation to each other that when the body is dumped its rear upper edge will strike the ground and arrest the body to dump the load, as described, and shown in the drawing.

138,014.—*Curtain-Roller Holder.*—BENJAMIN G. FITZHUGH, Frederick, assignor to MATHIAS MARTIN, Baltimore, Md. Application filed October 7, 1872.

The holder is in place of the ordinary bracket, and is made of India rubber, has a hole for the axis of the curtain-roller to run in, the hole being much smaller than said axis so as to grasp and hold the roller and curtain in any desired position, but yielding sufficiently to be moved by the cord of the roller.

Claim.—The combination, with a curtain-roller, of a rubber-bracket binding-bearing, to hold the curtain, as described.

138,015.—*Molding-Machine.*—JOHN W. GHEER, Wilmington, Del. Application filed May 18, 1872.

The feed-rollers of India rubber are inclined to the table to bind the "stuff" thereto when passing under the cutter. Provision is made for their adjustment outwardly by the slots in the the supporting-brackets, while the lower ends continue in gear with the driving-wheels.

Claim.—1. The feed-rolls G' G' made with elastic surfaces and mounted upon shafts, arranged as shown and described, to permit a lateral adjustment of the rolls to and from the cutter-head, and a lateral adjustment of the table, as specified.

2. In combination with the collars F having arms F' F', the shafts E and G G, slotted bars H H, and wheels *e e'* and *g g'*, so as to permit a vibratory or swivel motion of the shafts G G, for the purpose of accommodating the feed-rollers to different thickness of stuff while retaining the wheels *g g' e e'* in gear.

3. In combination with the table I, the arm I', collar *i*, rod *k*, arm *i'*, and screw L, substantially as specified.

138,016.—*Gas Light and Pressure Indicator.*—WILLIAM W. GOODWIN, Camden, N. J. Application filed August 9, 1871.

On an ordinary gas-pressure dial an additional scale is inscribed, showing the candle-light power corresponding to the graduations of pressure.

Claim.—In photometers, the combination of the two scales *a'* and *h''* with the index, as shown in the drawing, for the purpose hereinbefore set forth.

138,017.—*Drawers.*—BENJAMIN J. GREELY, Boston, Mass. Application filed June 28, 1872.

With bottoms stiffened to hold the pants in place and body cut away, except as to side extensions by which they are hung.

Claim.—1. Drawers without a waistband, constructed, as above described, by cutting away the front or back, or both, so that they will have no binding-action around the waist of the wearer.

2. The stiffened drawers-legs, constructed and operating as described.

138,018.—*Roller-Skate.*—WASHINGTON PARKER GREGG, Boston, Mass. Application filed October 21, 1869.

To a parlor-skate of four rollers is added a convertible arrangement for two large center-wheels.

Claim.—1. In roller-skates having four wheels, arranging the journals of the two large side wheels above the stock, substantially as shown in Fig. 5, for the purpose described.

2. As a new article of manufacture, a convertible skate, which can be used either with or without the large side wheels D E, Figs. 6 and 7, at the option of the wearer, becoming, when said wheels are dispensed with, the four-wheeled skate represented in Figs. 1 and 2, and when they are applied the skate represented in Figs. 6 and 7.

138,019.—*Middlings-Separator.*—ABSALOM R. GUILDER, Minneapolis, Minn. Application filed January 25, 1873.

Peculiar construction of bolting-reel, as shown, air-cylinder inside of reel, and such an arrangement of air-passages that all of the flour is subjected to a current of cool air, whether the flour is in the bolt-chamber, in the bolt, or in falling from the bolt after having been bolted; these air-passages and air-cylinder communicating with an eddy-chamber above the bolting-reel for separating the heavy particles of bran from the air before being drawn off by the suction-fan.

Claim.—1. The bolt-reel F, constructed with the short shaft a^6, spider K, ribs *f'*, truss-rods *f''*, and head F''', in the manner and for the purposes substantially as described.

2. The arrangement, in a flour-bolt, of the swinging doors *c*, air-passage *c'*, aperture *d'''*, stops *g''*, openings controlled by slides b^5 and b^6, eddy-chamber A' with compartments *i*, *i'*, *i''*, and *i'''*, and openings *j* and *j'* in partitions *b''*, with the exhaust-fan *a''* and eduction-air opening a^6, in the manner and for the purpose described.

3. The arrangement, in a flour-bolt, of the swinging doors *c*, air-passages *c'* and *c''*, horizontal air-conduit *c'*, flues *c' c''*, and *c'''* having valve c^6 therein, eddy-chamber A', with compartments *i*, *i'*, *i''*, and *i'''*, and openings *j* and *j'* in partitions *b''*, with the exhaust-fan A'' and eduction-air opening a^6, in the manner and for the purposes described.

4. The air-cylinder G, when constructed and arranged, with relation to the bolt-reel F, eddy-chamber A', exhaust-fan A'', and air-exit a^6, substantially as shown.

5. The eddy-chamber A', composed of compartments *i*, *i'*, *i''*, and *i'''* and openings *j* and *j'* and ingress-air chambers *b'''* by way of apertures controlled by slides b^5 and b^6, when arranged upon the top of a bolt-chest, A, and used in combination with a revolving bolt-reel, F, and air-exhaust fan A'', in the manner substantially as described.

138,020.—*Shuttle-Binder for Looms.*—GARDINER B. HAMMOND, Putnam, Conn., and JOHN A. TUCKER, Attleborough, Mass. Application filed March 26, 1873.

For the easy removal and attachment of the binder a knuckle-joint is used, consisting of two interlocking pieces held in position by a button, which is fastened by a screw. By loosening the screw sufficiently to give the button a half revolution the binder can be at once removed.

Claim.—A fastening for a shuttle-binder, consisting of the jointed pieces E and F and the button G, constructed and used substantially in the manner and for the purpose set forth.

138,021.—*Millstone-Dress.*—JOHN P. HARRIS, Greensborough, Ga. Application filed March 31, 1873.

Grinding-surface diminished toward periphery and enlarged at center, where the leverage is greatest.

Claim.—The millstone-dress, consisting of the furrows C C', deepest at the center, and widening toward the periphery of the stone, in combination with the lands D D widening toward the center of the stone, substantially as and for the purposes set forth.

138,022.—*Folding Book-Case.*—EZRA HASKELL, Dover, N. H. Application filed September 4, 1872.

The case is formed by two upright sides, which are in two parts and hinged together, and have compound grooves in them for the reception of shelves. To iron projections on the shelves backs are attached by hinges, so that the whole can be taken apart and packed into a small compass.

Claim.—The combination of the upright folding sides A B and grooves C with the shelves and backs E having the projections *a*, as and for the purpose specified.

138,023.—*Composition Pavement.*—DANIEL C. HELLER, Reading, Pa. Application filed January 3, 1873.

The lower stratum or foundation of the pavement is composed of coal-tar, one-half gallon; gravel, one-half bushel; dry earth, one-fourth gallon, mixed. This is then spread and rolled, and upon it is laid a surface-dressing composed of dry sand, one-fourth bushel; sifted coal-ashes, one-half gallon; dry slaked lime, one-fourth gallon; coal-tar, five-eighths gallon. The surface is finished by rolling.

Claim.—A composition pavement formed by combining coal-tar, lime, sand, dry earth, sifted coal-ashes, and broken stone or gravel, or their equivalents, substantially in the manner herein described, and for the purpose set forth.

138,024.—*Clothes-Pounder.*—SAMUEL HINKEL, Goodville, Pa. Application filed March 25, 1873.

A wash-pounder constructed with its outer form beveled or funnel-shaped, with outside air-conductors, and a center one connected with the handle, which is surrounded by a hoop or outer ring, perforated for the free circulation of water. To the bottom of the handle is attached a valve over an opening in it and an opening above for the admission of the air.

Claim.—The combination of the central cylinder C and valve E of the handle H and air-passages F *f*, together with the perforated intermediate cylinder B, conic or funnel form portion A with its air pipes and passages D, all arranged substantially in the manner and for the purpose mentioned.

138,025.—*Steam-Generator.*—ROBERT HOOPER, Baltimore, Md. Application filed January 31, 1873.

A diaphragm arranged near the bottom of the boiler is combined with channels, which extend along the side to near the surface of the water, for creating a better circulation. Pipes in the furnace connect the crown-sheet and front water-leg below the diaphragm, while other pipes connect the rear water-leg above the diaphragm and others below the grate-bars.

Claim.—1. The diaphragm E, with the channels K, in combination with the front tube-head *c'*, substantially as and for the purpose herein set forth.

2. The combination of the crown-sheet of the furnace, circulating-pipes G, front tube-head *c'*, and diaphragm E, substantially as herein set forth, for the purpose specified.

3. The combination of the tubes F and circulating-pipes H with the inside front sheet of the furnace, front tube-head *c'*, and diaphragm E, relatively arranged, substantially as and for the purpose herein set forth.

4. The combination of the diaphragm E and channels K with the engine feed-pipes L, as and for the purpose specified.

138,026.—*Bundling Kindling-Wood and other Substances.*—HENRY A. HOUSE, Bridgeport, Conn.—Case B. Application filed December 6, 1872.

The wood is packed in gage-rings, which are successively fed into the machine and then forced, by a plunger, through a compressing-cylinder, and at the outlet the bundles are tied with a cord, fastened with metallic clasps.

Claim.—1. The gage-seat P', in combination with a charging-gage, P, which is open at both ends, and a tubular compressing-chamber, C, which opens into said seat, substantially as and for the purpose described.

2. The inclined feeding-guides N, combined with the tubular compressing-chamber C and gage-seat P', substantially as described.

3. The ring-discharger T, arranged below the bed, and under the perforated seat P', in combination with the plunger D, chamber C, and guides N^1 N^1, substantially as and for the purpose described.

4. The combination of the chamber C, plunger or pressing head D, wrapping devices, and clinching devices, substantially as and for the purposes specified.

5. The combination of the wrapping devices, the clinching devices, and a cutter, c^1, as herein described, with a chamber, C, substantially as specified.

6. The combination of the tension devices *c c²* and a wrapping device, *a*, with the tapered compressing-chamber C, substantially as described.

7. The chamber C, in combination with the wrapping and clinching devices, substantially as described.

8. The flier-arm *a*, in combination with the chamber C, and the plunger D, and devices for crossing and holding the cord, substantially as described.

9. The inclined chute or guide N^2, in combination with the gage-seat P, for conveying the empty ring-gages back into the filling-boxes, substantially as described.

10. The combination of the wrapping mechanism, the clinching mechanism, and the compressing mechanism, shaft B, cams D^5 E, and tripping-plate G, all substantially as set forth.

138,027.—*Machine for Bundling Kindling-Wood and other Substances.*—HENRY A. HOUSE, Bridgeport, Conn.—Case C. Application filed December 6, 1872.

The material being forced through the compressing-cylinder, a binding apparatus carries a cord around the bundle as it protrudes from the outer end of the cylinder, and by the action of a spring-hammer a metallic clasp around the crossed ends of the cord is clinched against a small anvil; a knife then severs the cord.

Claim.—1. The intermittent flier-arm *a*, for carrying a cord or band and applying the same around bundles of kindling-wood or other substance, in combination with the clinching mechanism, substantially as described.

2. The tubular shaft a^2, carrying the flier-arm *a* and receiving through it the binding material, and acted on by a check-spring, *e*, in combination with the clinching mechanism, substantially as described.

3. The combination of the tension device, flier-arm *a*, and the clinching mechanism, substantially as described.

4. The cam-plate E on shaft B, having teeth *b'* on its periphery, for giving intermittent motion to the shaft a^2 of the flier-arm *a*, substantially as described.

5. The cam-tail a^3 on the flier-arm *a*, in combination with a lever, *d*, for actuating the staple-carrier *s*, substantially as described.

6. The slotted sliding staple-carrier *s*, receiving through it the clinching-tool *i*, and operating substantially as described.

7. The combination of the anvil *p*, staple-carrier *s*, and clinching-tool *i*, substantially as described.

8. The staple-feeder A, combined with and arranged over a sliding staple-carrier, *s*, which has a clinching-tool moving through it, substantially as described.

9. The hammer f^1 on arm *f*, actuated by a spring, f^2, tripping-lever f^3, and tripping-cam G, in combination with the clinching-tool *i*, substantially as described.

10. The cutter c^1 applied to the lever *c*, and operating substantially as described.

11. The intermittently-rotating plate *k*, carrying jaws *w* and lugs 2 on its periphery, for griping the binding-cord from the flier-arm *a*, substantially as described.

12. The beveled guides *k'*, in combination with the jaw *w*, substantially as and for the purposes described.

13. The cam-plate *g*, in combination with the griping-jaws *w*, for the purpose of causing these jaws to gripe and release the binding-cord at the proper times, substantially as described.

14. The lever J^1, actuated by the cam-plate E, and carrying the pawl *j* and the connecting-rod *j'*, substantially in the manner and for the purposes described.

138,028.—*Postal-Card Machine.*—JOHN M. D. KEATING, New York, N. Y. Application filed July 3, 1872.

The paper is fed intermittingly under the shears and cut into cards, which are deposited on a fly. At the same time a blank, gummed on one edge, is fed by a supporting-table under the plunger, which reciprocating movement trips the fly and raises the card to a vertical position, when its lower edge rests on the gummed end of the blank and its upper edge lies under the hooks of the plunger side. The plunger, descending, bends up the four flaps of the blank within right-angular folding-guides, causing the gummed one to adhere to the card, and deposits the two in this relative position within the folders and retreats. The three free flaps of the blank are then folded down, followed by the card which lies upon them.

Claim.—1. The combination, with the plunger J and plate K, of the fly-plate *g*, for receiving and delivering the card in proper position to be united to the envelope or flap, substantially as described and specified.

2. The hooks *t t* or equivalents upon the plunger-plate K, to insure the cards being carried downward with the envelope or flap as the plunger descends, substantially as described and specified.

3. In combination with the plunger J, plate K, and fly *g*, the finger-bars *f f*, constructed and operating substantially as described and specified.

4. In combination, a reciprocating carriage to convey the envelope-blanks under a plunger, a feeding device and cutting mechanism for feeding and cutting the cards, a mechanism for receiving and delivering the cards, and a mechanism for uniting the cards by adhesion, all co-operating together substantially in the manner described and specified.

138,029.—*Wrought-Iron Beam.*—LANCELOT KIRKUP, East New York, N. Y., assignor of two-thirds his right to STEELE & CONDICT, Jersey City, N. J., and HARRIS WILSON, Brooklyn, N. Y. Application filed February 7, 1873.

Beam constructed to avoid lateral strain, and the capacity of the beam made greater.

Claim.—The combination of the web A, top plate B, bottom plate C, braces D, and angle-irons E, constructed and operating substantially as and for the purposes described.

138,030.—*Laying Concrete Pavement.*—JOHN W. KRAUSE and HENRY W. KRAUSE, Jr., Philadelphia, Pa. Application filed March 18, 1873.

Claim.—The within-described mode of laying artificial pavements, the same consisting in covering the entire space to be occupied by the pavement with a single solid mass of material in a soft state, then cutting said mass into blocks separate and distinct from each other, with interstices between them, as shown and set forth.

138,031.—*Universal Coupling.*—HERBERT S. LELAND, Canton, Ohio. Application filed March 28, 1873.

The coupling-sleeve is provided with suitable bearings upon its inside for the reception of gudgeons of the connecting-ring. This ring is also provided with bearings similar to those of the coupling-sleeve, for the reception of the gudgeons of the spherical socket, which is arranged within.

Claim.—1. In a shaft-coupling, the combination of a coupling-sleeve, coupling-ring, and spherical socket, constructed and arranged so that the coupling-ring may be revolved on its bearings in the coupling-sleeve; and also so that the spherical socket may be revolved on its bearings in the coupling-ring, substantially as and for the purpose specified.

2. The combination, with the coupling-ring of a shaft-coupling, of a spherical socket, made of a sufficient size to admit and hold one of the shafts to be coupled without the aid of a side sleeve, and so arranged that it may be revolved on its bearings in the coupling-ring, substantially and for the purpose specified.

3. A spherical socket for shaft-couplings with gudgeons cast thereon of an elongated form, substantially as and for the purpose specified.

4. The combination of a spherical socket with elongated gudgeons with a coupling-ring having circular inner bearings connected by grooves with its outer edges, substantially as and for the purpose specified.

5. A coupling-ring for shaft-couplings with gudgeons cast thereon of an elongated form, substantially as and for the purpose specified.

6. A coupling-sleeve for shaft-couplings, with circular inner bearings cast thereon, with grooves connecting said bearings with the end of said coupling, substantially as and for the purpose specified.

7. The combination of a coupling-ring with elongated gudgeons with a coupling-sleeve having circular inner bearings, connected by grooves with its end edge, substantially as and for the purpose herein specified.

138,032.—*Cigar-Holder.*—T. JOHN LEWIS, Chicago, Ill. Application filed December 16, 1872.

The mouth-piece or holder is retained in the mouth by a bent-wire attachment resting within the cheek. A spur secures the cigar in the holder.

Claim.—1. The cigar-holder A provided with a retainer, E, as and for the purpose set forth.

2. The combination of the holder A, spur B, and retainer E, substantially as and for the purpose set forth.

138,033.—*Automatic Gate.*—NATHAN LONG, Muncie, Ind. Application filed January 27, 1873.

The gate is hung upon a rod resting or supported in a short lever, which is connected to horizontal rods and cranks, operated by the vehicle. The rod has a lower bearing in the hinge-post, and inclines outward toward the top of the gate, with its upper end hooked into another bearing on hinge-post.

Claim.—The inclined rod C with crank *d*, eyes *a a*, hinges *b b'*, lever *e*, rods and cranks D E, and gate B, all constructed and arranged as and for the purpose specified.

138,034.—*Apparatus for Cleaning Cess-Pools, &c.*—WILLIAM C. MCCARTHY, Pittsburg, Pa. Application filed December 2, 1872.

The arrangement and construction of the several globe-valves and pipe-connections. The filling and discharging openings are such that the tank may be used as a vacuum-tank, or may be filled by buckets, as becomes necessary.

Claim.—1. The air-tight tank B provided with a discharging-orifice, M, in combination with a movable or detachable door, N, as and for the purposes set forth.

2. The air-tight tank B, discharging-orifice M, movable or detachable door N, in combination with the receiving-pipe K and valve L, as and for the purposes set forth.

3. The air-tight tank B, discharging-orifice M, movable door N, in combination with the valves C C', as and for the purposes set forth.

4. The tank B, discharging-orifice M, movable door N, in combination with the opening D and its lid E, as and for the purposes set forth.

5. The large discharging-orifice M, in combination with a detachable door, N, and circumferential collar P, as and for the purposes set forth.

6. The combination and arrangement, with the top of the tank, of the central opening D, provided with a detachable lid, E, held in place by a circumferential screw-collar, F, as and for the purpose set forth.

7. The combination and arrangement of the opening D and lid E with the funnel G, as and for the purposes set forth.

8. The opening H in the front end of the tank, in combination with its lid J and collar *i*, as and for the purposes set forth.

9. The catches S S and lugs *o e*, in combination with the orifice M, movable door N, and its surrounding frame, as and for the purposes set forth.

10. The tank B, discharging-orifice M, movable door N, opening D, and its lid E, in combination with the wagon A, substantially as shown.

138,035.—*Mold for Earthen Pipes.*—PETER MCINTYRE, Hartford, Conn. Application filed December 2, 1872.

Central plug can be manipulated so as to free foot of core and allow sectional core to be withdrawn.

Claim.—The combination of the base *c*, the sectional core *d*, the plug *d'* arranged to move downward in order to release the foot of the core, the rod *h*, the cap *d'*, and the thumb-screw *h'*, all arranged as described, for the purpose set forth.

138,036.—*Car-Wheel.*—HELEM MERRILL, Brooklyn, N. Y. Application filed September 24, 1872.

The stationary hubs are surrounded by friction-rollers, which have conical ends. The tire is so recessed that it has its bearings upon the friction-rollers, and its flanges are prevented from coming into contact with the flanges of the hub.

Claim.—1. In combination with the stationary hub *b*, its outer periphery channeled to receive the friction-rollers *c*, the same having conical ends, of the tire *a*, correspondingly recessed so that the outer edges of the tire shall not come into contact with the sides of the hub, all substantially as shown and described.

2. The construction of a car-wheel with a stationary hub that can vibrate in a horizontal plane to adjust itself to a curve in the manner described.

3. The two parallel-motion bars attached to the opposite sides of the stationary hub of each wheel, and connecting them substantially as shown and described.

138,037.—*Mining-Pump.*—GEORGE E. MILLS, New York, N. Y. Application filed January 13, 1873.

The suction-pipes are provided with sliding sleeves. At proper intervals clamping-bars are attached to the discharge-pipes, and are provided with tapering arbors for the working-beams.

Claim.—1. The two water-reservoirs A A, as constructed and combined with the double cylinders B B, valve-plungers C C, suction-pipes D D, and the movable sleeves E E, substantially as herein shown and described.

2. The clamping-bars H H, tapering arbor *h*, in combination with the vertical tubes G G, through which the water is elevated for constructing the frame of mining-pumps, substantially as herein shown and described.

138,038.—*Toy.*—THOMAS MORLEY, Newark, N. J. Application filed February 21, 1873.

The toy battle-field is provided at each end with a company of soldiers, separately hinged to the said field, and arranged to stand upright and be knocked down by the balls from the cannons opposed to them.

Claim.—1. In a toy battle-field, the figures *a*, representing artificial soldiers, secured by hinges to the field A, in the manner substantially as described, and for the purposes set forth.

2. The combination of the field A, guns C, and artificial soldiers *a*, in the manner substantially as described, and for the purposes set forth.

138,039.—*Breast-Collar for Harness.*—HIRAM B. MORRISON, Le Roy, N. Y. Application filed December 19, 1872.

The clamping-plates are situated on each side of the breast-collar, and are united by the screw which contains the pole-strap ring.

Claim.—The combination of the two clamping-plates C D, situated on opposite sides of a breast-collar, and united by a screw, or equivalent, when the same form a portable attachment, and is otherwise constructed and arranged as herein described.

138,040.—*Ear-Covering for Hats and Caps.*—BENJAMIN R. MORSE, Galesburg, Ill. Application filed March 15, 1873.

A spring-frame is covered and hinged to a metallic plate attached to the cap at the sides thereof, and is capable of sustaining itself up against the side rim or down on the ears.

Claim.—1. An ear-flap for hats or caps, consisting of a spring-frame so attached to a base-plate that it shall remain in two positions, viz., extended over the ear or erect against the side of hat or cap.

2. The ear-flap, consisting of the base-plate B, contractile springs *h h*, extending springs *g g*, and connecting-plate *k*, arranged and operating substantially as described.

138,041.—*Boat-Detaching Apparatus.*—FREDERICK M. MUNGER, United States Revenue Service, assignor of one-half his right to EDWARD L. DEANE, Hampden, Me. Application filed January 13, 1873.

Two stanchions, firmly secured in a boat, (one in the bow and the other in the stern,) have each pivoted to them a lever weighted at its lower end, and its upper end formed into a hook, so that the weight of the lower end keeps this hook pressed against the stanchion, and thus forms a jaw for the reception of the tackle-block, hook, or ring. An independent lever is pivoted to each weighted lever, and connection is made between the independent levers by a rod operated by an upright bar, the said rod running fore and aft in the boat. Thus both weighted levers may be operated simultaneously or independently of each other.

Claim.—1. In a boat-detaching apparatus, the combination of the standard B and lever *c*, having a hook at one end and weighted at the other, with the shoulders *i* on said standards, said parts being so constructed and arranged as to form a jaw, *h*, for the reception of the tackle-hook, solid on both sides and on the bottom, substantially as described and shown.

2. In combination with the above, the levers *d*, rods *g g*, and rocker *f*, substantially as set forth.

138,042.—*Bake-Oven.*—JAMES J. PICCOTT, St. Louis, Mo. Application filed October 18, 1872.

Claim.—1. The bake-oven A, provided with the supports *c c*, in combination with the pan D, provided with the guides *d d*, all arranged and operated as specified.

2. In a bake-oven, constructed and operated as described, a safety-valve, G, substantially as described and shown.

3. In a bake-oven, constructed and operated as set forth, an indicator, H, substantially as described.

138,043.—*Cotton-Planter.*—WHITMAN PRICE, Mount Olive, N. C. Application filed January 31, 1873.

Pivoted inside near the fore part of a quadrangular frame is another frame, having a slight vertical angular motion, in which are pivoted, on one axis, two hollow frustums of cones, their smaller bases closing the ends, their larger ones taken away. Between their peripheries is a flat hook rigidly attached in front and rear to the inner frame. A portion of the hoop is cut out in one place for the exit of the seed. The cones are not in contact with the ground, but have attached to them short radial arms and a hoop which rolls on the ground, carrying with it the cones. An opener is in front and a coverer behind the machine.

Claim.—The annular plate C, provided with the sleeve K, in combination with the vibrating supporting-frame *f* and *f'* and rotating hopper D and D', substantially as and for the purpose specified.

138,044.—*Clothes-Pounder.*—DAVID W. RAWSON, Croydon, N. H. Application filed October 16, 1872.

The tube has a valve near the top. On the under side of the foot are slots. The foot is tapering and has a succession of beads. The tube passes through the foot and serves as a handle.

Claim.—The valve V, in combination with the tube F and the foot D, constructed substantially as and for the purpose herein set forth.

138,045.—*School Desk and Seat.*—ALBERT E. ROBERTS, Des Moines, Iowa. Application filed February 17, 1873.

To the boards of the desk top and back are attached metallic straps, having projecting hooks that engage with corresponding slots in the end frames. The bolt confining the two parts of the seat-joint has a washer of a wrench-shape, the point of which works in a slot on the projecting seat-arm. The projecting arm has also a recess for a rubber cushion, combined with a metallic friction-plate, which is forced outward when the rubber cushion is pressed into the recess, and thereby friction is caused on the seat-frame arm.

Claim.—1. Constructing a school-desk in separate complete movable sections, by means of the metal straps B and C, with the projecting hooks *a a* and the corresponding slots *b b* in the end frame A, substantially as described, and for the purposes specified.

2. Constructing an automatically expansive and contractive hinge-joint for adjustable seats by combining and co-operating the parts D and E by means of a common bolt, the elastic cushion *f*, friction-plate *g*, slot *k*, wrench-form washer *m*, nut *n*, and shoulder *o*, substantially as described.

138,046.—*Bottle-Washing Apparatus.*—FREDERICK SCHLICH and ADRIAN FETH, New York, N. Y. Application filed July 11, 1872.

A number of jet-nipples are attached to a water-pipe, and each is provided with a ring carrying uprights or fingers, which form supports to steady the bottle centrally over the jet-nipple.

Claim.—The bottle-washing apparatus, made of the jet-nipples *a*, and bottle-supporting fingers *d*, arranged in the manner and for the purposes specified.

138,047.—*Revolving Fire-Arm.*—GEORGE W. SCHOFIELD, United States Army. Application filed March 21, 1873.

Claim.—1. The combination of an extractor having a hollow or tubular stem and a spring having suitable stops or abutments arranged within said stem, the combination being and operating substantially as set forth.

2. A hollow extractor-stem having slots *e e*, the spring-stop described, spring, and the shoulders *u*, when combined for operation as and for the purposes described.

3. The combination of the extractor-stem, lifter, and lifter-catch, said catch being provided with ears *k k*, so that it may be thrown out of catch with the lifter, as desired, and as specified.

4. In combination with the hammer R and the hand D pivoted thereto, the crank O, and the nose *w*, and slot *s* for revolving the cylinder, substantially as described.

5. In combination with the hammer, hand, and crank, the recoil-plate interposed between the head of the crank or the crank-arm and the ratchet or semi-clutch on the shank or axle of said crank, so as to rotate the cylinder and at the same time cut off all escape for the gas between the cylinder and the lock mechanism, substantially as described.

138,048.—*Strike or Keeper for Door-Locks.*—JOHN SCOTT, Philadelphia, Pa. Application filed March 1, 1873.

A bolt, connected to a sliding block by means of a pivoted lever, is arranged within the strike or keeper so that the sliding block will be forced back and the bolt thrown into a recess in the lock-case, when the lock-bolt is thrown forward. The bolt in the keeper is provided with a rack, in which engages a pawl, for the purpose of holding it in the locked position. This pawl is attached to the inner end of a knob-shaft, and is released from the bolt by turning the knob, when the bolt will be withdrawn by a spring arranged for that purpose. To prevent the knob from being turned and the pawl released, another pawl, pivoted to the outside of the keeper, may be made to engage with the ratchet-teeth on the knob-shaft.

Claim.—1. The bolt box or keeper G of a lock constructed as described, and with the pawl *q*, spring S, knob K, rack *r*, bolt *d*, block *b'*, and lever D, applied within it, in combination with a lock, A *b*, which has passages for independent bolts from and into it, substantially as described.

2. The combination of the exposed pawl *h'*, and ratchet *h*, and the internally-located pawl *q* with the rack *r* on bolt *d*, the latter being connected to the block *b'*, substantially as described.

138,049.—*Baluster for Iron-Bridge Railings.*—SAMUEL SELLERS and MARCUS M. MANLY, Philadelphia, Pa. Application filed January 29, 1873.

Balusters of bridge-railings, made of rolled iron or steel, of ✳, H, or + section, plain or twisted, to give increased tightness and ornamental appearance, combined with strength.

Claim.—As a new article of manufacture, the balusters of bridges and other railings, made of rolled mouldings and of rolled flanged iron or steel, substantially as specified.

138,050.—*Device for Cooling Millstones.*—EDWARD D. SHANTON and SILAS SHAVER, Minneapolis, Minn. Application filed December 17, 1872.

A circular box, having a feeding-tube and an air-conducting tube, is set in the eye of the upper stone. The box has also a flap-valve for letting air into the eye of the millstone when, from any cause, the current of air being forced through the air-tube is stopped. A conical flange on the feeding-tube will, when the millstone is stopped and the current of air through the air-tube not stopped, prevent blowing out of the eye of the stone the grain that has passed through the feeding-tube.

Claim.—1. The box B having the flap-valve *b''*, in combination with the feeding-tube *a*, constructed, arranged, and operating substantially in the manner described.

2. The box B having the air-inlet tube *b'*, in combination with the feeding-tube *a* having the projecting conical flange C, constructed, arranged, and operating substantially as and for the purpose described.

138,051.—*Fire-Escape.*—GEORGE H. SHAW, Phelps, N. Y. Application filed February 11, 1873.

A friction-block, sling, and strap controlled by a friction-screw brake, for affording a retarded descent from the windows of burning buildings.

Claim.—The block C, having grooved cross-bolt *a*, friction-bolt *b*, and clamp-piece D, controlled by the thumb-screw F, adapted to be used in combination with the strap A and sling G, when arranged substantially as set forth.

138,052.—*Pocket-Knife.*—HENRY STAUDE, Troy, N. Y. Application filed December 30, 1872.

A screw-bolt and nut, such as is used in carpenters' saws, confines the blade of the pocket-knife. By means of this device a broken blade can be readily removed and a new one inserted.

Claim.—1. In combination with the handle and blade of a knife, the detachable screw-bolt and nut, all arranged as and for the purposes set forth.

2. In a knife-handle, the construction of the spring and detachable blade, as described, in combination with a removable screw-bolt and nut, substantially as and for the purposes set forth.

138,053.—*Instrument for Drawing Scrolls.*—EDWARD E. STEBBINS, Meadville, Pa. Application filed December 12, 1872.

The upright leg or staff of the instrument is provided with a right and left screw, upon the upper of which a nut or head is carried, to which the drafting-leg is hinged, while upon the lower screw-thread a sleeve is carried, to which an arm is pivoted, as well as to the hinged leg, thus forming therewith a kind of toggle-joint. As the hinged drafting-leg is moved around the stationary upright leg it is caused to approach to or recede from it by the conjoined action of the reversed screws.

Claim.—An instrument for drafting scrolls, with a center-rod, A B, with a right-and-left screw thereon, in combination with the collars D C, the rod S, and the leg L jointed to the screw-head H, all constructed as described.

138,054.—*Curtain-Fixture.*—THOMAS SYMONDS, Portland, Me. Application filed February 6, 1873.

A frame to support the curtain-rollers, made of wire, having a spiral spring at the two corners and eyes or loops at the two ends. The curtain-cords are attached to the wire at the spiral corners, and the frame is attached to the ends of the curtain-roller by means of the end eyes.

Claim.—The detachable wire-frame *c* with spring-corners, and eyes at the ends, as and for the purposes described.

138,055.—*Implement for Rolling, Guiding, and Controlling Barrels, &c.*—BENJAMIN V. TAMPLIN, Peoria, Ill. Application filed March 15, 1873.

The blade has a beveled edge transverse of the handle, one on either side elongated at right angles from the chisel-edge and parallel with the handle, and designed to catch the chimes of the barrel to turn the course of the same in rolling, the chisel-edge being used to obtain a hold on the bilge of the barrel in rolling it forward.

Claim.—1. An implement or tool for rolling barrels or casks having a chisel shape and a similar beveled edge, whether serrated or curved between the outer corners, with a lateral hook, *c*, on one or on either side, or on both sides of the blade B, substantially as and for the purposes described.

2. The implement for rolling, checking, and turning barrels or casks, having a straight chisel-edge, *a*, in combination with a lateral hook, *c*, forming part of the same, set in the handle A, substantially as described.

138,058.—*Spring Bed-Bottom.*—SILAS A. THOMPSON, Manchester, Mich., and CHARLES T. KENDRICK, Brooklyn, N. Y. Application filed April 16, 1873.

The springs are held to the cross-bar by a grooved plate or washer, and to the slats by a flat hook. The head-elevator is pivoted to the under side of the side rails and hinged to the top of them. Cords are run through the upper and lower bars, which are grooved, and it is held to an inclination by ratchet and pawl.

Claim.—1. The washer E with its two side grooves, for clasping over the contiguous arms of the springs, with a tooth upon one end, and held to the bar by means of a screw, as described.

2. The spring-holder D, made of band-iron or other flat metal, and forming a reversible hook, in combination with the mortised slat C, spring O, and washer E, as described.

3. The head-elevator or invalid attachment, fastened to the side rails of the bed-bottom by the castings and to the upper edge of the rails by the hinges, with a cord passing through the holes in the grooved pieces, and having the webbing, pawl, and ratchet, which engage with a pin driven in the side rails, as described.

4. The combination of the slats with the grooved washer for fastening the springs, the pin, the hook, or loop, the invalid attachment with the grooved head-piece and cross-bar, the webbing, cord, ratchet, and pawl, all constructed as described, and for the purposes set forth.

138,057.—*Sash-Holder.*—LYMON A. TUTTLE, Berea, Ohio. Application filed March 3, 1873.

A friction-plate sash-holder, slotted to form two angular-inclined planes, is combined with an eccentric cam, which has a convenient handle, and is secured to the sash by means of a screw passing through it and into and through the slot, the cam working on this screw as a pivot, while the screw at the same time serves to attach and hold the combined device in position.

Claim.—The plate A, slot B, and incline planes F G, as arranged, in combination with the cam C working on the screw *a*, substantially in the manner as described, and for the purpose set forth.

138,058.—*Machine for Pointing Spikes.*—JAMES WALDRON and DOUGLASS G. MOORE, Elizabeth Port, N. J. Application filed October 7, 1872.

Claim.—In a rotary machine for the fabrication of spikes and other similar articles from bars of metal, the combination of two shaping-rolls, C D, having the shaping-surfaces of their peripheries both concentric with and eccentric to their axes, substantially as described, and each roll having upon its periphery, and forming a part of itself, friction driving and guiding gears *b b c c*, whereby the said rolls are both rotated and guided, substantially as and for the purposes described.

138,059.—*Lifting-Jack.*—HENRY H. WARREN, Buffalo, N. Y. Application filed January 22, 1873.

Claim.—1. The standard A having double slots or openings B B, bearing-pins *c c*, and the catches or lugs *a b* or their equivalents, in combination with the lever C and pawl F, all arranged and operating substantially as described.

2. In combination therewith the button or catch *g*, toe *d*, recess *e*, and loop *f*, arranged and operating as and for the purpose set forth.

138,060.—*Apparatus for Drying Painted Wire-Cloth.*—CHARLES H. WATERS, Groton, Mass. Application filed February 28, 1873.

The skeleton-cylinder is provided with a hollow perforated shaft, through which is passed the artificial current of air for drying the painted wire-cloth.

Claim.—The method of drying painted wire-cloth or other reticulated fabric by winding it into a cylinder and passing an artificial current of air through the meshes thereof, as described.

138,061.—*Scissors.*—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed October 9, 1872.

Additional cutting-edges are furnished upon the inner side of the fulcrum or pivoted point. When the scissors are held in the left hand for cutting the nails of the right the pressure of the thumb in the bow forces these cutting-edges more closely together, whereas this same pressure would force the regular cutting-edges beyond the pivot, further apart upon the outer sides of the blades. Near the bows are placed curved points for cleaning the nails.

Claim.—1. The cutting-edges *a a'* combined with the cutting-edges *b b'*, substantially in the manner and for the purpose described.

2. The curved edges *i*, terminating in cleaning-points *g*, substantially as described.

138,062.—*Railroad-Car Heater and Ventilator.*—CHARLES F. WHORF, St. Louis, Mo. Application filed December 19, 1872.

The inner air-heating chamber about the stove is supplied with air from outside. The top pipes pass through the outer chamber and deliver the heated air into the car. In these pipes are openings, controlled by valves, to regulate the flow of hot air. The outer air-chamber, taking the air of the car through the perforations in its base, delivers it outside through the cowl.

Claim.—1. The combination of base B, the heater A, and casing C, the base having the central opening *a* communicating with the outer air, and with the chamber formed between the heater A and casing C, this chamber being provided with apertures discharging into the car and into the ventilating-shaft, the discharge being regulated and controlled by dampers, as described.

2. The combination of the base B provided with openings *d'*, with the chamber between the casings C and D and the ventilator-shaft, by which means impure air is drawn from the room and discharged into the open air, as described.

3. The combination of base B, rims *b b'*, opening *a*, orifices *d'*, casings C and D, tubes or pipes E, dampers *e*, ventilating-shaft F, when arranged to operate as and for the purpose set forth.

138,063.—*Shoemaker's Finishing-Tool.*—WILLIAM WILSON and JOHN FOSTER, Charlton, Iowa. Application filed October 11, 1872.

The collocation, in a hand-tool, of the various devices requisite for setting the edges and burnishing the soles and heels of boots and shoes.

Claim.—1. The adjustable guard C carrying the shank-wheel *d* and fudge-wheel *f* and stamp *g*, when combined and operated with the fore-part iron B and handle A, substantially as described, and for the purposes specified.

2. The adjustable guard A carrying the seat-wheel *k*, when combined and operated with the heel-iron G and shank-iron H and handle A, substantially as described, and for the purposes specified.

138,064.—*Hammer.*—ENOCH S. YENTZER, Ottawa, Ill. Application filed February 11, 1873.

A blank of peculiar form is cut from a sheet of metal and then bent to form shoulders and scrolls, as shown. The long portion of the blank forms the spring-shank, and is secured to the presser. The stop which projects from the spring-arm regulates the position of the hammer with reference to the bottom of the presser.

Claim.—1. The hammer constructed and operating as herein specified, supported on the spring-shank, and adapted for application to the pressure-foot of a sewing-machine, in the manner set forth.

2. The combination of the flexible pressure-regulating stop *g* with the described hammer and spring-shank and the pressure-foot, in the manner set forth.

138,065.—*Weather-Strip.*—JEROME BACON and GILBERT BACON, Medina, Wis. Application filed February 15, 1873.

Claim.—The triangular pieces A B hinged together and having spring D, rubber E *g*, and hook J, combined and arranged on a door with the lug I, as and for the purpose described.

138,066.—*Nut-Machine.*—JOHN BRAUN, Philadelphia, Pa., assignor to GOODELL, BRAUN & CO., same place. Application filed January 4, 1873.

The punch that cuts the blank from the bar acts simultaneously with the center punch. A horizontal bar is made adjustable as to height so that a discharging-pin in the punch will, as the latter rises, strike the bar and eject the nut, no matter what may be its thickness.

Claim.—1. The sliding pins *z*, in combination with the die-piece E, slotted at *g*, and the stop-bar G, substantially as and for the purpose specified.

2. The combination of the die-piece E, slotted at *g*, and holding the sliding plus *z* and die-socket *k*, with the horizontal stop-bar G, bolts *m*, and springs *n*, substantially as and for the purpose specified.

138,067.—*Machine for Making Machine-Screws.*—JOHN BRAUN, Philadelphia, Pa., assignor to GOODELL, BRAUN & CO., same place. Application filed January 4, 1873.

Cutters for milling the end of the rod, and dies for threading the same, are arranged in a rotatable disk, which, together with a knife-operative by a hand-lever for cutting off the finished screw, is supported by a frame which is moved to feed, as the work progresses, by two feed-screws, through the medium of two portable sectional nuts or tongs. At the termination of the threading operation the end of the screw forces back a plunger that releases a latch upon the tongs, and allows them to open and disengage the nuts with the screws.

Claim.—1. In combination with the worm-shaft B B, the feeder D, substantially as shown and described.

2. The tongs F, constructed and arranged substantially as set forth.

3. In combination with the tongs F, the sliding shaft e^2 for automatically unlocking said tongs, as described.

4. The combination of the hollow revolving shaft *e'*, the worm-shafts B B, the tongs F, sliding shaft e^2, and frame E bearing the cutting-tool and die-disk, substantially as described.

5. In combination with the block K and shaft L, the plunger *m*, substantially as shown.

6. In combination with the plunger *m*, the lever N, substantially as described.

7. In combination with the shaft L, arranged to operate as shown and set forth, the hollow shaft *e'*, as shown.

8. The combination of the block K, shaft L, plunger *m*, and lever N, substantially as shown and set forth.

9. The combination of the base-piece A^1, slide D', and standard O^2 with the frame E, having the die-disk and cutting-tool, and the tongs F.

10. The combination of the base-piece A^1, slide D', and standard O^2 with the block K, shaft L, plunger *m*, and lever N.

138,068.—*Boiler Fire-Extinguisher.*—JOHN D. BERENHAN, Montgomery, Ala. Application filed February 8, 1873.

When the fire is to be extinguished the valve is opened, and water from the water-space is allowed to run into the furnace.

Claim.—1. The tube C, with perforations *b* and aperture *a*, in connection with the bolt and valve D *c*, substantially as and for the purpose described.

2. The tube C provided with a bolt, and valve D *c*, and perforations *a b*, in combination with the furnace or fire-box of a boiler, and the steam and water space formed contiguously thereto between the sheets of the boiler, as shown and set forth.

138,069.—*Corn-Stalk Knife.*—JOSEPH M. BRICK, Marlton, N. J. Application filed March 1, 1873.

The blade of a corn-stalk knife, near its point, is bent upward from its horizontal plane, and also outward from its vertical plane, so that it will give a draw cut at every blow, and at the same time cut with an upward oblique action without forcing the stalks away from it.

Claim.—A corn-stalk knife which has its blade near its point bent upward from its horizontal plane, and also outward from its vertical plane, as herein described and shown.

138,070.—*Lamp.*—GEORGE BROWNLEE, Princeton, Ind. Application filed February 8, 1873.

An eccentrically-weighted valve, which may be unseated by the pressure from within or by inclining or jerking the lamp, releases a wire spring which carries the extinguisher-tube over the flame. The tension of the spring is regulated by a set-screw.

Claim.—1. A weighted valve, C, having the extension *e* applied to an aperture in the plate *d* over the body A, as and for the purpose described.

2. The lever-arm of valve C, having upward projection *g* and lug *h*, combined with the spring D and notch K of casing, as described, to form a connection between valve C and sliding extinguisher F, as and for the purpose set forth.

3. The screw-regulator G *m* applied to the spring D, as and for the purpose specified.

138,071.—*Iron Fence-Gate.*—CLARK T. BUSH, Oneonta, N. Y. Application filed December 6, 1872.

A continuous piece of iron, looped over the upper hook in the gate, passes thence to the latch-end, turns down to its base line, and is there turned toward the lower hook, around which it is looped. Another piece is looped over said lower hook and passes diagonally to the top front, where it is embraced, with the horizontal part of the continuous bar described, within a movable sleeve, by which this bracing is adjusted. The pickets are supported upon this skeleton frame by means of tongues and loops belonging to said pickets.

Claim.—The gate consisting of the single bar H, pickets P P, and adjustable brace-rod B provided with an eye to fit upon the lower gate-hinge, and secured at the upper end by the adjusting-band *n*, substantially as described and shown.

138,072.—*Work-Stand.*—CHAUNCEY S. CAPLE, Frankfort, N. Y., assignor to himself and WILLIAM GATES, same place. Application filed March 15, 1873.

The small central stand has in its bottom a slotted plate, said slot engaging with a pin made adjustable by a lever and spring, which are placed in the top of the main stand.

Claim.—The disk Q having hole R and the slot T, the pin S, spring U, and lever V combined with a stand, N, and a table-top, as described.

138,073.—*Adjustable Sewing-Machine Chair.*—FRANKLIN CHICHESTER, Milwaukee, Wis. Application filed February 15, 1873.

The inclination of the chair is adjusted by the latches attached to the pivoted cross-bar engaging with the notches in the side plates below the chair-seat. The back-frame is pivoted to the arms, and the inclination of said back-frame is adjusted by latches attached to the front of said arms and engaging with notches on the upper edge of the side plates of the chair. Coiled springs throw both the seat-frame and the back-frame forward when not locked in position. The back is pivoted to the back-frame, and is thrown forward by springs coiled about the pivots.

Claim.—1. The combination of the adjustable latches G, side plates E, and coiled springs H with the armed cross-bar C and the chair-seat F, substantially as herein shown and described.

2. The combination of the socket P, pivot Q, and coiled spring T with the parts N O of the chair-back, substantially as herein shown and described.

3. The combination of the coiled springs J, pivoted bars K, and latches M with the plates E, chair-seat F, and pivoted chair-arms L, substantially as herein shown and described.

138,074.—*Oiling Millstone-Spindles.*—JOHN J. CHUBB, Decatur, Ind., assignor to himself and SAMUEL C. BOLLMAN, same place. Application filed March 8, 1873.

Claim.—1. The tube D, embedded in a channel in the leading furrow of the stationary stone A, and extending from the heel or skirt to the bosom of said stone, substantially as herein shown and described.

2. The tube E, provided with an oil-cup, F, in combination with the hoop or curb B, the tube D embedded in the stationary stone A, and the spindle C, substantially as herein shown and described.

138,075.—*Friction-Clutch Mechanism.*—JOHN J. COBURN, Philadelphia, Pa., assignor of one-half his right to HUGH B. COYLE. Application filed March 22, 1873.

For preventing wear of frictional surfaces of parts composing the friction-clutch mechanism.

Claim.—1. In the clutch mechanism, as described, the removable steel shoe inserted within the cavity and upon the bearing-surface of the rollers or equivalent, as and for the purpose set forth.

2. The combination of the cup, disk, rollers, steel shoe, spring, and shaft, substantially as described.

138,076.—*Snow-Shovel.*—HENRY C. COLE, Wallingford, Vt. Application filed March 8, 1873.

A shovel fortified at the side by introducing a U-shaped metallic plate.

Claim.—The shovel A fortified by U-shaped plates of metal running the whole length of edges, as and for the purpose described.

138,077.—*Combined Stop-Cock, Check-Valve, and Blow-Off.*—ELDRIDGE G. CUSHING, Oswego, N. Y. Application filed February 1, 1873.

The body having a hollow tapering plug in which is a check-valve sliding on a stem; also, having three openings, and may be used as a stop cock and blow-off.

Claim.—The shell A having the inlet, outlet, and blow-off-pipe connections B C C', the hollow plug D having openings E F F', valve-seat G, and chambers H I, and the valve J, having rotary handle M, all constructed, arranged, and combined substantially as and for the purpose described.

138,078.—*Lifting-Jack.*—WILLIAM M. DOTY, New York, N. Y. Application filed March 15, 1873.

Three, more or less, lifters on the bar are arranged so as to be nearly over the center of gravity when either one of them is employed, adapting the jack for all kinds of vehicles, the axles of which vary from one to two feet, or more, in height from the ground.

Claim.—1. A friction-spring, substantially as shown at I, for supporting the lifting-bar, as shown and described.

2. A lifting-jack, consisting of the base A, stand B, lifting-bar C, link D, lever E, fulcrum-bars F, and friction-spring I, arranged to operate as and for the purposes described.

138,079.—*Machine for Molding the Edges of Marble Slabs.*—JAMES FINN, Boston, Mass. Application filed May 2, 1872.

Claim.—In the marble-grooving machine described, the combination of the longitudinally-reciprocating and rotary grinding-cylinder D with a single horizontal carriage, B, and mechanism, as described, for automatically moving such carriage toward the grinder while the latter may be in operation.

138,080.—*Mill-Pick.*—E. STOWE FORGY, Dayton, Ohio. Application filed February 8, 1873.

The blade is readily removable, but when in use is held rigid and immovable.

Claim.—1. The curved clamp-plate C, applied within the socket of head A and against the pick D, as and for the purpose set forth.

2. The head A having projection D and socket I, and the curved clamp-plate C having swiveled screw E, combined with pick D G, as and for the purpose specified.

138,081.—*Gate-Hinge.*—WILLARD G. FRANKLIN, Shelbina, Mo. Application filed November 30, 1872.

The eye-piece of a gate-hinge, constructed with three or more pintle-holes, is provided with a screw-shank and head or shoulder piece to attach it to the gate-post. The gate-piece of the hinge is slotted lengthwise, forming semicircular notches, through which fastening-bolts pass, and these being loosened permit a sliding adjustability, this construction allowing the gate to swing level or to tilt upward in swinging back according to the manner in which this compound hinge is adjusted.

Claim.—A gate-hinge, consisting of screw-shank D, shoulder-plate E, eye-plate F having a series of holes, and adjustable gate-piece G, combined and applicable, as and for the purpose described.

138,082.—*Liquid for Heating by Means of Pipes, &c.*—LOUIS GRIMM and JOHANNES CORVIN, Magdeburg, Prussia. Application filed March 14, 1873.

A fluid consisting of glycerine and chloride of calcium or equivalent.

Claim.—The herein-described fluid, consisting of glycerine and chloride of calcium, or its equivalent, in the manner and for the purposes substantially as hereinbefore set forth.

138,083.—*Invalid-Bedstead.*—GORHAM WHITCOMB GROTE, St. Catharine's, Canada. Application filed January 20, 1873.

The mattress-frame is made in three sections, the upper section hinged at its inner end to a cross-bar rigidly attached to the sides of the couch-frame, the inner section hinged to said rigid bar and to the lower section. These sections are adjusted by means of bars connecting with screw-shafts at each end of the couch-frame. Beneath the central section and attached thereto is a bed-pan adjuster. Above the mattress-frame is arranged a canvas stretcher made in three sections corresponding to the mattress-frame and united to it at the lower end by a hook, hinge, or connection; the upper end is adjusted by means of an eccentric lever pivoted to the center of the head-section, and bearing on the head-section of the mattress-frame.

Claim.—1. The couch proper, combining the frame A A, sectional mattress-frames B, D, and E, and adjusting screw-shafts G G, nuts, and connecting-bars F F, as and for the purpose hereinbefore set forth.

2. The bed-pan adjuster H L N I, including pan and pad, combined with and attached to sectional mattress-frame D, as and for the purpose hereinbefore set forth.

3. The upper frame or canvas stretcher with its sections P, Q, and R, (corresponding with sectional mattress-frames B, D, and E,) and draw-bolt *w*, provided with adjusting eccentric lever T and guide-bolt X, and combined with and attached to sectional mattress-frame at foot end of section E by adjustable hinges V V, as and for the purpose hereinbefore set forth.

138,084.—*Watchman's Time-Check.*—THEODORE HAHN, Stuttgardt, Germany. Application filed February 15, 1873.

The paper dial of the portable time-marker is provided with concentric circular lines, crossed by obliquely-curved lines, repre-

centing the play of the piercing-arm, which is jointed transversely to its pivoted motion. Different keys are so related to this jointed arm as to cause it to pierce the paper dial at any indicated time on different points in the curved graduations.

Claim.—1. The rotary dial D, made with the concentric annular subdivisions and with cross-lines curved on a radius equal in length to the pivoted carrying-arm of the piercing-tool, substantially as described.

2. The pivoted arm F of the piercing-point a, arranged below the plate C and jointed to be horizontally as well as vertically flexible or movable, as described.

3. The curved slotted supporter H applied above the rotary dial D and above the piercer of the jointed pivoted arm F, substantially as described.

4. The tool-arm F, provided with the pendent plate *g* and lug *h*, as specified.

138,085.—*Cultivator.*—JACK HELM, Hochheim, Tex., assignor to himself and CHARLES TIMM, same place. Application filed November 16, 1872.

The two parts of the evener are connected by an arch.

Claim.—The connected eveners C C, attached to the end of gang-plow frames by rings D, and to the sides of said gang-plows by the jointed rods F F, as and for the purpose described.

138,086.—*Paper-File.*—ROBERT HENNING, Ottawa, Ill., assignor to himself and J. D. CATON, same place. Application filed February 3, 1873.

The paper-hook depends from a bracket, to which is hinged a weighted lever bearing upon the hook-point.

Claim.—The hinged guard-lever B, combined with the paper-file plate A, having the rests *a e* arranged as and for the purpose described.

138,087.—*Thill-Coupling.*—GEORGE W. HOBART, Lowell, assignor to himself, JEROME B. MELVIN, Tewksbury, and JAMES H. PINDAR, Lowell, Mass. Application filed August 31, 1872.

A loop is attached to the axle, a draft-rod in form of a loop, or rod with enlarged head connects the thill and axle as a substitute for a leather strap commonly used to guard against accidents.

Claim.—The loop on the yoke C, in combination with the draft-rod D or the loop L, substantially as and for the purpose herein described.

138,088.—*Milk-Cooler.*—WILLIAM HODGDON, North Craftsbury, Vt. Application filed March 15, 1873.

A large water-pan divided into four compartments with a separate water-supply pipe for each, and a discharge-pipe connection of each with a main waste-water pipe. Each milk-pan has a separate discharge-pipe.

Claim.—The water-pan A with separate bottoms B, a special supply and exhaust pipe for each compartment, pans E, and a special discharge-pipe, J, for each pan, all constructed, combined, and arranged substantially as specified.

138,089.—*Churn.*—WILLIAM H. HOLDAM, Crab Orchard, Ky. Application filed March 1, 1873.

A perpendicular cylinder, an extensible concentric inner cylinder, open below and above, a revolving dasher-shaft with broad concave-convex blades obliquely set.

Claim.—The dasher F G, adjustable curbs H I, and radial flanges or block J, in combination with each other and with the churn-body E, substantially as herein shown and described, and for the purpose set forth.

138,090.—*Loom for Weaving Wire.*—SAMUEL HOLDSWORTH, Maspeth, assignor to himself and JAMES BLACK, Brooklyn, N. Y. Application filed January 18, 1873.

The weft-wire is beaten up by a series of blades which are actuated successively by a rotating roller having two spiral reversed cam projections, one actuating them from right to left, the other from left to right, according as the shuttle is thrown. The shuttle has a T-projection on the side, which runs in a corresponding way formed in a series of thin vertical plates, between which the warp-wires pass, and it is reciprocated by means of pins arranged spirally on a reciprocating drum, which pins engage in a diagonal groove in the bottom of the shuttle. The heddles are operated by means of a weighted arm, which is raised positively to a vertical position, and is then allowed to fall a limited distance, sufficient to complete the shed.

Claim.—1. The combination, with the blades A, of the rotating cam-roll D, having reverse cams, substantially as specified.

2. A shuttle-driver, consisting of a rotary reciprocating roller, having a spiral row of pins engaging an oblique slot in the shuttle, substantially as specified.

3. The combination of the stationary plates K, shuttle G, and shuttle-driving roller L, having the pins M arranged spirally, substantially as specified.

4. The combination of the oscillating-shaft A', arms V V, weighted arm B', and a device for actuating the latter with the harness, substantially as specified.

5. A shuttle-driving roller, provided with pins, arranged in the planes of the plates K, as and for the purpose described.

138,091.—*Carriage-Axle Box.*—JOSEPH JONES, JAMES DUNKERLEY, and JOSEPH DUNKERLEY, Paterson, N. J. Application filed December 31, 1872.

To keep sand and dirt from entering the axle-box, and to keep the same thoroughly lubricated.

Claim.—The combination of the axle-arm A, axle-box B, perforated screw D, and hollow screw-cap E, constructed to operate substantially as herein shown and described, and for the purpose set forth.

138,092.—*Lock-Hinge.*—MORTIMER C. LEE, New York, N. Y. Application filed March 29, 1873.

The pintle-leaf of a hinge is provided with two shoulders or foot-holds on its socket, serving as ratchet-teeth; a pawl is pivoted to the opposite leaf in such manner as to drop down automatically into one or the other of these shoulders when the hinge is opened, locking it firmly in position, the double shoulder serving to adapt the fastener to either side of the blind or window, making the hinge reversible. The pawl and projection-plate may be made unattached so as to apply the device detachably to an ordinary shutter-hinge.

Claim.—The pintle portion E of a lock-hinge, provided with the shoulders G G on its upper side adjacent to the pintle F, whereby it is adapted for use on either side of a window, and to co-operate with the leaf D and pawl H, as specified.

138,093.—*Cooking-Stove.*—DENNIS G. LITTLEFIELD, Albany, N. Y. Application filed February 19, 1873.

Metallic strips depend from the under side of the oven-plate into the flues for products of combustion to deflect the heat outward, and cause it to be evenly distributed. The damper has its seat on the rear of the top oven-plate.

Claim.—1. The deflecting-strips G G, in combination with the flues C C and D, as and for the purpose specified.

2. The combination of the strip F and deflecting-strips G G with the flues C C and D, as and for the purpose specified.

3. The damper-seat I, constructed and arranged so as to rest upon the oven-plates, as herein shown and described, to form a support for the top of the stove.

138,094.—*Egg-Beater.*—NATHANIEL C. MILLER, Stroudsburg, Pa. Application filed February 28, 1873.

To the frame is attached a cogged hand-wheel and a pinion, A wrist-pin is attached to the pinion, and the slotted end of the beater-bar moves on said wrist-pin, giving the beater-blade a vibratory motion.

Claim.—The arrangement of the pinion B and its wrist-pin C with the beater-bar A, in combination with the hand-wheel D, frame F, and beater H, substantially as shown.

138,095.—*Refrigerator.*—DENNIS MULCAHY, Boston, Mass. Application filed February 15, 1873.

The refrigerator is arranged to allow a free circulation of air between its parts, and the removable drip-pan D has a glass indicator to show the height of water in the pan.

Claim.—1. The combination and arrangement of the ice-chambers A, wire-bottomed drawers B B, and portable cistern D, substantially as and for the purposes described.

2. A portable cistern, furnished with an index-glass, and forming a part of the refrigerator, substantially as described, for the purpose described.

138,096.—*Fire-Proof Floor and Chimney Connections.*—WILLIAM NERACHER, Cleveland, Ohio. Application filed March 1, 1873.

The ends of the beams next to the chimney are incased in metallic sockets, and the spaces between the joists and the sides of the sockets next the fire are filled with cement or other non-conductor of heat. The hearth is supported by metallic bars, which rest on ribs or flanges on the sides of the socket-pieces.

Claim.—1. The combination, with the joists and chimneys, of metal socket-pieces C or D, and cement or other filling in the spaces between the joists and the sides of the socket-pieces next the fire, substantially as specified.

2. The combination, with said metal socket-pieces, of ribs I and bars K to support the hearth, substantially as specified.

138,097.—*Neck-Tie.*—REGINALD R. PARKER, Indianapolis, Ind. Application filed March 1, 1873.

The neck-tie shield instead of being covered on both sides with the fabric is covered only on the front side, the ends of the fabric being then folded over onto the under side of the shield in triangular pieces at its ends.

Claim.—1. A neck-tie having the points C C covered by folded-down triangular pieces E and H, substantially in the manner described.

2. The triangular piece E, in combination with the shield A, as and for the purpose set forth.

138,098.—*Miner's Bar.*—RALPH B. PLATT, Hazleton, Pa. Application filed January 11, 1873.

A crow-bar, one end of which is a steel point, the other a copper tamping-bar.

Claim.—1. A miner's bar with a crow or pick bar formed at the top, and to which miner's tools or points of the different forms used are detachably connected, substantially as specified.

2. A copper tamping-tool, E, provided with a steel shank, as shown and described.

138,099.—*Bolt Mechanism for Prison-Doors.*—THOMAS R. PULLIS and JOHN PULLIS, St. Louis, Mo. Application filed March 8, 1873.

The traveling bar is operated by a screw-wheel, and has pivoted thereto a series of arms, to each of which is attached a friction-roller, which, when the bar is moved in one direction, will close and fasten the cell-doors. The pivoted arms are locked in a position parallel with the traveling bar by means of padlocks, and by removing any one of the padlocks the arm to which it is attached may be swung outward, and the door opened without moving the traveling bar.

Claim.—The traveling bar B with lugs *a* and *c* having pivoted and connected therewith arms C and friction-rollers D in connection with screw-wheel E, applied as described.

138,100.—*Machine for Dressing Stone.*—GEORGE R. RAY, Bridgeport, Conn. Application filed August 3, 1872.

Cutters or chisels, in a rotary cutter-head, which is mounted on a support on the ends of radial arms, by which it is adjusted vertically to the work which is automatically fed along under the cutters; and the said cutter-head is caused to traverse laterally on its support by a feed-screw, and the radial frame is adjusted vertically by screws geared with a worm-shaft for turning these said screws, the worm-shaft being mounted on bearings so pivoted as to allow the screws to oscillate while working in nuts pivoted to the radial frame to admit of the vibration of the screw necessary for the working of the radial frame.

Claim.—1. The cutters J, secured in the cutter-head by the plates *i k*, wedges *m n*, and the screw-threaded extension of one of the wedges and a nut, substantially as specified.

2. The arrangement of the annular space *p* in the bearings of the cutter-head, and the oblique scrapers *t* on the latter in said space to exclude the grit and dust, substantially as specified.

3. The combination of the water-pipe A', nozzles B', and a flexible pipe, C', with the rotary chisels and the oscillating frame F arranged for discharging water-jets upon the stone where the tools act upon it, and at the same time, substantially as specified.

138,101.—*Machine for Paring Horses' Hoofs.*—GEORGE W. SCHAFER, St. Charles, Mo. Application filed September 7, 1872.

A circular plate or frame and cross-bar having a knife and operating-lever attached thereto.

Claim.—A machine for paring the hoofs of horses, consisting of the circular plate A, bar B, knife-blade C, handle or lever E, pivot-bolt D, stud-bolt F, and handle G, arranged substantially as shown and described.

138,102.—*Blacking-Box Cover.*—JUSTIN B. SHALER, Brooklyn, N. Y. Application filed April 4, 1873.

The cover has a detachable perforated disk inside for holding a wet sponge.

Claim.—The blacking-box cover *a* containing the sponge, or its equivalent, in combination with the perforated plate *c* held in place by lugs *e*, substantially as shown and described.

138,103.—*Scroll-Saw.*—HEZEKIAH B. SMITH, Smithville, N. J. Application filed March 29, 1873.

The saw and saw-table are both simultaneously adjustable to suit the curved lines of the work.

Claim.—The combination of the gear-wheels M N P Q and rods O R or equivalent gearing with the sliding rods G and table S, substantially as herein shown and described, and for the purpose set forth.

138,104.—*Music-Notation.*—EBENEZER P. STEWART, Cotton Plant, Miss. Application filed December 31, 1872.

Music written in figures which indicate the length of tone, and canceled notes or figures for pauses, or, rather, rests, so that each canceled note will indicate the position and length of rest to be produced.

Claim.—In a system of music-notation, the method herein described of indicating rests by canceled notes or figures, substantially as shown and described.

138,105.—*Seed-Planter.*—ISAAC T. SUGGS, Greene Hill, Tex. Application filed November 25, 1872.

A corn or cotton planter on one running-wheel, which, by a rod and cranks, as also by tappets at the opposite end of the axle, works the hopper mechanism. The front of the frame has a harrow pivoted thereto at its rear, and has handles and a coverer behind.

Claim.—A harrow, C, combined with a beam, B, pivoted at its rear end to the front of a seed-planter, as and for the purpose described.

138,106.—*Hedge-Trimmer.*—SAMUEL B. TURNER, Adams county, Ill. Application filed October 5, 1872.

The finger-bar is adjusted to cut at different angles by a weighted lever fulcrumed on an upright attached to the main frame.

Claim.—The arm N, weighted lever O, and standard P, in combination with the swinging sickle-bar E, substantially as shown and described.

138,107.—*Button.*—FRANK WASHBOURNE, Brooklyn, N. Y. Application filed November 4, 1872.

The base of the button is struck up and slotted to receive the T-shaped shank or post. The base can be turned over against the shank, and thus facilitate the attachment of the button.

Claim.—As a new article of manufacture, the improved sleeve or bosom button herein described, consisting of the shell F, struck-up slotted plate E, T-shaped post C, and button A, all constructed and combined in the manner and for the purpose specified.

138,108.—*Horse-Power.*—ADDISON G. WATERHOUSE, San Francisco, Cal., assignor of six-tenths of his right to J. S. NICHOLS and MOSES NICHOLS, same place. Application filed January 2, 1873.

The internal gear-wheel is eccentrically hung within the exterior wheel, engaging intermittingly with the latter, and transmitting power to the lower gearing, which connects with the pitman.

Claim.—The combination of the wheels B and C and the crank *k* with the arm or arms A, to be propelled in the manner and for the purposes substantially as hereinbefore set forth.

138,109.—*Wood-Finishing Compound or Oil.*—FREDERICK WEBSTER, Brooklyn, N. Y. Application filed March 29, 1873.

Linseed-oil, raw; linseed-oil, boiled; spirits of turpentine; strong paint-drier; wax.

Claim.—An improved finishing-oil, prepared of the ingredients in the proportion and manner substantially as herein set forth.

138,110.—*Washing-Machine.*—NELSON O. WILCOX, Omaha, Neb. Application filed March 22, 1873.

A washing-machine fitted, by an adjustable sliding base, with guides; single lower roll within the guides; an upper corrugated roll with springs fitted to and within slots in the uprights or end, onto which the journals are fitted, and upright motion allowed or given it by a separation in the center or near the center of the uprights, which are fitted to the outer frame.

Claim.—A tub washing-machine, consisting of an extension base B E, bed-roller H, corrugated roller J, stands C D, spring-holders L L, and springs N, when the same are arranged to operate as shown and described.

138,111.—*Dumping-Wagon.*—JOHN H. ADRIAANS, Washington, D. C. Application filed March 3, 1873.

A low truck adapted to be dumped by a lifting-jack.

Claim.—The herein before described dumping-truck A, inclosed at all points except its rear side, provided with the caster-rollers C, the ledge D, the nut F, and the screw G, and with or without the doors E, the whole adapted to receive earth from the shovels of workmen within a trench, substantially as and for the purpose specified.

138,112.—*Door-Latch Handle.*—JULIUS AMBRUN and ERNST OLTERMANN, Leavenworth, Kans. Application filed March 15, 1873.

Claim.—The combination, with the sliding bolt A, of the lever or handle B *b*, of such construction as to act upon the door-jamb and pry the door open when the bolt is thrown in or withdrawn from the jamb, substantially as specified.

138,113.—*Try-Square.*—WILBUR F. ARNOLD, Winthrop, Conn. Application filed October 26, 1872.

The blade of the square is secured to the stock or handle by means of a pin having an eccentric or cam-like groove, so as by its rotation to bind the blade against the bottom of the receiving-slot, and at the same time secure the pin itself from transverse displacement.

Claim.—In combination with the handle and blade of a try-square, the pin C, constructed with a cam, *a*, substantially in the manner described, to secure the blade in the handle without the necessary intervention of other pins or their equivalent.

138,114.—*Rolling-Mill.*—JOHN E. ATWOOD, Mansfield, Conn. Application filed December 24, 1873.

The rolls of each succeeding pair have their axes in planes at right angles to those of a preceding pair, the axes of all the rolls being at angles of forty-five degrees from a vertical plane. The rolls are sustained in this position by a V-shaped bed-plate, to the opposite inner faces of which the housings are secured, their tops being connected by an angle-iron tie-rod.

Claim.—1. The V-shaped bed-plate E, in combination with the reversely-oblique pairs of rolls A A' and B B' and their housings C and D, essentially as described.

2. The combination, with the reversely-oblique housings C and D, of the angle-iron tie-bar S secured to the housings by its opposite flanges or ribs, substantially as specified.

3. The combination, with the reversely-inclined or oblique roll-shafts *d d* and their rolls A B, of the upper loose bearings R R, the wheels L M, N O, and the horizontal and parallel side shafts K K, the whole being arranged in relation with each other, essentially as shown and described.

138,115.—*Subterranean Telegraph-Line.*—ELIJAH HARRISON AUSTIN, New York, N. Y. Application filed February 26, 1873.

At suitable intervals along lines of underground-telegraph conductors boxes are provided, in which the several wires are separated and supported in numbered notches of an insulated bridge, in order to facilitate the detection and repair of any faults in any of the lines.

Claim.—The arrangement of boxes A containing insulated bridges D between the sections C C of a conductor for telegraph-wires, substantially as and for the purpose herein shown and described.

138,116.—*Railway Snow-Plow.*—ORVILLE D. BAIRD, Newark, assignor to SAMUEL SOUTHWORTH and ELISAPH DORCHESTER, Geneva, N. Y. Application filed February 20, 1873.

The cut-off prevents the snow from escaping as the car is backed from a snow-drift; hinged sides and bottom are operated by hand-levers to allow the snow to be dumped.

Claim.—The construction and combination of the shovel B and slide-front G of the movable sides E E and trap-bottoms F F, as used and applied to the purposes hereinbefore mentioned.

138,117.—*Shoe-Fastening.*—ISAAC BARNETT, Newark, N. J. Application filed February 27, 1873.

An open link is secured to the end of a strap, and is adjustable in pockets formed in the quarter of a shoe. The strap is shortened or lengthened by means of a slide thereon.

Claim.—The combination of the open-end link 3, the slide 4, and the pockets *a*, all as and for the purpose specified and shown.

138,118.—*Fire-Proof Ceiling and Floor.*—JOHN W. BASSETT, New York, N. Y. Application filed March 14, 1873.

The plaster or cement slabs are formed in molds with the braces or straps B in them, the slabs and straps being perforated for attachment by screws or nails to the studding or joists, the holes being afterward filled up by plaster or cement.

Claim.—The plaster or cement slab or section A, made with an inner brace or strap, and with perforations extending through said strap and through the outer parts of the slab, substantially as and for the purpose herein shown and described.

138,119.—*Shaft-Hanger.*—WILLIAM BELLIS, Indianapolis, Ind. Application filed April 2, 1873.

A bracket, stand, or hanger, with socket for the reception of a screw-threaded shank, ending in loop that receives, in turn, the similarly screw-threaded shank of a journal-box constituting the bearing proper. Both shanks are provided with nuts to hold them in any specific position, while permitting them to turn freely in their sockets, in conformity with any angular deflection of the shaft.

Claim.—The described adjustable or yielding shaft-bearing, comprising the following essential parts—to wit: Cylindrical socket C holding screw-threaded shank E of loop D, which, in turn, holds screw-threaded shank I of bearing G H, said shanks having suitable jam and principal nuts, or their equivalents, as and for the purpose set forth.

138,120.—*Machine for Affixing Stamps to Letters.*—WINFIELD BENSEMAN and ELEZER SLOCUM, Washington, D. C. Application filed April 2, 1873.

The stamps are pressed through the open bottom of a box by a spring-follower upon the letter supported upon a yielding plate, which has a guide-apron, which presses the letter into contact with a moistening-roll as it is entered.

Claim.—1. The combination of a fixed box, A, a follower, B, and plate C, forming the bottom of the box, and having an inclined apron, C', operating substantially as and for the purpose set forth.

2. The combination of a fixed box, A, a follower, B, plate C, forming the bottom of the box, and having an inclined apron, C', and moistening-roller E, relatively arranged and operating substantially as specified.

138,121.—*Band Sawing-Machine.*—OLPHA BONNEY, Jr., San Francisco, Cal. Application filed June 1, 1872.

The frame which carries the shaft of the upper pulley is hung at one end upon trunnions, the other being carried upon and adjusted vertically by a screw and two jam-nuts.

Claim.—The pulley-shaft G supported at a point between its middle and the pulley C in a suspended box, *i*, in combination with the screw *l* and nuts *m* and *n*, substantially in the manner and for the purpose set forth.

138,122.—*Grater.*—GEORGE BOOTH, Philadelphia, Pa. Application filed March 24, 1873.

The top and two sides of the frame are made of one piece of wood and the bottom of another piece; the metallic grater-plate is then applied and secured by suitable strips.

Claim.—The improved grater herein described, having a frame with the top and two sides cut out from a single piece of wood, a bottom piece, and a grater-plate, all combined and arranged as set forth.

138,123.—*Vegetable-Grater.*—GEORGE BOOTH, Philadelphia, Pa. Application filed March 24, 1873.

The grater-plate is secured between a metallic frame and a metallic pad, the frame being provided with perforated lugs for the proper fastening of the pad thereto.

Claim.—The grater herein described, composed of a main frame-work, A A' A'' A''', a pad, B B' B'' B''', a grater-plate, C, eyes *c c'*, and keys *b b'*, the whole arranged and combined substantially as set forth.

138,124.—*Folding Chair.*—ASAHEL C. BOYD, Worcester, Mass., assignor to E. W. VAILL, same place. Application filed April 14, 1873.

The front legs and arms are formed of one piece, reversely curved, and the front legs are connected to the back legs by links, which encircle at their front ends a front round. The back extends below the seat and is pivoted to the back legs.

Claim.—1. The reversely-curved pieces A, forming the front legs and arms C D, respectively, in combination with the back E, back legs B, and folding seat F, substantially as described.

2. The side pieces A, provided with a round, *b*, that subserves the double purpose of a connecting-pivot for one end of the links *a* and a rest for the upper ends of the back legs, in combination with the links *a*, seat F, back legs B, and back E, substantially as described.

138,125.—*Corn-Sheller.*—FRANKLIN E. BROWN and JOHN R. SHANGLE, Hightstown, N. J. Application filed October 5, 1872.

An arrangement of spiral and semi-elliptic equalizing springs regulates the position and pressure of the roller-apron, between which and the studded cylinder the corn is shelled.

Claim.—In a corn-sheller, the semi-elliptic equalizing-spring *k*, secured to the plate G, in combination with the rods F, nuts H, spiral springs *n*, pivoted plates B' provided with the rollers C, and the shelling-cylinder B, substantially as specified.

138,126.—*Car-Brake.*—JOSHUA N. BRUSH, Olmstead county, Minn. Application filed May 18, 1871.

The brake is held at any required tension by means of the lever-wheel, the same being provided with lateral teeth, which engage with a rack which is secured to the truck-frame.

Claim.—The car-brake herein described, consisting of the brake-shoe C, chain D, lever-wheel E with sector of teeth G', lateral teeth H, rack I, dogs J M, and springs K' P', all constructed and arranged to operate as specified.

138,127.—*Self-Closing Faucet.*—ALEXANDER BUCKMAN and EDWARD BUCKMAN, Brooklyn, N. Y. Application filed February 5, 1873.

A loose valve, held to its seat by the current of liquid, may be opened by a movable rod, which latter, whenever it is desired to permanently close the valve, is rigidly secured by a nut.

Claim.—The combination, with the loose valve B in the body of the faucet, of the rod *c* and a screw-threaded cap or nut fitted thereto, and the fixed stop *e*, all arranged essentially as and for the purpose specified.

138,128.—*Washing-Machine.*—JAMES C. BURGNER, Poplar Creek, Miss. Application filed February 27, 1873.

A washing-machine with a revolving rubber constructed with rolls, with its shaft extending outside of the frame and held by a cross-bar, from which is appended a hook with double prongs, the lower ends of which are connected by a cross-bar with the bed on which the revolving rubber or cylinder revolves, and both held in position and adjustment by springs attached to hooks projecting from the double-pronged hook connecting the two. The bed of rolls is connected with ends having projections which are adjusted or fitted to roller friction-wheels attached to the end of the box, to give free and easy upright motion to the bed.

Claim.—1. The box D, in combination with the roller-wheel G, hook N, springs M' M', and hook N', as and for the purpose set forth.

2. The roller-wheel G, in combination with the spring M and M', and the roller-box D, hooks N N', and bar L, as and for the purpose set forth.

3. The frame B provided with guide-rollers *b b*, and used in combination with the roller-box D and hooks N N', as and for the purpose set forth.

138,129.—*Scrubbing-Machine.*—SIMEON H. BUSH, Bolstfort, Washington Ter. Application filed October 23, 1872.

The device is attached to a frame having extended sides for connecting to it the scrubber, which is a brush attached to a revolving plate with a center shaft, (upright,) around which a belt passes from the driving-pulley to give it motion. The brush is arranged to be surrounded by a circular hoop, suspended by hooks connected to or with the machine, which may be substituted, to which may be attached a mop and used in its connection.

Claim.—In a machine for washing floors, &c., the centrally-bisected wheel B in combination with belt E, shaft D, brush G, hoop H, tongue I, rod K, mop N, and mop-holder M, the whole arranged and operating in the manner and for the purpose described.

138,130.—*Embossing-Press.*—GEORGE CLISBEE, Marlborough, Mass. Application filed March 24, 1873.

The lever loosely pivoted at or near its center, receives operative movement from friction-rolls attached to a disk, which, intermittingly in their revolution, strike into a recess on the under side of the rear arm of the lever as this is raised by the treadle.

Claim.—1. The lever having the eccentric roll-track *l* and the disk *p*, rolls *m n*, shaft *d* and roll *r* and track *w*, arranged and operating substantially as described.

2. In combination with the rolls *m n* and loose disk *p*, the gears *s t u*, substantially as shown and described.

3. In combination with the lever *g*, disk *p*, and rolls *m n*, the hook a^3, link *z*, and foot-lever e^3, arranged and operating substantially as shown and described.

138,131.—*Plow.*—JAMES M. COBB, Jackson, Tenn. Application filed January 27, 1873.

A cast-metal plate, having ears to receive the upper end of the plow-standard, is bolted to the under side of the beam. The standard is inserted by a pivot-joint and further secured by a break-pin in the brace.

Claim.—The bearer-plate C, constructed as shown, and provided with ears *a a*, and the standard or foot-piece D hinged between said ears and slotted, as described, in combination with the stay-rod E with break-pin *d* and the blade G, all arranged with the beam A, as herein set forth.

138,132.—*Combined Rake and Tedder.*—ROBERT J. COLVIN, Lancaster, Pa. Application filed October 9, 1872.

A combined rake and tedder has flanges at regular intervals on the axle, which serve as guides for the tedder-arms, which arms are so made as to be removed simultaneously when the crank-shaft is released from its bearings, when the machine is converted into a rake.

Claim.—1. The fork-handle, consisting of the parts D *d*, having an open end to facilitate its detachment from the guide-axle when the tedder-shaft is removed, substantially as and for the purpose described.

2. The crank-shaft C, attached as described, in combination with the fork-handles D *d*, spring-bearing *u w y*, and axle A, with its shouldered guide-flanges *a a*, and pinions X V, all arranged as and for the purpose described.

3. In combination with the above second claim, and the frame having bearings *b* and R, a detachable rake, constructed and operated as and for the purpose described.

138,133.—*Leather-Boarding Machine.*—OWEN COOGAN, Pittsfield, Mass. Application filed March 10, 1873.

The table, supported upon arms pivoted to the frame, is susceptible of both vertical and lateral movement, so that its inclination may be varied and properly adjusted to different thicknesses of leather.

Claim.—1. The adjustable table or platform D, arranged between and in combination with the boarding-cylinders B and C, substantially as herein shown and described.

2. The supporting-arms E of the table D, when jointed, to permit the angle of the table with said arms to be regulated in accordance with the thickness of leather, as specified.

3. The adjustment-stops A, applied to the movable table D, or to its arms E, as and for the purpose set forth.

4. The combination of the table D of the boarding-machine with the ears *b*, bolts or fasteners *c*, arms E, stop *h*, and treadle or lever F, all arranged as specified.

138,134.—*Shuttle for Sewing-Machines.*—WILLIAM COONEY, Bridgeport, Conn., assignor to HOCKENSMITH & COONEY, same place. Application filed January 17, 1873.

The head of the screw bears against the lever and determines the position of the latter with reference to the wall of the shuttle according to the size of the thread being used, and the lever moves only from the regulated position toward the bobbin and under the action of the spring. The socket or bearing for the bobbin-journal has a spiral groove, which receives a screw, and, by turning the socket, it may be moved longitudinally to adapt it to bobbins of different lengths.

Claim.—1. In a sewing-machine shuttle, the lever *a*, provided with suitable eyes *f* for threading, combined with a screw, *b*, and nut *c*, and a spring between the said nut and lever in the head of the shuttle, the screw rigidly defining the distance or nearest approach of the lever to the shuttle-surface, substantially as set forth.

2. In a sewing-machine shuttle, the socket C, constructed with a spiral groove, *n*, combined with a set-screw, D, in the heel of the shuttle, substantially as set forth.

138,135.—*Fire-Place Back.*—GEORGE W. CUMMINGS, Franklin, Pa. Application filed April 13, 1872.

Claim.—1. The inclined fire-back E formed of the bars *b* and *c*, the front surface of the former which projects beyond that of the latter, substantially as shown and described.

2. The concave plate C provided with the rings *e* in combination with back E having the bars *a b*, arranged substantially as shown and described.

138,136.—*Device for Holding Cutter-Bars in Grinding.*—WILLIAM H. DANIELS, Bryan, Ohio. Application filed February 28, 1873.

A vertically-adjustable portion of the top rail allows cutter-bars of different thicknesses to be held. The front legs of the device are longer than the rear ones and tilt the top rail. Cam-levers, arranged flatwise on the top rail, secure the cutter-bar in place.

Claim.—1. The combination of the recessed or grooved top rail A *a* and vertically-adjustable supplemental rail B, substantially as and for the purpose specified.

2. The buttons C C', having cam-surfaces *c* arranged flatwise upon the recessed or grooved top rail A *a*, as shown and described, and for the purpose set forth.

3. A harvester cutter-bar holder of the character described, the front legs A^1 of which are longer than the rear legs A^2, substantially as and for the purpose specified.

138,137.—*Saw-Sharpening Machine.*—THOMAS L. DAVIDSON and HENRY WINNINGHAM, Charleston, S. C. Application filed March 1, 1873.

The yoke, by means of which the machine is supported, slides laterally upon the shaft.

Claim.—1. The sliding yoke D, provided at its rear end or side with the projecting arm *c* and the adjustable weight *d*, having a horizontal reciprocating rotatory motion on the shaft B, as described, and for the purpose mentioned.

2. The combination and arrangement of the horizontal sliding yoke D, having the projecting arm *c* and adjustable weight *d*, the yoke G having the arm F, journal-boxes *g g*, and handle *f*, all constructed and arranged as shown and described.

138,138.—*Process for Tanning.*—JAMES DAVIS and JOHN ARMSTRONG, Pittston, Pa. Application filed April 4, 1873.

The application to hides or skins at the time named of a solution composed of salt, alum, and sulphuric acid.

Claim.—The described process of tanning, consisting in the application of the compound described to the hides and skins after liming and bating, and before the introduction of tanning-extracts, as described, and for the purposes set forth.

138,139.—*Clutch for Machinery.*—WILLIAM B. DUCKWORTH, Hamden, assignor to JOHN MCLAGON and HENRY SMITH, New Haven, Conn. Application filed April 3, 1873.

Within two loose pulleys is a double conical clutch inclosed, which is connected with the slide within the hollow shaft. The slide and the platen, being connected by the lever, throw the clutch from one into the other pulley at the terminal movement of the platen.

Claim.—The combination of the platen B of an iron-planer, the driving-shaft C and loose pulleys D E on the said shaft, the clutch F constructed with a double conical face, and the pulleys constructed with a corresponding internal face, and the lever M N, when the said lever is made elastic and so as to operate substantially as described.

138,140.—*Wash-Board.*—GEORGE ELSEY, Sterling, Ill. Application filed March 29, 1873.

A wash-board constructed with sides and inclined cross-bars arranged parallel with each other, secured to the sides by tenons, with their upper edges projecting slightly for a rubbing surface.

Claim.—The wash-board, consisting of the side bars A, end strip B, and parallel inclined strip C, extending transversely between the side bars A and firmly jointed thereto, substantially as specified.

138,141.—*Car-Brake.*—ENOCH FARNSWORTH, Tipton, Pa. Application filed August 31, 1872.

To the middle portion of the car-body is suspended a swinging frame, in which is secured a pair of wheels mounted upon an axle. To this axle is fastened a rope or chain, which connect with the brake-levers. The swinging frame is connected by a rod and lever to the buffer, which is secured to a lever. When the power is applied the buffer is drawn out and, through the connecting rod and lever, raises the wheels from the track. As the power is reversed the buffers recede, allowing the wheels to come in contact with the rails and revolve, winding the rope about the axle, and thereby locking the brakes. An extra connection is made between the swinging frame and chain-shaft, by which the brake-wheels can be held clear of the rails, when the brake is not desired to act automatically.

Claim.—The combination of the car-body A, frame 2, wheels 3, axle 4, guitable ropes or chains, and rods 5 and 6, and lever 7, with its friction-roller and rod or chain 9, for applying the brakes, substantially in the manner set forth.

138,142.—*Convertible Freight-Car.*—THOMAS FOGO, St. Mary's, Canada. Application filed May 25, 1872.

The car may be readily converted from an ordinary freight or box car to a car for transporting grain in bulk, provided with a spout or chute for discharging the grain.

Claim.—1. In combination with a box or freight car the hinged section F of the car-floor, the chute C, and the vertical slide E, when the same are arranged substantially as and for the purposes described.

2. The slotted plates J, bars I, and hooks L and *m*, in combination with the flaps E E, for the purposes described.

3. The hinged handle H of the vertical slide, substantially as and for the purpose described.

138,143.—*Soda-Water and Syrup Cock.*—WILLIAM GEM, New York, N. Y. Application filed January 30, 1873.

By the raising of the valve the opening in its elbow is carried over the discharge-orifice of the cock so that the soda, passing through the hollow stem, carries with it a portion of the syrup in the large chamber.

Claim.—1. The elastic washer W furnished with an orifice, S, in combination with the valve G and the passage *p*, substantially as and for the purpose set forth.

2. The combination of the compression-valve G and slide-valves K and L, all operated by the same spindle, essentially as and for the purpose specified.

3. The elbow *f*, arranged over the outlet-orifice *e* a short distance above it, substantially as and for the purpose herein described.

138,144.—*Automatic Cradle.*—ISAAC S. GOLDMAN, Winterset, Iowa. Application filed March 1, 1873.

A cradle suspended from a shaft by a cord on pulleys, and the shaft connected with a clock-movement to give it motion. The clock-movement is eccentrically attached to the frame with a device by which it can be held out of a perpendicular line on its upper edge, to control the position of the cradle.

Claim.—1. An automatic cradle having the receptacle B suspended to the main shaft C by the cords *b b*, as shown and described.

2. In an automatic cradle, a rack and pinion attachment for adjusting the apparatus to an uneven surface, substantially as shown and described.

138,145.—*Gun-Lock.*—CHARLES GORDON, Goswell Road, England. Application filed October 27, 1871.

Claim.—In a gun-lock, the combination, with the plate *e* provided with the slot *g*, of the hammer *c*, trigger *f*, sear *d*, and combined main and sear spring, the several parts being constructed and arranged for operation substantially as described.

138,146.—*Breech-Loading Ordnance.*—CHARLES GORDON, Goswell Road, England. Application filed April 18, 1873.

This invention has for its object the provision of a breech-block which may be readily and securely locked in position in the gun, the means for which is fully set forth in the claim.

Claim.—The combination of the rear block B, block C, head-piece D, eccentric locking-blocks G G, spindle E, and cams F, all united together and operating in connection with the breech of a gun, substantially as described.

138,147.—*Sizing Compound.*—THOMAS GORRELL, Warren, assignor of one-half his right to GEORGE J. HAMPSON, Providence, R. I. Application filed April 12, 1873.

Claim.—1. A compound consisting of tallow, salt, soap, molasses, bees-wax, isinglass, and flour, when mixed in the manner and substantially in the proportions herein set forth.

2. Combining the composition herein described with starch for the purpose of adapting it for application to yarns, as set forth.

138,148.—*Lock for Drawers, &c.*—EMANUEL G. GOBY, Cincinnati, Ohio, assignor to himself and H. T. NIEMANN, same place. Application filed November 19, 1872.

The rear face of the lock-case is provided with projecting flanges, which are driven into the wood, and serve to hold the lock securely in the cavity formed for its reception without the aid of screws or nails.

Claim.—A lock for drawers and other uses whose frame A is made with side extensions *a* at the rear face to enable the lock to be firmly secured in the routed cavity B *b* in the drawer, substantially as and for the purpose specified.

138,149.—*Spring-Plate Washer.*—FAYETTE R. GRIDLEY, St. Paul, Minn., assignor of one-half his right to THOMAS JORDAN, Indianapolis, Ind. Application filed January 15, 1872.

A connected series of spring-washers, formed by indenting or recessing a straight plate at the points where the bolts are to pass on the surface opposite to that against which the nuts are to be applied.

Claim.—1. In a fish-joint or other similarly-constructed joint, the combination, with the splice-pieces and bolts and nuts, of the spring-plate washer C, substantially as and for the purposes set forth.

2. A fish-joint or other similarly-constructed joint, consisting of solid plate B and recessed spring-plate C bolted to the rails or beams D, substantially as specified.

3. As a new article of manufacture, a spring-plate washer, C, constructed substantially as herein set forth.

138,150.—*Dentist's Tool.*—CHARLES P. GROUT, New York, N. Y. Application filed January 30, 1873.

The tool is held in its socket by means of a spring, which works in a rounded cavity in the shank. A simple pull releases the tool, which, when fastened, is prevented from rotating. This fastening is intended for drills, rotated by a lathe for dental work.

Claim.—The tubular slotted handle A, combined with the spring D, which is rigidly fastened to it, and which is provided with the projection *b* for locking the notched tool-shank B, and for allowing the release of said shank by a simple pull, substantially as specified.

138,151.—*Door-Bell.*—JAMES HARRISON, East Hampton, Conn. Application filed December 4, 1872.

The hammer, pivoted beneath the bell, is arranged to strike a double blow on the outside of the bell by a single pull through the action of the spring on an eccentric hub of the hammer.

Claim.—1. The combination of the spring *d* with the shank of the hammer D, the pull-wire E, and the bell A, substantially in the manner and for the purposes set forth.

2. The eccentric *b*, formed on the shank of the hammer D, and provided with a groove, *f*, in combination with the spring *d*, pull-wire E, and bell A, all constructed and operating substantially in the manner shown and described.

138,152.—*Combined Rule, Square, and Bevel.*—CASSIUS M. HEFFRON, Rochester, N. Y. Application filed February 21, 1873.

A double-jointed rule is provided with a spring catch and clamp in such manner that it may be set as a square or as a bevel.

Claim.—1. In combination with the parts A B provided with the notches *a a'* and slots *b b*, made in the angular or bevel form described, the combined clamping and locking device, consisting of the nut D, the block E with offsets *i i*, and the spring-arms *d d*, the latter provided with the bevel-catches *g g*, the whole arranged to operate in the manner and for the purpose specified.

2. In combination with the parts B C, the spring *m* formed from the part C by slitting, as described, and armed with a stud, *n*, which strikes into sockets formed for its reception in part B, substantially as specified.

138,153.—*Thread-Cutter for Sewing-Machines.*—CHARLES J. HENRY and CORNELL J. WOOD, Tunkhannock, Pa. Application filed February 18, 1873.

The button is adapted to a recess in the plate, and arranged so that a portion of it projects above and crosses the plane of the top of the plate. This arrangement forms a notch, into which the thread is drawn and broken or cut.

Claim.—The combination of the button and plate, so arranged that one side of the button shall extend above the surface of the plate, for the purpose of forming a cutting device, substantially as shown and described.

138,154.—*Elevator.*—ARIEL C. HERRON, Boston, Mass., assignor to himself and DAVID WHITTEMORE, same place. Application filed April 2, 1873.

The hoisting-rope is connected to car by means of link, formed as a wedge, and having bolt-pin extending through cross-beam at top of car. The bolt-pin has at bottom flange a washer, and between this and the beam is a spring, which is compressed by weight of the car, but expands and draws down the bolt in case of breakage of hoisting-rope. On top of beam are pivoted levers, the inner ends of which extend nearly to the center of the beam, the wedge extending between and separating them; the outer ends extend by the uprights, and have eccentrics attached so that if the rope breaks the spring draws down the bolt, the wedge forces the inner ends of the levers outward, and the eccentrics on the outer ends are thereby forced against the uprights, stopping the car.

Claim.—The combination of the wedge A, nut *i*, spring *l*, levers *m m n n*, and eccentrics *p*, arranged and operating substantially as shown and described.

138,155.—*Dyeing with Aniline Black.*—JAMES HIGGIN, Manchester, England. Application filed February 12, 1873.

Claim.—The use of the disulphocyanide of copper as an assistant oxidiser in printing color for producing aniline black.

138,156.—*Canal.*—HENRY HILL, Cabin Creek, W. Va. Application filed June 7, 1872.

This device is to be employed where a sufficient natural head or supply of water can be obtained to move boats in a descending channel by the current alone, and utilize the overflow or waste water from said channel to overcome the rises in a parallel return-channel, a portion of said waste water being lifted to successively higher levels or steps by means of buckets, operated by mechanism actuated by the preponderance of the waste water discharged. The boats are transferred to the higher levels on inclined planes formed of series of rollers, which are revolved by similar mechanism, the motor being the waste water.

Claim.—1. Utilizing the waste water which flows from the higher to the lower sections in one channel, in the manner substantially as described, for raising water from the lower to the upper sections of the opposite channel, or for lowering and elevating the boats from one level or section to another, substantially as described.

2. The inclined ways P provided with the rollers Q, in combination with the mechanism for transmitting motion to the rollers when operated by the falling water in one of the channels, substantially as and for the purpose set forth.

138,157.—*Breech-Loading Fire-Arm.*—GARDNER L. HOLT and JOSEPH C. MARSHALL, Springfield, Mass., assignors to EDWD. H. BUCKLAND and ALMANGOR A. BUCKLAND, same place. Application filed February 28, 1873.

Claim.—1. The hammer L and trigger E, made in one and the same piece, substantially as described.

2. The combination of the hammer L provided with the notch I, the hammer-pivot J, and the spring G, whereby the hammer is held in a cocked position and is also forced forward to explode the cartridge, substantially as set forth.

138,158.—*Corn-Planter.*—GEORGE O. HOUCK, Springfield, Ohio. Application filed February 21, 1873.

A long narrow frame carries two wheels and a seed-box. The forward wheel has its circumference presenting an acute angle, that forms a furrow for the seed. The rear wheel is deeply grooved, the two flanges forming the groove passing upon the outside of the furrow, thus covering the grain, which is dropped at regular intervals, a hill at each revolution of the wheel. The grooved wheel has a print-marker, which designates the position of the hill, for the purpose of check-row planting.

Claim.—The combination of the furrowing-wheel B, seed-dropper D D', coupling-rod E, crank F^2, and concaved covering-wheel F having the transverse rib F^1, all constructed and arranged substantially as and for the purpose set forth.

138,159.—*Water-Proof Plastic Cement for Roofing.*—GARDNER HOWLAND, Brunswick, N. Y. Application filed December 16, 1872.

The composition is composed of paper-pulp, two parts; linseed-oil, one part; and white lead or mineral paint, a sufficient quantity. It forms an elastic and tenacious water-proof material for covering roofs and analogous purposes.

Claim.—The combination of paper-pulp, linseed-oil, and white lead or mineral paint, in about the proportions herein specified, to form a water-proof, adhesive, and flexible coating or body.

138,160.—*Gas-Generator.*—DAVID H. IRLAND, Hudson, Mich. Application filed March 21, 1873.

Claim.—1. The combination of the furnace A with exterior shell E and hot-air pipes *c c* and a revolving retort, D, substantially as and for the purposes herein set forth.

2. The arrangement of the smoke-pipes *b b*, as shown and described, along the sides of the furnace A, for the purposes herein set forth.

3. The combined condenser and cooler G, constructed as described, with the condensing-chamber G^1, having faucet *i* and the cooling-chamber G^2 with funnel *k* and pipe *m*, all substantially as and for the purposes herein set forth.

4. The purifier I, provided with grates J J placed in an inclined position, and three of the spaces thus formed filled respectively with whiting, oyster-shells, and tan-bark, substantially as and for the purposes herein set forth.

5. The perforated funnel L and perforated cylinders M M, arranged within the vessel K, substantially as and for the purposes herein set forth.

138,161.—*Pipe-Tongs.*—ALBERT H. JARECKI, Erie, Pa. Application filed March 21, 1873.

The adjustable steel bar is sharpened at both ends and reversible.

Claim.—1. The steel bar G, pointed and sharpened on both ends, serrated on one face, and operated by the worm-wheel D, as and for the purposes herein set forth.

2. The combination of the handles A A', hook B, enlarged, forked, and mortised part C, worm-wheel D, and reversible and serrated steel bar G, all constructed and arranged substantially as and for the purposes herein set forth.

138,162.—*Method of Adjusting Signaling-Mirrors.*—MARTIN M. KENNEY, Travis, Tex. Application filed December 2, 1872.

A mirror held adjustably in any position, has a small opening through its center, the shadow from which is set upon an adjustable arm placed a short distance in front of the mirror. By sighting through the opening in the mirror so as to bring the shadow-point in line with the distant station, the accurate adjustment of the mirror for reflecting to the station is secured.

Claim.—The combination of an adjustable perforated mirror and an adjustable shadowing-post, arranged and applied as and for the purpose described.

138,163.—*Sewing-Machine.*—MICHAEL H. KERNAUL, Berlin, Prussia. Application filed March 17, 1873.

The thread from a bobbin, such as is used in a Wheeler and Wilson machine, passes through the end of a lever or arm, which always remains in about a vertical position; the bobbin is fitted

to turn on the cup-shaped end or hub of this arm, and the degree of friction between the two and, consequently, the tension of the thread is regulated by means of the screw-nut and spring.

Claim.—1. The combination with the spool A and lever B, having a cup-shaped end *b*, of the nut *f*, screw *j*, and spring *k*, all arranged to operate essentially as described.

2. In combination with the spool A, lever B, nut *f*, screw *j*, and spring *k*, the socket C, arranged to hold the spool and lever firmly to each other while the spool is being filled, and constructed to operate essentially as described.

138,164.—*Oyster-Dredge.*—ISAAC A. KETCHAM, Breslau, N. Y. Application filed February 19, 1873.

The teeth are separately detachable, bent at a right angle, and locked fast by a screw-nut to each tooth. These nuts also draw the teeth into grooves in the rake-head, which serve to prevent lateral displacement of the teeth.

Claim.—1. The tooth C of an oyster-rake provided with an end-bent shank, *c*, detachably fastened to the rake-bar, as and for the purpose described.

2. The rake-head B having the grooved seats *b'* for reception of the teeth, as and for the purpose set forth.

3. The plates C' C', arranged over and in front of the rake, and attached to frame A *a'*, as and for the purpose specified.

4. The means described for spacing the distance between the bar *a* and lever-gage D, and consequently the depth to which the the teeth may sink into the soil, consisting of the loop *d'*, screw E, and tubular-shanked stop-nut F *f*, arranged as described.

5. The bar G, hung loosely on frame A from one end and provided with a bifurcation at the other to embrace rod *a*, as and for the purpose set forth.

138,165.—*Boat-Detaching Apparatus.*—JAMES M. KILNER, Chester Castle, Chester, Great Britain. Application filed April 18, 1873.

Two shackles are jointed to the bow and stern of a boat, one above the other. The upper one allows the block-chain to pass freely through it, but the lower one has a narrow slot near its outer end with V-shaped inner surfaces to gripe the chain better. The upper shackle, being raised, allows the chain to pass from the narrow slot in the lower one to a larger opening connected with it, by which the chain is automatically released.

Claim.—1. The shackles *c d*, jointed or pivoted to a suitable support attached to the boat, and formed and arranged to operate on a chain and in combination with each other, substantially as set forth.

2. The shackle *c* formed with the V-shaped edges c^3 and with the cross-piece c^4, for the purpose specified, in combination with a pivoted shackle, *d*, substantially as described.

138,166.—*Grain-Drill.*—JACOB KING, Indianapolis, Ind., assignor of one-half his right to BERNER, ENGLISH & OVER, same place. Application filed February 15, 1873.

Two iron side boxes vertically pivoted to a central one, the whole formed of upper and lower halves bolted together; in each is a pinion on a horizontal axis; the device to be placed at the apex of a triangular frame. Motion given to the central pinion by a rod passed into it from gearing on a front bearing-wheel. Other rods passed into the side pinions give rotation to the seed-cup boxes on the side of the frame and permit angular adjustment.

Claim.—The case or boxing G H H and wheels D D E F, constructed and arranged substantially as and for the purpose set forth.

138,167.—*Wash-Boiler.*—RUDOLPH LANGENBACH, New York, N. Y. Application filed April 4, 1873.

A wash-boiler constructed with an inner cylinder sufficiently reduced to admit steam and water between the outer and inner cylinder, with a bottom, and another partition or bottom which is perforated, through which a perforated water-conductor is passed, having on its upper end a cap with perforations. Attached to the top of the cover are bars, connected with an upright which revolves and to which is attached a lever to move it, by which they are given outward motion to the holding-staples to secure the top of the boiler firmly to it.

Claim.—1. The arrangement of a perforated inner wall on a wash-boiler, said inner wall being provided with a perforated tube and rose-head, which, in addition to the annular space *a*, forms the communication between the lowest compartment *d* of the boiler and the clothes compartment, substantially as set forth.

2. The swivel-head F and lock-bolts G, in combination with cover D and with the body of a wash-boiler, constructed and operating substantially as shown and described.

138,168.—*Reciprocating Churn.*—MAGNUS LITTY, Williamsville, Neb. Application filed December 7, 1872.

An upright cylindrical churn, its spindle or shaft of many arms ascending through the top, whence both ends of a cord coiled around it are extended to a pair of bars pivoted at the base, by drawing which alternately with the hands of the operator the dash-shaft is rapidly revolved in different directions, a detachable cross-beam at top affording a bearing to the shaft.

Claim.—1. The notched vibratory alternating arms I with their lower ends pivoted to the table A, the rotary churn-dasher C, cord H connecting said arms and dasher, and the churn B, combined and arranged as specified and shown.

2. The mortised and tenoned beam D, the upright E, the upright F having beveled notches, the wedge H', and the removable dasher C, substantially as and for the purpose specified.

138,169.—*Lubricator.*—FREDERICK LUNKENHEIMER, Cincinnati, Ohio, and JAMES MEEHAN, Covington, Ky. Application filed March 21, 1873.

Stand-pipe for the admission of steam into the chamber containing the lubricator, having valve which opens and closes with the action of the steam, the said valve being provided with duct, through which a small column of steam may always ascend, thereby preventing the congelation of the lubricator.

Claim.—1. The provision, in a steam-engine lubricator-reservoir, of stand-pipe C, valve D, gage H, and closing screw-plug I, in the described combination, for the purpose set forth.

2. In the described combination, the plug I, gland O, loose collar N, and elevated neck L of the reservoir.

3. The described arrangement of valve D, having the tapering stem F occupying the diaphragm E in the stand-pipe C.

4. The provision in the valve D, of the duct G, for the purpose designed.

5. In the described combination with hollow screw-plug I, valve D, and channeled stand-pipe C, the adjustable bowl *j*, for the purpose set forth.

138,170.—*Plaster Wall.*—MICHAEL F. LYONS, New York, N. Y. Application filed February 28, 1873.

Slabs or plates are formed of metallic frames made of V-shaped stripe, filled with mortar or cement, which, after the material has hardened, are secured to the studding or joists to form the inner wall. A finishing coat of plaster may be afterward applied.

Claim.—1. The V-sectioned metal frames A and the earthy filling B, combined and adapted to serve as herein set forth.

2. The within-described method of finishing rooms and buildings by means of sheets of earthy material held in metal frames and adapted to be readily applied and secured by nails or the like, with the joints filled and the surfaces covered with additional material applied as herein set forth.

138,171.—*Cap to Prevent the Bursting of Carbonic Acid and other Vessels.*—JOHN MATTHEWS, New York, N. Y. Application filed April 18, 1873.

A metallic disk is clamped in a cap which has a chamber in the upper portion, from which openings project downward. The disk is made of a metal like copper, which is strongest when cold, and a metal like iron, which is strongest when warm, so that the strength of the disk remains the same under varying temperature.

Claim.—1. The improved device herein described, for preventing the bursting of carbonic-acid generators and other vessels, provided with a disk composed of two or more metals so as to compensate for varying temperature, as and for the purpose set forth.

2. The combination of the cap C, nut D, and packing E, substantially as described.

3. The cap C provided with chamber B and downwardly-projecting orifices *i*.

4. The corrugated annular disk-seat formed of the hollow nut D and corrugated base *g*, as described.

5. The combination of the cap C, disk *a*, nut D, and packing E, all so as to operate substantially as set forth.

6. Compound disk made by uniting copper and iron or other metals similarly effected by heat so as to secure a uniform strength under varying degrees of temperature.

7. The disk *a*, made of iron and copper or equivalent metals, and coated so as to resist corrosive liquids and gases, as set forth.

138,172.—*Harvester.*—SIMON L. MCCOLLOCH, Wheeling, W. Va. Application filed March 6, 1873.

A cam-cylinder is mounted on the front end of a vibrating frame, and a coupling-arm supporting the vibrating lever, which is operated by the cylinder, is hinged about the cylinder-case.

Claim.—1. The combination, with the clutches *a* and springs *b*, of the rods *e*, collars *d*, levers D, and foot-piece G with wedge E, all substantially as and for the purposes herein set forth.

2. The cylinder J placed at the end of the main frame, and provided on its circumference with zigzag grooves, as shown, in combination with the vibrating lever R, hinged bar L, elbow-lever O, shoe M, and cutter bar P, substantially as and for the purposes herein set forth.

3. The combination of the vibrating lever R, ball *m*, and grooved elbow-lever O with the shoe M and cutter-bar P, for the purposes herein set forth.

4. The combination of the slotted elbow-lever O, cutter-bar P, shoe M, pivot *x*, and friction-rollers *y z*, for the purposes herein set forth.

5. In combination with the hinged bar L and shoe M, the curved brace-rod V provided with a T-head, and the casting W secured at an angle to the tongue *y* and provided with an oblong slot on its under side, within which the T-head moves, substantially as and for the purposes herein set forth.

6. The arrangement of the hooked lever A', wheel Z with cam *w'*, and chain *w* connecting with the bar L, for the purposes herein set forth.

138,173.—*Suction Apparatus for Paper-Machines.*—WILLIAM MCLAUGHLIN, Lee, Mass. Application filed February 12, 1873.

To prevent the motion of the web being impeded, and to prevent injury to the same by friction, rollers, upon which the web rests, are arranged within the suction-box. These rollers turn in separate packing-boxes, which contain an adjustable follower to keep the packing pressed against the roller and thus render the suction-box none the less air-tight.

Claim.—The combination of the suction-box A, packing-boxes and rollers C, packing E, followers F, and web B, substantially as and for the purpose described.

138,174.—*Artesian-Well Boring.*—WILLIAM MCPHERSON, Manchester, N. H. Application filed September 11, 1871.

Apparatus for sinking shafts for wells, consisting of derrick A frame composed of two timbers, B B, bolted together so as to allow open space between them for passage of buckets and other tools employed in discharging water, sand, &c., accumulating in

the tubes F during the process of sinking them. The tubes covered with block E, (perforated through the center to correspond with diameter of the inside of the tubes,) on which the beams B B set as a lever, having for a fulcrum the frame-work C, and by their own and added weight force the tubes length after length into the ground.

Claim.—An apparatus for sinking shafts for wells, consisting of the two beams B B, secured together as shown, having their fulcrum in the frame C, in combination with the derrick A, constructed as described, all arranged to operate substantially as set forth.

138,175.—*Grain-Elevator.*—HELEN MERRILL, Brooklyn, N. Y. Application filed September 28, 1872.

Claim.—1. The arrangement of the apparatus for the elevation of grain or other similar material by the induction of an uninterrupted current of air, substantially as described.

2. The combination, with the lift-pipe, of the adjustable cylindrical regulating-valve having an air-space between the pipe and valve-cylinder.

3. The combination of the suction-pipe *g* and blast-discharging pipe h with the receptacle *e*, when their terminuses are in opposite ends of the receptacle, as and for the purpose specified.

138,176.—*Process for Casting Bearings on Shafting.*—JAMES MILLER, New York, N. Y. Application filed February 17, 1873.

The shaft is held in a lathe and heated while being revolved. The flask is placed on the shaft and the bearing cast without removing it from the lathe.

Claim.—1. The method herein described of casting bearings on shafts while the shafts are held in lathes, as set forth.

2. The combination of the heating apparatus D with the lathe A for the purpose of heating the shaft when in such lathe, as set forth.

138,177.—*Box-Opener.*—LUCIEN MILLS, Jersey City, N. J. Application filed January 18, 1873.

The chisel end is provided with a notch, whereby the iron straps on boxes may be severed.

Claim.—The box-opener consisting of implement A, having its chisel end provided with a sharp curved notch, *a*, in the center, and its opposite end made of an angular or foot-like shape, with a curve or bend, *b*, in the angle and with claws B, substantially in the manner and for the purposes herein shown and set forth.

138,178.—*Construction of Vessels.*—WILLIAM F. MORGAN, New York, N. Y. Application filed February 21, 1873.

The "ceiling" of a vessel is composed of a boarding with square joints, and an internal boarding with rabbeted joints, which strengthen the ship and prevent moisture from injuring the grain, and also the grain from getting into the bilge. The grain-space is divided into three longitudinal sections or bins, which are divided by "shifting-planks," composed of rabbeted boards.

Claim.—1. The combination, in ceiling the holds of vessels, of a boarding, E, with square joints, and a boarding, F, with rabbeted joints, constructed and applied substantially as shown, and for the purposes described.

2. The partitions or shifting-planks I I, arranged as described, to divide the upper part of the bin or grain-space, fore and aft, into three parts, substantially as described.

138,179.—*Dumping-Scow.*—AUGUSTUS T. MORRIS, Bloomfield, N. J. Application filed March 5, 1874.

Claim.—1. The dumping-scow, made with the double inclines *c d e f*, in combination with the central and lateral discharge-openings and doors or flaps *m m o o*, substantially as and for the purposes set forth.

2. A dumping-scow, made with the central float *b* and end floats *a*, connected by the two double inclines *c d e f* and bottoms *g*, in combination with the lateral and central discharge-openings and the doors or flaps, substantially as set forth.

138,180.—*Device for Capping and Uncapping Cartridges.*—JOSEPH F. NETTLETON, Branford, Conn. Application filed April 3, 1873.

Device for placing upon cartridge-shells the cap or primer which is inserted into a cavity upon the rear end or head of the shell prior to charging the shell.

Claim.—The herein-described cartridge-primer, consisting of the cylinder A with its ledge B for the support of the shell, the lever D constructed with the notch *f*, and the follower E with its spindle *b* within the said cylinder, all substantially as set forth.

138,181.—*Corn-Harvester.*—SAMUEL PATTON, Chatsworth, Ill. Application filed April 24, 1872.

A husking and gathering frame, with gathering-heads, husking-rollers, and endless-apron elevator attached, is pivoted above the axle of the supporting-wheels, and may be adjusted at different heights, gathers one row at a time, which is received between a divided tongue.

Claim.—1. The husking-rolls M, when provided with the lips *m* of the form shown and described, having abrupt shoulders on one side and of an elliptic curve on the other, and arranged to operate as set forth.

2. In combination with the husking-rolls, as above described, the spirally-grooved head Q, when arranged to work against or in close proximity to a smooth head, as shown, so as to separate the stalks and feed them between the rolls singly and at regular distances apart, as set forth.

3. The bell-shaped gathering-heads S, provided with the tangential arms P having the outwardly-curved ends, as and for the purpose set forth.

4. The pivoted gathering-frame K mounted on the main frame A, and provided with the transverse shaft N, said shaft being passed through the journals of the frame K, and provided on its ends with pinions i gearing into teeth on the main wheels, as shown, so that the frame may be adjusted without affecting the gearing.

5. In combination with the husking-rolls and the elevating-apron T, the horizontal apron X for delivering the corn at the side of the machine, as set forth.

138,182.—*Table-Leaf Support.*—GEORGE PAYZANT, Chicago, Ill. Application filed February 26, 1873.

A hinged supporting-arm strikes against a fixed arm on the table when the leaf is raised, and the fixed arm has a laterally-inclined side to press against the hinged arm and fold it when the leaf is folded.

Claim.—A table-leaf support, consisting of the supporting-arm D and of the brace or bearing C provided with a laterally-inclined arm, C', for the purpose of folding the arm D when the leaf is folded, substantially as specified.

138,183.—*Seat.*—JOHN PEARD, New York, N. Y. Application filed March 28, 1873.

The hinged seat is connected to the hinged arm-piece by a hinged brace and link; the hinged arm-piece supports a pivoted desk; the inclination of the desk is adjusted by a secondary brace pivoted at the top of the main brace.

Claim.—1. The combination, with a hinged seat, A, and a hinged arm-piece, D, of the brace C, link *b*, stops *f* and *g*, and swivel-desk E, all constructed, arranged, and operating as and for the purpose specified.

2. The secondary brace *i*, combined with the main brace C, link *b*, arm-piece D, pivoted desk E, and seat A, substantially in the manner and for the purpose described.

138,184.—*Cupola-Furnace.*—JOHN B. PEARSE, Swatara township, Pa. Application filed January 18, 1873.

The water-cooled breast-block prevents the breast of molding-sand from melting and becoming dangerously thin, and also the gradual enlargement of the tapping-hole. A cast-iron runner daubed with "clay-wash" does not clog by adhesion of slag.

Claim.—1. The combination, with a cupola as ordinarily constructed, of a water-cooled breast-block containing the sand-breast, substantially as and for the purpose specified.

2. The combination, with a cupola as ordinarily constructed, of a cast-iron runner, sufficiently thin to be cooled by the air, substantially as set forth.

3. The combination, with a cast-iron runner, as described, of a cooling-tube cast in the bottom of the same, substantially as and for the purpose specified.

138,185.—*Lamp.*—JULIUS A. PEASE, Boston, Mass. Application filed November 27, 1872.

The reservoir is adjustably suspended above the chimney; a tube leads therefrom to the basin, from which the flame-supply is drawn. A drip-pan is secured in the bottom of the hollow pedestal, and serves to catch the overflow from the wick-tube basin.

Claim.—1. The combination of the wick-tube basin, the pedestal, and the drip-basin, substantially as and for the purpose specified.

2. The adjustable reservoir, provided with the feeding-tube, in combination with the wick-tube basin, and drip-basin within the pedestal, as and for the purpose set forth.

138,186.—*Windmill.*—WALTER PECK, Rockford, Ill., assignor to DAVID S. PENFIELD, same place. Application filed January 17, 1873.

A hollow cylinder is supported upon and revolves freely in plates or sockets; secured to the cylinder is a shank, cast in one piece with it, and having arms or lugs projecting horizontally. A grooved ring surrounds the cylinder, and has notches cut in its inner surface which fit over feathers on the cylinder, leaving it free to rise and fall and revolve with the cylinder. A weighted lever is secured to the post, and is connected with the grooved ring by means of a link which slides in one of the plates. A bearing-box, in which the shaft of the wind-wheel is mounted, is provided at its inner end with an upright arm, from which project two arms, corresponding with those on the shank, secured to the cylinder. The wheel shifts its position according to the direction of the wind. When the wind increases in violence the angle at which the face of said wheel is presented to the wind may be changed so as to maintain a nearly uniform speed of revolution.

Claim.—1. The hollow cylinder B, provided with the shank B' for the vane and the arms b^2 b^3, in which the sleeve or box E is pivoted, substantially as set forth.

2. The sleeve or box support E, provided with its vertical arm *e* having its projecting lugs, in combination with the cylinder B provided with the vertical arm b^4 and lugs b^2 b^3, these parts being united by the pivot e^1, substantially as described.

3. The arrangement of the hinge or pivot of the wind-wheel over or nearly over the vertical center of the cylinder B, substantially as described, so that the relative position of the pitman with the cylinder shall not be materially changed when the wheel is brought parallel to and in line with the vane, as and for the purpose set forth.

4. The combination of the rock-shaft, provided with crank-arms d d^2, with the cylinder B, sleeve E, loose ring C, weighted lever c^2, and their connecting devices, substantially as set forth.

5. The combination of the lever D' with the cylinder B, sleeve E, links d^1 d^1, and their connecting devices, substantially as set forth.

6. The combination of the stops *g g'* with the sleeve E, cylinder B, shank B', and operating devices, substantially as set forth.

138,187.—*Reversible Pinion for Watches.*—FERDINAND PICKERT, Concord, N. H. Application filed March 24, 1873.

An under-cut segment of the center pinion-arbor is pressed transversely by a spring so as to engage with a corresponding recess in the interior of the pinion, and thus act as a pawl for locking the pinion to its arbor in the going direction of strain, while allowing it to slip freely in the backward direction.

Claim.—1. The pinion retaining or locking catch or pawl H, provided with dovetailed or enlarged ends, inserted into a corresponding seat in the arbor A, in combination with the pinion B, having a notch or groove on its interior periphery, substantially as described, for the object specified.

2. In combination with the arbor and catch, the spring E, bearing upon the heel of the catch, as and for the purpose set forth.

138,188.—*Hot-Air Furnace.*—CHARLES L. PIERCE, Natick, Mass. Application filed December 28, 1872.

Above the combustion-chamber is another chamber communicating with it by a central opening controlled by a damper. The sides of the upper chamber project so as to receive pipes which connect at the other end with a chamber around the base of the stove. The draft may be direct through said central opening, or caused to pass down into the lower chamber, and thence to ascend through the upper chamber to the exit-pipe.

Claim.—1. The chamber E E' opening at top into combustion-chamber D and arranged about fire-pot, in combination with a series of radiating vertical flues, F, placed at intervals around the air-chamber and leading to the smoke-flue through chamber L, as and for the purpose described.

2. An annular combustion-chamber, D, having damper *d* at the top and opening into chamber E, as and for the purpose set forth.

3. The annular register K combined with the chambers E and E' and flues F, and so arranged in relation to them that it will allow any deposit from either to be transferred to the ash-pit beneath it, as set forth.

4. The tunnel G declined inwardly and obliquely downward toward the center of combustion-chamber and having the smoke-flue H extending to near the bottom thereof, in combination with damper *d*, combustion-chamber D, annular chambers E E', and flues F, as described, to enable the deposit from the tunnel to be readily emptied into the fire-pot.

138,189.—*Hot-Air Furnace.*—CHARLES L. PIERCE, Natick, Mass. Application filed December 28, 1872.

The draft passes down from the projected top of the combustion-chamber through the pipes around the furnace into a chamber under the ash-pit, and thence by a central pipe to the exit-pipe. This central pipe turns on a bottom flange so as to adapt the furnace to be set in any location.

Claim.—1. A furnace having combustion-chamber closed, projected at top and provided with pendent flues *b* leading from top down through the air-chamber into a hollow chamber below ash-pit, in combination with the central swiveled smoke-flue *d* and flue F, as and for the purpose described.

2. The arrangement of the smoke-flue F within the air-chamber, in combination with the swiveled connecting-pipe *d*, as and for the purpose set forth.

3. The connecting-pipe *d*, swiveled and arranged to turn, as and for the purpose described.

4. The chamber projecting and notched, as described, to allow the smoke-flue to be placed within the air-chamber.

5. The combination of the descending tubes with the sub-base and central draft at bottom, as and for the purpose set forth.

138,190.—*School-Chair.*—EDWIN J. PIPER, Springfield, Mass. Application filed April 9, 1873.

To the top of the pedestal are secured two metallic side pieces, each having an inside flange, upon which are fitted slats having a recess made in each end. These metallic side pieces form the side frames for the seat and back, and are held together by screws inserted in the ends of a portion of the slats.

Claim.—1. In an improved school-chair, the frame *b* provided with the inside flange *n* and the projections *f*, in combination with the slats *a* having a recess, A, in each end, whereby the slats and frame are fitted together, and the slats secured at proper distances apart, substantially as described.

2. The frame *b* provided with the wings or pieces *e*, in combination with the pedestal provided with the flange B, whereby the chair-seat is secured to said pedestal, substantially as set forth.

138,191.—*Nutmeg-Grater.*—ALBERT L. PLATT, Bloomington, Ill., assignor to JOHN D. CONNERS and THEODORE K. CONNERS, same place. Application filed April 11, 1873.

The frame of the grater is constructed of a single block of wood with openings to receive the grating-cylinder, feeding and discharging pipes. A crank connects with the rim of the grating-cylinder.

Claim.—As an article of manufacture, the nutmeg-grater shown and described, constructed of a single block of wood, A, with openings *b b' d*, grating-cylinder B, and crank C, connected to the rim of the cylinder, all as set forth.

138,192.—*Harvester-Cutter.*—CHARLES POMEROY, Matteon, Ill. Application filed December 26, 1872.

Horizontally-revolving cutters are attached to sockets which fit over and are driven by vertical square journals, and are held thereon by a plate long enough for the set.

Claim.—In combination with the spur-wheels *a a*, shafts *c c*, and endless chain *b*, the knives C C connected to the socket-disks D D and held in place by the covering-plate E, substantially as set forth.

138,193.—*Machine for Recessing Tobacco-Boxes.*—ISAIAH M. REAMES, Oxford, N. C. Application filed January 23, 1873.

A revolving cutter is arranged in a frame so as to reciprocate vertically, the box being held in contact with the cutters by means of a screw-clamp.

Claim.—The cutting devices H I, mounted in a vertically-sliding frame, E F, provided with a rod, R, and treadle Q, all arranged to operate as herein specified.

138,194.—*Belt-Fastening.*—JEAN E. RICHARD, Columbia, S. C. Application filed February 15, 1873.

The ends of the belt to be united are split, cut, or bored, and cores inserted to prevent the clamps from drawing off.

Claim.—The combination of the separable clamp-plates and the core-pieces with the split, cut, or bored belt-ends, substantially as specified.

138,195.—*Cooler for Beer.*—AUGUST F. RICK, Chicago, Ill. Application filed February 21, 1873.

A blower forces air through pipes surrounding an ice-receptacle into a chamber containing one or more inclined partitions, over which the beer flows.

Claim.—In combination, the chamber B provided with an ice-receptacle; the chamber I provided with one or more inclined floors; the pipes C C arranged substantially as described; a blower and a "steeple," all operating together, substantially as and for the purposes specified.

138,196.—*Plow-Boot.*—CHARLES H. RICKER, Dover, N. H. Application filed March 1, 1873.

The peculiar cut affords a proper bend above the instep and a swelled back for the calf without crimping.

Claim.—A boot having its vamp and leg-pieces formed substantially as shown in Figs. 5 and 10, and sewed together as described.

138,197.—*Plow.*—JACOB ROOP, Clinton, Tenn. Application filed March 12, 1873.

The mold-boards are movable in the grooved standard, and when raised the point D becomes a subsoiler.

Claim.—1. The mold-boards G G, in combination with the rods *d d* and handles H H, as and for the purpose set forth.

2. The standard I, in combination with the handles H, as and for the purpose described.

3. The combination of the grooved standard C, movable mold-boards G G, rods *d d*, and handles H H, all substantially as and for the purposes herein set forth.

138,198.—*Injector for Steam-Generators.*—SAMUEL RUE, Jr., Philadelphia, Pa. Application filed February 28, 1873.

The auxiliary steam-jet pipe, by which the action of the injector is started, passes around the heads of the adjustable and discharge tubes through the overflow or a pipe supplementary thereto.

Claim.—1. The steam-pipe S, extending through the head C from the top thereof around the ends of the tube H and pipe D into the tube R, substantially as and for the purpose set forth.

2. The combination, with the adjustable tube H and pipe D, of the steam-pipe S, arranged in the overflow and projecting into the tube R, substantially as and for the purpose set forth.

138,199.—*Injector for Steam-Generators.*—SAMUEL RUE, Jr., Philadelphia, Pa. Application filed February 28, 1873.

A tubular passage in the head next to the generator connects the adjustable tube with the discharge-tube. An opening in this passage communicates with the overflow, and is closed by a valve when no water is overflowing, thus preventing the entrance of air. The lever and the adjustable tube are so constructed that they may be reversed, and are thus applicable to either a right or left hand injector.

Claim.—1. The rotating tube H and removable lever M, in combination with the heads B C and bed-plate A, substantially as and for the purpose set forth.

2. The tubular passage T, situated in the overflow-passage O, in connection with the opening *t* and valve V, substantially as and for the purpose set forth.

138,200.—*Steam-Heater.*—EDMUND RUSSELL, Brooklyn, N. Y. Application filed January 22, 1873.

The radiators are screwed into the base like ordinary tubes. The inner sides of each radiator are connected by pipes to facilitate the circulation of steam. The several parts, excepting the plug, are cast in one piece.

Claim.—1. The cross-connections A^4, A^5, &c., arranged, as shown, at different levels between the branches A^3 A^3 and adapted to allow the steam to circulate first in a short length and afterward in a longer length of the radiator, as herein specified.

2. The within-described construction and arrangement of all the parts A^1, A^2, A^3, A^4, A^5, &c., when formed in a single casting, as herein set forth and described.

138,201.—*Portable Punch.*—JOHN J. SAFELY, Ottumwa, Iowa. Application filed March 14, 1873.

This punch is particularly adapted to the punching of round or rectangular holes in the web of railroad rails. The punch is held in such manner that it will not rotate, and is pushed through the rail by means of a screw. The die and punch are of the same contour as the web, in order that the pressure may be equal on the punch, to prevent breakage.

Claim.—1. The device, consisting of a clamp, B, right-handed screw C, the left-handed screw-cap *a*, punch *d*, and die *c*, all constructed as herein described, for the purposes set forth.

2. The combination with each other, within a clamp, of a cylindrical die, punch, and cap, the die, punch, and the cap which incloses the punch being removable and interchangeable, and also being provided with flat or convex ends, so as exactly to fit the web or contour of the rail to be punched before the punching process is begun, all substantially as herein described.

138,202.—*Guide for Cutting Out Photographs.*—JOHN SCHOFIELD, Philadelphia, Pa., assignor to JOHN HAWORTH and THOMAS H. MCCOLLIN, same place. Application filed January 25, 1873.

A guide-tool, provided with a rim of oval or other shape, beveled to a sharp edge, and a handle, is employed in connection with a cutting instrument for the purpose set forth.

Claim.—The guide, consisting of the rim A and handle B, constructed and arranged substantially as and for the purpose described.

138,203.—*Spring-Fastener for Bed-Bottoms.*—DAVID A. SCOTT, Cincinnati, Ohio. Application filed November 5, 1872.

The spring-fastener or clasp has a curved groove in which the bent ends of the springs are inserted. It has a central bearing and a sharpened edge that sinks into the bar.

Claim.—The spring-fastener A, formed with the central bearing, the sharpened edge or rim, and the laterally-curved groove to receive the bent end of the spring resting upon the bar B, substantially as and for the purpose set forth.

138,204.—*Vault-Cover.*—THEODORE SHARTS, New York, N. Y. Application filed March 20, 1873.

The spurs retain the concrete filling when the cover is reversed, and the shouldered flanges surround and firmly retain the bull's eye in place for the same purpose.

Claim.—In a vault-cover or sidewalk, the base-plate A filled with concrete, and provided with the obliquely arranged spurs *b b*, holes *d d*, and shouldered flanges *e e* formed as shown, for the reception of bulls'-eyes *c*, substantially as described, for the purpose set forth.

138,205.—*Suspender for Fly-Guards upon Horses.*—GILLUM SHELTON, Normal, Ill. Application filed March 8, 1873.

Claim.—The above-described straps or suspenders F and F′ for fastening and supporting the coverings of the legs of animals, substantially as set forth.

138,206.—*Saw-Mill Carriage.*—BENJAMIN F. SMITH and JAMES B. SMITH, Webster, Mass. Application filed April 4, 1873.

The setting-bar is retracted by means of a chain winding upon a windlass, which is operated by means of a friction-wheel coming in contact with a vibrating bar.

Claim.—The combination, with angle-lever L and friction-lever K, of foot-piece 2 and spring 4, substantially as and for the purposes set forth.

138,207.—*Breech-Loading Fire-Arm.*—DEXTER SMITH, Springfield, Mass. Application filed April 4, 1873.

Claim.—1. As a means of giving the extractor an accelerated movement, the lever *a* pivoted to the breech-block and operating against a stop, *s*, or its equivalent, by the downward movement of said block, substantially as described.

2. As a means of forcing back the fire-pin, the sliding bar *w′*, operating in the breech-block and against the frame, or a shoulder therein, by the downward movement of the said block, substantially as set forth.

138,208.—*Toy-House.*—JOSIAH B. SMITH, Chicago, Ill. Application filed October 28, 1872.

The box forms the foundation upon which the toy-house is built. When the house is taken apart the pieces are packed in the box.

Claim.—The toy-house herein described, consisting of the box A B, in combination with the frame and panel-pieces, so constructed that they can readily be taken apart or put together, substantially as specified.

138,209.—*Baby-Jumper.*—ALVAH F. SPOONER, Sterling, Ill. Application filed February 5, 1873.

The frame is made of a bar having a ring at the top, a bend near the middle for the child's head, and a projecting arm at the bottom to which the saddle is secured. The waistband is strengthened by a metallic plate, and is made adjustable on the upright bar by means of a metallic strap and a piece of rubber or leather. The clasps that hold the rubber spring are corrugated on their inner faces and made with one detachable side.

Claim.—1. The frame A, formed of a half-round metal bar, in the shape shown, with bend *a*, and ring *b*, and the saddle B, substantially as and for the purposes herein set forth.

2. The waistband C, constructed as described, with stiffening-plate *d*, and movable upon the frame A by means of the metal strap *f* and piece *e* of leather or rubber, all as and for the purposes herein set forth.

3. The combination of the elastic strap E and the clasp G, corrugated on its inner side and with a movable side, A, substantially as and for the purposes herein set forth.

4. The combination of the frame A, saddle B, waist-strap C, supporting-strap D, elastic strap E, and clasps G G, all constructed and arranged substantially as and for the purposes herein set forth.

138,210.—*Hay and Cotton Press.*—GEORGE W. STEWART, Atlanta, Ga., assignee of three-fourths his right to JESSE A. ANSLEY and HENRY LEWIS, same place. Application filed March 3, 1873.

The press-frame is pivoted below to the standard, upon which it rests and revolves, and by being wound around the ends of the levers are drawn inward so as to raise the platen. By reversing the motion of the press the platen will be lowered to its normal position.

Claim.—1. The combination of the standard T provided with the bearing-collar *t*, the press-frame shown pivoted upon said standard, the platen Q, the levers R, the rollers S, the pulleys *r*, and the cord W, substantially as and for the purpose specified.

2. The posts A, cross-bars B, and sills D provided with the sockets C, when said parts are constructed and combined substantially as and for the purpose shown and described.

3. The device as a whole, when its several parts are constructed and combined substantially as and for the purpose shown.

138,211.—*Horse Hay-Fork.*—HIRAM C. STOUFFER, Canfield, Ohio. Application filed September 21, 1872.

Two parts, each resembling the letter S, with part of the lower curve left off and the middle prolonged, are pivoted together near the lower end of the upper curve, ready for insertion when the points of the inner tines are overlapping, in consequence of which they diverge, but converge with outer tines as the fork is forced into the hay, thus inclosing two bunches, in which position they are locked by a toggle-joint and levers.

Claim.—The slotted toothed toggle D′, toggle D, lever G, clevis A, and double-tined jaws F F′, combined and arranged substantially as specified.

138,212.—*Hopper for Grinding-Mills.*—GEORGE S. THOMPSON, Philadelphia, Pa. Application filed July 5, 1872.

The hopper, with the spout as constructed, prevents the material from obstructing or sticking, and feeds it easily and freely to the stones, and admits it to be raised and lowered.

Claim.—The hopper B, in combination with the spout C, having a cylindrical exterior and a tapering or conical interior, both rising and lowering and adjustable together, substantially for the purpose shown and described.

138,213.—*Brush.*—PHILIPP WAGNER, New York, N. Y. Application filed March 13, 1873.

A paint-brush with a handle, constructed with a metallic socket fitted to a wooden ring, which is fitted to the ferrule. To the ferrule is fitted and attached to its inside an annular ring or rib to secure the bristles, and the whole covered by a closely-fitted cap or cover.

Claim.—1. The metallic cap-disk D, combined with a socket, handle, and wooden ring, as and for the purpose described.

2. The brush-socket D, provided with the annular inside rib *d*, arranged in combination with the ferrule and wooden ring, as and for the purpose set forth.

138,214.—*Nut-Lock.*—WILLIAM B. WAIT, New York, N. Y. Application filed February 26, 1873.

The gravitating portion of the nut has a lateral extension, which forms the bearing-surface. The nut acts on the bolt with a leverage.

Claim.—A nut provided with the eccentric portion *a*, carrying the lateral extension *b*, arranged at right angles to the face of the nut, as and for the purpose shown and described.

138,215.—*Derrick.*—JOHN E. WALSH, New York, N. Y. Application filed March 7, 1873.

Claim.—1. In a hoisting-derrick, the removable revolving cap or head A′, when constructed and operating upon the mast A in the manner substantially as described and shown.

2. In a hoisting-derrick, the swinging arms B, in combination with the revolving cap A′ and mast A, constructed to operate in the manner substantially as described.

3. The swinging arm B, having slot *b* with ledges or tracks 1 therein, substantially as and for the purposes described.

4. The combination of the hoisting-block C, having sheaves *c* and friction-rollers 2, with the swinging arm B, having the slot *b* and ledges or tracks 1 therein, substantially as and for the purposes described.

5. The combination of the windlass D, hoisting-rope E, pulley *e*, and traveling-block C with the swinging arm B, in the manner substantially as described.

6. The combination of the windlass D, rope *g*, pulleys *e* and *g′* with the traveling block C and swinging arm B, substantially as and for the purpose specified.

7. The combination of the swinging arm B that carries the traveling hoisting-block C with the guy-ropes *h″ h″* and cleats *h‴ h‴*, substantially as and for the purpose described.

138,216.—*Machine for Rolling Scythes.*—HERVEY WATERS, Boston, Mass. Application filed September 9, 1865.

Claim.—1. A cam for controlling the position of the gage, substantially as described, which gage determines the position of the rod or bar with relation to the rolls, or the point upon the bar in the direction of its length at which the rolls shall bite upon it.

2. The system of mechanism for automatically and accurately introducing the rod to the rolls, substantially as set forth.

3. Combining with the guide or guides, which keep the rod from swaying laterally, a mechanism or device for preventing the rod from twisting.

4. A double system of die-grooves, substantially as described, for rolling the point and heel ends of scythes and similar articles, where the finishing-die grooves for each end of the scythe have substantially the same terminal form.

5. The process, as described, by which scythe-plates of various lengths may be rolled in the same suit of dies.

6. The forked roller groove for rolling the points of scythes to obviate the necessity of bending.

138,217.—*Pocket-Book.*—LUDWIG WENDT, Philadelphia, Pa. Application filed January 11, 1873.

Provided with a hinged supplemental flap, adapted to receive articles for toilet use.

Claim.—1. A supplementary receptacle or flap, B, adapted to receive and retain articles for toilet use, and connected to and forming a part of a pocket-book, A, as set forth.

2. The said flap B, constructed substantially as described, with a hinged portion, B′, for the purpose specified.

138,218.—*Slate-Washer.*—WILLIAM WESTLAKE, Chicago, Ill. Application filed March 7, 1873.

A slate-washer, having a water-receptacle, with a screw-thread upon its outer surface: a cup-like cover, for containing a sponge, also having a screw-thread, screws down over the water-receptacle. A circular plate fits over the top of the water-receptacle to cover the water-opening and air-hole.

Claim.—The sponge-receptacle A, having a screw-thread, *a*, in combination with the water-receptacle B, having a screw-thread, *d*, and with or without a top, D, substantially as and for the purpose specified.

138,219.—*Nursing-Bottle.*—GEORGE R. WHITE, Boston, Mass. Application filed April 2, 1873.

The inner suction-tube is rigid and of metal, and has a jointed piece at its bottom end. This second piece turns by gravity and reaches the bottom of the bottle in all positions. The screw-cap is provided with two flanges for securing it will with a tube or a rubber teat.

Claim.—1. In combination with the bottle *a*, the rigid center draft-tube *e*, having at its inner end the pendent loosely-swinging metal tube *f*, substantially as shown and described.

2. The screw-cap *d*, made with the two buttons or flanges *h i*, for receiving either the nipple *k* or nipple-tube *l*, substantially as described.

138,220.—*Wheel for Vehicles.*—JOHN F. WRIGHT and BENONI B. JONES, Columbus, Ind. Application filed January 21, 1873.

To clamp and hold the spokes from being drawn out or pressed in.

Claim.—In a carriage-wheel, the combination of the clamping-flanges B′ and C′, having convex bearing-surfaces *b* and *c*, with spokes, the tenons D of which are concaved at *d d*, substantially as and for the purpose specified.

138,221.—*Eyelet.*—SOLOMON W. YOUNG, Providence, R. I. Application filed April 26, 1872.

The eyelet is struck from a hexagonal blank, thus making an eyelet with a hexagonal base. Waste of metal is prevented and cutting facilitated as the die which cuts one blank also cuts parts of others at the same operation.

Claim.—1. As a new article of manufacture, an eyelet having a hexagonal flange, substantially as described.

2. The method of cutting blanks for hexagonal-flanged eyelets, substantially as described, whereby each cut of the dies on any one blank will contribute to the cutting of one, two, three or more sides of succeeding blanks, as and for the purposes specified.

REISSUE PATENTS.

5,360.—*Clothes-Wringer.*—RODNEY S. CATHCART, Cincinnati, Ohio, assignor, by mesne assignments, to THE QUEEN CITY WRINGER COMPANY, of same place.—Patent No. 131,392, dated September 17, 1872. Application filed April 4, 1873.

In the outer legs are placed cylinders which rotate freely, having screw-clamps through them. The inner legs are chamfered so as to fit a round tub.

Claim.—1. In combination with the leg A′, provided with the vertical opening *a* and transverse slot *a′*, the cylindrical nut G, and clamp-screw H, substantially as and for the purpose specified.

2. In combination with the leg A′, provided with the swiveled clamp-screw H, the leg A″, having its inner face *a″* chamfered outward and rearward, substantially as and for the purpose shown.

5,361.—*Fruit-Basket.*—STEPHEN R. CONOVER, New York, N. Y., assignor to JOHN A. MOUNT.—Patent No. 131,851, dated October 1, 1872. Application filed March 24, 1873.

The basket is made of three splints, forming a polygonal convex bottom. The splints are divided into three parts to form the open sides of the basket, and are secured at the top to inner and outer hooks.

Claim.—A basket constructed of three or more splints which are divided at their ends and crossing each other at their centers, and connected at their upper ends to a circular band so that the bottom of the basket shall assume a polygonal shape, while its top is round, as shown and described.

5,362.—*Soldering Apparatus.*—JACOB GULDEN, Key Port, N. J. Patent No. 117,770, dated August 8, 1871. Application filed January 15, 1873.

The soldering-iron is connected to an adjustable pivoted bar having a spring attached, and is held in contact with the can by means of a foot-lever.

Claim.—The combination of the soldering-iron E with the pivoted bar G, spring *h*, and standard *g*, substantially as described.

5,363.—*Ventilator.*—SERENUS C. MAINE, Boston, Mass., assignor, by mesne assignments, to MAINE'S PORTABLE VENTILATOR COMPANY.—Patent No. 100,429, dated March 1, 1870. Application filed October 29, 1872.

A rounded pipe provided with an elbow is secured in an adjustable frame, so that it can be turned in its frame and adjusted at any required angle for the purpose of deflecting the currents of air from their direct course. To regulate the flow the elbow is provided with a damper. On one side of the inner end of the pipe the metal is depressed so as to form a cup for receiving any disinfectant.

Claim.—1. A ventilator of the character hereinbefore described, whereby the currents of air are deflected from a direct course on entering the apartment to be ventilated, and are thrown upward in a vertical direction, substantially as and for the purpose set forth.

2. A ventilator provided with an adjustable frame, substantially as and for the purpose described.

3. The combination, in a ventilator, of an adjustable frame, an air pipe or pipes, and a damper or dampers for regulating the supply of air, substantially as described.

5,364.—*Screw Propeller.*—JAMES MONTGOMERY, Sing Sing, N. Y. Patent No. 23,508, dated April 12, 1859; extended seven years. Application filed March 26, 1873.

The screw-propeller is composed of a plurality of blades surrounded by a cylinder or casing which is secured to the blades by means of solid tenons projecting from the peripheries of the blades into mortises in the casing. Each propeller-blade is formed in one piece with a segment of the hub.

Claim.—1. A screw-propeller composed of a plurality of blades surrounded by a cylinder or casing, secured by means of solid tenons projecting from the peripheries of the blades into mortises in the casing, substantially as described.

2. The propeller-blades B, each formed in one piece with a segment, *b*, of the hub, in combination with a surrounding cylinder, C, substantially as set forth.

5,365.—*Lappet-Loom.*—FREDERICK W. NEWTON, South Orange, N. J., assignor, by mesne assignments, to WM. L. POMEROY and JOHN F. PLUMMER.—Patent No. 64,753, dated December 8, 1868. Application filed August 29, 1871.

To enlarge the scope of the pattern mechanism it is separated from the stitching mechanism, each being actuated and its speed adjusted independently of the other. The rim of the pattern-wheel is removable and acts upon a lever connected with the traverse bar which carries the needle-bar, and the fulcrum of this lever is made adjustable to regulate the traverse of the needles. The stitching mechanism is fixed on bearings independent of the lay, but on the same axis, and the ratchet-wheel is provided with projections which act upon the stitch-bar and are made adjustable for the purpose of using stitches of different lengths. The stitch-wheel is held, when not positively moved, by means of a disk carried on a friction-sleeve on the shaft, and the pawl which actuates it is made in two parts, one adjustable upon the other. The stitching-wheel acts upon the traverse bar through a lever-arm, to which is attached a wire having a bight around a pinion-pulley in gear with the traverse bar. When the lever is drawn back it tightens the wire on the pulley and revolves it sufficiently to give the traverse-bar the required lateral movement. To give a uniform delivery of the whip-yarn it is passed between friction-rollers, which are moved laterally with the traverse-bar, so that the yarn is always directly under the needles. The whip-yarn is given out to the needles in definite quantities by means of a combined ratchet and pinion and a rack operated by the lay; and to adjust this quantity a double wedge-bar works vertically in the rack, so reciprocating it that as more yarn is taken up by the rollers less remains for the stitch. In weaving borders for gored skirts the warp is put upon conical spools and the fabric taken up on rollers of corresponding shape. The required irregular movement of the pin-bar is obtained by means of an eccentric lifting-roller.

Claim.—1. The combination of the pattern mechanism with the stitching mechanism, when the two are actuated by different powers, or are connected with the same power by intermediate gearing or attachment, so as to give to each mechanism a motion distinct from the other, and so that the speed of each may be adjusted independently of the other, substantially as described.

2. The combination of the stitching mechanism with the pattern mechanism, when the stitching mechanism is fixed on bearings independent of the lay, but is operated on the same axis as the lay itself, substantially as described.

3. The combination of the driving or stitch wheel U with the spur-wheel Y, pinion Z, pattern-wheel *b*, substantially as described.

4. The lever *e* with adjustable fulcrum, in combination with the traverse-bar M and needle-bar for regulating its movements, substantially as described.

5. The friction-sleeve having an upright stand, in combination with the pattern and stitch wheels and traverse-lever *e*, substantially as described.

6. The combination, with the stitching mechanism, of the adjustable pawl Q, constructed and operating substantially as described.

7. The stitching mechanism provided with removable cams, swells, or sliding projections, one or more, when combined with a pattern mechanism operating independently of the stitching mechanism.

8. The combination of the removable pattern-rim *c* and the pattern-wheel *b* and the stitching mechanism, arranged and operating substantially as described.

9. The combination of the independently-acting stitching and pattern mechanisms with the traverse-bar M, substantially as described.

10. The combined pinion and friction-wheel N in combination with the friction-wire, substantially as described, and for the purpose set forth.

11. The friction rollers or cylinders, one or more, for the purpose of giving a definite yet adjustable quantity of whip-yarn in a direct line to the needles, substantially as described.

12. The combined ratchet and pinion wheel G, in combination with the rack H, substantially as and for the purpose set forth.

13. The double wedge-bar I, for the purpose of regulating the quantity of whip-yarn to be furnished to the needles, substantially as described.

14. The lever *n*, in combination with the bar O and its pin for raising the double wedge-bar, substantially as described.

15. The combination of the mechanism which makes the stitch with the mechanism which gives the whip-yarn to the needles, arranged and connected substantially as described, so that the motion of the mechanism which gives off the whip-yarn to the needles may be regulated and controlled by the stitching mechanism sliding or traversing the let-off roller or rollers, so as to bring the whip-yarn at all times in a line with the needles.

16. The conical spools *o* combined with the stitching and pattern mechanisms and needle-bars, substantially as described.

17. The roller *j* of irregular or cam-shape, in combination with the pin and needle-bars, for the purpose of giving them an irregular motion, substantially as described.

5,366.—*Hub for Vehicles.*—ALMON WARNER, Belvidere, N. J., assignor, by mesne assignments, to ELIHU HALL & CO.—Patent No. 61,900, dated February 5, 1867; reissue No. 4,642, dated November 21, 1871. Application filed July 1, 1872.

A mortised wooden hub, surrounded near the middle by a metallic band having tapered mortises.

Claim.—1. The band composed of the parts B and C and the webs which connect them, constructed substantially as hereinbefore described, whereby tapered mortises are formed between the said rings and the said webs, substantially as hereinbefore set forth.

2. The combination of the band hereinbefore described, having continuous radial rings and tapered mortises, with the hub *a* and spokes extending through the said tapered mortises into the said hub A, substantially as hereinbefore set forth.

3. The combination of the band hereinbefore described, having continuous radial rings and tapered mortises, the hub A, and spokes mortised into the said hub, substantially as hereinbefore set forth.

4. The combination of the band, having tapered mortises therein, with the hub A, also having tapered mortises, substantially as hereinbefore set forth.

5,367.—*Process and Apparatus for Puddling Iron and Steel.*—JAMES G. BLUNT, Leavenworth, Kans., assignor of one-half interest to MERRITT H. INSLEY, same place.—Patent No. 129,268, dated July 16, 1872. Application filed April 17, 1873.

Petroleum vapor is conveyed by pipes into the combustion-chamber where it ignites, and the flame passes in a thin sheet into the boiling-oven.

Claim.—1. The combustion-chamber B, in combination with the boiling and reheating oven A and the central smoke-stack H, substantially as described, and for the purposes set forth.

2. The gas-pipe *b* and blast-pipe *c*, in combination with the combustion-chamber B, oven A, and stack H, substantially as described, and for the purposes set forth.

3. The process herein described of puddling and refining iron, the same consisting in subjecting the metal in the hearth of the furnace to the action of petroleum vapor or gas as fuel, either alone or in conjunction with superheated steam, mixed with a proper amount of air to effect combustion and produce intense heat, substantially as described and set forth.

5,368.—*Ruffling Attachment for Sewing-Machines.*—DE WITT C. CAREY, Chicago, Ill., assignor to WM. G. WILSON, Cleveland, Ohio. Patent No. 58,376, dated October 2, 1866. Application filed February 7, 1873.

The ruffling-plate is moved forward toward the presser by the spring, and is moved in the opposite direction by the strap, which is connected with a projection from the top of the needle-bar by means of a clamp-screw.

Claim.—1. A gathering and ruffling attachment for sewing-machines in which the reciprocatory gathering-blade is actuated from or by the needle arm or bar of the machine, substantially in the manner and by the means shown and described.

2. The combination, substantially as herein described, in a gathering or ruffling attachment for sewing-machines, of a frame adapted to be applied to and removed from the sewing-machine at pleasure, and a reciprocatory gathering-blade arranged to move toward and away from the needle, and actuated from or by the needle arm or bar of the machine by means substantially as and for the purposes set forth.

3. The curved or segmental guide A in the described combination with the bar B carrying a ruffling-plate, L.

4. The spring R, in combination with the curved and segmental guide A, the ruffling-plate L, and bar B, substantially as and for the purposes set forth.

5. The connecting-strap T connected to the head of the needle-bar or other suitable needle-operating mechanism to actuate the ruffling device, substantially as described.

6. In combination with the aforesaid ruffling mechanism A, B, L, and the connecting-strap R, the slotted bar S and clamp-screw C for varying the fineness of the ruffling.

5,369.—*Reservoir-Stove.*—HENRY F. T. HALE, Bay City, Mich.—Patent No. 44,183, dated September 13, 1864. Application filed January 2, 1873.

Cold air enters at the bottom of the stove, and is heated in its passage through.

Claim.—1. The hollow vertical grate-bars, in combination with the chamber O', substantially as shown.

2. The small pipes *e*, in combination with the chamber O' and air-chamber C', and hollow grate-bars, substantially as and for the purposes set forth.

3. The arrangement of the hollow vertical grate-bars with the flues Q, D D, and E, substantially as described.

4. The flat air-chambers *x*, for supplying the front vertical grate-bars of the fire-pot with air, substantially as and for the purposes set forth.

5. The fuel-reservoir A, open annular chambers C C' *c*, flue Q, chamber O', flues or pipes H E, and the vertical bars and the horizontal grate, all combined and arranged as described, for the purpose set forth.

5,370.—*Window-Button.*—ALBERT D. JUDD, New Haven, Conn. Patent No. 112,717, dated March 14, 1871. Application filed November 26, 1872.

The lever, its journals, and the bearing-surfaces, to actuate a spring, are cast in a single piece. An opening in the case admits the journal with its bearing-surface, and allows the straight spring, which serves to actuate the lever, to be inserted from beneath.

Claim.—1. The sash-fastening lever, neck or journal, and spring bearing, cast in one piece, substantially as set forth.

2. And in combination with the above, the sash-fastener plate, with an opening for receiving the neck or journal of the lever, and for passing the spring bearing in below the plate, substantially as specified.

3. The sash-fastening containing the lever, neck or journal, and spring bearing cast in one piece, and retained within the plate by the spring, substantially as set forth.

5,371.—*Operating Screw-Propellers.*—AMOS LEE, White Marsh, Pa.—Patent No. 132,588, dated October 29, 1872. Application filed January 30, 1873.

Claim.—A frame carrying two propellers and mechanism for driving them in opposite directions, adapted to be connected with and to be adjusted vertically on a canal-boat or other vessel, substantially as described.

5,372.—*Draw-Bridge.*—LOUIS SCHNEIDER, Williamsport, Pa., and JOHN A. MONTGOMERY, Springfield, N. J., assignors to LOUIS SCHNEIDER.—Patent No. 29,917, dated September 4, 1860. Application filed March 17, 1873.

The bridge is balanced on a central pivot, and steadied in its position by a wheel running on rollers. Around this wheel passes a chain carried over pulleys and weighted at its lower ends, by which means the bridge is returned to its normal position when turned aside in either direction from any cause.

Claim.—A turning bridge, constructed substantially as hereinbefore set forth, so as to be swung open by a vessel passing in either direction, and automatically closing itself as soon as the vessel has passed.

5,373.—*Turn-Table for Railroads.*—WILLIAM SELLERS, Philadelphia, Pa.—Patent No. 19,717, dated March 23, 1858; reissue No. 582, dated August 10, 1858; extended seven years. Application filed March 15, 1873.

The turn-table is formed of a quadrangular metallic box supported on a central pivot, and carrying four arms projecting in pairs from opposite sides of the box. The arms are detachable for ready transportation, and are attached by means of screw-bolts, and also by double-headed T-links and keys, said links extending from one arm to the opposite arm and resting in a socket formed in the top surface for that purpose. The arms are connected at their outer ends by cross-girts and supported by track-wheels in the usual manner.

Claim.—1. The combination of a central box with four beams, which are rigidly secured at their inner extremities to the said box, and project from the corners thereof in parallel lines.

2. The combination of the beams in two parallel lines with the central box, in such a manner that portions of the box are interposed between transverse bearing-surfaces of the beams.

3. The combination of four beams, a central box, two cross-girts, and track-wheels, in such manner that the beams are connected at their inner extremities in two parallel lines by the box, and at their outer extremities by the cross-girts, and that the track-wheels are arranged near the outer ends of said beams.

4. The combination of the beams, the links, and the keys, substantially as before set forth.

5. The combination of the central box, the cap-plate, the socket-plate, the suspending adjusting-bolts, and the central pedestal, substantially as before set forth.

6. The combination of the central box, the cap-plate, the socket-plate, the anti-friction rollers, and the central pedestal, substantially as before set forth.

5,374.—*Coffin-Handle.*—CLARK STRONG, Winsted, Conn.—Patent No. 97,827, dated December 14, 1869. Application filed April 10, 1873.

The tubular handle and levers are secured together by tips, which are driven in so as to firmly bind all three pieces without the use of screws or rivets or fastenings of any kind.

Claim.—1. The use of double sockets C C, in combination with the arm of the coffin-handle, substantially as shown and described.

2. Providing the arms B with pivots *e e*, formed of pieces of wire, and having a right-angled flattened shank placed together, so that when the arm is cast upon them there will be an equal thickness of metal on both sides thereof, substantially as described.

3. Securing the handle A to the arms B B by means of the tips F driven into the ends of the handle, substantially as set forth.

5,375.—*Breech-Loading Ordnance.*—ELIHU A. SUTCLIFFE, New York, N. Y.—Patent No. 39,586, dated August 18, 1863. Application filed February 11, 1873.

A mortise is made at right angles to the bore of the gun, in which a circular breech-stopper is moved to open and close the breech by a pin on the front end of the hollow breech-screw.

Claim.—1. A circular breech-stopper, moving laterally, in combination with mechanism, substantially as specified, for giving such movement in opening and closing the breech.

2. The tubular breech-screw A and pin *i*, in combination with the breech-stopper *s* within the lateral mortise of the gun, substantially as specified.

5,376.—*Hame-Tug Clip.*—JOHN B. WELTON, Tabor, Iowa.—Patent No. 125,237, dated April 2, 1872. Application filed June 1, 1872.

The spring fitting against a shoulder upon the bolt prevents its turning and consequent retraction, except by design.

Claim.—1. A tug-clip, consisting of a twisted body or open loop and a removable coupling-bolt, as a new article of manufacture, substantially as hereinbefore set forth.

2. The combination, with a tug-clip, of the coupling-bolt B b^1 b^2 and spring C, constructed as hereinbefore shown and described.

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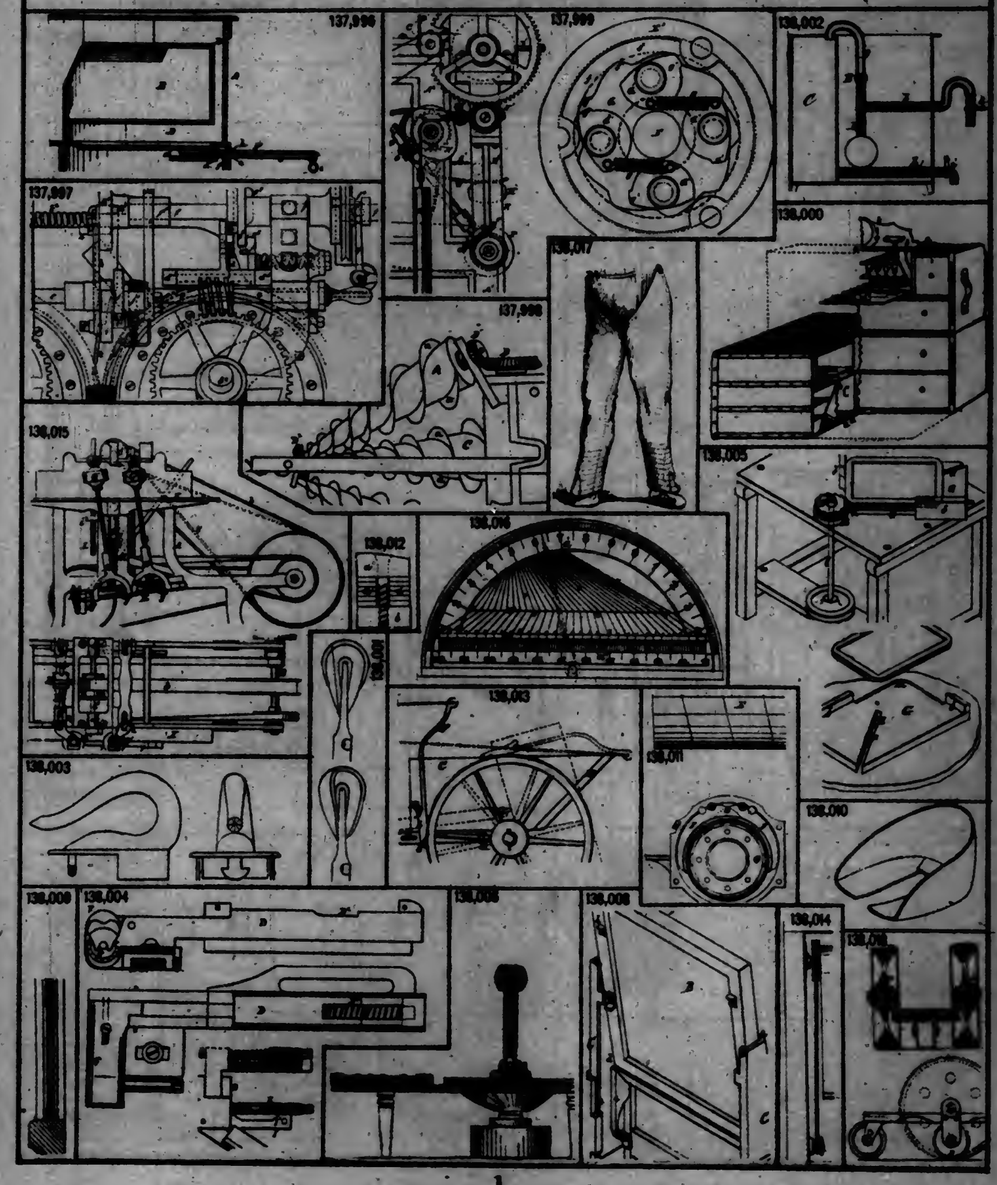
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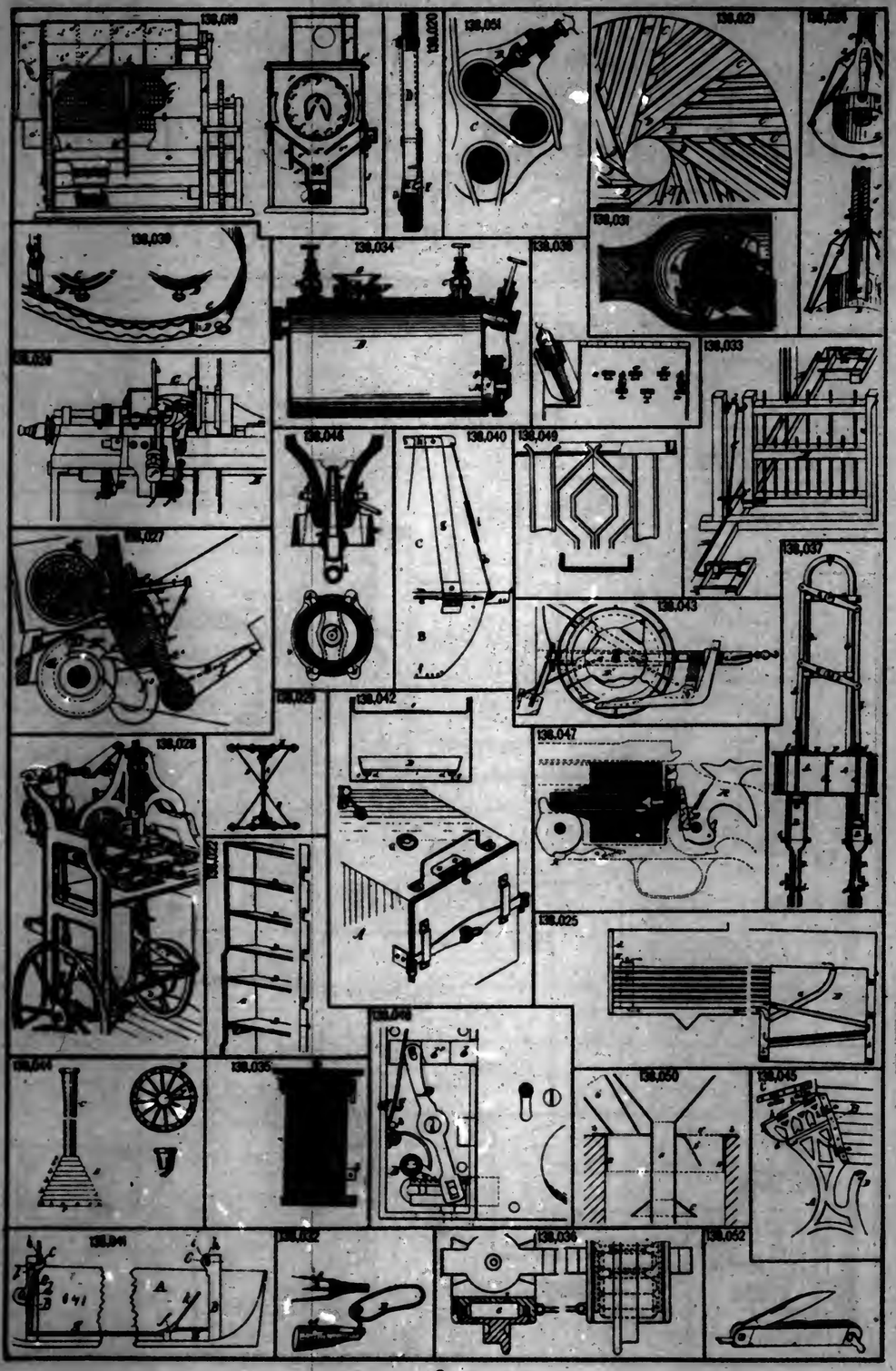
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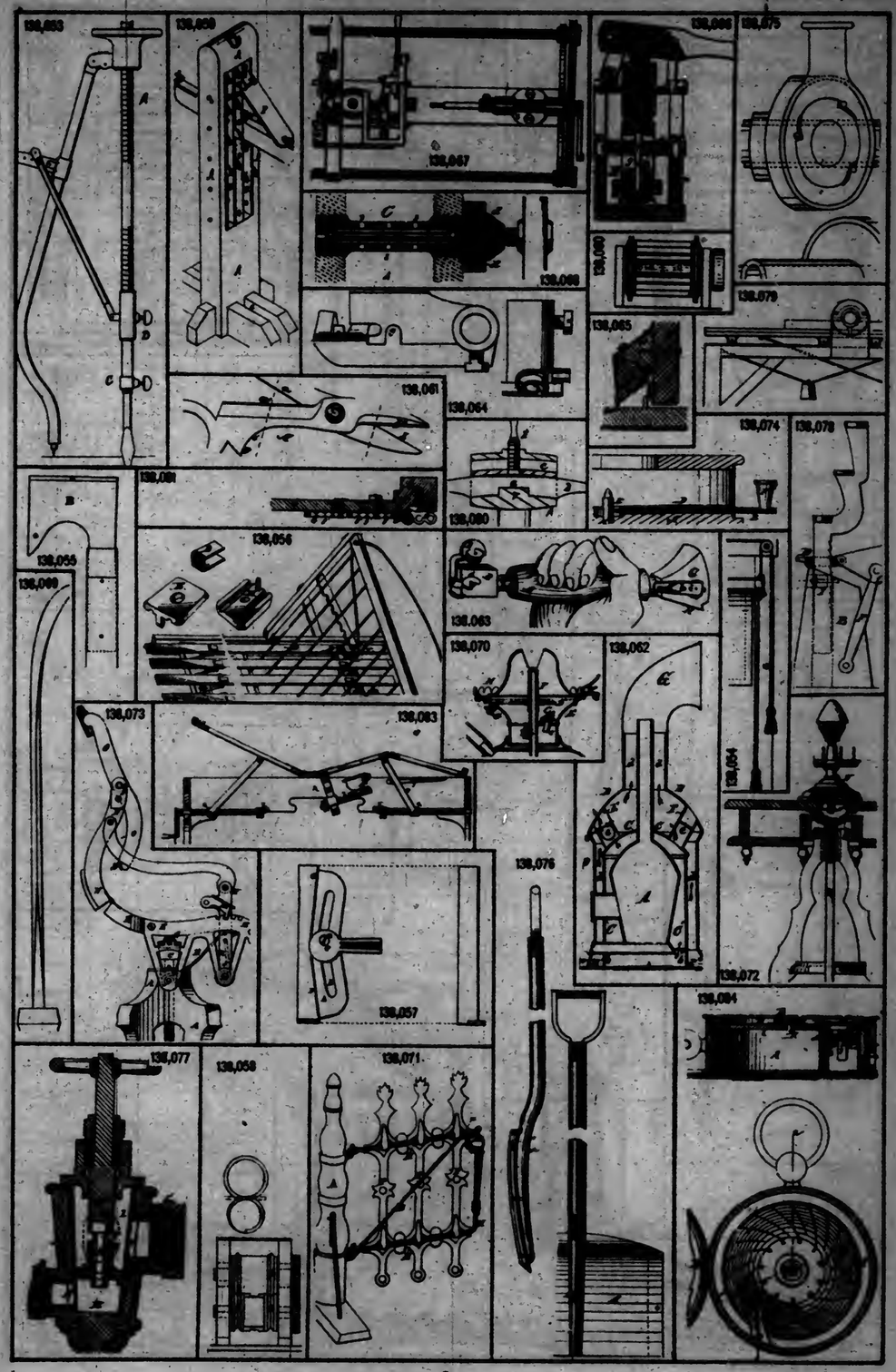


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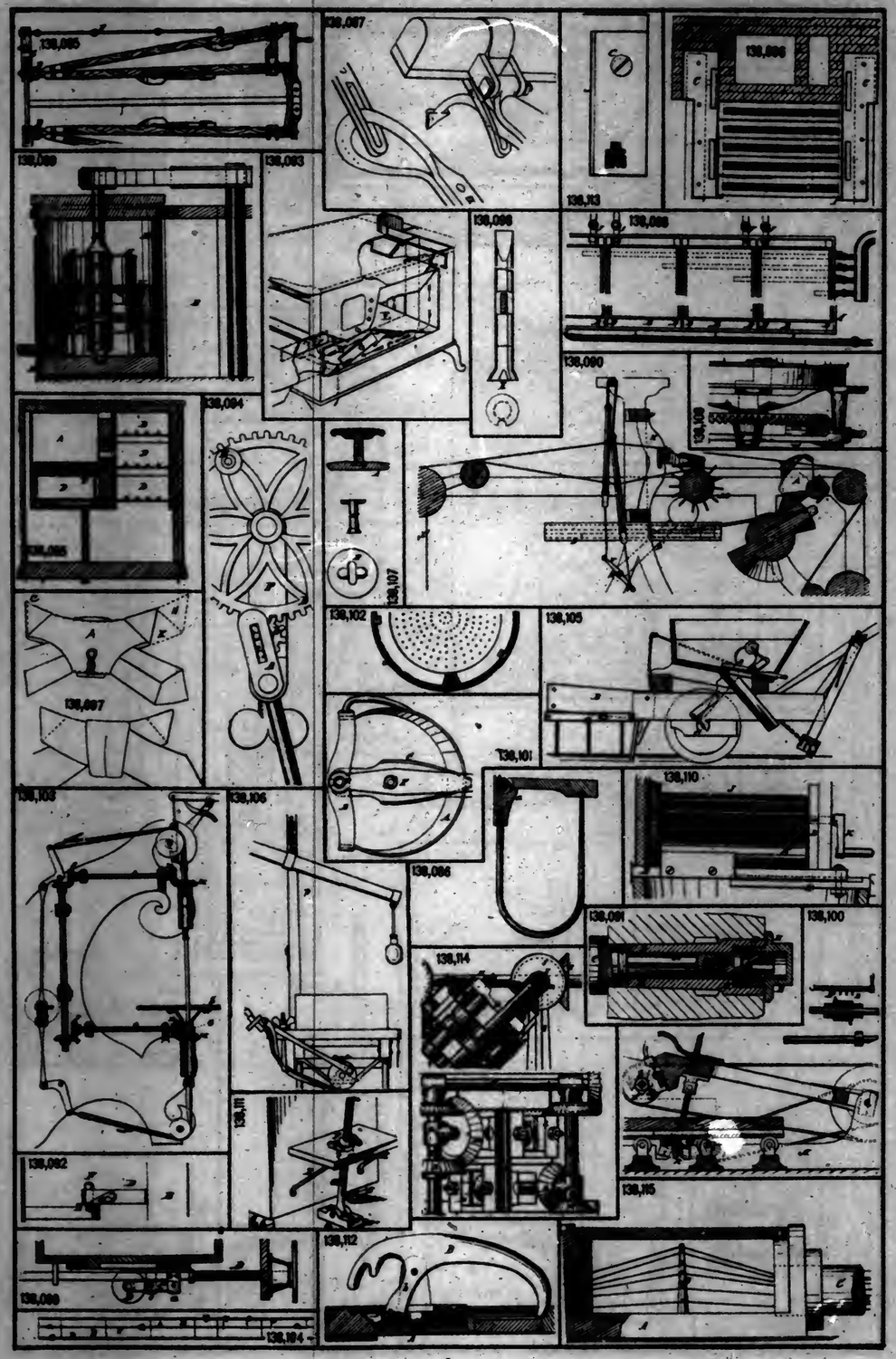
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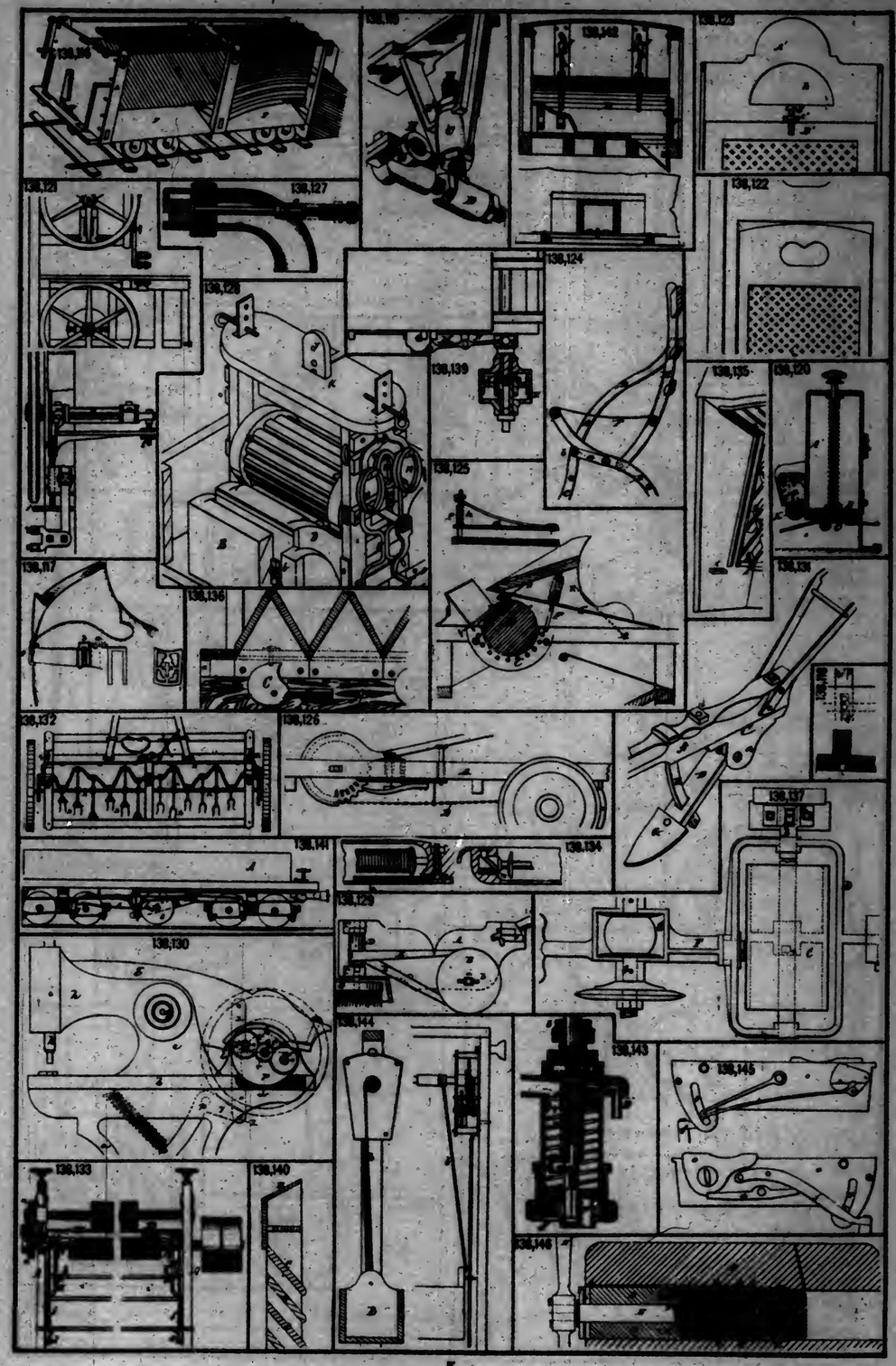
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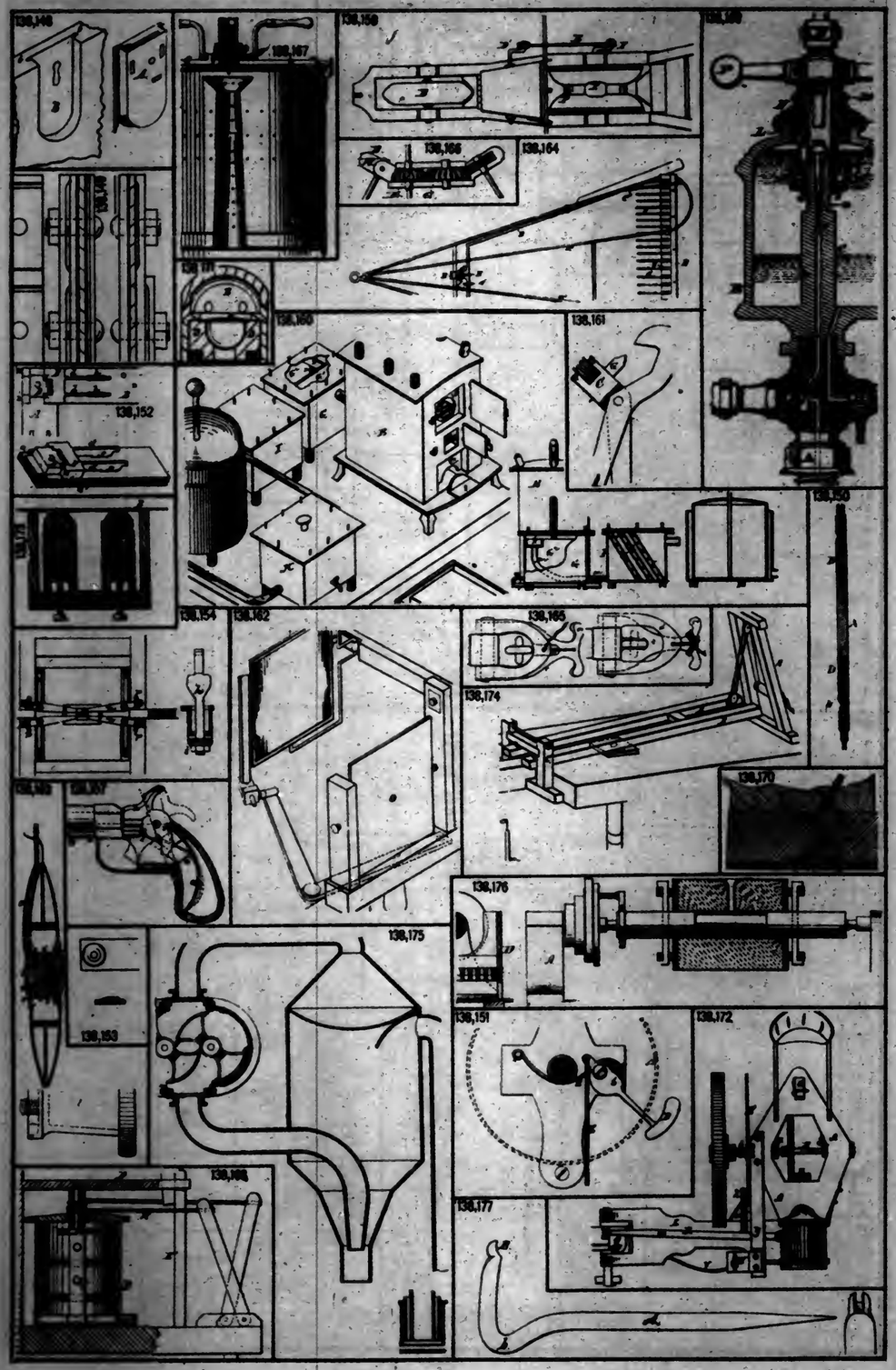
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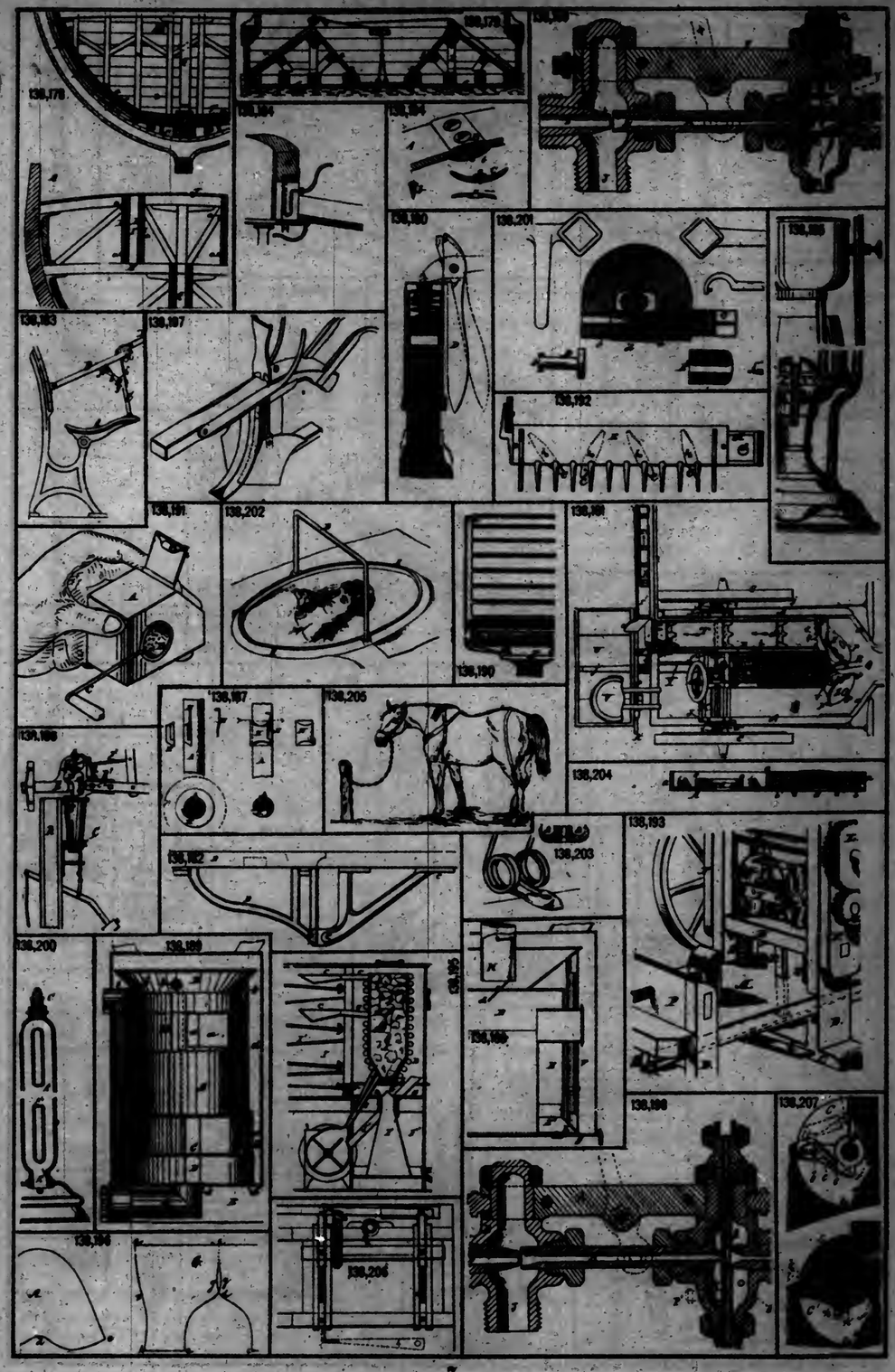
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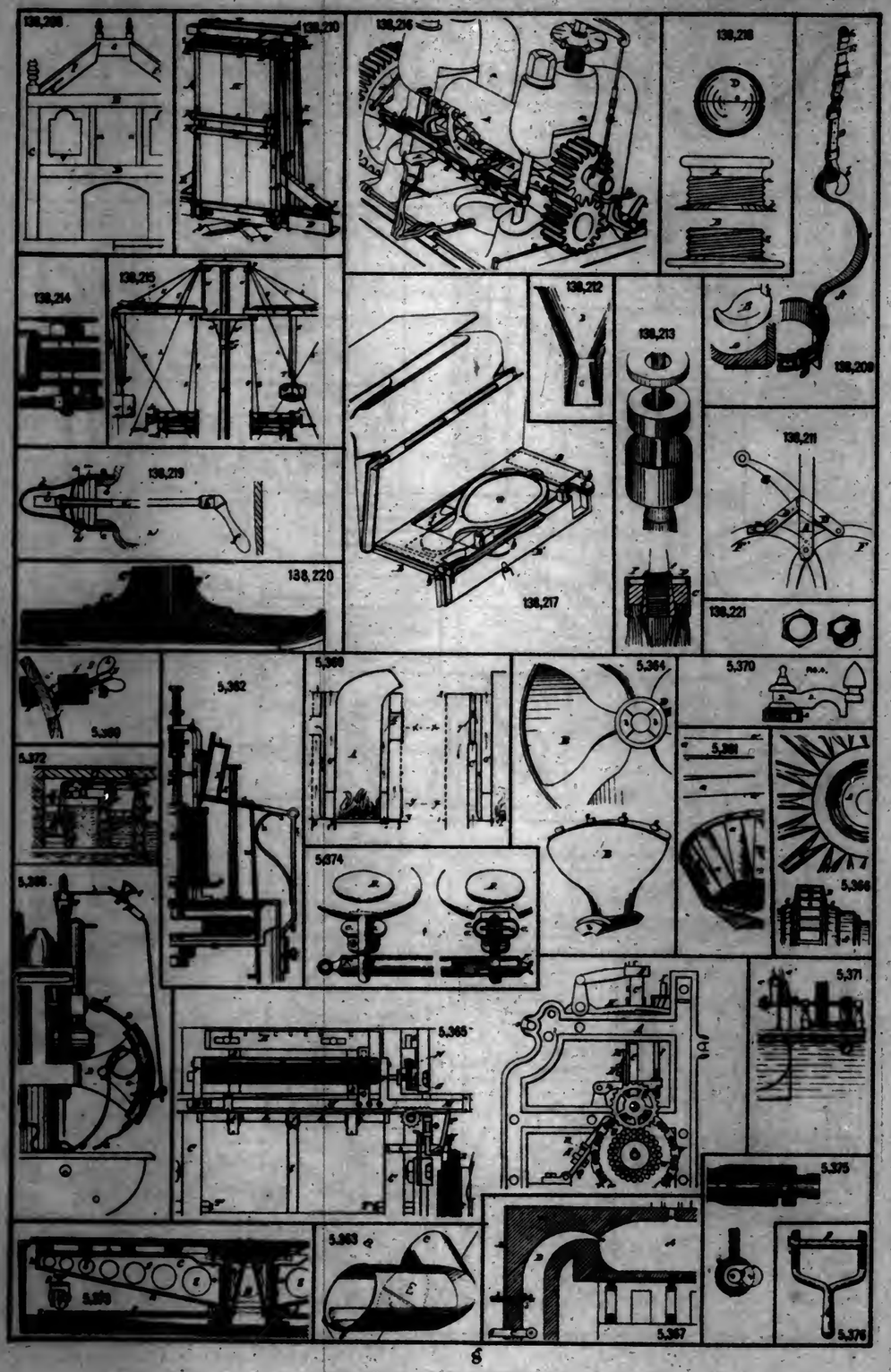
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COMMISSIONER'S DECISIONS.

JOSEPH H. SPERRY.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Joseph H. Sperry for a patent for* IMPROVEMENT IN SAW-TEETH.—*Decided May* 3, 1873.]

The merit of novelty cannot be accorded to a saw-blade with a socket of a spiral form for a tooth, in combination with a tooth of a corresponding form, if the drawings of a previous patent show a saw-blade and tooth so nearly resembling them that they cannot be distinguished unless by a mathematical test.

LEGGETT, *Commissioner:*

Applicant claims—

"In combination with a saw-blade, provided with a receptacle or socket of spiral form, a removable tooth, the insertible edge or periphery of which is also of spiral form, when constructed and operating as described."

Thus, applicant limits his invention to the construction of the base of his tooth, and the recess for its reception, in the form of a true spiral. The patent cited, Disston & Disston, reissue No. 3,651, so far as can be determined by an inspection of the drawing, is a perfect answer to his claim. It would require a scientific test to detect any difference between the curve of his tooth and that of the tooth referred to. There certainly can be no practical difference between the two teeth, even if there is a mathematical one. The same object is contemplated and accomplished in the form of both teeth and the recesses for their reception. The patent sets forth that "the base of the tooth is curved at the edge, the curve becoming gradually more abrupt from the point *x* at the rear to the point *y* in front, and the recess in the blade for the reception of the base is made of the same shape." The claim covers such a corresponding construction of curves of the base and recess "that pressure against the point of the tooth will tighten the base in its recess."

A patent cannot properly be allowed applicant except upon proof of priority of invention upon an interference with the patent cited. The decision of the Board is affirmed.

BENJAMIN MORSE.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Benjamin Morse for patent for* COMBINED RAKE AND PLASTER-SOWER.—*Decided May* 6, 1873.]

To place a horse-rake upon a wheeled vehicle in the usual way, and a seeding-box with its customary apparatus, does not present a patentable combination, when neither implement modifies the operation of the other.

A cam-wheel which is applied on one of the wheels of such a machine, when used as a rake to operate the teeth, and when used as a seeder upon the other wheel to vibrate the slide of the plaster-box, may be claimed as a new thing in connection with either implement.

LEGGETT, *Commissioner:*

Applicant proposes to apply upon a wheeled horse-rake a box for containing plaster and the necessary mechanism for vibrating the slide in the bottom of the box to distribute the plaster. The object is to enable the same wheels, axle, frame, and tongue to be utilized for raking and plaster-sowing, respectively. This is an advantage to farmers, in that the cost of the combined implement is less than that of two independent ones, and there is a saving of room in storing during the winter season. In the use of the device, however, there is no connection between the rake mechanism and the plaster-sowing mechanism. When one is employed the other is not. The plaster-sowing devices might be detached from the wheels and axle, and there would be left a complete and less cumbrous rake. So the rake mechanism might be removed from the carrying vehicle, and the sower would be complete. The union of the two devices upon the same vehicle works no modification of their respective functions, and has no relation to any common function to be accomplished

by their co-operation. It refers solely to the economy of carrying and storing the two machines upon the same wheels. There is therefore no patentable combination produced by the mere placing of the two machines upon the same wheels and axle, because there is no co-operation effected in their use producing a common or unitary result.

The Examiner has therefore correctly held that the subject-matter claimed cannot properly be embodied in the same patent. There is one device, however, in this case which is used in connection with both the rake and the sower, viz., "the wheel *n*" with its projections and depressions. It is to be attached to one of the rake-wheels to operate as a clutch to raise the teeth, and to the other, when the machine is used for sowing plaster, to operate as a cam for vibrating the slide of the plaster-box. It is a distinct device adapted to be applied either on a rake or plaster-sower of the kind produced by the applicant. It may be claimed in connection with either the rake or the machine for sowing plaster.

Applicant has filed an application for his "sower," and his request to have the original model serve for both applications will be granted. The Examiner should point out specifically the defects in the amendments which he has refused to enter for informality, so as to enable the applicant to understand what they are, and to correct them if they actually exist.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—NINETEENTH DISTRICT, CALIFORNIA.

HARDY AND MOORMAN *vs.* CUTTER *et als.*—*Trade-Mark.*

[*In Equity.—Before Wheeler, Judge.*]

The plaintiffs were entitled to the exclusive use of certain trade-marks including the expressions "J. H. Cutter" and "Bourbon Whisky," under which they sold an article of high reputation known as "Cutter whisky," yet the defendants were held not liable for selling whisky with labels unlike the plaintiffs' in all other respects, but inscribed with the words "J. F. Cutter," (which was the name of one of the defendants,) "son of the late J. H. Cutter," and "Bourbon whisky."

An action cannot be maintained because the defendants have sold an article inferior to the plaintiffs' in packages resembling theirs, or have sought to deceive the public.

Descriptive phrases which are in common use, like the words "Bourbon whisky," cannot be appropriated as a trade-mark.

The use of a man's own name is not actionable, though it forms part of another man's trade-mark, provided he does not do it so as to deceive the public, and uses no other material part of the trade-mark.

WHEELER, *J.*:

PURPOSE OF THE ACTION.

This action is brought to perpetually enjoin the defendants from infringing the trade-mark of the plaintiffs, and for damages.

The substantial allegations of the bill are that one John H. Cutter, in his lifetime, was the manufacturer and vender of an article of whisky known as "Cutter Whisky;" that it was a superior article, and acquired great reputation throughout the United States; that said Cutter adopted and used certain trade-marks to designate said article, and which are set out in the complaint; that in July, 1860, said Cutter assigned and transferred to the plaintiffs his stock of whiskies, and also the exclusive right to use his said name, trade-mark, and brands.

It is further averred that from the time of said assignment the plaintiffs have carried on the business of manufacturing and vending said article, and that the same has always been contained in packages impressed with the trade-marks and brands of plaintiffs. That on the boxes in which plaintiffs packed their bottled whisky was branded with a hot iron a representation of the English crown and the words "J. H. Cutter; Old Bourbon;" that plaintiffs have uniformly used printed wrappers to envelop said bottles, and which wrappers are described in the complaint. It is also averred that plaintiffs' barrels were branded in the same manner as their boxes.

After setting forth various other matters appropriate and usual in a complaint of this character, the plaintiffs proceeded to charge the defendants with a wrongful violation of their said trade-mark.

It is charged that the defendants have put up, and are offering for sale, an article in imitation of plaintiffs' article, contained in similar packages, to wit: Boxes, bottles, and barrels, and labeled with a nearly similar label, brand, and trade-mark, a specimen of which is annexed to the complaint and made a part thereof. It is also averred that defendants did these things with intent to deceive the public; that their whisky is inferior to that manufactured by plaintiffs; that they have misled the public; and that the plaintiffs have been greatly damaged thereby.

These are all the allegations of the complaint that I deem it necessary to notice for the purposes of this decision. To the complaint the defendants interposed a demurrer.

SIMULATING PLAINTIFFS' TRADE-MARK.

If this action can be maintained at all, it must be for simulating the plaintiffs' trade-mark. The mere fact that the defendants sought to deceive the public, or that they manufactured an inferior article, or that they put their whisky into boxes, barrels, or bottles similar to those of the plaintiffs, does not give to the plaintiffs a cause of action. But the offense consists in the defendants so closely imitating the trade-mark of the plaintiffs as to induce persons purchasing the defendants' goods to believe they are the goods manufactured by the plaintiffs. The inquiry, then, of chief importance is, does the complaint show that the defendants thus simulated the plaintiffs' trade-mark? In order to avoid a confusion of things which the law permits with those which it forbids, it is well to recur to a few established rules or principles.

First. It is undisputed that all persons have an equal right to manufacture and vend any article of commerce for which no patent has been issued. Second. Any word or assemblage of words in common use, which indicates the name, nature, or quality of an article cannot be appropriated as a trade-mark. Third. Every person has the right to use his own name in connection with the articles he manufactures or sells, provided he does not use it in such a way as to deceive or defraud

the public, or to obtain for himself, at the expense of another, an undue advantage.

Keeping these principles in view, (and they are not controverted,) I will now proceed briefly to examine the alleged simulation of plaintiffs' trade-mark.

It is alleged by the plaintiffs that their boxes and barrels were branded with a representation of the English crown, and with the words and letters "J. H. Cutter; Old Bourbon." It is not pretended that defendants placed upon their goods a representation of the English crown, nor the words "J. H. Cutter," and it must be admitted by all that, though defendants use the words "Old Bourbon," they had a perfect legal and moral right so to do, because these are words in common use, indicating the nature and quality of a certain article of commerce known throughout the country as Bourbon whisky.

Indeed, I do not understand that plaintiffs pretend that they have any property in these words as a part of their trade-mark.

So far, then, I do not perceive any simulation, unless it be in the use of the surname "Cutter." But of this hereafter.

UNIFORM WRAPPERS.

In addition to the brands of plaintiffs, as above stated, they allege their uniform use of certain wrappers for their bottles, copies of which are annexed to the complaint and made a part thereof. Exhibit "B" of the complaint is a copy of the wrapper used by plaintiffs on their bottles containing Bourbon whisky; the other, "C," is used on the bottles containing "Rye" whisky; and, save in this particular, the wrappers are precisely alike. I will therefore examine "B" only. This wrapper or label is of a light-brown color, and about six by twelve inches in its dimensions. Near the top are printed in large black letters the words "J. H. Cutter, Old Bourbon Whisky." Immediately under this lettering is the representation of a barrel, on the head of which are printed the words "J. H. Cutter, Old Bourbon." Under the word "Bourbon" is a representation of the British crown, and under that the words "A. P. Hotaling & Co., sole agents for the Pacific Coast." Underneath the barrel, in black shaded letters, are the words "C. P. Moorman & Co., distillers, Louisville, Kentucky." Beneath all this are eight additional lines of printed matter, in type of various sizes, and occupying a space of about three by five inches. The whole is surrounded by an elaborate border, also in black.

Copies of the labels or trade-marks alleged to have been employed by defendants, and which, it is claimed, are a simulation of the plaintiffs' trade-mark and labels, are also annexed to the complaint, marked Exhibits "D" and "E," and these Exhibits "D" and "E" are the only trade-marks that the defendants are alleged to have used or employed in and about their business.

I will first examine "D." This label is about two inches shorter and one inch narrower than Exhibit "B;" indeed, the difference in the dimensions of the two labels is so great as to be detected at a glance. In color, instead of being a light brown, it is a bright yellow. Near the top are printed the words and letters "J. F. Cutter, Extra," and immediately under the word "Extra" is a yellow star within a shield. On the left of the shield is the word "Trade," and on the right the word "Mark," and under the shield the words "Old Bourbon." This label contains no other device, letters, words, figures, or emblems. The whole is surrounded by a black border, much less elaborate than that surrounding Exhibit B, and only about half its width. This Exhibit D is used by defendants on their boxes, barrels, and casks.

Next in order is Exhibit "F." This is used by defendants on their bottles. In size it is about three by four inches. In color it is pure white, surrounded by a plain and very narrow border of black. The device and lettering are precisely like those contained in Exhibit D, except that the star within the shield is white upon a field of gray. Underneath, and within a separate border, are these words: "Notice.—This whisky has been carefully distilled from selected grain, and is bottled expressly for medicinal and family use. None genuine without the fac-simile signature of the subscriber covering the cork. J. F. Cutter, son of the late J. H. Cutter, of Louisville, Ky."

To say that either D or E is a simulation of B is, to my mind, the utterance of an absurdity that the senses of the most ordinary observer would at once rebuke. To say that a star within a shield is a simulation of the British crown is no more absurd than to contend that the American eagle is an imitation of the British lion, or that the crescent of the Turk is a simulation of the cross of the Christian. The only words used by the plaintiffs, and which have been adopted by defendants, are "Cutter" and "Old Bourbon." As shown above, defendants have an unquestioned right to the use of the words "Old Bourbon;" and this brings us to the second inquiry, viz.: Has the defendant used his own name, J. F. Cutter, improperly? Several cases have been cited where a party has been restrained from the use of his own name in connection with his own goods, but in all these cases he was guilty of appropriating the whole or material portions of the plaintiff's trade-mark in addition to the name.

In the case of *Croft* vs. *Day*, decided in the English Chancery, the defendant not only used the name, Day & Martin, under which plaintiff's business was conducted, but the colors of his labels were of the same nature as plaintiff's colors; his labels were of exactly the same size; the letters were arranged in precisely the same mode; and the very same name appeared on the face of the jars. In deciding the case the Master of the Rolls says: "The defendant has a right to the use of his own name; * * but I must prevent him from using it in such a way as to deceive and defraud the public, and obtain for himself, at the expense of the plaintiff, an undue and improper advantage." It is unnecessary to refer to the cases in detail, as the one cited above lays down the doctrine that has been uniformly followed.

J. F. CUTTER'S WHISKY.

It may be true, and probably is, that the profits of the plaintiffs have been diminished by the defendants embarking in a similar business; and this remark will apply with equal force to thousands of other cases where competition has lessened the income of established houses; and yet the law does not afford a remedy. J. F. Cutter has the same right to manufacture and vend Bourbon whisky that the plaintiffs have, and so long as he refrains from simulating their trade-mark, and uses only his own proper name, together with the

name of the article in which he deals, with an emblem or device in no way resembling plaintiffs', clearly he is acting strictly within the rights guaranteed to him by by the law of the land. From these views it follows that the demurrer must be sustained, with leave to the plaintiffs to amend within ten days, if they shall be so advised.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABRATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHNEBLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,724.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OTIS TUFTS, August 9, 1859. Hearing July 23, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,820.—*Improvement in the Manufacture of Watch-Cases*, granted to JAMES BOSS, May 3, 1859.

Claim.—1. Spinning up of watch-cases by the employment of a mandrel and spinning-wheels constructed to operate in the manner substantially as set forth.

2. Spun plated sheet-metal watch-case, constructed as herein specified.

23,875.—*Improvement in Lamp-Shades*, granted to CHARLES WILHELM and ANNA CATHARINE WILHELM, May 3, 1859; reissued August 14, 1860.

Claim.—1. The combination of the metallic shade A A′ A″ with the paper pictures C′ D′ E′ between sheets of mica, as above described.

2. The combination of the metallic frame A A′ A″ and the pictures C′ D′ E′ upon paper or any other suitable substance, substantially as above described.

3. The combination of the metallic frame A A′ A″ and the pictures C′ D′ E′ upon paper or other suitable substance and the mica lining, the whole being arranged substantially as herein set forth.

23,826.—*Skate-Fastening*, granted to JOHN COE, administrator of the estate of JOHN H. COE, deceased, and WILLIAM B. SNIFFIN, May 3, 1859; reissued March 23, 1869, numbered 3,333.

Claim.—1. The combination, with a skate, of a movable clamp and a screw, arranged transversely to the skate, for pressing the clamp against the foot or the sole of a boot or shoe, substantially as described.

2. A skate-clamp having a raised or roughened surface, or the equivalent thereof, to hold the edge of the sole of a boot or shoe with a firm gripe, substantially as described.

3. The arrangement of a skate-clamp upon a vertical stud or pivot, on which it can turn, so as to adjust itself automatically to the surface against which the clamp is drawn, substantially as shown and described.

4. The curved adjustable slotted bars E F F, combined and arranged, in relation to each other and to the foot or base-plate A, substantially as and for the purpose described.

5. The arrangement, on the screw-shaft K, of a hinged handle, L, in such a manner that it can be folded out of the way, after the skate is fastened to the foot, substantially as shown and described.

Disclaimer filed April 30, 1873.

Disclaims the second clause of claim.

23,882.—*Improvement in Cement for Roofing*, granted to NATHAN A. DYAR, May 3, 1859.

Claim.—The water-proof roof-covering herein described; the same consisting of a central layer or web of cloth, or its equivalent, covered on both sides with adhering layers of water-proofing, the outward side of one of which is covered with a layer of paper fixed thereto by contact with the water-proofing while it is in a warm and plastic state, while, upon and embedded in the outward side of the other layer of water-proofing, while in the state just described, is a layer of sand, or its equivalent, forming the uppermost or weather-surface of the article.

DISCLAIMERS FILED.

3,333.—JOHN COE, administrator of JOHN H. COE, deceased, and WILLIAM SNIFFIN, Stratford, Conn.—*Skate-Fastening*, granted May 3, 1859; reissued March 23, 1869, No. 3,333. Disclaimer filed April 30, 1873. Disclaims:

"A skate-clamp having a raised or roughened surface, or the equivalent thereof, to hold the edge of the sole of a boot or shoe with a firm gripe, substantially as described."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date April 29, 1873.]

6,613.—*Glass-Ware.*—THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed April 11, 1873.

6,614.—*Knobs and Plates.*—GEORGE E. BRINGMAN, Philadelphia, Pa. Application filed February 4, 1873.

6,615.—*Stair-Rods.*—WILLIAM T. MERSEREAU, Orange, N. J. Application filed April 17, 1873.

6,616.—*Lamp-Stand.*—MELZAR H. MOSMAN, Chicopee, Mass. Application filed February 26, 1873.

6,617.—*Hames-Top.*—HENRY BEAGLE, Jr., Philadelphia, Pa. Application filed April 4, 1873.

6,618.—*Cooking-Stove.*—MALCOLM M. COFFUCK, Philadelphia, Pa., assignor to CHARLES NOBLE AND COMPANY, same place. Application filed April 8, 1873.

6,619.—*Toy Savings-Bank.*—RUSSEL FRISBIE, Cromwell, Conn., assignor to THE J. AND E. STEVENS COMPANY, same place. Application filed March 31, 1873.

6,620.—*Hot-Air Register.*—EDWARD A. TUTTLE, Morristown, N. J. Application filed April 19, 1873.

6,621.—*Hot-Air Register.*—EDWARD A. TUTTLE, Morristown, N. J. Application filed April 19, 1873.

6,622.—*Hot-Air Register.*—EDWARD A. TUTTLE, Morristown, N. J. Application filed April 19, 1873.

6,623.—*Door-Knobs.*—GEORGE W. WHITE, New York, N. Y., assignor to P. & F. CORBIN, New Britain, Conn. Application filed April 18, 1873.

6,624.—*Plates of Door-Bolts.*—GEORGE W. WHITE, New York, N. Y., assignor to P. & F. CORBIN, New Britain, Conn. Application filed April 18, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date April 29, 1873.]

1,232.—*Cold-Swaged Sewing-Machine Needles.*—BRIDGEPORT COLD-SWAGED NEEDLE COMPANY, Bridgeport, Conn. Application filed March 28, 1873.

1,233.—*Frillings.*—FREDERICK BROWETT & CO., Coventry, England. Application filed April 19, 1873.

1,234.—*Bottles for Brandy.*—CAZADE AND CROOKS, New York, N. Y. Application filed April 12, 1873.

1,235.—*Sealing-Wax.*—R. B. DOVELL'S SON, New York, N. Y. Application filed February 8, 1873.

1,236.—*Burnishing-Ink.*—FLETCHER & DWYER, Lynn, Mass. Application filed March 17, 1873.

1,237.—*Oils for Medical Purposes.*—M. S. GOODRICH & CO., Flint, Mich. Application filed March 29, 1873.

1,238.—*Prepared Flour.*—HOPKINS & COMPANY, New York, N. Y. Application filed March 7, 1873.

1,239.—*Salt-Rheum Ointment.*—FRED H. KIMBERLY, Springfield, Mass. Application filed April 4, 1873.

1,240.—*Rake and other Handles.*—SMITH & MONTROSS, Galien, Mich. Application filed April 5, 1873.

1,241.—*Harvesting-Machines.*—D. M. OSBORNE AND COMPANY, Auburn, N. Y. Application filed April 23, 1873.

1,242.—*Binding.*—HENRY SAWYER, Chelsea, Mass. Application filed April 23, 1873.

1,243.—*Gas-Burners.*—MRS. ALONZO H. WOOD, Boston, Mass. Application filed April 2, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date April 29, 1873.]

ORIGINAL PATENTS.

138,222.—*Iron Front for Stone Piers.*—JOB ABBOTT, Canton, Ohio. Application filed March 10, 1873.

The pier-nose is covered with an iron front composed of plates arranged horizontally, and having a heavy angle-bar at the front edge. The plates are held to the pier by dowel-pins having enlarged heads at their outer ends, and secured in holes in the faces of the nose by fusible metal poured in through a channel in the head for that purpose. The space between the plates and pier is filled with cement in a fluid form to give the plates a firm support by leveling the inequalities of the stone surface.

Claim.—1. The combination, with the pier-nose of a stone pier, of an iron front having a heavy angle-bar at its front edge and plate-iron sides of sufficient size to cover the faces of the pier-nose, said iron front being secured by dowels to the pier-nose at points scattered over both faces thereof, substantially as and for the purpose specified.

2. An iron front for stone pier-noses having a heavy angle-bar at its front edge and with the plates forming the sides thereof, so formed as that the battens uniting said plates shall lie in horizontal position when the front is placed on the pier, substantially as and for the purpose specified.

3. A dowel-bolt for iron pier-fronts having an enlargement at the upper part of the body thereof and a groove along the said enlargement and the head, substantially as and for the purpose specified.

4. The combination, with the front plate B and pier-nose A, of a plastic filling, K, inserted between the plate B and nose A around the dowel-hole c, substantially as and for the purpose specified.

5. The combination, with the nose of a stone pier and an iron front therefor, of a cement filling introduced in a fluid form between said front and nose, substantially as and for the purpose specified.

138,223.—*Frame for Window-Awnings.*—JAMES A. ALLEN, Philadelphia, Pa. Application filed February 12, 1873.

The upright portion of the frame extends across the top of the window so that the awning may be secured thereto, and both can be removed together when not wanted.

Claim.—The combination of the metallic frame C having parts a b b with a window-frame, the part a being connected with the head of the window-frame by means of hooks D D, and the parts b b with the jambs of the same by means of the bolts E E, substantially in the manner and for the purpose above set forth.

138,224.—*Blinder for Cattle.*—MATHIAS BACKMAYR, Lyons, Wis. Application filed January 6, 1873.

A blinder for preventing cattle and horses from jumping and tearing down fences.

Claim.—Blinder A, strap B, strap C, and girt D, all in combination, substantially as described.

138,225.—*Life-Boat.*—EDWARD A. BARRETT, New York, N. Y., assignor to himself and JOSEPH J. WALTON, same place. Application filed March 12, 1873.

Floats are made attachable and detachable to ordinary boats by bands surrounding them, which bands act as fenders, and are secured by bolts which screw into countersunk holes in plates secured permanently to the gunwales. When the floats are detached the screw-bolts and plates are flush with the gunwales, and thus offer no obstruction.

Claim.—The battens P P, provided with the permanent sockets D D and countersunk screws G G, combined with the fender-straps J J and buoyant tubes B B provided with connections at bow and stern, whereby said tubes are detachably connected to the boat, so that the same is convertible to a life or ordinary boat, as desired, as and for the purpose specified.

138,226.—*Dry-Goods Stand.*—JOSEPH J. BIGEL, Williamsport, assignor to himself and M. V. B. STEINMETZ, Lancaster, Pa. Application filed January 30, 1873.

The revolving frame consists of four angular or L-shaped bars, connected at or near both their lower and upper ends by two diagonal bars. In the center of the lower bars, where they cross each other, a hole is made for the passage of the upright standard, and to the lower side of the upper bars a conical bearing is attached for the upper end of the standard to fit into. Suitable supports are attached to the outside of the corner-bars for the reception of shelves.

Claim.—1. The revolving frame, consisting of the angular or L-shaped corner-bars D D with diagonal connecting-bars C C and E E, and provided with shelves around its outside, for the purposes herein set forth.

2. The combination of the stand A B, revolving frame C D E, supports G G, and shelves H H, all constructed and arranged substantially as and for the purposes herein set forth.

138,227.—*Dredger.*—ADOLF C. BOTH, Portland, Me. Application filed March 3, 1873.

The buckets are hinged to the connecting-rods, which are pivoted to the frame in such a manner that when the power is applied to force the buckets into the earth their cutting edges will follow the line of a long flat curve, which will make them cut easier and leave the outer circular sides of the buckets, when closed, free from contact with the cut, thus avoiding suction when the buckets are raised. The power to close the buckets is applied by means of the chain *t* to the drum, which is loose on the stationary shaft, and also has the gears fastened to it, which engage with the gears on the intermediate shaft carrying the small wheels on which are wound the chains, secured to sliding shaft, which is thus drawn down, and by means of the connecting-rods closes the buckets.

Claim.—1. The combination of the swinging connecting-rods *e e* and *d d'* and the guide segment *g*, operating as and for the purpose specified.

2. The combination of the gears *k k* and *l l* and the intermediate shaft *o*, operating as and for the purpose specified.

138,228.—*Sign for Moving Vehicles.*—ERASTUS Y. CLARK, Brooklyn, and WILLIAM A. LILLIENDAHL, New York, assignors to themselves and J. H. BEARDSLEY, Brooklyn, N. Y. Application filed September 5, 1872.

A wire-gauze sign forms a part of the side of the car, and its lettering is exposed by the illuminated interior.

Claim.—The combination, with a moving vehicle and a lamp, or equivalent illuminating device, of one or more wire-gauze surfaces provided with opaque letters, signs, or characters, substantially as and for the purpose specified.

138,229.—*Rotary Churn.*—FRANK E. CLARKSON, Highland, Kans., assignor of two-thirds his right to JOHN JACOB STRADER, Jerseyville, and GEORGE FRANCIS NELSON, Chicago, Ill. Application filed October 2, 1872.

The dasher is a rotating annulus, carrying buckets or square staples on its upper and lower faces, and downwardly-inclined deflectors are fixed to the upper part of the inner walls of the cylinder.

Claim.—The combination and arrangement of the circular dasher C, staple-shaped lugs E E E, and projections F F, substantially as shown and described.

138,230.—*Bottle for Effervescing Liquids.*—HIRAM CODD, Grove Lane, Camberwell, England, assignor of one-half his right to RICHARD BARRETT, London, England. Application filed January 21, 1873.

The bottle is provided with internal ridges in the sides of the neck to prevent the internal stopper from moving back to the mouth during the pouring of the contents.

Claim.—1. The bottle having internal ridges in the sides of the neck, substantially as before set forth, to prevent the internal stopper from moving back to the mouth during the pouring out of the contents.

2. The bottle, having the base of the neck contracted, and also internal ridges in the sides of the neck between the contracted base of the neck and the mouth, substantially as before set forth.

138,231.—*Tire-Bending Machine.*—FRANK E. COLEMAN, Kirkwood, N. Y. Application filed November 11, 1872.

The upper bending-roll is held in bearings at each end, which are raised and lowered by means of screws, which work through the frame above. The bearings slide vertically upon V-shaped grooves, and can be raised above them, where the roll with its bearings can be removed from the machine in order to take out the finished tire.

Claim.—In a machine for bending tire, in combination with the roller G and set-screws I, the posts or frame *b b b'* provided with ways or ribs *c c*, and the bearing-blocks H provided with recesses *h'* and throats *f*, substantially as set forth.

138,232.—*Lantern.*—JOHN P. CONNOR and MICHAEL T. HYNES, Boston, Mass. Application filed February 24, 1873.

Pyramidal-shaped lugs are attached to the lamp a little above its lower flange. These enter notches in the flange of the gallery. Vertical springs attached to the gallery bear against the lamp to hold it in place, and also serve as stops, against which the lugs abut.

Claim.—1. A lamp, C, provided with conical-shaped lugs or projections *d* on its sides, in combination with a casing, A, having a flange, B, provided with openings *b* to receive them, substantially as described.

2. The spring-stops *c*, in combination with lugs or projections *d*, and openings *b*, substantially as and for the purpose set forth.

138,233.—*Car-Starter.*—THEODORE COOPER, Philadelphia, Pa. Application filed April 17, 1872.

To the car-axle is fitted a sleeve, on one end of which is a groove, in which rests one end of a lever, which throws the sleeve either in or out of connection with a friction-coupling. On the center of the sleeve is a pinion, which meshes into a rack that is secured to the draw-bar, which is divided into halves, the inner end of each half being attached to a strong spring. The friction-coupling is also attached to the spring and its movement governed by a pawl in combination with the coupling, by which arrangement, when the brake is applied, the power used to check the car is utilized in compressing the spring, and the same, reacting, assists in starting the car.

Claim.—The combination of the friction-clutch D, pinion E, rack I, spring N, lever O, pawl Q, and ratchet C, substantially in the manner described and shown.

138,234.—*Extension Step-Ladder.*—LEWIS B. COVERT, Detroit, Mich. Application filed October 28, 1872.

The latch engages with notches formed on the side of the extension, thus holding it in position. Hooks are provided at each step for attaching the cord anew as the extension is raised to different heights.

Claim.—1. In combination with the ladder A and extension E thereof, the plate B and latch *a*, substantially as described, and for the purposes set forth.

2. The cord K, in combination with the series of hooks *h h*, attached to the steps of the ladder A, and the extensible legs F G, substantially as described.

138,235.—*Washing-Machine.*—ELLIOT DICKERMAN, Middlefield, Conn. Application filed March 31, 1873.

The washing-machine is constructed in usual form, with a suspended rubber upon a vibrating frame, upon which the rubber is connected by pivots in open slots, that it may be removed at will. The rubber is constructed with bars, arranged in form of steps, and open for the free passage of water.

Claim.—1. The box A, frames A', links C, and vibrating squeezer B, combined and arranged as and for the purposes specified.

2. The operating-frame D D D^1 D^2, in combination with the vibrating squeezer B and suitable supporting and guiding means C, when the frame is connected by means of slots *d* and pins *e*, so as to be readily shipped and unshipped, as herein specified.

138,236.—*Saw-Tooth.*—JAMES E. EMERSON, Beaver Falls, Pa. Application filed January 24, 1873.

The cutting point of the tooth is formed of a triangular piece of steel, which, after being properly shaped, is made very hard, so that it may retain its cutting edge longer than the teeth commonly used.

Claim.—The removable saw-tooth C as a new article of manufacture.

138,237.—*Process for Refining Petroleum.*—ALONZO FARRAR, Brookline, Mass. Application filed February 26, 1873.

Mixes with oil, which has been treated with acid, an equal quantity of water and agitates them for a half hour; then draws off water, leaving the oil in the tank. Repeats this process till the acid is separated from the oil; heats the oil to a temperature of 300° Fahrenheit, and maintains at this temperature till the water is driven off.

Claim.—The process above described, of treating petroleum or crude coal-oil after mixture with sulphuric acid; or of treating the oil obtained from the spent acid used in refining petroleum or coal-oil.

138,238.—*Automatic Gate.*—LEANDER FILSON, Bushnell, Ill. Application filed September 28, 1872.

A gate running on tilting curved way overhead is operated by a connecting-rod, a crank-wheel, a cogged lever, and cords.

Claim.—In combination with a tilting gate running on rollers, as shown, the curved way G, the tilting bar F, connecting-rod and crank-wheel O N, and cogged lever M, arranged substantially as set forth.

138,239.—*Turbine-Wheel.*—DAVID B. FLINT, Orange, Mass., assignor to THE RODNEY HUNT MACHINE COMPANY, same place. Application filed March 6, 1873.

The step of this wheel is supported by a spider or cross having four or other suitable number of arms arranged at proper angles to each other. They project beyond the draft-tube of the wheel-case, and have fixed to them a short tube or centralizing ring, which slides within the draft-tube. Instead of being arranged within the draft-tube, the centralizing-tube may encompass it so as to slide up or down upon the outside of it, the object of the tube or ring being to maintain the spider duly centralized with respect to the draft-tube.

Claim.—The centralizing ring or tube E, the draft-tube D, the spider C, the screw-rods F, nuts H, and guide G, arranged and combined substantially as specified.

138,240.—*Rock and Ore Crusher.*—CHARLES FORSTER, Pittsburg, Pa. Application filed March 29, 1873.

Claim.—1. The jaws *a* and *d*, one of which is movable, such movable jaw having a grinding motion laterally across the face of the other jaw, as distinguished from an up-and-down grinding motion, substantially as and for the purposes described.

2. The jaws *a* and *d*, corrugated as shown—that is, with the full parts of the corrugations in one jaw opposite to the hollow parts of the corrugations in the other jaw—when one of such jaws is arranged for operation laterally across the face of the other, and at right angles, or nearly so, to the line of the corrugations, for the purpose of securing a crushing motion between the full parts of the corrugations, substantially as and for the purposes described.

3. The jaw *d*, chambered out at *i* and provided with a pivot or journal, *j*, in combination with the gearing *h*, substantially as and for the purposes described.

138,241.—*Machine for Distributing Type.*—MERRITT GALLY, Rochester, N. Y. Application filed February 21, 1873.

Types of varying thicknesses are clamped between two sliding jaws, to one of which an indicator is pivoted and vibrated by the other into proper position to engage the corresponding slot of an inclined bar, which operation stops the rear jaw over the proper letter-chute, and thus deposits the type therein.

Claim.—1. A set of types to be distributed by an automatic distributer, when the bodies of all the characters are made to differ from each other, in whole or in part, so that the difference in dimensions may be used to indicate to the distributing device the character of the letter or place for its delivery, substantially as set forth.

2. The combination, with an automatic distributer, of a multiplying-indicator, so that too fine adjustments may be avoided, substantially as set forth.

3. The combination, with an automatic type-distributer, of the clamps B C and a motor, substantially as set forth.

4. The compound clamp-slide, made up of parts E B and C D and friction device G, or equivalents, substantially as specified.

5. The combination, with an automatic type-distributer, of a type-carrier, a part of which shall stop at the place of delivery of the type while the other part proceeds in its movement, substantially as specified.

138,242.—*Car-Axle Box.*—STEPHEN F. GATES, Cambridge, Mass. Application filed August 3, 1872.

Claim.—1. The air-tight oil-fountain forming a part of the axle-box, as described, and arranged to regulate, automatically, the supply of oil to the axle through the agency of heat, the heat serving to force oil from the box by reason of the expansion of the oil, or of the air and oil in the box, substantially as set forth.

2. The glasses E E applied to the oil-fountain of a car-axle box, substantially as described, and for the purpose specified.

3. The air-tight oil-fountain D, the plug-screw K or its equivalent, and the regulating feed-valve H or its equivalent, in combination with the aperture L, bearing B, and shaft A.

4. The pipe N, in combination with an air-tight oil-reservoir in or upon the car or platform, and with the axle-box, substantially as shown and described.

138,243.—*Lubricator.*—JOHN GATES, Portland, Oregon. Application filed August 23, 1872.

Claim.—1. The described method of feeding oil, consisting in delivering the oil from the reservoir up through a body of water inclosed in a glass chamber, and discharging the same through the feed-cocks, substantially as described.

2. The combination of an oil-chamber with a water-chamber, the latter being located over the former, and adapted to receive oil from it, and deliver the same above the body of water inclosed in it, substantially as described.

3. The combination of the chambers A F, passages J K, and plug M with the induction-pipe I and feeding-cocks, substantially as described.

4. The drip-pan C provided with the filling-ping D, substantially as described.

138,244.—*Planing-Machine.*—ETMAN GOULD, Norwich, Conn. Application filed February 8, 1873.

The bands supporting the idle-wheels and gear-wheels on the ends of the feed-rollers are fitted to hubs on the ends of the journal-boxes, to obviate the wear which otherwise would ensue by a rapid motion of the feed-rollers. The bearing-steps of the vertical spindles are constructed for the reception of a lining of soft metal, and to leave a space for oil on the top and at the bottom aronnd the bearing-boss.

Claim.—1. The combination, with the hubs *d'* of box D and standards supporting it, of the journal of the upper feed-roll and the journals or studs *e g* of the straps or links *k m*, substantially as and for the purposes set forth.

2. The combination, with the chambered bearing-piece L of the planing and matching machine, of the supporting projection 4 and the bearing parts 5 and 6, substantially as and for the purposes set forth.

138,245.—*Calculating-Machine.*—GEORGE B GRANT, Cambridge, Mass. Application filed December 30, 1872.

A series of notched or laterally-toothed and numbered wheels, each comprising three decimal series and mounted on the same axis, are arranged to perform operations in addition and subtraction by means of engaging and disengaging pins, drivers, and carriers, operated by a curved shield having suitable slots and numbered spaces reversed in direction on opposite sides of the slots.

Claim.—1. The combination of two pins, *p* and *p'*, in the plate P, with the driver *d*, so that it shall be thrown onto the wheel A by the pin *p'* and off again by the pin *p*, substantially as set forth.

2. Providing the driver *d* with a pointed head, so that it will be thrown onto or off the wheel A, according as the right or left side of the point strikes the pin *p*, substantially as described.

3. The combination of bar E with pins *p*, on the wheels A, B, C, &c., substantially as and for the purpose specified.

4. The arm K, which is thrown into the path of the driver *d* by the carrying-stud *x*, substantially as described.

5. The connector *b*, so arranged as to throw the carrying apparatus belonging to any decimal place into action when the carrying apparatus belonging to the next decimal place below is in action and the value of that place is at the same time nine, substantially as hereinbefore set forth.

6. The combination of the catches *n* and *z*, or their equivalents, in the carrying apparatus, the catch *n* to hold it out of action till the next decimal place below reads nine, and the catch *z* till that place reads zero, if its carrying apparatus is not in action, substantially as set forth.

138,246.—*Dumping-Wagon.*—DAVID E. HAINES, Uniontown, D. C. Application filed February 25, 1873.

The driver by turning a crank causes the wagon to be dumped, and brings the wagon-box again into position by backing his horses, looking the tongue. In either operation the driver is not obliged to move from his seat.

Claim.—1. The combination of the pin *s* or its equivalent with the block *c*, cord or chains *d*, wheels *e* and *f*, and crank-rod for giving motion to the body of the wagon.

2. The combination of the arm *l* and stanchion-roller *n* for elevating the tail-board.

3. The combination of the bars *u* and *r* with spring *y*, knuckle *o*, and reach and movable tongue, as and for the purpose described.

4. The combination of the plate *r* with the plate or recessed front axle, as and for the purpose set forth.

138,247.—*Carriage-Spring.*—CHESTER F. HALL, Rockford, Ill. Application filed December 30, 1872.

The transverse springs are attached to the longitudinal springs by means of screw-bolts working in double conical holes in said springs.

Claim.—1. The spring A, in which the leaf *a'''* has bearings *b b*, in combination with leaf *a''*, which has the bent lips *b'*, in the manner and for the purpose substantially as described.

2. The spring A', having conical bolt-holes *c c*, in combination with the spring A, having screw bolt or pin *a'*, in the manner and for the purpose substantially as described.

138,248.—*Tuyere.*—GEORGE HARSCH, Chicago, Ill. Application filed October 11, 1872.

The blast is regulated by a valve supported inside the air-chamber by standards passing through the under part of the air-chamber into a frame, and raised and lowered by a lever. A valve opening downward allows cinders to escape, and is held in place by a latch.

Claim.—The combination of the chamber A having opening *a* above, opening below, and side opening, pipe B, frame A A^1 A^2 A^3, with valve C, lever D, bearing E, and valve F with latch *k*, all constructed and arranged as set forth.

138,249.—*Horse Hay-Fork.*—LEVI HAVERSTICK, Manor township, Lancaster county, Pa. Application filed March 14, 1873.

The handle and cross-head, attached in the usual way, have four tines which pass directly through the cross-head, then carved, and riveted to the handle.

Claim.—1. The combination of the tines 1, 2, 3, and 4, head B, and handle A, when said tines pass through the head and are riveted to the handle, substantially as and for the purpose described.

2. The combination of handle A, tines 1, 2, 3, and 4 passing through cross-head B, brace connections G G, clevis F, jointed lever E D, tripper *c*, and catch and cord connections, arranged and operated in the manner and for the purpose set forth.

138,250.—*Treatment of Sewage.*—FRITZ HILLÉ, Flora Villa, Brentford, England. Application filed August 6, 1872.

The sewage, after having been mixed with the disinfecting liquid, enters the first chamber, in which it is thoroughly mixed by a revolving agitator. From the mixing-chamber the sewage, &c., flows through a series of depositing-tanks, wherein the solid matters settle. The purified sewage escapes from the third settling-tank through self-acting floating-outlets, passing thence to the filters, composed of broken brick, stone, &c., and a layer of spent charcoal from sugar-refineries mixed with seaweed. Before the purified sewage reaches the filters it is treated with carbonic-acid gas, causing the excess of lime to be deposited.

Claim.—1. The treatment of sewage with lime, the chloride of zinc, and the chloride of magnesium, substantially as before set forth, and the subsequent separation of the liquid and solid constituents by deposition and filtration.

2. The treatment of sewage with lime, and, after the deposit of the precipitate, with carbonic acid, previous to filtration, to precipitate any excess of lime, substantially as before set forth.

3. The combination of the deposit-tank and the filter, by means of the self-acting floating outlet, so as to draw off the liquid at or near the surface thereof, substantially as before set forth.

4. The combination of the agitating-chamber with two sets of deposit-tanks and filters, so that one series may be cleansed and got ready for use without the necessity of stopping the flow of sewage, substantially as before set forth.

5. The manufacture of artificial manure by mixing together the chemical precipitate obtained by treating the sewage with the disinfecting materials and the spent filtering materials, and drying the product, substantially as before set forth.

138,251.—*Brick-Machine.*—JAMES HOTCHKISS and PHILIP N. WOLISTON, Springfield, Ohio. Application filed November 6, 1872.

Continuous webs of clay delivered vertically from between forming-rolls upon a counterweighted frame, which sinks with the weight; this web, then forced off horizontally upon a roller-carrying frame, being cut into bricks by wires stretched across its path onto the carrying-frame. Forming-rolls sanded by perforated cylinders placed above them.

Claim.—1. The combination and arrangement of the press-box A, dies D, and wire L, so as to form and deliver a section of the web of clay vertically or nearly vertically downward, for the purpose herein specified.

2. The counter-weighted frame or carriage E, for receiving the web of clay, arranged and operating substantially as and for the purpose herein specified.

3. The arrangement and combination of the vertically-moving

roller-frame or carriage E, receiving-board *g*, plunger N, roller carriage-way G, and the stationary wire-frame M, substantially as and for the purpose herein specified.

138,252.—*Bed-Bottom.*—MARCUS A. HUNT, Cincinnati, Ohio. Application filed April 7, 1873.

A spring-holder arranged in the mortise of a slat, the holder having lips or flanges that clasp against the slat.

Claim.—The holder D having lips *a a'*, in combination with, and arranged in the mortise of, a slat of a bed-bottom, substantially as described.

138,253.—*Inhaler.*—CLINTON D. HUNTER and ERASTUS S. WOODS, Marlborough, Mass. Application filed March 29, 1873.

A valve is placed in the exhaust-tube to prevent the water from being blown into the acid-receptacle, which is sunk in a deep recess in rubber stopper of the inhaler. The stopper is also provided with a deep groove, into which the inlet-tube may be forced when its outer end is disconnected from the acid-bottle. A rubber band buttons over the top of the cork to hold the acid-bottle securely in its place.

Claim.—1. The valve *d*, in combination with the exhaust-tube C, inlet-tube *b*, stopper B, and main receptacle A, operating substantially in the manner and for the purpose described.

2. The stopper B provided with a cavity or recess for the reception of the acid-vessel *c*, substantially as and for the purpose set forth.

3. The stopper B provided with a groove, *h*, for the reception of the upper portion *g* of the inlet-tube *b* when forced down, the inlet-tube being so constructed and arranged that it may close the exhaust-passage and prevent the leakage or escape of the medicated liquid from the main receptacle when tipped or inverted, substantially as described.

4. The band *i*, in combination with the acid-vessel embedded in the stopper B, and the inlet-tube *b*, substantially as and for the purpose set forth.

138,254.—*Manufacturing Pyroxyline Articles.*—JOHN W. HYATT, Albany, N. Y. Application filed October 23, 1872.

Place the coated article in a receiver and force in air or liquid under about twelve atmospheres pressure.

Claim.—In the manufacture of articles composed of compounds of pyroxyline or soluble cotton, or of articles coated therewith, the process of subjecting the articles, when first formed or coated, and before drying, to pressure in a vessel, by forcing therein air, alcohol, and water, or other suitable fluid which will absorb the solvent from the formed article, the pressure on the surface preventing the expansion thereof and the formation of air-cells without distorting the shape of the article, substantially as hereinbefore set forth.

138,255.—*Reflector.*—CHARLES F. JACOBSEN, New York, N. Y. Application filed March 29, 1873.

The reflector is made in sections, which are united by hinge joints and pins. If exterior burners are attached the gas-distributer is also made in sections, which are united by collars, one above and one below.

Claim.—1. A reflector, constructed as described, divided vertically through the middle into two sections, which are united by means of the pins *b* entering eyes *a*, as and for the purpose specified.

2. A reflecting-chandelier, in combination with a gas-distributer, when both are made in sections, substantially as and for the purpose described.

138,256.—*File.*—JAMES B. JOHNSON, San Francisco, Cal. Application filed October 4, 1872.

A three-cornered file, with the corners rounded and serrated the same as the flat surfaces.

Claim.—The improvement in the art of making three-cornered files, the same consisting in rounding the corners of the files, substantially as and for the purpose above described.

138,257.—*Machine for Turning Heel-Rands.*—JOSEPH B. JOHNSON and GEORGE W. MOULTON, Lynn, Mass. Application filed December 10, 1872.

A circular head is supported upon one end of the arbor, is provided with radial teeth upon its outer surface, and revolves in the rand chamber or passage, forcing the stock against an abutment, bending it into form and beveling its inner edge to the thickness required.

Claim.—1. The combination of the abutment A, provided with or being without the discharging-passage *h*, the rand-turner B, the case D, having the rand turning and spring chambers, as shown, the spring *f*, the screw G, the cross-head F, the arm *i*, and the crank H, all arranged and combined essentially in manner and to operate as and for the purpose specified.

2. The combination of the abutment A and the discharge-opening *h* thereof with the rand-turner B and the rand guide-chamber *d*, provided with a mouth, *e*, for reception of the rand, as set forth.

138,258.—*Sash-Holder.*—ELIJAH KNAPP, San Francisco, Cal. Application filed December 14, 1872.

A thin plate of spring metal is secured by screws in one edge to the front of the side rail of the sash. The free end of the plate works against the inside of the window-jamb, and creates enough friction to prevent the window from easily falling when raised, and also makes a tight joint and prevents rattling. The central portion of this thin plate is furnished with a perforation smaller than the head of a set-screw, which is screwed into the sash underneath. This set-screw bears against the plate directly under the hole, and may be operated through said hole from the outside, so as to regulate the pressure against the jamb.

Claim.—The thin plate A attached to the inner face of the sash, secured by screws or their equivalents at one end, and adjustable against the jamb by means of a screw placed beneath its central portion and operated through an opening of less size than the head of said screw, as described.

138,259.—*Corn-Planter.*—LESLIE LACEY, Bath, Ill. Application filed October 19, 1872.

A lever on each side is raised by pins on the spokes of the carriage-wheels, and thus, by a bell-crank lever, actuates the seed-cup slides, and on falling, by a rigid and laterally-adjusted marker, indicates where the seed has fallen.

Claim.—The combination of the dropping-levers F, the link *t*, crank *n*, and lever *m*, and rod *t'* with the oscillating valve L in the hopper H, as described.

138,260.—*Milling-Machine.*—BENJAMIN LAWRENCE, Lowell, Mass. Application filed March 3, 1873.

A vertical post supporting by a collar a rotatable sleeve, from which extend in opposite directions two arms, to which are attached, respectively, mechanism to support a wheel to be cut and plain work to be milled, the milling-tool being located above on a horizontal shaft, adjustable longitudinally and also vertically.

Claim.—1. The combination of the index-miller A and the plain milling-machine B with the stand C and tool *d* by means of the sleeve D, substantially as described.

2. The combination of the adjustable tool *d* and index milling machine A, constructed to swing away from the tool and its shaft, substantially as described.

3. The combination of the plain milling-machine B, rotating about the stand C, with the tool *d*, substantially as described.

138,261.—*Match-Safe.*—CLINTON H. LEGGETT, Elizabeth, N. J. Application filed February 12, 1873.

The cast boxes and sheet-metal back are united by a dovetail joint. An ear or projection from the back is bent down upon the top of the box to prevent disunion of the parts.

Claim.—1. The combination, with the cups B D, of the sheet-metal plate A provided with the clamping and holding parts *a a*, *b b'*, substantially in the manner described and shown in the drawing.

2. As a new and improved article of manufacture, a match-safe composed of the cast cups B D, united together by the parts A, *a a'*, *c c'*, and *b b'*, constructed substantially as described and specified.

138,262.—*Furniture-Polish.*—CALEB A. LIBBY, La Cygne, Kans. Application filed April 7, 1873.

Raw linseed-oil, turpentine, dragon's blood, resin, alum, iodide potassium, sulphuric acid, nitric acid.

Claim.—A composition formed of ingredients or substances compounded in the proportions and in the manner as herein specified, for the purposes set forth.

138,263.—*Wagon-Axle Lubricator.*—WILLIAM LOEWENSTEIN, Keokuk, Iowa. Application filed March 19, 1872.

A channel is formed longitudinally on the inner side of the box to conduct and distribute the oil.

Claim.—The box D with the channel G and the elevated part C, and having the pipe B opening into channel G from the outside of the hub for the introduction of lubricants, and with screw A, substantially as set forth.

138,264.—*Machine for Cutting Out Planchets of Sheet Metal.*—JOHN LOWE, Taunton, Mass., assignor to THE ALBERT FIELD TACK COMPANY, same place. Application filed March 11, 1873.

The forward feed of the strip is at right angles to the direction of the lateral feed, and to avoid waste of material, after the last blank of each row has been punched, the lateral feed moves the sheet one-half of its previous movement, when a forward movement takes place. This causes the first blank of the next row to be punched obliquely in the rear of the one punched previously, and so on throughout each row.

Claim.—The intermittingly-reciprocating slide H, so actuated that the last movement at each end of its traverse shall be one-half that of its other movements, in combination with the feed-roll *p* and its actuating mechanism, and the punch *d*, when the table I is so arranged that the forward feed of the strip to be punched takes place at right angles to the direction of its lateral feed, all operating substantially in the manner and for the purpose described.

138,265.—*Car-Axle Box.*—WILLIAM J. MANKER, Sedalia, Mo. Application filed September 26, 1872.

The bearings within the journal-box are formed with air-chambers and apertures in their sides which correspond with like openings in the sides of the journal-box. To the openings in the sides of the journal-box are fitted funnels, which serve to conduct air within the box and around the journal, the object being to prevent the journal from heating.

Claim.—1. In a car-axle box, a bearing-piece provided with an air chamber or chambers and communicating passages opening upon the journal, constructed substantially as described, for the purpose specified.

2. The combination of a bearing-piece, provided with chamber or chambers and communicating passages, with a casing or shell provided with funnels, or equivalents, for catching and conducting the external air into the chambers and passages, substantially as described.

138,266.—*Vessel for Containing Liquids Under Pressure.*—SAMUEL MARKS, San Francisco, Cal. Application filed November 26, 1872.

Claim.—The jar or vessel A having the emptying-faucet B, and with its oblong or oval mouth, in combination with the oblong or oval plug C, with its shoulder *d*, the bridge or cross-piece *f*, and set-screw *g*, substantially as and for the purpose set forth.

138,267.—*Ventilating Water-Closet Bowls.*—J. VICTOR MATHIVET, Cleveland, Ohio. Application filed March 7, 1873.

A water-closet bowl made in the usual form except that the top edge is made thicker and is provided with a groove for the purpose of inserting a strip of packing to make an air-tight joint between the said bowl and the seat-board which lies over it. There is an outlet-pipe, which leads to a flue or pipe attached to the wall of the room, for conducting off the effluvia from the bowl, and when the lid of the seat is raised the draft is inward through the seat, so that none of the foul air escapes into the room.

Claim.—In a water-closet bowl having a thickened upper edge, the combination of the groove B and packing and the outlet-pipe C, for the purposes respectively of forming an air-tight joint between the bowl and seat and for ventilating the bowl in such manner as to prevent the escape of odors into the apartment, substantially as described.

138,268.—*Nut-Lock.*—LEVI J. MILLER, Orrville, Ohio. Application filed March 11, 1873.

A right and left hand screw-thread is cut on the bolt, with a space between to receive a sliding slotted plate, which is provided with flanges and projections formed to fit into notches on the corners of the nuts.

Claim.—1. The lock-washer C with the oblong slot F, rear flanges *c c*, and front corner projection *e*, the several parts being arranged substantially as and for the purpose specified.

2. The combination of the bolt D with right and left handed threads *d* D' and flattened seat *h*, washer C with slot F, rear flanges *c c*, and corner projection *e*, main nut E, and lock-nut B, the several parts being arranged and operating substantially as and for the purpose specified.

3. The lock-nut B with rear notches *i*, in combination with the sliding washer C with projection *e*, substantially as and for the purpose specified.

138,269.—*Steam-Generator.*—JOHN H. MILLS, Boston, Mass. Application filed October 23, 1872.

The water surrounding the system of pipes containing the bisulphide of carbon is in a reservoir open to the atmosphere to prevent a temperature higher than that at the boiling-point from being attained. The exhaust vapor is condensed and re-used, and if a compound engine is employed it passes to the auxiliary cylinder through a pipe located in the water-reservoir, so as to be subjected to the same heat as that for vaporizing the material.

Claim.—1. In a system of generating steam from a sensitive fluid, as described, in which two differential cylinders are employed for purposes stated, the method, substantially as herein shown, of reheating the exhaust steam in transit from the primary to the auxiliary cylinder by passing the exhaust-pipe through the tank containing the water or other liquid heating medium, substantially in the manner set forth.

2. The combination of the generator E for containing the sensitive fluid, the surrounding water tank or jacket B, the condensing-pipe Q, and the primary and auxiliary cylinders G and T, said parts being arranged for joint operation, substantially as shown and described.

3. In combination with the sensitive-fluid steam-generator and the surrounding water tank or receptacle, the heating-chamber C, and the furnace communicating with said chamber, under the arrangement and for operation as shown and described.

138,270.—*Log-Turner.*—JAMES C. MOORE, Ypsilanti, Mich. Application filed February 3, 1873.

The log is placed in slings which pass over pulleys, and is raised by a system of levers, to which is attached a chain connected with a windlass.

Claim.—1. The combination, with the slings G, of the levers B', ways D, carriages or blocks E, and sheaves F, when arranged to operate substantially in the manner and for the purposes specified.

2. In a saw-mill, the arrangement of the chains or ropes *d*, sheaves A, drum *m*, pulley *c*, and bed *e*, in combination with the devices hereinbefore named for elevating the log, substantially as and for the purposes shown and described.

138,271.—*Store-Stool.*—ALEXANDER A. MURPHY, Montreal, Canada. Application filed December 2, 1872.

A seat attached to or connected with a screw fitted to and working in an enlarged end of the standard or support, which has on its lower end a pivot fitted to a socket with a shoulder for its support, the socket being constructed with an enlarged foot for securing it to the floor.

Claim.—The standard *a* with the reversible socket *e*, in combination with the nut *b*, screw *c*, and seat *d*, substantially as and for the purpose hereinbefore set forth and described.

138,272.—*Key-Fastener.*—WILLIAM NERACHER, Cleveland, Ohio. Application filed April 2, 1873.

The key is prevented from being turned in the lock by means of a metallic plate, one end of which passes through the key-bow, and the other end is secured to the door by a button. This plate may be attached to the key, and serve also as a tag on which the number of the room or name of the owner may be marked.

Claim.—The plate or tag D, button-hole *e*, and button E, in combination with the key C and door, in the manner as and for the purpose specified.

138,273.—*Mitten.*—FARNAM L. OAKLEY, New York, N. Y. Application filed March 1, 1873.

Knitted mittens are widened so that the thumb portion projects from the mitten to suit the natural position of the thumb.

Claim.—As a new article of manufacture, a mitten having the hand portion D corresponding to the wrist in width, and the thumb portion formed by widening out the web altogether on one edge, or partly on one edge and partly on the other, as shown and described.

138,274.—*Lubricator.*—JOHANNES OSENBRÜCK, Hemelingen, Germany. Application filed April 2, 1873.

The circular oil-cup forming part of the journal-box is secured upon the shaft, and both are connected by passages and tubes bent with their interior openings opposite the direction of revolution of the cup. When the cup is brought into swift rotation the surplus lubricating material will pass from the journal into the cup, be spread over the greatest interior surface, taken up by the small bent tubes, and conveyed back into the grease-box.

Claim.—1. The arrangement of circular cups on the rotating shaft or on a loose pulley, in combination with a stationary pipe or pipes, whereby oil collected in said cup, and thrown by the centrifugal force against the inner periphery of said rotating cup, is caught by said stationary pipe or pipes and conveyed through the same either into the grease-cup or into the bearing, substantially as and for the purpose set forth.

2. The centrifugal cup D, attached to the revolving shaft A, in combination with pipe J, attached to the bearing B, and connected through suitable holes with the grease-cup C, operating in the manner and for the purpose substantially as described.

3. The recesses *d d*, channel-way *m*, and pipe *b* in the shaft-bearing, in combination with a centrifugal cup, D, fast to the revolving shaft, and pipe J fast to the upper part of the shaft-bearing connected with the lubricating-cup C, substantially in the manner and for the purpose hereinbefore set forth and specified.

4. The cavities H in the loose pulley, closed by suitable cups D, in combination with pipes *v* and *w*, attached to the shaft and connected through suitable holes or channel-ways with a groove, *s*, or with the internal bearing of said pulley, and operating in the manner and for the purpose substantially as hereinbefore set forth and described.

138,275.—*Animal-Trap.*—DEMUS J. OWEN, Springville, Pa. Application filed March 10, 1873.

A self-setter, the victim in endeavoring to escape setting the trap for the next one.

Claim.—1. The arrangement of the drops or gates B B' and the wires *c* and *d*, substantially as shown and described in the box A, and for the purposes herein set forth.

2. In combination with the above, the sliding box C, for the purposes herein set forth.

138,276.—*Apparatus for Separating Metals.*—SAMUEL J. PEET, Boston, Mass., assignor to THE PEET VALVE COMPANY, same place. Application filed June 14, 1872.

The reciprocating trough causes the magnets to traverse the mass of filings, so that the iron is not swept forward and out of the trough by the revolution of the drum.

Claim.—The combination of a reciprocating reservoir, D, the drum B provided with a series of magnets, *a a*, &c., and the rotary brush C, substantially in manner and for the purpose hereinbefore specified.

138,277.—*Screw and Nut.*—SAMUEL J. PEET, Boston, Mass., assignor to THE PEET VALVE COMPANY, same place. Application filed October 17, 1872.

To diminish friction, but without affecting strength or essential bearing, the periphery and one side of the thread of either bolt or nut is cut away to prevent impingement of the threads where impingement is not required.

Claim.—A bolt and nut, the thread of one or both of which is reduced on its periphery and on one of its lateral surfaces, in the manner and for the purposes set forth.

138,278.—*Screw-Rod.*—SAMUEL J. PEET, Boston, Mass., assignor to THE PEET VALVE COMPANY, same place. Application filed January 22, 1873.

The rod or valve-stem has two screw-threads of different pitch to operate in nuts of corresponding pitch, the object being to obtain variable speed.

Claim.—The combination of the rod B, provided with two male screws or series of threads, *c d*, of unequal pitch, as described, with the part A having corresponding female screws or nuts *f g*, the whole being arranged so as to operate together in manner and for the purpose set forth.

138,279.—*Revolving Book-Case.*—LUTHER B. PEET, Tecumseh, Mich. Application filed January 21, 1873.

A series of book-cases, a pair of drawers, and four book-rests, all revolving on a central spindle mounted on a movable platform. The doors of the book-cases have studs projecting from the top and bottom edges. These studs slide in grooves made in the top and bottom of the cases, the grooves extending from the middle of the doorway to the right-hand corner and half-way around the right side of the closet.

Claim.—1. The construction and arrangement of the platform A, spindle B, case C, drawers C' C', closet D, book-supporting frames E E', and one or more book-cases, F G, all revolving on said spindle, substantially as shown and set forth.

2. In combination with the case, constructed as described, the doors D' provided with studs *f f* sliding in the grooves *e e*, substantially as shown and described.

138,280.—*Lever Cider-Press.*—HENRY PETERS, Penn township, Lancaster county, Pa. Application filed March 17, 1873.

A pair of bolts locking alternately into slotted bars, one of which is affixed to the bed of the press and the other to a lever, both passing through slots in the head of the pressing-beam held between guide-posts, and having its fulcrum-pin in a post on the base-bed, which supports the material to be pressed.

Claim.—The perforated vertical bars L M, when severally connected with the base-block B and lever P, in combination with bolts R, pivoted springs *s*, press-beam D, hinged bar N, all arranged and operating substantially in the manner and for the purpose specified.

138,281.—*Apparatus for Packing Snuff.*—AUGUSTUS H. FLOCK, Philadelphia, Pa. Application filed March 25, 1873.

The material is gaged in measuring-tube by a piston, made adjustable by means of a second piston or plate having an adjusting-screw and connection. The tube is pressed down into the material and receives the desired quantity, after which the measured mass is pushed out into a package.

Claim.—In combination with the measuring-tube A and adjustable piston B, the rods C C, plate D, removable head E, and adjusting device J H, substantially in the manner and for the purpose above set forth.

138,282.—*Medical Compound Called Milk of Magnesia.*—CHARLES H. PHILLIPS, New York, and LAWRENCE REID, Brooklyn, N. Y. Application filed March 15, 1873.

Claim.—The medical compound herein described, consisting of a hydrate of magnesia mixed with water, and termed a milk of magnesia, when prepared in the manner substantially as specified.

138,283.—*Automatic Gate.*—JOSEPH P. POXON, Mayfield, Cal., assignor to himself and JOHN MILLER, same place. Application filed September 2, 1872.

The gate-post extends beneath the surface of the road-way, and, by a system of levers, is turned so as to open the gate when the hand-levers are thrown outward. By the same movement the latch is worked by cords, bell-crank, and levers connected to the fixed arm at the bottom of the post.

Claim.—1. The gate B with its extended post *d* bearing in a timber below the surface of the road, and having the fixed arm *g*, in combination with the rods *j j j'*, centrally-pivoted rocking-lever *m*, and upright levers K K', all connected and arranged as and for the purpose above described.

2. In combination with the arm *g* and levers *j j'*, the short levers *i o*, cord *p*, and bell-crank *r*, substantially as and for the purpose above described.

138,284.—*Universal Joiners.*—JOSEPH H. RAYNARD, BENJAMIN W. HATCH, and WILLIAM P. HATCH, Boston, Mass. Application filed August 14, 1872.

By this machine wood-work of any shape may be executed without removing the stock from the chucks.

Claim.—1. The combination of the upper bed or platform B'', provided with curved bars or plates E'', curved rack-bar F', and curved rails E', traveling in curved ways D'' formed in the top of curved sides C'' of a frame, A'', formed with segmental grooves N'', and operated by cog-wheel G', shaft H'', gears I K', shaft O'', and wheel M', substantially as specified.

2. The combination of the circular upper frame T, formed with grooved projecting rim, and provided with slotted bar S, rack-bar X, and operated by cog-wheel W, gears Y N, shafts U V, and wheel Q'', substantially as specified.

3. The upper platform or bed B'' and frame A'', arranged as herein described, in combination with the upper circular frame T, arranged and operated substantially as specified.

4. The turn-table I formed with cog-rim K, and to hold and allow the forward and backward travel of the slotted bar S, and operated by a cog-wheel, L, shafts Z Q, gears O P, and wheel R so as to revolve on platform A, in combination with the circular upper frame T, arranged and operated substantially as specified.

5. The platform A, having knees or braces *y*, traveling up and down in ways *x*, and provided with bearings C D, screw-rods B, gears J J', shaft E, and wheel H for raising or lowering the platform A, in combination with the frame *a* and turn-table I, arranged and operating substantially as specified.

6. The combination of platform A, turn-table I, frame T, platform B'', frame A'', all arranged and operated substantially as and for the purposes specified.

7. The combination of the swinging arm S'', cutter-spindle V'', shaft H', platform A, turn-table I, frame T, upper platform B'', frame A'', and frame *a*, all arranged and operated substantially as specified.

8. The adjustable standard R' arranged with spindle V', disk X' having apertures *x''*, in which engages a pin, *y''*, connected with bent spring Y', in combination with the bed or platform B'' and adjustable standard Q''', all arranged and operated as and for the purpose specified.

138,285.—*Wash-Boiler.*—JOHN REINIG, Fond du Lac, Wis. Application filed January 29, 1873.

A wash-boiler constructed with a false bottom with cylinders passing through it having angular perforations, and with cross-partitions on which are suspended valves to regulate the flow of water.

Claim.—The false bottom B, having two holes, D D, covered with caps C C, tubes E E, frame F, valves G G, together with the tubes K K and the cross-bars M M, in combination with wash-boiler A, when arranged and used as and, for the purpose specified.

138,286.—*Horse Hay-Fork.*—THOMAS RHOADS, Ottawa, Ill. Application filed February 17, 1873.

A casting with grooves in its upper side to receive a portion of the handle and tines of a common hand hay-fork, and means for securing in place and for hoisting is used to convert a hand-fork into a horse-hay fork.

Claim.—The casting A with staples B B, staples D D, and bail E, as an attachment to a common hand, hay, or manure fork, so that the same may be used as a horse hay-fork, substantially as described.

138,287.—*Water-Closet.*—PHILIP C. ROWE, Boston, Mass. Application filed March 1, 1873.

A bellows is so arranged that when the stream of water is let on the bellows fills itself with the foul air. When the pan is again raised to its former position, and the water shut off, the bellows closes and forces the foul air into the soil-pipe.

Claim.—The combination and arrangement, with a water-closet, of a bellows or its equivalent, having pipes connecting with the excrement-chamber and soil-pipe, and operated by the pull or cock, as the case may be.

138,288.—*Stirrer for Malt-Kilns.*—EDWARD SCHMIDT, Pittsburg, Pa. Application filed September 28, 1872.

The shaft acts in combination with the rack-pinion and guide as a carrier for the stirring-wheel. The wheel, while revolving, travels alternately back and forward over the drying-floor. The V-shaped troughs on the end of the arms have a fixed and a swinging side, and they are so attached on the successive arms that every alternate swinging half will act as a scoop while the wheel moves in one direction, and, during the opposite motion, the other swinging halves act in like manner.

Claim.—1. The shaft *a* as a carrier for a stirring-wheel, in combination with rack-pinion and sliding guide at each end, substantially as set forth.

2. A V-shaped stirring-trough, consisting of one fixed slide, *c*, and a swinging side, *c'*, the latter having a limited swinging motion, substantially as set forth.

3. The relative arrangements of troughs *c c'*, with the fixed sides of each two contiguous troughs adjacent or opposite, whereby each alternate swinging half will act as a scoop as the wheel goes one way, and the remaining swinging halves will have a like action with the reverse motion of the wheel, substantially as described.

4. A stirring-wheel having a forward-and-back traversing motion along the floor of the kiln or drying-oven, and also a simultaneous rotary motion, and operative in stirring the grain or malt whichever way it moves, substantially as described, without reference to the form of stirrers employed thereon.

138,289.—*Beer-Cooler.*—FREDERICK SCHMITT, Milwaukee, Wis. Application filed March 24, 1873.

A floating pan, made of metal and strengthened by wires inserted around the body of the pan on the inside, is filled with ice and floated on top of the beer to be cooled.

Claim.—A beer-cooler constructed with body A with wires B round the inside to strengthen it, and cross-pieces C secured across the bottom, all in combination, substantially as described.

138,290.—*Stereotype-Plate Holder.*—FREDERICK SCHOLEFIELD, Chicago, Ill. Application filed January 11, 1873.

The plate is held between a stationary and a moving slide, the latter guided in ways in the block by means of a worm-gear and worm, the shaft of which is actuated by a wrench.

Claim.—The griping-slide B provided with the rack *c* and moved in the ways *a* by means of the worm-gear C and the worm *c* on the vertical shaft D, substantially as described.

138,291.—*Harness-Buckle.*—JAMES L. SELLECK, Baldwinsville, N. Y. Application filed January 16, 1873.

Improvement on patent No. 79,874. The improvement consists in casting the lugs which form the hinge open at the bottom, and also in casting lugs on the opposite end of the hinged plate, which act as guides and hold it in place by friction.

Claim.—The cover A, having lugs or projections *a a* thereon to form the hinge-joints, and side pieces a^1 a^1 to guide and hold the cover in place when closed, combined with the body B of the buckle, as and for the purposes above set forth.

138,292.—*Floating Light-Houses.*—JOHN B. STONER, New York, N. Y. Application filed March 27, 1872.

Combination with central buoy and circular frame of small buoys adapted to be turned for painting and repairs; also combination of circular frame bridges, central and circumferential buoys, and combination, with a buoy or floating light-house, of mooring-chains and weight, whereby the structure may rise and fall with the tide and swells while constant strain is kept on the mooring-chain.

Claim.—1. The small or outer buoys a^1 arranged to turn on axles or journals, in combination with an endless chain for turning them, substantially as described.

2. The combination of a central buoy, *a*, and circumferential buoys a^1 operating as breakwaters therefor with a bridged platform, constructed substantially as described.

3. The mooring-chains f^1 applied to the central buoy of the float *a*, and loaded so as to operate substantially as described.

138,293.—*Floating Light-Houses.*—JOHN B. STONER, New York, N. Y. Application filed March 22, 1872.

Combination of wheels and drums and weight with telegraph-cable, whereby a constant strain is kept on the cable for taking up the slack thereof at different stages of the tide; also arrangement of valve in connection with concentric tubes, whereby water may be admitted for ballast or excluded and pumped out, and the buoy keeled over for painting or repairs; also combination, with circumferential breakwater-buoy, of central elevated office, connected therewith by gimbal-joint, and having its balance-weight extending through a protecting-tube into the water.

Claim.—1. The wheel U^1 and wheel E', the latter having a weight suspended from it, in combination with suspenders U^2 U^3, and the telegraph-cable U, substantially as and for the purpose described.

2. The tubes *d e*, extending from the office below the water-line, and provided with a valve, *f*, and a pump-tube, *o*, substantially as described.

3. The elevated office and an external buoy, A, connected together by means of a gimbal-joint, and having combined with them a loaded tubular portion which extends down into the water and keeps the said office in an upright position, substantially as described.

4. The casing C in combination with the ballast D^2, substantially as and for the purpose described.

138,294.—*Machine for Loading Cartridges.*—THOMAS L. STURTEVANT, Framingham, Mass. Application filed February 15, 1873.

Claim.—1. The combination, with the tubular cartridge-case receiver, of the wad or bullet magazine arranged by the side of said receiver, and provided with a feed-aperture corresponding to a similar aperture in the receiver, and the reciprocating feed-plate playing transversely across the magazine and operating at each traverse to push a wad or bullet laterally from said magazine into the receiver, substantially as set forth.

2. The combination, with the cartridge-case receiver and the wad or bullet magazine, arranged substantially as described, of the rammer and reciprocating feeder connected with and operated by said rammer, substantially in the manner and for the purposes shown and set forth.

3. The combination with the supporting clamp or frame, provided with a forked foot or shelf, of the cartridge-case receiver, hinged to said clamp or frame, so that its lower end may be swung either directly over or out away from said shelf, as and for the purposes shown and set forth.

4. The tubular cartridge case receiver and wad or bullet magazine, arranged together substantially as specified, in combination with the supply tube or tubes for introducing powder or shot into the receiver, substantially as shown and set forth.

5. The plunger or rammer, provided at its lower end with a type or die, substantially as and for the purposes set forth.

138,295.—*Dredger.*—THOMAS SYMONDS, Portland, Me. Application filed March 24, 1873.

The windlass and the small wheels are on the same shaft at the joint of the arms, and the wheels are connected with the joint of the opposite arms by ropes or chains. By pulling on the rope it is unwound from the windlass and the ropes connecting the small wheels and opposite joints of the arms are wound on the wheels, thus bringing the arms of the toggles together and closing the scoop with great power.

Claim.—1. The combination of the pulley *k*, placed centrally, with windlass *a* wheels *m n*, shaft J, the ropes extending from the small wheels *m n* on the shaft *d* to the opposite joints of the toggles, and cord *h*, as herein set forth.

2. The shaft *d* having the windlass *a* and wheels *m n*, when said shaft is located at the joint or angle of the toggle-joint, as herein set forth.

138,296.—*Washing-Machine.*—JOHN TABER, South Wolfborough, N. H. Application filed April 1, 1873.

A washing-machine constructed with a corrugated roll, with its upper surface covered with a bed of small rolls secured by journals to an oscillating frame and held in their position in slots by rubber springs, to give tension, and has guides attached to the uprights to conduct the clothes when in use.

Claim.—The combination of the base A, standards B B with guides I I, fluted roller C, rocking frame G H, rollers *b b*, and springs *d d*, all substantially as and for the purposes herein set forth.

138,297.—*Saw-Set.*—JOHN G. TATTERSHALL, Delphi, Ind. Application filed March 22, 1873.

The set-screw, rest, and anvil, being on the same arm, remain stationary in relation to the saw while the tooth is set by the jaw of the other arm, which passes through slots in the gage and stationary arm.

Claim.—1. The saw-set, having stationary arm B provided with anvil I, bar E, set-screw *a*, and adjustable flat gage G, and the handle A provided with rigid jaw D, projection *b*, and set-screw *d*, all constructed and arranged as and for the purpose specified.

138,298.—*Stretching-Tool for Wire and Rope.*—REUBEN LINCOLN TAYLOR, Golden Prairie, Iowa. Application filed January 20, 1873.

A tool having a large-headed pin on its rear upper surface, a small and headed pin forward of this, and a large inclined notch farther forward. A turn of the wire or rope is made around the larger pin, and then around the smaller pin, and thence around the larger again, when further turnings continue to tighten the wire or cord which is drawn through the notch. Increased leverage is obtained by inserting this dovetailed tool into a handle socketed for the purpose.

Claim.—The plate A provided with studs C and D, in combination with the wrench G provided with a dovetail score, H, fitted to the inclined sides of the plate A, substantially as described.

138,299.—*Shirt-Stud.*—OSCAR S. THAYER, Attleborough, Mass. Application filed March 6, 1873.

The teeth upon the periphery of the cup prevent the button from rotating upon the shank when more than ordinary resistance is encountered.

Claim.—1. The teeth in the edge of the cup in shirt-studs and other similar articles, substantially as described, and for the purpose set forth.

2. As a new article of manufacture, a shirt-stud in which the screw is secured to the button by means of a toothed cup, substantially as and for the purpose set forth.

138,300.—*Threshold for Doors.*—OSCAR G. THOMAS, Taunton, Mass. Application filed January 7, 1873.

Claim.—The improved water-shed threshold or threshold-plate, provided with the rear and edge-grooves *a b b*, and the covered educts *c c*, arranged and constructed as described and represented.

138,301.—*Machine for Pulverizing Soil.*—AUGUSTUS C. TOWER, Mendota, Ill. Application filed December 12, 1872.

The side bars of the rectangular frame are provided with adjustable beams, into which are inserted cimeter-shaped teeth. These adjustable beams can be placed in line with each other, or either one adjusted to any desired angle to the line of draft. They also have an oscillating motion.

Claim.—1. The combination of the beams A A with the side beams B B, the beams A A being capable of adjustment to the line of the draft, and also to the unevenness of the ground, substantially as described.

2. The combination, in a pulverizing-machine, of knife-carrying beams capable of double adjustment, adjusting-rods, and a pulverizing-beam, substantially as described.

138,302.—*Paper.*—HEINRICH EDWARD WAGNER, Copitz-Near-Dresden, Germany, assignor to J. F. HUGO MATTULLATH, Pittsburg, Pa. Application filed December 26, 1872.

Paper, saturated in benzine, is coated with boiled linseed-oil, lead shavings, oxide of zinc, turpentine, gum copal, and gum sandarac.

Claim.—As a new article of manufacture, translucent paper having a surface suitable for receiving a record by means of ink or other coloring matter, and a body and face such that the record so made may be removed by ordinary washing without impairing the paper for receiving a new record, when prepared substantially in the manner described, and for the purpose set forth.

138,303.—*Lathe for Turning Hubs.*—JOSEPH Z. WAGNER and HENRY R. FRY, Wabash, Ind. Application filed October 7, 1872.

The rest G, in connection with the sliding rest B, incloses the mandrel upon which the hub is secured and tends to prevent vibration therein.

Claim.—1. The movable rests B B, provided with the jaws which receive and embrace the mandrel, for the purpose set forth.

2. The chisel-head, connected and used in combination with the eccentric rests G G, as and for the purpose set forth.

3. The combination of the pivoted chisel-head D, arm *e*, pivoted lever *f*, and cross-piece E, all as and for the purposes set forth.

4. The combination of the chisel-head with the rests B B and G G, in such manner that the rests close upon the mandrel when the chisel begins to cut and hold said mandrel securely in position, substantially as and for the purposes herein set forth.

138,304.—*Fire-Escape Ladder.*—CHARLES H. WHITE, White's Station, Mich. Application filed January 21, 1873.

The ladder consists of links connected by rule-joints and wound upon a drum. The edges are formed into toothed racks meshing into spur-gearing, by means of which the ladder can be forced up an inclined guide to a desired height.

Claim.—The construction and arrangement, with relation to the frame A mounted on wheels, of the drum C of the chain-ladder D, having rule-joints formed by passing the bolts E through the webs *d*, the racks *e*, hinged guide-frame F F', the extension-braces G G', guide-rollers H H', shafts *k k'*, chain-wheel I, endless chains J, pinions K L, spur-wheels M, and counter-shaft *l*, substantially in the manner and for the purpose set forth.

138,305.—*Lathe-Dog.*—CHARLES L. WICKHAM, Utica, N. Y. Application filed August 3, 1872.

The plate, which is bolted to the face-plate of a lathe, is bent outward and flanged. From one side of this projection an arm or jaw extends downward. This jaw is slotted to receive a notched bar, which is caused to engage with a tooth in said slot by a thumb-screw passing through the plate and bearing on the bar. Said bar is in one piece with and at right angles to the other jaw, which slides on the flange, and is the means by which said jaw is adjusted.

Claim.—The improved lathe-dog, consisting of the jaw C, in one piece with the part A, and having a toothed mortise, as described, and the jaw E and the toothed bar D, also in one piece, all as and for the purpose set forth.

138,306.—*Folding-Guide for Sewing-Machines.*—STEPHEN W. WOOD, Cornwall, N. Y. Application filed April 9, 1873.

The opening through the edge-turning guide is so formed as to turn one or both edges at about a right angle to the main portion of the strip of material passing through it, and these edges so turned by coming against the inclined sides of the edge-laying guide-aperture are folded completely down, and the strip is then folded centrally between the trough-like throat and a stud which projects from the back of the plate or edge-guide into such throat.

Claim.—1. The combination of the edge-turning guide-throat B, or its equivalent, with the plate having the edge-laying guide-aperture C, as and for the purpose set forth.

2. The combination of the edge-turning guide-throat B, or its equivalent, and the plate provided with the guide-aperture, with the folding guide or throat D, the combination operating substantially as described.

138,307.—*Ore-Washer.*—THOMAS WREN, Hamilton, Nev. Application filed February 24, 1873.

Claim.—In an apparatus for washing ore by a counter current of water, the combination and arrangement of a short neck, C, containing the glasses *d*, and connecting the hopper B and box A with the pipe *f* so arranged as to give a directly vertical stream of water, as described.

138,308.—*Railroad Cattle-Guard.*—ROBERT M. YOUKS, Schoolcraft, Mich. Application filed January 21, 1873.

The weight of an animal upon the counterbalanced platform raises the picketed gate and arrests the animal's passage down the track.

Claim.—The platform C hinged to the ties, the apron D, picket-shaft E, pickets G, disks F F, each having a cam, *a*, the bearers I I, posts J J, and fulcrum-posts K or L, or both, and the weighted levers L, substantially as and for the purposes herein set forth.

138,309.—*Table-Leaf Support.*—EVERETT L. ABBOTT and SAMUEL T. GIBSON, South Bend, Ind. Application filed April 5, 1873.

A bent rod, with spiral ribs, operates in spiral loops attached to the table-leaf. Slotted plates are attached to the leaf and frame, one of them being serrated for receiving and holding the end of the bent rod.

Claim.—1. In a table-leaf support, a supporting-arm rendered capable of an automatic falling and forward movement, substantially as specified.

2. A supporting-arm provided with one or more spiral ribs, in combination with one or more spiral loops, substantially as and for the purposes specified.

3. The combination and arrangement of the arm C, provided with the spiral ribs *a a*, the loops *a' a'*, and the inclined serrated plate *e*, substantially as and for the purposes specified.

4. In a table-leaf support, the slotted plates D and D', either or both, substantially as and for the purposes specified.

138,310.—*Lumber-Measure.*—FRANK S. BALDWIN, St. Louis, Mo. Application filed November 16, 1872.

The spring-reel of a tape-measure is so arranged in relation to a disk carrying a cone of spur-wheels *as*, by means of an adjusting device, to be thrown into engagement with either one of several sets of registering-gears, and thus indicate the aggregate measure of different lengths of lumber.

Claim.—1. Two or more trains of a registering-instrument in one machine, with gears for connecting them with the tape-measure reel, arranged to shift the connection from one recording-train to the other, substantially in the manner described.

2. The combination of the differential cone H, pinion P, shaft Q, tubes R and U, radial plate *c*, and pinion O, substantially as specified.

3. The combination, with the disk *n* and recording-trains I, of the stop-lever *p* and the tappet *q* on the disk S, substantially as specified.

4. The combination of the disk V with graduated slots, as described, with the shifting devices for the pinion P, and a stop-pin, K, substantially as specified.

138,311.—*Car-Replacer.*—JOHN T. BAXTER, Finksburg, assignor of one-half his right to WILLIAM A. MCKELLIP, Westminster, Md. Application filed October 29, 1872.

A pivot working in a slot connects the hook to the supplementary rail to obtain adjustment at any convenient angle for replacing the unshipped car. The spike is also made adjustable, so as to shun spike-heads.

Claim.—1. The combination herein described of a swivel hook, D, with the supplementary rails A and B of a railroad-car replacer, for the purposes set forth.

2. The combination of an adjustable swivel-hook, D, with the supplementary rails A and B, for the purposes set forth.

3. The combination of an adjustable spike, *c*, with the supplementary rails A and B and hook D, for the purpose set forth.

138,312.—*Water-Elevator.*—THOMAS BELL, Bellport, N. Y. Application filed January 25, 1873.

The blades of the paddles are provided with buckets for receiving and holding the water, the buckets having a valve in one end and an adjustable head at the other to regulate the quantity of water lifted to the varying force of current.

Claim.—1. A box-bucket, G, having a valve in one end and an adjustable head, H, at the other, as described, so as to graduate the quantity of water lifted to the varying force of the tide or current.

2. The arrangement of water-carrying buckets G on the propelling paddles D of a wheel, as and for the purpose set forth.

138,313.—*Compound or Liniment.*—JOSEPH BENDA, Yatton, Iowa. Application filed April 5, 1873.

Alcohol, oil of sassafras, oil of hemlock, oil of origanum, oil of cedar, spirits of turpentine, tincture of Cayenne pepper, tincture of catechu, tincture of opium, tincture of myrrh, guaiac, gum camphor, chloroform, and wintergreen.

Claim.—The liniment consisting of a mixture of ninety-eight per cent. alcohol with two per cent. of the vegetable oils and extracts, in the proportions given, substantially as set forth and specified.

138,314.—*Doublet Stone.*—SIMON BRUHL, New York, N. Y. Application filed January 25, 1873.

Claim.—As an improved article of manufacture, a doublet stone, consisting of a base of artificial or inferior material, provided with one or more steps of facets above the girdle *a b*, and the cap piece or table of genuine precious stone, said parts being combined and arranged substantially as described and shown, for the purpose set forth.

138,315.—*Bag-Holder Weighing-Scale.*—HENRY T. BUDGE and NELSON W. RUSSELL, Cedar Falls, Iowa. Application filed January 9, 1873.

A scale-beam with forked or branching arms carrying knife-edge bearings is supported in an open frame, and to each extremity of the straggling scale-beams is attached a horizontally curved and grooved arm, with a lever-clamp for holding open a bag while being filled and weighed.

Claim.—1. The clamp G, composed of the perforated casting ears or flanges *e e*, lever *f*, and segment or disk *h*, all constructed substantially as and for the purpose specified.

2. The curved gutter-shaped holders *k*, in combination with the clamp G, constructed as set forth, the bag H, and the ring, substantially as and for the purpose herein specified.

138,316.—*Electro-Magnetic Induction-Coil.*—JOSÉ S. CAMACHO, Havana, Cuba. Application filed October 26, 1872.

The armature of the primary magnet, provided with an insulated cross-arm, is arranged to operate double-spring contact-levers reciprocally reversing so as to alternately reverse the induced current in the secondary coil, while the starting point of the current will be in the same direction, giving continuity of effect.

Claim.—1. The armature-lever *r*, arranged in combination with the spring-plates *m m'* and plates H, I, T, and E, to operate substantially as herein shown and described.

2. The plates H and E, arranged, respectively, over the plate *m'* and under *m*, and connected, metallically, with the screw K, as specified.

3. The plates I and T, arranged, respectively, over the plate *m* and under *m'*, and connected, metallically, with the screw J, as set forth.

4. The coils A A, connecting their wires with the screws F F', and plates *m m'*, as and for the purpose set forth.

5. The coils B B and A A, arranged in an apparatus in conjunction with the lever *r*, as set forth.

138,317.—*Coiled-Wire Brush.*—JOHN B. CHRISTOFFEL, Williamsburg, N. Y. Application filed February 15, 1873.

Two or more rods provided with a coil of wire are twisted together, either with or without two or more other rods destitute of this coil, thus forming a coiled brush with uncut edges.

Claim.—An improved coiled-wire brush, formed by the combination of one or more coiled wires, B, with two or more twisted wires, A, substantially as herein shown and described.

138,318.—*Dental Engine.*—CHARLES M. CURTIS, Philadelphia, Pa. Application filed February 14, 1873.

The treadle which communicates motion to a flexible power-conveyer passes through the standard so that the pitman is upon the side away from the operator's knee. A friction-wheel is pressed down by a spring against the periphery of the treadle-wheel. The shaft is coupled together by universal joints, which pass through sleeves. The sleeves are pivoted together by projecting arms, and one set of the arms or branches extends below the pivot-arm and is secured to springs, which tend to throw the two shafts into a line with each other. A rigid bracket holds the end of the flexible shaft so that it turns upon itself at nearly a right angle, and a flat steel spring holds the jointed portions of the power-conveyer in a horizontal position. The tool is released by forcing down a spring through an opening in the socket.

Claim.—1. The arrangement of the treadle-plate and pitman on opposite sides of the standard, said pitman and plate being connected by an arm of the latter intersecting the standard, substantially as described.

2. The combination of the wheel H, bearing B, shaft K, and spring I, substantially as set forth.

3. The combination of the shaft K, slotted sleeve-coupling *k*, and pin *k'*, as shown and described.

4. The combination of the coupling M N with the staff L or the extensions thereof, the branches being attached to said staff L or to a collar or sleeve by suitable springs P P, as set forth.

5. In combination with the shaft K, the curved arm S, bent spring U, and short shaft T, as set forth.

6. In combination with the rotating shaft of the hand-piece of a dental burring-engine, the sleeve e^2 and burr or tool *b*, lever *g*, pin *g'*, and spring *e*, said sleeve being provided with an opening, e^3, for obtaining access to the spring *e*, and the burr or tool having one or more bevels at its shank end, as specified.

138,319.—*Washing-Machine.*—HERMAN DEXTER, Chicago, Ill. Application filed September 6, 1872.

A cylinder with a corrugated inner surface. The staves or strips are tongued and grooved together. The heads of the cylinder are adjustably connected together by rods passing along outside of the cylinder, and held by nuts and screws. The door is made steam-tight by packing and a locking device. The cylinder rotates on journals having their bearings on friction-rollers arranged with cases secured to and supported by side standard.

Claim.—1. The body A, composed of the tongued-and-grooved strips B B and heads *a a* and their projecting rims, united by the bolts *b' b'*, as described, in combination with the interior corrugated lining or pieces *c c*, substantially as herein shown and set forth.

2. The door X and its elastic packing, in combination with the cylinder A, pivoted screw-rod *l*, nut *d*, and slotted plate L, as herein shown and set forth.

3. The cylindrical body A, made as described, and provided with the heads *a a* and interior corrugated surface *c c*, in combination with the journals R R, incased friction-rollers P P, and standards G G, all constructed and arranged substantially as described, for the purpose specified.

138,320.—*Cradle.*—WILLIAM T. DORRMUS, New York, N. Y. Application filed March 6, 1873.

A cradle suspended from the lower end of the legs by cranks passing through a cross-piece resting upon blocks of wood and rubber, with openings formed to give side motion, and held in position by staples and hooks connected to a supporting bracket or brace, on which it rests.

Claim.—The flexible supporting-columns F, in combination with the cranks C and cradle A B, substantially as herein described.

138,321.—*Folding-Seat for Street-Railway Cars.*—KIERGAN EGAN, New York, N. Y. Application filed March 22, 1873.

The bar to which the seat is attached is hinged to the supporting-rod, the latter being adapted to support the seat at different heights.

Claim.—The plate A, hinged bar B, sliding seat C, socket D and its lug and stops, tube E and its jaws, stops, and slot, and the rod F with its knob, constructed and arranged in connection with each other, substantially as herein shown and described.

138,322.—*Scrubber.*—ISRAEL J. EMORY, Jr., Webster, Ohio. Application filed October 26, 1872.

To the head or block of the scrubber plates of elastic rubber are fastened by metallic strips and tacks. These rubber plates extend below the block, and are cut in a vertical direction to form narrow strips. A wire is fastened to the block to form a loop for the reception of a mop-rag.

Claim.—The rubber plates C, block A, wire loop *d*, and handle B, combined, constructed, and arranged substantially as and for the purpose specified.

138,323.—*Mold for Glass Bottles.*—CHARLES D. FOX, Philadelphia, Pa. Application filed January 14, 1873.

Makes bottle without any seam or fin.

Claim.—1. A mold for glass bottles, having the cylinder, shoulder, and neck, cast or formed in one seamless piece, as shown, and having the hinged bottom C opening downwardly to allow the bottle to be taken from the bottom of the mold, substantially as specified.

2. A mold for glass bottles having the cylinder, shoulder, and neck-receiver cast or formed in one seamless piece, substantially as and for the purpose specified.

3. The hinged bottom C, opening downwardly, substantially as shown and described.

4. In combination with the bottom C, the lever D, as and for the purpose described.

138,324.—*Binding for Sewing-Machine Covers.*—EVELYN F. FRENCH, New York, N. Y. Application filed January 18, 1873.

A sewing-machine cover constructed in ordinary form, with a molding around its lower edge formed of veneers, by which its corners are firmly secured.

Claim.—A continuous band, B, made of narrow strips of veneering glued together and molded into shape, combined with the round-cornered cover A, as and for the purpose described.

138,325.—*Balanced Slide-Valve.*—ABRAHAM O. FRICK, Waynesborough, Pa. Application filed February 21, 1873.

A flexible diaphragm, corrugated at its outer edge, is connected by rings with flanges and bears against the back of the slide-valve. The upper ring, bearing against the steam-chest cover, is provided with suitable arms, through the center of which passes a regulating-screw, the lower end of which bears on the springs, by which the valve is held to its seat.

Claim.—1. The improved valve formed of the flexible corrugated ring H L, the inner ring K, cylinders B and D, and the outer flanged ring G, combined as shown and described.

2. The combination of the screw P and its jam-nut, the curved spring Q, arms N, and nut M, all arranged within the valve-cylinders A and B, and connected therewith, as shown and described.

138,326.—*Dress-Facing.*—WILLIAM H. GALLUP, Troy, N. Y. Application filed January 25, 1873.

A facing to protect the bottoms of dresses.

Claim.—As a new article of manufacture, a skirt-protecting facing, consisting of the plain band A of stiffened fabric, and the fluted strip B of like material attached thereto, substantially as and for the purpose described.

138,327.—*Feather-Renovator.*—WILLIAM S. GROFF, Mahanoy City, Pa. Application filed March 15, 1873.

Through one set of pipes steam is admitted into the cylinder, and through another it is admitted into chambers which do not open into the cylinder, but which, being thus heated, dry its contents after they have been renovated. The detachable beaters are used when feathers and hair are to be treated, and the detachable bars when carpets and the like are to be renovated.

Claim.—1. The cylinder A with distributing-pipes H I, drying-pipes F, connections E G, hollow journal C, escape-pipes K and X, and the beater-shaft L, substantially as specified.

2. The said beater-shaft having the beaters detachably connected, the disks Q, and the detachable bars R, substantially as specified.

138,328.—*Shave for Boots and Shoes.*—DEXTER HARRINGTON, Southbridge, Mass. Application filed March 31, 1873.

The spur-pieces are rigidly attached at their outer ends to the end of the frame or handle, while their inner ends press against the tangs of the cutter, their pressure rendered positive by means of screws.

Claim.—1. The combination, with the jaw-pieces C D, arm or rib pieces *c d c' d'*, and spur-pieces E E', of the adjusting screws G G' and H H' and cutter or shave B, substantially as and for the purposes set forth.

2. The combination, with the jaw-piece D, of the spur-pieces E E' and holding-screws G G', substantially as and for the purposes set forth.

138,329.—*Wheel-Plow.*—FRED HASBROOK, Stokes' Mound, Mo. Application filed August 13, 1872.

A guide-rod attached to the plow, sliding in a box on the sulky to cause the plow to rise vertically instead of tilting it and having a movable stop to regulate the depth, in combination with a hand lever and chain.

Claim.—The combination of the bar or rod A, box C, block G, chain F, and lever E, substantially as and for the purpose specified.

138,330.—*Washing-Machine.*—DANIEL W. HELFRICH, Corry, Pa. Application filed April 5, 1873.

A washing-machine constructed with a square receptacle and hinged cover, with the suspended upright shaft passing through it and connected with the cross-timbers or frame holding the beaters extending downward from it; and on its top is attached a crank, from which a pitman or connecting-rod, extending to the crank or arm attached to the driving-shaft, and gears by which motion is imparted by an ordinary crank. The pitman-crank attached to gear-shaft is of less length than the one on the main shaft, by which a reciprocating or oscillating motion is given to the beaters.

Claim.—The shaft D, cross-bars E, arms F, crank G, connecting-rod H, crank I, brackets K, gear-wheels L M, and crank O, constructed and arranged to operate in connection with the cover C of the box A B, substantially as herein shown and described.

138,331.—*Ironing-Board.*—RICHARD N. HERRING, Chew's Landing, N. J. Application filed April 1, 1873.

An ironing-board constructed with a brace connected at its upper end by a bracket and pivot, and supported by legs folding within it, one of which is attached to the upper end of the brace turning down, and one at its lower end turning up, both sustained by a projecting bracket connected with the brace, and may be closely folded when not in use.

Claim.—1. The hinged or pivoted frame B, folding supports F F', adapted, respectively, to be lowered and raised, and skirt or ironing board A, combined substantially as and for the purpose specified.

2. The plates G G', in combination with the folding supports F F' and frame B, substantially as described.

138,332.—*Corn-Crib.*—JOSEPH M. HUGHES and ANDREW J. MAPES, Independence, Mo. Application filed February 21, 1873.

Corn flows into feeding-troughs through an opening adjusted by bars.

Claim.—1. The adjustable feed-bars E E, in combination with a corn-crib, as and for the purposes described.

2. The troughs D, (one or more,) in combination with a corn-crib and adjustable feed-bars, substantially as shown and described.

138,333.—*Carpet-Stretcher.*—PETER KELLY, New York, N. Y. Application filed April 12, 1873.

The device is constructed with a pair of jaws with arms extending to form pinchers. To the ends of the arms is pivoted connecting levers or links, one in form of U, to which the handle is pivoted at one end, and its other end to an S-shaped bar or link, which, when working in concert by the handle attached to an upright lever, the carpet is firmly held, and by aid of the upright lever extended.

Claim.—The jaw-levers C and D, in combination with the intermediate links E F and handle-lever G, pivoted and connected, substantially as and for the purpose described.

138,334.—*Rotary Steam-Engine.*—JOHN LUCAS, Hastings, Minn. Application filed February 21, 1873.

The outer shell is provided at its upper side with a cam, in the center of which is pivoted a reversible and self-adjusting valve. The sliding pistons in the revolving inner cylinder are made in two parts, with right and left hand screws between them to adjust them as they wear.

Claim.—The combination and arrangement in a rotary engine of the case A, cam B, pistons F, induction-valves C C, piston-wheel G, reversible self-adjusting valve J, and port K, substantially as shown and described.

138,335.—*Medical Compound for Treating Rheumatism, &c.*—GIDEON LUCY, Mobile, Ala. Application filed April 5, 1873.

Tincture or extract of the root of the lint plant and diluted alcohol.

Claim.—A medicine of which the lint plant (or extract thereof) forms a component part, substantially as described.

138,336.—*Hinge.*—PHILIP P. LYNCH, Newark, N. J. Application filed January 21, 1873.

A hinge for book-clasps and the like articles, constructed to obviate the necessity of soldering, is formed by bending up the per-

forated ends of a narrow metallic strip and passing both the ends through slots or holes in a round face-plate, thus forming lugs or ears upon the same; these lugs engage the opposite part of the hasp or hinge, and are secured to it by a pin in the usual way, thus completing the hinge without riveting or soldering.

Claim.—The metal strip *s*, having its ends perforated and turned up at right angles forming a clip, both ends of which are passed through holes or slots *i i* in the plate *e*, thus forming lugs or ears (without riveting or soldering) on the face-plate of the hinge, said lugs engaging the opposite part of the hasp or hinge, and being secured to it by a rivet or pin in the ordinary way, all as described and shown, for the purpose set forth.

138,337.—*Elevator.*—MATTHEW MAGEEAN and GEORGE W. MARKS, Chicago, Ill. Application filed March 24, 1873.

The elevator-platform, when nearly at the top of the main frame, engages by the rack and pinion, and disengages when the lever is raised. Also, the guide-ways made in sections and connected by means of ferrule and pins.

Claim.—1. The combination, in an elevator, of a rack and pinion, ratchet and pawl, and lever, arranged substantially as described.

2. An elevated guide-way made in sections, having one end provided with the ferrule J and with one or more pins, K K, and the other end constructed to receive a ferrule, J, and one or more pins, K K, substantially as shown and described.

138,338.—*Pruning-Shears.*—MICAJAH C. MALONE, Palmyra, Ill. Application filed April 5, 1873.

The short shank of one blade of the shears is secured by a jointed link to a metallic plate, with lugs resting upon the top of the usual long wooden handle. The straight shank of the other blade passes through guides along down the side of the handle. The handle has a connection and sleeve that allows it to be readily taken apart in sections and still afford the needed strength.

Claim.—1. The plate D, provided with lugs *d'*, the sliding rod E, having a head, *e'*, upon its lower end and a hook, F, upon its upper end, the pivoted blade G, and the pivoted bar or bars H, constructed and arranged in connection with each other and a handle, A, substantially as herein shown and described.

2. The combination of the spring-hooks B *b'* and the sliding band or ferrule C with the adjacent ends of the sections of the handle A, substantially as herein shown and described, and for the purpose set forth.

138,339.—*Steam-Power Air-Brake.*—HUGH L. MCAVOY, Baltimore, Md. Application filed January 22, 1873.

A reservoir is connected directly with the boiler of the locomotive, the steam from which compresses the air in said reservoir. The air passes through pipes to diaphragms in suitable chambers and connected directly to the brakes by the stems of the diaphragms.

Claim.—1. The combination of the locomotive-boiler, an air-compressing reservoir, a pipe connecting the boiler and reservoir, and a pipe or pipes leading from the said reservoir to a brake-operating mechanism, jointly with the method of compressing the air by the direct action of the steam thereon in such reservoir, substantially as herein set forth.

2. The chamber formed by the solid and perforated concavo-convex plates *l l'*, having within it the flexible diaphragm *k* and sliding stem G, connected by the pipes *h''*, *h'*, and *h* to the reservoir E, substantially as and for the purpose herein specified.

3. A series of two or more of the chambers *l l'*, connected together and to the reservoir E by the pipes *h''*, *h'*, and *h* common to the series of chambers, as set forth, for the purpose specified.

4. The stems G operating directly upon the brake-shoes *b*, in combination with the flexible diaphragms *k* forced outward within the chamber *l l'* by the action of compressed air at the back of the diaphragms, as herein set forth.

5. The combination of the air-reservoir E, safety-valve *p*, pipe *c*, cock *d*, and the boiler of the locomotive, as and for the purpose herein set forth.

6. For the purpose of relieving brakes, the combination of the pipe *f*, three-way cock *d*, and reservoir E with the pipes *h*, *h'*, and *h''*, leading to the back of the diaphragms *k* within the chambers *l l'*, as herein shown and specified.

138,340.—*Pruning-Shears.*—WILLIAM MCCRAY, Black Oak, Mo. Application filed April 5, 1873.

A guide in form of an arc of a circle is attached to the upright shank, and the curved shank is carried upon it by a loop. Both the straight blade and the curved work between parallel guide-bars riveted upon the shank.

Claim.—1. The blades A B, handles C D, parallel bars E F, curved arm *f'*, and curved bar H, constructed and arranged in connection with each other, substantially as herein shown and described.

2. The combination of the curved arm G, keepers *h'*, and stop I, with the parallel bars E F, and curved bar H, substantially as herein shown and described.

138,341.—*Lubricator.*—WILLIAM MORRIS, Dayton, Ohio. Application filed April 5, 1873.

A hollow stop-cock in the passage between oil-chamber and steam-pipe, (or steam-chest,) which receives oil when the cock is turned to open the passage from said oil-chamber and shut the passage to the steam-pipe, and which discharges the oil when this is reversed by pressure of the steam, which is admitted by a small pipe connecting with the steam-pipe, so that a current will pass through the cock and back into the steam-pipe (or chest,) and carry the oil in the hollow plug along with it.

Claim.—The combination of the oil-holder A, pipe B, nozzle F, hollow cock C, and the pipe E, combined and arranged with the steam-pipe and steam-chest, or the pipe only of a steam-engine, substantially in the manner described.

138,342.—*King-Bolt for Perch-Carriages.*—JOHN L. H. MOSHER, New York, N. Y., assignor to BREWSTER & CO., same place. Application filed January 18, 1873.

The clip which secures the spring to the bolster serves as a bearing for the shoulder of the king-bolt.

Claim.—The single saddle-clip N, having spring G riveted thereto, and holding the detachable socket-bar K *k'*, in combination with king-bolt J and head-block F, as and for the purpose described.

138,343.—*Lubricator for Steam-Engines.*—WILLIAM R. PATTERSON, Chicago, Ill. Application filed March 1, 1873.

The oil-reservoir is connected with the steam-chest above and below. It also has a tube for the purpose of being filled with oil, and a tube for its outlet, which is effected by pressure of steam from the chest.

Claim.—An oil-tank, A, connected to the steam-pipes by the pipes C D and E F, and provided with a feed-cock, I, a filling-tube, M, and the pet-cocks P R, and the connecting-pipes having stop-cocks G H, all substantially as specified.

138,344.—*Machine for Driving Brush-Handles.*—PETER PEARTREE, Lansingburg, N. Y., assignor to JOHN AMES, same place. Application filed October 12, 1872.

In a suitable frame are arranged arms and levers for holding a brush-handle, combined with a rack and pinion, and with gear-wheels and crank for driving the handle into a brush.

Claim.—1. The combination of the guides B, arms or frame C, vertical rod D provided at its lower end with a foot-rest or treadle, E, coiled or equivalent spring F, extension bars G *g'*, levers H, arms I, short bars J, arms K *k'*, guide-wheels L, pivoting and adjusting screw-pins M, and slides A' with each other and with the frame A, substantially as herein shown and described.

2. The combination of the shaft V, gear-wheel U, toothed rack S T, and driver R with the adjustable holders K L M and frame A for driving the brush-handle, substantially as herein shown and described.

3. In a machine for driving brush-handles, the pivoted arms K, adjustable grooved wheels L, and adjusting-screw pins M for centering the brush-handles, substantially as herein shown and described.

138,345.—*Automatic Fan.*—PHILIP H. REICHHARDT and MORRIS SCHNAPP, Brunswick, Mo. Application filed March 22, 1873.

Claim.—The arrangement, with the trains A and B, of chronometer mechanism, of the pendulum E, arms D F, and a series of fans, G, with suspending and connecting devices, substantially as specified.

138,346.—*Magnesium-Lamp.*—ISAAC S. RUSSELL, New Market, Md., and HENRY R. RUSSELL, Woodbury, N. J. Application filed March 20, 1873.

A revolving disk between the feed-rollers separates the two wires with which the flame is fed. The governor consists of two wings, which may be more or less inclined in such manner as to expose a greater or less surface to the resisting atmosphere.

Claim.—1. The disk *n* interposed between the feed rollers O O to steady the ribbons and light, as described.

2. In a magnesium-lamp, the governor for the feed-rollers, consisting of the wings W W, operated by the chain of mechanism consisting of the shaft *l*, lever *f*, fingers I I, and bent rod N, all substantially as shown and described.

138,347.—*Gage for Setting Axle-Boxes.*—THOMAS SCOTT, St. Paul, Minn., assignor of one-half his right to ALEXANDER KENRICK, same place. Application filed February 8, 1873.

The shaft of the gage which enters the hub of the wheel is provided with a means of adjustment, which enables it to fit boxes of different sizes.

Claim.—1. A gage for "truing" axle-boxes made with a mandrel adjustable to fit varying sizes of axle-boxes by means of sliding leaves at the top and at the bottom, which leaves form the bearing-surface of the mandrel, substantially as described.

2. The gage for truing axle-boxes having sliding leaves upon its mandrel, and a lengthening device formed by dividing the mandrel and making one part to slide in the other, substantially as set forth and described.

138,348.—*Spring Bed-Bottom.*—ELON G. SHERMAN, Forestville, N. Y. Application filed March 8, 1873.

Long and short longitudinal bars, with square and wedge-shaped transverse bars, compose the frame. The arched slats rest upon coiled and wooden springs, the latter held in a metallic socket attached to the under side of the slats.

Claim.—The combination of the long longitudinal bars D, the cross-bars E, the short longitudinal bars F, and the beveled cross-bars G with the springs A C H, substantially as herein shown and described.

138,349.—*Tempering Harvester-Knives.*—JOEL F. SHIPPEY, Valley Falls, N. Y. Application filed April 1, 1873.

A frame is provided with a series of sockets for the knives, made in such form that the knives can be dropped into them and held in place therein, at the same time permitting the edges to be tempered to be exposed to the action of the heated lead baths.

Claim.—1. A frame or holder, provided with sockets or recesses for receiving and holding the knives or sickle-sections for the purpose of tempering, substantially as described.

2. The slotted holder, provided with hollow or chambered sides, substantially as and for the purpose set forth.

3. The slotted frame or holder A, in combination with the slotted pyramidal or conical projections B and the bands C, arranged substantially as and for the purpose set forth.

138,350.—*Winding-Click of Watches.*—SIMEON C. SMITH, Boston, Mass., assignor of one-fourth his right to FREDERICK CURTIS, same place. Application filed December 21, 1872.

By means of a friction-collar on the winding-arbor, provided with an arm carrying the pawl, the latter is lifted out of engagement with the ratchet whenever the ratchet is turned backward on winding, and is dropped into engagement so soon as the winding is stopped or reversed.

Claim.—1. In watches and other time-keepers, the combination, with the winding-wheel and its pawl or intercepter, of mechanism whereby, during the revolution of said wheel or its arbor in winding up the watch or other time-keeper, said pawl or intercepter is positively lifted and maintained out of contact with said wheel, substantially as and for the purposes set forth.

2. In combination, the wheel *b*, sleeve *e*, pawl *c*, arm *f*, and bar *g*, substantially as and for the purposes stated.

138,351.—*Portable Stock-Feeder.*—JOSEPH M. SPENCER, La Plata, Mo. Application filed January 25, 1873.

A hay-rack is arranged around the outside of a corn-crib, sliding doors in the crib below the rack opening out into a trough, a section of the rack being hinged to be pressed up close to the crib when openings in both coincide, through which to fill the crib.

Claim.—The slatted roofed corn-crib A, having the movable doors *g*, the hog-pen B, the feeding-trough C, and the hay-racks D, all constructed and arranged as described, to form a portable stock-feeder.

138,352.—*Rotary Steam-Engine.*—WILLIAM C. STILES, Nevada City, Cal. Application filed December 4, 1872.

The outer rim of the revolving wheel is made in sections, and each section has a piston secured to it. The sections of the wheel are secured between the disks, with a small space between them to allow for expansion. An elevated bridge supports a cylinder or part of a cylinder with a longitudinal slot through its entire length, and in this cylinder are arranged the sliding abutments, which are closed by springs when the pistons have passed through or in between the said abutments.

Claim.—1. The wheel A with its sectional rim C and pistons *c*, constructed and arranged substantially as and for the purpose above described.

2. The wheel C with its pistons *c*, in combination with the cylinder G, when said cylinder is applied to the whole or only a portion of the rim, in the manner and for the purpose substantially described.

3. The cylinder G with its abutments K K and longitudinally-slotted bottom, in combination with the sectional rim C and pistons *c*, substantially as and for the purpose above described.

4. The thin metal edge-strips *s*, in combination with the wheel C, constructed as described, substantially as and for the purpose described.

138,353.—*Blacking-Brush.*—F. W. CARUS VON KESSLER and AUGUST F. MEDENWALD, Chicago, Ill. Application filed March 18, 1873.

A shoe-brush in ordinary form, with its handle separated and a scraper introduced, supported by side pieces for its free passage in and out, and connected with a knob outside the handle to operate it, and is detained in its free passage by a spring attached to the under side of it.

Claim.—The combination, with the shoe-brush handle A, having the cavity *a* and slot *b*, of the scraper B, provided with the stud *c* and spring *d*, as and for the purpose set forth.

138,354.—*Machine for Gumming Saws.*—KARL WEINBERGER, Milwaukee, Wis. Application filed December 31, 1872.

A rotatable emery-wheel on an upright frame hinged at bottom; a rigid curved arm located beside the frame, and two adjustable collars on said arm to limit the extent of movement of the frame.

Claim.—The sliding or adjustable stops G and H, and the fixed curved bar F, in combination with the vibrating frame B, carrying the arbor C, with emery-wheel D mounted thereon, as and for the purpose specified.

138,355.—*Coal-Screen.*—STEPHEN W. WOODWARD, Buffalo, N. Y. Application filed December 31, 1872.

A reciprocating motion is given to the screen by means of toggle-jointed levers operated by crank.

Claim.—1. The toggle-levers *f* and *h*, in combination with the bent arm *d*, slotted piece D, and cranks I J, or their equivalents, for imparting a reciprocating motion to sieve B, substantially as described.

2. The combination of the bent piece *d* and screen-box B, when constructed, as shown and described.

138,356.—*Billiard-Cushion.*—HENRY A. ALDEN, Matteawan, N. Y. Application filed March 15, 1873.

The inserted spiral spring gives longitudinally as well as transversely.

Claim.—The combination, with a vulcanized India-rubber billiard-cushion, of a spirally-coiled metallic spring embedded in said cushion at or near the upper and inner corner of the same, substantially as and for the purposes herein set forth.

138,357.—*Method of Perfecting Veneers.*—AARON H. ALLEN, Boston, Mass. Application filed December 14, 1872.

The imperfect portions of veneers are cut out by a peculiarly-formed punch and perfect pieces cut by the same punch inserted in their places.

Claim.—The method of cutting out imperfect portions of veneers and fitting new pieces therein, substantially as herein described.

138,358.—*Composition for Covering Steam-Boilers.*—JOHN M. ALLISON, New Albany, Ind. Application filed February 27, 1873.

Composed of fire-clay, wood ashes, pulverized charcoal, coarse salt, mixed with hair and water.

Claim.—The within-specified materials, compounded substantially as and for the purpose set forth.

138,359.—*Photographic-Plate Holder.*—HENRY T. ANTHONY, New York, N. Y. Application filed January 24, 1873.

The plate-frame is provided with vitrified or other corner pieces to receive the plate in the ordinary position, as usual; but, in addition, the wooden frame is provided with ledges arranged in the same plane as the surface of the corner-pieces, so that the plate, when changed in position, shall rest on said ledges instead of the corners.

Claim.—The ledges *i i* within the frame *a* upon the same plane as the surface of the corners *d d*, in combination with the said corners *d*, as and for the purposes set forth.

138,360.—*Bolt for Doors.*—STEPHEN D. ARNOLD, New Britain, Conn.; assignor to P. CORBIN and F. CORBIN, same place. Application filed April 12, 1873.

A spring-dog is hinged to a mortised bolt-stock and operated by pressure on a push-pin passing into and through the outside knob, concealed in an indentation on top of the same. The bolt, when projected, is held in place by the dog, which for this purpose is self-acting, but slides freely when the bolt is being withdrawn. A coiled spring around the bolt may be added to make its movement automatic when the dog is pushed back, the locking device operating to prevent the bolt from being shaken or displaced by efforts to open the door from the outside.

Claim.—The dog *f*, hinged to the stock *c* of the bolt, in combination with the spring *r* and the push-pin *o* that passes through the knob *d*, as and for the purposes set forth.

138,361.—*Dumping-Car.*—OWEN M. AVERY, Pensacola, Fla. Application filed March 17, 1873.

The car is dumped by means of a beveled bolster and a semi-circular shifting-rocker.

Claim.—1. The stationary bolster D beveled downwardly from middle to each end, and the rocker E pivoted to the middle of said bolster, combined and arranged in connection with a car-dumper, as and for the purpose described.

2. The combination with a stationary rocker-beam, D, and a movable beam, E, pivoted together over the middle of the curved shifter G, arranged and applied as and for the purpose described.

3. The latch I, combined with the shoulders g^1 g^2 on shifter G to lock the latter, in the manner described.

4. The bar H having rectangular notches *h h*, combined with loop *g* of shifter and loop *b* of plate B, as and for the purpose set forth.

5. The combination with bar H having cross-pins at the ends of the cam-shaped lever J, and beam having oval-shaped end c^1, as and for the purpose described.

138,362.—*Butcher's Combined Knife, Saw, and Spring-Scale.*—JOHN BAGGS, Easton, Md. Application filed January 28, 1873.

A narrow saw is attached to arms from the back of a knife-blade, and a spring-scale is contained in the handle, the graduations of weight being marked on the hook-bar.

Claim.—1. A butcher's implement, consisting of a knife, A', separate saw-blade G, tabular handle A inclosing a spiral spring, M, disk I, and sliding graduated plates K provided with a suspension-hook, P, as herein shown and described.

2. The pivoted suspension-hook P, arranged as shown, and combined with a spring, R, for the purpose specified.

138,363.—*Cotton-Chopper.*—CLEMON BAILEY and GEORGE K. BAGBY, Kinston, N. C. Application filed March 8, 1873.

Two bars, which are easily applied to an ordinary plow, support the chopper and its operating mechanism.

Claim.—The means of holding the wheels G H I and shafts to the beam A, consisting of the bars D D, each fastened on one side of said beam and projecting in the rear thereof, as described.

138,364.—*Refrigerator.*—JOHN J. BAILEY, New York, N. Y. Application filed March 21, 1873.

The hollow walls of the refrigerator are provided with air-tubes, which are surrounded by ice for cooling the air before it enters the refrigerating-chamber; and in the top of said chamber is placed a semi-cylindrical-shaped vessel having air-tubes covered with ice for the purpose above mentioned.

Claim.—1. The hollow walls of the refrigerator provided with vertical air-tubes and one or more lateral pipes, *g*, passing through the sides of said walls, as and for the purposes set forth.

2. The vessel *l* of a semi-cylindrical shape, and applied in the top of the refrigerating-chamber, and provided with vertical air-tubes *m* and lateral tubes *n n*, as and for the purposes set forth.

138,365.—*Toy.*—CORTLAND BALL, Augusta, assignor of one-half his right to THOMAS MARRIOTT, Detroit, Mich. Application filed December 14, 1872.

The shell of the toy is furnished with a vibrating strand fast at each end and lengthwise of its mouth. The whole, being attached to a cord and whirled, is resonant.

Claim.—The hollow whirling-toy A B C, constructed for use, substantially as described.

138,366.—*Machine for Thrashing and Hulling Clover.*—ISAAC T. BARTON, Union City, Mich. Application filed February 14, 1873.

By means of a slotted concave and an inclined way the greater portion of the chaff and seed is conveyed directly from the thrashing to the hulling cylinder. Imperforate ratchet-conveyer to convey the chaff and seed in an opposite direction from a perforated straw-carrier. Arrangement of sieve in elevator.

Claim.—1. The combination of the thrashing-cylinder A, slat concave A', hulling-cylinder B, and concave B', arranged, as herein described, to separate the straw from the mingled chaff and seed, and cause the bulk of the latter to pass from the thrasher through the concave directly to the hulling-cylinder, as explained.

2. The conveyer K with ratchet-teeth or ribs *n*, slat bottom *m*, and supplemental riddle R, all constructed and arranged substantially as herein described.

3. The reciprocating imperforate ratchet-conveyer L depressed toward the tail of the machine, and employed, in combination with the reciprocating straw-carrier K, constructed as described, to convey to the huller the seed and chaff separated from the straw by the said carrier K, as explained.

4. The sieve *g* placed in the bottom of the elevator G, in combination therewith, substantially as specified.

138,367.—*Brackets.*—LOUIS BENECKE, Brunswick, Mo. Application filed March 22, 1873.

The bracket is made of one piece of pasteboard or sheet metal, and the supporting-braces are cut out of the back of the bracket just below the shelf and turned out to support said shelf.

Claim.—A bracket made of pliable material, consisting of the back or wall B, supporting-braces D cut in the wall in such a manner that the upper and outer edges *c d* will be free, while the vertical edges *e* remain adherent to the back and the shelf A bent over in the manner as described.

138,368.—*Glass-Mold Carriage.*—DANIEL BENNETT, Baldwin township, Allegheny county, and MICHAEL KEEBS and JONATHAN HALEY, assignors to THE CRYSTAL GLASS COMPANY, Pittsburg, Pa. Application filed April 19, 1873.

Truck with wheels near front; sliding bed supported on truck-frame; molds placed thereon. Rear end of truck run into furnace and bed carrying molds slid back into furnace. Molds being heated, bed is slid forward, and the molds carried on truck to press.

Claim.—1. An apparatus for heating molds for the manufacture of glassware, comprising a portable carriage or frame, adapted and arranged to be run into and out of the heating oven or chamber, in combination with a mold-supporting bed or plate sliding lengthwise in or on said carriage, substantially as herein shown and described.

2. The combination of the carriage or frame, its supporting wheels or truck, and the sliding mold-supporting bed, under the arrangement and for operation as shown and set forth.

3. An apparatus for heating molds, consisting of the parts herein described—namely, the carriage or frame and draft-pole or handle, the sliding mold-supporting bed or plate, the truck or wheels, and the hinged leg or support and its latch—the said parts being arranged together for joint operation, substantially as shown and set forth.

138,369.—*Quilting-Frame.*—BEVERLY BLACKSTONE, Warren, Ill. Application filed February 8, 1873.

The quilting-frame is extensible in length and breadth by its side and end rails being composed of double bars sliding longitudinally upon each other.

Claim.—1. In a quilting-frame, the adjustable bars or rails A A' B B', held together by the keepers *a a' b b'* and set-screws *c*, substantially as shown and described.

2. The keepers *b*, in combination with the pivoted side rails A A' and end rails B B', arranged to operate substantially as shown and described.

138,370.—*Clamp for Dental Purposes.*—CHARLES E. FLAKE, San Francisco, Cal. Application filed March 5, 1873.

A spring metal clamp of the general shape of the letter U has its serrated jaws formed to fit the sides of the teeth and hold thereon the "rubber-dam," which is a piece of sheet rubber used to prevent the saliva from flowing into the cavity during the process of filling a tooth. This clamp is furnished at one side with an orifice, through which the filling may be inserted in the side of the tooth, and also with a similarly-perforated arm, which adjusts on the main clamp by a slot and set-screw.

Claim.—1. A rubber-dam clamp, provided with serrated jaws, adapted to grasp the tooth, substantially as described.

2. The construction of the clamp A with the adjustable compress *a'*, as described.

3. The clamp B, having one end enlarged and perforated, substantially as and for the purpose described.

138,371.—*Hemmer for Sewing-Machines.*—EZEKIEL BOOTH, Great Bend, Pa. Application filed March 11, 1873.

The case or hem turning portion is composed of two parts; the one at the receiving end contains the tongue, about which the edge is turned, and the parts may move with reference to each to adapt the case material of different thicknesses. The movable tongue-plate supports the material between its edge and the gage.

Claim.—The gage G, in combination with the case C C' and tongue T, constructed and operating substantially as shown and described.

138,372.—*Work-Box.*—WILLIAM BRACE, Washingtonville, Ohio. Application filed April 5, 1873.

Claim.—The case C, provided with drawers D D therein, the needle-cups F F, and apartments E E thereupon, swiveled to the movable base A, and having handle G on top, as and for the purpose described.

138,373.—*Self-Tamping Torpedo.*—STEPHEN A. BRIGGS, Tidioute, Pa. Application filed February 1, 1873.

Semicircular tamping-jaws adapted to be drawn up the conical head, and thereby contract so as to be readily inserted into the bore of the well, and act as stops for the head upon explosion of the charge.

Claim.—1. The combination, with the cone C, of the semicircular jaws D D and the elastic band K, substantially as specified.

2. The combination, with the cone C, of the semicircular jaws D D, the rods I I, the cross-bar J, and the plate B, substantially as specified,

138,374.—*Washing-Machine.*—WILLARD P. BROOKS and JOHN D. HARTZELL, Ozawkie, Kans. Application filed August 30, 1872.

The upper fluted roller has metallic plates on the ends, the edges of which bear upon bands on the ends of two or more lower rollers. Endless rubber bands are placed around projections on the outside of the frame, and around pulleys on the journals of the upper roller, and grooved bars are placed beneath the under rollers to brace the frame and direct the water.

Claim.—1. The ribbed and bed rollers D E, provided with end plates *f* and bands *s* to support the said ribbed rollers, as described, whereby the ribs of the roller E are protected from wear, as set forth.

2. The fixed projections *g* of the head-blocks C, and the spools *i* on the roller axis to receive and hold the rubber bands *h* without rolling motion, and thereby save them from wear, as described.

3. The longitudinal bars G, grooved on their under sides, and arranged beneath the bed-rollers D, to let out the water from said rollers, prevent the clothes from being drawn under them, and to brace the end pieces C C, as described.

138,375.—*Vacuum-Pan.*—AURELIUS P. BROWN, Upperville, Va. Application filed January 11, 1873.

The vacuum-pan is filled with the liquid to be evaporated or distilled, and a vacuum created by means of the dependent pipe.

Claim.—The combination of an evaporating-pan with the pipe *e*, as and for the purpose described.

138,376.—*Slide-Valve.*—JAMES L. BROWN, Brookville, Pa. Application filed February 11, 1873.

A link is pivoted to each end of the valve; said links cross each other and are pivoted to the arms of a rocking shaft, which passes through the steam-chest and operates the valve.

Claim.—The combination of the rock-shaft A, and the arms B B, and the links C C, and the valve D, and the ports E E, substantially as and for the purposes described.

138,377.—*Gas Apparatus.*—JOHN W. BROWN, Butlerville, Ind., and HENRY B. WEST, Put-in-Bay, Ohio. Application filed September 2, 1872.

The washers, purifier, and gas-holder are inclosed within one vessel, which is attached to the top of the furnace, and the apparatus is provided with an automatic arrangement whereby the same is made self-regulating.

Claim.—1. The combination of the washers, purifier, and gas-holder, when the same are constructed as described and set forth.

2. The construction of the washers H^1, H^2, and L, and purifier C, when the same are constructed substantially as described.

3. The automatic arrangement by which the apparatus is made self-regulating, substantially as described.

138,378.—*Machine for Cutting Splints.*—CHARLES P. CLARK and CHESTER D. CLARK, Beaver Dam, Wis. Application filed December 13, 1871.

The splint-cutter is drawn under the block by the rotation of a wheel winding on its periphery a strap, by which another hollow wheel, having a coiled spring within it, winds up said spring, which, at the proper moment, draws back the cutting device for the succeeding cut.

Claim.—1. The combination of the block B' carrying the cutter C, with the shaft J, mandrel K, clutches L L', wheel K, strap H, wheel I^1, Shaft R, and spring *m*, all arranged as and for the purpose described.

2. The spring I and guides G G, arranged substantially in the manner and for the purpose set forth.

138,379.—*Washing-Machine.*—GEORGE J. COLBY, Reading, Mich. Application filed March 21, 1873.

A washing-machine constructed with side or end pieces, with a cross-bar to secure it to a tub having a bed of small corrugated rolls, attached separately to coiled springs resting in slots in the frame, by which each has an independent action, with an upper larger roll resting upon the smaller ones, and is held in contact by a hook on the journal pivoted to the outside of the frame.

Claim.—The combination of the frame A B C, crank-roller D, smaller independently-operating rollers H, button-hook G, cleat I, and thumb-screw J, all constructed and arranged substantially as and for the purposes herein set forth.

138,380.—*Candle-Mold Tip.*—ISAAC COLE, Brooklyn, N. Y., assignor to C. C. BEGGS & Co., Pittsburg, Pa. Application filed March 29, 1873.

The groove when filled with packing causes the tip to close the end of the mold in such a manner as to prevent the exudation of wax from between the mold and plug or tip.

Claim.—The groove *g* in the side of the plug or movable bottom *b*, adjacent to the sides of the mold *a*, for the reception of packing, substantially as and for the purposes described.

138,381.—*Sewing-Machine.*—DAVID H. COLES, New York, N. Y. Application filed April 9, 1873.

The needle-bar reciprocates within a reciprocating sleeve provided with eyes that, in connection with an eye on the needle-bar, serve the purpose of a take-up for the thread. The sleeve is moved from the crank through the link, and a pin on the link enters a slot in a plate secured to and moves the needle-bar.

Claim.—1. The movable sleeve D, provided with one or more eyes and moved up and down in the face-plate by means substantially as described, in combination with the needle bar or slide arranged within such sleeve, as herein shown, for the purpose specified.

2. The combination of the crank B, connecting-rod C, and cam-groove *h* with the needle-slide F and sleeve or guide D, substantially as set forth.

138,382.—*Composition for Kindling Fires.*—JOHN C. CRUMPTON, Allegheny City, Pa. Application filed December 11, 1872.

Claim.—The composition for kindling fires, consisting of resin, sawdust, paraffine, and pulverized coal, above described.

138,383.—*Horse-Collar Lining.*—DEXTER CURTIS, Sun Prairie, Wis. Application filed February 24, 1873.

Claim.—A lining for horse-collars, collar-pads, and other parts of a harness, formed of imperforate sheet-lead, and applied to the parts to conform to their bearing-surfaces and to the corresponding parts of the animal, substantially as described, for the purposes specified.

138,384.—*Feed-Regulator for Grinding-Mills.*—JOHN C. DUNLAP, Moffat's Creek, Va. Application filed January 30, 1873.

The annular-chamber secured in the eye of the runner-stone, and revolving with the same, secures an even delivery of the grain to the burrs.

Claim.—1. The annular chamber K, having a sloping bottom and an orifice at the lower part thereof, and placed in the eye of the runner, substantially as and for the purpose specified.

2. The combination of the runner L, annular chamber K, having a sloping bottom and an orifice therein, and the spout S, substantially as and for the purpose specified.

138,385.—*Stove-Pipe Shelf.*—WILLIAM B. ELLIOTT, Corning, N. Y. Application filed March 28, 1873.

The device is fitted to the pipe by an opening on one side of it, on the sides of which are hooks, into which the shaft of the holding-cam is fitted, and may be adjusted to pipes of different sizes, and is supported by projections or brackets projecting downward to sustain it.

Claim.—The cam-lever *h* with a concave face suspended to the transverse shaft *c*, in combination with the stove-pipe shelf having the brackets *c* and the hooks *d* extending upward from each lateral edge and turned inward toward the stove-pipe, as shown and described.

138,386.—*Boat-Detaching Apparatus.*—CHARLES A. ENELL, Philadelphia, Pa. Application filed February 4, 1873.

Claim.—The combination of the bolt L having locking-grooves on the under side of its head extending upwardly into the head, and the hooks K having upwardly-projecting locking-ends, when constructed, arranged, and operating together as herein set forth.

138,387.—*Washing-Machine.*—GEORGE W. FAGAINES, Shelby, Ohio, assignor of one half his right to JOHN COTNER, same place. Application filed March 22, 1873.

An attachment to a washing-machine for holding it to the tub, by a slide connected to the bottom, secured to it by a set-screw in a slot, and held in position by brackets, with a device on its other end fitted to the form of the tub with holes to attach it by pins or screws.

Claim.—The extension bottom, consisting of the bars D D', placed one under the other, and held together by the keepers *d*, in combination with the fastening brackets B, substantially as shown and described.

138,388.—*Row-Lock.*—THOMAS FEARON, Yonkers, N. Y. Application filed March 10, 1873.

The socket which surrounds the sleeve on the oar is provided with a pivot and flanged feet, which latter retain the socket in the trunnion-plate and admit of the lateral play of the oar. A spring attached to the outrigger bears against the trunnion-plate and assists in supporting the weight of the oar.

Claim.—1. The combination of the socket C, provided with a pivot *s* and flanged feet A A, with the trunnion-plate, constructed as described, substantially as and for the purpose herein set forth.

2. The combination of the spring S, arranged on the outrigger A, and the trunnion-plate B, substantially as and for the purpose set forth.

138,389.—*Musical Wind-Instrument.*—ISAAC FISKE, Worcester, Mass. Application filed March 15, 1873.

Claim.—The relative arrangement of the valve-cylinders, having valves and valve-pistons connected, as described, with the crooks and connections for producing the open and valve tones, substantially as specified.

138,390.—*Prescription-File.*—ALBERT D. FOSTER, Council Bluffs, Iowa. Application filed March 25, 1873.

Two boards are placed one upon the other, each having an eyelet-hole centrally located near its end, through which a wire passes; said wire is rigidly attached to the under side of the lower board.

Claim.—The pasteboard piece A, provided with the wire C fastened to the same by an eyelet, *a*, and passing through the hole *b*, in combination with the piece B having eyelet-hole *d*, substantially as and for the purposes herein set forth.

138,391.—*Let-Off Mechanism for Looms.*—CHARLES GARREN and LOUIS LANGLOTZ, New York, N. Y., assignors to MORITZ COHN, same place. Application filed February 24, 1873.

To equalize the tension and prevent the crowding of the warp in a corset-weaving loom having a sectional warp-beam, the threads that pass convergently to the heddles, instead of being reeled off directly from the beam to the fabric, are first passed over a tension-bar connecting the two arms of the bifurcated tension-lever of the let-off mechanism and placed obliquely to the axis of the warp-beam.

Claim.—In combination with the warp-beam E, the tension-bar *f*, arranged obliquely to the axis of the beam, and arranged to operate in the manner and for the purpose described.

138,392.—*Hand Corn-Planter.*—HENRY GORTNER, Nashport, Ohio. Application filed October 19, 1872.

The upright pieces which form the sides of the machine are hinged near the bottom, and are provided with openers which penetrate the ground. The seed-valve consists of a curved triangular block, which is pivoted at its lower end to the side of the box below the seed-box. The side pieces are limited as to expansion.

Claim.—As an improvement on my patent dated November 5, 1872, the pivoted angular seed-slide described, having the leg D, the slotted adjustable Z-shaped gage G, and the segmental piece F, constructed and arranged substantially as specified.

138,393.—*Hydraulic Wheel-Presses.*—GEORGE A. GRAY, Jr., Hamilton, Ohio. Application filed August 20, 1872.

In connection with the ordinary valve-chamber of a pump two plungers of unequal sizes are arranged to operate, one belt being used for both plungers. The large plunger being set in motion the forcing-cylinder is rapidly filled and the work is partially accomplished. When the pressure reaches the limit of power of the large plunger the belt is shifted and the small plunger completes the work by increasing the pressure to the safety-valve limit.

Claim.—1. In a hydrostatic press, the combination, with a single pump, of plungers H and I of unequal area, and arranged for independent action, substantially as and for the purpose specified.

2. The combination, in a hydrostatic press, of the plungers H I of unequal areas, rods J N, crank and eccentric K O, shafts L P, and driving-pulleys M Q, connected and operating substantially in the manner and for the purpose specified.

138,394.—*Machine for Turning Pulleys.*—GEORGE A. GRAY, Jr., Hamilton, Ohio. Application filed August 20, 1872.

The bed-plate revolves horizontally and is provided with a center. A tool-block way is supported above it by two pillars. This way also holds a center-pin and two tool-blocks which operate on opposite sides of the pulley. The pulley to be turned is placed on a mandrel between the centers, and two pins on opposite ends of the dog adjust themselves to its arms by means of slots in the dog, through which screws pass to hold it to the bed-plate, and which allow it to slide from side to side until both pins bear against arms on opposite sides of the wheel.

Claim.—The combination, in the usual or suitable frame-work of a pulley-turning machine, of revolving table F, tail-block E, self-adjusting driving-dog I J K, and adjustable cutters L M M', the parts being connected together and the whole operating substantially in the manner and for the purpose specified.

138,395.—*Dumping-Wagon.*—OLE GUNBULDSON, Christiana, Wis. Application filed February 10, 1873.

Permanent partitions extend across the frame and serve to close the open ends of the boxes, which are so connected by chains or ropes that each one, in dumping its load, will elevate an adjacent box, previously tilted, and lock it to its support.

Claim.—1. The combination of the dumping-boxes A, their supporting-levers and permanent partitions or timbers B', all arranged and to operate substantially as specified.

2. The dumping-boxes A connected by chains H or their equivalents, substantially as and for the purpose specified.

3. The combination of the eccentrically-hung dumping-boxes, their supporting-levers and chains H, substantially as and for the purpose specified.

138,396.—*Bird-Cage.*—GOTTLOB GÜNTHER, New York, N. Y. Application filed March 14, 1873.

Claim.—The combination of stationary hooks, (one or more,) secured in or on the bottom of a cage with one or more buttons which swivel in standards rising from said bottom, and which work in a slotted piece of metal attached to the bottom of the cage, substantially in the manner herein shown and described.

138,397.—*Balanced Valve.*—ARTEMAS N. HADLEY, Richmond, Ind. Application filed December 11, 1871.

A steam-engine slide-valve and steam-chest is combined with a piston, sliding in a loose ring, that bears against the steam-chest

cover, and a regulating valve or cock in the cover admits air to the back of the piston to assist in balancing the valve. The loose ring is forced against the cover by coiled springs around studs on the back of the valve that bear against projecting lugs on the ring.

Claim.—The combination, with a steam-engine slide-valve and steam-chest, of the piston H, floating ring I, and regulating valve or cock Q, substantially as and for the purpose set forth.

138,398.—*Fertilizer-Distributer.*—DAVID F. HALLIBURTON, Rutherford Station, Tenn. Application filed October 26, 1872.

A hopper and frame, supported in the rear by a pair of wheels, are intended to be attached to a wagon or cart by a tongue that can be folded under the bottom of the frame. Removable partitions in the hopper render it available for drills or broadcast distribution. The wheels, by cranks and rods, revolve a studded roller placed beneath laterally to draw the manure from the bottom of the hopper and scatter it.

Claim.—The manure-distributing machine, constructed as described, having the inclined wall L, vertical partitions G, studded roller D, removable divider I, and the removable side-boards H, substantially as specified.

138,399.—*Quilting-Attachment for Sewing-Machines.*—WILLIAM H. HEPPLEY, Rochester, Ind., assignor of one-half his right to CHARLES ASA MITCHELL, same place. Application filed July 19, 1872.

The movable quilt-carrying carriage is provided with a roller or stud that enters one of the grooves in the removable plates, and as the carriage is moved forward by the feeding device it has also lateral movements to correspond with the shape of the groove then used. The positions of the curves and angles of adjacent lines of stitching may be varied by moving the plates longitudinally, the lever serving for this purpose. The rocking frame allows the rollers to move toward or from the cloth-plate as the material passes from one to the other and their sizes change.

Claim.—1. A pair of removable plates grooved in various patterns, applied to a sewing-machine, and guiding a carriage or frame provided with rollers upon which a quilt or other article is held while being stitched or quilted, substantially as described, for the purpose specified.

2. The grooved plates D D′ connected by the rod E and operated by the lever F, in combination with the frames B B′ and carriage H, substantially as described.

3. The carriage H′ provided with the rocking adjustable quilting-frame, substantially as described, for the purposes specified.

4. The rocking adjustable quilting-frame having the curved end pieces S S′ supported by the end blocks U U′, substantially as described, for the purpose specified.

5. The combination of the rocking adjustable quilting-frame and the end blocks U U′ adapted to be locked in any required relation to each other by means of the ratchet *s* and the screw-rod T, or their equivalents, substantially as described, for the purpose specified.

138,400.—*Dumping-Platform.*—WILLIAM W. HINMAN, Elkhart, Ill., assignor of part interest to SAMUEL B. HUNTER and JOHN GIBBS, same place. Application filed March 21, 1873.

The front of the wagon rests on the bar. By means of the wheel and axle this bar is raised, carrying with it the front of the wagon, and thus dumping its contents into the trap.

Claim.—The combination, with a platform, A, having trap-door B, of the cases G G, sliding bars E E with cross-bar H, cords or chains *a a*, shaft C, and wheel D, all constructed and arranged substantially as and for the purposes herein set forth.

138,401.—*Toy.*—FRANCIS HUBBARD and EDWARD B. SEVERANCE, Durham, Conn., assignors to THE MERRIAM MANUFACTURING COMPANY, same place. Application filed February 21, 1873.

To avoid the clatter of the ordinary wheeled tin toys the axles are provided with leather, wooden, or other non-metallic collars.

Claim.—In that class of toys formed from sheet metal, and which are arranged upon or with an axle, the bearings E for the said axle, when formed of leather or other non-metallic material to prevent the axle or wheel coming in contact with the metallic portion of the toy, substantially as set forth.

138,402.—*Wagon-Standard.*—JOHN L. HUDSON, Cumming, Ga. Application filed March 27, 1873.

Formed from a simple flat piece of metal.

Claim.—The combination, with the bolster A and its plate D, of the standard and brace B C, made of one piece of flat metal, with a tenon passing through the bolster, and secured by the nut *a* on one side and by the nut *d* on the other, and the thimble A between the parts, through which is passed the bolt *b*, all as and for the purposes set forth.

138,403.—*Broadcast-Seeder.*—J. DEAN HUFFMAN, London, Ohio, assignor of one-half his right to C. M. THOMPSON, same place. Application filed February 12, 1873.

A fixed hopper is suspended upon a fixed stem the lower part of the hopper telescoping with the revolving seed-distributer. The seed is conveyed to the distributer on the side next to the body of the operator, and in this manner the seed is all thrown forward or at right angles to the line of progression.

Claim.—1. The fixed hopper D suspended upon a fixed stem, E, and with its neck telescoping with a revolving seed receiving and distributing chamber F, supported by the same stem E, from which the hopper is suspended, the periphery of said chamber forming the driving-pulley, as and for the purpose described.

2. The wire-armed collar-bearings *e* for steadying the motion of the chamber F, to serve as stirrers, and assist in discharging the seed, as described.

138,404.—*Traction-Wheel.*—OLIVER HYDE, Oakland, Cal. Application filed February 28, 1873.

Improvement in Letters Patent No. 117,174, July 18, 1871. Method of applying rubber tires to traction-wheels.

Claim.—1. A traction-wheel having its rim provided with one or more parallel troughs or channels, *a a*, the bottoms of which are formed into concave beds for the reception of elastic cylinders *b b*, substantially as and for the purpose above described.

2. The shoe C with its parallel channels or troughs *g g e* arranged to provide a bearing for four or more of the elastic cylinders, and attached to the wheel by a flexible connection from its center, substantially as and for the purpose above described.

3. In combination with the shoe of a traction-wheel, the eye *f*, links F, and eyebolts *i*, with its nuts G G′, substantially as and for the purpose above described.

4. The troughs *a a*, separated by the plate H, in combination with the elastic cylinders or rolls *b b* and shoe or block C, with its troughs *g g*, all arranged in the manner and for the purpose above described.

138,405.—*Car-Coupling.*—ELI H. JANNEY, Alexandria, Va. Application filed April 1, 1873.

The arm *a* of the draw-head of one car striking the arm *b′* of the hook B in the draw-head on the approaching car, throws it back until it is held by the catch C. This operation throws the heads of the hooks B into connection, and the coupling is effected.

Claim.—1. The combination, in a car-coupling, of a rotary hook, B, guard arm *a*¹, and automatic catch-lever C, substantially as described.

2. In combination with a draw-head having arms *a a*¹, the hook B, all constructed and operated as described.

138,406.—*Auxiliary Table.*—ELBERTA JOHNSON, McLean county, Ill. Application filed February 27, 1873.

The auxiliary table is supported on one leg, and is connected to the main table by a pivoted arm having a sliding joint, and is held in position by one or more hooks.

Claim.—The combination, with a dining or other table, A, of the supplementary table B C, pivoted arm D, vertical spindle *b*, sliding joint *d*, and one or more hooks, *h*, all constructed substantially as set forth.

138,407.—*Fanning-Mill.*—JOHN W. JOHNSON, Port Treverton, Pa., assignor of two-thirds of his right to IRA SAYRS, same place. Application filed March 31, 1873.

Claim.—1. The vibrating shoe C provided with the inclines D H H′, screens E and I, in combination with the detachable supporting-links *c c′*, all constructed, arranged, and operating substantially as described.

2. The double reversible incline grass and clover seed screen F having the inclined middle board *f′*, arranged and operating substantially as and for the purpose set forth.

3. The screen E having a plane upper face and provided with transverse slots and pendent angular lips or flanges, substantially as and for the purpose set forth.

4 The pivoted long screen I, provided with the finer lower screen *i*² and pivoted valve J, constructed, arranged, and operating as and for the purposes described.

138,408.—*Middlings-Separator.*—HORACE P. JONES, Springfield, Ohio. Application filed February 15, 1873.

Devices for equalizing and regulating the current and draft of air through the pivoted sleve.

Claim.—1. The tapering triangular openings *j j* for equalizing the current, in combination with the adjustable gate *n* for regulating the draft of air, arranged substantially as specified.

2. The combination of the pivoted graduated sleve B with the induction openings P, tapering triangular openings *j j*, fine N, and fan and casing M, arranged substantially as shown and described.

138,409.—*Apparatus for Carbureting Air.*—THORWALDSEN JUDD, and ELLIS DOTY, Janesville, Wis., assignors to THE PHILADELPHIA GAS-MACHINE COMPANY, Philadelphia, Pa. Application filed January 14, 1871.

The central space or chamber C gives the wheel a double capacity both to gather and discharge the air, and produces a more continuous and uniform supply than can be obtained from a single wheel. The hinged buckets fill in passing through the space L′, and in passing upward they are tilted by striking a fixed rod and discharge their contents into a tray, from whence the gasoline passes through a sealing-pipe to the distributing-tray.

Claim.—1. The air-wheel B, divided to form a central exit-chamber, C, in combination with the two end-receiving air-chambers D and the open inner discharging ends *c* of the wheel, as and to produce the advantages described.

2. The arrangement of the central air-exit chamber C with respect to the fixed generating-surface G, to cause the air from the wheel to impinge against the middle of the generator and forced over both ends thereof to obtain a more uniform contact of the air with the generating-surface, as described.

3. The hinged tilting buckets *f* of the gasoline-supply wheel M, in combination with the tilting-arm *g*, the receiving-tray N, and the conducting sealing-tube O, arranged to operate as described.

4. The sealing-pipe O, arranged to conduct the gasoline from the feed-wheel to a sealing-cup, A, beneath the gasoline-chamber L, and thereby effect an open feed-communication between the gas and the gasoline-chambers, and prevent the escape of the gas into the latter, as shown and described.

5. The pipe S, arranged to connect the water-chamber A with a waste-chamber, J, for the purpose of carrying off the waste gasoline from the surface of the water and automatically regulate the

height of the fluid within which the air-wheel revolves, as described.

6. The winding and driving clutch of the air-wheel, having eccentric grooves *k* and rubber balls *j* to render the parts noiseless in winding, and to allow the weight to be unwound without reversing the motion of the air-wheel, as described.

138,410.—*Fire-Escape.*—WILLIAM KEGG, Lasalleville, N. Y. Application filed September 24, 1872.

The rope is wrapped around the grooved pulley with no center bearing, in a single turn, so that the ends can be alternately used for descending. The revolutions are controlled by brake-straps which are constricted by the lever H with cord attached. One of the brake-straps has locking-lugs engaging with a notch in the circumference of the pulley.

Claim.—1. In a fire escape, the arrangement of a pulley, B, with no center-point and a rope, C, wrapped nearly around the same in a V-shaped circumferential groove and passing under suitable brakes, substantially as and for the purposes herein set forth.

2. The locking device for the pulley B, consisting of the bar I with lugs *e e* pressed by the spring J into notches *i i* on the pulley, substantially as and for the purposes herein set forth.

3. The lever H provided with double fulcrums *b b* and arm *f* for simultaneously operating the locking device and the brakes of a fire-escape, substantially as herein set forth.

4. The combination of the casing A A′, pulley B, rope C, brakes D D, lever H, with cord *d*, and locking devices I J, all constructed and arranged to operate substantially as and for the purposes herein set forth.

138,411.—*Apparatus for Cooling Rooms and Buildings.*—THOMAS D. KINGAN, Indianapolis, Ind. Application filed April 4, 1873.

Air circulates through a set of tubes surrounded by a refrigerating mixture, the circulation being induced by a blast of air driven through a bent tube passing horizontally through the ice-box.

Claim.—An air refrigerator or cooler for rooms, buildings, &c., consisting of the rectangular air-tubes *a a′*, having vertical and horizontal arms, and the horizontal tube *g h i i* for the passage of an air-blast, in combination with the surrounding case for a refrigerating mixture or medium, substantially as described.

138,412.—*Thread-Cutter for Sewing-Machines.*—ARTHUR M. LESLIE, Chicago, Ill. Application filed October 2, 1872.

Claim.—1. A thread-cutter, substantially as described, for sewing-machines, having a movable or rotating cutting-edge which presents new or different points to the thread at each cut, for the purpose specified.

2. A thread-cutter for sewing-machines, consisting of two circular cutting-blades pivoted to a holder so as to overlap each other, substantially as described, for the purpose specified.

138,413.—*Machine for Making Links for Ornamental Chains.*—EUGENE ISIDORE LEVAVASSEUR, Paris, France, assignor to HENRICH WITZENMANN, Pforzheim, Grand Duchy of Baden. Application filed September 7, 1872.

The series of punches and dies give the results indicated by the perforated strip of metal and the detached link shown; and to the blade is imparted successively vertical and lateral movements, in virtue of which its point enters every link as they are successively brought within its reach, carries them from the machine, and facilitates their fall and the formation of a column around it convenient for removal to the chain-making machine.

Claim.—1. The rock-shaft *i*, finger *j*, and lever A, actuated by the cam *i′*, in combination with the lever *d*, cam *b*, arm *f*, and tooth *e*, for feeding the strip of metal to the cutting and shaping dies, substantially as set forth.

2. In a machine for making the links of watch-chains, the three-part punches and dies *r s t*, constructed as set forth, to punch out the center of the link, round up the edges of the metal, and to separate the link from the strip, as set forth.

3. The blade *s*³ and its actuating mechanism, constructed substantially as described, and combined with the shaping and cutting dies, for receiving the complete links, as set forth.

138,414.—*Photographic Plate-Holder.*—WILLIAM LEWIS, Brooklyn, N. Y. Application filed October 22, 1872.

Corners constructed so as to reverse the position of plates and hold them steadily in place.

Claim.—The corner for the photographic-plate frame, made with a straight ledge or offset running diagonally to the sides of the frame, as and for the purposes set forth.

138,415.—*Lamp-Filler.*—HUGH H. V. LILLEY, Milford, Mass. Application filed September 21, 1872.

The neck is opened by handles to put the wick through into the bowl of the funnel, which is adjusted upon neck of lamp, with the wick held by spring and the burner hung over the side.

Claim.—1. The improved oil-funnel, consisting of the neck B and bowl A extending within said neck, said funnel being cleft through bowl and neck, substantially as specified.

2. The cleft bowl A and cleft neck B, in combination with the diverging handle F, substantially as specified.

3. The combination, with the cleft funnel, of spring wick-holder E, substantially as specified.

138,416.—*Atomizer-Bulb.*—HAMILTON D. LOCKWOOD, Charlestowa, Mass. Application filed March 5, 1873.

Claim.—A flexible bulb, having, in combination with the air-outlet orifice, an air-inlet controlled by the valve *d*, substantially as shown and described.

138,417.—*Fountain-Syringe.*—HAMILTON D. LOCKWOOD, Charlestown, Mass. Application filed February 7, 1873.

A spring-valve is arranged midway of the elastic delivery-tube, and a small bag of India rubber is joined to the valve-box at right angles to it, in which the end of the valve-stem plays.

Claim.—The valve-box *i*, having combined with the valve *n*, valve-seat *m*, spring *o*, stem *q*, the flexible elastic hollow tip, *r*, substantially as shown and described.

138,418.—*Pin-Hinge.*—ABRAHAM LYONS and ISAAC B. ABRAHAMS, New York, N. Y. Application filed September 21, 1872.

Claim.—In combination with a brooch-pin, the post B, cleft at its head and having an extension, *a*, adapted to be bent over and passed through the eye of the brooch-pin, substantially as specified.

138,419.—*Machine for Making Needles.*—FRANCIS W. MALLETT, New Haven, Conn. Application filed November 30, 1872.

The wires are fed singly from a hopper to a press, where the heads of two needles are formed in the center of the wire; the blank is then fed to a punching-press, where the two eyes are formed, and thence to two horizontal reciprocating and rotating screws, which carry the blank forward. As the blank moves forward it is carried over a mill that removes the fin thrown out by the heading-dies, and then over a pair of pointing-mills, and finally over a pair of finishing-mills.

Claim.—1. In a hopper, substantially such as described, the two cheeks B¹ B², which form the throat *a* of the hopper, one of which cheeks is made adjustable, so that the said throat may be made of greater or less width, substantially as described.

2. In combination with a hopper for supplying the wires, the revolving shaft B², with its cams *a′*, arranged in the relative position to the throat *a*, as and for the purpose specified.

3. The parallel slides D, having an up-and-down and longitudinal reciprocating movement, combined with the jaws *c c*, to receive and translate the blanks for successive operations, substantially as set forth.

4. The longitudinal screws L, constructed with the hook *l* at their ends, arranged to receive the blanks within the grasp of the said hooks, and combined with the mills V and G G¹, over which the blank is carried by the said revolving screws, substantially as described.

5. In combination with the revolving longitudinal screws L, the slide L² and bed H, the said slide L² having a reciprocating movement, substantially as described.

6. The longitudinal revolving screws L, the slide L², and the bed H, the said slide L² and the revolving screws L having each a longitudinal reciprocating movement independent of the other, substantially in the manner and for the purpose set forth.

7. The arrangement of the springs *p* above the flexible stripe *m* in the slide L², substantially as and for the purpose set forth.

8. In combination with the mills G G¹, the bars P P¹, and their pressure-spring R¹, substantially as and for the purpose described.

9. In combination with the mills G G¹, bar P, and its spring R¹, the auxiliary bar P¹ and adjusting-screw P³ to bear upon the said bar, substantially as and for the purpose described.

138,420.—*Marine Steam-Engine Governor.*—OBADIAH MARLAND, Boston, Mass. Application filed January 18, 1873.

A time-keeping motor and steam-controlling valve of a marine-engine are combined with a cam with parallel and inclined grooves and switches, by which the flow of steam is regulated as the speed varies; also, by an arrangement of valves by which, when steam is shut off communication from the cylinder with the condenser is closed and established between both ends of the cylinder, and when the steam is again let on communication is re-established as before. Combined with this arrangement is a donkey-engine so arranged that when the throttle-valve is closed it shall also cause the donkey-engine to make one stroke, by which communication between the cylinder and condenser is closed and opened between both ends of the cylinder.

Claim.—1. The combination, with a time-keeping motor and a steam-controlling valve of a marine steam-engine, of a cam constructed with parallel and inclined grooves and switches, substantially as described.

2. The combination, with an engine, of valves, arranged as described, under the second part of this invention, to prevent or lessen the addition of power to the main piston after steam has been shut off, substantially as described.

3. The combination, with the valves of an engine arranged to perform the function effected by the subject-matter of the second claim, of an auxiliary engine, in such a manner as to automatically operate said valves at the instant when they are required to perform their functions, substantially as described.

138,421.—*Apparatus for Filling Bottles.*—JOHN MATTHEWS, New York, N. Y. Application filed March 21, 1873.

A double tube, one of which passages, for the admission of the liquid, projects below the passage for the egress of the air. By turning the cock the liquid passes into the bottle, compressing the air and forcing it through the air-passage, an escape-valve is regulated, by means of a spring, to the required pressure within the bottle.

Claim.—The improved filling apparatus herein described, composed of a liquid-tube and an air-tube with a pressure-regulating valve, both tubes projecting into the bottle while filling, and the liquid-tube projecting below the air-tube, all substantially as specified.

138,422.—*Screw-Forming Machine.*—WILLIAM A. MCCOOL, Ashland, Ohio. Application filed February 18, 1873.

Claim.—1. The adjustable crank *s*, substantially as described, for adjusting the roller to varying thicknesses of pipe.

2. The adjustable holder *i*, substantially as shown.

3. The screw-shaft *d*, adjustable crank *e*, roller *g*, and mandrel *h*, when combined to operate as set forth.

138,423.—*Tool-Handle.*—WILLIAM H. MCCOY, Miller's Falls, Mass. Application filed December 7, 1872.

The sleeve is made interiorly to correspond with the dovetail shank of the blade. The slot *d* corresponds with a slot, *c*, in the ferrule of the handle. When the blade is to be fastened a quarter turn of the sleeve accomplishes it.

Claim.—The slotted tapering stock D, and the slotted tapering sleeve or nut C, in combination with a tool provided with a tapering shank, B, all substantially as and for the purposes herein set forth.

138,424.—*Mechanical Movement.*—CORNELIUS MEINERS, Indianapolis, Ind. Application filed April 15, 1873.

A toothed wheel, secured to shaft, to which is pivoted a lever having a spring-dog pivoted to its side, which catches in the teeth of the wheel and moves it forward; above this shaft is pivoted a second lever having its upper end slotted and secured to the side of the first lever, while its lower end is semicircular and provided with cogs which mesh with teeth formed on a third lever, pivoted on the shaft, and having a dog secured to its lower end which engages with the teeth of the wheel and moves it forward the instant the dog on the first lever ceases action, so that the action of the wheel is continuous.

Claim.—1. The handle or lever *e*, in combination with the two levers *d g* having their ends geared together, as shown, dogs *i*, and wheel *a*, substantially as set forth.

2. In combination with the dogs *i*, a device for moving them out of gear, substantially as shown and described.

138,425.—*Shingling-Bracket.*—LYMAN W. MERRIAM, Fitchburg, Mass. Application filed August 31, 1871.

A metallic strip is temporarily nailed to the roof, to which the bracket is secured by a slotted shaft, into which the plate is inserted, the shaft being then rotated so as to bend the plate into a hook form, thus forming a sufficiently strong attachment to hold the bracket upon the roof. The wedge-shaped piece is reversible for the purpose of changing the angle to adapt the seat to different pitches of roof.

Claim.—1. A rotary slotted binder, constructed substantially as described, for attaching a roofing-bracket to a roof by means of a metallic strip, in the manner specified.

2. The wedge-shaped piece B, in combination with the frame of a roofing-bracket, for the purpose specified.

138,426.—*Locomotive Head-Light.*—LEWIS MICHAELS, Covington, Ky. Application filed March 7, 1873.

The neck connecting the burner and reservoir is in two parts, joined by the simple scarf-joint, and held in place by a bolt, around which a recess is formed in the tube to allow passage of the oil. The reservoir is provided with a stop-cock to retain oil therein when the burner is disconnected.

Claim.—The combination of the reservoir A, burner B, and two-part neck C D, when the two parts of the neck are connected together by the flat lap-joint *c d* and screw F, arranged and operating substantially as and for the purpose specified.

138,427.—*Refrigerator-Building.*—WILLIAM M. MIXER, New York, N. Y. Application filed March 28, 1873.

The grate for supporting the ice, the joists covered with metal, and the trough for receiving the dripping water are so arranged that the entire under surface of the ice is exposed to the upper surface of the air in the refrigerator.

Claim.—The combination of the metal grate, caps, and gutters over the entire surface of the refrigerator in such a manner as to expose the entire under surface of the ice to the upper surface of the air contained in the refrigerator, substantially and for the purpose hereinbefore set forth.

138,428.—*Furnace for Smelting Ores.*—JOHN NEVILLE, Jersey City, N. J., assignor of one-half his right to THOMAS HOLIHAN, Chicago, Ill. Application filed March 28, 1873.

Each half of the double furnace is provided with separate chambers for desulphurizing, deoxidizing, and carbonizing the ore, and has certain pipes arranged for delivering steam and air into the deoxidizing and carbonizing chambers.

Claim.—A reduction-furnace, having the chambers *a*, *d*, *e*, *g*, and *i*, and the stacks B B, constructed and arranged substantially as herein described and shown, and in combination therewith the steam-pipes *k* k^1 k^2, arranged to operate substantially as and for the purpose set forth.

138,429.—*Combined Rotary Blast and Puddling Furnace for Making Wrought-Iron Direct from the Ore.*—JOHN NEVILLE, Jersey City, N. J., assignor of one half his right to THOMAS HOLIHAN, Chicago, Ill. Application filed March 28, 1873.

A fine opening in the back end of the puddling-furnace discharges the waste heat into the center of a cylindrical stack, which is rotated by the action of a vertical shaft driven by an engine or other motor. The rotary stack contains six or more egg-shaped retorts, open at the top, with a tap-hole at the lower outer end of each. One branch of a steam-pipe, conveying steam from a generator and superheater, is led toward the stack, where it is subdivided, each jet being coincident with one of the openings in the stack, so that a volume of superheated steam is being continually blown into two of the retorts, which present themselves to the nozzles.

Claim.—1. The rotary stack B containing ore-retorts C, in combination with a puddling-furnace, when the reduction of the ore in the said retorts is effected by the waste heat of the puddling-furnace, substantially as described.

2. The arrangement of the pipes D D^2 with relation to the stack B and retorts C for supplying superheated steam thereto, substantially as described and shown.

138,430.—*Hat.*—JAMES O'DONNELL, St. Louis, Mo. Application filed October 21, 1872.

Claim.—The hat herein described having the brim A turned up in a flange, *a*, and the crown C attached to the brim outside of and at a distance from said flange so as to form the chamber D, and having the perforated or open-webbed inner casing B′ attached inside of said flange *a* and between it and the sweat-band B, as shown and described.

138,431.—*Table.*—HENRY W. PEABSALL, Emporia, Kans. Application filed October 19, 1872.

A table-top is finished with a bed of plaster of Paris, ornamented with different colors, and a plate of thick glass placed thereon.

Claim.—A table or counter top, made of a bed of plaster of Paris, or its equivalent, and covered with glass, substantially as set forth.

138,432.—*Press.*—EPENETUS B. PLATT, Florence, Ind. Application September 25, 1872.

A sweep provided with a swiveled seat, and swinging frames for opening and closing the doors.

Claim.—1. The press-boxes *a a′*, platens C C′, screw G, gearing E F, and sweep D, relatively arranged as set forth, in combination with the swinging standards J J′, swinging frames K K′, and suitable tackle for operating the doors B B, substantially as and for the purpose specified.

2. In combination with the swinging doors B B′ the swinging standards J J′ with their sheaves *f f′*, the swinging frames K K′ with their sheaves k'' k''', and the cords *m m′* operating to make the same cord pulled in the same direction act to both open and close the doors.

3. In combination with the sweep D the swiveling seat *d* pivoted to the end of the sweep, substantially as and for the purpose specified.

138,433.—*Car-Spring.*—JOHN B. QUIRK, Philadelphia, Pa. Application filed March 27, 1873.

Bar-springs, peculiarly coiled, are arranged within a case, and a follower rests upon the free ends of the springs. The ends of the springs are limited in their vertical movement by means of shelves, which are arranged within the case.

Claim.—1. The spring A, constructed of a continuous piece coiled or bent at *c*, crossed at *d*, and having free ends *b b*, substantially as and for the purpose set forth.

2. The casing B formed with the shelves D, arranged to operate in relation to the free ends of the spring, substantially as and for the purpose set forth.

3. The stud E of the follower or portion C, in combination with crossed ends of the spring, substantially as and for the purpose set forth.

4. The bearing-block F supporting the spring, in combination with the stud E, substantially as and for the purpose set forth.

5. The casing B with shelves D and bearing-block F, and the follower or portion C with stud E, in combination with the spring A having crossed ends, substantially as and for the purpose set forth.

138,434.—*Plow-Handle.*—JOHN T. RAFTERY, El Dara, Ill. Application filed September 7, 1872.

The main part of the plow-handle is of wood, the upper end being straight, and extended by means of an adjustable curved plate of iron, which is provided with wood casements for the hands.

Claim.—The metallic adjustable slotted handles B having incasements *c*, in combination with the fixed plow-shanks A and bolts *b*, substantially as and for the purpose specified.

138,435.—*Sewing-Machine Cabinet.*—GUSTAV RANGE, New York, N. Y. Application filed April 12, 1873.

A sewing-machine cabinet constructed with openings in the uprights or ends, into which, on one side, is a looking-glass, on the other a desk and book-case, both having weights appended to them by cords running over pulleys, by which they are raised to the top of it, and by pivots turned to its front for use, &c.

Claim.—1. A sewing-machine cabinet-case and looking-glass combined with a frame carrying such glass, and sliding vertically in the said case, substantially as set forth.

2. A sewing-machine cabinet-case and desk or secretary combined with slides in such case in which the secretary or desk is moved vertically, substantially as set forth.

3. A sewing-machine cabinet-case combined with a base sliding vertically, a counterpoise, and a looking-glass or desk turning upon a pivot, substatially as set forth.

138,436.—*Lubricator.*—HENRY W. REGAN, Renovo, Pa. Application filed October 18, 1872.

A measuring cup and valve placed in the bottom of the cup.

Claim.—1. The measuring-valve B B′ arranged within the supply-cup A A′, and filled from its bottom through well *b* and orifice *b′*, and emptied through the same orifice, in conjunction with ports *e e′* and conducting-pipe E E′, one or more, substantially as herein shown and described, for the purpose specified.

2. The measuring-valve B B′ arranged within the supply-cup A A′, and having its axial stem h perforated, as described, to connect the measuring and supply chambers for equalizing the air-pressure within the same, as set forth.

3. The supporting and adjusting screw *o*, in combination with the valve B having the measuring-chamber B′, and axial stem h, posts *m m′*, and cross-bar *n*, as described, for the purpose specified.

4. The combined standard and steam-induction pipe D, the steam-ports *d d′*, steam-tube *i*, and valve *j*, in combination with the measuring-valve B B′ and supply-cup A, as means for discharging the oil or grease from the measuring-chamber by steam pressure.

138,437.—*Recording-Instrument for Locomotives.*—JOHN D. RICHARDSON, Houston, Tex., assignor to himself, IRVIN C. LORD, and MILTON G. HOWE, same place. Application filed September 26, 1872.

The paper fillet or chart is moved or wound upon a drum geared in connection with an axle of the locomotive, and the recording-pencil is carried backward and forward at a uniform rate across the moving sheet by means of reversed screws alternately engaged, and rotated by clock-work. A second pencil, moved by the fluctuations of a steam-gager, records simultaneously on the same sheet the boiler-pressure at each particular point of the distance traveled.

Claim.—1. The combination of the rotating chart F, ruled transversely and longitudinally to indicate distance and time, and driven from the wheels of the car or locomotive at a definite rate, and a pencil, P, operated by a clock to continuously traverse back and forth across the path of the chart, substantially as and for the purpose specified.

2. The combination of rotating shaft F operating substantially as described, pencil P, screws U, lever T *d b*, plate W, and springs X X′, connected and operating substantially in the manner and for the purpose stated.

3. In combination with the elements of the preceding clause, the steam-gage Y and reciprocating pencil Z, as and for the purpose specified.

138,438.—*Carriage-Spring.*—JOHN D. RICHARDSON, Houston, Tex., assignor to himself and JOSEPH RICHARDSON, Cincinnati, Ohio. Application filed August 29, 1872.

The double concavo-convex form of the springs obviates the use of hinges, and the spring assumes a more rigid position as the strain increases.

Claim.—1. The combination of heads B B′ and double concavo-convex bent springs D D, constituting a spring which in use will elongate or straighten under a load, substantially as and for the purpose specified.

2. The combination of heads B B′ *d′*, side spring-plates D *d*, and hoops E E′, substantially as and for the purpose specified.

138,439.—*Magazine Fire-Arm.*—LOUIS C. RODIER and FRANCIS G. BATES, Springfield, Mass. Application filed March 27, 1873.

Claim.—1. The barrel A and a magazine or chamber in rear of the said barrel for supplying cartridges, in combination with the lever F, actuated by the finger-lever to transfer the cartridges from the magazine to the barrel, substantially as described.

2. In combination with the subject-matter of the first clause of the claim, the vertically-moving breech-block G, also actuated by the said finger-lever, substantially as described.

3. In combination with the vertically-moving breech-block G and lever E, the hammer I, hung forward of the said breech-block and adapted to be cocked by the successive operation of the lever and breech-block, substantially as described.

4. In combination with the barrel A, vertically-moving breech-block G, and lever F, the plate P, hinged to the frame in the rear of the barrel to cover and close the passage from the magazine to the arm, form a chute for the ejection, and guide for the insertion of a cartridge from the magazine, or by hand, substantially as set forth.

5. In an arm having the hammer hung forward of the breech-block, the double spring N, one part thereof operating as the main-spring and the other as a spring-sear, the combination being substantially as described.

6. In combination with the finger-lever and hammer, hung upon the same pivot, the trigger I, pivoted to the finger-lever, and extending up so as to release the hammer for discharge, substantially as specified.

138,440.—*Car-Starter.*—LOUIS C. RODIER and FRANCIS G. BATES, Springfield, Mass., assignors to themselves, RUFUS BAKER, Middletown, Conn., and WILLARD PARKER, New York, N. Y. Application filed April 3, 1873.

The arm, which is attached to the loose sleeve on the axle, has a cam-shaped hook, by which the pawl which engages lateral ly with the ratchet-wheel is thrown out of connection with the same when the lever is carried to that point where its power is spent.

Claim.—In combination with a toothed wheel, D, on the axle of a railway car, the lever E, carrying the pawl *e*, and the rod F for actuating the said lever, the cam-shaped arm L for withdrawing the pawl, substantially in the manner described.

138,441.—*Paraffine-Lamp.*—HENRY RYDER, Somerville, Mass. Application filed October 2, 1872.

The perforated wick-tube is inclosed in a guard or case projecting above the cap of the reservoir and extending nearly to its bottom. The guard is perforated to allow the liquid to reach the wick. In the upper part of the guard are small cups to contain paraffine and asbestus. When this is burned the paraffine on the wick is melted, and the wick may be readily lighted.

Claim.—1. The combination of the lighting cup or cups *g* with the wick-tube K, wick-guard L, and reservoir H, all being arranged as set forth.

2. The air-deflector *m′*, the wick-tube K, and the wick-guard L, arranged and connected as represented.

138,442.—*Shaft for Vehicles.*—BERNHARD SCHRÖDER, Newark, N. J. Application filed March 26, 1873.

The pole is made in two sections, which are connected by a hinge, the same being adapted to receive a rubber pad at its joint.

Claim.—The hinge-joint D, each part of which is provided with lips *d d* for confining in place the elastic pads *c*, in combination with a draft pole or shaft, made in two sections, *a b*, substantially as and for the purpose described.

138,443.—*Band Sawing-Machine.*—HENRY SILLMAN, Brooklyn, N. Y. Application filed June 14, 1872.

The driving-pulleys are connected with each other by means of a system of gearing so as to give a uniform speed to all the saws.

Claim.—1. The combination of the upper saw-shaft journal-boxes *c c*, made of two parts, one adjustable relatively to the other, as described, the adjusting-screws *e e*, worm-wheels *f*, shaft *g*, and endless screws *e e*, the whole arranged and operating substantially as described, for the purpose set forth.

2. The combination, with the saws, of bevel-wheels provided on the rear end of the lower pulley-shafts, and corresponding bevel-wheels capable of sliding on shafts geared together, one of which constitutes the driving-shaft, essentially as and for the purpose described.

138,444.—*Friction-Gear.*—FRANKLIN SIMMONS, New Orleans, La. Application filed October 16, 1872.

Friction-pulley having two faces, operated by a shifting friction-roller, which is brought in contact with either surface by a set-screw.

Claim.—The double friction-pulley D, small pulley or roller C, and set-screws E, when the same are combined and arranged substantially as described.

138,445.—*Thimble.*—WILLIAM P. SLENSBY, New York, N. Y. Application filed February 17, 1873.

A needle-threader is riveted to a thimble.

Claim.—1. The threader B, cast with projecting rivets *e* and *f f*, substantially as herein shown and described.

2. The thimble A, perforated as shown at *g g*, substantially as and for the purpose specified.

3. The combination of the perforated thimble A with the cast threader B having the pins *e f f*, and with the spring C, all arranged for connection with each other in manner set forth.

138,446.—*Spring Bed-Bottom.*—WILLIAM STARKE, Chicago, Ill. Application filed September 30, 1872.

The base of the coiled spring rests upon cross-bars. At the point it has eyes, which pass through transverse and longitudinal slats. Through the eyes a rod is inserted, which holds the springs in place, and passes down through the base-bar. The rod works free and acts as a guide and brace to prevent lateral motion.

Claim.—The combination of the longitudinal and transverse slats A B, spring I *d*, and rods D, which pass through the eyes, hold the slats A B together, bend down at the side, and pass through the lower section, and prevent the upper section from having a lateral motion, as and for the purpose set forth.

138,447.—*Corn-Knife.*—GEORGE STEPHENSON, Zionsville, Ind. Application filed March 8, 1873.

A blunt-edged hook is attached to the back of the blade, near its end. This serves to gather in the stalks, and also to raise them from the earth when trodden down.

Claim.—A corn-knife having a curved hook, C, formed on or attached to the back of the blade near the outer end, substantially as and for the purposes herein set forth.

138,448.—*Rotary Blower.*—JOHN A. SVEDBERG, Washington, D. C. Application filed February 18, 1873.

The blades of the blower are mounted so as to revolve eccentrically within and longitudinally of a cylindrical casing having induction and eduction air-ports. By the eccentric action the blades have imparted to them a reciprocal sliding movement within bearings formed in a drum having its axial center removed at a distance from the corresponding center of the cylindrical casing. The extremities of the blades, when in rotary motion, are in contact with the interior surface of the casing.

Claim.—1. In combination with the drum C, the bearing-support E revolving with it, and the stationary yoke E′, placed axially upon different center lines as bearings for the parts operating the blades of the blower, as set forth.

2. The drum C of the blower, having the bearing-support E revolving with said drum as a part thereof, in combination with the shaft or shafts D, fixed yoke and pin E′ *e*, and double crank F, substantially as herein specified.

3. The strips deepening the slots formed within and lengthwise of the drum, as intermediate bearings for the sliding blades, as specified.

4. The combination of the plates *g*, covering the ends of the slots, with the drum, as set forth.

5. In combination with the drum C, the rod or rods G and blades G′, the blades having their bearings in the deepened slots cut lengthwise with the drum, substantially as herein specified, for the purpose set forth.

6. In combination with the bearing-support E and bearings F″, the dovetailed slide F′ *f*, and piston-like rod G *f′*, and blades G′, substantially as and for the purposes set forth.

7. The pin *f′* of the rod G, and pin *f* of the slide F′, in combination with the double crank F, fixed pin *e*, and bearing-support E of the drum of the blower, substantially as and for the purpose specified.

138,449.—*Corpse-Preserver.*—PETER TALTAVULL, Washington, D. C., assignor to himself and EDWARD M. BOTELER, same place. Application filed June 1, 1871.

Claim.—In combination with an exterior case, constructed and operating as herein described, the ice-box D suspended therein, when said ice-box nearly fills or extends throughout the upper part of the case, has no contact with said upper part, except by the thin plates by which it is suspended, and is surrounded on all sides by the dead-air space *e*, as and for the purpose described.

138,450.—*Carpet-Stretcher.*—CHARLES TERRY, St. Louis, Mo., assignor of one-half his right to JAMES L. HICKOK, same place. Application filed April 2, 1873.

The device is constructed with a platform, having metallic curved points at one end and a block attached to a leather strap, which is confined to the lower side of the platform and passes over its end, by which the carpet, while in a partial upright position, and the carpet stretched by depressing it.

Claim.—The combination of the claw-lever A *a*, rib B, block C, and strap D, substantially as and for the purpose described.

138,451.—*Cultivator.*—CHRIST THEDE, Aledo, Ill. Application filed August 31, 1872.

An arched sectional axle connected by a bar or cross-piece holding the sections by screws and nuts. The ends of the main braces are connected to both axle and draft-pole by means of slotted plates, and the axle-sections turning loosely upon the cross-bar give a forward and back movement to each set of plows independently of the other so that the draft of each is borne by the horse attached to it.

Claim.—The combination of the laterally-adjustable axle-sections C and the threaded cross-piece B with the slotted pole-braces E, draft-pole A, and plow-frames G carrying the plows I^1 I^2, as shown and described.

138,452.—*Device for Adjusting the Elevating and Depressing Screws of Rolls.*—RICHARD H. THOMAS, Newport, Ky. Application filed December 7, 1872.

The horizontal shaft, connected by gearing with the adjusting-screws, is divided in the middle, and to one end is attached a worm-wheel, and to the adjacent end of the other part is fixed a frame, in which is situated a worm-shaft; by turning this shaft one of the screws is raised and the other lowered. For coarser adjustments one gear-wheel is loose, but can be connected to the shaft by a clutch sliding on a feather; when separated, only one screw is raised; when connected, both.

Claim.—1. In combination with the two screws E E', the two-part shaft I, worm-wheel L, and worm N, connected and operating substantially in the manner and for the purpose specified.

2. In combination with the shaft I, screws E E', and wheels G G' H H', the clutch Q, operating substantially as described, and for the purpose specified.

138,453.—*Gage for Circular-Saws.*—CHARLES J. ULMER, East Cambridge, Mass. Application filed April 2, 1873.

The gage is adjusted by means of a lever provided with a segmental gear acting upon a rack attached to the gage.

Claim.—The sliding gage and gear-bar *b*, lever *g*, segment *f*, tooth *l*, and notch-plate *i*, when constructed, combined, and relatively arranged, substantially as and for the purpose specified.

138,454.—*Card-Rack.*—HENRY R. VAN ETS, Peoria, Ill. Application filed February 26, 1873.

Claim.—A folding card-rack consisting of a net-work of wire, or of strips of metal, made in sections A and hinged together by loops or eyes *f* formed of the same piece of wire, the hinges or loops being continued vertically upward to form the tongues *a* to receive the cards, substantially as set forth.

138,455.—*Portable Electrical Apparatus.*—FREDERICK HENRY VARLEY, London, England. Application filed July 22, 1872.

A tube or rod of glass or other electric is provided with an enveloping rubber, which carries a small tubular Leyden jar having a wire loop for collecting the electricity excited by passing the rubber up and down the electric rod.

Claim.—The rod A, of glass or other dielectric substance, the rubber E, accumulator B, conductor D, chain C, and pin *d*, all arranged and combined for operation, as specified.

138,456.—*Device for Boring and Turning Gas-Fittings.*—MATHIAS WALTY, Buffalo, N. Y. Application filed February 26, 1873.

The device is applied to a lathe, and is connected to the feed-screw, by which a turning and boring tool clamped on an upper slide is fed forward through a train of gears. Below this slide is another, which, by means of a hand-screw, can adjust the whole device transversely. The fitting is rotated with the face-plate of the lathe, and these tools can be adjusted longitudinally in their seats, where they are held by set-screws.

Claim.—1. The combination, with the bottom rest B and transversely-adjustable top rest D, of the longitudinally-movable tool-holder E, when provided with the cylindrical socket *f* and rectangular recess *g*, for adapting the tool-holder to boring and turning, substantially as hereinbefore set forth.

2. The combination, with the feed-shaft *a* and pinion *k* and the screw-shaft *h* of the tool holder provided with gear-wheel *i*, of the pivoted arm M and wheels and pinions *m n o p* mounted thereon and driven from the feed-shaft, substantially as and for the purpose hereinbefore set forth.

3. The combination of the slotted segment P and set-screw *r* with the pivoted arm M, carrying the pinions *m n o p*, and slide E located upon a transversely-moving slide D, substantially as and for the purposes set forth.

138,457.—*Lounge and Bath-Tub Combined.*—CONRAD WENDEL, New York, N. Y. Application filed March 28, 1873.

The hinged cushion-frame is opened and shows a bath-tub suspended in the frame of the seat; a secondary hinged-cover also covers the bath-tub.

Claim.—The combination of a bath-tub with the frame and seat of a lounge, settee, or other article of a similar nature, the bath-tub adapted to be suspended, substantially in the manner herein shown and described.

138,458.—*Fertilizer.*—JAMES WHITEHILL, Frederick, Md. Application filed April 3, 1873.

Claim.—1. A barrel or other package of caustic lime ground to the sand state, as and for the purpose described.

2. The process of preparing unslaked lime by burning and grinding it for agricultural purposes, in the manner set forth.

138,459.—*Machine for Wiring and Binding Hats.*—HENRY A. WHITING, New York, N. Y. Application filed March 20, 1873.

The wire and brim-edge are laid in the bight of the adhesive braid, which is doubled by a folding-guide which directs these parts between rollers, where they are firmly pressed together.

Claim.—The shafts *a b*, having gear-wheels *c d* and pressing-rollers *e f*, constructed and arranged as described, in combination with each other, and with grooved abutment *i* and folding-gage *j*, as and for the purpose herein specified.

138,460.—*Boring Attachment to Lathes.*—FITZALLAN B. WILLIAMS, Sterling, Ill. Application filed January 24, 1873.

This device is to take the place of the tail-stock. The boring-spindle is rotated by a belt, and fed forward by another belt operating through gearing on a screw that passes through a nut in the end of the spindle.

Claim.—The combination of the bed-plate A with standards, boring-spindle C, sleeve *a*, nut *c*, screw G, countershafts *d h* with pulleys E I, respectively, and the gears D *b* and H *f*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

138,461.—*Tilting Chair.*—GEORGE C. WINCHESTER, Ashburnham, Mass. Application filed December 29, 1871.

The seat and stool are centrally pivoted together and are also connected by one or a pair of steel wires, each wire being securely fixed at one end in the stationary arm of one hinge, and, extending diagonally across to the other hinge, is fixed in the movable arm of the same.

Claim.—The combination, with the hinges C and D, of the steel wire or wires E, connecting the stationary arm *a* of one hinge with the movable arm *b* of the other, substantially as and for the purpose set forth.

138,462.—*Planing-Machine.*—JOSEPH P. WOODBURY, Boston, Mass. Application filed December 5, 1870.

A yielding presser-bar is used in place of the ordinary yielding pressure-roller.

Claim.—1. The combination of a rotary cutter and a yielding pressure bar or bars, substantially as and for the purpose described.

2. The combination of a solid bed and a yielding pressure bar or bars, for the purpose of holding down the material while being acted on by the cutter, substantially as set forth.

3. The combination of a solid bed, a rotary cutter, and a yielding pressure bar or bars, substantially as described.

4. The combination of the two pressure-bars, one of which is supported upon arms, and the other upon springs, substantially as and for the purpose set forth.

138,463.—*Plasterer's Head-Support.*—THOMAS T. WRIGHT, Fayetteville, N. C. Application filed March 22, 1873.

A head-rest for plasterers, stucco-workers, and all that class of artisans engaged in the fatiguing work of looking and operating overhead.

Claim.—The head-pad C, spring B, and adjusting-stem *a*, connected and provided with suitable fastening-straps, substantially as specified.

138,464.—*Railroad-Car Spittoon.*—HARRISON J. ZIMMERMAN, Hudson, Mich. Application filed March 15, 1873.

A metal and porcelain bowl with a hinged cover is attached to the side of the car, having a pipe extending down through the bottom.

Claim.—The spittoon B provided with the cover *b* and connecting with the pipe C for depositing the contents outside and below the car, the parts being made of metal and lined with porcelain, and attached to the panel of the car, substantially as and for the purpose shown and described.

REISSUE PATENTS.

5,377.—*Process of Transferring the Grain-Marks of Wood.*—JOHN R. CROSS, New York, N. Y., assignor to himself and ANDREW J. BASTINE.—Patent No. 128,468, dated July 2, 1872. Application filed April 1, 1873.

Employs a smooth elastic roller or curved surface to take up the grain-marks, natural or imitated, from a flat board properly colored and prepared, and transfer the same to other flat surfaces by rolling or pressure.

Claim.—1. A roller or curved surface with a smooth elastic surface, as a means of transferring configurations or designs, when employed in the manner described and set forth.

2. The process hereinbefore described of transferring configurations or designs.

5,378.—*Process and Apparatus for Stippling Metallic Surfaces.*—RICHARD DIMPS, New York, N. Y., assignor to TIFFANY & CO., same place.—Patent No. 128,290, dated June 25, 1872. Application filed April 2, 1873.

One or more punches of elastic wire points, loosely connected to a revolving chuck, are made to impinge against the metallic surface to be stippled, covering the same with fine indentations and producing a style of ornamentation known as satin or pearl finish.

Claim.—1. The process of stippling satin or pearl finishing, substantially as described.

2. One or more bunches of stippling-points loosely connected to a revolving chuck or mandrel, substantially as described.

3. The combination of one or more bunches of stippling-points with links loosely connecting said bunches to loops on the chuck or mandrel, substantially as described.

4. A metallic surface stippled or satin-finished, substantially as described.

5. The combination of the link *c*, cap *e*, and stippling-points *d*, substantially as described.

6. The chuck-head *b'*, carrying the loops *b*, substantially as described.

5,379.—*Stuffing for Mattresses.*—FREDERICK A. LANE, Cleveland, Ohio, assignor, by mesne assignments, to himself, LUTHER S. LANE, Swanzey, N. H., and EPHRAIM KENDALL, Cleveland, Ohio.—Patent No. 90,308, dated May 25, 1869; reissue No. 5,166, dated February 4, 1873. Application filed March 28, 1873.

The material is made from woolen fibers of refuse woolen goods and rags prepared by bunching and curling.

Claim.—1. As an improved article of manufacture for stuffing purposes, woolen fiber made from the refuse of woolen goods, rags, &c., by bunching and curling, as described.

2. The prepared homogeneous woolen fiber for stuffing bedding, upholstering, &c., when made from the waste of refuse woolen goods, rags, &c., and by separating the woven or interlocking fibers thereof and rendering them free and open, substantially as set forth.

5,380.—*Cot-Bed.*—LEANDER B. MORSE, Athol, Mass., assignor of one-half interest to LABAN MORSE.—Patent No. 135,573, dated February 4, 1873. Application filed March 29, 1873.

The cross-bars are attached to the longitudinal girders and the folding legs. In the upper side of the cross bars are pins; the slats are slotted to receive the pins, and a cleat holds them in place at the foot. A head-board is hinged to the top and acts as a cleat upon the slats at that end.

Claim.—1. A bed-frame consisting of the cross-bars A and A' and the girders or side pieces B B, provided with the legs D, and secured to said cross-bars in such a manner that, while they serve as stretchers to keep said bars the proper distance apart, they may be rotated for the purpose of folding the legs under the bed when not in use, substantially as described.

2. The combination of the slats C C provided with the slots *d d*, the cross-bar A having inserted in its upper side the pins *b b* to fit into said slots, and the holding-down cleat F, all constructed and arranged substantially as described.

3. In combination with the slats C C provided with slots *d d*, and the cross-bar A having inserted therein the pins *b b*, I claim the head-board G, hinged to the cross-bar A in such a manner that it may be placed in a perpendicular position or folded down onto the slats, and serve the purpose of holding the slats in position on the pins while they are free to move endwise thereon, substantially as described.

4. The cylindrical girders B B having the legs D secured therein and secured to the bed-frame by the straps *a*, whether said girders are arranged longitudinally or transversely of the frame, substantially as described.

5,381.—*Power-Hammer.*—JOSEPH PALMER, Concord, N. H.—Patent No. 122,647, dated January 9, 1872. Application filed April 11, 1873.

Claim.—1. The combination of the hammer *a*, spring S, and the crank, as and for the purpose set forth.

2. The combination of hammer *a*, spring S, connecting-rods *d* and *e*, and crank, as and for the purpose set forth.

5,382.—*Changeable-Gage Car-Truck.*—CHARLES D. TISDALE, Boston, Mass.—Patent No. 37,889, dated March 10, 1863. Application filed August 19, 1870.

The adjacent ends of the narrow and broad gage tracks are joined by intermediate rails; the wheels of the truck are secured to tubes, which allow the wheels to be adjusted to the different gages.

Claim.—1. In combination with the rails C C uniting the tracks A A and B B, the switch E E, substantially as shown and described.

2. In combination with the wheel-changing rails and switch, the extra broad-gage track-rail F, arranged and operating substantially as described.

3. A car, for running upon tracks of different gage, having in combination with rotary axles incapable of end movement, wheels sliding upon the axles, and the mechanism for locking the wheels in respective positions to run upon either a wide or narrow gage, substantially as described.

4. The peculiar wheel-locking mechanism, consisting of the two yokes G G, and the wheel-tubes made and applied to the axles substantially in the manner as hereinbefore specified.

5,383.—*Compound for Coating Roasted Coffee.*—JOHN T. COOKE, Brooklyn, N. Y.—Patent No. 131,852, dated October 1, 1872. Application filed April 8, 1873.

Claim.—1. Starch when used for coating coffee, substantially as and for the purposes set forth.

2. A compound of starch and gum arabic mixed together, substantially in the manner and proportions, and for the purposes specified.

3. A compound made of starch, gum arabic, and essence of coffee mixed together, substantially in the manner and proportions, and for the purposes described.

5,384.—*Pencil-Case.*—WILLIAM S. HICKS, New York, N. Y.—Patent No. 112,917, dated March 21, 1871. Application filed April 1, 1873.

A pencil-case the point of which is projected in withdrawing the lead by means of tubes, with reverse spiral slots sliding telescopically within one another, and having the outer shell fitted loosely on the barrel and held in position by a solid head and a screw-nut.

Claim.—1. An extension pencil-case having its outer shell A arranged to turn loosely on its body B, and independently of the other parts of the pencil or case, substantially as described.

2. The arrangement of the tubes *d* and *c* and the tubes *a* and *b*, the latter having reverse spiral slots, and all sliding telescopically within one another, as set forth.

3. In combination with the loose shell or casing A, the detachable or screw point C, whereby the outer shell can be applied or removed at will, and without soldering, substantially as herein set forth.

5,385.—*Treadle.*—GEORGE B. KIRKHAM, New York, N. Y.—Patent No. 136,603, dated March 11, 1873. Application filed April 3, 1873.

Foot-power to turn a fly-wheel constantly in the same direction, with noiseless and positive motion. The fly-wheel kept in motion by the alternate pressure of two bearing-arms, one above and one below; the bearing-arms attached to a pitman, operated in turn by the treadle; the pitman steadied by friction-clutches hinged to the treadle, which act as a shifting apparatus, and, by pressure against the pitman, increase the traction of the bearing-arms against the fly-wheel. Applicable to sewing-machines, jig-saws, hand-lathes, and the like.

Claim.—1. The arrangement of the bearing-arms B B' at an angle to the pitman C and the set-screws *a a*, substantially as and for the purpose hereinafter set forth.

2. The combination of friction-clutches F F G and H I J K with the pitman and treadle, substantially as and for the purpose hereinbefore set forth.

3. The arrangement of the curved arms B B', set-screws *b b*, and double pitman C C', substantially as and for the purpose hereinbefore set forth.

4. The arrangement of the two halves of the wheel A A', disks *c c*, screws *d d* with grooves, bevels, curved or flat surfaces to the arms B B' and wheel A A', substantially as and for purpose hereinbefore set forth.

5,386.—*Grab-Tool for Oil-Wells.*—JAMES H. LUTHER, Petroleum Centre, Pa.—Patent No. 56,961, dated August 7, 1866. Application filed January 14, 1873.

A hollow wrought-iron cylinder or tube, with seats formed on its inside, extending in the direction of its length, milled entirely through the thickness of the tube at its lower end, with bevel or inclined faces. Fitted to these faces are the grabs, connected to a common loose ring or collar by thin metallic bands, the collar upon the outside or stem of the tube, near its upper end, and resting on projecting pins of the same. Between this collar and the shoulder of the tube a spiral spring is coiled, by which means the collar is held to its seat on the pins. The inner faces of the grabs are serrated to prevent them from slipping when set upon the tool which they are to remove.

Claim.—1. In a tool for extracting articles from oil-wells, the wedge-shaped grab, in combination with and operated by an inclined seat, in the manner described.

2. The combination of the grabs B, the stripe *c c*, and ring D, constructed and operating as described.

3. The combination of the wedge-shaped grabs B, having inclined and rounded backs, as shown, with the inclined and rounded seats *a a*, milled or turned in or through the sides of the cylinder *b*, as specified and shown.

5,387.—*Hatchway.*—JAMES D. SINCLAIR, Brooklyn, N. Y., assignor, by mesne assignments, to EDWARD A. LAMBERT, WILLIAM S. HARRIS, and NICHOLAS B. RHODES, same place.—Patent No. 84,387, dated November 24, 1868. Application filed April 3, 1873.

The hatches can be opened in succession from the top downward by a person pulling on the rope. A series of hooks retain the hatches when opened, and by pulling the cord all the hooks can be lifted and the hatches allowed to fall in place.

Claim.—1. The combination of the hatches B F D with the system of pulleys *a b* and the cord or chain H, substantially as and for the purpose set forth.

2. The combination of a series or tier of hatches, B D F, with the series of hooks or latches *d d* and the cord *e*, substantially as and for the purpose described.

3. The apparatus as a whole, consisting of the hatches B D F, provided with the system of pulleys *a b* and the cord or chain H, and the series of hooks or latches *d d*, and the cord *e*, substantially as and for the purposes described.

5,388.—*Sewing-Machine.*—EARLE H. SMITH, Bergen Heights, N. J.—Patent No. 18,605, dated November 10, 1857; extended seven years. Application filed January 29, 1872.

The needle-thread detainer and cast-off is arranged on the body of the rotating shuttle, and it receives and holds the thread during a portion of the shuttle's movement, and then casts it off.

Claim.—1. The combination, with the shuttle, of a revolving needle-thread detainer and cast off to receive, control, and deliver loops of needle thread from and to the shuttle, substantially in the manner described and specified.

2. The combination, with a reciprocating needle, of a revolving shuttle, thread-detainer, and cast-off, constructed and operating substantially in the manner described and specified.

3. A reciprocating needle operated by a continuous rotary movement, a rotary shuttle, a rotary thread-controller, (constructed as described,) and a feeding-dog, operated by a circular cam, all combined and arranged in co-operative relation with each other and producing a noiseless sewing-machine, substantially in the manner described and specified.

5,389.—*Plaster for Walls.*—BENJAMIN R. SMITH and JOHN C. HARRIS, Philadelphia, Pa.—Patent No. 111,267, dated January 24, 1871. Application filed March 16, 1873.

Dried and powdered hydrate of lime is mixed with crude ground plaster or gypsum, and the mixture calcined, or the dry hydrate of lime is mixed with plaster already calcined. This compound may be mixed with any coloring matter, found best adapted, at any stage of the process, and the figments must be so mingled that there is perfect uniformity of tint throughout the whole mass.

Claim.—1. The compound plaster produced of the materials and in the manner substantially as above set forth.

2. A homogeneous tinted plaster, adapted for coating walls or ceilings, substantially as described.

3. The process hereinbefore described of mixing lime, gypsum, and coloring-matter, to produce a tinted plaster.

5,390.—*Brick-Machine.*—ROBERT A. SMITH, Newburyport, Mass. Patent No. 128,822, dated July 9, 1872. Application filed March 29, 1873.

Having shaft-adjusting mechanism, steel-faced mold-wheel provided with flanges, and having Babbitt-metal-lined receiving-chambers, an auxiliary cut-off combined with the main cut-off, a brick-discharger pivoted at its lower parts and sliding in vertical grooves; the follower H having its packing-plate *k* made of Babbitt metal.

Claim.—1. The pug-mill shaft-adjusting mechanism, viz., the screw-rods L L, nuts, and cross-bar I, combined and arranged with the pug-mill and the supporting-frame thereof, as set forth.

2. The mold-wheel, as provided with the Babbitted receiving-chambers *h* and steel cap-plate G arranged with it, as set forth.

3. The auxiliary "cut-off" *q* and its discharging-throat *z* arranged and combined with the main cut-off *p*, the rotary mold-wheel A, and the pug-mill F, all being substantially as described.

4. The presser-spring *v* and adjusting-screws *t* arranged and combined with the main and auxiliary cut-offs, substantially as set forth.

5. The brick-discharger H pivoted at its lower parts to a bar or carrier, *g'*, arranged to slide in vertical slots or guides *h' h'*, whereby the follower is allowed to vibrate more or less to accommodate it to the mold while rising or falling therein.

6. The follower H made with the packing-plate *k*, of anti-friction or Babbitt metal, and the cap-plate *l* arranged and combined with it, as described.

7. The combination of the abutment with the mold-wheel provided with the flange or shoulder, all being essentially as and for the purpose as explained.

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TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

The following abbreviated form of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

Aërated liquor apparatus .. 1
Air and gas engines 2
Amalgamators, ore-mills ... 3
Architecture 4
Artificial limbs, &c. 5
Baking 6
Baling-presses 7
Baths, closets, &c. 8
Bee-hives 9
Bell and brass founding 10
Bleaching, dyeing, &c. 11
Blowers 12
Boats 13
Bolts, nuts, rivets 14
Bookbinding 15
Boots and shoes 16
Braid, thread, &c. 17
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Brewing, cider, &c. 19
Bricks 20
Bridges 21
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COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks).....	6,500
SEWING-MACHINES and attachments.....	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture.	2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles	1,200
FELTING and HATS; including caps, bonnets, flock, &c.....	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs.....	1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)	

The specifications of patents have been reprinted back to November 20, 1866; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

BOUND VOLUMES OF PATENTS.

The Office is now prepared to furnish to subscribers the monthly volumes of patents at $125.00 per annum, bound in half-sheep.

In these volumes the specifications are in full, the type of the same size as the printed patents and records; the drawings are in full, but are one-half the size (linear) of those attached to the patents and bound up for record; the illustrations are four on a page, but *fac-similes* of the originals, with the headings and signatures.

The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 200 of drawings; total of each volume about 1,000 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,000 pages per month: 9,600 pages of specifications, 3,120 pages of drawings—12,720 pages.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

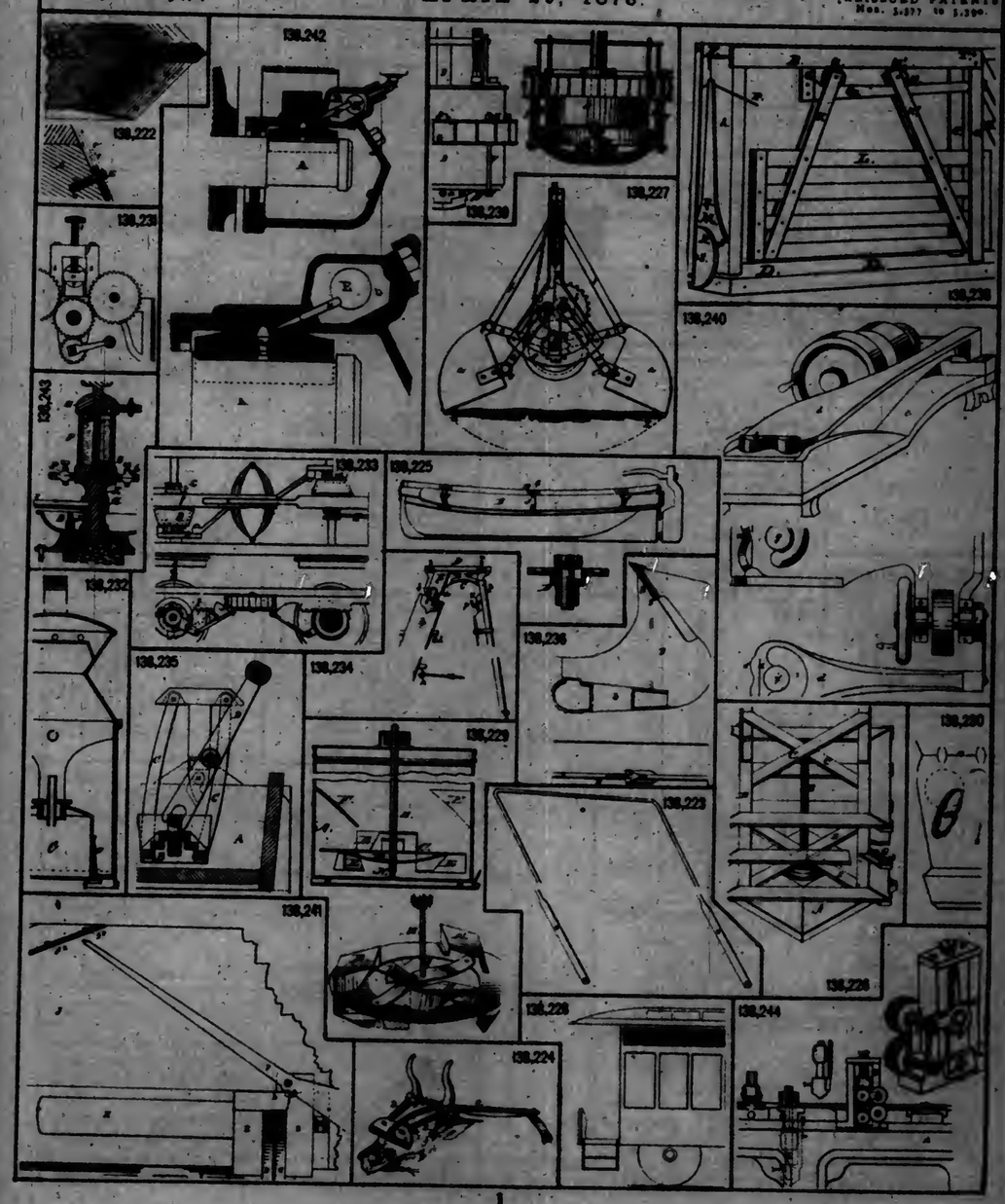
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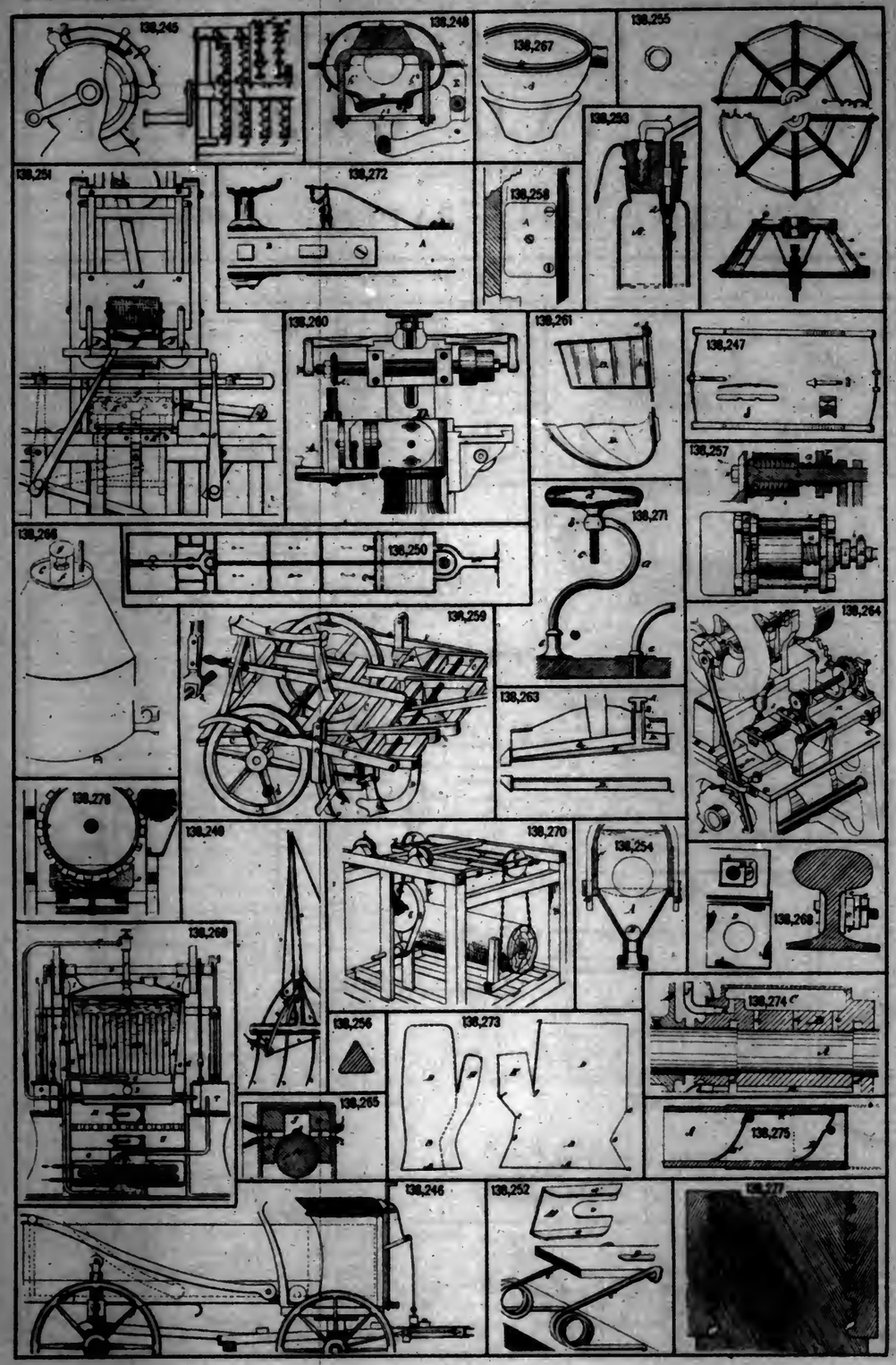
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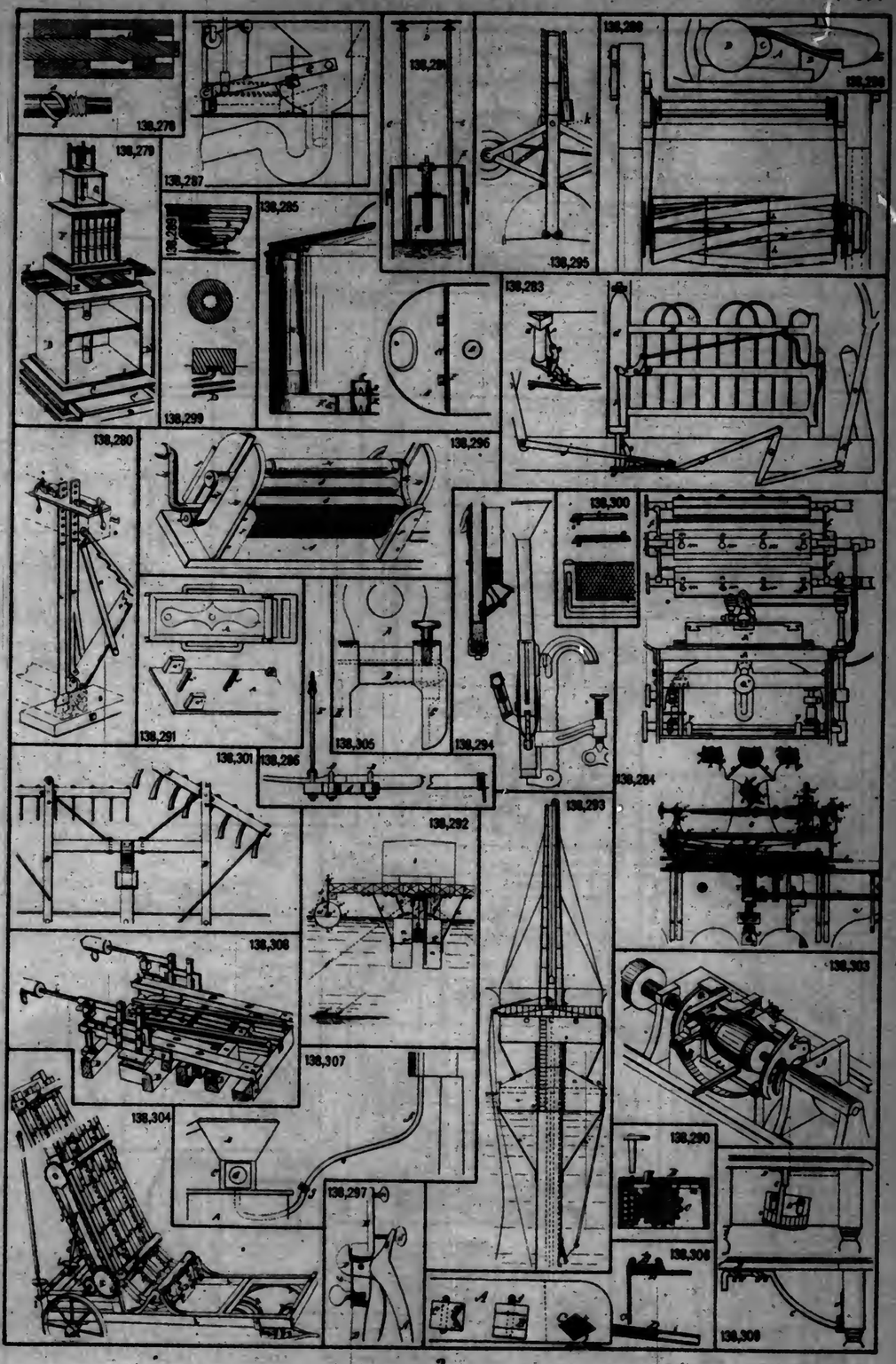


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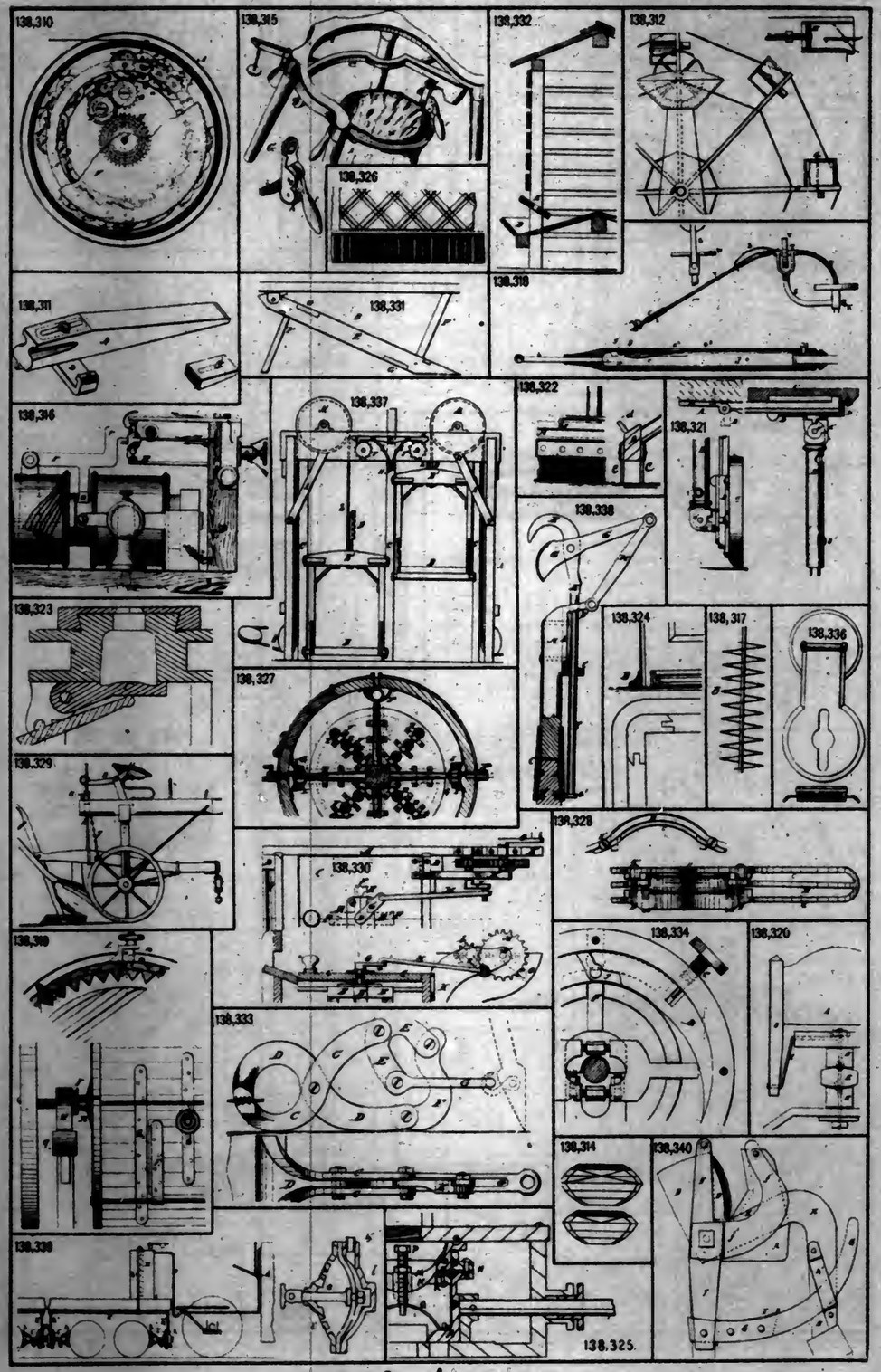
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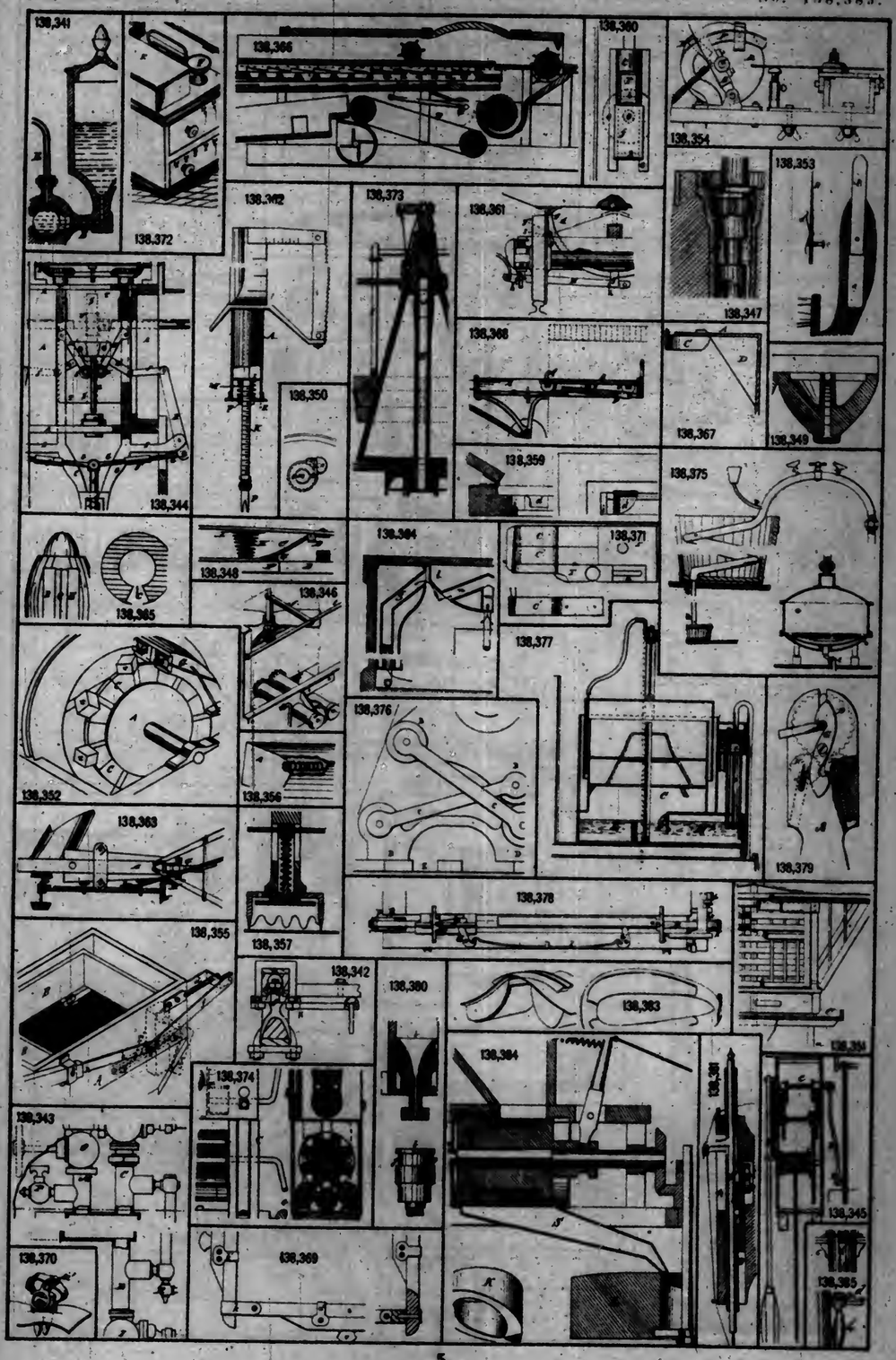
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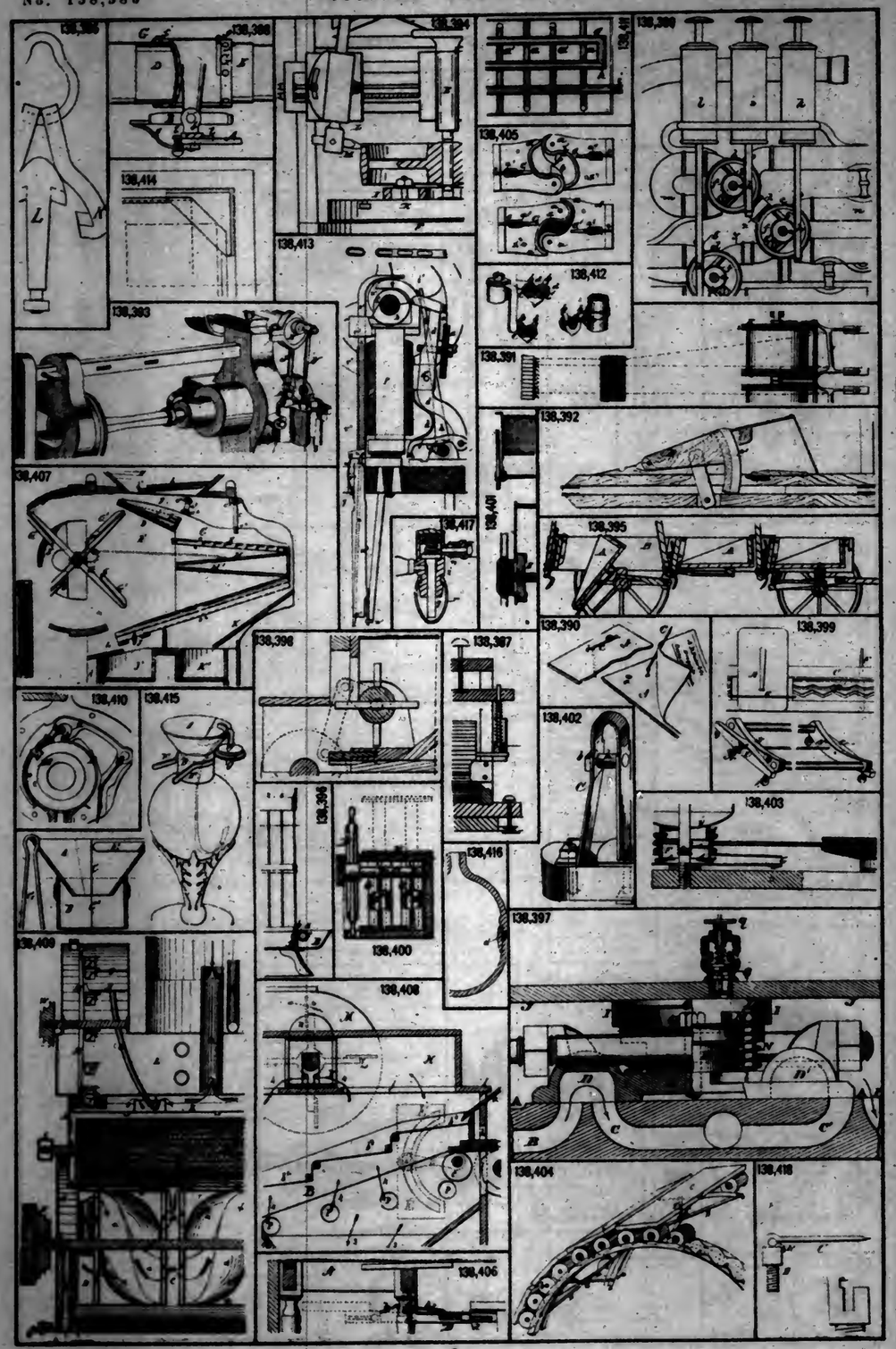
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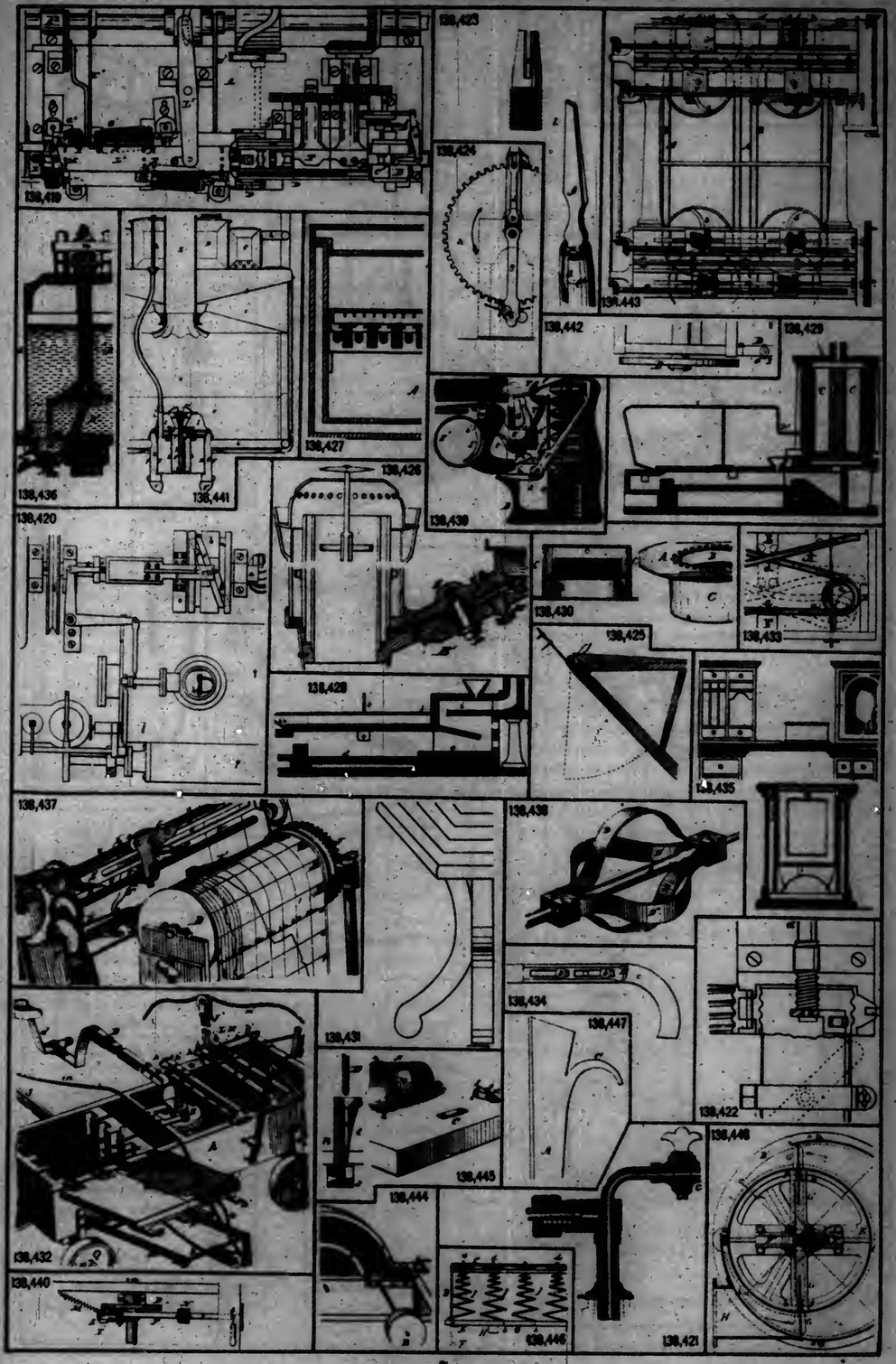
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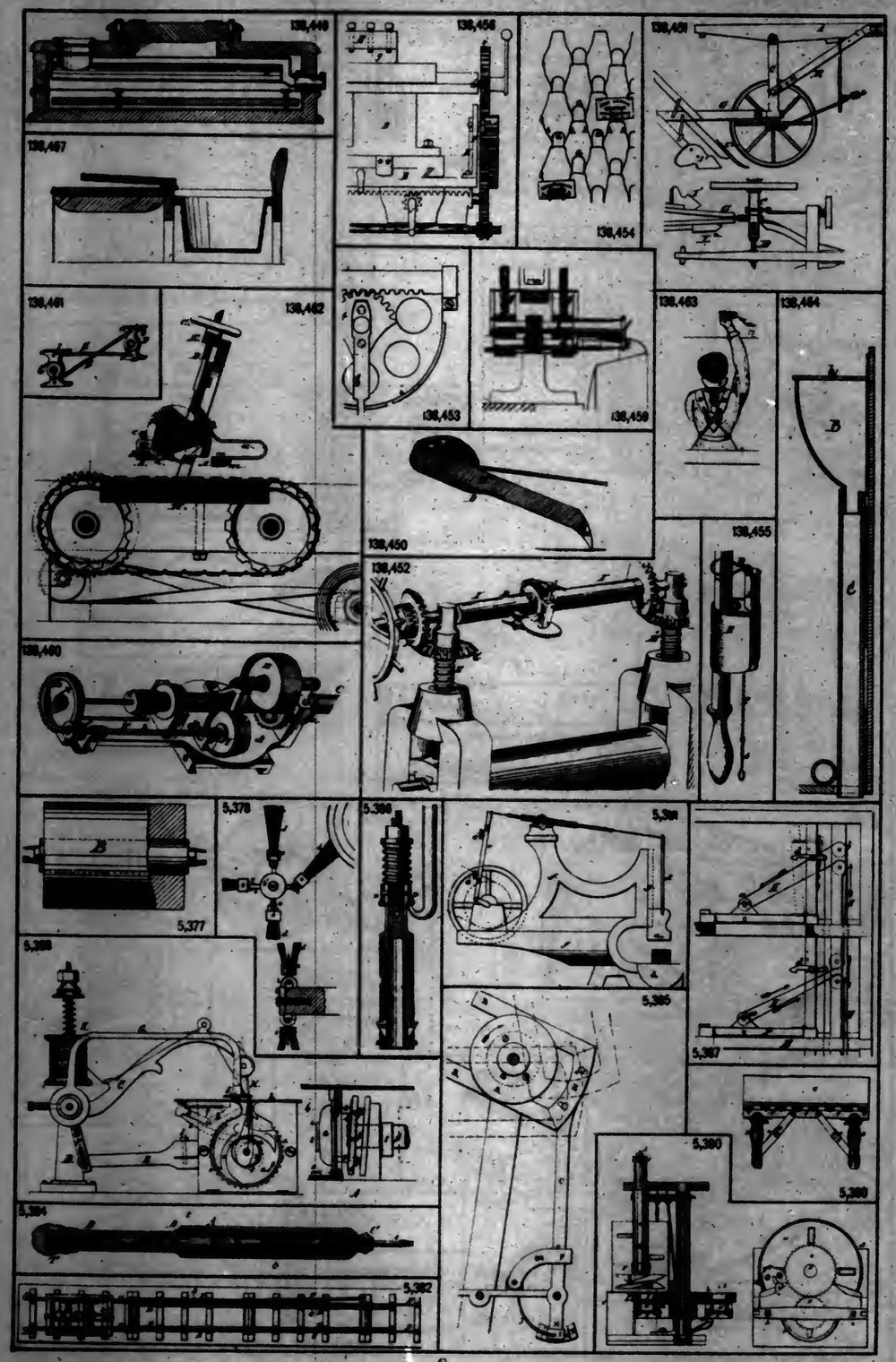
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OFFICIAL GAZETTE

OF THE

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NOTICE TO CORRESPONDENTS.

NEW POSTAL REGULATIONS.

The act of Congress, chapter LXXXII, An act to abolish the franking privilege, approved January 31, 1873, is as follows:

"*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled*, That the franking privilege be, and the same hereby is, abolished from and after the first day of July, anno Domini eighteen hundred and seventy-three, and that thenceforth all official correspondence, of whatever nature, and other mailable matter sent from or addressed to any officer of the Government or person now authorized to frank such matter, shall be chargeable with the same rates of postage as may be lawfully imposed upon like matter sent by or addressed to other persons." * * * * *

NOTICE.

On and after the first of July next all mail matter addressed to the Commissioner of Patents must be prepaid.

M. D. LEGGETT,
Commissioner.

PATENT OFFICE, *May* 17, 1873.

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COMMISSIONER'S DECISIONS.

THE AMERICAN SARDINE COMPANY.—*Appeal.*

[*Appeal from the decision of the Examiner of Trade-Marks in the matter of the application of the American Sardine Company for the registration of a Trade-Mark.—Decided May* 13, 1873.]

Registration refused to the phrase "American Sardines," intended to be placed as a trade-mark on cases resembling sardine-boxes, but containing another kind of fish, it being calculated to deceive the public.

The phrase "American Sardines" is not one coined for the intended use, but would be the proper name of such fish if they should be found in this country, and ought not therefore to be appropriated as a trade-mark.

LEGGETT, *Commissioner:*

Applicants seek to have the words "American Sardines" registered as their trade-mark, to be applied upon boxes containing a preparation of fish of the herring family, to which Mediterranean sardines belong, known as the "Menhaden" or "Moss Bunker." These fish, it is alleged, are of larger size than sardines, and have not heretofore been used as an article of food, owing to their numerous fine bones. Applicants set forth that they have been accustomed to treat them by a certain patented process, whereby their bones become softened, and they are converted into a valuable article of food. As thus prepared they have packed them in suitable boxes as sardines are packed, placed them upon the market, and adopted the name or label "American Sardines" for them, by which it is alleged they are known to the trade, and appropriately designated, as to source or origin, as the product or article prepared and sold by the American Sardine Company. This name, it is said, is neither "the true denomination of the goods," nor of the fish themselves before their preparation, but is merely an arbitrary mark calculated to designate this manufacture as a product furnished the trade by this company, and is no further descriptive of the product than merely as such a designation of it. This is all of the substance of applicants' arguments.

It is acknowledged that the word "sardines" is not intended to truly indicate, and does not truly indicate, the contents of the boxes—the kind of fish they contain. That word, then, is obviously calculated to deceive when placed on a box of applicants' prepared fish as a label. But the word "American" employed with it is supposed to obviate this objection. This word, however, is, from the nature of the case, merely de

scriptive. It is in common use to distinguish all sorts of products made in this country from foreign products. It cannot be divested of that significance when placed upon an article displayed for sale. It does not diminish the deception which the false name applied to the boxes of fish is naturally calculated to convey. It rather aids that deception, for in fact there are no American sardines. The designation of the boxes of fish as "American Sardines," therefore, is but the adoption of a false name for them. If there were any American sardines known, or if any should be discovered in the waters of any of our coasts, American sardines would be their true name, and for that reason could not constitute a trade-mark to designate them.

These words have not the virtue of a new name, a "coined" word, which, like the word "cocoaine," for instance, may be a legal trade-mark. Especially is this true when they are applied as a label upon boxes of fish like ordinary sardine-boxes. They are simply a misnomer in such a use, calculated to produce a false impression. It is immaterial that, on account of their large size, an examination of the fish will readily undeceive the purchaser. The effect of the mark itself is alone to be taken into consideration. If that is a false mark merely, and likely to be deceptive, it is not a legal trade-mark and ought not to be registered. Such I regard it. The decision of the Examiner of Trade-Marks is sustained.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,304.—*Machines for Moving Iron at the Rolls.*—Granted to CHARLES HEWITT, June 7, 1859. Hearing May 21, 1873.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL P. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860. No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,486.—*Brakes for Power-Looms.*—Granted to R. and GORDON R. REYBOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHERBLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. HARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OTIS TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,886.—*Improvement in Cultivators*, granted to MILTON ALDEN, May 10, 1859.

Claim.—The within-described arrangement and combination of the adjustable shares B, the frame A, and the raised thills C, which are made out of one piece, with the handles D, to operate substantially in the manner and for the purpose specified.

23,921.—*Improvement in Harvesting-Machines*, granted to MOSES G. HUBBARD, May 10, 1859.

Claim.—1. The conformation of the intermediate fingers of a reaping and mowing machine having a conical form with a straight outline from point to heel, as herein set forth, so as to present a straight gradual taper on the under side, as well as above, the whole being constructed and arranged as herein specified.

2. The safety-flange *e* for securing the pitman-connection, when constructed and located substantially as set forth.

23,924.—*Improvement in Mail-Bags*, granted to THOMAS J. LAMDEN, May 10, 1859.

Claim.—1. The placing of the staples or buckles on the flap of the bag or pouch so that when the flap is turned down said staples or buckles will pass through the grummets, as herein stated.

2. The manner of forming the seams of the bag or pouch so that they cannot be cut open and resewn from the outside of the bag without instant detection on looking at the seam, as its whole character must be changed in any such attempt or effort, as described.

Disclaimer filed May 9, 1873.

Disclaims the second clause of claim.

23,950.—*Improvement in Clock-Dial*, granted to S. E. ROOT, May 10, 1859.

Claim.—The combination of a clock-dial, B, metallic back A, frame C, as a new manufacture, specifically as and for the purpose described.

23,970.—*Improvement in Stoves*, granted to JOHN G. WIDMANN, May 10, 1859.

Claim.—The arrangement and combination of the gas-tubes *d* with the cylinder D and fire-openings *b*, so that the gases which arise from the heating of the coal will be compelled to pass down into the fire, as herein shown and described.

23,957.—*Improvement in Lathes for Turning Irregular Forms*, granted to CHARLES SPRING and ANDREW SPRING, May 10, 1859.

Claim.—The combination of a griping-chuck, by which an article can be so held by one end as to present the other free to be operated upon, with a rest preceding the cutting-tool, when it is combined with a guide-cam, or its equivalent, which modifies the movement of the cutting tool, all operating together for the purpose set forth.

23,983.—*Improvement in Cooking-Stoves*, granted to HENRY G. LEONARD, May 10, 1859.

Claim.—1. So constructing and arranging one or more of the oven-plates of the stove that it or they can be removed and the flue or flues cleaned and the plates replaced, substantially as described, without loosening or separating the plates which form the outside of the stove.

2. Making one or more of the interior flue-plates so that it can be removed and the flue cleaned, and the plate replaced, substantially as described, without loosening or separating the plates which form the outside of the stove.

DISCLAIMERS FILED.

23,294.—THOMAS J. LAMDEN.—*Improvement in Mail-Bags*, granted May 10, 1859. Disclaims:

"The second clause of the claim of invention set forth in his said patent."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 6, 1873.]

6,625.—*Carpet.*—OTTO HEDINGER, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed April 23, 1873.

6,626.—*Type.*—JULIUS HERRIET, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place. Application filed April 21, 1873.

6,627.—*Type.*—JULIUS HERRIET, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place. Application filed April 21, 1873.

6,628.—*Clock-Front.*—EDWARD INGRAHAM, Bristol, Conn. Application filed February 19, 1873.

6,629.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,630.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,631.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,632.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,633.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,634.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,635.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,636.—*Bread-Plate.*—HENRY S. MCKEE, Pittsburg, Pa. Application filed April 17, 1873.

6,637.—*Trimming.*—JAMES PHIPPS, Philadelphia, Pa., assignor to MARTIN LANDENBERGER & COMPANY, same place. Application filed April 15, 1873.

6,638.—*Trimming.*—JAMES PHIPPS, Philadelphia, Pa., assignor to MARTIN LANDENBERGER & COMPANY, same place. Application filed April 15, 1873.

6,639.—*Casket-Handle Socket.*—CEPHAS B. ROGERS, Meriden, Conn., assignor to C. ROGERS & BROTHER, same place. Application filed April 3, 1873.

6,640.—*Casket-Handle Socket.*—CEPHAS B. ROGERS, Meriden, Conn., assignor to C. ROGERS & BROTHER, same place. Application filed April 3, 1873.

6,641.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,642.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,643.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,644.—*Fountain-Basin.*—JONATHAN MOORE and WILLIAM H. WILKINSON, Brooklyn, N. Y. Application filed April 19, 1873.

6,645.—*Hot-Air Register.*—EDWARD A. TUTTLE, Morristown, N. J. Application filed April 19, 1873.

6,646.—*Hot-Air Register.*—EDWARD A. TUTTLE, Morristown, N. J. Application filed April 19, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date May 6, 1873.]

1,244.—*Caps of Bottles of Cordials, &c.*—CAZADE & CROOKS, New York, N. Y. Application filed April 12, 1873.

1,245.—*Packages of Cordials, &c.*—CAZADE & CROOKS, New York, N. Y. Application filed April 12, 1873.

1,246.—*Bottles of Cordials, &c.*—CAZADE & CROOKS, New York, N. Y. Application filed April 12, 1873.

1,247.—*Bottles of Cordials, &c.*—CAZADE & CROOKS, New York, N. Y. Application filed April 12, 1873.

1,248.—*Sponge or Butter Crackers.*—JOSEPH FOX, Lansingburg, N. Y. Application filed April 17, 1873.

1,249.—*Clock and Watch Oil.*—EZRA KELLEY, New Bedford, Mass. Application filed April 14, 1873.

1,250.—*Chewing-Tobacco.*—WALKER, MCGRAW & CO., Detroit, Mich. Application filed April 24, 1873.

1,251.—*Candles.*—GEORGE DELANO, New Bedford, Mass. Application filed April 26, 1873.

1,252.—*Medicinal Oil.*—ELIZABETH F. LIBBY, Allegheny City, Pa. Application filed April 3, 1873.

1,253.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed April 23, 1873.

1,254.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed April 23, 1873.

1,255.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed April 23, 1873.

1,256.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed April 23, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date May 6, 1873.]

ORIGINAL PATENTS.

138,465.—*Boiler-Flue Scraper.*—MARCUS M. AMMIDOUN, West Roxbury, Mass. Application filed October 30, 1872.

A tube-scraper having four arms connected together with four wire hooks, and spread to fit the tube by means of springs.

Claim.—The combination and arrangement of the arms *a a' a a'*, recesses *e e*, and springs *d d*, with the hooks *f f*, substantially as specified.

138,466.—*Water-Filter.*—PHINEHAS HALL and BENAIAH FITTS, Worcester, Mass. Application filed February 13, 1873.

Two compartments, separated by a felt filter, secured upon a grate, over which is placed a sheet of fine metallic gauze to prevent the passage downward of the filtering material. The chamber at the mouth of the induction-pipe is closed by a weighted valve. The water discharged from the chamber at the top, in a line parallel with the plane of the filter, passes over its under surface, washing from it all impurities.

Claim.—1. The combination of the induction-pipe G with the self-adjusting mouth J, as arranged with relation to the mechanical or felt strainer C, for the purpose set forth.

2. The combination of the self-adjusting mouth J and strainer C, as arranged in relation to each other, with the wash-out pipe H, for the purpose specified.

3. The combination, substantially as described, of a felt strainer, C, or its mechanical equivalent, with the filtering and purifying chambers A and B, when so arranged that the process of filtration through it and the process of cleansing its outer or straining surface from the impurities eliminated from the filtered water shall be carried on simultaneously, in the manner described.

138,467.—*Fire-Alarm.*—WILLIAM A. BARNES, Bridgeport, Conn. Application filed March 1, 1873.

An explosive button or cartridge charged with any composition that may be ignited by heat, but not by accidental percussion, is applied to exposed places by an attached pin or screw, so as to give an alarm wherever a fire occurs. To avoid the risk of flying fragments, the capsule or envelope is made of a single piece, so as to open on explosion.

Claim.—1. A metallic case or shell, *a*, with its base and cover in one piece and attached by a screw or nail, *f*, to facilitate its opening when exploded, and thereby avoid liability to fly in fragments, as described and represented.

2. A fire-alarm torpedo or cartridge, consisting of a shell or case, *a*, fastened in any desired locality by a nail, screw, or other similar fastening, *f*, and inclosing within it so as not to be exposed externally any known composition, *c*, ignitible, not by concussion, but by heat conducted through the metal of the case or shell, as and for the purpose described and represented.

138,468.—*Wrench.*—STEPHEN BARRY and FRANK PERKINS, Brunswick, Ohio. Application filed January 17, 1873.

The oscillation of the handle serves to adjust the wrench to the nut.

Claim.—The herein-described wrench, consisting of the shank A, head B, movable jaw C with arm D, handle E with curved head F, and the connection *g*, all combined and arranged substantially as described, and for the purpose set forth.

138,469.—*Traction-Wheel.*—WILLIAM ERSKINE BARTLETT, Edinburgh, North Britain, assignor to THE NORTH BRITISH RUBBER COMPANY, (limited,) same place. Application filed December 14, 1872.

Segmental blocks are secured to the tires of the wheels by means of transverse bolts, while the cellular metallic shoes are retained in position by being arranged between the segmental blocks, and have a bearing upon an elastic block.

Claim.—1. Elastic tires constructed of segmental blocks and the same secured to the wheels by means of transverse bolts and bushes, substantially as above described.

2. The cellular metal shoes constructed and retained in position on the wheel in the manner and for the purpose above described.

3. The combination of the segmental retaining-blocks R and the filling-blocks *r* for sustaining the pressure of the shoes S while the same are passing over the ground, as set forth.

138,470.—*Potato-Digger.*—SILAS BIGELOW, Newburg, and LEANDER C. BIGELOW, Kirtland, Ohio. Application filed January 8, 1873.

An axle-tree mounted upon wheels has two projecting arms, which are secured at their outer ends by a cross-bar. At a short distance from the axle-tree is hinged a group of fingers which are secured together by cross-bars, the fingers resting upon the axle-tree, where they are secured by a button.

Claim.—The herein-described implement, consisting of the adjustable rake B, hinged as described, arms E, axle-tree F, and wheels A, all constructed to operate substantially in the manner as and for the purposes specified.

138,471.—*Die for Making Blanks for Ship-Hooks.*—CHARLES E. BILLINGS, Hartford, Conn. Application filed March 12, 1873.

A blank roughly formed in one set of dies is transferred to another set, which finish it, as shown in the drawing, and from this blank is afterward produced by other means the completed ship-hook.

Claim.—The two several sets of dies set forth and described.

138,472.—*Spring Bed-Bottom.*—HIRAM H. BLAIR and STEPHEN BARRY, Brunswick, Ohio. Application filed March 24, 1873.

A saddle, consisting of two plates hinged together, is clamped to the slat and to the spring.

Claim.—The saddle consisting of the two parts, B C, constructed as shown, in combination with the spring A and slat G, as and for the purpose set forth.

138,473.—*Medical Compound.*—AVERY BROWN, Fond du Lac, Wis. Application filed March 1, 1873.

Sarsaparilla, lignum vitæ, elder-flowers, burdock-root, yellow-dock, sassafras-bark, iodide of potash, dandelion, mandrake, bromide of potash, alcohol, and winter-green oil.

Claim.—1. A compound composed of the first twelve articles named, in the proportions, and for the purposes set forth.

2. A compound composed of the first twelve articles with the addition of silk-weed, in the proportions substantially as described.

3. A compound composed of the first twelve articles with the addition of cypripedium, substantially as described.

4. A compound composed of the first twelve articles with the addition of wild-cherry-tree bark, substantially as set forth.

138,474.—*Wave-Power.*—CHARLES BUCKNER, San Francisco, Cal., assignor of part interest to HENRY BRUNS, JOHN REINERS, JOHANN H. A. LUDWIG, and ISAAC M. WARD, same place. Application filed July 25, 1872.

A water-engine is actuated by a force-pump driven by the rise and fall of waves acting upon a buoy suspended between ways. A water-reservoir, with springs to give continuity of flow, intervenes between the engine and the pump. The second claim relates to means for adjusting the position of the buoy to varying heights of tide.

Claim.—1. The reservoir M, provided with the springs T T and piston L, in combination with the floating buoy B, pump P, and water-engine E, substantially as and for the purpose hereinbefore set forth.

2. The rod I, provided with a rack in which bolts *b b'* work on spring *z*, and lever *k* actuated by the arms *a a'* and projections *c c'*, together with the slide-box S, and springs *s s*, and oval slot *r*, substantially as and for purposes set forth.

138,475.—*Drier.*—JAMES BUTTERWORTH, Philadelphia, Pa., assignor to himself and CHAS. C. BUTTERWORTH, same place. Application filed January 24, 1873.

For the purpose of equalizing the heat of the drying-surfaces, steam or hot air is admitted at one end of one series of cylinders and at the opposite end of the other series.

Claim.—A drying-machine in which there are parallel hollow cylinders, to which steam or hot air is admitted so as to traverse some of the cylinders in one direction, and others in the opposite direction, substantially as and for the purpose set forth.

138,476.—*Machine for Unloading Flat Cars.*—GEORGE S. CALDWELL, Auburn, N. Y. Application filed September 4, 1872.

The scraper is supported upon wheels which travel upon rails extending over the ends of the car-platform, so that the rails of the adjoining cars will nearly meet.

Claim.—1. In combination with one or more cars for carrying earth or other material, the scraper, with wheels thereunder upon which it is supported and carried, and the rails or guides for guiding and directing said scraper over or upon said cars, as and for the purpose described.

2. In combination with a series of cars for carrying earth or other material, having guiding-rails with their ends extended so as to form a permanent and continuous track throughout the series of cars, with a scraper having supporting-wheels to run and be guided on said rails, as and for the purpose described.

3. The combination of the attachment *k* with the scraper, as and for the purpose described.

138,477.—*Pump.*—JOHN F. CARLL, Pleasantville, Pa. Application filed February 14, 1873.

The pump may be removed without disturbing the tubing, being held in place only by the tapering packing, and can be withdrawn by means of the pump-rod.

Claim.—The described arrangement and combination of the barrel *b*, with its tapering packing *d* and valves *e* and *f*, the whole attached to the pump-rod and held in position in the tube *a* by static pressure, and operating substantially in the manner and for the purposes set forth.

138,478.—*Cooler for Liquors.*—JAMES W. COLLIER, New York, N. Y. Application filed April 14, 1873.

A glass vessel, having a tightly-fitting cap, is set in a tank, which may be lined with lead or other material. Two tinned tubes enter the vessel. The one connecting with the keg containing the liquor passes just below the cap, and the one connecting with the pump for drawing the cooled liquor extends nearly to the bottom of the vessel. Water from the ice around the top of the vessel trickles down the sides of the vessel and cools the liquor contained therein. The tank contains an overflow-pipe.

Claim.—1. An apparatus for cooling palatable liquors, consisting of one or more glass vessels, in combination with a tank, in the manner and for the purpose described.

2. Cooling potable liquors by the application of ice and water, in the manner hereinbefore described.

138,479.—*Bale-Tie.*—FREDERIC COOK, New Orleans, La. Application filed April 24, 1873.

One end of the band engages with the loop, and the other end is secured to the shank of said loop.

Claim.—The cotton-tie fastening, as shown and described, having a detached loop or loops, D, secured to the end of the band, for the purpose specified.

138,480.—*Bale-Tie.*—FREDERIC COOK, New Orleans, La. Application filed April 23, 1873.

Claim.—The cotton-tie, constructed as shown and described, having the loop D at right angles with the body of the band and the bend E in a double thickness of the band.

138,481.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed April 28, 1873.

The bale-tie buckle is slipped into the looped end of the band and held in position square with the band without riveting, and

forms a loop for the reception of the hook of the other end of the band.

Claim.—The sliding loop A, substantially as shown and described.

138,482.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed April 21, 1873.

Claim.—A clasp for cotton-bale ties, having two pairs of raised lips, C C, recessed for the reception of the bent ends of the bands, and so made, with relation to the body of the clasp, as that said ends shall pass between the lips and body of the clasp, as and for the purpose described and represented.

138,483.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed September 3, 1872.

Claim.—1. The cotton-tie link made with the planes of the band-seats at an angle with each other, having a fold and twist in the middle.

2. The end flanges, made at an angle with the plane of the band-seat, for the purpose shown, and substantially as described.

3. The combination of the angular band-seats with end flanges and looped ends of metallic bands for bales.

138,484.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed April 22, 1873.

One end of the band is bent at right angles with the band so as to form a band-seat for the other end of the band, which has been previously bent into a loop form or hook, and is passed into the hook or loop, which stands at right angles with the band, as aforesaid.

Claim.—The construction of the cotton-tie, as shown and described, without a buckle or link.

138,485.—*Excavator.*—JOHN M. CURLESS, Cedar Rapids, Iowa. Application filed March 12, 1873.

The cart is raised and lowered by the chains being wound upon eccentrics, which are operated by levers and cords, the cords being wound on drum on the shaft, which is operated by gearing in connection with one of the main wheels. A wedge is used to throw the shaft into or out of gear with the wheel.

Claim.—1. The cart C, composed of two parts hinged together, substantially in the manner described and shown, and supplied with plows C', as and for the purpose set forth.

2. The combination of the cart C, lifting-chains D D, eccentrics or rollers E E, levers F F, cords *f f*, drum G, shaft *g*, gears g^2 g^3, frame A, axle A', and wheels B, substantially as and for the purpose set forth.

3. The inclined plane or wedge H, fitted to slide upon the side of one of the bearings of the shaft *g*, and beneath that end of the latter having the pinion g^3, substantially as and for the purpose specified.

138,486.—*Velocipede.*—GEORGE DISMER, Mound City, Ill. Application filed October 16, 1872.

Each end of the axle is provided with compound cranks, which are constructed at right angles to each other. To these cranks are attached rods, one of which is pivoted below the bearing of the hand-lever, and the other above this bearing.

Claim.—The combination of the double cranks B B on shaft or axle *c* with their connecting-links D D D D, levers E E, and body A, arranged and constructed to operate substantially as and for the purpose set forth.

138,487.—*Buckle.*—SAMUEL H. DOUGHTY, Nyack, N. Y. Application filed March 22, 1873.

Improvement on patent No. 55,532. The slide covered by said patent has an eye bent on one of its sides, and is attached to one end of a belt. An ornamental buckle is secured to the other end, and is adjustable by hooks struck from its under surface or a tongue secured to a cross-bar operating in eyelet-holes. The eye engages with a hook on the under side of the buckle, or a swinging hook on its cross-bar.

Claim.—The within-described fastening having a hook and eye, D B^2, in combination with the frame B and sliding bar C, serving relatively to each other and to a belt, A^1 A^2, as and for the purposes herein specified.

138,488.—*Refrigerator.*—BENJAMIN RANDOLPH DUVAL, Portsmouth, Va. Application filed December 9, 1872.

A series of vessels are arranged one within the other, with a packing of feathers or sawdust between them.

Claim.—The refrigerator, composed of the outer case or carrier, and series of contained vessels, forming non-conducting and freezing chambers, as and for the purposes specified.

138,489.—*Insulator for Telegraph-Lines.*—PETER EBY and MICHAEL B. FENDINGER, Kinzer's P. O., Pa. Application filed December 24, 1872.

The telegraph-wire is supported by a divided cylindrical glass insulator, having the lower half grooved or recessed and the upper half correspondingly ribbed so as to cause the division-line to descend from the wire on either side. Partial flanges on the ends of the glass segments allow the insulator to be locked in the wooden supporting-arm by a partial rotation.

Claim.—The combined construction of the segments or portions A B when a semi-groove for the wire is, in each portion, so raised and beveled in their connection as to exclude water, and locked by a full half turn by means of the collars or flanges *a b* on one side, and the ing or partial shoulder or flange *a' b'* on the other side, all substantially made and applied in the manner and for the purpose specified.

138,490.—*Spring Bed-Bottom.*—EDWIN S. FIELD, Hartford, Conn.—Case A. Application filed December 2, 1872.

The fabric is formed of V-shaped links having hooked ends, the hooks taking into the apex of the next succeeding link. The straight-edged links at the sides have one long leg hooked into the next straight-edged link, and one short leg hooked into the apex of the V-shaped link.

Claim.—1. A wire netting composed of the V-shaped links hooked together, substantially as described, for the purpose set forth.

2. The peculiarly-shaped link *g* for forming the straight edges of the netting, having one long leg hooked so as to take into the angle of the next of these links, and one short leg running off obliquely, and hooked so as to take into the angle of one of the V-shaped links, substantially as and for the purpose set forth.

138,491.—*Spring Bed-Bottom.*—EDWIN S. FIELD, Hartford, Conn.—Case B. Application filed December 2, 1872.

Diamond-shaped links are made of one piece of wire having hooks on the two extreme ends of the wire to take into the angle of the adjacent link, the two side angles being held together by rings.

Claim.—1. As a component part of a bed-bottom, a diamond-shaped link made of one piece of wire, and having the two ends of the wire turned downward at one of the angles of the link so as to form a hook to take into an angle of the next link, substantially as and for the purpose set forth.

2. A bed-bottom composed of such links as are specified in the last clause, hooked together at two of the angles of the links, and united at the other two angles by subsidiary rings or links, substantially as described.

138,492.—*Cotton-Bale Tie.*—WILLIAM D. FIELD, Providence, R. I. Application filed March 24, 1873.

Claim.—1. A cotton-tie formed from a single plate, and having the slot and two hollow projecting arms, B and B', as described, for the purposes specified.

2. The cross-bar E in combination with the hollow projecting arms B and B', the whole arranged and operating in the manner substantially as described.

138,493.—*Curtain-Fixture.*—CHARLES E. FRITTS, Oneonta, N. Y., assignor to JOSEPH S. FRITTS, same place. Application filed January 3, 1873.

The pawl is attached to the spindle, and is double or has two arms; said pawl operates in connection with a ratchet formed on the end of the roller. The end of the spindle is slotted to receive a spring that operates to prevent the coiled spring inside the roller from unwinding when the roller is taken out of the bracket.

Claim.—1. An improved curtain-fixture, consisting of a double pawl, D E, interior ratchet and end plates F, spindle A B, bracket H, spring S, and washer W, in combination with a roller, P, and spiral spring X, constructed and operating substantially as herein set forth and described.

2. An improved stop-work for curtain-fixtures, consisting of a double pawl, D E, and combined end plate and ratchet F, constructed and operating substantially as and for the purposes described.

3. In curtain-fixtures, attaching a pawl to the spindle, substantially as and for the purposes herein set forth and described.

4. A slotted spindle, A B, combined with a spring, S, substantially as set forth.

5. The combination, with the pawl D E, ratchet F, and spindle A B, of a spring, S, substantially as and for the purposes herein set forth and described.

138,494.—*Sash-Holder.*—JOSEPH F. GRAHAM, Warrensburg, Mo., assignor of one-half his right to ALEXANDER BETTES, same place. Application filed September 4, 1872.

The ordinary set-screw which operates a friction-plate is furnished with a jointed drop-handle.

Claim.—In combination with the metallic strap F, the screw D provided with swinging wrench E, constructed and operating in the manner and for the purposes substantially as set forth.

138,495.—*Washing-Implement.*—CYRUS R. GRAMM, Bainbridge, Pa. Application filed April 16, 1873.

A wash-pounder constructed with concentric rings, with the outer one of less length than the inner, with its edge curved outward and all attached to a plate covered by a conical-shaped top, through which the cylinder is passed to receive the handle.

Claim.—A series of three or more concentric rings or cells, 1 2 3, open below, above closed by the disk D, which separates the flange A from the conic top B, the whole arranged and constructed in the manner and for the purpose specified and shown.

138,496.—*Station-Indicator.*—OLIVER B. GRIGGS, Mansfield Centre, Conn. Application filed October 23, 1872.

The actuating-lever is cranked to bear against arms attached to slides which carry respectively a hook and a bar, which operate on the apron-barrels and revolve them in either direction, according as the lever is moved.

Claim.—The combination of the arm *b*, shaft *c*, cranked, as described, arms *f* and *f'*, slides *d d'*, springs *i i'*, spring-hook and spring-arm *g g'*, rolls A B provided with ratchets $A A^1$, apron C, and spring A^1, constructed and operated substantially as described, for the purpose set forth.

138,497.—*Cotton Seed Planter.*—ALBERT D. GRISWOLD, Rocky Hill, Conn. Application filed March 22, 1873.

A cotton-seed planter with two cylinders; these cylinders are revolved by means of band-connection from the drive-wheel; to the cylinders are secured V-shaped feed-teeth, which fit V-shaped

notches in a yielding feed-plate. The feed-plate is adjustably secured in position upon screw-bolts, and is supported by spiral springs. To the front of the frame is secured an opening-plow, while the rear is provided with covering-plows.

Claim.—The combination of the feed-rollers *c* having feeders *d*, adjustable yielding feed-plate d^2, gears *f* with the cultivator A, covering-plates A^1, and hoppers *g* g^1, arranged and operating substantially as and for the purpose set forth.

138,498.—*Flash-Light Signal-Recorder.*—MOSES GUSTIN, Troy, Pa. Application filed December 7, 1872.

The shield or screen of a flash-light lantern is operated by a lever, which is connected with a pawl and ratchet for feeding a fillet of paper by each movement, while an adjustable pencil-holder causes an automatic record to be made simultaneously of each signal as it is made by the lantern.

Claim.—1. The lever E and the adjustable lever *e* for operating the shield C at one end to expose the light, and the lever R at the other end to operate the ratchet-feeding mechanism, as shown and described.

2. The movable paper-holder L for receiving the register, in combination with the ratchet-wheel and friction-roller *i* and presser-roller *m*, as constructed to operate as described.

3. The combination of the movable pencil-holder H with the knob *k* for operating it laterally, and the levers E *e* and *g* with the mechanism for moving the strip of paper one or two notches, as may be desired, substantially as herein set forth.

138,499.—*Roll for Rolling Iron for Horseshoe-Nails.*—JOHN HUGGETT, Eastbourne, and JOHN ALBERT HUGGETT, Clapham, England. Application filed January 21, 1873.

Two rolls on separate shafts and overlapping one another, with a groove partly in both at the point of overlap and a collar held by a nut on the shaft of one roll that overlaps and supports the other roll to prevent endwise spread. The peripheral angles or corners of the walls of the groove are beveled and roughened to facilitate the entrance of the rectangular bar and to turn it vertically edgewise, if by accident it shall have been presented flatwise.

Claim.—1. The combination and arrangement of rolling machinery, substantially as before set forth, consisting of two rolls, each with a flange at one side only of its rolling-face, and of an adjustable collar for sustaining the end thrust of the rolls, and for the end-wise adjustment of them after re-turning.

2. The method of causing the nail-rod to enter truly between the rolls by beveling or inclining the edges of their flanges, substantially as described.

3. The use of tar or such like viscous fluid to prevent the nail-rod sticking in the cavities of the rolls, substantially in the manner as described.

138,500.—*Treating Gold and Silver Ores.*—JOSEPH KALLMES, San Francisco, Cal. Application filed March 13, 1873.

Claim.—The process, substantially as herein described, for desulphurising and chloridising gold and silver by injecting, first, chlorine gas into the pulp, then dry steam or hot air, without roasting the ore, substantially as set forth.

138,501.—*Molasses-Pitcher.*—WILLIAM C. KING, Pittsburg, Pa. Application filed April 8, 1873.

A covered pitcher with an attachment pivoted at or on its sides, with a thumb-piece extending in rear of the pivot, and to the outside of the spout, with a drip which serves to cut off and return the sirup to the pitcher, and is closed by a spring on its axle or pivot.

Claim.—The pouring-lip of a pitcher, provided with a pivoted shield having an inward projection, which will wipe off the drip and carry it back into the pitcher, substantially as herein described.

138,502.—*Jelly-Jar.*—WILLIAM C. KING, Pittsburg, Pa. Application filed March 5, 1873.

Claim.—1. A new article of manufacture—viz., the jelly-glass A, provided with a V-shaped groove near its upper edge, substantially as herein described, and for the purpose set forth.

2. The jelly-glass A in combination with the lozenge-shaped ring C (when viewed in cross-section) and the lid D, substantially as herein described, and for the purpose set forth.

138,503.—*Candy-Jar Lid.*—WILLIAM C. KING, Pittsburg, Pa. Application filed March 5, 1873.

Claim.—A new article of manufacture—viz., a lid for candy-jars, said lid being constructed by the pressing and polishing process, substantially as hereinbefore described.

138,504.—*Obtaining Bisulphide of Carbon from Gas-Lime, &c.*—JULIUS KINCHER, New York, N. Y. Application filed October 19, 1872.

Gas-lime, &c., is mixed with an equal quantity of clay, loam, or sand, and subjected to heat in a closed retort. The vapors evolved are conducted over charred or other coal heated to a light red.

Claim.—The production of bisulphide of carbon, in the manner and by the process above described, from the waste material used in the manufacture of coal-gas.

138,505.—*Machine for Trimming Lumber.*—CHANCY LAMB and THOMAS J. FRAZIER, Clinton, Iowa. Application filed September 30, 1872.

Two saws are arranged upon a long arbor, one of them being movable, the other stationary. A series of endless belts carry the lumber by the saws which cut off the damaged ends.

Claim.—1. The rock-shaft I, levers J, rocker-arms K, forked connecting-rods L, radius-links N, pulleys M M^1, guide-rods O, chains Q, and shaft P, the latter rotated in any convenient manner, and all operating substantially in the manner described, for carrying the lumber to and past the saws.

2. The arrangement with relation to the arbor B of the friction-gears or pulleys *k l n o q r* and shafts *m* and *p* for rotating the shaft P, as shown and set forth.

138,506.—*Wagon-Body.*—HUBERT LAVERS and HERMAN STIEVATER, Greenfield, Wis. Application filed September 16, 1872.

Claim.—1. Key-bolt E, frame F, hooks G, and seat H, all in combination with wagon-body A, substantially as described.

2. A wagon-body, the sides and ends of which are joined together by the bolts K and L and spring-bolt I, substantially as described.

138,507.—*Folding Screen.*—MANUEL G. LAZARUS, Pittston, Pa. Application filed April 15, 1873.

A screen with two folding wings and a mirror pivoted in the center.

Claim.—A portable folding screen and an adjustable mirror, B, arranged substantially as described.

138,508.—*Turpentine Still.*—ARCHIBALD K. LEE, Galveston, Tex. Application filed April 12, 1873.

Modification of Patent No. 131,550, reissued April 15, 1873. The heating-pipe within the still is a conical coil, and within the reservoir and liquidizing-chambers is not perforated. The agitator of the liquidizing-chamber has horizontal arms or beaters in contradistinction to the revolving rake of the former patent. The reservoir is connected to the separator by a pipe for the escape of vapors from the reservoir. The valve-connections between the liquidizing-chamber, reservoir, and still are guarded by strainers of different-sized mesh. Operation same as in former patent.

Claim.—1. The still B, having a jacket, C, arranged in connection therewith, forming a superheating steam-chamber, C^1, and the circular cone-shaped worm B^1, the same being connected, combined, and arranged to operate substantially as described.

2. In combination with the worm B^1, the pipe K, having coils K^1 K^2 formed therein or connected therewith, the whole being arranged so that the superheated steam from the coil shall serve as the heating medium for the reservoir G and tub D, substantially as described.

3. The reservoir G, still B, jacketed pipe H, sliding valve *h'*, and strainer A, the same being constructed, combined, and arranged to operate substantially as described.

4. The liquidizing-tub D, reservoir G, sliding valve *d'*, and double strainer g^1 g^2, the whole being constructed, combined, and arranged to operate substantially as described.

5. The revolving agitator or stirrer herein described, consisting of the shaft F' and the series of independent arms F F, formed as shown, the whole constructed and combined to operate substantially as set forth.

6. The liquidizing-tub D, agitator F F', and independent steam-jets *d d*, the same being combined and arranged to operate substantially as described.

7. The still B, tub D, reservoir G, separator M, and pipes L D^1 D^2, the whole being constructed, combined, and arranged to operate substantially as described.

138,509.—*Lamp.*—JAMES E. LEIGHTON, Lowell, Mass. Application filed January 18, 1873.

The draft-tube extends through the lamp, being secured thereto by a washer having leather packing beneath it, and by a lock-nut. The regulating-tube is moved over the wick through the medium of a thumb-rod and eccentrics.

Claim.—1. The center draft-tube B extending through the bowl of a lamp, when combined with the lock-nut H, packing P, and washer K, as and for the purpose specified.

2. The combination of the thumb-rod C, eccentrics L L, eccentric-pins N N with the regulating-socket D, as and for the purpose set forth.

3. The combination, with a central draft-tube of a lamp, of the lock-nuts H H', packing P, and washer K, as and for the purpose specified.

138,510.—*Cupola-Furnace.*—PHILIP W. MACKENZIE, Blauveltville, N. Y. Application filed June 20, 1872.

The products of combustion from the furnace are projected downward through pipes passing through the steam-boiler or water-jacket surrounding the base of the furnace, and pass thence into the chimney, whereby the heat of the products of combustion is utilized and the blast maintained.

Claim.—1. The combination, with a steam-generator heated by a reducing-furnace, of a steam-injector deriving its supply of steam directly from said generator, and operating to pass the products of combustion of said furnace to the generator, and thence to the chimney or main outlet, as shown and described.

2. The steam-generator G, made up of vertical sections arranged to form a jacket on the outside of the shell of the furnace, and provided with draft-flues *e* and water-spaces *f*, in combination with an upper outlet, I, from the furnace, a steam-injector, H, a lower escape passage or outlet, L, the chimney J, and a lower air-supply opening or openings, *d*, essentially as shown and described.

138,511.—*Self-Acting Spinning-Mule.*—PETER MCGOVERN, North Andover, Mass., assignor to GEORGE L. DAVIS, JOHN A. WILEY, JOSEPH M. STONE, GEORGE G. DAVIS, JOSEPH H. STONE, and JAMES H. DAVIS, same place. Application filed August 24, 1871.

Claim.—1. The combination of the worm and the driving-gear of the roller-shaft revolving loosely thereon, and the clutch by which motion is imparted from the gear to the shaft, with the clock, and the shipper-lever or other equivalent means by which the clock disengages the clutch B to stop the rollers, substantially as described.

2. The combination and arrangement of the clock with and upon the shipper-lever so that the clock is carried upon the lever, substantially as described.

3. The combination and arrangement of the incline *b*, that puts the clock *c* and clutch G^2 into gear, and the roller *a* upon the spindle-carriage, so that the delivering-rollers will be started a sufficient time before the carriage is entirely run in to deliver nearly all the yarn made at each stretch to be wound up by the spindles, substantially as described.

4. The balance-rod Q, in combination with the spindle-carriage and the worm I^1 or its equivalent, for drawing in the carriage while the twist is being put in, and also in combination therewith the cam Q^2 and its lever Q^3 or their equivalents for producing the engagement and disengagement of the rod Q and the carriage and worm-gear, substantially as described.

5. The combination of the endless screw or worm I^1 with the clock that determines the twist and the rack upon the balance-rod, so that one worm drives both of them, substantially as described.

6. The combination of the clock P, the catch *r*, and the escape-lever N, substantially as described.

7. The combination of the clock P, the cam *p*, and the worm I^1, and their subordinate devices, to throw the clock into gear, substantially as described.

8. The combination and arrangement of the main driving-shaft and the worm-shaft at a right angle thereto, and the clock and the balance-rod, substantially as described.

9. The combination of the conical sleeve R with the latch or locking rod U of the faller and the rocker-shaft T and its accessories or their equivalents, so that the pawl *s* will be held out of the ratchet during the backing off, and its engagement restored at the commencement of winding on, substantially as described.

10. The combination of the detent-arm T^2 on the rocking shaft or its equivalent with the floor-lever and the latch or locking rod U of the faller, so arranged that when the rod engages with the piece that rides upon the coppin-rail, the floor-lever will be released from the detent, and the backing off stopped and the winding mechanism started, substantially as described.

11. The combination of the radial arm t^1 and its catch t^2 upon the faller-shaft with the hook-rod and counterpoise-lever W, which raises the counter-faller, by which the counter-faller wire is allowed to fall below the top of the spindles while the stretch is made, substantially as described.

138,512.—*Insulator for Telegraph-Lines.*—EDWARD A. MERRELL, East Lyme, Conn. Application filed October 19, 1872.

The telegraph-wire is confined in a curved groove in the top of the glass insulator, and a glass cap held in position by a screw-bolt secures the wire in its position.

Claim.—The combination of the body A, made of insulating material, having the cavity S for a supporting-pin and the curved groove *a*, the cap B made of insulating material, and the screw-bolt D, the whole constructed, arranged, and designed for use substantially as and for the purpose set forth.

138,513.—*Fire-Escape.*—CHARLES C. MILTON, San Francisco, Cal., assignor of one-half his right to EDWARD A. LEARNED, same place. Application filed February 27, 1873.

The sling-seat is attached to a rectangular frame, in the right-hand portion of which is located a powerful compound-lever brake, acting upon a rope which passes through the tubular side, and is attached to the opposite side of the frame, the intermediate portion passing over a pulley on the building. The frame being naturally grasped with both hands by the person descending, the handle of the brake is included within the grasp, thus rendering the descent easily controllable. A central pulley is sometimes used on the frame, as in Fig. 6, to give increased control to the brake.

Claim.—1. The compound-lever eccentric brake E E' provided within the right-hand bar *b* of the frame F, part of the car A A, in combination with the endless rope *r* and pulley-block K, substantially as and for the purpose herein set forth.

2. The compound-lever brake E E' provided within the frame F of the car A A, in combination with the endless rope *r*, sheave *f*, and double pulley-block *k*, substantially as and for the purpose hereinbefore set forth.

138,514.—*Brake-Shoe.*—JOHN W. MOFFITT, Harrisburg, Pa. Application filed March 19, 1873.

The shoe can be laterally disengaged from its holder by slight vertical displacement, and is so arranged to be used if inverted and inserted within the holder; is adapted to be used with either brake-holder to insure the same wear upon each side of the face of the shoe.

Claim.—1. The shoe K, having the two similarly-formed double-hooked tenons A B, in combination with the bits *a e* in the holder W, interlocking vertically, the shoe being reversible, substantially in the manner as and for the purpose herein set forth.

2. The arrangement of the holder-abutments P P^1, in relation to the tenons A B, to effect the sidewise detachment of the shoe from the holder by a limited vertical displacement, substantially as herein set forth.

3. The tenon, having the notch *s* and the cut *c* thereon, as and for the purpose herein set forth.

4. The keying or locking device, composed of the bar D, lug T, wire tab or its equivalent, arranged in the upper abutment, in the manner as and for the purpose specified.

138,515.—*Pipe-Coupling.*—DAVID MYERS, Chicago, Ill. Application filed March 24, 1873.

A frame-work attached to the car-body and to the reservoir end of the supply-pipe is provided with a bar which slides with a peculiar motion, having at one end a fork which catches under the coupling of the pipe and holds it firmly in place, so that pipes cannot be uncoupled until the pressure of air is removed or cut off from the reservoir.

Claim.—The combination and arrangement of the frame D *d*, leg H with inclined top, the movable bar E with a fork, *e*, at one end, the handle F extending up into the hook G, the part K furnished with a slot, *k*, having a depression, *m*, at each end, all constructed and operating, in connection with the pipes A B and valves C C', as and for the purpose specified.

138,516.—*Fruit-Drier.*—GEORGE R. NEBINGER, Philadelphia, Pa. Application filed August 15, 1872.

Claim.—1. The combination of the central furnace-flue C and the air-duct D provided with the funnel E and arms *d*, as and for the purposes herein set forth.

2. The combination of the revolving hot-air duct D provided with arms *d* and trays F, as and for the purposes herein set forth.

3. The combination of the central furnace-flue C, air-duct D provided with arms *d*, and the trays F, as and for the purposes herein set forth.

4. The combination of the vapor-heated air-flue G surrounding the hot-air duct and furnace-flue C, as and for the purposes herein set forth.

5. The combination of the plate or shield I and the hot-air duct D, as and for the purposes herein set forth.

138,517.—*Condenser and Refiner for Spirituous Liquors.*—WILLIAM NEIL, San Francisco, Cal. Application filed April 7, 1873.

After the vapors have been running for a short time through the vessel having perforated partitions, the lower part of each chamber will be filled with the products of condensation, through which the succeeding vapor will have to pass. From the lower part of said chambers overflow-pipes conduct the several grades of condensation to a second partitioned chamber, from which they can be drawn or returned to the still, as desired.

Claim.—1. The vessel A, with its perforated partitions E and F, for directing and condensing the vapors, and forming chambers for holding the condensed products together with its inclosing water-jacket B, substantially as herein described.

2. In combination with the divided vessel A, the discharge-pipes G, H, and I, and the vessel J with its partitions K gradually increasing in height from first to last, substantially as and for the purpose herein described.

3. In combination with the refiner as herein shown, the peculiar discharge vessel or pipe N, having perforated floors, substantially as and for the purpose herein described.

138,518.—*Mode of Constructing Wooden Pulley-Wheels.*—AUGUSTUS NEWELL, Erie, Pa. Application filed March 5, 1873.

Claim.—A wooden pulley-wheel, constructed of quadrant-like segments A A A, &c., and arc-like segments B B B and *b b b*, &c., arranged and attached together, substantially as and for the purposes herein named.

138,519.—*Apparatus for Making Paste.*—GEORGE G. NOAH, Charlestown, Mass. Application filed October 31, 1872.

Steam or hot water is admitted to the jacket to cook the paste, and to the inner tub by means of the induct when required to moisten the mass or for other purposes.

Claim.—The paste-cooking machine, substantially as described, consisting of the agitator C, the vessels or tubs *a b* with the closed space *e* between them, and provided with the induct N and valve P, or such and the faucet *h*, all arranged in manner as represented, and to operate as and for the purpose set forth.

138,520.—*Joint for Sheathing.*—NELSON G. NORTHUP, St. Paul, Minn. Application filed March 29, 1873.

Claim.—1. An upright sheathing, formed of the grooved and rabbeted board A and the tongued board B, when the rabbets lap upon the board B, all substantially as described.

2. A tongue and groove for joining boards made flat on the inner and beveled or rounded on the outer side, substantially as and for the purpose set forth.

138,521.—*Governor for Steam-Engines.*—WILLIAM OED, Brooklyn, Ohio. Application filed December 27, 1872.

A valve and shell with triangular openings are operated by a toothed belt and wheel to prevent slipping of the belt. The wheel is arranged on a horizontal shaft, having a bevel-wheel on its inner end, and gearing into another on a vertical shaft, upon the upper end of which is a wide-faced pinion, which meshes into a gear-wheel on the governor-valve stem, and regulating the admission of steam by the rise and fall of the valve.

Claim.—The combination in a governor of the valve C, shell B, triangular ports *b c*, with the gearing F G, constructed in such relative proportion as described, and the toothed belt D and wheel E, all arranged and operating as and for the purposes set forth.

138,522.—*Speed-Regulator.*—GEORGE W. PARKER, Gardner, Mass. Application filed April 10, 1872.

A concavity formed in the center of a movable, rotary convex disk or pulley, whereby the motion of the machinery may be regulated or stopped.

Claim.—1. In a speed-regulator, a disk or pulley having a concavity in its center for stopping the motion of machinery, substantially as described.

2. A convex disk or pulley having a concavity in its center, and arranged to reverse the motion of the mechanism to which it is applied, substantially as described.

138,523.—*Metallurgic Furnace.*—GEORGE PERRY and JOB WEBB, Chicago, Ill. Application filed March 11, 1873.

The fire-place communicates with the body of the furnace by means of a return-flue, in which blasts of air are mingled with

the gases from the fire-place, so that complete combustion takes place in the body of the furnace.

Claim.—1. The combination, substantially as described, of a return-flue, K, and blast-pipes communicating therewith, with the body A and fire-place B of a furnace.

2. The combination of the bridge *g* and arch *f* with the bridge-walls *d* and *e*, and walls *d'* and *e'*, the whole being arranged, substantially as described, so as to form a continuous return-flue, K, communicating with the fire-place and body of the furnace.

138,524.—*Water-Indicator for Steam-Boilers.*—ALBERT P. PITKIN, Hartford, Conn. Application filed January 20, 1873.

The arrangement of the passage in pet-cock in line with that of the plug-valve permits the chamber and passages to be readily cleaned.

Claim.—The valve A, cock C, in combination with tube-holder B and passage *m*, substantially as and for the purpose set forth.

138,525.—*Manufacture of Buttons.*—CLARK M. PLATT, Waterbury, Conn. Application filed February 12, 1873.

The button is made of one piece of metal. The upper edge is flanged and folded inward, and the lower end has a bar across to hold the thread.

Claim.—As a new article of manufacture, a button made from a single piece of metal with the edge folded over, and with a cross-bar formed in the base of the hub, as described.

138,526.—*Harvester-Dropper.*—WILLIAM J. PLECKER, Bushnell, Ill. Application filed August 26, 1872.

An apron is raised from the finger-bar to serve as a cut off for the grain, while the dropper is carried to one side to deliver the gavel which has been received thereon.

Claim.—1. The combination of apron L, roller M, crank N'', rod R, cam and spring plates E and F, and disk D, substantially as and for the purposes described.

2. The combination of apron L'', roller M'', crank N, rod V, pinion U, and segment T, substantially as and for the purposes described.

3. In combination with the elements recited in the preceding claims, the platform G, arms H and H'', and universal joints K K, substantially as and for the purpose described.

138,527.—*Gate for Railway Crossings.*—JOHN B. POWELL, Philadelphia, Pa., assignor of one-half his right to EDGAR P. MICHENER, same place. Application filed September 30, 1872.

The gate, composed of jointed levers, is advanced and retracted by means of a rack and pinion. The free end is borne upon rollers. Vertical rods descend from the upper joints through eyes in the lower joints, which serve to support the gate when extended. A series of vertical rods, H, are also attached to the joints of toggle-levers, and extend through eyes on the middle joints, and serve the same purpose as rods F. The rods H and F are placed on opposite sides of the gate to give a broader base.

Claim.—1. In combination with the gate A, constructed of jointed bars A' operating after the manner of lazy-tongs, the rack-bar C and operating-pinion D, applied and adapted substantially as and for the purpose set forth.

2. The rods F, combined and operating with the jointed bars A', substantially in the manner and for the purpose specified.

3. The rods H and toggle-levers J, combined and operating with the jointed bars A', substantially as and for the purpose set forth.

4. The combination, with the gate A, of the rods F on one side thereof, and the rods H and toggle-levers J on the other side thereof, and operating together, as set forth.

138,528.—*Combined Watch-Key and Screw-Driver.*—GEORGE P. REED and HENRY B. DAY, Malden, Mass. Application filed November 16, 1872.

Within the tubular handle of a watch-key a stem or rod, forming at one end a tooth-pick and at the other a watch-screw driver, is concealed, and held by double springs. Either end of the rod may be protruded, and so held by a pin projecting through a slot in the case.

Claim.—A combined watch-key, screw-driver, and tooth-pick, formed by the combination of the case A, key B, plunger D carrying at one end the screw-driver and at the other end the tooth-pick, and springs *c* and *d*, the plunger carrying a stud, *h*, arranged to move in slots in the case A, and the whole being constructed and arranged for operation as set forth.

138,529.—*Spring Bed-Bottom.*—SAMUEL H. REEVES, New York, N. Y. Application filed February 20, 1873.

An upper and a lower surrounding-frame inclose spiral springs. The springs are fastened together at one end by loops or links, and at the other by cross-bands. At each end the springs are secured to the frames by clasps.

Claim.—The metallic spring bed-bottom or mattress, consisting of the upper surrounding-frame A, the lower surrounding-frame B, and the inclosed spiral or hour-glass springs C, the latter fastened together at one end by the loop-fastening D, and at the other end by the cross-bands E E, and both ends being secured to the said surrounding-frames, substantially as herein specified.

138,530.—*Harness.*—GEORGE RENTON, Boston, assignor to CHARLES H. ISBURGH, Melrose, Mass. Application filed March 14, 1873.

Claim.—The device shown and described, and consisting of the parts *d d' d'' d''' d''''*, constructed, arranged, and operating substantially as and for the purposes herein before set forth.

138,531.—*Barrel-Heater.*—ALSON E. SALISBURY and SAMUEL S. STEEL, Martin, Ohio. Application filed December 23, 1872.

The heater is a cylinder situated between the stove and chimney. It has a central vertical partition extending nearly to the top. As the products of combustion pass through they impinge upon the entire interior surface.

Claim.—The cylinder A, provided with the central division *a*, base B, pipes E D, stove C, and chimney F, the several parts being constructed and arranged as and for the purpose specified.

138,532.—*Ship's Lantern.*—HERBERT SAUNDERS, South Kingston, R. I. Application filed March 18, 1873.

The vertically-adjustable perforated tube is held in place by the action of a bent spring.

Claim.—The inner perforated cap F, in combination with the outer perforated cap D and spring G, substantially as and for the purpose hereinbefore set forth.

138,533.—*Cider-Mill.*—MARCUS P. SCHENCK, Fulton, N. Y. Application filed October 17, 1872.

Two feed and a crushing rollers geared together, combined with a chamber for catching stones.

Claim.—1. The feed-rollers C C, in combination with the grinding-cylinder D, hinged concave E, and separately-adjustable floor G, all arranged to operate in manner substantially as and for the purposes specified.

2. The stone-catching box I, combined with the grinding-cylinder D, as and for the purpose set forth.

3. The combination of gearing J K L L with the cylinder D and feed-rollers C C, as set forth.

138,534.—*Bottle-Filling Apparatus.*—FREDERICK SCHLICH and ADRIAN FETH, New York, N. Y. Application filed July 11, 1872.

The bottles are placed in a frame made of strips of metal bent up to form the sides, and riveted to a strip forming the rim. To prevent the bottles floating when first inserted in the liquid a wire frame is placed over them in such position that, as the handles of the frame are grasped by the hands of the operator, the thumbs can be placed upon the frame, which rests upon the necks of the bottles.

Claim.—A bottle-filling apparatus, consisting of a frame or stand for holding the bottles, combined with a movable wire frame for keeping the bottles in place and handles for lifting the stand, located so that the operator can simultaneously hold down the frame *i*, as set forth.

138,535.—*Car-Brake.*—JAMES SHANNON, Cohoes, N. Y. Application filed February 28, 1873.

Beneath the frame of the truck is arranged a shaft carrying a bevel-spur gear upon one end and a worm-gear upon the other end. When the spur-gear wheel is thrown into gear with a spur-wheel attached to the axle, the worm-gear engages with a gear-wheel which is secured to the brake-shaft and revolves the latter, thereby winding up the brake-chain very tightly.

Claim.—1. The shaft D, pinion G, and worm H, in combination with the wheel C, (attached to the axle *b*,) worm-wheel J, and shaft I, when constructed substantially as herein described, to operate the brake-blocks K K, as and for the purpose specified.

2. The combination of the shaft P, having the cross-bar Q and rods R R, with the shaft D, having the cross-bar *d*, as and for the purpose specified.

3. The check-plate S and spring-bolt T, or their equivalents, in combination with the shaft D, as and for the purpose specified.

138,536.—*Harvester Attachment for Dumping and Shocking Sheaves.*—WILLIAM A. SHARP and CHARLES L. MCCLUNG, Tama City, Iowa. Application filed October 28, 1872.

A conical receiver is mounted upon a shaft supported on the rear of the binder's platform. The sheaves are placed therein with heads downward, and, when filled, the receiver is turned by means of a crank, and the sheaves deposited in a compact form upon the ground.

Claim.—The hopper D, shaft E, bearing F, standard G, crank *e*, and handle *f*, in combination with the binder's platform A, substantially as and for the purpose herein before set forth.

138,537.—*Seat for Vehicles.*—ALFRED B. SHEAFFER, New Holland, Pa. Application filed November 12, 1872.

The front seat can be thrown both forward and backward. The hind seat can be thrown forward over the front seat, and both seats can be taken off without removing the sill-fastenings.

Claim.—1. The sill-plates A, sliding or hinged clamp-plates B, slotted and wedge-shaped heads *b* held together by a binding-screw, D, in combination with the hinged seat-supports F, all combined and constructed substantially in the manner specified.

2. The double-acting lever O with its spring S, in combination with the connections P, adjusting-screw Q, and sliding case R with its prop I and fixed guide-bolt T, all combined and to operate substantially in the manner and for the purpose set forth.

138,538.—*Toilet-Stand.*—DANIEL SHERWOOD, Lowell, Mass., assignor to E. P. WOODS, DANIEL SHERWOOD, and C. H. LATHAM, same place. Application filed January 6, 1873.

The stand is made of wound wire bent into the required form, and the hoop or frame is provided with a glass or other receptacle. The upright support or hanger is for suspending articles.

Claim.—As a new and improved article of manufacture, a stand or holder made of wound wire, constructed substantially in the manner and for the purposes described and specified.

138,539.—*Excavator.*—AMROY B. SMITH, Denison, Tex. Application filed March 22, 1873.

The earth is thrown into one end of the revolving cylinder by the excavator-plow, and is carried to the other end by the internal screw. It is passed out periodically by means of the lever and clutch, by which the head is operated.

Claim.—1. The combination of the cylinder A, provided with a suitable screw, S, with the plow H I and frame B C E F D, as and for the purpose set forth.

2. The combination of the cylinder A, constructed as set forth, with the plow H I, the plate *b*, clutch-cylinder L M, clutch attachments N X O, and lever P, as and for the purpose specified.

138,540.—*Belt-Lacing Needle.*—JOHN W. SMITH, Bryan, Ohio. Application filed March 15, 1873.

The needle is made of three flat pieces of metal secured together, the center one being the shortest, thus forming an open eye. One of the outside pieces has barbs or flukes, over which one end of the strap is secured, and the other outside piece acts as a spring to hold the strap in the slot or eye.

Claim.—The combination of the bars A A^1, spring-bar A^2, and barbs *a*, substantially as and for the purpose set forth.

138,541.—*Scoop for Raising Sunken Coal.*—ROBERT STILES, Cincinnati, Ohio. Application filed April 2, 1873.

Claim.—The chain-sack E, in combination with the metal scoop-frame A, serrated edge *a a*, bail B, socket C, and handle D, constructed and arranged to operate as and for the purpose set forth.

138,542.—*Combined Shears and Button-Hole Cutter.*—ALFRED SWINGLE, San Francisco, Cal. Application filed December 23, 1872.

The blades are stamped out of sheet metal, and the eyes or bows are then strengthened by swaging a layer of sheet-silver, or some other metal, around them. The portion of the cutting blades which is nearest the pivot has a different angle from the other portion of the main blades, so as to provide a suitable point for cutting whalebone without dulling the blades proper. A button-hole cutter is formed between the bows and the fulcrum-pivot. One of the blades and also a gage are both adjusted by the same set-screw.

Claim.—1. As a new article of manufacture, scissors or shears, the two parts of which are stamped out of sheet metal, and the rings of which are finished and thickened by a partially-surrounding thickness of sheet metal, substantially as above described.

2. The permanent blade *d*, in combination with the attached movable blade *g* and slotted gage-plate K, both adjusted by the same screw, substantially as and for the purpose above described.

3. Providing the cutting-blades of scissors or shears with a short portion, *e*, next to the pivot, which has a slightly-opposite angle from the outer portion of the blades, substantially as and for the purpose described.

138,543.—*Range for Cooking and Heating.*—STEPHEN TRETS, New York, N. Y. Application filed January 23, 1873.

There are numerous tubes or flues extending up from the fire-pot to carry off the products of combustion. All the parts of the range are arranged to secure perfect combustion and the full advantage of the heat.

Claim.—An elevated-oven heater-range in which the series of heating-tubes *a* occupying the entire length of the range, opening above and at the rear of the fire-pot D, and without being deflected downward extending to and opening into the oven-chamber B, the air-heating flue A occupying the entire length of the range, opening at the bottom around the entire rear and side surfaces of the fire-pot D, inclosing the heating-tubes *a*, and passing upward at the rear end only of the oven-chamber B, together with the oven-chamber B, the oven C, one or more, the smoke-pipe E, and the hot-air pipe F, are all combined and operated substantially as specified.

138,544.—*Tilting Chair.*—EDWIN N. TUTTLE, Fitchburg, Mass. Application filed February 12, 1873.

The seat-frame and the lower or pedestal frame or bar are connected by a pivot near the rear ends, and one or more U-shaped springs are arranged near said pivoted connection, which keep the front of the seat down upon the bearing of the lower frame or bar.

Claim.—The pivoted bars A and D, in combination with one or more U-shaped springs, *h*, for the purpose specified, all constructed substantially as described.

138,545.—*Brush-Machine.*—EDWIN D. VAN HORN and CHESTER N. FARR, Philadelphia, Pa. Application filed March 14, 1873.

Above the operating mechanism is a reservoir, into which is placed a quantity of bristles, resting on a movable bottom. A needle-shaped separator enters the mass of bristles and separates from the lower part the required quantity for a tuft. The portion thus separated is seized by a pair of nippers, which, as they advance toward the front of the machine, push back the movable spring-bottom of the reservoir and deposit the bristles on a bed in advance of a carrier, which advances, pushing the bunch of bristles before it, and deposits them on a shuttle, which moves in a direction at right angles to the carrier, and passes the tuft through a loop of wire to its center. The tuft is now above the needle and the hole in the brush-block, a punch descends and strikes the tuft in the center, doubles it up and forces it into the hole in the brush-block, which is brought into a proper position by a feeding-stud. A spring-wiper slips upward over the tuft and straightens up the bristles after the fastening operation is completed.

Claim.—1. The combination with the reservoir A of a sliding bottom, B, acted on by a spring.

2. The said sliding bottom B, rendered vertically adjustable upon the reservoir, for the purpose specified.

3. The combination of the concave or recessed portion *d* of the separator D with the upper jaw of the nippers.

4. The combination of the spring bottom-plate B of the reservoir with the lower jaw of the nippers.

5. The separator D, operated substantially as described through the medium of a projection, *c*, of the nippers.

6. The carrier G, consisting of a series of parallel bars caused to reciprocate simultaneously beneath the reservoir, substantially as and for the purpose described.

7. The jointed ends or plates h of the carrier-bars, adapted to grooves in the bed-plate and operated by shoulders within the said grooves, substantially as herein set forth.

8. The combination, substantially as described, of the nippers E with the carrier G.

9. The combination, substantially as described, of the arm c^3 of the nippers with the inclines *f* of the carrier.

10. The combination of the reservoir A, the carrier G, and the shuttle-race, all arranged, in respect to each other, substantially as described.

11. The shuttle H H', constructed in two separate sections, substantially as and for the purpose described.

12. The combination of the shuttle, its race, and the jointed ends h of the carrier, all arranged and operating, substantially as described, to prevent the escape or disarrangement of the bristles during their transfer from the said carrier to the shuttle.

13. The section H' of the shuttle, constructed substantially as described, with a nose, *k'*, and a hinged portion, *k*, acted on by a spring.

14. The combination of the sliding bar R with the hinged portion *k* of the shuttle.

15. The combination of the cam-like projection A with the said hinged portion of the shuttle.

16. The combination and arrangement, in respect to each other and the shuttle, of the sliding bar R and cam projection *n*.

17. The combination, substantially as described, of the punch J and needle I with the divided shuttle.

18. The punch J and needle I, arranged in respect to and operating in conjunction with each other upon the bunch of bristles, substantially as described.

19. The wiper L, constructed and operating substantially as described.

20. The feeding device, consisting of the yielding stud K and bar *k'*, in combination with a cam on the driving-shaft or equivalent operating mechanism.

21. The shuttle-driver Q, adapted to the exterior of the shuttle-race, connected to the two sections of the shuttle through a slot in the said race, and operated as described by a lever, *m'*, through the medium of a link, *m*.

22. The take-up lever S, arranged and operating in combination with the needle I, substantially as specified.

138,546.—*Organ-Lever Coupling for Hydraulic Motors.*—HENRY F. WHEELER, Boston, Mass. Application filed July 3, 1872.

The piston-rod of the motor, which is designed for operating the bellows of an organ, is made in two parts, connected together by a coupling-box, there being in the box a rubber cushion between the two parts of the piston-rod, and another cushion made as a ring, through which one part of the rod passes, so that as the piston starts on its upstroke to lift the bellows-lever the first force is exerted against and compresses one of the cushions, while, when the piston starts down to draw the bellows-lever, the first or immediate strain is upon the other cushion, so that in each case the force is applied gradually to the lever without jar. The piston-rod carries an arm, which, in moving up or down, strikes a projection on the valve-rod to shift the valve. In connection with the sliding valve-rod there is employed a stationary rod provided with stops and springs. When the piston-arm strikes the valve-rod stop the piston can have a continued movement, the arm striking also the spring on the stationary arm, and permitting the piston to move on cushions by the spring until the movement of the valve is completed.

Claim.—1. In combination with the motor-cylinder and its piston-rod, the coupling-box *f* and its cushions or springs *h i*, substantially as shown and described.

2. In combination with the cylinder *a*, piston-rod *b*, valve-rod *c*, and stops *m n*, the stationary rod *o* with its stops *p q* and springs *r s*, substantially as shown and described.

3. In combination with the rod *b*, arms *k l*, and rods *c o*, the adjustable stops *n q*, substantially as shown and described.

138,547.—*Apparatus for Automatic Control of Combustion in Hot-Water and Hot-Air Heating Apparatus.*—JOSEPH C. WIGHTMAN, Newton, and JOHN H. MILLS, Boston, Mass.; said WIGHTMAN assignor, by mesne assignments, to said MILLS. Application filed February 27, 1872.

By means of a flexible diaphragm, operated by a fluid vaporized at a low temperature by heat from another fluid, the draft-damper of a furnace may be controlled.

Claim.—The automatic control of combustion in hot-water and hot-air heating apparatus by the employment of two fluids, as specified, the one to serve as a medium to receive and absorb heat from the furnace and impart it to the other, and the other, more volatile and vaporizable at a low temperature, to operate, at temperatures under 212° Fahrenheit, the draft regulation or damper of the furnace, through the medium of a flexible diaphragm, or its equivalent, and mechanism intermediate between and connecting said diaphragm, or its equivalent, and damper, each fluid being contained within a distinct vessel, and operating substantially as and for the purposes herein shown and set forth.

138,548.—*Combination Tool.*—TURNER WILLIAMS, Providence, R. I. Application filed August 26, 1872.

Interchangeable devices are made adjustable to jaw and lever, so as to provide a wrench, wire-bender, cutting-nippers, pliers, belt-punch, share-blade, or saw-set.

Claim.—The combination of the jaw A and lever B, constructed as described, with the interchangeable devices, constructed and operated as herein described, for the purposes set forth.

138,549.—*Tobacco-Press.*—FRANK J. WITOVEC, St. Louis, Mo., assignor to himself and JAMES G. BUTLER, same place. Application filed February 18, 1873.

Improvement in presses for packing cut tobacco and granular substances in sacks, consisting, first, of the arrangement of a crank operating in a slotted curved cross-head, imparting intermittent reciprocating motion to a plunger, by which the tobacco or other material is pressed in proper molds, a funnel-receiver being used, over which the sack is placed; and, secondly, of the arrangement of a rotary table, by which the molds are successively brought under the plunger, motion being communicated by bevel-gear and shafting-connections with main driving-shaft; also, the manner of affording the table sufficient brace, and likewise arrangement of forked arms to withdraw funnel from sack after pressing the material by the plunger.

Claim.—1. The crank B, its pin *b*, slotted cross-head C, plunger-stem *c*, and extension c^2, in combination with driving-shaft A', as and for the purpose set forth.

2. The combination of the table D, sleeve *d*, circular plate E having ratchets *e*, wiper e^1, shaft E', spur-gears F F', extension shaft G, bevel-gears *g g'*, driving-shaft A', and column A, operating as and for the purpose set forth.

3. The table D having holes *k*, brace I, sleeve-collar d^1, catch-lever J, its pin j^1, bracket j^2, rod j^3, spring j^4, collar j^5, wiper j^6, in combination with shaft E', spur-gears F F', shaft G', bevel-gears *g g'*, main shaft A', and frame A, as and for the purpose specified.

4. The forked-arm attachment consisting of the arm L, adjustable forks M, vibrating beam N, cam-groove pulley *n'*, in combination with driving-shaft A', as and for the purpose set forth.

5. The forked-arm attachment consisting of arm L, adjustable forks M, vibrating beam N, cam-pulley *n'*, side rods O O', adjustable cranks o^2 o^3, top shaft P, bevel-wheels *p p'*, in combination with driving-shaft A' and frame A, as and for the purpose set forth.

138,550.—*Culinary Steamer.*—HENRY WOOTTON and JOHN WOOTTON, Rochester, N. Y. Application filed March 3, 1873.

By means of two apertures in the top of the water-pan, over either of which the valve may be pushed, steam is directed into the cooking-chamber or diversed into the side exit-passage.

Claim.—The combination of the body A, its openings *c* and *g*, the vertical tube *f* with opening *d*, and the sliding valve D and its supports A A, all constructed, arranged, and operating substantially as and for the purpose described.

138,551.—*Door Check and Retainer.*—GEORGE H. WORSTER, Athol, Mass. Application filed March 19, 1873.

A metallic bracket, carrying a rubber-head stop, is cast in one piece, with latch projecting beyond the stop, and interposed between this bracket and the casing is a rubber packing or added spring. The device is combined with any suitable catch on the door or blind, and serves both as a door stop and retainer.

Claim.—The bracket D, cast or otherwise formed in one piece with the latch *b*, and provided with an elastic stop, *c*, in combination with the rubber packing or spring *c* and any suitable catch, E, when arranged, in combination with a door or blind, as herein described, for the purpose specified.

138,552.—*Sawing-Machine.*—JAMES T. BAGGS, Bridgeport, Ohio, assignor of one-fourth his right to ANDREW J. BAGGS, same place. Application filed February 21, 1873.

The saw-table is so arranged that its two sides are independently adjustable, or may be both inclined at any desired angle to the saw.

Claim.—1. The table-bearers I, vibrating arms K, eccentric N, slotted crank E, and link F, or their equivalents, when combined and arranged to produce a compound movement, substantially as and for the purposes herein set forth.

2. The combination of the table-bearers I with the adjustable leaf-bearers G and leaves A B, as and for the purpose specified.

138,553.—*Refrigerator.*—WILLIAM M. BAKER, Fortville, Ind. Application filed March 1, 1873.

Cools the air in such a manner that the same is carried dry, fresh, and cold over the provision therein.

Claim.—1. The air-spaces A between the outer sides of the refrigerator and interior sides of ice-chambers C, divided by cross-pieces *i*, in connection with the air-chambers D, apertures *k* and *l* for the free circulation of the cooled air, substantially as described.

2. The arrangement of one or more air-chambers, D, having inclined sides, for the purposes described.

138,554.—*Sifter, Mixer, and Grinder for Glass-Stock.*—GEORGE B. BARNES and JAMES A. LEASURE, Bellaire, Ohio. Application filed March 22, 1873.

Stock sifted and mixed by sieve, lumps, &c., passing over tail of sieve, ground by the rollers. Dust prevented from rising by cover.

Claim.—1. The combination of the reciprocating inclined screen D and crushing-rolls K L, substantially as specified.

2. The combination of the removable cover C and hopper N with the inclined reciprocating screen and the crushing-rollers, substantially as specified.

138,555.—*Cotton-Cultivator.*—FINIS L. BATES, Bremond, Tex. Application filed February 21, 1873.

Claim.—The spring Q attached at one end to bar G, and connected by a link at the other with the end of hoe-handle, as and for the purpose described.

138,556.—*Machine for Thrashing and Hulling Clover.*—JAMES BRADLEY and JAMES NICHOLAS, Gomer, Ohio. Application filed February 1, 1873.

Pivoted feed-board, automatically agitated, prevents the grain from lodging on the same.

Claim.—The combination of the crank K, connecting-rod L, and crank M with the feed-board J and with the roller N of the straw-carrier, substantially as herein shown and described.

138,557.—*Apparatus for Loading and Unloading Baggage and Freight from Cars.*—ORLANDO C. BROWN, Iberia, Ohio. Application filed November 1, 1872.

A frame hinged upon one end of an ordinary truck, which can be elevated or depressed by means of the lifting-jack.

Claim.—1. The combination of a track, 4, with hinge 14, fastened to frame of lower truck 2 3 7, substantially as and for the purposes hereinbefore set forth.

2. The combination of a lifting-jack, marked 10, 11, and 13, arranged in frame 3, in combination with track 4, substantially as and for the purposes hereinbefore set forth.

3. The combination of a drum-wheel, axle, and handle, 12^2, on end of track 4, substantially as described.

4. The combination of friction-rollers 6 to operate against frame 3, substantially as described.

5. The combination of the double truck with track 4 between them, to operate as described.

138,558.—*Lubricating-Cup.*—THEODORE COOPER, Warwick, R. I. Application filed January 30, 1873.

Claim.—The combination of the regulating and graduating apparatus, consisting of the spring 4, the washer 2, the nut 8, and the index 3 or their equivalents, with a reservoir and a siphon, arranged and operating substantially as shown and described.

138,559.—*Stamp for Cutting Out Figures.*—ERNEST JULIUS FISCHER, Philadelphia, Pa. Application filed November 23, 1872.

Spring-seated arms have the numerals cut in their ends, which engage hollow dies in the bed. A paper-holder, consisting of two spring-plates, is reciprocated transversely in a guide-slot.

Claim.—The improved hand-stamp comprising the platform A, pivoted arms B, having cutting-punches at the ends thereof, springs *a'*, solid plate C having counterpart dies cut therein, base-piece *d*, handle d^2, spring-plate d^3, and holder E, all constructed and arranged substantially as and for the purpose specified.

138,560.—*Carpet-Stretcher.*—JOSEPH S. GREENE and THOMAS D. BRADT, Watertown, N. Y. Application filed March 8, 1873.

The device is constructed with a block, with an angular top in which the handle is inserted. On its bottom are pointed wires to hold it to the carpet, and from the block extends a coiled-wire brace, with hooked points to hold the device to the floor for the carpet to be stretched by the use of the handle.

Claim.—The slotted socket-plate A *a b*, handle B, claw C *f*, and bristle-plate *d*, combined, constructed, and arranged as and for the purpose set forth.

138,561.—*Potato-Digger.*—GEORGE W. HAAG, Cairo, Pa. Application filed February 8, 1873.

A rectangular frame is supported upon a pair of wheels. Within this frame is situated a pair of fingered wheels, the fingers being made in sections and so operated by cams that the sets approach each other as they enter the ground, and thus lift the potatoes and deposit them upon a series of separating-rollers.

Claim.—1. The combination, in a potato-digging machine, of a pair of wheels, O, with radial oscillating prongs R and cams for working them, substantially in the manner described.

2. The combination of said prong-wheel and an elevator or carrier, *y*, substantially as specified.

3. The arrangement of the rims O, bars T, prongs R, arms U, and cams V, substantially as specified.

4. The combination of a series of fluted rollers, A', frame B', cranks C', bars D' and F', and cranks E', substantially as specified.

138,562.—*Hydrant.*—JAMES V. HAYES, Buffalo, N. Y. Application filed February 7, 1873.

To thaw the water when frozen in the hydrant, casts around the latter a jacket. The space thus formed is divided into two compartments by vertical diaphragms, which extend down through the elbow into a circular belt, which form a communication between the two. Steam from the engine is admitted into this space.

Claim.—The combination of the passage B, steam-passages *e* and *e'* divided by diaphragms d *d*, and having the inlet and outlet openings *f* and *g*, substantially as and for the purpose described.

138,563.—*Blast-Governor for Grain-Separators.*—THOMAS HOGE, Washington, D. C. Application filed March 3, 1873.

Over an opening in the air-trunk is placed a box containing a valve or piston, which is actuated by the difference of pressure of the blast and the external air. This valve being suitably connected with a balanced regulating-valve in the air-trunk, automatically adjusts the latter. A weight may be attached to the first-mentioned valve to limit its action as desired.

Claim.—A blast-regulating valve, automatically adjusted by means of another valve or piston suitably connected to it, the latter being actuated by the difference in pressure of the blast and the external air, substantially as and for the purpose described.

138,564.—*Reverberatory Furnace.*—WILLIAM HOYLAND, Newcastle, Pa. Application filed April 5, 1873.

The furnace-plates are constructed so as to be readily removed and replaced in repairing the furnace. The bottom plate

can be withdrawn through a recess formed in the side plate at the side of the opening for the breast-plate. A recess formed in the end plates permits the withdrawal of the end-wall plates. A set of bearers support the bottom plates, the bottom plates being provided with openings, which, in connection with a vertical pipe, draw air through the chills and carry off gases that accumulate under the furnace.

Claim.—1. The combination of the breast-plate P with the plate E, substantially as herein shown and described.

2. The recess e^1, formed in the plate E at the side of the opening for the breast-plate P, to enable the plate N to be withdrawn through said opening, substantially as herein shown and described.

3. The arrangement of the bearers J K L with respect to each other and the plates M N O, substantially as herein shown and described.

4. The recess formed in the end plate G for the end-wall plate Q to be drawn through, substantially as herein shown and described.

5. The combination of the pipe R with the puddling-furnace, substantially as herein shown and described, and for the purpose set forth.

6. The holes *m' o'* in the plates M O, in connection with the pipe R, substantially as herein shown and described, and for the purpose set forth.

138,565.—*Fruit-Gatherer.*—HORACE KELSEY, Ottawa, Kans. Application filed September 28, 1872.

A fruit-gatherer constructed in the form of an inverted umbrella, with ribs supported at their outer ends by uprights. The center is fastened to the tree by means of beveled blocks secured to a strap which passes around the tree somewhat lower than the outer ends, so that when the fruit falls upon the gatherer it rolls toward the center, and passes through a spout into a receptacle.

Claim.—The strap and beveled blocks E F, in combination with the flexible body A provided with the spout G, as and for the purpose specified.

138,566.—*Seal-Lock.*—JACOB KINZER, Pittsburg, Pa., assignor to himself, ROBERT PITCAIRN, DAVID M. WATT, and JOHN J. TORLEY, same place. Application filed March 3, 1873.

A hinged plate is arranged to cover the key-hole, and is held down by means of a slotted metallic seal, which must be broken before access can be had to the key-hole. A shank having a T-shaped head that passes through the slot in the seal and then partially rotated serves to hold the seal. The seal is provided with lips near its edge which lap over the edge of the lock-case and prevent its rotation. A spring locking-dog, when in the locked position, bears against an arm attached to the inner end of the T-headed shank and prevents it from being rotated. This arm also serves to hold the spring-dog in the unlocked position when the lock is open.

Claim.—1. The shank *d* having an arm, d^1, and a T-head, d^2, in combination with the swinging dog of a lock, and suitably arranged for holding the dog in an unlocked position when unsealed, and retaining, after locking and sealing, a metallic seal placed thereon, substantially as set forth.

2. A metallic seal, *r*, having an oblong slot, r^1, over which the T-head d^2 may be turned to secure it in place, and overlapping lips r^2, or other equivalent stop device to prevent its rotation, substantially as and for the purposes described.

3. The hinged lid *n* arranged to cover the key-hole, and also by a central opening, n^1, to expose a shipping-card, *q*, in combination with barbs *p* for holding the card, the non-rotating seal *r*, and T-head d^2, substantially as set forth.

138,567.—*Automatic Fan.*—JACOB LEHNER, Galena, Ill. Application filed March 29, 1873.

A frame, whose base is grooved for the cradle-rockers to rock in, has a rotary fan hung in bearings above the head of the cradle, and supported by an upright attached to the head-board. A cord from the back of the rocking-chair revolves the fan whether the cradle rock or not, which latter is determined by the connecting-rod joining chair and rocker being in or out of gear.

Claim.—1. In combination with a cradle, the casing B having segmental slot *a*, as described.

2. The support C, in connection with casing B and head-screws *b* and *d*, adjustable in the position described, as set forth.

3. The shaft *f*, in connection with pulley F and slotted head-piece D, having set-screws *g* to adjust fan E, as described.

4. The pulley F having button A, connected by string and rubber band with button *i* of rocking-chair and *i'* of support C, to convey the motion of the rocking-chair to the fan.

5. The pulley F, having buttons A connected by leather strings with buttons *l* of standards H, in combination with rod I and buttons K, to fan and rock the cradle, substantially as described.

6. In combination with rocking-chair and cradle, the detachable notched rod I, for the purpose described.

7. The frame G, having grooves for the cradle, wedges *m*, and standards H, combined as set forth.

8. The combination of the various parts mentioned in the foregoing clauses of the claim.

138,568.—*Bung-Bush Inserter.*—LOMAX LITTLEJOHN, New York, N. Y. Application filed April 5, 1873.

An elliptical journal is formed upon the end of the shank, with a split sleeve having elliptical or elongated cavity, so when inserted in the bush and the shank turned the elliptical journal will expand the sleeve, causing it to grasp the bush and screw it into the bung-hole of the stave.

Claim.—The combination of the elliptical journal B, formed upon the end of a shank, A, with the split sleeve E, made with an elliptical or elongated cavity, substantially as herein shown and described, and for the purpose set forth.

138,569.—*Dinner-Pail.*—EMIL C. LUKS, Massillon, Ohio. Application filed April 12, 1873.

An outer pail of wood and an inner pail of metal, with space between them filled with some non-conducting material. Vessels for holding food are placed inside.

Claim.—The combination of the cylinders A and B, connected at their upper ends by the ring C, and the space between them filled with non-conducting packing D, the lid E, with lining *a*, cover G, and interior food-receptacles J J, all constructed and arranged substantially as and for the purposes herein set forth.

138,570.—*Drilling-Machine.*—HENRY MARTIN, Duncan, Pa. Application filed February 21, 1873.

Claim.—The tube A, slotted plate B C, arm E, end-socketed centering-screw F, sliding head-block H, and screws G K L, combined as described, said parts being put together and taken apart, as set forth, so as to make an easily-portable hand-drill.

138,571.—*Extension Table.*—SAMUEL H. MARTIN, Mount Vernon, N. Y. Application filed March 8, 1873.

The transverse slats of the table-top are hinged together, and also connected by metallic chains, and the combined flexible top coils around a flanged octagon shaft arranged near one end of the table. To the under side of the under end of the table is attached a slot-plate, in which rods attached to the ends of the chains slide back and forth.

Claim.—1. An extension table having a flexible top, F, chains G G, octagonal shaft D, and flanges H H, arranged to operate substantially for the purpose described.

2. In combination with the chains G, the slot-plate J, as shown and described.

138,572.—*Horse Hay-Fork.*—DE WITT C. MCDONALD, Rushford, N. Y. Application filed March 22, 1873.

A hoisting lever or bail is pivoted to the sides of a scoop-shaped fork, the tines of which are braced in a horizontal position for hoisting, and allowed to drop to a vertical position for discharging.

Claim.—A horse hay-fork formed of the tines A, (two or three,) the rigid shank B, the pivoted draft-bar C provided with the notch *c'*, the pivoted brace-bar E, the trip-lever F pivoted to brace-bar, the chain G, and the trip-coord H, constructed and arranged to operate in connection with each other, substantially as herein described.

138,573.—*Picket-Fence.*—WILLIAM MOST, Greenville, N. J. Application filed August 12, 1872.

The rails are mortised endwise into the sides of the posts. An iron bar secured to the edge of the rail passes through the post. Where a gate occurs this bar is bent back on itself and its end secured to the post, and in like manner with the gate itself, so that vertical holes being drilled into the loops of the bars a rod is passed through them to form the hinge.

Claim.—1. The means, substantially as shown and described, for securing sections of a fence to each other and to the posts C, viz., the combination of the bars F, recesses *a*, plate G, and pickets E inserted in the holes and sockets *b c*.

2. The gate-hinges, formed by bending one end of the connecting and bracing plates H H, respectively, into the form shown at *d e*, in combination with the bolts I, substantially as shown and described.

138,574.—*Can-Filler.*—ROBERT NEWTON, Millville, N. J. Application filed April 5, 1873.

Below the hopper is a vertically-movable rest for the can connecting with the lever working the plunger. When the plunger begins to act the can is raised up to the nozzle to discharge the tomatoes into it. A self-closing valve is arranged in the hopper to prevent the escape of tomatoes during the changing of the cans, the waste passing through a grating over which the filled cans are passed along in being delivered from the machine.

Claim.—1. The hopper C, chamber G', valve E, collar P, lifter R, and an actuating-lever combined and arranged for filling cans with tomatoes, substantially as specified.

2. The receptacle Y, chute U, and slotted table H, combined with the can-filling apparatus described in the foregoing claim, substantially as specified.

138,575.—*Tooth for Cotton-Gin Saws.*—THOMAS B. OGLESBY, Hempstead, Tex. Application filed August 13, 1870.

The teeth are square in the rear and on the same plane with the sides of the saw-plate; in front beveled on both sides, with a central plain surface—that is, having three surfaces in front.

Claim.—A tooth for cotton-gin saws, having the front beveled on the sides *a a*, and flattened on the center *b*, as and for the purpose specified.

138,576.—*Wash-Boiler.*—JOHN R. PENDELL, Dryden, N. Y. Application filed March 6, 1873.

The boiler has a perforated tube in the center, with a perforated false bottom. A pan fits into the top of the boiler, having a tube in the bottom that sets in the tube of the boiler, and has a graduated faucet connected with it. The pan has guards to protect the hands from the steam in lifting the pan from the boiler.

Claim.—1. The combined arrangement and construction of the steamer *e*, lower pan *c*, tube *d*, upper pan *f* with beveled sides, the graduated faucet or tubular aperture *i*, and guards A, substantially as and for the purpose set forth.

2. The upper pan *f*, combined and arranged as described, with guards A and double tubular faucet *i*, graduated as described, all as set forth.

138,577.—*Loading Railroad Flat Cars.*—GEORGE W. PENNISTON, North Vernon, Ind. Application filed September 5, 1872.

The manner of binding bales upon a flat car. Dispenses with stakes and uses refuse hoops.

Claim.—The mode of fastening or securing bales of hay or other materials to cars by means of flexible hoops secured to the car and passing around the bale, substantially as described.

138,578.—*Traction-Wheel.*—CHARLES H. PERKINS, Providence R. I. Application filed February 20, 1873.

Flat tread-blocks are so arranged, in combination with a solid wheel, as to give great amount of traction.

Claim.—1. The sectional wheel-track for traction-engines, &c., in which the several sections are combined with the wheel W, as described, and by the rotation of the wheel laid tangentially in front of the same for a track, and afterward taken up in the rear and carried forward over the wheel to be laid in front of it again, substantially as set forth.

2. In a traction-wheel, the cogs or projections *n* interposed between the surfaces of the wheel and track, substantially as shown and described.

3. In a traction-wheel, the tie or bridge H, in combination with the sectional wheel-track, substantially as shown and specified.

138,579.—*Window.*—JOSHUA PERKINS, Danielsonville, Conn. Application filed October 19, 1872.

Claim.—A window-pane consisting of two parts, A B; one or both arranged in guide-ways to open and close, and provided with a thumb-piece for actuating them, substantially as specified.

138,580.—*Self-Closing Stop-Cock.*—JAMES PIGOT, Brooklyn, N. Y. Application filed April 5, 1873.

Two springs are connected at one end with the plug of the faucet, the one arranged to hold it to the valve-seat by means of a rod, upon which the spring works; the other arranged to close the faucet, and working against an arm attached to the movable handle.

Claim.—1. The combination of the arm F, spring E, and rod C, with the plug of a stop-cock, substantially as specified.

2. The combination of the presser-bar H, spring J, and nut K, with the plug of a stop-cock, substantially as specified.

3. The arrangement of the bar B, rod C, spring E, arm F, rod H, spring J, and nut K, with a stop-cock, substantially as specified.

138,581.—*Safety-Guard for Pocket-Books.*—THADDEUS POTTER, Jackson, Miss. Application filed March 29, 1873.

By moving the slide the hooks are made to protrude from openings in the book and pierce the lining of the pocket.

Claim.—The combination of hooks A, bar C, arm E, rod F, and slide I, with a pocket-book, substantially as described.

138,582.—*Bedstead.*—D. CHRISTIAN RAUB, St. Louis, Mo. Application filed September 13, 1872.

The corner posts are tubular and in three pieces. The side and end rails and braces are tubular, and enter the center piece of the corner posts and are held by nuts. The side rails are braced by rods running from their center to the foot of the posts. The cord runs longitudinally over pulleys, and its tension is regulated by a ratchet-wheel and pawl.

Claim.—1. A bedstead, Z, constructed of the tubular side pieces B B' C C', the tubular cross-pieces D D' E E', the posts A A A A, the rods *d*, the nuts *e*, and the braces F, substantially as and for the purpose hereinbefore set forth.

2. The bedstead Z, in combination with the pulleys G, the rope I, the pulleys L and O, ratchet-wheels T T, ratchets U U, the shaft P, and crank V, substantially as and for the purpose hereinbefore set forth.

138,583.—*Cotton-Press.*—WILLIAM H. REYNOLDS, New Orleans, La. Application filed February 25, 1873.

Claim.—1. The combination of two or more outriggers, as described, upon a revolving press-box with their central parts embracing said box, and attached to the vertical rods and supporting the press-box, substantially as described, for the purposes set forth.

2. The combination and arrangement, upon a revolving press-box, of the outriggers M M and eyebolt-hinges P P mounted upon the upswinging doors H, the whole arranged and operating in connection with hooks N N to control the doors in a horizontal position, substantially as described, and for the purposes set forth.

3. The combination and arrangement, with a revolving press-box frame, of the automatic lubricating devices, all constructed substantially as described, for the purposes set forth.

138,584.—*Machine for Cutting Box-Stuff.*—CHARLES W. ROYSE, Rindge, N. H. Application filed December 14, 1872.

Rim-stuff for round and oval boxes is shaved from a block and beveled at each end for the lap.

Claim.—1. The combination, with an ordinary block-holder, B C, of the reciprocating shave-cutter F and the taperer H arranged on same slide, and operated as and for the purpose described.

2. The combination, with a carriage, K, and tool-holder I, provided with lug L, of the guide-channel M N N, constructed and arranged as described, to regulate the movement of the tapering cutter, as set forth.

3. The combination, with the cutter H, of the plate Q, constructed and arranged substantially as and for the purpose set forth.

138,585.—*Desk.*—GOTTHARD SCHAFF and JOHN A. SCHAFF, Chicago, Ill. Application filed April 8, 1873.

At the rear of the drawers and sliding top is arranged a vertical iron rod, having a number of catches extending outward from its front side for locking said drawers and sliding top, and which is balanced upon one end of a small tilting lever, the lever having upon its other end a small upright rod, upon the top of which the cylinder-cover rests when thrown back, and thus tilts the lever up so as to raise the catches and release both the sliding top and the drawers.

Claim.—The lever *i*, rod *l* provided with suitable catches, and rod 3, in combination with a suitable cover, *c*, for operating them, substantially as set forth.

138,586.—*Wash-Boiler.*—FRANZ J. SCHIRMAYER, Milwaukee, Wis. Application filed April 5, 1873.

The wash-boiler is constructed with valves on the bottom of the washing device, and are connected for closing and opening by a rod and crank attached to the bottom of the boiler. The rod passes up through the water-passages and a funnel-shaped opening at the top outside and above it.

Claim.—1. The wire rods *b* having lugs *c* and rings *d*, in connection with levers E pivoted to arms *b*, and bottom hinges *i*, operating as and for the purpose described.

2. The hot-water passages D, extending to the top of boiler, having funnels *a* and bottom projections *m'*, in connection with the straight sides of cover F, as set forth.

3. The false bottom B having apertures *l*, with pivoted wing-pieces G and stripe F, substantially as described.

4. The combination of the parts of the foregoing clauses with boiler A, substantially as and for the purposes described.

138,587.—*Apparatus for Making Confectionery.*—WILLIAM H. SEIDENSTRICKER, Hagerstown, Md. Application filed November 21, 1872.

The table on which the batch of candy is worked into sticks is provided with a steam-chamber, whereby the condition of the batch is regulated and prevented from becoming sticky or brittle.

Claim.—The combination of the boiler A, connecting steam or hot-air pipes G and J J, and steam-chamber K, when constructed and arranged as herein described, and for the purposes set forth.

138,588.—*Furnace for Steam-Boilers.*—CHARLES D. SMITH, Chicago, Ill. Application filed March 11, 1873.

The metallic lining, arranged at an angle with the boiler, reflects and assists in radiating the heat. The combustion of the gases is induced by currents of heated air introduced about the center of the combustion-chamber through tubes provided with registers to regulate the amount of air admitted.

Claim.—1. A regulator or register for governing the amount of air necessary to be admitted into the flue, ash-pit, or combustion-chamber to insure good combustion of fuel, gas, and smoke, in combination with pipes or tubes, substantially as described.

2. The metallic lining of a furnace, ash-pit, or combustion-chamber, in combination with pipes for the admission of air between lining and boiler, constructed and arranged substantially as shown and described.

3. A metal lining resting directly upon the masonry of a boiler-furnace, ash-pit, or combustion-chamber beneath the boiler, arranged and constructed substantially as shown and described.

138,589.—*Bed-Spring.*—F. ROLLIN SMITH, Bennington, Vt. Application filed March 29, 1873.

The end of the V-shaped spring is cut so as to form a tongue, which is bent up and presses against a slot in the slat. Each side of the tongue the spring is bent down to form a seat for the slat.

Claim.—As an improved article of manufacture the spring A, having a seat, *a*, for the slat to rest on, and one or more tongues, *d*, for holding on the seat, all formed of the end of the spring, substantially as specified.

138,590.—*Gymnastic Apparatus.*—JOHN SMITH, Philadelphia, Pa. Application filed February 10, 1872.

A convenient arrangement for lifting is made so as to have all the parts within the control of the gymnast.

Claim.—1. The bent lever F, hook E, and coiled spring G, in combination with the lifting-rod H and tube B, through which said rod passes, substantially as herein shown and described, and for the purposes set forth.

2. The hook A^3, formed upon the end of the hook A^1 of the rod H, and the slot or groove i^1, formed in the shank of the handle I at the upper side of the hook-hole through said shank, substantially as herein shown and described, and for the purpose set forth.

3. The combination of the handle I i^1 i^2, hooked rod H A^1 A^2, lever F, hook E, coiled spring G, and tube B, provided with gudgeons C, with each other and with the cross-bar A, substantially as herein shown and described, and for the purpose set forth.

138,591.—*Plane.*—J. CEVILLE SPENCER, Phelps, N. Y., assignor to himself and FRANCIS X. GERVIS, same place. Application filed March 1, 1873.

The plate for closing the throat of the plane is regulated by a key-rod, fulcrum-lever, and thumb-screw.

Claim.—1. The combination of the bolt F, hand-nut G, and fulcrum-collar H with the plane-stock A and adjustable plate D, substantially as herein shown and described.

2. The combination of the perforated and notched stationary plate I, toe *f'*, and forked lever J with the plane-stock A, adjustable plate D, bolt F, and nut G, substantially as herein shown and described.

138,592.—*Wood-Screw.*—JAMES K. STOCKTON, New York, N. Y. Application filed April 12, 1873.

A triple-threaded screw with conical point, each thread being triangular in section, the lower side being perpendicular to the core and the upper side slanting downward.

Claim.—The hammer-driving screw A, having triple triangular threads, slanting and rectangular to the core, with conical point, substantially as and for the purpose described.

138,593.—*Wind-Wheel Power.*—ISAAC STRAUB, Kenton county, Ky. Application filed March 14, 1873.

Two or more wind-wheels arranged upon independent towers, and connected by gearing to vertical shafts extending downward, and connected to a driving or power-transmitting shaft common to all, any one of which may be detached from the common shaft without interfering with the others by clutch-couplings.

Claim.—In combination with a series of wind-wheels, arranged upon independent towers, and a driving or power-transmitting shaft common to all the wind-wheels, connecting and disconnecting mechanism whereby any one of the series may be attached to or detached from the common shaft without interfering with the others, substantially as described.

138,594.—*Cistern-Strainer.*—NICHOLAS G. THOMAS, Ringgold, Tenn. Application filed March 13, 1871.

The rod to which the diaphragms are attached bears against the cover, thus preventing their being forced out of their proper position by the action of the water. The rod also affords a convenient means for withdrawing the filter proper from the case upon removal of the cover.

Claim.—The combination of the diaphragms B D, lugs *b b*, stem C, cover X, hooks *n n*, and catches *l l*, with the case A, as and for the purpose specified.

138,595.—*Shirt Button and Stud.*—JONATHAN T. THORNTON, Providence, R. I. Application filed October 7, 1872.

The button is constructed with two arms, one of which is double, and is combined with a disk which revolves in a flange on the under side of the face-plate. The other arm is pivoted to the double one, and has a lock or projection which renders the button attachable or detachable when it is brought to a slot made in the flange.

Claim.—The swivel *a*, in connection with arm C and in combination with the double arm B and front plate A, substantially as herein described, and for the purpose specified.

138,596.—*Cotton-Chopper.*—WILLIAM C. TILTON, Spring Place, Ga., assignor to himself and HENRY DIETON AND SON, Philadelphia, Pa. Application filed November 19, 1870.

A revolving shaft provided with a series of adjustable chopping-blades and suspended on a frame.

Claim.—The combination of the driving-wheels d^3, bands or chains *f*, the revolving adjustable cutters, and adjusting-lever H, substantially as described.

138,597.—*Washing-Machine.*—ABRAHAM VAN ALLEN, Freeport, Ill. Application filed January 28, 1873.

A washing-machine constructed with a series of conical rolls covering the entire surface of the bottom, their outer ends attached or pivoted to a hoop and the inner to the center, in which journal for the driving upright shaft is connected with a rubber having corrugations forming triangles radiating from its center.

Claim.—The washing-machine, constructed substantially as described, having for its lower disk or rubber the stationary system of revolving conical rollers *a a a*, the hoop *b* or its equivalent, the center block *c* with its center upright shaft or journal, and their necessary connections, all substantially as described, and for the purpose set forth.

138,598.—*Wagon-Seat.*—JESSE WINECOFF, Lavansville, Pa. Application filed March 3, 1873.

The seat is supported by pulleys upon swinging rods.

Claim.—The curved rods 1 1, the seat-carriers with pulleys 2 2 2 2, and the pivoted coupler 3, in combination with the slatted seat 4 4, substantially as set forth.

138,599.—*Crow and Tamping Bar.*—ALLEN WRIGHT and ALVIN F. TAW, Westfield, N. Y. Application filed November 16, 1872.

The bar is hollow and screw-threaded at the point of attachment for the tool. The objects of the hollow handle are lightness, larger circumference for a good grasp thereon, and the greater surface for distributing the vibratory reaction, which is injurious to the operator's hand.

Claim.—A crow, claw, or tamping bar, with a tubular handle, A, the two being detachably connected together, substantially as specified.

138,600.—*Piano and other Stools.*—ROBERT W. ARCHER, Rochester, N. Y. Application filed December 10, 1872.

The standard is provided with a cap-piece, which fits in an open socket in said standard, thereby embedding the nut through which the elevating-screw runs, and forming an upper support for the screw-shaft and an ornamental top to the standard.

Claim.—The standard B of a piano or other stool constructed with a cap-piece, D, which fits within an open socket, thereby embedding the nut *a* through which runs the elevating-screw C, and forming an ornamental top complete with the standard, as shown and described, for the purpose set forth.

138,601.—*Lamp-Burner.*—LEWIS J. ATWOOD, Waterbury, Conn., assignor to the PLUME & ATWOOD MANUFACTURING COMPANY, same place. Application filed February 24, 1873.

The vapor-chamber, wick-tube, and ratchet slide vertically, being guided by the columns which support the cone and by the lower part of the vapor-chamber, which fits closely in the screw-cap. A spiral spring holds the parts in position for use.

Claim.—1. A vapor-chamber, *n*, rising above the burner-screw *a*, and in which the flat wick hangs freely, in combination with a wick-tube, *s*, at the top of the vapor-chamber *n*, substantially as and for the purposes set forth.

2. The vapor-chamber *n*, sliding vertically through the burner-screw *a*, and provided with the ratchet-case, wick-raisers, and wick-tube, substantially as specified.

138,602.—*Galvanic Battery.*—LOUIS BASTET, New York, N. Y. Application filed November 18, 1872.

A solution of the nitro-hyposulphate of soda in water is used for the outer or positive fluid, dispensing with amalgamation of the zinc plate or cylinder. sulphate of copper with nitrate of soda in diluted sulphuric acid being used for the interior or carbon fluid.

Claim.—1. An alkaline nitrate, a copper sulphate, and sulphuric acid, united to form the negative, combined in a porous-cell carbon-battery with the nitro-hyposulphate of sodium for a positive, as described, to enable the zinc to be used without amalgamation.

2. The application of a nitro-hyposulphate of sodium or potassium to electric batteries, as and for the purpose described.

138,603.—*Wash-Boiler.*—JAMES H. BATCHELDER and SEWELL J. SARGENT, Lincoln, Vt. Application filed March 22, 1873.

The boiler is constructed in ordinary form, with its inner device resting upon its bottom, with flange surrounding it, with partitions across its length obliquely, and with alternate ends, forming zigzag passages, and terminating at each conducting-spout, and with an opening on its side, covered on the upper side with perforated cover.

Claim.—1. The arrangement of the central oblique partition *c*, extending entirely across the length of the base, and the oblique partitions *d*, attached to the circumscribing flange *e* at alternate ends, forming on each side of the central partition a continuous zigzag passage, *e*, leading independently to each spout, as shown and described.

2. The combination, with the spouts C and transverse passage A above the base-plate B, of the separate passages *s* below the base-plate, leading, respectively and independently, to said spouts, substantially as specified.

138,604.—*Churn.*—JOHN BECKLEY, Stiles, Iowa. Application filed March 14, 1873.

A perpendicular cylindrical churn. An interior skeleton frame, carrying a series of perpendicular perforated inward projections or abutments, against which revolving curved and perforated dashers throw the cream as they revolve, their spindle being centrally stepped at bottom, and at top its square end passing into the operating-pinion.

Claim.—The combination, with the churn-box A, of the skeleton-frame, composed of the vertical bars C C with perforated flanges G' G', rings B B, and cross-bars D D, and the shaft E with radial perforated wings G G, all operated substantially as set forth.

138,605.—*Fruit-Basket.*—STEPHEN D. BEDELL, New York, N. Y. Application filed March 15, 1873.

A basket formed from splints crossed obliquely, with a supporting-hoop crossing in, and over, and between the splints, secured by nails or rivets near its center.

Claim.—A fruit-basket, constructed of a bottom, A, rim or upper hoop C, upright standards, stays, or splints B, and of a hoop, D, placed between the outer and inner layers of uprights or splints B, substantially as and for the purpose described.

138,606.—*Tobacco-Cutting Machine.*—NICHOLAS H. BORGFELDT, New York, N. Y. Application filed April 16, 1873.

The grooves are so formed as to leave cutting-edges, which are arranged to engage on one roller with those on the other roller, the cut material being discharged from the grooves, and the rollers being adjusted by a set-screw.

Claim.—The combination of two rollers, B, each of which is provided with a series of cutting-edges, *a*, and intervening curved grooves *b*, the cutting-edges of one roller being set up against those of the other by a set-screw, E, and the curved grooves serving to facilitate the discharge of the cut material from the rollers, substantially as set forth.

138,607.—*Steam-Generator.*—NATHAN P. BRIGHTMAN, New Bedford, Mass. Application filed February 21, 1873.

A conical coil of pipe is placed in the upper part of the fire-box, the lower end communicating with the water in the lower part of the boiler, and the upper end projecting into the steam-space. The upper part of the fire-box is conical, but the distance between its sides and the coil increases toward the top, where a plate is placed to deflect the heat.

Claim.—1. The combination and arrangement of a conical spiral coil of pipe within the furnace of a steam-boiler, the lower end of the coil being connected to the lower part of boiler, and the upper end passing through the crown-sheet, and terminating in the steam-space of the boiler, substantially as and for the purpose set forth.

2. The combination of said conical coil of pipe, in the manner described, with the furnace of a steam-boiler, the walls of which are coned with less taper than that of the coil of pipes, so that an annular expanding space is left between them, substantially as described, for the purpose specified.

3. The combination of the coil, arranged within the furnace of a steam-boiler, with the hood or deflector placed near the apex of the conical coil to deflect the heat and flames, and prevent their direct exit through the smoke-stack, substantially as described.

138,608.—*Button-Fastening.*—ANTON BROCKMANN, Chicago, Ill. Application filed March 28, 1873.

Claim.—The metallic washer and elastic bell-shaped washer C in connection with the button or stud A having the toggle *b* pivoted in its slotted shank *a*, substantially as shown and set forth.

138,609.—*Billiard-Table.*—EMANUEL BRUNSWICK, Chicago, Ill. Application filed February 27, 1873.

A drop-shelf is let into the side or end of the billiard-table to hold a small package, hat, &c., during play. A modification is a semicircular shelf pivoted to the under part of the table, and sliding out like a chalk-cup.

Claim.—A billiard-table, when provided with a movable shelf, constructed and arranged substantially as and for the purposes specified.

138,610.—*Wardrobe-Bedstead.*—JAMES BYRNES, Chicago, Ill. Application filed February 27, 1873.

The folding bedstead is combined with a wardrobe that folds up, which is located above the case that incloses the folded bedstead.

Claim.—In a combined folding wardrobe and folding bedstead, the piece B hinged to the wardrobe, in combination with the folding piece E, a folding bolster, rails, or side pieces, C and D, and suitable legs or supports, all substantially as specified.

138,611.—*Corner-Piece for Picture and other Frames.*—THOMAS CALLAHAN, Brooklyn, N. Y. Application filed March 15, 1873.

Claim.—A corner-piece for the frames of pictures, window-screens, and the like, composed of a thin web, *a*, and flanges *b* and *c*, extending along the edges of the same, substantially as set forth.

138,612.—*Straw-Stacking Attachment for Thrashing-Machines.*—WILLIAM CARR, Yellow Springs, Ohio. Application filed January 29, 1873.

A series of windlass-drums are arranged so as to be placed in connection with the beater-shaft of the thrashing-machine by means of a slip-belt or movable clutch. From these windlasses proceed ropes to a traveling carrier, from which depends a double fork or grapnel, which serves to grasp a bunch of straw, raises it to the proper height, conducts it to the point from which it is desired to drop it, and there to release the bunch. This traveling, grasping, and releasing apparatus is suspended from and guided by a tight rope attached to suitable sheers, which, for the sake of convenience, are made in sections.

Claim.—1. The straw-stacking attachment for a thrashing-machine, consisting of counter-shaft driven from the beater-shaft or other moving member of the machine, loose drums I and J, clutch and ratchet, as and for the purpose set forth.

2. The sheers P P' P'' P''', each formed of two or more separate members united by joint *p p' p'' p'''*, as explained.

3. The combination of the counter-shaft driven from the beater-shaft, the loose drums I and J, clutch G, carrier T, self-releasing catch, and double fork or grapnel, all arranged to operate substantially as and for the purpose set forth.

4. The described combination of carrier T, ropes W W', trackcables S, pulleys V V' V'', sheave X, and block-pulley Y, for the purpose designated.

5. The described combination of grapnel *a a'*, strap *b*, and trip-catch *c d*, ring *e*, for the object stated.

138,613.—*Method of Engraving Bank-Note Plates.*—GEORGE W. CASILEAR, Washington, D. C.—Case B. Application filed March 29, 1873.

Impresses two letters at a time on the plate, and in constructing a word makes the impression of the last letter the matrix of the next succeeding letters taken from the roller.

Claim.—The method herein described of engraving names and titles upon bank-note plates, &c., by means of a roll or rolls having a compound alphabet produced upon its periphery, and operated substantially in the manner hereinbefore fully set forth.

138,614.—*Method of Engraving Bank-Note Plates.*—GEORGE W. CASILEAR, Washington, D. C.—Case A. Application filed March 29, 1873.

Impresses in the operation one letter at a time on the plate.

Claim.—The method herein described of engraving titles and words upon bank-note plates by means of a roll having a partial or complete alphabet produced upon its periphery, as described, and operated substantially in the manner herein set forth.

138,615.—*Draft-Cock for Soda-Fountains.*—WILLIAM P. CLARK, Medford, Mass. Application filed February 27, 1873.

Liquid is admitted to the cock through a tube with strainer. The mouth of the cock has two outlets, one of which breaks the force of the current. The valve has one hole through it, and is turned from one outlet to the other, as desired, and is held down by a spring and double joint. Two stop-screws prevent the stem turning too far. A cock on the tube closes the tube when the main cocks are to be repaired.

Claim.—1. In combination with the valve c^2 having the single passage p^2, the valve-seat having the two passages *t u*, the passage *l* leading into the arm w^2 and thence into and through the tube *y*, and the passage *u* leading into the arm s^2 and from the top of said arm, substantially as shown and described.

2. The combination of the valve-coupling c^2, spring f^2, and joint h^2, and the spindle g^2 and valve c^2, combined and relatively arranged, substantially as shown and described.

3. In combination with the valve c^2, the forked spindle g^2, tubular spindle w^2, and connecting-pin o^2, substantially as shown and described.

4. In combination with the spindles m^2 g^2, the slot q^2, stop-pin o^2, and stops r^2, substantially as shown and described.

5. In combination with the stop-pin o^2, the adjustable stops or screws s^2, arranged substantially as shown and described.

6. In combination with the arm *b*, the chambers *h i* and strainer *k*, substantially as shown and described.

7. In combination with the arm *b* and draft-cock, the shut-off or disconnecting valve x^2, arranged substantially as shown and described.

138,616.—*Spoke-Machine.*—ROBERT W. COFFER, Big Spring, Va. Application filed March 22, 1873.

A horizontally-moving table carries a pattern-spoke and a pair of centers, between which the material from which a spoke is to be formed is placed and reduced to the form of the pattern by a revolving cutter.

Claim.—1. The combination of the drum D, fuses G H, belts H' G' J^1 N, frame J, cutter-head A, sheaves J^2 J^3, shafts K M, gears K^1 K^2 M^2 M^3 P, spring K^3, and lever O, all constructed and arranged to operate substantially as described.

2. The combination of the carriages F, pattern I, guides F^2, springs F^3, rest I', frame J, and cutter-head A, all constructed and arranged to operate substantially as specified.

138,617.—*Swaging-Machine.*—HENRY M. CRIPPEN, Bartlett, assignor of one-half his right to JAMES C. WILSON, Plymouth, Ohio. Application filed February 1, 1873.

A series of dies, arranged side by side on a bed, and a corresponding series of spring-swages, to be struck with a hammer, supported by a cross-head that is itself supported by springs, but which may be brought down by force applied to a foot-lever. The die-bed turns on gudgeons, and a lever, adjusted by a screw, serves to adjust the dies to different inclinations.

Claim.—1. A swaging-machine, consisting of a series of movable hammer-spring dies or swages and die-plate and die-plate bed, the former plate being made adjustable on its bed and the plate and bed being made adjustable on the bed-plate of the machine, substantially as shown and described.

2. The hammer-die bar H, guide-rods E, springs G, and treadle K, substantially as described, for the purposes set forth.

3. The removable clamp *c*, in combination with the die-plate P, as and for the purposes described.

138,618.—*Horseshoe-Calk.*—GEORGE CUSTER, Monroe, Mich. Application filed March 23, 1873.

The lug is inserted into a correspondingly-shaped aperture in the shoe and secured by welding.

Claim.—The heel-calk described, consisting of the body *a* and the central angular welding-lug *b* having parallel sides, and inclined edges forming the angular upper end *c*, and notched at the base at *z*, said lug being surrounded by the level shoulder *n*, substantially as specified.

138,619.—*Draft-Hook for Whiffletrees, &c.*—JAMES T. DODSON, Kane, Ill. Application filed April 29, 1873.

The guard is intended to ward off any obstacle that might otherwise be caught by the end of the whiffletree or the draft-hook, as standing corn, passing vehicles, &c.

Claim.—In a draft-hook for whiffletrees, the combination therewith and with the whiffletree of the guard or shield F, essentially as described.

138,620.—*Child's Chair.*—JEROME F. DOWNING, Erie, Pa. Application filed April 19, 1873.

The back is hinged so as to be let down, and the seat is double, so that it can be extended to form a crib. To the bars connecting the rockers are hinged secondary bars having casters attached. To the arms of the chair slotted projecting bars are attached, having a bar affixed to their outer ends. To this bar a table or leaf is hinged, the table being retained in a horizontal position by a spring-catch attached to the side of the chair.

Claim.—1. In combination with the frame of a child's chair, the back E, seat F, and leaf G, each connected by hinged or pivot joints in such manner as to permit of the device being used either as a chair or crib, substantially as described.

2. The back E, seat F, leaf G, rockers C C, and hinged bars D D having rollers D' D' attached, the whole being so constructed, combined, and arranged as to permit of the chair being used for the different purposes specified.

3. In combination with the upper sections *b' b'* of the arms B B of a child's chair, the bar H', slotted arms K K, thumb-screw k^3, hinged table H, latch L, and plate L', the whole being arranged to operate substantially as described.

138,621.—*Water-Wheel.*—WILLIAM C. EDWARDS, West Winsted, Conn. Application filed November 22, 1872.

At a distance of about two-thirds the width of the bucket toward the center is arranged a vertical flange or ring, and upon the upper edge of this an inwardly-projecting flange. The upper portion of the bucket projects inwardly over this flange, so that the water passing into the wheel strikes the whole surface of the bucket, and so much of it as is inclined to do so will pass through the buckets over the flange, the remainder passing through the buckets.

Claim.—In combination with a succession of buckets, L, the internal vertical ring *l* and the flange *n*, substantially in the manner and for the purpose described.

138,622.—*Steam-Pump.*—RUDOLF EICKEMEYER, Yonkers, N. Y. Application filed January 15, 1873.

Channeled pistons in opposite cylinders for steam and water, respectively, receive an oscillating motion through a hinged crank, operating a wrist-pin on the piston-rod. Two inlet and two exhaust ports opposite each other are combined with the pistons to balance them, and said ports act alternately as outlet and inlet passages. The hinged crank is combined with an adjustable fly-wheel and piston-rod with its wrist-pin, to take up any wear.

Claim.—1. The combination of the steam-cylinder, channeled piston, piston-rod, and wrist-pin with a hinged crank, substantially as and for the purpose described.

2. The channeled pistons, in combination with the opposite cylinders, a hinged crank operating a wrist-pin attached to the piston-rod, and the two channeled pistons, substantially as and for the purpose described.

3. The two inlet-ports opposite each other, and the two outlet-ports opposite each other, in combination with the channeled piston, as and for the purpose specified.

4. The channeled pistons, when so arranged relatively to the inlet and outlet ports in the cylinder that the same channels will act alternately as outlet and inlet passages, as and for the purpose specified.

5. The hinged crank, in combination with the adjustable fly-wheel, piston-rod, and its wrist-pin, as and for the purpose described.

138,623.—*Hollow Auger.*—OZIA ALVIN ESSIG, Canton, Ohio. Application filed February 19, 1873.

The washers to suit the different sizes of tenons are held in position by the bar of the cutter, which is retained by a screw.

Claim.—The combination of the bit C, formed with a cutter, *m*, and bar *f'*, and the washer D in a hollow auger-head, A, all as and for the purposes set forth.

138,624.—*Felly-Plate.*—CHARLES D. EVERETT, Cleveland, Ohio. Application filed March 21, 1873.

A swell is formed on the plate, and is embedded in the felly, thus dispensing with a nut. The bolt passes through the felly-joint, one-half being in each end of the felly, tending to prevent lateral displacement.

Claim.—In combination with the fellies A A and tire B, the plate C with its embedded swell *a*, provided with female screw-thread and single bolt D, the bolt passing through the joint of the fellies and into the swell *a* and plate C, substantially as and for the purposes herein set forth.

138,625.—*Surfacing-Plane.*—GEORGE E. FRANKLIN, Natick, Mass. Application filed March 8, 1873.

The two cutting-irons are at right angles to each other, and the depth of cutting is regulated by a fence on the side. The ends of blocks are surfaced by this plane.

Claim.—1. The surfacing-plane, formed with two cutters, *d* and *e*, having their edges in line, and standing one in horizontal and the other in vertical position, combined with the gage *m* on the vertical face of the plane, substantially as described.

2. In combination with the two cutters, the clamp *h*, for holding the cutters, substantially as shown and described.

3. The clamp, formed with the shoulder *i*, for pressing the cutter *e* down to the cutter *d*, substantially as shown and described.

138,626.—*Soldering-Furnace.*—JOHN A. FEY, Jersey City, N. J. Application filed March 21, 1873.

The cups that hold the cans are made of copper, and attached to an iron base extending into the fire-pot. The cup chambers are provided with independent dampers.

Claim.—1. The copper cup *c* as a heating-surface for the can, in combination with the cone or iron surface for transmitting the heat from the fuel to the cup and can.

2. The annular spaces *m m'*, between the fire-plate *h* and the top plate *i*, provided with independent dampers for controlling and directing the heat to the cups, substantially as described.

138,627.—*Metallic Packing for Piston-Rods, &c.*—JAMES C. FURNESS, Boston, Mass. Application filed November 11, 1872.

Metallic segments made wedge-shaped by dividing a cylinder on a plane oblique to its axis, each ring having a thin and a thick side, against the latter of which the steam acts and forces them against the piston-rods, one section sliding upon the other. Springs are provided to keep the sections in place when no steam is used.

Claim.—1. The metallic packing, hereinbefore described, formed of the two rings *a b* and *c d*, made of Babbitt metal, as stated, each ring being broken, and said rings being arranged within the packing-box A so as to break joint, as shown in Figs. 1, 2, and 3, and remain steam-tight, the entire packing being rendered effective by steam-pressure, substantially as described.

2. A metallic packing formed of two unbroken rings, made by dividing a cylinder on a plane oblique to its axis, as shown in Fig. 4, so that each of said rings shall have a thin and a thick side, as shown, against the latter of which sides the steam can act, as and for the purpose set forth.

3. The springs *z* in packing-boxes in which the Babbitt metal is to be made effective by steam to keep the pieces of metal substantially in place when not in operation.

138,628.—*Peg-Mill.*—DAVID H. GAGE, Dover, N. H. Application filed March 7, 1873.

Has a shaft provided with a fixed rack placed between two grinders. Over the upper grinder is a cleaner, arched at its center, its extremities fitted into recesses on the inner face of the cylinder, the lower grinder having on its under side a channel and sweep, the lower end of the shaft, provided with a mixer, having a curved sweep on its under side to give any resisting material a direction opposite to that given by the lower grinder.

Claim.—1. The sweep M, substantially as and for the purpose shown and described.

2. The grinder L, in combination with the sweep M and stud O, substantially as shown and described.

3. The cylinder C provided with the aperture E, in combination with the sweep M, channel N, and stud O, substantially as shown and described.

4. The sweep S, substantially as and for the purpose shown and described.

5. The grinder I, provided with the sweep M, in combination with the mixer R provided with the sweep S, substantially as shown and described.

6. The stripper T, for the purpose of cleaning the grinder I, substantially as shown and described.

138,629.—*Deodorizing Oils Obtained from Acid Tar of Oil-Refineries.*—RICHARD GAGGIN, Erie, Pa. Application filed April 3, 1873.

By treating with milk of chloride of lime, or chloride of lime dissolved in water at a temperature not higher than about 140°. After thus treating, and the limy sediment drawn off, introduce a caustic or carbonate alkali.

Claim.—The diluting and distilling of oil from acid tar and then deodorizing the same, in the manner and by the processes substantially as herein described.

138,630.—*Bed-Bottom.*—ELI K. GARRETSON and WOODARD FULGHUM, Winchester, Ind. Application filed April 1, 1873.

The slats, slotted at the ends, rest upon a pin that passes through the end of the levers, and the levers rest upon elastic blocks. The fixed end of the lever is held by staples inserted in a bar attached to the head and foot boards.

Claim.—The slats D D resting at each end upon a pin, *d*, in a lever, E, the levers E E, the lever-supporting blocks *b b*, block-supports C C, and the staples *a a a*, in combination with the bedstead, sofa, or seat, substantially as and for the purposes described.

138,631.—*Music-Leaf Turner.*—JOHN B. GEYSER, Pittsburg, Pa. Application filed January 3, 1873.

The arms end in pinions, which gear with sliders having a short rack at their center. Both ends of the sliders terminate in down-projecting fingers, against which the performer presses sidewise to turn the said arms.

Claim.—1. The combination of the dished frame or rack A with the groove B, vertical in its center, the opening C at the base of groove, and the recess D with the two lugs E E, projecting from its center, and the projections R R on the sides of the frame, together with the pivots F F and the lugs G G, or their equivalents, substantially as and for the purposes hereinbefore set forth.

2. The hooked binding-rod H, pivoted to the sliding piece I and operated by the spring J, substantially as and for the purposes hereinbefore set forth.

3. The sliding piece I having the wings *c' c'* and slot for the reception of the binding-rod, substantially as and for the purpose hereinbefore set forth.

4. The sliding rack-bars K with their extremities turning downward and outward, ending in the finger-keys L, and having the slots *m'* for the reception of the lock-bar, substantially as and for the purpose hereinbefore set forth.

5. The vibrating arms P, in combination with the latch S or its equivalent, secured to the frame by means of the screw *a'*, substantially as and for the purpose hereinbefore set forth.

6. The lock-bar N, in combination with the pin O, substantially as and for the purpose hereinbefore set forth.

7. The combination of the subject-matter of the foregoing clauses of claim, the whole forming a music rack or stand and a leaf-turner, substantially as and for the purpose hereinbefore set forth.

138,632.—*Wash-Boiler.*—WILLIAM G. GIBSON, Lynchburg, Ohio. Application filed March 7, 1873.

A wash-boiler constructed with a perforated crowning-plate with a center tube, with perforations on its upper end, partly covered with a flange. Through the center tube is a smaller one with a conical end, which serves to give direction to the water and keep it in close contact with the outer one.

Claim.—1. The combination, in a wash-boiler, of crowning-plate C, tube D *d'*, inverted trough or chute E, and perforations *e e'*, arranged and operating substantially in the manner and for the purpose specified.

2. In the described combination with the elements of the clause immediately preceding, the conical-ended cylinder F, arranged and operating substantially in the manner and for the purpose specified.

138,633.—*Packing for Pistons and Stop-Valves.*—PAUL GIFFARD, Paris, France, assignor to CHARLES JAMES ADOLPH DICK, Pittsburg, Pa. Application filed February 17, 1873.

A piston-ring, made softer at the inner than the outer circumference, of India rubber, vulcanized, and provided with or without annular bearings, is placed between the flanges of a piston to allow it to vibrate.

Claim.—1. The within-described piston-ring, made softer at the inner than at the outer circumference, and adapted to the groove of a piston, all substantially as and for the purpose herein set forth.

2. The combination of a recessed piston, a packing-ring, and one or more annular bearings, *a a*, arranged to limit the play of the ring, substantially as described.

138,634.—*Machine for Forming Boot-Heels.*—CHARLES W. GLIDDEN, Lynn, assignor to JAMES W. BROOKS, trustee, Boston, Mass. Application filed April 2, 1873.

The heel-blank is rigidly held in a revolving clamp. A wheel with peripheral serrations is brought into contact with the blank, when, both revolving, the lift-edges are solidified and rolled down until brought to a uniform surface.

Claim.—1. In combination with a clamp for holding an assemblage of heel-lifts, a wheel operating to compress the heel-lift edges and shape the heel-edge, substantially as described.

2. In combination with the clamp, the wheel having the peripheral serrations, substantially as described.

3. The combination of the rotating clamp for holding the heel-blanks with the wheel attached to the carriage *a* and moved forward by the pressure of a spring, the wheel being in inclined position and the extent of compression of the lifts being determined by the pattern-plate *d* and roll *j*, substantially as described.

4. In combination with the clamp, the wheel made adjustable as to inclination, substantially as described.

5. The improved mode of shaping the edges of boot and shoe heels, consisting in subjecting the edges of the lifts to the rolling pressure of a wheel, by means substantially as described.

138,635.—*Tuck-Marker for Sewing-Machines.*—HARRY C. GOODRICH, Chicago, Ill. Application filed October 5, 1872.

The tongues *c d* project laterally from the spring-arm, and the upper tongue overlaps the other and the elevated tongue of the plate. The material is entered over the tongue of the plate and under the other tongues, and when the latter are depressed the upper tongue first engages the cloth on the tongue of the plate, and the two then move together, holding the fabric, and crease or fold it over the edge of the tongue.

Claim.—The combination of the tongues *c d* and spring-arm D with the lip or tongue *e*, plate A, and arm or hammer C, all operating substantially as and for the purposes specified.

138,636.—*Tuck-Marker for Sewing-Machines.*—HARRY C. GOODRICH, Chicago, Ill. Application filed February 4, 1873.

Claim.—The adjustable bow-like actuating-arm, consisting of the rigid section or arm *f* and the spring-arm A to equalize the blows on the tuck-marker in all of its positions, substantially as specified.

138,637.—*Presser-Foot for Sewing-Machines.*—HARRY C. GOODRICH, Chicago, Ill. Application filed July 26, 1872.

This foot is adapted to the Wheeler & Wilson machine; is made in skeleton form, and with a narrow under surface to allow the creasing notch and edge to be brought under the presser close to the needle, and as also to allow the operator to see the line of stitching.

Claim.—As a new article of manufacture, the hollow metallic presser-foot attachment herein described, constructed substantially as and for the purpose specified.

138,638.—*Hammer for Sewing-Machines.*—HARRY C. GOODRICH and RUSSELL S. BARNUM, Chicago, Ill. Application filed February 24, 1873.

When the plates of the clamp are brought together the straight edge is pressed forward against the supporting-rod of the hemming-scroll that rests in the curved portion of the clamp. The reversed hammers are connected with and removable from the rod by means of the socket between the hammers.

Claim.—1. The clamp B, constructed as and for the purposes specified.

2. The double hemmer herein described, consisting of the two hammers *f g* and socket *h*, constructed substantially as and for the purpose specified.

138,639.—*Belt-Lacing Gage.*—HENRY GOULD, Minneapolis, Minn. Application filed February 21, 1873.

A graduated square is provided with a spring-marker capable of adjustment in a longitudinal slot for conveniently spacing the end holes for uniting machine-belts.

Claim.—The combination of a graduated and grooved square and straight-edge with a gage and marking device, all arranged substantially as described, for guiding the cutting of ends of belts and marking the location of lace-holes therein.

138,640.—*Truss.*—GEORGE W. GREGORY, Syracuse, N. Y. Application filed April 30, 1873.

A series of end and central slots is formed in the abdominal plate in order that a single pad may be fastened, with a set-screw at either end or in the middle to retain umbilical hernia. A fastening-plate carries three buckling-clamps to retain the straps at required points.

Claim.—1. A truss-plate provided with the series of central and end openings, substantially as described, to provide for the attachment of pads, as set forth.

2. The corrugated truss-plate provided with the long vertical openings at its ends for attachment of a pad or pads.

3. The combination, with the truss-plate provided with the vertical end and central slots, of the pad provided with the transverse slots and with a screw-connecting device, substantially as described.

4. A detachable truss-fastening attachment, composed of a plate or frame provided with buckle like tongues for confining the straps, and with a hook or equivalent to engage the truss-plate, substantially as described.

5. A detachable truss-fastening attachment composed of a plate or frame provided with buckle-like tongues and with a hook or equivalent to engage with the truss-plate, and with a projection at the back of the frame to bear against the other side of the truss-plate, for the purpose described.

138,641.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed January 29, 1873.

Metallic plates with projections thereon having compound metaline pressed between the said projections.

Claim.—A sheet of metal with which is incorporated metaline, substantially as and for the purposes specified.

138,642.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed February 3, 1873.

A sheet of corrugated metal, the corrugations being filled with metaline and the whole subjected to great pressure, so that the base of the corrugation folds over the metaline. It is to be cut into strips of desired size.

Claim.—A sheet of corrugated metal with which is incorporated metaline, substantially as and for the purposes specified.

138,643.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed January 29, 1872.

Metallic tubes or sheet metal bent in any desired form filled with compound metaline and subjected to severe pressure.

Claim.—A sheet of metal with which is incorporated metaline, substantially as and for the purpose specified.

138,644.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed January 29, 1873.

Perforated metallic blocks filled with compound metaline subjected to severe pressure.

Claim.—A perforated sheet of metal, with which is incorporated metaline, substantially as and for the purposes specified.

138,645.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed January 29, 1873.

Alternate layers of woven fabric (either animal or vegetable) and the compound metaline subjected to severe pressure and then cut into strips of required size.

Claim.—The composition denominated metaline, incorporated with any woven, knit, or felted fabric, of either vegetable or animal fiber, in the manner and for the purposes specified.

138,646.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed January 29, 1873.

Alternate layers of strips of wood and compound metaline subjected to severe pressure and cut in forms as desired.

Claim.—The composition denominated metaline, incorporated with sheets of wood of any kind, substantially as and for the purposes specified.

138,647.—*Egg-Beater.*—ETHAN HADLEY, Chicopee Falls, Mass. Application filed February 8, 1873.

The beaters are secured in a pinion of hard metal by a plug of soft metal having spurs on the outer surface.

Claim.—As an improvement on the Dover egg-beater, the combination of the hard-metal annular pinion D, the central soft-metal plug or core F, and the bars C, attached to the soft-metal core, constructed as shown and described.

138,648.—*Wind-Wheel.*—DANIEL HALLADAY, Batavia, Ill. Application filed December 24, 1872.

The governing mechanism of this wheel has an arrangement of the central regulating-disk, having upon its front face an annular series of slotted projections and upon its rear face a circular friction-wheel. It also consists in the arrangement of the central hub and cross-bars of the wheel-frame, of the reacting springs, and of the brake and the fast friction-wheel upon the crank-shaft.

Claim.—1. The combination, with the regulating-disk K and sails L, of the friction-wheel R and brake *u*, substantially as specified.

2. The combination, with the regulating-disk K and the eccentrically-pivoted sails L, of the radial spokes H of the wheel-frame and the reacting springs *s*, substantially as specified.

3. The combination, with the sails L, regulating-disk K, and friction-wheel R, of the crank-shaft D, friction-wheel E, and brake or brakes, substantially as specified.

4. The combination, with the regulating-disk K of a wind-wheel and the shaft D, of the friction-wheels E R, and the brake-lever *z* having an elastic arm, *y*, substantially as specified.

5. The regulating-disk K placed loosely on the wheel shaft D, provided with the slotted flange *n* in front, and the friction-disk R in rear, substantially as specified.

138,649.—*Mortising-Machine.*—EUGENE HAMMOND, Cumberland, Md. Application filed February 14, 1873.

Different-sized mortises are made in the material by adjustment of the gages.

Claim.—1. The combination, with a mortising-chisel and side-recessed post-carriage, of the gages G G or G' G', the traveling-dog H, gage I, and stop-bar J, applied as and for the purpose described.

2. The spring-pressed dog H *h* sliding in the perforated way *e'*, the gage I, and the stop-bar J, combined with the carriage of a mortising-machine, as herein shown, and for the purpose specified.

138,650.—*Fluting-Machine.*—EDGAR P. HOLLY, Lockport, N. Y. Application filed December 12, 1872.

The arms of the frame, in which the fluted rollers are mounted, hinge upon the bolt which joins them. Both arms are embraced by a movable clamp adjusted by a spring and screw. The machine is secured to a table by a screw-clamp with a pair of blocks.

Claim.—1. The combination, in a fluting-machine, of the arms A A and the bolt H forming a hinge-joint, substantially as and for the purpose herein set forth.

2. The combination of the rollers C C, the arms A A, and the movable clamp *a'* and the spring *b'*, substantially as and for the purpose hereinbefore set forth.

3. The combination of the lower arm of the frame and the clamp *a'* and the blocks *d' d'*, substantially as and for the purpose hereinbefore set forth.

138,651.—*Brick-Machine.*—HENRY HUGHES, Pekin, Ill., assignor of one-third his right to WILLIAM S. KELLOGG, same place. Application filed September 23, 1872.

A reciprocating frame having dogs or claws arranged to feed the molds automatically from two or more chambers, operated by suitable machinery.

Claim.—1. The reciprocating frame E, provided with the dogs or claws *e*, constructed and arranged to feed the molds S automatically from two or more chambers, *g*, to the receiver B, in combination with the longitudinal slots *d'* of the platform D, the whole constructed so as to operate substantially as set forth.

2. The actuating-rod F, crank G, connecting-rod H, arm I, rod K, beveled gear-wheels L M, shaft N, driving-wheel T, and beveled gear-wheels P O, all combined and arranged to operate the stirring-shaft Q and frame E, substantially as shown and set forth.

138,652.—*Steering Apparatus for Vessels.*—LYMAN HUNT, Buffalo, N. Y., assignor of one-half his right to MARCUS M. DRAKE. Application filed April 5, 1873.

Claim.—The combination, with the rudder-post, rear steering-shaft D, and hand-wheel E, of the pulleys M N, forward steering-shaft K, hand-wheel L, and chain or cable *n*, substantially as and for the purpose hereinbefore set forth.

138,653.—*Lamp.*—JOHN H. IRWIN, Philadelphia, Pa. Application filed March 17, 1873.

The ratchet bears against the central tube which rises from the bottom of the fount. The bottom plate of the Argand burner forms a drip-cup, covers the oil-fount, and is bent up at its outer edge to form the chimney-rest. The chimney covers the entire fount. A foraminous plate over the drip-cup protects the oil therein from heat.

Claim.—1. The combination, in a kerosene-lamp, of an Argand burner having its central tube extended through the bottom of the oil-pot, and a ratchet wick-raiser acting against said central tube, as and for the purpose set forth.

2. A kerosene-lamp constructed with the wick-tube permanently attached to the oil-pot, and but a single plate, B, with no unclosed perforations, interposed between the burner and the contents of the oil-pot.

3. A cylindrical or hollow wick-burner, constructed so that the central air-tube shall exert an elastic pressure against the teeth of a ratchet wick raiser, substantially as and for the purpose set forth.

4. A kerosene-burner with its bottom plate formed to constitute a drip-cup, as and for the purpose set forth.

5. In combination with a drip-cup formed by the bottom plate of the burner, a perforated peripheral rim or flange, *c*, with a seat, *a*, and series of springs *d* to clasp and hold the chimney, and so as to cause the volatile emanations from said drip-cup to pass up said chimney to be consumed.

6. A series of springs, *d*, arranged upon the wall of the oil-pot A to receive and hold the chimney, as described.

7. The cup A, plate B, and tubes C D, and the wick-raiser, constructed and arranged in the manner shown and described.

8. The cup A, plate B, tubes C D, filler E, pedestal G, and base H, all constructed and arranged as shown and described, for the purpose set forth.

9. The chimney I constructed with the expanded base, substantially as described, combined with the peripheral flange *c* of a burner whose bottom plate forms a drip-cup, substantially as and for the purpose set forth.

10. The removable perforated plate K, covering the drip-cup and filler and extending from the wick-tube to the chimney-seat, as and for the purpose set forth.

138,654.—*Lamp.*—JOHN H. IRWIN, Philadelphia, Pa. Application filed November 5, 1872.

The ascending currents of the products of combustion are prevented from entering the air-tube, and the inlets for fresh air are placed out of said currents, and none but fresh air is admitted to the tube to be heated.

Claim.—1. The combination, in a tubular lamp, of the tube E provided with the radial inlet-tubes F, substantially as set forth.

2. The combination, in a tubular lamp, of the air-tube E with closed bottom *e*, placed vertically over the flame, and provided with laterally-extended air-inlets so as to receive none but fresh air, and heat the same before it enters the burner, substantially as and for the purpose set forth.

3. The combination, in a tubular lamp, of the tube E, radial tubes F, and heating-jacket H, substantially as specified and shown.

4. The combination, in a tubular lamp, of the radial tube or tubes F, tube E, and protector G, substantially as shown and described.

138,655.—*Hoisting Apparatus.*—JOHN L. ISBELL, Naugatuck, Conn. Application filed April 16, 1873.

The bevel-gear upon the main shaft is arranged with the driving-pulley upon a sleeve which turns slightly on the shaft, so that when power is applied to raise the platform the sleeve turns slightly on the shaft, carrying with it the entire mechanism, which thereby relieves the gear from contact with the worm, and so retains it until it is desired to stop the platform, or in case of accident, when the sleeve turns in the opposite direction, and the weight is taken up by the worm and the descent of the platform prevented.

Claim.—In combination with the drum B, the two runs or chains of gearing, one of which causes the revolution of the drum to wind or raise the fall, the other the revolution of the drum in the opposite direction to lower the fall, the latter by means of a worm, L, when the device through which power is communicated in one direction is constructed to allow a slight over-motion independent of the other device for communicating power in the opposite direction, substantially as set forth.

138,656.—*Shovel-Plow.*—WELLINGTON JOHNSON and MOSES RANNEY, Northfield, Ohio. Application filed February 14, 1871.

Claim.—The shovel S, removable point P, and colter C, braces *b b*, and removable and adjustable wings W W, all constructed and arranged for operation as and for the purpose described.

138,657.—*Fluid-Meter.*—JOHN O. JOHNSON, New York, N. Y. Application filed March 20, 1873.

Within a pipe through which the water to be measured flows are arranged two auger-shaped screws, one of which is stationary while the other revolves, the revolving screw being provided with a shaft which connects with a registering mechanism inclosed in a case cast with the fluid-supply pipe.

Claim.—The case H for containing the registering mechanism and the worm-wheel of the arbor D connected with the elbow E, in combination with each other and with the movable and stationary auger-shaped screws B C, pipe A, screw G, and elbow F, all constructed and arranged as herein shown and described.

138,658.—*Machine for Making Wooden Pins.*—EDWARD C. JOHNSON, Williamsport, Pa. Application filed December 12, 1872.

The material from which the pins are to be formed is placed upon a die, and a vertically-sliding punch is driven through it by a blow from a falling weight, which strikes the upper end of the pins after they have passed through the punch, and forces their lower ends into recesses in the die, thus pointing them.

Claim.—1. The combination of the punch and recessed die, relatively arranged, as described, with the drop-weight, substantially as described.

2. In a machine of substantially the described construction, the combination of the stationary die-block having recesses, as described, the reciprocating punch, the drop-weight, and the spring for throwing the pins, substantially as described.

3. The combination of the springs E and F with the slotted pin I and its set-screw, as described.

4. The combination of the frame A, bearing-box B, shaft L, double crank H with pins A A', punch C with its connecting-rod, die D, drop-weight B, and springs E and F, all arranged and operating as described.

138,659.—*Float-Valve for Horse-Troughs, &c.*—JULIUS JOHNSON, New York, N. Y., assignor to ISAH CHASE, same place. Application filed August 17, 1872.

An elongated valve with rubber facing attached to a stem and float regulates the flow of water to a horse-trough, hydrants, &c., by the action of the float.

Claim.—The combination of the elongated cylindrical valve D, having a rubber facing, *d*, the cylinder C, the inlet B, the valve-seat E, the outlet *c*, the float I, and the connecting-stem J, when constructed and arranged in relation with each other, substantially as and for the purposes herein set forth.

138,660.—*Printing-Press.*—WILLIAM A. KELSEY, Meriden, Conn. Application filed April 3, 1873.

The vibrating platen has pivoted to it a lever carrying trunnions which bear against two inclined arms projecting from the bed. The chase is cast with a bottom for use as a composing-stick, and has ledges by which it is clamped to the bed.

Claim.—1. The herein-described press, consisting of the frame A supporting the bed C, and the platen D pivoted to the said frame below the bed, the lever G H pivoted to the said platen, and with trunnions working upon the inclined arms to give the requisite movement to the platen, substantially as set forth.

2. In a printing-press, substantially such as described, the chase I, constructed with a bottom, P, and with projections R, combined with a clamping device, S, substantially as specified, and with or without the adjusting-screw *s* through the bed.

138,661.—*Bee-Hive.*—EDWARD KRETCHMER, Coburg, Iowa. Application filed December 30, 1872.

In the center of the top is seated the axial projection of a small cylindrical vessel, close at all points except that the base of the projection is perforated that the bees may draw honey therefrom. When this perforated projection is turned upward another axial projection permits the ventilation of the hive.

Claim.—1. The parts S and *r* of the feeder and ventilator H, in combination with the roof B or its equivalent, in the manner and for the purpose set forth.

2. The ends of metal corners of glass-sided honey-boxes, made with parts *o o*, *m m*, and *p*, in the manner and for the purpose set forth.

138,662.—*Slate-Washer.*—DANIEL W. LEET and WILLIAM C. SHIELDS, Bellaire, Ohio. Application filed March 19, 1873.

The water is forced out of the receptacle into the sponge by pressing upon the elastic end of the case. The diaphragm prevents the water passing too freely into the sponge.

Claim.—1. In a slate washer or cleaner, the combination, with the cleaning-sponge thereof, of a removable cotton diaphragm, *f*, seated upon the open neck *e* of case A, and serving the several purposes herein described.

2. In a slate-washer, the combination, with the stand or case A, of the elastic end C, the removable diaphragm *f*, and the contracted seat or neck *e*, substantially as herein described.

138,663.—*Photographic Apparatus.*—WILLIAM AUGUSTUS LEGGO, Montreal, Canada. Application filed August 6, 1872.

Claim.—1. The bed *c*, with grooves *m*, boxes *n*, *o*, and *p*, screwed shafts *r* and *t*, rings or collars *s*, in combination with camera *q* and object-stand *y*, substantially as and for the purposes set forth.

2. The bed *c*, with grooves *m*, boxes *n*, *o*, and *p*, rack *u*, pinions *v* v^1 v^2, and handles W, W^1, and W^2, in combination with cam-

era *q*, and object-stand *y*, and clamps *x*, substantially as and for the purposes set forth.

3. The object-stand *y*, hinged to the box *p*, substantially as and for the purposes set forth.

138,664.—*Canal-Boat.*—WILLIAM AUGUSTUS LEGGO, Montreal, Canada. Application filed September 18, 1871.

A main canal-boat has its motor situated between flaring bows, which open into a channel the entire length of boat, and said channel is constructed to admit a supplementary boat, which also has flaring bows, so that the current of water from the motor may have an easier exit aft and the boat have less obstruction in passing through the water.

Claim.—The main vessel having the side compartments *b*, bows *b'*, deck *d*, central space *d'*, extending the entire length of the boat, and motor *e*, in combination with the supplementary vessel *f*, all constructed and arranged as described, for the purpose set forth.

138,665.—*Propulsion by Gas Explosion.*—WILLIAM A. LEGGO, Montreal, Canada. Application filed August 22, 1871.

A large tube is hinged vertically to the stern-post of a vessel and extends down into the water, having an open mouth at right angles to the length of said tube. Hydrogen-gas is admitted from gasometer into main tube and mixes with atmospheric air, which passes through a drop-valve at top. When the hydrogen predominates it is exploded by a flame from gas-jet at top, by which explosion the drop-valve closes, and the force of explosion acts against the body of water through the tube to propel the boat.

Claim.—The new and useful art of propelling vessels and driving machinery by gas explosions as a motor, with apparatus for carrying the same into effect, as follows: The novel combination and arrangement of the chamber *d*, connected with gasometer *b* by a flexible or other tube, *c*, and provided with valve g^1 and touch-hole *h* and gas-jet *i*, or their equivalents, working in combination with any vessel, *a*, substantially as and for the purpose set forth.

138,666.—*Sole-Nailing Machine.*—ABA S. LIBBY, Lawrence, Mass. Application filed April 2, 1873.

The tube through which the wire passes has a movable section, which receives vibratory motion from a lever, by which means the wire is presented to the action of the cutters, so that the point formed upon it is at or toward one side of the nail.

Claim.—1. The swing-tube *i*, in combination with the tubes *a d* and cutting mechanism, substantially as described.

2. The improved mode of presenting the wire for the action of the cutters, substantially as described.

138,667.—*Safety-Hook for Pocket-Books.*—FRANZ CARL LIKAR, Baltimore, Md. Application filed March 18, 1873.

By turning the rod the barb or hook is made to penetrate the lining of the pocket, thereby forming a safety attachment.

Claim.—The rod D having the hook G and toe F, in combination with the plate A having the slotted bridge or plate I, slots J K, and spring K', the latter holding the hook G in different positions, substantially as described.

138,668.—*Die for Forging Stay-Ends.*—PERLEY N. LOWE, Plantsville, Conn., assignor to himself and EMERY W. DOOLITTLE, same place. Application filed November 4, 1872.

Two pairs of dies, the first pair having an H-shaped recess, the space between the parallel sides being convex. The second or finishing dies have a similar recess, the intervening portion being flat, and forms each side circular in cross-section.

Claim.—The dies B D, constructed as described, for forging stay-ends for carriage iron-work.

138,669.—*Safety-Platform for Cars.*—HENRY E. MARCHAND, Pittsburg, Pa. Application filed April 3, 1873.

A hollow supplementary platform inclosing a telescopic section is hinged to the car. The telescopic section is hinged to allow of lateral movement, while the endwise movement of the same is controlled by means of a spring, which is secured between the ends of rocking levers.

Claim.—1. In a safety-platform, the rocking or oscillating lever-arms L, in combination with a fixed or hinged section, A, for the purpose of resisting the inward motion of a sliding section, and for permitting a rocking motion of the sliding section, caused by the movement of the cars, substantially as set forth.

2. The combination of a spring, K, with the levers or arms L, which are arranged within the receiver of a sliding section, for operation substantially as described, for the purpose specified.

3. A hinged or jointed door, P Q, combined with the sliding section and a fixed or hinged section, A, substantially as described, for the object specified.

4. The sliding telescopic section provided with hinged or pivoted ends for admitting of a rocking and longitudinal motion of such section within the receiver, substantially as described.

138,670.—*Seal-Lock for Boxes.*—HENRY C. MARSTON, Washington, D. C. Application filed April 18, 1873.

The cover is secured to the body of the box by means of sliding seal-plates (one or more) secured to the cover and provided with button-headed studs, which engage in slots cut in a flange attached to the box. The seal-plates are held in the locked position by means of spring-pins that engage in holes in the seal-plates, and seals are arranged to cover these holes, so that access to the spring-pins cannot be had without breaking or destroying the seals. A seal-plate is also arranged for closing the throat of boxes for receiving ballots.

Claim.—1. In combination with the cover B of the box, the sliding seal-plates c^1 c^2, (one or both,) provided with the button-headed studs *d*, engaging with the flange A' of the box, and the locking-dogs *e'*, substantially as set forth.

2. In combination with a box having a throat, C', for receiving ballots, the sliding seal-plate c^3 and locking-dog *d'*, said seal-plate having its upper end expanded and formed into a gate to close the throat C^3, substantially as described.

138,671.—*Apparatus for Cooling and Dispensing Beverages.*—JOHN MATTHEWS, New York, N. Y. Application filed April 24, 1873.

The liquid is drawn from the reservoir through a coil in an ice-chamber, and discharged into a receiving-vessel also situated in the ice-chamber, from which it is drawn as required, the pressure in the receiving-vessel being relieved as required.

Claim.—1. The combination, in the cooling-chamber, of the coil *b*, branches *c* and *l* of the draft arm of the receiving-vessel, so as to cool and dispense the beverage under reduced pressure, substantially as set forth.

2. The double-branched draft-arm with passages and valves, arranged substantially as described.

3. The combination of the ice-chamber, receiving-vessel, and draft-pipe, as and for the purpose set forth.

4. The inlet-valve, discharge-port and valve, and draft-arm, all arranged and combined substantially as set forth.

5. The gage s^2, in combination with the receiving-vessel and projecting outside of the cooling-chamber, as and for the purpose specified.

6. The receiving-vessel and draft-tube, in combination with the glass gage, as specified.

7. The receiving-vessel made wholly or in part of glass or other transparent material, in combination with a side opening or a side of transparent material in the cooling-chamber, substantially as specified.

138,672.—*Cigar-Mold.*—THOMAS D. MCGUIRE, Brooklyn, N. Y. Application filed December 24, 1872.

The chips or upper dies are formed together on one piece and strengthened by an outer back, having its grain running transversely.

Claim.—The mold having the chips C of its upper half A made of the same piece with each other and with the back *f*, substantially as and for the purpose herein specified.

138,673.—*Apparatus for Feeding and Returning Water of Condensation to Steam-Boilers.*—THOMAS E. MCNEILL, New York, N. Y. Application filed February 17, 1873.

A steam-cock in the live-steam pipe and an exhaust-cock in a branch pipe attached to said steam-pipe are connected to a cylindrical condensing-vessel. In this vessel is arranged a counterbalanced float, the lever of which is connected by another lever to the steam-cock, and as the condensed water rises and falls it operates the cocks, both being connected, one to open and the other to close. A crank connected to both cocks strikes against studs and a lip, and trips a weighted lever, which assists the opening and closing of the cocks.

Claim.—1. The combination of the steam-cock E, the exhaust-cock J, the pipes D I, in communication with the cylinder A above, the crank M, the weighted or tumbling lever K, the lever N, the lips *h*, the studs *i l k*, the crank O, the counterbalanced float B, the levers C L, the connection *f*, the cylinder A, the pipes F G, and the water-discharge pipe H, the whole being arranged for operation, substantially as specified.

2. The combination, with the water-inlet pipe G, of the pipe I, extended and constructed to discharge the exhaust steam in line, or nearly so, with the flow of water through the pipe G, the exhaust-cock J, the steam-cock E, the pipe D, the cylinder or vessel A, and the operating-float B, essentially as shown and described.

138,674.—*Sausage-Stuffer.*—FRANK MICKELS, Quincy, Ill., assignor of one-half his right to HENRY A. GEMMER, same place. Application filed March 14, 1873.

A vertical cylinder with a horizontal delivery-spout at its base. Two rods secured to the base-plate support at top a cross-head, in the center of which a screw-shaft works, carrying a platen to press down the mince-meat, being operated by a pinion and crank. When the platen is drawn to the top the cross-head is released at one side and turned off by a hinge on the other for refilling.

Claim.—The barrel B, brace H, sleeve L, wheel M, pinion P, and piston N, when arranged and operated relatively one to the other, substantially as shown and described.

138,675.—*Car-Spring.*—ALLEN MIDDLETON, Jr., Philadelphia, Pa. Application filed November 27, 1872.

The supporting-plates are connected by small spiral springs, the ends of which are screwed into the plates and surrounded by larger spiral springs, the latter kept from contact with the former by means of a raised circular projection upon the plates.

Claim.—1. A car-spring in which large spirals D are confined between plates A A, connected together by small spirals B, all combined to operate substantially as and for the purpose set forth.

2. The plate A, having the annular projections *z* threaded internally, and surrounding the small spirals and retaining the large spirals in their proper lateral position.

138,676.—*Whip-Rack.*—JOHN M. MITCHELL, Cincinnati, Ohio. Application filed April 10, 1873.

Claim.—A rack constructed of a base, A, standards B B', &c., springs C C', &c., and slots *d d'*, &c., arranged and operating substantially as and for the purpose specified.

138,677.—*Railroad-Crossing Gate.*—WILLIAM F. MORGAN, New York, N. Y. Application filed April 4, 1873.

The extensible gate is on the lazy-tongs principle, and is operated by the ordinary double-screw spindle, while the outer end is supported by the hanger traveling on an elevated way by means of friction-rollers.

Claim.—The carriage F and hanger G, in combination with the gate A and spindle C, constructed and operating substantially as and for the purpose set forth.

138,678.—*Railway-Car Brake.*—GEORGE W. MORRIS, Pittsburg, Pa. Application filed January 24, 1873.

The brake-bar is connected by rods to a socket press-piece, which embraces a central guide-rod on a cross-bar of the truck. Between the socket and rear of the guide-rod is interposed a spiral spring, which operates to release the brake-bar when the brake-lever is released.

Claim.—1. A sliding brake-bar, provided with arms and a sliding socket press-piece, in combination with a central guide-rod and a spiral releasing-spring arranged thereon, to operate as described.

2. In a car-brake release, the sliding connection of the socket-press-piece with the spring guide-rod, and having also a partial swiveling movement upon its connections, as and for the purpose described.

3. The sliding press-piece G locked upon its carrying-bar C by the grooves *e* and the stops *c*, as described.

138,679.—*Electrical Gun-Cartridge.*—THADDEUS P. MOTT and SAMUEL GARDINER, Jr., New York, N. Y., said GARDINER assignor of one-sixth his right to T. P. MOTT. Application filed April 3, 1873.

A copper pin, insulated from the cartridge-shell, passes into the cartridge, terminating near the fulminate, in order that when electricity is applied to the copper pin or wire a spark may pass through the priming to the cartridge-shell, which, being in metallic contact with the fire-arm barrel, allows the electrical discharge to pass through the person holding it to the ground.

Claim.—1. A cartridge or shell, substantially as described, adapted to be exploded by an electrical spark where a single wire is used to bring the positive current to the fulminate, the negative being obtained through the metal of the ball or other metallic surroundings of the fulminate, for the purpose set forth.

2. The combination, in a cartridge for fire-arms, of a metallic shell insulating-disk and a single "positive" wire, D, substantially as and for the purposes set forth.

138,680.—*Mortise Door-Latch.*—WALLACE T. MUNGER, New Britain, Conn., assignor to P. CORBIN and F. CORBIN, same place. Application filed April 12, 1873.

A vertically-sliding block is pivoted to the lower arm of the bent lever, and moves in a recess provided for it in the lock-case. The thumb-piece levers on either side of the door act upon this block, and, the leverage being the same, the latch is withdrawn with equal facility by pressure upon either thumb-piece.

Claim.—The slide-block *i* within the case near the opening in the bottom thereof and pivoted to the end of the lever *g h*, in combination with the latch *a*, substantially as and for the purposes set forth.

138,681.—*Cap.*—MORRIS M. MYERS, Boston, Mass. Application filed April 2, 1873.

The body is double, one-half, carrying the visor, being reversible.

Claim.—The duplex cap, capable of being reversed or of being turned wrong side out for use, formed with the reversible band *m*, reversible visor-piece *n*, and a partially-attached lining, serving as a lining to the cap when reversed, and when not reversed or when turned inside out.

138,682.—*Reservoir Cooking-Stove.*—DAVID H. NATION and EZEKIEL C. LITTLE, St. Louis, Mo. Application filed March 14, 1873.

The reservoir rests in the base-pan in the front or fire-box end of the stove. It is entirely free from contact with the stove or flues, except at its bottom. A curved damper in the front flue regulates the flow of the products of combustion. It is made in two parts, so as to be readily applied, when a new one is needed, without taking the stove apart.

Claim.—1. The arrangement of the flue E and flue-shell E', made separate and attached to the front plate of the stove, in combination with the reservoir H and exit-flue K, substantially as and for the purposes herein set forth.

2. The opening or openings in the front plate G, in combination with the damper I, flues D E, and reservoir H, for the purpose specified.

3. The direct-draft flue D in front of the fire-chamber, and formed by the flue-plate J and front plate G, in combination with the opening or openings in the front plate G, the damper I, flue E, and reservoir H, as shown and described.

138,683.—*Compound Tool.*—ELHANAN OMENSETTER and JOHN F. PARKER, Philadelphia, Pa. Application filed March 15, 1873.

Claim.—The handle A, having the gas-tube B, stop-cock C, apertures E E', and screws D D', constructed and arranged as and for the purposes set forth.

138,684.—*Manufacture of Oxide of Zinc for Pigments.*—FRANKLIN OSGOOD, New York, N. Y. Application filed April 26, 1873.

Metallic zinc in powder is mixed with coal and heated in a furnace, so that a blast of air may pass through in the same manner as in making oxide direct from the ore.

Claim.—The process herein described for manufacturing oxide of zinc from metallic zinc, the same consisting in heating the zinc mixed with coal and forcing a blast of air through or over the same, so as to form and carry off the oxide, substantially as set forth.

138,685.—*Treating Zinc Dross and Skimmings for the Manufacture of Pigments.*—FRANKLIN OSGOOD, New York, N. Y. Application filed April 26, 1873.

The ammoniacal skimmings are ground and sifted so as to separate the metal from the zinc and other salts, then roasted, and afterward converted into zinc-white or zinc-lead in the usual way.

Claim.—1. The process herein described for purifying galvanizing dross or skimmings, consisting in grinding or crushing, sifting, and roasting, substantially as set forth.

2. The process of producing oxide of zinc or other pigment from dross by roasting, mixing with coal, and subjecting to heat with a blast of air, substantially as set forth.

138,686.—*Ice-Pitcher.*—EDMUND A. PARKER, West Meriden, Conn. Application filed April 16, 1873.

The shell of the pitcher is made in two parts, so that the larger base of the lining will go into a shell with a smaller top. The parts are held by screws.

Claim.—In that class of pitchers in which the lining is of an increasing diameter toward the bottom, dividing the shell at a point below the top, where the internal diameter of the shell is slightly larger than the largest diameter of the lining, and providing one part with a bead at the joint, and attaching the handle and spout to the upper portion, so that by means of the said handle and spout the two parts are secured together, substantially as set forth.

138,687.—*Self-Waiting Table.*—WILLIAM W. PATTERSON, Crawford Springs, Va. Application filed February 21, 1873.

The central revolving top and the outer stationary top are both bisected and hinged. The legs are attached to the stationary top by hooks, and the legs are connected together by cross-pieces having bed-joint hooks.

Claim.—The combination of the bisected and hinged top D, and bisected and hinged revolving top D^1, detachable legs A, and cross-pieces B and C, connected to the legs by the bed-joint hooks *a*, substantially as and for the purposes set forth.

138,688.—*Plastic Compound for Furnace-Lining, Retorts, &c.*—SAMUEL J. PAYNE, Charlton, England. Application filed April 9, 1873.

The calamine applied to the surface of molded articles fuses upon them when they are burned, and produces a tough surface.

Claim.—1. A plastic composition consisting of siliceous and aluminous materials combined with calamine, in or about the proportions above set forth.

2. The application of calamine to the external surfaces of molded articles composed of a plastic compound of siliceous and aluminous materials, in the manner and for the purpose above set forth.

138,689.—*Printing-Press.*—FREDERICK C. PENFIELD, West Meriden, Conn. Application filed April 3, 1873.

The swinging platen is forced into contact with the fixed bed by a lever, carrying at its short end a friction-roller, bearing against a cam-faced rib.

Claim.—The herein-described printing-press, consisting of the frame A A supporting the bed B, and the lever L, and the swinging platen C, the said lever constructed and arranged so as to impart the requisite movement to the said platen, substantially as set forth.

138,690.—*Piston-Packing.*—CHARLES E. PERKINS, Malone, N. Y. Application filed September 24, 1872.

There are two sets of double rings divided by a metallic steam-tight diaphragm. Apertures being made in each end of the piston, steam is admitted through said apertures when the piston is traveling in the direction front or back, respectively, and thus the packing-rings are expanded to fit the bore of the cylinder.

Claim.—1. The double ring D, constructed, as described, of an inner ring, *a*, and an outer ring, *b*, connected together by studs *d d*, and cut apart at *e*, with a partition, *f*, on each side of said cut, substantially as and for the purposes herein set forth.

2. The combination of the head B with holes *i i*, spider C, the double rings D D, partition-ring E, and cover or follower G with holes *i i*, all constructed, arranged, and fastened together, substantially in the manner and for the purposes herein set forth.

138,691.—*Work-Holder.*—RUSSELL W. PERKINS, West Meriden, assignor to himself and JAMES H. HOLMES, Wallingford, Conn. Application filed February 6, 1873.

The base of the work-holder has a groove on its under side adapted to receive and slide upon a plate secured to the table.

Claim.—A work-holder, the base of which is constructed with a groove or slot, combined with a correspondingly-shaped block to be attached to the table, so that by means of the said block the holder may be secured to or removed from the table without removing the block from the table, substantially as set forth.

138,692.—*Bath-Tub for Bird-Cages.*—GEORGE T. PETERS and GEORGE E. PETERS, Jersey City, N. J. Application filed March 6, 1873.

The tub is covered by a shield of vitreous material, except one end, which is left open for the entrance of the bird. The water is kept clean, and young birds are prevented from falling into the water.

Claim.—The shield or dome B, with rounded end, sides, and top, made of a single piece of material, and with open front, as shown, and fitted upon the bath-tub A, substantially as and for the purpose described.

138,693.—*Wagon-Seat.*—JOHN W. PLATTENBURG, Tiffin, Ohio, assignor to himself and J. G. ARMSTRONG, same place. Application filed September 10, 1872.

The outer ends of the compensating-springs are secured to the bearing-block, the inner ends having a limited lengthwise movement.

Claim.—The combination of the seat A with downward-projecting ears *b b* and friction-rollers *d d*, springs B B, blocks C C, bars *a a*, and the sliding metal straps D D moving over the rollers *d d*, and having hooked ends, all substantially as set forth.

138,694.—*Steam-Boiler Furnace.*—ALONZO C. RAND, Aurora, Ill. Application filed March 5, 1873.

A steam-boiler furnace having within it a steam-generating chamber, and connecting with the outer chamber by means of circulating-pipes at the top, sides, and water-legs, said inner cham-

ber having within it the fire-place, and open at the bottom, the products of combustion passing down and around between the inner chamber and the inside walls of the outer chamber, and supplied with air and steam from the top by means of an injector-head to promote combustion.

Claim.—The combination, with a boiler-furnace, of the interior double-walled magazine B, connected, by pipes *b b*, with the steam and water spaces of the boiler, and the injector C, supplying steam and air to the interior of the magazine, all substantially as and for the purposes herein set forth.

138,695.—*Steam-Pump.*—GEORGE J. ROBERTS, Dayton, Ohio. Application filed February 5, 1873.

A cut-off valve is arranged in a hollow piston-valve and operated by a valve-stem passing through the main stem and an eccentric on an arm of the main crank-shaft, and reciprocating in a slotted head or guide. The pump-cylinder has a relief port or groove in it, near each end of the cylinder, and somewhat greater than the length of the piston, for permitting a portion of the water at its front to escape into the space at its rear and relieve the pressure.

Claim.—1. In a steam-engine provided with a piston-valve which is positively driven by steam-pressure, the combination of said valve with the driving-shaft and suitable mechanism in such a manner as to cause the motion of the former to assist the main crank over its dead-centers, substantially as specified.

2. In combination with the hollow piston-valve Q, provided with an interior valve-seat and with the ports T and U, the slide-valve N, constructed to operate substantially as and for the purpose shown.

3. The hollow and solid valve-stems P and *w*, respectively, when arranged as shown and combined with suitable valves and mechanism to reciprocate the same, substantially as and for the purpose set forth.

4. The main valve O, constructed as shown, and provided with the inlet-port *o*, main ports *l l* and *m'*, and the supplemental ports T T and U, when said ports are arranged substantially as and for the purpose described.

5. In combination with the valves O and V and with their rods P and *w*, respectively, the shaft H provided with the crank A', the slotted head R, the box S, the strap W, and the eccentric X, substantially as and for the purpose specified.

6. In a pump-cylinder, a relief port or groove, *b*, placed near each end, and operating in connection with the plunger E', substantially as and for the purpose shown.

138,696.—*Coffin-Handle.*—HERVEY ROGERS, Jr., West Meriden, Conn., assignor to C. ROGERS & BROTHER, same place. Application filed April 3, 1873.

The thin metallic tube forming the handle is enlarged at the point where the lever-socket is to rest. This is done to prevent the injury to the ornamentation as the lever-socket is slid along. The socket, of course, by this arrangement, can be made larger than all parts of the tube except that which is enlarged.

Claim.—In a casket-handle formed from a bar extending through levers, the said bar, when enlarged at the point where the levers are to be attached, substantially as and for the purpose specified.

138,697.—*Water-Meter.*—ALBION M. ROUSE, St. Louis, Mo., assignor of one-half his right to PETER E. BLAND, same place. Application filed December 11, 1872.

In the water-way is inserted a case which has a spring-valve that opens more or less, according to the water-flow, the valve being inclined so as to deflect the current to the periphery of the chamber containing the bucket-wheel. A small passage between the valve and its seat allows the water which may leak from the hydrant to pass to the chamber and be registered. The register-gear case is attached to a disk that fits, with a water-tight joint, the end of the bucket-wheel case, and is secured by a coupling-nut, so that the register-case may be adjusted to any position irrespective of the position of the bucket-wheel.

Claim.—1. The case E, for insertion in the feed-pipe of a rotary meter, and provided with a spring-valve, F G, substantially as set forth.

2. In combination with the case E, the valve F, when the same is provided with an orifice, *c*, substantially as and for the purpose set forth.

3. The wheel B having a reduced waist, B', devoid of buckets, in combination with the valve F, as and for the purpose set forth.

4. The register M', secured to the case A by means of the disk O and nut P, to allow the adjustment of the register on the case A, substantially as set forth.

138,698.—*Railway-Rail Chair.*—WILLIAM A. ROWLAND, Waverly, N. Y. Application filed April 12, 1873.

The chair is so formed as to be capable of being placed in position from the outside without removing the rail, the hooked and curved bolt being afterward inserted and confined by a nut for holding the inner flange of the rail.

Claim.—The combination, with the curved bolt D, of the chair C provided with a curved bearing to fit the bolt and to give a downward draw to the ends of the same, substantially as specified.

138,699.—*Whiffletree Snap-Hook.*—CYRUS W. SALADEE, Pittsburg, Pa. Application filed April 29, 1873.

A chamber is provided in the whiffletree-ferrule for the spring, which operates the snap-hook.

Claim.—The independent spring O, with or without the friction-plate C, secured to operate within the chamber or recess B of the ferrule or socket F, in combination with the snap-hook A, substantially as and for the purpose set forth.

138,700.—*Faucet.*—EDWARD SCRANNAGE, Jr., Melrose, Mass., assignor to SCRANNAGE, D'ESTE & CO. Application filed February 17, 1873.

Packing is wrapped on the spindle and held in place between a shoulder there and a sleeve forced down upon it by a screw, the whole sliding in the cap C.

Claim.—The spindle *b* with its shoulder *c*, packing *d*, and removable sleeve or tube *e*, in combination with the cap C, operating substantially in the manner and for the purpose set forth.

138,701.—*Coupling for Whiffletrees.*—WILLIAM C. SHIPHERD, Cleveland, Ohio, assignor of three-fourths his right to S. S. COE, JOHN J. SHIPHERD, and JAMES R. SHIPHERD, same place. Application filed January 31, 1873.

A recessed plate, having two flanged disks on the opposite sides of it, is attached to the whiffletree.

Claim.—1. In a whiffletree-coupling, the recessed plate C and disks I O, combined substantially as described, for the purpose specified.

2. In a whiffletree-coupling, the disk I provided with studs R, as and for the purpose set forth.

3. The combination, with the disks I O, of the fastening-bolt T and nuts W X, as and for the purpose set forth.

4. The combination of the recessed plate C, disks I O, and packing P Q, as and for the purpose set forth.

138,702.—*Thill-Coupling.*—WILLIAM C. SHIPHERD and EDWARD P. CURTISS, Cleveland, Ohio, assignors of three-fifths their right to S. S. COE, JOHN J. SHIPHERD, and JAMES R. SHIPHERD, same place. Application filed January 28, 1873.

The thill is secured to the squared ends of conical bearing-bolts.

Claim.—The hollow angular tenons G G, formed with the conical bearing-bolts D D and angular eyes S S, in combination with the thill-iron E, the adjusting and retaining bolt H, and the shackle A having the conical recessed jaws C C, and the interposed packing, substantially as herein shown and described, for the purpose specified.

138,703.—*Planing-Machine.*—ALBERT H. SHIPMAN, Albany, N. Y. Application filed March 17, 1873.

Lumber is taken out of "wind" in its seasoned shape to prevent the warping which results from dressing the surface to a gage under pressure rollers or bars.

Claim.—1. The combination of the beds B B', throat *a*, cutter D, and follower C, for operating in connection with the feed-rollers F, for the purpose of taking the wind out of lumber, substantially as described.

2. In combination with the levers I I and pendent loops *o o*, the screw-rod *q* and clamping-collar *i*, arranged and operating as herein specified.

3. In combination with the bed B and feed-rollers F F, the follower C, working in guide-grooves in the bed B for guiding the back end of the board true with the front end, as herein described.

4. In a planing-machine, the method of feeding the lumber to the cutters and feed-rollers in a continuous length by means of the dogs L L, provided with spurs *y y*, which engage the ends of the pieces, as and for the purpose specified.

138,704.—*Stair-Rod.*—ELDRIDGE J. SMITH, Washington, D. C. Application filed January 7, 1873.

The ordinary wooden stair-rod is held in place by metallic caps or end pieces of peculiar construction, one end projecting outwardly, a screw-hole at or near the middle, and the other end formed with a curved projection, adapted to rest on and secure the rod in position. The rod is prevented from slipping by a shoulder on the outer edge of the cap, which bears against the beveled end of the rod. When the rod is to be detached the screw is loosened, and a slight difference in configuration of the end piece adapts the device for use either on the angle or upon the riser of the stair.

Claim.—In combination with the rod A, the plates B B, provided with the cap and shoulder C and curved projection D, and secured by the screw E or its equivalent, substantially as and for the purpose hereinbefore set forth.

138,705.—*Centrifugal Machine.*—JOHN SPARROW, Portland, Me. Application filed March 19, 1873.

The sirup thrown from the basket runs down the inclines, escaping by the pipes at the bottom of the inclines. The pipes are movable, and may be turned simultaneously to direct the different grades of sirups into separate tanks. Steam is admitted to the chambers beneath the inclines to facilitate the flow of the sirup.

Claim.—1. The base of a centrifugal sugar-machine constructed with an annular chamber having one or more inclined planes, as aforesaid, and having also heating-spaces beneath said planes, substantially as and for the purpose described.

2. The combination of the base C, adjustable pipes I, connecting-bar K, and lever L, substantially as and for the purpose specified.

138,706.—*Trace-Detacher.*—WILLIAM H. STIMELY, Buchanan, assignor of one-half his right to WILLIAM H. DOYLE, Pittsburg, Pa. Application filed March 18, 1873.

The trace is inserted between the faces of a bifurcated rod, and, by means of a spiral spring, the rod is held in place on the end of the whiffletree. The rods being forced apart by means of a lever, which is inserted between their inner ends, the traces are detached from the whiffletree.

Claim.—1. The combination of the whiffletree A, sliding rods F, slotted heads H, slotted elbows M, spear-head L, lever K, cord N, springs G, and friction-rollers I, substantially as and for the purpose specified.

2. The combination of the holdback-plate O, holdback P, tongues Q, spring S, and thill C, substantially as and for the purpose specified.

138,707.—*Traction-Wheel.*—HENRY T. SMITH, Peoria, Kans. Application filed May 2, 1873.

An elliptical traction-wheel is encircled by three independent endless traction-belts, the outer one forming the endless track, which affords a large traction-surface.

Claim.—1. The combination, in an elliptical traction-wheel, of a traveling sectional supporting-track, C, connected by knuckle joints, for the rollers B, with a bracing-frame of links, G, forming a part of said sectional support C, and traveling with the same to render rigid and straight the supporting-sections C for the rollers B, essentially as described.

2. In an elliptical traction-wheel, adapted to be supported by a single axle-tree, the traveling bracing-frame of links G, having a capacity to lengthen and shorten to conform to the flat and rounded sides of the elliptical wheel, essentially as described.

3. In a single elliptical traction-wheel, adapted to be supported by a single axle-tree in a fixed hub, A, and having both sectional and roller-traveling supporting-tracks C B, the combination therewith of an encircling traveling-track, D, arranged and operating jointly with the elliptical wheel, essentially as described.

4. In an elliptical traction-wheel, having an outer traveling-track, D, the slits or bed-sections thereof interlocked with the sectional traveling-supports C, to be independent thereof, and to be free to rise and fall vertically to conform to the ground, substantially as described.

138,708.—*Button-Fastening.*—EDWARD J. F. STOLTE, Washington, D. C. Application filed March 19, 1873.

A metallic disk has a perforation at its center, through which the eye of a button is passed, and loops or guides are struck up from its under side to receive a notched bolt or bar which slides through the shank. The bolt is secured by the notches and also by a spring formed by a U-shaped slot in the disk.

Claim.—1. The fastening device constructed substantially as herein described, consisting of a plate, A, and pin B, arranged to be secured in position by one longitudinal movement, and not to be withdrawn without two partial rotary movements, in connection with a longitudinal movement, substantially as specified.

2. The combination and arrangement of the plate A, having two or more loops, *c d e*, and one or more spring-loops, *g*, and slotted pin B, all arranged and operating substantially as herein set forth.

138,709.—*Coupling-Joint for Reapers.*—GEORGE W. SYLVESTER, Plainview, Minn. Application filed October 26, 1872.

A joint made of two parts, connected by screw, and having a rubber bearing fitting in grooves.

Claim.—The reaper-joint herein described, consisting of the adjustable internally-grooved eyes B B', rubber packing D arranged within the grooves *c*, and the adjusting-screws C, the several parts being constructed as shown and specified.

138,710.—*Construction of Buildings.*—JOSEPH TALL, Southwark, England. Application filed June 4, 1872.

Adjustable and extensible panel-frames for laying up walls of concrete, cement, &c., without skilled labor. The panels are adjusted by means of the screw-bolts *e*, nuts e^2, and tubes e^1 for thick or thin walls, and they can also be varied in length by adding or removing sections e^1. Holes for the reception of the joists are formed in the walls by means of sand-cores, which are removed after the walls have hardened.

Claim.—1. The molds for forming walls of concrete, composed of frames consisting of panels connected at their ends to wrought-iron pieces which may be used to form the corner or angle of a wall or building, in combination with the screw-bolts *e*, the nuts e^2, and tubes e^1, substantially as and for the purposes herein set forth.

2. The adjustable panels, in combination with the metal rods *i*, provided with holes i^1 arranged to receive cross-pins *j*, and constructed and arranged to admit of additional or short lengths of panel when necessary, substantially as and for the purpose set forth.

3. The iron boxes *m*, when used in combination with sand, dust, or other friable substance, capable of removal with facility from the wall, for the purpose of leaving recesses to receive the ends of the flooring-joists, substantially as described.

138,711.—*Breech-Loading Fire-Arm.*—JAMES PATTON TAYLOR, Elizabethton, Tenn. Application filed October 29, 1872.

Claim.—1. The combination of a laterally-swinging breech-block, F, and an axial breech-bolt or plug, H, sliding within the breech-block to close the breech-cavity *f* and to furnish the rear abutment for the charge, substantially as herein shown and described.

2. The swiveled face-plate I containing the hammer-aperture *k*, in combination with the breech-block F and breech-bolt H and a firing-pin, J, arranged within the same, communicating the rotary motion of the breech-bolt to the face-plate and thereby shifting the hammer-aperture, so as to prevent accidental firing before the bolt is locked.

3. The cartridge-extractor G, furnished with the retracting-spring *u* and spring-latch *b*, in combination with the breech-block F and breech-bolt H constructed with the tripping-incline 7 and lugs *n*, respectively, substantially as herein specified, said extractor being withdrawn by the breech-bolt and returned to its seat automatically.

138,712.—*Manufacture of Soap.*—RICHARD P. THOMAS, San Francisco, Cal. Application filed October 31, 1872.

The fats, oils, and resin are melted by steam heat, the caustic lyes thoroughly mixed, the mass allowed to rest until saponification takes place.

Claim.—Saponifying vegetable and animal fats, in combination with resins, by fermentation or chemical agitation, in an open vessel, with salty caustic alkalies of high strength, substantially as set forth and described.

138,713.—*Machine for Rubbing and Rolling Seams of Boots.*—ALBERT THOMPSON, Boston, Mass. Application filed JUNE 5, 1873.

To the end of the reciprocating rod is attached a double head adapted for either rolling or rubbing action, with mechanism for reversing the same while the machine is in motion.

Claim.—1. The improved rubbing-down machine for seams of boots and shoes, consisting of the reciprocating rod A with the slot *g*, the lever E, the gearing *f'* and *f''*, the sleeve D, the operating ends *b* and *c*, the treadles J and K with their several connecting-rods, and the stretcher or form I, in combination, substantially as above described.

2. The reciprocating rod A with the slot *g* passing through the sleeve D, with the pin A, the double head B, the lever E, and the gearing *f'* and *f''* in combination, in the manner and for the purpose substantially as above described.

3. The stretcher operating as a holding device for rubbing or rolling down the seams of boots and shoes, in combination with the double head B adapted for either rubbing or rolling, and actuated by a reciprocating rod.

4. The reciprocating rod A, passing through the sleeve M eccentrically, so as to be revolved with it by means of suitable gearing, and the lever E, substantially as above described.

138,714.—*Musical Blackboard.*—JAMES M. THOMSON and JAMES CORDLEY, Adrian, Mich. Application filed November 25, 1870.

The blackboard is provided with music staves and notes, which latter, being in fact keys connected with properly-tuned reeds, are, when pressed, accompanied by the appropriate and corresponding sound, the hollow supports conveying air to or from a bellows in the pedestal, in which the whole packs away.

Claim.—1. A musical blackboard provided on its face with keys arranged upon a staff or staves, to represent musical notes, and connected with valves to control corresponding musical reeds or their equivalent, the whole supported by one or more hollow standards constituting wind-trunks, upon a pedestal containing the bellows by which air is supplied or exhausted to sound the reeds, all substantially as described, for the purposes set forth.

2. The additional sounding-board T, throat M, valves E E', and reeds L, all arranged substantially as and for the purposes set forth.

3. The musical blackboard A A' hinged or jointed together, as at U U', in combination with the detachable hollow standards C C, and the pedestal B, adapted to contain the board A A', when folded substantially as described.

138,715.—*Gas-Machine.*—HOWARD TILDEN, Philadelphia, Pa. Application filed April 17, 1873.

The carbureting-chamber is made separate from the hydrogen-gas-generating chamber for greater convenience in operating each.

Claim.—1. The combination of the cylinder 1, bell 2, basin 6, pipe 8, hydrocarbon-compartment 9, standard 19, and drip-cup 14, as described and illustrated.

2. The construction and arrangement of cylinder 1, bell 2, basin 6, pipe, 8, hydrocarbon-compartment 9, standard 19, drip-cup 14, as and to operate as set forth and described.

3. The Sisal hemp in the lower part of the hydrocarbon-compartment 9, in combination with the charcoal in the upper part above the screen 10, separating the charcoal from the Sisal hemp, as described and set forth.

138,716.—*Leg for Folding Lounges.*—JONATHAN F. TOWEY, Medford, Mass., assignor to himself and Julian D'Este, same place. Application filed April 7, 1873.

A double plate or hollow socket receives the slotted end of the leg on its central pivot; the leg has also a pin projecting from its face that engages with notches on the socket. The screw-openings in the outer plate of the hollow socket are made large enough to permit the screw-heads to pass through and rest in the openings of the inner plate.

Claim.—1. The hollow socket B provided with one or more notches, *g*, in combination with the leg A pivoted thereto, and provided with a slot, *d*, and a pin or projection, *h*, operating substantially as described.

2. The hollow socket B, constructed with openings *f* in its outer plate 6 to allow of the passage of the heads of the fastening-screws *e*, substantially as and for the purpose set forth.

138,717.—*Car-Axle Box.*—JOHANN ERNST UHL, Renovo, Pa. Application filed September 28, 1872.

The cover is held securely by a spring, one end of which is held in a recess in the forward part of the cover, the other end bearing upward against an angular surface upon the hinge. A projecting ridge upon the cover or a set-screw gives the requisite tension to the spring. A pad is attached to the inner side of the cover by suitable cement. A dust-guard, composed of a double metallic ring, held in place by springs and divided packing-rings placed over the same, excludes the dust from the rear end of the box.

Claim.—1. The external spring D applied to the center of the cover C, and projecting within a recess, 6, in the hinge-lug 1, and pressing upward against a suitable bearing-surface on the same, so as to hold the cover against all parts of its seat, substantially as described.

2. The combination, with the box B and cover C, of the spring D and angular bearing-surface 8 9, arranged as herein described, so that the said spring will hold the cover against all parts of its seat when closed, and support it when open.

3. The fulcrum enlargement 10 on the end of the spring D, and the flaring fulcrum-socket 5 with groove 11, for securing the spring by its own resiliency, as herein set forth.

4. The adjusting or set screw 12, employed in connection with the spring D and cover C, in the manner and for the purpose specified.

5. The combination of the cover C, pad 13, and an intervening body of cement, 14, applied in manner substantially as herein described, in order to adapt the pad accurately to the cover-seat, as explained.

6. The locking-clips 16, in combination with the open hinge-lugs 17 of the cover C, and the hinge-plate 7 attached to the box, for the purpose specified.

7. The supplemental cover-frame I, constructed with the recessed hinge-lug 1 and seat 2, for application to old boxes, in combination with a gasket, 21, and the cover C and its spring D, as herein set forth.

8. The locking strips or clips 22, in combination with the supplemental cover-frame I and its attaching-bolts 23, for the purpose stated.

9. The dust-guard, composed of the metallic ring E and packing F, supported by springs G H, substantially as herein described, for the purpose set forth.

10. The dust-guard-supporting ring E, composed of two interlocking parts, *a b*, constructed substantially as herein set forth, in combination with the divided packing F 28, for the purpose specified.

138,718.—*Table.*—JERVIS H. WATTLES, Battle Creek, Mich. Application filed April 12, 1873.

The legs are made detachable, and are provided with beveled shoulders, which engage with the beveled shoulders of the end and side rails; and the outside clamp is connected to said leg and rails by a bolt passing through the clamp and leg.

Claim.—1. The removable leg C, provided with the beveled shoulders *c e*, in combination with the beveled ends or corners of the end and side rails, substantially as described.

2. The combination of the corner-clamp E, through bolt D and nut, with the removable leg C, for clamping said leg to the rails, substantially as described.

138,719.—*Fly-Switch.*—LYMAN S. WELCH, Canaan, N. H. Application filed October 15, 1872.

Claim.—The combination of the wires B B' and C, linked and adjusted together, as shown, with the handle A and rests *d'*, substantially as and for the purposes set forth.

138,720.—*Automatic Fan.*—THOMAS WELCH, Philadelphia, Pa. Application filed March 21, 1873.

A horizontal shaft, provided with friction-wheels at both ends, hangs in bearings clamped to a sewing-machine table, and communicates motion from the fly-wheel to an upright fan-shaft. The fan-shaft has at its lower end a disk which rests upon the outer friction-wheel of the horizontal shaft, and carries a peculiar double-armed socket at its tip.

Claim.—1. The fan-shaft H with disk L resting on the friction-wheel G', substantially as and for the purpose set forth.

2. The shaft F having an axial movement and carrying the friction-wheels G G', operating in combination with the fan-shaft H, substantially as and for the purpose set forth.

3. The shaft H carrying the fan and disk L, in combination with the shaft F carrying the friction-wheels G G' and mounted on the pivoted arm D, substantially as and for the purpose described.

4. The fan, constructed of the blades N N and cross-arms M, substantially as and for the purpose set forth.

5. The holder P, consisting of the diagonally-arranged sockets P', for the crossed arms of the fan, substantially as and for the purpose set forth.

138,721.—*Die for Cutting and Cupping Sheet Metal.*—CHARLES F. WILSON, Northbridge, Mass., and SAM. H. MILLER, Brooklyn, N. Y., assignors to themselves and JESSE E. FOLK, Brooklyn, N. Y. Application filed December 24, 1872.

The margin of the disk, cut by the joint action of an external annular cutter and an internal annular cutter, is clamped between the latter cutter and a ring supported by a spring, and which, while yielding to the descent of the internal cutter and to the gradual withdrawal of the plate, prevents buckling of said plate.

Claim.—1. The combination, substantially as herein shown and described, with the female cutting-die B, male cupping-die *d*, and the female cupping-die A, constructed to also form a male cutter, of the spring-borne clamping-ring or follower C, wholly within the space separating the dies B and *d*, for operation together, as specified.

2. The arrangement of spring *k* externally to the dies, and the device supported by said spring, and which supports the follower C within the die, substantially as described and shown, whether said device be posts or any equivalent thereof.

138,722.—*Steam-Radiator.*—JAMES P. WILSON, Yonkers, N. Y., assignor to ADAM CARR, Paterson, N. J. Application filed February 14, 1873.

In the bottom plate, beneath the transverse division-plate in the base, are depressions to hold the water of condensation and form a water-seal between the inlet and outlet pipes.

Claim.—An opening between the inlet and outlet steam-spaces located below the level of the water of condensation to form a water-seal for insuring the circulation of steam in a radiator, substantially as set forth.

138,723.—*Superheater for Steam-Boilers.*—JOHN WOLFORD and ROBERT CONNER, Knightsville, Ind. Application filed January 9, 1873.

Steam is superheated after passing from pipe E through the compartment D in chamber B, thence into the outer pipes F, from these two outer pipes the steam works through the compartment *d* and intermediate pipes F to the central chamber D', whence it is discharged through the pipe G for use.

Claim.—1. The semi-annular chamber B having the longitudinal compartments D D' and the transverse compartments *d*, in combination with the serpentine pipes F, inlet-pipe E, discharge-pipe G, and boiler A, all arranged as described.

2. The semi-annular chamber B, in combination with the boiler A, drip-pipes H, and ball-valves *h*, as specified.

3. A boiler for superheating steam having an arched series of serpentine pipes, F, in combination with a series of cells or compartments, *d*, and chamber B, all as specified.

138,724.—*Vault-Light.*—JOHN WOOD, New York, N. Y. Application filed November 26, 1872.

Claim.—The bulb A formed with the packing-supporting flange, as shown, and with external screw-threads for operation in connection with the plate A, as and for the purpose specified.

138,725.—*Sounding-Board Bridge for Musical Instruments.*—GEORGE WOODS, Cambridgeport, Mass. Application filed March 27, 1873.

The metallic plate or bridge to which the sounding-forks are attached is connected to the sounding-board by a curved shank at one end; the other end remains free to vibrate, but is secured from displacement during transportation by a rubber-lined ear.

Claim.—A metal bridge for musical instruments, attached by one end only to the sounding-board, or its equivalent, and allowed to vibrate freely at its other end, for the purpose and in the manner herein shown and described.

138,726.—*Walking-Cane Umbrella.*—EDMUND WRIGHT, Philadelphia, Pa. Application filed September 25, 1872.

Claim.—1. A walking-stick parasol, the handle or stick of which is in sections capable of being connected to or detached from each other, for the purpose set forth.

2. The combination, with the sections of a parasol or umbrella stick, of a coupling, consisting of two metal blocks, A A', each having a socket to receive the end of one of the sections, and one having a threaded projection adapted to a recess in the other, and a chain secured to a ring or rings, and permanently connecting the sections without preventing them from turning independently, as specified.

138,727.—*Unloading Coal-Barges.*—WILLIAM A. WRIGHT, East Haven, assignor to AMERICAN COAL-BARGE COMPANY, Bristol, Conn. Application filed January 3, 1873.

A coal-barge and elevator, the former provided with wells and pockets or receptacles, the latter moving on tracks, so that it may be secured over any of the wells, which are walled openings extending below the pockets such a distance that when buckets rest on the bottom of the wells the material in the pockets will of itself flow out through gates and fill the buckets, which are elevated in frames, moving between ways or guides, and emptied into dump-chute attached to tower of elevator.

Claim.—1. The combination of the pockets C, well B, tower D, dump-chute F, and tub *b*, all operating in connection with each other, substantially as described, and for the purpose set forth.

2. The arrangement herein described for suspending the dump-chute, whereby it is made yielding when forced upward by the buckets, substantially as described, and for the purpose set forth.

3. The combination of the body or hull of the barge-tower or elevator-frame with the dump-chute and vertically-adjusting mechanism, substantially as and for the purpose described.

4. The combination of the dump-chute, changeable apron *u*, and buckets *b b*, operating alternately, all substantially as described, and for the purpose set forth.

5. The gate *c*, hinged at the bottom of the opening *v*, in combination with the bucket *b*, substantially as and for the purpose described.

138,728.—*Book-Rest for Desks.*—LIDA A. TARRING, Washington, D. C. Application filed April 26, 1873.

A board and cleat at the lower edge are secured to the sides of an ordinary desk by two slotted arcs fastened with thumb-screws and an arm moving in staples.

Claim.—The rest B, combined with the slotted arc C provided with the arm *e*, and secured to an ordinary desk by set-screws, as and for the purpose set forth.

REISSUE PATENTS.

5,391.—*Seam for Boots and Shoes.*—SAMUEL A. BRACKETT and WILLIAM W. WHITCOMB, Boston, Mass.—Patent No. 133,826, dated December 10, 1872. Application filed February 26, 1873.

Claim.—In a boot or shoe, the seam formed by stitching the two parts to be joined to each other, with their surfaces placed together, as described, and then turning the edge of the one part over and stitching it down beyond the edge and to the main body of the other part, substantially as and for the purposes hereinbefore set forth.

5,392.—*Egg-Carrier.*—ABNER H. BRYANT, Chicago, Ill.—Patent No. 104,261, dated June 14, 1870. Application filed April 5, 1873.

Strips having inclined slits in their upper edges are interwoven with strips having inclined slits in their under edges, portions of the strips of pasteboard being left in each series for the purpose of holding the walls of the adjacent pockets apart and to prevent breakage.

Claim.—1. The combination, with the strips A having sloping or inclined notches in the lower edges, of the strips B having the sloping or inclined notches in their upper edges, substantially as specified.

2. Strips of pasteboard or other flexible material provided with inclined or sloping notches or slits in their upper or under edges, substantially as specified.

3. The strip A having inclined or sloping notches in its lower edge and separating-tongues, substantially as specified.

4. The strip B having inclined or sloping notches in its upper edge and separating-tongues, substantially as specified.

5,393.—*Hollow Auger.*—WILLIAM A. CLARK, New Haven, Conn. Patent No. 121,707, dated December 12, 1871. Application filed April 17, 1873.

The depth of tenon is regulated by the flanged disk secured by the set-screw, and the diameter of it by the wedges and screws.

Claim.—1. The stop A having the beveled slotted shank *c*, constructed and arranged to operate in connection with a hollow auger, as herein set forth.

2. The combination of the wedges *e* and screws *h* with the slotted head or tube C of a hollow auger, substantially as and for the purpose herein set forth.

5,394.—*Condenser and Feed-Water Heater for Steam-Engines.*—JOSEPH DILWORTH, Muskoka District, and JOHN C. HODGINS, Toronto, Canada; said DILWORTH assignor to THOMAS K. MORGAN and HORACE THORN, Toronto, Canada.—Patent No. 111,916, dated February 21, 1871. Application filed March 28, 1873.

The exhaust steam enters at the upper side of a vertical-tube condenser, and the condensing water at the lower end of the tubes. A perforated cap is arranged over the top of the tubes. Below the tubes is a chamber for receiving the condensed water, and a spray-pipe is arranged in this chamber for condensing any steam not already condensed. An overflow-pipe is arranged at the upper end, under the tube-sheet. The feed-water is heated at the same time that the steam is condensed.

Claim.—1. In a feed-water heater, the combination of water-cylinder *a*, steam-pipes *b* passing through the heads of said cylinder, steam-chamber *f* above said steam pipes, into which chamber the exhaust steam enters, condensing and vacuum chamber below, but connecting with said pipes, for superinducing the downward passage of the steam through said pipes, and preventing back pressure, water-inlet *l* at the lower and water-exit *n* at the upper end of said cylinder, all arranged as and for the purpose described and represented.

2. The perforated plate *h* in the chamber *f* above the vertical ends of the vertical tubes *b* of the feed-water heating apparatus, for the purposes set forth.

3. The blow cocks or valves applied to and combined with the chamber *f* and perforated plate *h*, for the purposes set forth.

5,395.—*Drawer-Pull Label-Holder.*—JOHN A. EVARTS and PIETRO CINQUINI, West Meriden, Conn., assignors to BRADLEY and HUBBARD, same place.—Patent No. 113,506, dated April 11, 1871. Application filed April 3, 1873.

The frame holding the label is made detachable from the pull.

Claim.—A drawer-pull and label-holder combined, when the frame which incloses the label is made detachable for the introduction or removal of the label without detaching the pull, substantially as described.

5,396.—*Pump.*—EDWARD GRASER, Union City, Pa.—Patent No. 124,434, dated March 12, 1872. Application filed March 5, 1873.

The metallic pumping-cylinder contains all the valves. The lower valve-seat is provided with a screw fitting a sleeved screw in a metallic tip on the lower section of the pump-stock. The piston has two rods, which give a purchase for unscrewing the cylinder from the tip. By this arrangement the working parts may be readily removed and replaced.

Claim.—The cylinder C, constructed substantially as described, and provided with the screw E and tip D, or their equivalents, in combination with the piston J and plunger-rod L, substantially as shown and described, and for the purposes mentioned.

5,397.—*Furnace for Smelting Iron and other Ores.*—SAMUEL W. HARRIS, Hudson, New York, assignor of part interest to BENJAMIN RAY, MILTON MARTIN, and JACOB W. HOYSRADT.—Patent No. 123,894, dated February 20, 1872. Application filed June 14, 1872.

In charging the furnace with fuel, ore, &c., the barrow conveying it is pushed against the door, which swings inward, allowing the fuel, &c., to be dumped into the furnace. When the barrow is withdrawn the door swings back by its own weight, closing the furnace, so that gases evolved may be conducted off by a proper outlet, and used as desired.

Claim.—1. The cover applied to the head of a blast-furnace, and provided, substantially as herein described, with one or more charging-apertures and swinging doors for closing the same.

2. The escape-opening *b* and regulating-damper, in combination with the cover and its opening and closing charging-apertures, substantially as and for the purpose herein described.

5,398.—*Steam-Boiler and Furnace.*—GEORGE W. LASCELL, Syracuse, N. Y., assignor to himself and HUGH ROBINSON, Jersey City, N. J.—Patent No. 133,161, dated November 19, 1872. Application filed March 24, 1873.

The fuel is consumed in the external furnace, the products of combustion passing through flues into the central combustion-chamber, to which air is supplied through register in its bottom, and thence following the direction of the arrows to the chimney. The water is caused to circulate through the double walls of the exterior furnaces and zigzag pipes located in front of their exit flues before entering the main boiler, in which latter a circulation is kept up by means of the coiled pipe, which also serves to retard the gases.

Claim.—1. The combination of the outside fire-chambers A and flues D thereof with a central or intermediate well for combustion of the gaseous products and the register G, arranged in relation with each other and with the boiler-surface above or body to be heated, substantially as specified.

2. The combination, with the outside fire-chambers A, the flues D, the central or intermediate combustion-well, and the register G, of the double-walled boiler E, arranged to form a water-space around said well and flues D, connecting the latter with the fire-chambers, essentially as shown and described.

3. The combination of the pipes L, dome K, pipes M, and jackets O and P with the double-walled boiler E, coiled pipe or pipes J, and one or more exterior fire-chambers or furnaces, A, substantially as herein shown, and for the purpose set forth.

4. The combination of the pipes H with the double-walled exterior open-topped fire-chambers A and with the double-walled boiler E, substantially as herein shown and described, and for the purpose set forth.

5. The combination of the coiled or zigzag pipes I with the double-walled exterior open-topped fire-chambers A and with the flues D leading through the double walls of the boiler E, substantially as herein shown and described, and for the purpose set forth.

5,399.—*Whiffletree Snap-Hook.*—CYRUS W. SALADEE, Pittsburg, Pa.—Patent No. 51,069, dated November 21, 1865. Application filed April 28, 1873.

The spring which actuates the hook is concealed and protected from dirt and water by a plate.

Claim.—1. The snap-hook A, constructed to operate in connection with a concealed spring and the trace-hook H, substantially as and for the purpose set forth.

2. The spring to actuate the snap-hook A, concealed within the plate B or ferrule F, substantially as and for the purpose set forth.

3. The snap-hook A, when provided with thumb-hold J, in combination with the ferrule or socket F and trace-hook H, Fig. 4, substantially as and for the purpose set forth.

5,400.—*Whip-Socket.*—ERASTUS W. SCOTT, Wauregan, Conn., assignor to himself and ARSON SEARLS, Newark, N. J.—Patent No. 70,627, dated November 5, 1867. Application filed January 16, 1873.

The curved lever, which is pivoted within a slot in the side of the whip-socket, securely clamps the whip between its curved ends and the opposite side of the socket.

Claim.—1. The combination of the stationary part of a whip-socket and a lever, the lever being hinged or pivoted so that the lever bears against the whip at or near the ends of the lever, to hold the whip in position, for the purpose set forth.

2. The lever B, curved or inclined inward from its point of pivot, and used in connection with the stationary part A, substantially as and for the purpose specified.

3. The lever B pivoted at a point inside of its center of gravity, so that when left free the upper part of the lever will fall outward, substantially as and for the purpose set forth.

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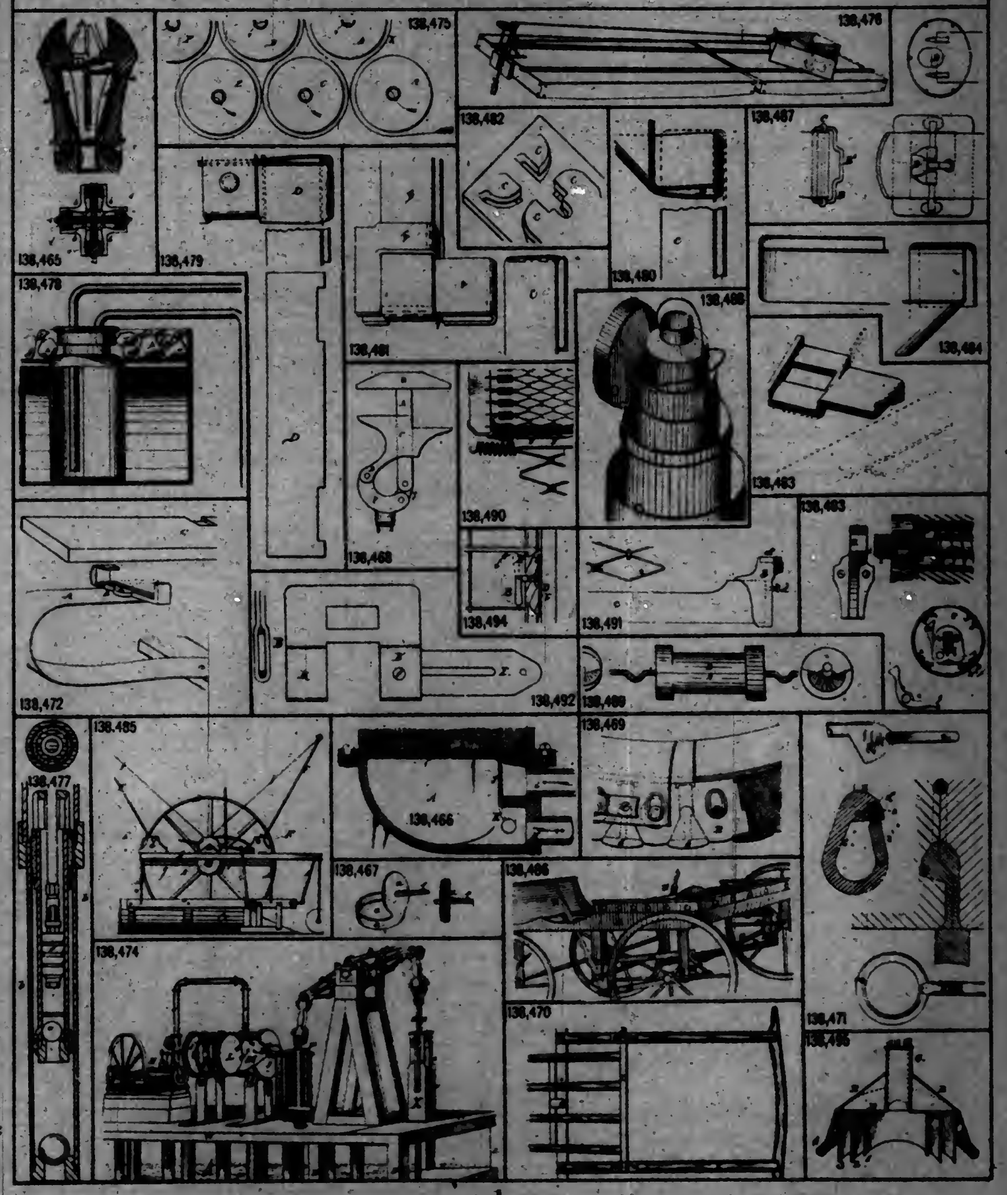
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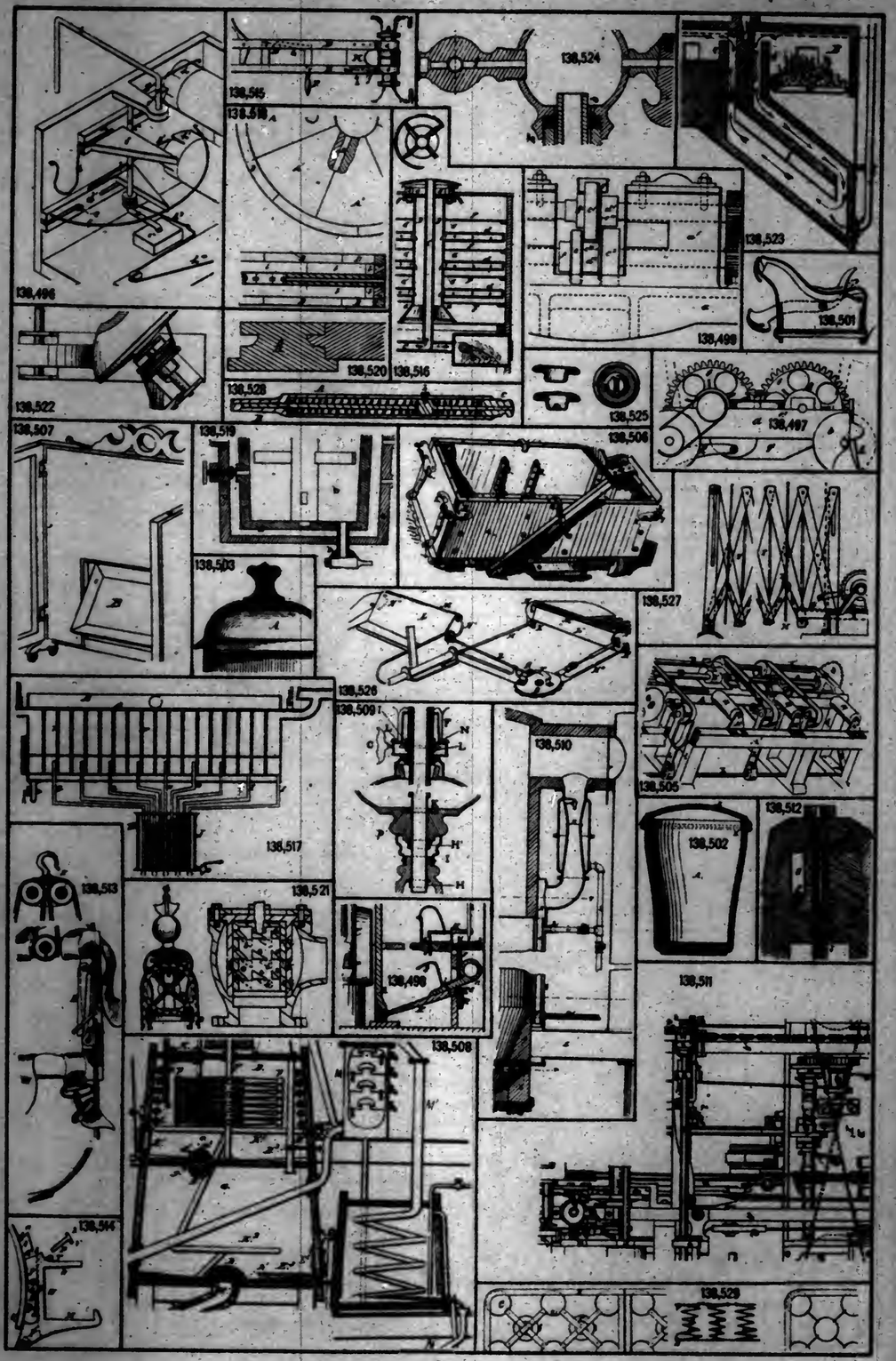
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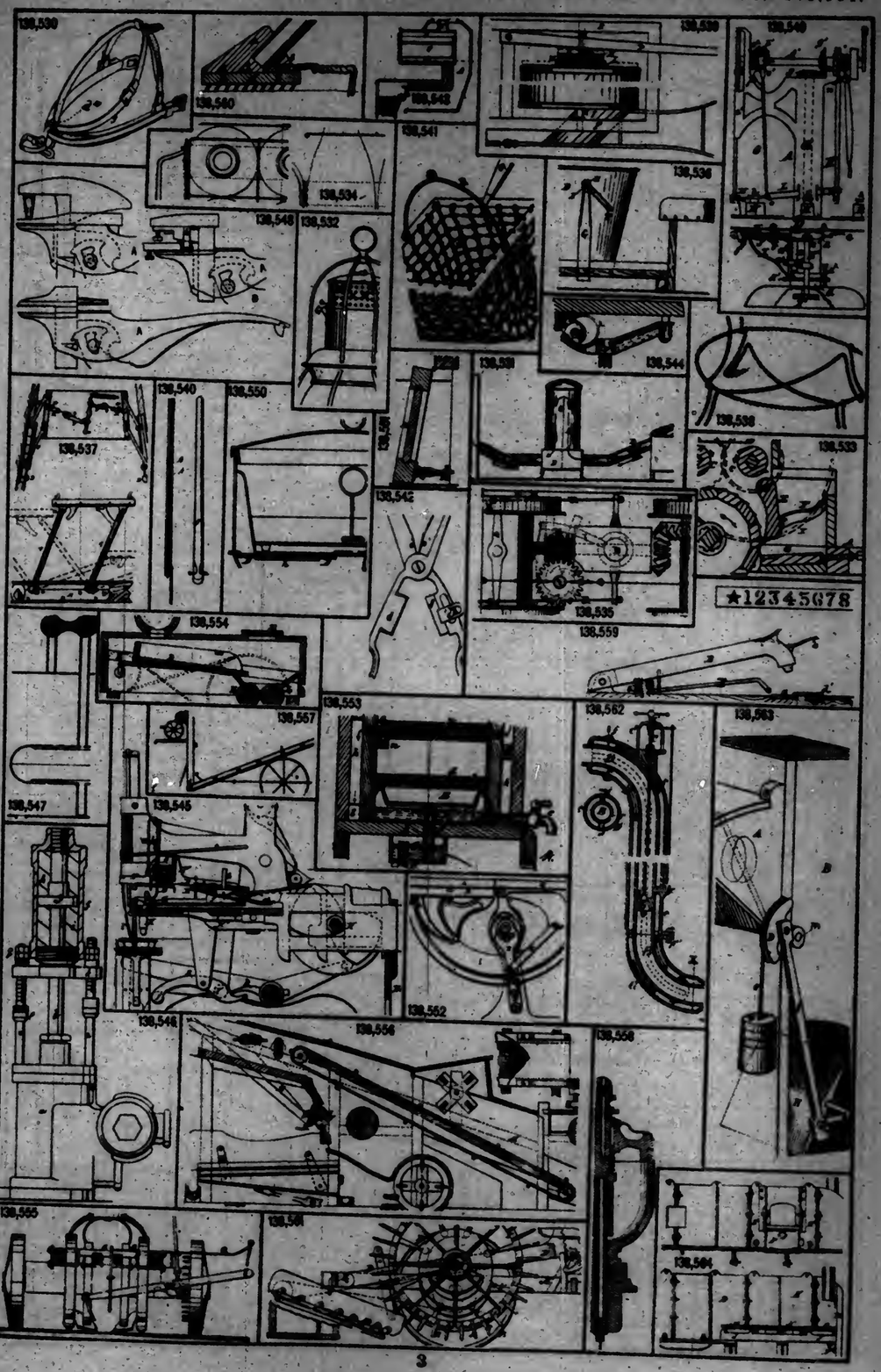


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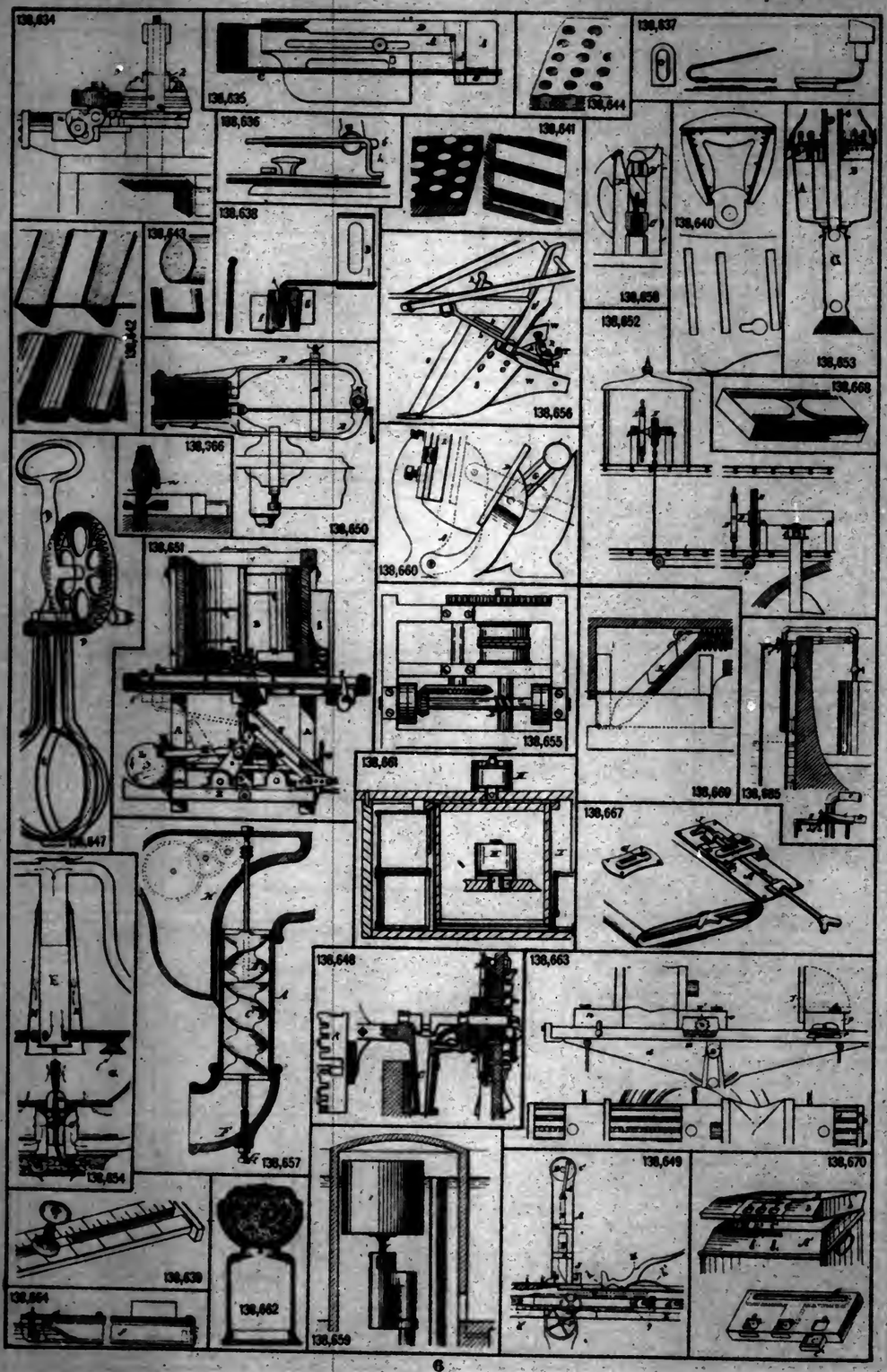
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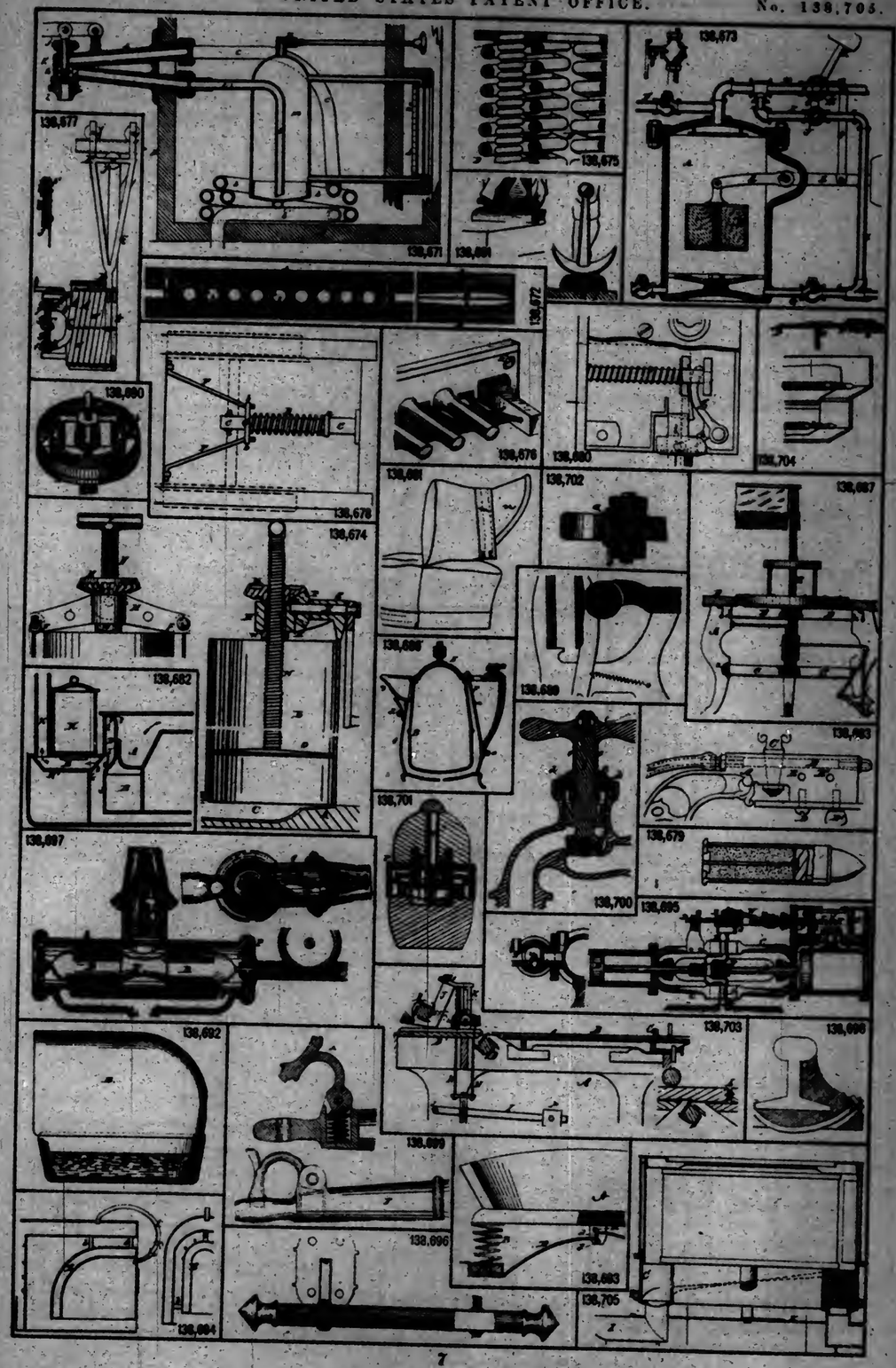
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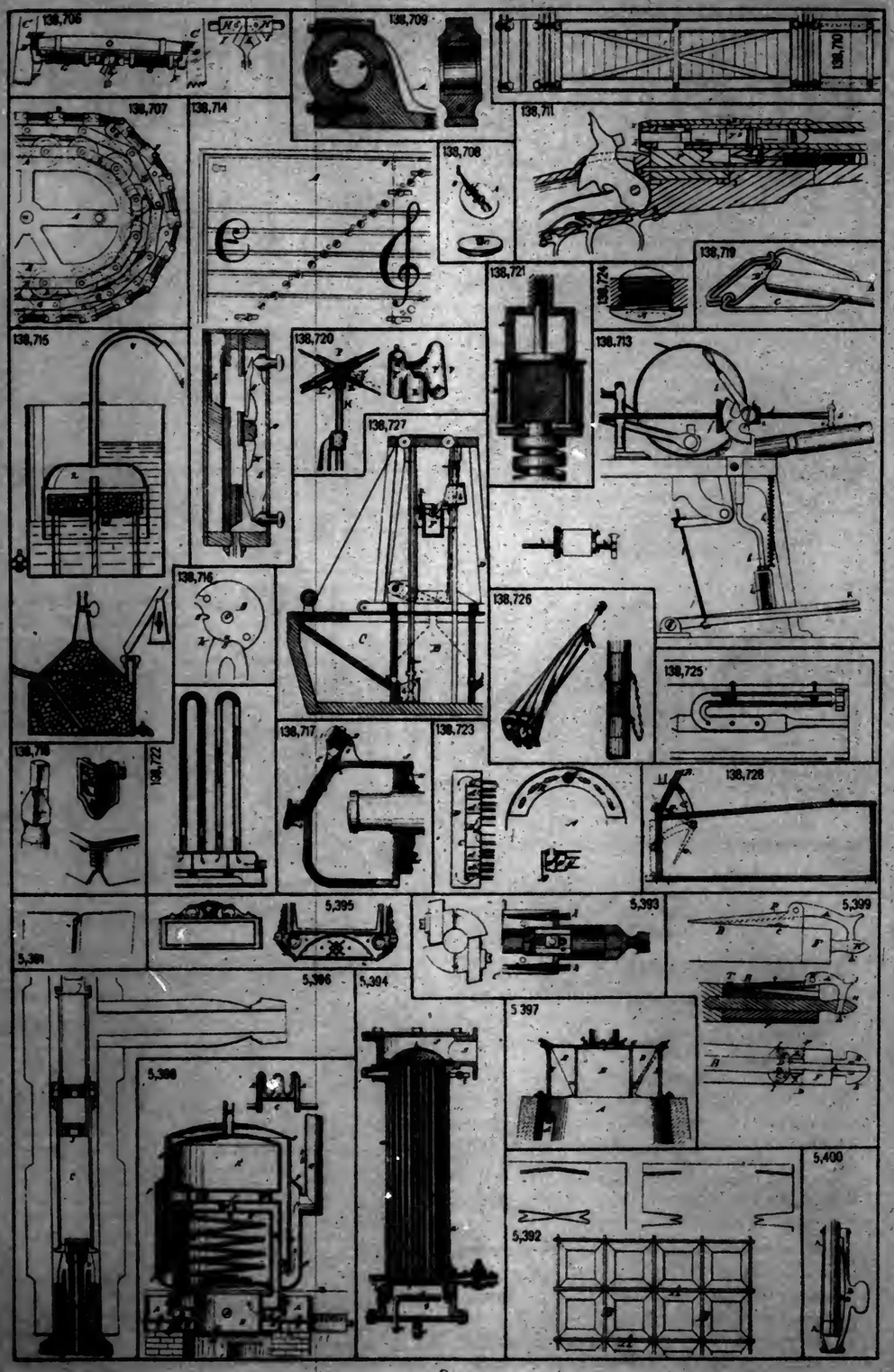
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ERRATUM.

On page 468, GAZETTE of April 29, for "U. S. Circuit Court," read "California State Court."

ORDER.

For all purposes of Office practice, the date of an application for a patent will be fixed at the time when—

The first fee has been paid, an acceptable drawing or model received, and a specification, properly signed, witnessed, and sworn to, filed.

After such date, and during the pendency of an application, either the drawing or model (but not both at the same time) may be withdrawn for correction, but the specification will not be permitted to be withdrawn for any purpose whatever.

M. D. LEGGETT,
Commissioner of Patents.

U. S. PATENT OFFICE, *May* 21, 1873.

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COMMISSIONER'S DECISIONS.

JOHN E. WOOTEN.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of John E. Wooten for the reissue in two divisions of Letters Patent No.* 67,624, *for* IMPROVEMENT IN RIVETS.—*Decided December* 28, 1872.]

A patent for a process may be reissued with a claim for a part only of the process, if the same result may be obtained without employing the steps which are omitted from the claim.

A patent for making tubular rivets by coiling a flat strip of iron, and welding it, may be reissued with a claim for coiling it alone, if the welding is found to be unnecessary.

A claim for making rivets by coiling a flat strip of iron is something more than a claim for "a coil of strip iron."

A mere suggestion in the specification that the article monopolized may be used in a certain way, does not warrant the insertion in a reissue of a claim for a combination of the article with the mechanisms in connection with which it is to be so used.

THACHER, *Acting Commissioner:*

Applicant describes his invention in his patent as being a "tubular rivet made by coiling a strip of flat bar or plate iron, and then welding the same," to which construction the original claim is also limited; but he has found in practice that the welding may be dispensed with. He therefore seeks by reissue to obtain a patent without this restriction, and in Division A has claimed the rivet, either welded or not.

There is no force in the objection of the Examiner that the claim is simply for a "coil of strip iron." The claim is to a "*tubular rivet* made by coiling a strip of iron, as set forth." This is sufficiently definite, if he is entitled to leave out the welding. I think he is. If the inventor of a process finds that the same result can be obtained without carrying out the entire operation, he is entitled to the benefit thereof, and I can see no objection to his securing it, if he be a patentee, by reissue.

The decision of the Examiner in Division A is therefore overruled.

In his patent Wooten states that this rivet is "especially applicable to the securing of rail-splices and other objects on railways." In Division B of his reissue application he makes this suggestion the basis of a claim to a specific combination of tubular rivets, splicing bars and rails, which he has now described and shown for the first time. The ruling of the Examiner that this is matter foreign to the patent is undoubtedly correct. The bare suggestion of one of the uses of an article affords no ground for a claim to the combination in which it is used, unless fully shown and de-

scribed. Applicant would not have been allowed in his original patent the claim he now sets up, and he cannot have it now by reissue.

The Examiner is therefore sustained in his action on Division B of the application.

JOHN F. SHEPARD.—*Appeal.*

[*Appeal from the Principal Examiner in the matter of the application of John F. Shepard for Letters Patent for a* SLICING, GRATING, AND SIFTING MACHINE.—*Decided November* 16, 1872.]

A patent may be granted for a mechanism so constructed that it may be used for several purposes by having different devices connected with it, each adapted to one of those purposes.

Such a patent may, it seems, include also a claim for the principal mechanism in combination with any one of the adjunct devices.

If a peculiar construction of the adjunct device is necessary to effect the combination, it may also be claimed in the same patent.

But a patent will not be granted for a combination of the principal mechanism with all the adjunct devices with which it may be thus connected, the combination with each device constituting a distinct machine, and requiring a separate patent.

THACHER, *Acting Commissioner:*

Applicant mounts a hopper upon a rack or frame, to which may be applied a slicer, a grater, or a sieve, the three being so constructed as to be interchangeable.

The claims are as follows:

"1. The construction of the rack A and hopper B, and their combination and arrangement with a slicer, grater, or sieve, substantially as and for the purposes set forth.

"2. The slicer C, composed of the frame *c*, knife *g*, slides A A, and plates *i i*, combined and arranged substantially as and for the purposes shown.

"3. The traps *s s*, in connection with a grater, substantially as and for the purpose shown."

The Principal Examiner requires a division of the application, stating that it embraces "three different inventions for three different purposes." From this decision applicant appeals to the Commissioner.

The objection of the Examiner is well taken. The question of joinder of inventions has been discussed by the Commissioner so frequently and fully, in decisions heretofore published, that the established practice of the Office ought by this time to be generally known. (Linus Yale, C. D., 1869, 110; Leopold Lehman, C. D., 1870, 70; and Abel Combs, C. D., 1871, 209.)

The decision in the case of Lehman is especially applicable to the one now under consideration.

Shepard first claims the rack and hopper in combination with a slicer, grater, and sieve, and then the specific construction of the slicer and grater separately. The first is improper because it is in effect a claim for three distinct and independent machines. When the slicer is removed, and either the grater or sieve substituted, a new machine is produced, having new functions and a different operation. To all intents and purposes, each is an independent machine, and as such constitutes the subject-matter for a separate application.

The same objection lies to the second and third claims. The construction of the grater is wholly independent of the slicer, as well as of the combination of the latter, or the sieve, with the rack and hopper.

What applicant may probably claim in one application is the construction of the rack and hopper, which enables him to use them in connection with either the slicer, grater, or sieve, and the combination of one of the latter devices with the two former. If a peculiar construction of the adjunct device is necessary to effect the combination with the main portion of the machine, it may also be claimed in the same application.

This is the utmost liberality that can be shown applicant. In its present form, his claim clearly contains subject-matter for several applications. The decision of the Examiner requiring amendment before further action is consequently affirmed.

If, however, the claim should be amended as suggested above, there would seem to be no objection to retaining all the figures of the drawing, and the description thereof in the body of the specification, unless other applications are to be made on this subject-matter.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF NEW JERSEY.

THE AMERICAN NICOLSON PAVEMENT COMPANY *vs.* THE CITY OF ELIZABETH *et al.*

[*In Equity.—Before Nixon, Judge.*—1873.]

THE NICOLSON PATENT FOR WOOD PAVEMENT SUSTAINED—PRESUMPTIONS IN FAVOR OF REISSUES—REASONABLE DILIGENCE IN MATURING INVENTION AND APPLYING FOR A PATENT—SUBORDINATION OF MERE IMPROVEMENTS.

The issue of a patent, its reissue, its extension by the Commissioner, its long use and the public acquiescence, and the judgment of competent legal tribunals where the question of its novelty was directly involved, are strong presumptions in its favor.

When the Commissioner of Patents grants a reissue the court must assume that he has examined and found that all the necessary conditions existed which authorized him to perform the act, and that the invention described in the reissue is the same as in the original.

The only exceptions to such an inference are where it appears upon the face of the patent itself that the Commissioner has clearly exceeded his authority, or where the new patent has been obtained by fraud or by collusion between the Commissioner and the patentee.

The validity of a reissue is not affected by the fact that in it the patentee has embodied a modification of his opinion as to the relative value of two differing modes of construction described in his original patent.

A caveator has a reasonable time in which to mature his invention, and if he has used due diligence he has the right to have his matured invention incorporated into his patent, and to supersede those that have intervened between the date of his first discovery and his subsequent taking out of the patent.

The question of diligence is not an absolute, but a relative one, and must be considered in reference to the subject-matter of the experiments.

Where the inventor, before applying for a patent, allowed six years to elapse in honest experiment to test the strength and durability of a wood pavement, which was laid upon a frequented road, but without exposing to the public view the mode of its construction: *Held*, that there was no such public use of the invention, or any such dedication or abandonment of it, as would void a patent subsequently issued.

Patented improvements upon an earlier patented invention cannot be used in connection with it without the consent of its owners.

This was a bill in equity, brought against the city of Elizabeth and others, for an alleged infringement of the reissued letters patent for an improvement for wood-

en pavements, granted Samuel Nicolson, August 20, 1867, the original of which bore date August 8, 1854.

The claims of the reissue are as follows:

1. Placing a continuous foundation or support, as above described, directly upon the roadway, then arranging thereon a series of blocks, having parallel sides, endwise in rows, so as to leave a continuous narrow groove or channel-way between each row, and then filling said grooves or channel-ways with broken stone, gravel, and tar, or other like materials.

2. I claim the formation of a pavement by laying a foundation directly upon the roadway, substantially as described, and then employing two sets of blocks, one a principal set of blocks that shall form the wooden surface of the pavement when completed, and an auxiliary set of blocks or strips of board, which shall form no part of the surface of the pavement, but determine the width of the groove between the principal blocks, and also the filling of said groove, when so formed between the principal blocks, with broken stone, gravel, and tar, or other like material.

3. Placing a continuous foundation or support, as above described, directly upon the roadway, and then arranging thereon a series of blocks having parallel sides endwise in a checkered manner, so as to leave a series of checkered spaces or cavities between said blocks, and then filling said checkered cavities with broken stone, gravel, and tar, or other like material.

4. I claim the formation of a pavement by laying a foundation directly upon the roadway, substantially as above described, and then employing two sets of blocks, viz.: One a principal set of blocks that shall form the wooden surface of the pavement, and an auxiliary set of blocks that shall form no part of the wooden surface of the pavement, but determine the dimensions of the tesselated cavities between the principal blocks, and then filling said tesselated cavities with broken stone, gravel, and tar, or other like material.

[*O. A. Seward* and *B. Williamson*, for complainant.

C. F. Blake and *C. M. Keller*, for defendants.]

NIXON, *Judge:*

This is a bill in equity for an injunction and an account, for an alleged infringement by the defendants of a patent granted to Samuel Nicolson, for an improvement in wooden pavements, on the 8th day of August, 1854.

The bill set forth that the said Nicolson surrendered the original letters patent issued to him as aforesaid, and obtained a reissue upon corrected descriptions and specifications December 1, 1863; that he afterward surrendered these reissued letters patent and obtained another reissue on the 20th day of August, 1867; that he died intestate on the 6th of January, 1868; and that letters of administration were duly issued to George T. Bigelow, who, as administrator, applied to the Commissioner of Patents, by petition, on the 7th day of July, 1868, for a renewal and extension of said patent, and that the same was renewed and extended for the period of seven years from the 8th day of August, 1868; that by mesne assignments in writing from the said Bigelow, administrator, &c., the complainant had become the sole owner of the said extended patent for the State of New Jersey, except so much of said State as is embraced within the corporate limits of Jersey City.

The bill further alleges that the validity of the said original and reissued letters patent has been settled and established by long and extensive use and by public acquiescence, and also by judicial determination, and that the defendants have infringed the same by constructing and using a wooden pavement or pavements in the city of Elizabeth embracing the invention or improvement contained in the last reissued letters patent, or the substantial or material parts thereof.

The answer of the defendants sets up substantially these defenses:

1. They deny that Samuel Nicolson was the original and first inventor of the improved wooden pavement described in his letters patent.

2. They allege that the reissued letters patent are fraudulent and void, as covering and including many things not invented by Nicolson, and not described and claimed in his original letters patent.

3. That the complainant's patent is void for want of novelty.

4. That the alleged invention was in public use, with the knowledge and consent of Nicolson, long prior to his application for letters patent, and that such public use worked an abandonment and dedicated the invention to the public.

5. Admitting that they had constructed and laid, and were then constructing and laying, certain wooden pavements in the city of Elizabeth, under and in accordance with letters patent granted to the defendants, Brocklebank and Trainer, dated January 12, 1869, they deny that by so doing they have infringed upon the rights of complainants.

I have examined the testimony taken by the parties, and have given to the arguments of counsel the attention which their marked ability and learning, and the large interests involved, seemed to demand; and I will briefly state the conclusions that I have reached, without stopping now to detail the reasons which led me to such conclusions.

The complainant's patent, if valid, is doubtless for a combination. The several parts that make up the structure are:

1. A continuous foundation directly upon the roadway.

2. A series of blocks, with parallel sides, standing endwise in rows, that form the wooden surface of the pavement.

3. An auxiliary set of blocks or strips of board, which form no part of the surface, but determine the width of the grooves between the principal blocks.

4. The filling of the grooves, when so formed, between the principal blocks with broken stone, gravel, and tar, or other like material.

It is not claimed that any one of these parts is new, but that in their combination they produce a new and useful result.

1. Was Nicolson the original and first inventor, or is the patent void for want of novelty?

I have carefully examined the copies of specifications and the large number of models produced, representing the pavements described in eighteen English patents issued previous to the date of the Nicolson patent; and, while nearly all of them have some one or more of its elements, I find that none of them, except perhaps the Hosking patent, to which I shall allude hereafter, suggests the combination which Nicolson has made.

There are strong presumptions in favor of the novelty of Nicolson's invention. The issue of the patent, its reissue, its extension by the Commissioner, its long use and the public acquiescence, the judgment of competent legal tribunals where the question of its novelty was directly involved—are all facts to be taken into the account.

The burden is upon the defendants to rebut and overthrow these presumptions, which, in the opinion of the court, they have failed to do.

2. Are the reissued letters patent fraudulent and void because they cover and include more than Nicolson invented, described, and claimed in his original letters patent?

The patent act authorized a surrender of the original letters, and a reissue for the residue of the term, when the patent first granted should be inoperative or invalid by reason of a defective or insufficient description or specification, or by reason of the patentee claiming in his specification, as his own invention, more than he had a right to claim as new, if the error had arisen from inadvertency, accident, or mistake, and without any fraudulent or deceptive intention. It is an appeal to the judgment of the Commissioner, and when he grants a reissue the court must assume that he has examined and found that all the necessary conditions existed which authorized him to perform the act, and that the invention described in the reissued letters patent is the same as the invention claimed in the original letters patent. The only exceptions to such an inference are where it appears upon the face of the patent itself that the Commissioner has clearly exceeded his authority, or where the new patent has been procured by fraud or by collusion between the Commissioner and the patentee.

There is no proof of fraud or collusion, and a comparison of the specification and claim of the original patent with the corrected and amended description of the two reissues, establishes the fact, I think, beyond question that he included nothing in the latter which was not fairly indicated and suggested in the former.

The original patent was for improved wooden pavements. He specifies and claims therein the invention of a pavement which may be constructed in one of two forms—either by using the long and short blocks, or "by arranging the long blocks side by side and in rows transversely of the roadway, and with spaces between each two rows of them, in each of which spaces a strip of board may be introduced, the width of the board being equal to about half the length of the blocks." As these are related to a like subject, and in their nature are connected together, and as the elements necessary for the construction of the one are substantially used in the other, no objections can be properly raised, because both forms are included in the one patent.

It is quite evident that when the first patent was applied for, and the first surrender and reissue made, the inventor attached more importance to, and expected greater results from, the former than from the latter mode of construction; but his experiments afterward changed his views in this respect, and in his reissue of August 20, 1867, his first and second claims are for the pavement with continuous transverse grooves made by the introduction of boards, for the infringement of which the present suit is brought. But such modification of opinion on his part as to their relative value does not disturb the fact that both forms were described, although imperfectly, in his first specifications.

3. Has there been such a public use of the invention, such a dedication of it to the public, or such an abandonment by the patentee, as to void the patent?

As these acts are closely related to each other in their essential qualities, and as the several questions grow out of one transaction, I shall consider them together.

The transaction was this: The inventor was the treasurer of the Boston and Roxbury Mill Corporation—a private company chartered by the Legislature of Massachusetts on the 14th of June, 1814. The act incorporating it is made an exhibit in the case, and it appears from the third section that it was authorized to make and finish a dam from Charles street, in Boston, to the upland at Sewall's Point, in Brookline; to connect the different parts thereof by bridges and causeways so as to render the same a good and substantial road, suitable for the passing of men, loaded teams, and carriages of all kinds; and, when finished, railed at the sides and furnished with lamps, to receive tolls for passing over the same. It was a private road over the dam, about thirty feet in width and one mile in length, with two bridges, and all under the exclusive control of the corporation. There was a toll-gate and house on the southerly side of the road, near one of the bridges. Nicolson was appointed treasurer of the company in 1833, and while acting in that position, to wit, on the 4th of August, 1847, he filed a caveat in the office of the Commissioner of Patents. His petition represents that "he has discovered or invented certain new and useful improvements in street or road pavements, and that he was then engaged in making experiments for the purpose of perfecting the same, preparatory for depositing at the Patent Office of the United States a correct specification thereof, in view to obtain letters patent therefor. He desires to obtain an exclusive property in his said invention or discovery, and prays that said caveat may be considered as the preliminary application or petition required by law to be made in order to obtain letters patent; and that his right in the said invention or discovery may be protected until he shall have matured the same."

In the description annexed to the caveat he states his invention or improvement to be as follows:

"Wooden blocks are cut from joists of about four inches square, one-half of which are cut eight inches long, the other half are cut four inches long. They are placed side by side on the prepared earth, the ends being upward, and in alternate position of long and short blocks, so that no two blocks of the same length will stand together, but so as to present a checkered surface. The lower ends being on a level, the upper will present alternate open squares of about four inches by four inches deep. Into said openings a small quantity of coarse salt is first put, then small broken stone is firmly rammed, so that the whole surface of the pavement is firm and level; then tar is poured over the whole surface, after which a sprinkling of sand or gravel. * * * Instead of broken stone and tar, used in the spaces above named, any other material or cement may answer as well, the design being to use something which will expand as the wood contracts, by which a hard surface prevents water from penetrating to rot the wood. * * * The earth may be prepared to receive the pavement by covering the surface with paper saturated with tar or other preventive to moisture rising to rot the under surface of the blocks."

The checkered pavement only is here specifically described, but the combination for which he afterward received his patent is suggested.

And that this combination was in his mind is proved by the fact that in the following summer, and as he stated to the witness Nutting, at his own expense, he caused to be laid on the dam opposite to the toll-house a piece of wooden pavement about seventy-five feet in length and of the width of the turnpike road, constructed in three different forms, to wit:

1. The checkered form, with long and short blocks.

2. The transverse channel form, with long blocks and strips, and with concrete filling.

3. The circular form, composed of small round logs of equal length set close together, with the intervening spaces filled with concrete. The foundation of a part was composed of boards or wood, and in other places it consisted of tar and sand. Both modes were used to ascertain, by experiment, which would best accomplish the desired results of an even solid earth bed, and a preventive of moisture being absorbed from the ground by the under blocks.

The 12th section of the act of July 4, 1836, under which the foregoing caveat was filed, authorizes any person who shall have invented any new art, machine, or improvement thereof, and shall desire further time to mature the same, upon payment of twenty dollars, to file in the Patent Office a caveat, setting forth the design and purpose thereof, and its principal and distinguishing characteristics, and praying protection of his right till he shall have matured his invention. Such caveat is filed in the confidential archives of the Office and preserved in secrecy. The obvious design of this section is to afford to inventors the opportunity of perfecting their discoveries and inventions. To prevent an abuse of the privilege, it is further provided that if an application is made by any other person, within one year from the time of filing the caveat, for a patent of any invention with which it may in any respect interfere, it shall be the duty of the Commissioner to deposit the descriptions, specifications, drawings, and model in the confidential archives of the Office, and to give notice by mail to the person filing the caveat of such application, who shall, within three months after receiving the notice, if he would avail himself of the benefits of his caveat, file his description, specifications, drawings, and model.

If no such application is made, the caveator has a reasonable time in which to mature his invention or discovery; and when his letters patent are issued, if he have used due diligence, he has the right to have his matured invention incorporated into his patent, and to supersede those that have intervened between the date of his first discovery and his subsequent taking out of the patent. (Curt. on Pat., § 270.)

It is impossible to read the testimony in reference to laying this section of the pavement upon the dam, and the conduct and declarations of Nicolson respecting it, without reaching the conclusion that he was making an honest experiment, and that the caveat was filed by him for protection while he was engaged in it. It was a private corporation, and the roadway was under his control as treasurer. It was a favorable spot to test the strength and durability of the pavement, because heavily-laden teams stopped and started in front of the toll-gate. He was not exposing to the public the mode of its construction, because that could not be learned from the portion exposed to the public view, and no one had a right to disturb it.

But he allowed six years to elapse after putting down the three forms of pavement before he applied for the patent. Was this using reasonable diligence?

The question of diligence is not an absolute, but relative one, and must be considered in reference to the subject-matter of the experiments. Could the value and practical utility of such an invention be sooner ascertained?

In all calculations as to cost, which necessarily involved the fact of durability, long use and lapse of time were essential ingredients.

In the absence of all intent, and indeed in the face of a manifest contrary intent, I am not willing to infer from the facts of the case that there was any such public use of the invention, or any such dedication or abandonment, by the inventor, as would avoid the patent afterward issued to Nicolson.

As the foregoing view of the legal effect of the caveat, and the experiments under it, and the patent afterward issued, carries the invention of Nicolson back to a period of time antedating the English patent of Hosking, it does not seem necessary for me now to consider whether or not the former infringes the latter. It will hardly be contended that when Nicolson laid on the Mill-Dam road his pavement with long blocks and transverse slips and grooves, in the month of July, 1848, he derived his knowledge of such a combination of elements from a patent, the specifications of which were not enrolled in the Foreign Office until March, 1850.

4. The only question remaining is the one of infringement. The defendants acknowledge that they have constructed and laid, and are constructing and laying, the pavement in the city of Elizabeth which the complainants, in their bill, allege infringes their patent, but justify under certain letters patent issued to two of the defendants, Brocklebank and Trainer, on the 12th of January, 1869. I have examined this patent and the specifications and claim annexed to it, and, conceding all that the patentees claim for it, its use must be regarded as an infringement of the combination embraced in the complainant's patent.

They state in their schedule that "the invention relates to improvements in wood pavements, and consists in an improved arrangement of the same, whereby the flooring is strengthened and adapted for the better securing of the vertical blocks to the flooring." They then describe the flooring, vertical blocks, strips between the blocks secured to the floor by nailing, and spaces between the blocks and above the strips filled with tar, gravel, cement, or other substance in the usual manner.

Their claim is for—

> The combination of the bed, transverse strips, and vertical blocks, when the latter are rebated, either on one or both sides, and either with dovetail rebates or otherwise, and the said strips fitted to the rebates and secured to the bed, all substantially as and for the purpose specified.

If you add to this the filling of the grooves or spaces between the vertical blocks and above the strips with some concrete substance, which must be done before the pavement is of any practical value, you have undoubtedly the Nicolson combination, having added to it, however, rebates upon one or both sides of the blocks of dovetail or vertical form, which addition it is claimed is an improvement, in more securely fastening to the flooring both the blocks and strips, and in the equalization of the pressure upon the pavement, and its distribution over a larger surface.

If it be granted that these additions are valuable improvements, they are nevertheless merely grafted upon the Nicolson patent, and cannot be used in connection with it without the consent of its owners.

The affidavits of Brocklebank and Trainer, taken in 1868, to be used upon the application of the administrator of Nicolson for an extension of the Nicolson patent, and exhibited in this case, fully disclose the estimate in which the patent was held by these defendants. They not only recognize its novelty, but are very extravagant in their praises of its utility and value. Not mentioning their specification of its merits in particular cases, they are of opinion that its general introduction into the streets of the cities and towns of the United States would save to the people in various ways, in the next seven years, from five to seven hundred millions of dollars.

If it be commendable in them to strive to make it more useful by improvements, it is hardly just that they should seek to rob such a benefactor of his race of the glory of his invention, or deprive his legal representatives of the profits from the extension, which they did so much, I doubt not honestly, to obtain.

I am of the opinion that the patent of the defendants infringes the first and second claims of the extended patent of the complainant, and that a decree should be entered according to the prayer of the bill.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,367.—*Ore-Separators.*—Granted to WILLIAM OLAND BOURNE, June 14, 1859. Hearing May 28, 1873.

24,402.—*Steam-Pressure Regulator.*—Granted to ALBERT P. PITKIN, June 14, 1859. Hearing May 28, 1873.

24,428.—*Trip-Hammers.*—Granted to BENNETT HOTCHKISS, June 14, 1859. Hearing May 28, 1873.

24,432.—*Rolling Metal for Jewelry.*—Granted to JOHN S. PALMER, June 14, 1859. Hearing May 28, 1873.

24,436.—*Railroad Bars.*—Granted to HENRY WEBB, June 14, 1859. Hearing May 28, 1873.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL P. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,473.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 906 and 907, July 3, 1860. No. 907 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABBATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHENERLY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,586.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,596.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. HARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OLIN TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JANKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

23,309.—*Improvement in Harvesters*, granted to ISAAC S. and HENRY R. RUSSELL, March 29, 1859.

Claim.—The peculiar arrangement of mechanism, consisting of two segment bevel-wheels, G H, two spur-wheels, K K, an independently-turning heel, E, having a slotted plate, F, attached to it, and a crank-arm, I, having a turning crank-pin, J, for giving motion to the rake round the reel in the path of a vertical circle, and over the platform in the path of a horizontal circle, substantially as set forth.

23,996.—*Improvement in Surgical Instruments*, granted to DAVID AHL, May 17, 1859.

Claim.—An improved splint, made of the ingredients and in the manner set forth.

24,009.—*Improved Machine for Upsetting Tire*, granted to C. L. CROWELL and ROBERT SMITH, May 17, 1859. (CHAUNCEY L. CROWELL and WELLINGTON LOUCKS, executors of said SMITH, deceased.)

Claim.—The combination of the lever and the intermediate slide, arranged substantially as described, for the purpose of giving movement to the sliding jaw.

24,022.—*Improvement in Sewing-Machines*, granted to JOSHUA GRAY, May 17, 1859.

Claim.—1. The combination of the reciprocating bar G with its side inclines 10 and 11, and upper incline W with the feed-bar N, stop V, and adjustable stop *t*, arranged and operating as herein described, for the purpose set forth.

2. In combination with the slide-bar G, which operates the feeder, the bent lever *f*, and universally-adjustable cam I, the several parts being arranged to operate substantially as described, for the purpose set forth.

24,034.—*Improvement in Railroad Frogs*, granted to DAVID D. LEWIS, May 17, 1859; reissued January 5, 1864, numbered 1,602. (GEORGE J. CHAMBERLAIN and GEORGE H. MCCABE, executors of said LEWIS, deceased.)

Claim.—1. The ribs A and A′, curved from the throat *x* outward in both directions, as set forth, for the purpose specified.

2. The ribs A and A′, so beveled and rounded on the edge that they will conform to, or nearly conform to, the treads and flanges of the car-wheels, for the purpose described.

3. The steel point A dovetailed to the body of the frog, in combination with the tread-plate K and the block *i*, when the said tread-plate overlaps and is secured to the said point, and when the block *i* is of such a tapering or wedge-shaped form that, during the process of riveting it and the tread-plate to the body of the frog, the said block may serve the purpose of driving the point tight into its socket.

24,046.—*Improvement in Machines for Rolling Fabrics*, granted to THOMAS H. MURPHY, May 17, 1859; reissued August 6, 1872, numbered 5,029.

Claim.—The rolling or sliding shaft D, in combination with the friction or pressure roller G and windlass E, substantially as and for the purposes hereinbefore set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 13, 1873.]

6,647.—*Foot-Rests for Barbers' and Dentists' Chairs.*—ROBERT W. ARCHER and GEORGE W. ARCHER, Rochester, N. Y. Application filed April 30, 1873.

6,648.—*Barbers' and Dentists' Chairs.*—ROBERT W. ARCHER and GEORGE W. ARCHER, Rochester, N. Y. Application filed April 30, 1873.

6,649.—*Bolster for Knives or Forks.*—CHARLES H. CRUMP, Boston, Mass. Application filed May 7, 1873.

6,650.—*Ruffle-Stand.*—LUDWIG SUTRO, New York, N. Y. Application filed April 19, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date May 13, 1873.]

1,257.—*Medicinal Compound.*—D. RANSOM, SON & Co., Buffalo, N. Y. Application filed April 3, 1873.

1,258.—*Medicinal Compound.*—D. RANSOM, SON & Co., Buffalo, N. Y. Application filed April 3, 1873.

1,259.—*Medical Compound.*—D. RANSOM, SON & Co., Buffalo, N. Y. Application filed May 29, 1872.

1,260.—*Medicinal Compound.*—D. RANSOM, SON & Co., Buffalo, N. Y. Application filed May 29, 1872.

1,261.—*Medicinal Compound.*—D. RANSOM, SON & Co., Buffalo, N. Y. Application filed April 3, 1873.

1,262.—*Sections for the Cutters of Harvesting-Machines.*—WALTER A. WOOD MOWING AND REAPING MACHINE COMPANY, Hoosick Falls, N. Y. Application filed April 24, 1873.

1,263.—*Colors, Dye-Stuffs, Chemicals, &c.*—F. BREDT & Co., New York, N. Y. Application filed April 28, 1873.

1,264.—*Woolen Goods.*—GEORGE F. ELLIS, Terre Haute, Ind. Application filed May 5, 1873.

1,265.—*Medicinal Compound.*—HENRY W. FULLER, Chicago, Ill. Application filed May 8, 1873.

1,266.—*Flour.*—THE GALLEGO MILLS MANUFACTURING COMPANY, Richmond, Va. Application filed May 9, 1873.

1,267.—*Polishing Material.*—COFFIN, REDDINGTON & Co., New York, N. Y., also doing business in San Francisco, Cal., under the title of REDDINGTON & Co. Application filed May 5, 1873.

1,268.—*Sugar-Cured Hams.*—EVANS, LIPPINCOTT & CUNNINGHAM, Cincinnati, Ohio. Application filed April 16, 1873.

1,269.—*Rice Starch.*—WILLIAM J. RAND, New York, N. Y. Application filed April 24, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date May 13, 1873.]

ORIGINAL PATENTS.

138,729.—*Umbrella.*—JOHN B. BLAIR, Philadelphia, Pa. Application filed April 12, 1873.

The ferrule slides down over the drip-cup and has a slot which engages with a pin on the end of the umbrella-rod.

Claim.—1. The ferrule of the umbrella, adapted to cover and uncover the applied drip-cup, substantially as and for the purpose set forth.

2. The sliding ferrule with slot *a a* and the screw or pin *b*, in combination with the drip-cup and rod or stick of an umbrella, substantially as and for the purpose set forth.

138,730.—*Tucking Attachment for Sewing-Machines.*—EUGENE BOUILLON, New Orleans, La. Application filed October 23, 1872.

The material, being formed into a tuck, is folded over the adjustable guide, the distance between its free end and the presser determining the width of tuck, and the material is guided in a line parallel with the last finished tuck by means of such tuck filled with a metallic strip, and which passes freely between the adjustable guides.

Claim.—1. The plate L and adjustable guide K with its right-angled point I, when combined with the vertical and adjustable guides C D secured to the presser, and adapted to receive a tuck already made and distended by means of a metallic or other strip, all being constructed and operating substantially as described.

2. The presser-foot A, bearing the laterally-projecting bar A′, index-plate, and temper-screw B, in combination with the vertical and adjustable guides C and D, all constructed and arranged to operate as set forth.

138,731.—*Brick-Machine.*—GEORGE C. BOVEY, Chillicothe, Ohio. Application filed January 9, 1873.

The inner sides, furnished with longitudinal grooves, the plunger-shaft engaging in said grooves, elevate and depress the plunger-shaft at the proper moment within the molds, which are successively brought within the hopper and filled with clay by the rotation of the wallowers and presser-roller provided with radial channels.

Claim.—1. In a brick-machine having a reciprocating bed carrying a number of molds, the combination of molds D, followers C provided with journals *c*, and guiding grooves B′ of the longitudinal framings A′.

2. In combination with the molds, the cylindrical presser-roller L having radial channels *l*, and situated in the hopper, substantially as and for the purposes set forth.

138,732.—*Soldering-Iron.*—ALMON H. BURNHAM, Bridgeton, Me. Application filed November 1, 1872.

The rod *b* holds the cap down upon the can while the soldering-iron is pressed down and revolved upon the solder and cap.

Claim.—1. A soldering-iron, composed of the rod *b* with its handle *c*, handle *d*, sleeve *e*, space A, and hollow iron *a*, to operate as herein set forth.

2. A soldering-iron, composed of the rod *b* with its handle, the handle *d*, sleeve *e*, and space A, together with the iron *a* having the reversible tip, as herein described.

138,733.—*Washing-Machine.*—ALMON H. CALKINS, Chesterton, Ind. Application filed October 21, 1872.

In a frame is arranged a lower corrugated roller on a proper shaft and journals. Semicircular plates, with radial slots, are pro-

vided with vertical ribs, which play in grooves in the frame, and a series of small rollers have their bearings in the slots. A spring wire is arranged over the spindles of these rollers, or in eyes twisted around the spindles, and a spiral spring is attached to the lower part of the spring wire. Parallel boards extend across the lower part of the machine, and a plate or apron extends across to prevent the clothes from getting between them.

Claim.—1. The spreading-rollers D D having bearings in the radial slots *b'*, cut in the vertically-yielding pieces B B, in combination with the roller C having fixed bearings in the rigid ends A A, substantially as and for the purposes specified.

2. In combination, the rollers D D, the radially-slotted pieces B B, provided with the vertical rib *b*, the rigid and vertically-slotted ends A A, the roller C, the spring F, and the wire E, all arranged together substantially as described.

3. The apron H, arranged upon the parallel boards G G in the manner described, when the latter are attached to the ends A A, and employed in connection with the combination and arrangement of the parts included in the last foregoing claim, substantially as and for the purposes specified.

138,734.—*Washing-Machine.*—ALMON H. CALKINS, Chesterton, Ind. Application filed October 21, 1872.

In standards with vertical slots the journals of a large corrugated roller are placed, and are held by springs and a cross-bar. A series of small rollers, with their journals in radial slots of the standards, are held by a spring to bear against the large roller.

Claim.—1. In combination, the rigid pieces A, provided with the vertical slot *a*, and the radial slots *a'*, the vertically-yielding roller B having its spindle arranged in the slots *a*, and the yielding rollers E having their spindles arranged in the radial slots *a'*, substantially as and for the purposes specified.

2. In combination, the rigid pieces A, provided with the vertical slot *a* and the radial slots *a'*, the roller B having its spindle arranged in the slots *a*, the springs C, also arranged in the slots *a*, and pressing the spindle of the roller B, the rollers E having their spindles arranged in the radial slots *a'*, the spring F, arranged across the spindles of the rollers E, and the sliding bar D, arranged on the springs C, and supporting the spring F, substantially as and for the purposes specified.

138,735.—*Lid for Jelly-Glasses.*—DAVID CHALLINOR, Pittsburg, Pa. Application filed April 10, 1873.

A glass disk provided with a metallic flange, which projects down over the top edge or lid of the jelly-glass.

Claim.—1. A lid for jelly-glasses, said lid consisting of the glass disk D, and metallic flange C, substantially as herein described.

2. The hereinbefore-described lid, in combination with a jelly-glass, as and for the purpose set forth.

138,736.—*Heat-Governor or Draft-Regulators.*—FERDINAND E. CHATARD, Jr., Baltimore, Md. Application filed February 13, 1873.

The temperature of the atmosphere in an air-tight metallic tube or vessel placed in one of the apartments to be heated regulates a bell-valve, which communicates motion to the dampers controlling the draft-passages of the furnace.

Claim.—1. The draft-box A A with its two compartments N and O, and damper-plate K, when constructed and arranged to operate as hereinbefore set forth.

2. The motor D with its bell T and pipe G, when constructed and arranged to operate as hereinbefore set forth.

3. A metallic air-tight tube or vessel, H, when placed within the oven or within any of the rooms of a building to be kept at a standard temperature, which tube or vessel, by the expansion of its contents, communicates motion by suitable device, substantially as set forth, to a damper to regulate the draft and heat of an oven, furnace, or stove.

138,737.—*Motor.*—MERLIN COMSTOCK, Chicago, Ill. Application filed November 5, 1872.

Applying intermittent primary power and develop a secondary power, which will cause the terminal or driving-wheel to be rotated continuously in the same direction.

Claim.—1. The combination of the wheel B, lever E, wheel F, ratchet G, lever H, and one or more springs J, or its equivalent, in connection with a pushing-pawl and one or more stop catches or hooks, all arranged together substantially as and for the purposes specified.

2. The combination of the wheel B, lever E, wheel F, ratchet G, lever H, one or more springs, J, or its equivalent, and arms K and K', in connection with a pushing-pawl and one or more stop catches or hooks, all arranged together, substantially as described.

138,738.—*Wash-Boiler.*—SMITH COVEY and OREEN A. SLAFTER, McHenry, Ill. Application filed March 3, 1873.

A wash-boiler constructed with a false bottom, with a cap and flange extending through an opening in the center of it, and buckets extending below it, into which is fitted a wood float to control the water. A sloping conductor, perforated below its top or cap, gives direction to the water and steam, and on its top are valves or hinged doors to allow an escape of steam.

Claim.—1. The combination of the single wall or case provided with the fixed false bottom B and the perforated flue K, the removable valve-plate D provided with the canopy F and valve L, the cover M provided with one or more lids, O, all constructed substantially as shown and described, and for the purpose set forth.

2. A steam wash-boiler, provided with a fixed false bottom having an opening therein to admit of the chamber below the said bottom being cleaned, in combination with the removable cover D, arranged over the said opening, and attached to the false bottom by means of the buttons G G, substantially as specified, and for the purposes set forth.

138,739.—*Wash-Boiler.*—JOHN CRAMER, Monee, Ill. Application filed March 18, 1873.

A wash-boiler constructed with a hollow rib across its false bottom, with perforations covered by bars or grates in the opposite direction, and is supported by flanges on its side and by projections on the bottom of the conductors. The conductors are located in each corner for water and steam, with closed top and openings below for the flow of water and steam.

Claim.—The square boiler A having the perforated plates B, and the false bottom C having the hollow rib *b*, perforations *c*, grating *d*, and supports *e*, constructed and arranged as shown and described, for the purpose specified.

138,740.—*Tool for Use in Lacing Belts.*—FREDERICK N. DU BOIS, New York, N. Y. Application filed February 26, 1873.

The templet, besides making part of the clamp, serves as a ready square for trimming the ends of the belt and to properly space the lace-holes.

Claim.—The combination of the perforated templet A with the clamping-jaw B, as and for the purpose set forth.

138,741.—*Automatic Fan.*—EDWARD DUFFNER, Vicksburg, Miss. Application filed March 5, 1873.

Claim.—1. The combination, with fan-shaft E, of a clock-power, A, and wheel K, with pinion J and upright crank-shaft I, as herein shown and for the purpose specified.

2. The pinion J, the upright crank-shaft I, and connecting-rod H, when combined with a fan suspended from the ceiling of a building, as herein shown, and for the purpose described.

138,742.—*Machine for Boring Hubs.*—JOHN EISENMANN, Chicago, Ill. Application filed February 7, 1873.

The boring-bits are arranged radially about the hub and forced inward by means of an encircling cam-ring.

Claim.—1. The cam-ring G provided with the cams *f* for moving inwardly the spindles E, as shown.

2. The construction and arrangement of the frame A, driving-shaft B, friction-gear C, pulleys D, spindles E, springs *d*, ring F, cam-ring G, cams *f*, and stops h, substantially as and for the purpose set forth.

138,743.—*Machine for Sharpening Harvester-Knives.*—JOSIAH S. ELLIOTT, Chelsea, Mass. Application filed December 13, 1872.

The carriage is arranged so as to present the teeth to the wheel at the proper angle, and keep the work always under the eye of the operator.

Claim.—1. The emery-wheel B, in combination with a carriage, consisting of the slide *c* and platform E, operating substantially as described.

2. The plate *p* forming a part of the ring of the slide *c*, and operated by a screw, substantially as described, for the purpose described.

3. The set-screw *x*, in combination with the slotted table through which it passes, and the plate secured to the table by the screw *y*, substantially as described, for the purpose described.

138,744.—*Rotary Engine.*—MICHAEL EISAESSER, Brooklyn, N. Y. Application filed March 10, 1873.

Elliptic springs, bearing at their ends against the sliding pistons, pass through cylindrical pieces in slots in the revolving wheel, and they are forced apart by elliptic springs placed at right angles to the former and bearing against the cylindrical pieces, thereby making a uniform pressure on all of the pistons.

Claim.—The combination of the elliptic springs G G E E and pins J J with each other and with the pistons D D, substantially as and for the purpose hereinbefore set forth.

138,745.—*Button and Stud Attachment.*—HIRAM FREEMAN, Petroleum Centre, Pa. Application filed February 8, 1873.

Two metallic plates are hinged together at one side and have a clasp-fastening at the other. The inner edges of the plates are grooved, or grooved and recessed, to receive and embrace the shank of a button.

Claim.—As a stud or button securer, an adjustable disk to be interposed between the fabric and the small head E of the stud or button, composed of the two parts A A swinging upon the hinge *a* and provided with the grooves *c c*, which, when closed and clasped, will form the opening *z* for the transmission of the shank of a stud or button, substantially as and for the purpose set forth.

138,746.—*Child's Carriage.*—THOMAS GALT, Rock, Ill. Application filed February 19, 1873.

Means for locking the fifth-wheel of a child's carriage that the tongue may be changed from front to rear and the carriage propelled from behind.

Claim.—The fifth-wheel D of a child's carriage notched at *c*, in combination with the bolt D for locking the same, substantially as shown and set forth.

138,747.—*Portable Fence.*—LEWIS GATES, Mount Vernon, Ohio. Application filed January 13, 1873.

At each end of the panel a combination post is formed of three rails secured together, two inclined and intersecting near the top, the third horizontal near the bottom, preventing the spread of the inclined rails. When the legs on or in the ground decay the whole panel may be reversed, bringing sound ends to the ground, and the decay may be cut off the ends thus brought to the top.

Claim.—The fence-post, consisting of the pieces A D C, so arranged that the extremities of each will project beyond their

points of intersection and permit the reversal of the panel, substantially as and for the purposes herein set forth and shown.

138,748.—*Car-Coupling.*—MARTIN GOOLAVEN, Taunton, Mass. Application filed August 15, 1872.

The draw-head is provided with a frame in which works a cross-head which has a catch for engagement with the coupling-link, and a rod which passes up through the frame and acts as a keeper for a spring which forces the catch down. The cross-bar is raised by levers on either side, or by a cord passing up to the top of the car.

Claim.—In combination with the draw-bar of a car the spring-catch C H, to operate by means of the lever or levers S K or G, substantially as and for the purpose specified.

138,749.—*Roller for Window-Curtains.*—WILLIAM W. GRIER, Hulton, Pa. Application filed April 8, 1873.

The rollers are made of sheet metal, bent into the form of a tube, each end of which has screw-threads adapted to screw into threads formed inside of tubular caps or ends. These caps or ends are provided with pintles which serve as an axis for the roller. The curtain is clamped between the edges of the tube.

Claim.—A sheet-metal tubular roller, A, the ends of which are furnished with screw-threads, in combination with the tubular end pieces B, constructed and operating with relation to each other, substantially as herein described, and for the purpose set forth.

138,750.—*Glass-Press.*—JONATHAN HALEY, Pittsburg, Pa. Application filed April 24, 1873.

Pulley-shaft rotating continuously and gearing into crank-shaft operating the plunger. Cam arranged on gear-wheel of crank-snaft so as to ship pulley at certain point of revolution and so stop plunger. Plunger yielding so as to accommodate itself to varying thickness of glass.

Claim.—1. A power-press for molding glassware, in which the reciprocating parts that operate on the mold are actuated from or by a crank-shaft having a continuous rotary movement in one direction during the operation or working of the press, substantially as and for the purpose herein shown and set forth.

2. In a press for molding glassware, a reciprocating plunger, arranged to act on the material in the mold with a yielding pressure, which admits of its automatically adapting itself to variations in the quantity of glass in the mold, substantially as shown and set forth.

3. The combination, in a glass-press, of a crank-shaft, continuously rotating in one direction during the working of the press, and a reciprocating plunger connected with and deriving its movement from said crank-shaft, and automatically self-adjustable to variations in quantity of glass in the molds upon which it acts, substantially as and for the purposes described.

4. In a power-press for molding glassware, the combination, with the rotary crank or driving shaft which actuates the reciprocating plunger, of a stopping and starting mechanism, arranged and operating substantially as herein shown and described, whereby the movement of said crank-shaft may automatically be arrested in order to stop the movement of the plunger at any given point or points in its ascent or descent, as and for the purposes set forth.

5. The combination, in a glass-press, of the following elements, namely, a rotary crank or driving shaft, a reciprocating plunger deriving its movement from said shaft, and automatically self-adjusting to variations in quantity of glass in the molds, and a stopping and starting mechanism, whereby the movement of said shaft, and consequently of the plunger, may be arrested automatically at any given point or points, substantially as herein shown and set forth.

6. The combination of the plunger-rod, spring-box, cross-head, plunger, and spring or elastic cushion within said box, the same being arranged together for joint operation, substantially as shown and set forth.

7. The combination, with the spring-box, its inclosed spring, and the plunger, of the presser-plate, adjustable to regulate the compression of said spring, and its consequent pressure upon the plunger, substantially as and for the purposes shown and set forth.

8. In combination with the reciprocating plunger and the bed-plate, the sliding mold guide-plate, moving in guides or ways on the bed-plate, and arranged with relation to the plunger substantially as shown and set forth.

9. The herein-described stopping and starting mechanism, constructed and organized as set forth, in combination with the crank-shaft and the driving-shaft, under the arrangement and for operation substantially as shown and specified.

138,751.—*Powder and Shot Charger for Fire-Arms.*—ALBERT HALL, New York, N. Y. Application filed October 1, 1872.

Combination of an adjustable sliding-charge gage with a gate and operating-lever, as shown, so that the slide and gate may be moved together and without detaching any of the parts.

Claim.—1. The combination, with the discharge-tube A and cross-slides B B', of the side opening *g* in said tube, and the slotted outer longitudinal slide D, arranged to cover the opening *g*, and receiving the one cross-slide through it for adjustment within the opening *g* in direction of the length of the discharge tube, substantially as and for the purposes herein set forth.

2. The thumb-lever C, in slotted or free connection with the adjustable cross-slide B, in combination with the slotted longitudinal slide D and discharge-tube A, provided with an enlarged side opening, essentially as specified.

138,752.—*Bag-Holder.*—JOHN HUNTER and HENRY M. CLAYTON, Ashland, Pa. Application filed April 1, 1873.

Mouth of bag turned down over bent arms arranged at right angles to the supporting-bar; turning the arms outward holds the bag open more firmly by the increased strain on them caused by filling the bag.

Claim.—The bent arms B B' pivoted to a support, A, and operating as shown and described.

138,753.—*Shaft-Iron for Carriages.*—WILSON W. KNOWLES, Plantsville, Conn., assignor to ATWATER MANUFACTURING COMPANY, same place. Application filed March 1, 1873.

Welding the iron at the joint made by the shaft and cross-bar is obviated.

Claim.—As an article of manufacture, the T-shaped shaft-corner iron A B C, its under side being flat, the same being formed solid at the junction of the arms by cutting from a single piece of wrought metal, substantially as specified.

138,754.—*Brick-Machine.*—HENRY MARTIN, Chicopee, assignor of one-half his right to WILLIAM C. MCCALLAN, Springfield, Mass. Application filed March 19, 1873.

A main lever imparting movement to a sliding center, so as to permit the order of the main lever to be changed by transferring its former fulcrum to the end of the connection when the passage is obstructed; the obstruction being removed, the lever is returned to and held in its former place.

Claim.—In combination with lever E having the sliding center T, the friction-wheel B having cord and weight c W, hub and cord *d m*, operated by the lever D, with friction-band A the parts being arranged and constructed substantially in the manner and for the purpose shown and described.

138,755.—*Window-Sash.*—WILLIAM L. MCDOWELL, Philadelphia, Pa. Application filed April 6, 1873.

A means of retaining the glass in its place in the sash, so that it can be inserted and removed at pleasure, by the construction of the sash itself, without the use of putty.

Claim.—1. In combination with the montants or uprights A, the flanges or projections *a' a''*, or their equivalents, arranged in relation to each other substantially as and for the purpose hereinbefore set forth and described.

2. In combination with the flanged montants or uprights A, the cross-pieces C C, when constructed with the water-table *c''* and the raised portion *c'*, substantially as and for the purposes hereinbefore set forth and described.

138,756.—*Bedstead.*—HARMON D. OLDS, Cedar Rapids, Iowa, assignor of two-thirds his right to CHARLES J. BAYER, same place. Application filed February 13, 1873.

An angular metallic brace is secured to the side rail of the bedstead in which is fitted transverse rails with dovetail ends, which strengthen the bedstead.

Claim.—The bent metallic plate D with its ends projecting beyond its bed or bearer A, and secured in the bearer-mortise to form an endwise brace to the bedstead, as described and shown.

138,757.—*Spring for Rocking-Chairs.*—ALBERT H. ORDWAY, Haverhill, Mass. Application filed March 25, 1873.

The seat is supported on two pairs of curved springs, the upper end of each spring provided with a longitudinal slot to receive the bolt that confines it to the seat, so as to adjust the length of the spring. Each pair of springs is connected by a center-brace, through openings in which each separate spring passes. The side braces are connected to each other by an arched brace that is secured at its center to the under side of the seat. Brakes or stops are attached to the lower frame for the purpose of preventing the lower parts of the rear springs from bending too much.

Claim.—1. In combination, with the seat *a* of a chair, cradle, &c., and the frame *b*, the springs *c c'* having slot-holes in their upper ends, of the screw-bolts *d d'*, and thumb-bolts *e e'*, or their equivalents, as and for the purpose set forth.

2. The combination of the springs *c c'*, arched brace *f*, and the braces *g g* having each two openings, *i i*, in a manner set forth.

3. In combination with the frame *b*, seat *a*, springs *c c'*, of the brake or stopper *k*, as and for the purpose set forth.

138,758.—*Manufacture of Door-Knobs.*—JOSEPH OTTKER, Bridgeport, Conn. Application filed April 7, 1873.

The two shells of a knob are united, by a ring of metal cast around the joint, into grooves previously cut.

Claim.—1. The method of casting and preparing the shells for metallic knobs, as described and set forth.

2. The uniting of the shells of a metallic door-knob by a metal ring cast to the parts and finished, as described and set forth.

138,759.—*Medical Compound or Blood-Purifier.*—DANIEL PARLOW, Philadelphia, Pa. Application filed April 9, 1873.

Cinnamon bark, boneset, sassafras bark, wood-dittany, and May-apple root and water.

Claim.—The composition or compound consisting of the ingredients named in the proportions hereinbefore specified, prepared, substantially as described, for the purposes set forth.

138,760.—*Boom and Raft Rudder.*—LEVI W. POND, Eau Claire, Wis., assignor to himself and THE EAU CLAIRE LUMBER COMPANY OF WISCONSIN. Application filed September 9, 1872.

A steering boom-raft has pivoted to its sides leaves or rudders which are controlled in their relative position to the boom by steering-lines. The raft is steered to the larboard or port side, according to the position of said rudders.

Claim.—Rudder C, with end pieces D and E, in combination with stationary support B and rope F, substantially as described.

138,761.—*Inside Blind.*—WILLIAM POTTER, Jr., Andover, N. Y. Application filed March 17, 1873.

An arrangement of cords and pulleys by which the slats are elevated or opened, as desired, or one end of the slats may be

raised, giving a fan-shape to the blinds. The slats are attached to the side cords by a short cord that passes underneath each slat, with its center carried up through an opening in the center of the slat and held there by a pin.

Claim.—1. The arrangement and use of the pulleys *e f h i*, to operate in combination with the cords B B, *g g*, *c c*, and *b b*, as and for the purpose described.

2. The above arrangement of the cords and pulleys, in combination with the small cords *k k* fastened by the pin *i* to the slats *a*, by which means the blinds are raised and lowered, or shut or opened, as hereinbefore specified.

138,762.—*Stave-Jointer.*—JOHN J. RALYA, Cleveland, Ohio. Application filed November 29, 1871.

A revolving wheel having a slightly-concave face is provided with suitable cutting-bits. The stave is secured upon an oscillating table and pressed against the face of the wheel until the cutters have reduced it to the proper shape.

Claim.—1. The adjustable frame K, hangers M, links O attached to the arms P of the shaft N, combined and arranged to operate in the manner as described and in relation to the wheel B, for the purpose specified.

2. The clamps Q, levers S, links T, slide U, standard V, friction-rollers *a*, and treadle A', as arranged to operate in combination with each other and in relation to the rests or tables E, substantially in the manner as described, and for the purpose set forth.

138,763.—*Wire-Fence.*—HENRY M. ROSE, Waterman Station, Ill. Application filed December 31, 1872.

An attachment to an ordinary wire-fence, consisting of a bar of wood having barbs radiating from it, the said bar suspended from the horizontal wire (one or more) by means of wire bands.

Claim.—The combination of wooden strip C with metallic points D, and wire bands E with the wires B and posts A of an ordinary wire-fence, as and for the purpose described.

138,764.—*Shoe-Sewing Machine.*—JOHN G. ROSS and THOMAS L. MILLER, Philadelphia, Pa., assignors to JUSTUS W. FRENCH, VIVIAN K. SPEAR, BENJAMIN DORE, and WILLIAM F. MORGAN, Lynn, Mass. Application filed October 18, 1872.

Designed for sewing "turns." The rest and channel-opener projects upward from a horizontally-reciprocating bar, which also carries the bevel-sole guide, and these parts, together with the presser-foot, sustain the sole in position, and the upper in position about the sole, and produce the feeding action. The upper presser-foot is secured to the plate hinged to the stock, and is adjustable laterally as well as horizontally with reference to the rest and edge of the sole. The oblique presser-foot presses on the upper and edge of the sole and holds the latter down on the rest and against the sole-guide, which presses against the bevel of the sole.

Claim.—1. The combination of the rest and channel-opener E with the feed-bar D and presser-feet I and I' for feeding the shoe forward and holding it for the sewing operation, substantially as and for the purpose specified.

2. The combination of the upper presser-foot I, plate J, stock K, and set-screw *f*, substantially in the manner and for the purpose above described.

3. The oblique presser-foot I' in combination with the rest E and bevel sole-guide G, substantially in the manner and for the purpose set forth.

138,765.—*Basket-Form.*—ANTON F. SCOW, Chicago, Ill. Application filed February 10, 1873.

The clamp X pivoted to one standard and fastened to the other, and by a dependent spring-rod holds the bottom of the basket to the form M.

Claim.—The curved clamp X with stationary or adjustable standards C, when used to hold the bottom J to form M, substantially as and for the purpose set forth.

138,766.—*Gas-Fixture.*—GEORGE G. SHELDON, Chicago, Ill. Application filed April 12, 1873.

The drop-light tube-nozzle extends from the burner-pillar down under the globe. A valve is so arranged that gas may be admitted to either the drop-light, the attached burner, or to both. The flexible pipe is attached to the nozzle by a sleeve, the arms of which engage upon a rim of the nozzle, and is made gas-tight by a coiled spring and rubber ring.

Claim.—1. The hereinbefore-described arrangement, substantially as shown and specified, of a tube-receiving nozzle in a gas-fixture, for the purposes set forth.

2. In a gas-fixture, a tube-receiving nozzle having a bifurcated channel and provided with an adjustable valve or cock arranged at the junction of the channels for the purpose of controlling and shifting the flow of gas through either and both channels, substantially as and for the purposes specified.

3. As a new article of manufacture, a gas-fixture attachment, consisting of a tube-receiving nozzle having a bifurcated channel, and provided with an adjustable valve or cock arranged at the junction of the channels for the purpose of shifting the flow of gas both through a burner-tip arranged on the fixture and through a drop-light, and through either.

4. The nozzle D having the bifurcated channel D' D'', constructed and arranged substantially as described, and provided with the thumb-screw F, also constructed and arranged substantially as described, for the purposes set forth.

5. The arrangement, substantially as described, in the channel of a drop-light tube-receiving nozzle, of an adjustable valve or cock for the purpose of shifting the flow of gas both to a burner-tip on the fixture and to a drop-light, and to either.

6. The drop-light tube E' provided with the bent arms or clasps *e e*, in combination with a tube-receiving nozzle provided with the open and beveled shoulders or ribs *u u* and with the washer *r*, arranged to receive and engage the end of the tube E, substantially as and for the purposes specified.

7. The combination and arrangement of the tube E' provided with the shoulder *s*, sleeve G provided with the bent arms or clasps *e e*, spring *t*, open shoulders or ribs *u u*, and washer *r*, all substantially as and for the purposes specified.

8. In a gas-fixture, a tube-receiving nozzle, in combination with a valve or cock for shifting the flow of gas both through the fixture and the nozzle, and through either, substantially as and for the purposes specified.

138,767.—*Apparatus for Painting or Coating Broom-Handles, Moldings, &c.*—STEPHEN A. SHEPARD, Pittsburg, Pa. Application filed April 16, 1873.

Claim.—The wiping or coating apparatus hereinbefore described, viz., the elastic sheet A, provided with opening D and secured to the frame B, in combination with a vessel containing a painting or coating material, as and for the purpose specified.

138,768.—*Coffin-Handle.*—CLARK STRONG, Winsted, Conn. Application filed April 17, 1873.

The end of the thin metallic tube, which constitutes the handle proper, is inserted in the lever-socket, and the metallic tip is then driven forcibly into it, crowding together and securing the three parts without rivets or solder.

Claim.—Fastening together the tubular hand-piece A, the swinging lever B, and the tip C by means of the inner pressure of the plug end of the tip and the outer pressure of the ring *d* of the swinging lever, the ring being first forced upon the end of the tubular hand-piece, and then the plug end of the tip being forced into the end of the tubular hand-piece, substantially as set forth.

138,769.—*Table-Leaf Support.*—GEORGE C. THOMAS, Chicago, Ill. Application filed April 12, 1873.

The support is constructed in two parts, one of which is adapted to be secured on the under side of the bed of the table; the other part is hinged to the permanent part of the support so as to support the leaf when extended, and to fold under the bed of the table when closed.

Claim.—An improved table-leaf support formed by combining the parts A A' and shaft C, constructed and arranged substantially as described.

138,770.—*Manufacture of Artificial Hydraulic Cement.*—WILLIAM B. TUCKER, Baltimore, Md.; assignor to FRISBY LLOYD, same place. Application filed October 25, 1872.

Blue river, pit, or other clays that contain some or all of the following substances, viz.: Silica, alumina, oxide of iron, manganese, or corundum, combined with them naturally or chemically, in combination with any lime or limes, either in the carbonate or caustic state, which has absorbed hydrogen, sulphurous or sulphuric acid while purifying gas. The whole ground, mixed, and heated to 125° Fahrenheit and then molded.

Claim.—1. Clays containing silica, alumina, oxide of iron, manganese, or corundum, or clays having these substances added in proper proportions, in combination with the limes herein set forth, for the purpose of manufacturing artificial hydraulic cement.

2. The refuse limes herein set forth—*i. e.*, from the manufacture or purification of gas, and from the manufacture of lye—for the purpose herein described.

3. Treating the materials herein set forth in the manner herein described, in the manufacture of hydraulic cement.

138,771.—*Binder's Attachment for Harvesters.*—THOMAS WEBB, Freeport, Ill. Application filed September 23, 1872.

The binding-tables are arranged so as to admit of three binders operating at the same time.

Claim.—The combination of the tables A and B B, platform D, and wheel E, when said parts are constructed and arranged substantially in the manner and for the purposes herein set forth.

138,772.—*Binding-Folder.*—ELLIOTT P. WEST, Jersey City, N. J. Application filed April 10, 1873.

The binding material is received within the curvilinear opening of the guide, from which it passes between the jaws, one of which is secured to the cloth-plate, while the other is made to reciprocate so as to pinch the material partially folded and closely fold it near each edge, and then the material, with edges folded, is passed to the binder of ordinary construction, which folds it centrally and applies it to the material to be bound.

Claim.—1. The combination of guide A and jaws B and C, when operated together, substantially as and for the purpose specified.

2. The combination of jaws B and C and binder K, operating together substantially as specified.

3. The combination of guide A, jaws B and C, and binder K operating together, substantially as specified.

138,773.—*Painting Striped Awnings.*—CHARLES E. WHEELER, Boston, Mass. Application filed March 22, 1873.

The cloth to be striped is first passed through a solution of soap or alkalies in water to prevent the paint from spreading on the cloth beyond the stripe.

Claim.—1. In combination with the elastic pressure-roller *c d*, screw *h i*, and bar *k*, or their equivalents, of one or more pattern-rollers, *f f'*, partially immersed in the oil-paint contained in the boxes *g g*, for the purpose of striping awnings, &c., with oil-paint, as herein shown and described.

2. In combination with the oil-striping apparatus herein described, the sizing-machine consisting of the trough *p*, immersed roller *q*, rollers *t*, *r*, and *u*, as and for the purpose set forth.

3. As a new article of manufacture, awning-stripes, painted by machine in oil-colors, in the manner herein shown and described.

4. The process of manufacturing oil-colored striped awning, as herein shown, and for the purpose set forth.

138,774.—*Tent-Frame.*—WILLIAM W. WHITCOMB, Boston, Mass. Application filed January 3, 1873.

The pole is made in two or more sections, which slide telescopically one within the other. At or near the top of the upper section is a movable head-block, to which radiating arms, which support the canvass, are hinged or pivoted. The tent may be raised or lowered by means of pulley or friction wheels and a cord.

Claim.—1. A center-pole for a tent or other like purpose, having two or more sections sliding one into the other, in combination with a movable head-block, in which radiating arms may be fixed or hinged.

2. In a center-pole for a tent or other like purpose, in two sections, sliding one into the other, the pulley-wheels B and C, and the grooves A, and the grooves opposite, whether said grooves are in the upper or lower section of said pole.

3. A frame for a tent or other like purpose, consisting of a center-pole, in two or more sections, sliding one into another, and capable of being raised or lowered and fixed at any point of height, and a movable head-block having hinged radiating arms.

138,775.—*Process in Casting in Metallic Molds.*—JOHN WILLIAMS, Philadelphia, Pa., assignor to EDWIN CHAMBERS and CYRUS CHAMBERS, Jr. Application filed January 14, 1873.

Red lead is applied to the interior surfaces of the molds to prevent the fluid metal from adhering thereto.

Claim.—A coating formed of red lead, (minium,) and applied to the surfaces of metallic or other molds or metals around, in, or against which other metals are to be cast, for the purpose herein specified.

138,776.—*Apparatus for Improving Liquors.*—CHARLES WOLTERS and IGNAZ RUDIGIER, Pittsburg, Pa. Application filed September 5, 1872.

The plates of glass are placed in the heads of the revolving vessel.

Claim.—1. The light-inducting glasses *d*, in combination with a vessel A, when used in aging and purifying alcoholic liquors, constructed in the manner set forth and described.

2. Vessel A, in combination with the hollow axis F and worm of the condenser *n*, for the purpose to condense the alcoholic vapors, and to produce an air-current through the liquors without the use of an air-pump, when used in aging and purifying alcoholic liquors, constructed in the manner described.

138,777.—*Rock-Drilling Machine.*—DE VOLSON WOOD, Hoboken, N. J. Application filed February 14, 1873.

The main valve is operated by means of a piston within a secondary cylinder. This cylinder is also provided with a valve, which is operated by means of a valve-stem, the end of which rests upon the inclined surface of the main piston. A spiral groove around the valve-stem serves to govern the action of the auxiliary valve. A false head is arranged within the main cylinder, forming thereby a space for the reception of steam which forms a cushion for the piston.

Claim.—1. The combination of the main valve K, piston I, valve G, piece F, and conical surface *b b*, arranged and operated substantially as described, and for the purposes herein set forth.

2. The combination of the valve G, the spiral groove *g h* in the valve-rod F, and the adjusting-rod *p* or its equivalent, arranged and operated substantially as described, for the purpose of regulating the stroke of the piston B B.

3. The inclined sides *b b* and *b c*, arranged between the heads of the piston B B, in combination with the rod E, valve-stem F, and valve G, as and for the purposes specified.

4. A regulated hand-feed, consisting of the combination and arrangement of the crank Y or its equivalent, screw T, ratchet V, click *v*, and projection W, substantially as described.

5. In a direct-acting rock-drilling machine, the false head N, arranged to form a space, *r*, in combination with the valve *s* and passage *t*, as and for the purposes specified.

138,778.—*Gas-Generator.*—JOSEPH S. WOOD, Brooklyn, N. Y., assignor of one-half his right to JOHN J. CARBERRY, Philadelphia, Pa. Application filed March 25, 1873.

A pipe allows the acid to be forced back from the generating-chamber to the acid-chamber, and, by projecting below the perforated plate, has its end sealed by the dilute acid remaining in the bottom of the tank, so as to prevent the gas entering the acid chamber.

Claim.—1. The perforated false bottom *d*, in combination with a communicating passage, E, for the circulation of dilute acid controlled by a plug or valve, *g*, the said passage having its lower termination at or below the said false bottom of the generating-chamber and the other end terminating in the acid-chamber, as herein described.

2. The circulating pipe E having its lower termination below the level of the iron-turnings contained in the gas-generating chamber and the other termination in the dilute acid chamber, and controlled by a plug or valve therein, substantially as herein described.

138,779.—*Watch-Key.*—FRANCIS E. ALLEN, Keene, N. H., and SAMUEL G. HALL, Winchendon, Mass. Application filed March 10, 1873.

The steel pipe or barrel is attached to the brass tubular stem by being forced through it from the top and secured by a constriction of the brass stem just above it. The key is finished with a cap or cover soldered to the top of the stem.

Claim.—The within-described method of making watch-keys, by forcing a steel pipe, having upon its enlarged upper portion serrations or splines, partly through a tapering soft-metal tube, and confining it permanently in position by compressing the tube immediately behind the pipe, substantially as described.

138,780.—*Compound for Lining Bottoms of Bessemer or Kelly Converters.*—JAMES E. ATWOOD, Pittsburg, Pa. Application filed May 5, 1873.

Claim.—1. A compound consisting of plumbago in the form of old crucibles, German clay, ground fire-brick, Mount Savage stone-clay, and burnt or unburnt sand, substantially as described, for lining the bottoms of converters.

2. A compound consisting of carbon in the form of anthracite or bituminous coal, ground fire-brick, burnt or unburnt sand, and one or more of the plastic clays, substantially as described, for the lining of converters.

138,781.—*Compound for Tuyeres.*—JAMES E. ATWOOD, Pittsburg, Pa. Application filed May 5, 1873.

Claim.—1. A compound consisting of old crucibles, fire-brick, German clay, and burnt or unburnt sand, for forming converter-tuyeres, as set forth.

2. A compound consisting of plumbago, fire-brick, German clay, sand, burnt or unburnt, and Mount Savage stone-clay, as set forth, for forming the tuyeres of Bessemer or other converters.

138,782.—*Safety-Hook for Filing Papers.*—LUTHER H. BECKWITH, Port Jervis, N. Y. Application filed October 6, 1872.

A retaining-spring bears against the end of the hook and is moved back by a loop attached to a rock-shaft actuated by a lever.

Claim.—1. The improved safety-hook, consisting of the combination of the plate A; the hook B, and the safety-spring, the latter composed of the bow C and the coils *a a*, all arranged and operating substantially as and for the purposes herein specified.

2. The combination, with the plate A, spring C, and hook B, of the lever D *c*, substantially as and for the purpose herein specified.

138,783.—*Machine for Assorting Nails.*—BENJAMIN BEVELANDER, Boston, Mass. Application filed May 31, 1873.

The nails are thrown into a hopper, in the bottom of which reciprocates vertically a carrier for raising a single nail at a time up against the arms of a magnet, which latter turns on a pivot and carries the nail to the side of the machine, where a stripper takes the nail off the magnet.

Claim.—1. In machinery for assorting nails, tacks, &c., I claim the combination, with the nail-hopper or receptacle, of a vertically-reciprocating carrier, sliding within an orifice in the bottom of the hopper, and a rocking or vibratory magnet arranged to move towards and away from the carrier, said parts being arranged for joint operation, substantially as herein shown and described.

2. In combination with said hopper, reciprocating carrier and vibratory magnet, arranged and operating as specified in the preceding clause, I claim the vibratory stripper, arranged and operating to remove the nail from the magnet after said nail has been lifted by the latter out of the hopper, substantially as herein shown and described.

138,784.—*Wood-Screw.*—WILLIAM BOURN, Geneva, N. Y. Application filed August 1, 1872.

The screw has a brad-awl point, distinguishable from the brad-awl points of other screws by having a rounded edge instead of a straight edge.

Claim.—As an improved article of manufacture, a wood-screw provided with a flattened point having a circular cutting-edge, as and for the purposes set forth.

138,785.—*Clothes-Line Reel.*—JOHN BRIZEE, Alvarado, Cal. Application filed March 28, 1873.

A clothes-line reel with an upright outer case, having a weight suspended within it from a cord attached to the reel and to the weight, by a pulley and the top of the case, which passes over a smaller pulley near its top, and down to the shaft of, and the other end out and over, a pulley on the case, with a ring for its connection to a detent or holder for use, and with a detent to hold it attached to the reel by a pawl and ratchet.

Claim.—A clothes-line reel, consisting of the upright box A, with its extension C having the shaft *d*, with its pulley E, the ratchet-wheel *r*, pawl *s*, hook *t*, clothes-line *f*, weight-cord K, and weight O, all constructed and arranged as shown, and for the purpose above described.

138,786.—*Clover-Harvester.*—DAVID R. BRUTON, Concord, N. C. Application filed October 7, 1872.

The box which supports the gathering devices and receives the cut crop is adjustably suspended between horizontal bars supported on the axles of the carrying-wheels.

Claim.—The combination, with the axles K K', of the longitudinal rails J J and the adjustable box A with perforations *x x* and interior clover-gathering mechanism, all constructed and operated substantially as set forth.

138,787.—*Paint-Brush.*—GEORGE H. CHINNOCK, Brooklyn, assignor to JOHN H. HAPGOOD, New York, N. Y. Application filed October 19, 1872.

The head of the brush is formed by compressing the bristles into the band or ferrule of wire about half of its width, the upper ends of the bristles being saturated with melted resin, when pegs are driven into the top or inner end of the mass of bristles of a sufficient number to tighten them securely, after which the block and handle are attached to the band or ferrule.

Claim.—The combination of the system of isolated pegs, made and applied separate and distinct from the handle-butt, with the

bristles and top or holding-band, whereby provision is made for the efficient tightening of the bristles to any requisite degree previous to the attachment of the handle, substantially as herein set forth.

138,788.—*Means for Operating Earth-Augers.*—JOHN B. CHRISTIAN, Hamburg, Iowa. Application filed November 14, 1872.

The rods B B are pivoted at their lower ends to the base-frame, and at their upper ends support the socket C, through which the boring-shaft works. The rods and socket are held in proper position for boring brace-hook E. When the auger is to be withdrawn the sections D and D' of the boring-shaft are uncoupled, the hook E unfastened, and section D of the shaft swung over and coupled with the shaft of the windlass M, which is then rotated and raises the auger by means of the chain attached.

Claim.—1. The combination, with the frame A, of the pivoted rods B B, socket C, fenders G G, with studs *a a*, hooked brace E, and shafts D' D', all substantially as set forth.

2. The pivoted or hinged rods B B and shaft D, in combination with the windlass-wheel M, when used as and for the purpose specified.

3. The hinged or pivoted cross-bar N, when used with the frame A, as and for the purpose set forth.

138,789.—*Machine for Pointing the Journals of Bobbins.*—DWIGHT M. CHURCH, Holyoke, Mass., assignor to TIMOTHY MERRICK, same place. Application filed May 17, 1872.

Bobbins for use upon sewing-machines are carried forward and held in position by a carrier-wheel, while two rotating reciprocating cutters are advanced to point them.

Claim.—1. In a machine for pointing or finishing the journals of sewing-machine shuttle-bobbins, the cutter-heads provided with the removable circular thimble or face-plate 25, adapted to be inserted in the cutter-head, and to receive the heads or journals of the bobbins, as shown and described.

2. The thimble 25 constructed with a flange, 25*, or its equivalent, serving to lodge it concentrically in the cutter-head, a concentric cavity, 28, serving to receive and guide the head of the bobbin, and a smaller central and concentric opening, 29, serving to receive and guide the journal to be finished.

3. The combination, with the two continuously-revolving but intermittently-sliding shafts carrying cutters for journaling or pointing both ends of small bobbins, of an intermittently-rotating bobbin-feeding wheel, adapted to receive and carry the bobbins fed in at its periphery, substantially as shown and described.

4. The combination, with mechanism for simultaneously pointing or journaling both ends of the bobbin, of an intermittently-rotating feed-wheel provided with adjustable bearings, the combination being substantially as and for the purpose described.

5. The combination of two cutter-heads, each mounted on a separate and adjustable shaft in the same axial line, with the separately-adjustable side guides 5 5 for guiding and positioning both ends of the bobbin in its passage to the cutters.

6. The combination, with the described feed-wheel having the peripheral notches to receive the bobbin-barrels and the peripheral flanged groove, of the strap for holding the bobbins to place upon the wheel, as set forth.

7. In combination with the feed-wheel and holding-strap, the intermittently-acting lever for pressing positively upon each bobbin successively while its journal is being pointed or journaled.

8. The combination of the adjustable and inclined feed-guides 4 4 with the intermittently-acting feed-wheel and its holding-strap, substantially as shown and described.

9. The combination of a bobbin-feeding guide, 4, a bobbin-feeding-wheel, H, and mechanism, substantially as described, for finishing or pointing the journals of sewing-machine bobbins ready for use in the shuttle.

138,790.—*Plumb-Bob.*—GEORGE B. COWLES, Bridgeport, Conn. Application filed March 10, 1873.

A screw-cap on the top of the plumb is so formed as to leave a neck upon which the line is wound, and a slot in the cap allows the line, when of the desired length, to be brought to the axial or central point in the top, at which point it is held by the rotation of a slotted plate or washer.

Claim.—In a plumb-bob, the recess C, spindle B, slotted cap D, and locking-tip or equivalent *e*, substantially as described and set forth.

138,791.—*Sectional Steam-Generator.*—WELLSLY W. CRANE, Auburn, N. Y. Application filed April 12, 1873.

A hollow front wall having a steam-dome and a hollow flange running the entire length, vertically arranged, communicating with the water space. The smoke flue running through the hollow wall. The water-tubes screwing into the back of said wall and into sockets at the other end, with circulating-pipes connecting with each water-tube to the mud-drum, thus keeping up a circulation, all the steam passing through the front to the steam-dome.

Claim.—1. The front piece A, provided with an enlargement, D, at its top, and a hollow flange, *c*, on one side, which extends from top to bottom, substantially as and for the purposes herein set forth.

2. The combination of the screw-socket G and extension A, with the water-tube B, smoke-pipe C, and circulating-pipe I, screwed into the outer face of the extension A, substantially as and for the purposes herein set forth.

3. The combination of the front piece A, provided with female screw-threads, the water tube or tubes B with screw-threads on each end, the smoke pipe or pipes C with screw-threads on each end, the screw socket or sockets G having extensions A, circulating pipe or pipes I, and the mud-drum J, all constructed substantially as and for the purposes herein set forth.

138,792.—*Sectional Steam-Generator.*—WELLSLY W. CRANE, Auburn, N. Y. Application filed April 12, 1873.

A reversible fire-brick-lined back and top, having a damper. A coil of water-pipe is arranged around the water-flues, said flues being connected by tubes at their ends leading to a mud-drum. The coil is connected to the hollow walls, said walls connected by pipes, top and bottom, the whole provided with a bottom inclined toward its center to form a sediment-collector.

Claim.—1. The combination of the removable fire-brick-lined back wall E with the fire-box of a steam-generator, substantially as and for the purposes herein set forth.

2. The removable fire-brick lined top H, provided with a damper, I, in combination with the fire-box of a steam-generator, substantially as and for the purposes herein set forth.

3. The combination of the coil-pipes *d d*, with the walls of the fire-box, as and for the purposes set forth.

4. The combination of the hollow walls A G bolted together and connected at top and bottom by the pipes *b b*, substantially as and for the purposes herein set forth.

5. The inclined fire-box bottom M in combination with the hollow water bridge-wall D, as and for the purposes set forth.

138,793.—*Device for Applying Steam-Power to Street-Railway Cars.*—WELLSLY W. CRANE, Auburn, N. Y. Application filed April 12, 1873.

Two engines are placed upon the front platform, their pistons being connected to a double crank-shaft which is secured to suitable bearings underneath the platform. The front and rear axles connect by means of belting with the crank-shaft. Upon the rear platform is placed a water-tank, and underneath the rear platform a condenser, into which the exhaust steam is conveyed by pipes from the engines. In connection with the condenser is an air and a force pump, both operated by rods from an eccentric on the rear axle.

Claim.—1. The combination, with a street-car, A, of an engine and a rectangular boiler, D E, upon one end of the car, the elevated tank J placed upon the other end of the car, and the pipe *m'* under the bottom of the car, substantially as and for the purposes herein set forth.

2. The combination, with a street car, of the axles B, loosely-fitting wheels C, ratchets *a*, collars *d*, and pawls *b*, all constructed and operating substantially as and for the purposes specified.

3. The combination of the axles B B', loosely-fitting wheels C C, ratchets *a*, collars *d*, pawls *b*, chains A A', pulleys G G', crank-shaft *e*, pulley *f*, and engine D, with a street-car, A, all constructed and operating substantially as and for the purposes herein set forth.

4. The combination of the tank J, condenser H, air-pump I, force-pump I', connecting-rods K K', eccentrics *n n*, and the axle B' of a street-car, A, all substantially as and for the purposes herein set forth.

138,794.—*Car-Axle Box.*—WELLSLY W. CRANE, Auburn, N. Y. Application filed April 12, 1873.

The box is provided with a rear extension, into which is arranged a divided packing-case, the same being held in place by means of bolts and spiral springs. Oil is supplied to the journal by means of a roller, which rotates beneath the journal and is inclosed by a shield, the sides of which are so shaped as to confine the oil to the journal.

Claim.—1. In combination with a box, A, provided with an extension, H, the removable packing-box I made in two parts, connected by the bolts *p p*, and covered by the plate J, all substantially as and for the purposes herein set forth.

2. The combination of the plate *k* with its inclined semicircular lip *m* and pointed ends *i i*, with the removable box I, substantially as and for the purposes herein set forth.

3. The shield G inclosing the roller D extended above the top of the same and around the lower portion of the axle, and having exterior vertical flanges *d d*, inclined flange A, and spring-feet *b b*, substantially as and for the purposes herein set forth.

138,795.—*Carriage-Axle Iron.*—S. JAMES DENNIS, Boston, Mass. Application filed March 1, 1873.

Claim.—The new article of manufacture described, to wit, axle-iron rolled with two of its corners alternately round and square, as described.

138,796.—*Stool for Dental Chairs.*—THOMAS BENTON DOWNS and WILLIAM DAWSON MORRIS, Jefferson City, Mo. Application filed July 22, 1872.

A revolving seat that works by an elevating-screw in a bracket which has two arms. Each arm plays in a ball that is attached to a sliding carriage that moves back and forth on slides secured horizontally to the chair.

Claim.—The seat E, bracket D with arms *c c* and A, in combination with the balls *c c*, slides A A, carriages B B, and set-screws G G, the several parts being constructed and arranged substantially as and for the purpose described.

138,797.—*Fly-Trap.*—GEORGE W. ERNST and ISAIAH LUCAS, Fremont, Ohio. Application filed April 17, 1873.

The trap is constructed with a woven-wire cover and a closely-fitted wire basket with openings for the flies to pass up, which rests upon another inverted to cover the receptacles for food upon the bottom or foundation. The cover and bottom are held together by springs. On the top of the cover is a closely-fitted flanged cap.

Claim.—1. The movable basket C, constructed as herein described, used in combination with the box D and movable cover E, the basket and box being made of gauze-wire, as and for the purposes set forth.

2. The combination of the bottom A with cups *a a*, wire-gauze cover B, removable wire basket C, wire box D, and movable top E, all the parts being constructed substantially as and for the purposes set forth.

138,798.—*Car-Wheel.*—FRANK A. FOUTS, Bloomington, Ill. Application filed April 21, 1873.

The wheel has an outside supplementary tread, which has an outer flange. The supplementary wheel suports the truck should the main wheels jump the track.

Claim.—A car-wheel having the flange *d*, tread *c*, and the supplementary tread *b* having the outer flange *a*, substantially as set forth.

138,799.—*Carriage-Curtain Fastening.*—JOHN H. GLEASON, Troy, N. Y. Application filed October 8, 1872.

Designed to avoid boring holes in the top props, and to be adjusted to correspond with portions of curtain button-holes.

Claim.—A carriage-curtain fastener having the hinged, jointed, or flexible clasp with the two-part screw-threaded shank on the end portions of the clasp, and the removable button-knob screwed upon the said two-part shank, substantially as herein described.

138,800.—*Butter-Paddle.*—DEMAS L. GROVER, Groton, N. Y. Application filed April 3, 1873.

A butter-paddle having a thermometer so inserted in the lower part of the handle as to have its front and back exposed to the direct contact with the liquid.

Claim.—A paddle for stirring milk, cream, or curd, provided with a thermometer, as and for the purposes set forth.

138,801.—*Stock-Feeder.*—CYRUS M. HALL, Yates City, Ill. Application filed March 10, 1873.

The inclined sides of the crib are provided with hinged sections which are acted upon automatically by the nose of the animal to shake down the feed. A sliding waste-trough beneath has a central division-board extending nearly to the bottom, the space permitting the frame to cover the whole trough.

Claim.—1. The hinged slats or boards E forming part of the inclined slides C of the grain-crib, for the purposes herein set forth.

2. The sliding trough I with central divider-board J, constructed as described, in combination with the openings and slides G in the troughs B, substantially as and for the purposes herein set forth.

138,802.—*Washing-Machine.*—JOHN D. HARTZELL, Ozawkie, Kans. Application filed March 31, 1873.

A washing-machine constructed with its rubber attached to an upright, (hinged or pivoted on top of the tub,) and motion given by adjustable levers pivoted at or near its top. The rubber is constructed with corrugated rollers on each side and at its center, with plain rolls between them, and held in contact with the bottom by rubber springs on its journals, and the frame is provided at its ends with drip-boards.

Claim.—1. The standard provided with rollers alternately corrugated and smooth, in combination with the corrugated frame, substantially as shown and described.

2. The combination of the frame *a* provided with drip-boards *d*, blocks *g t*, cross-bar A, levers *i i*, rollers *m n*, and the rubber band or its equivalent, when all are combined and arranged as set forth.

138,803.—*Clothes-Wringer.*—CORNELIUS E. HAYNES, Boston, Mass., assignor to himself and WILLIAM H. HENDERSON, same place. Application filed March 23, 1873.

The invention consists in the attachment, to a furcated clasp or holder, of a spring in S-form with its ends formed to receive the journals of the rolls. In the curved part of the clasp is an opening, through which a lever is passed, with a curved end and notches to fit the variation in the thickness of the tub and for its support.

Claim.—1. In a clothes-wringer, the roller carrying springs B, formed substantially as shown, and provided with bends A for receiving the journals of the rolls, substantially as and for the purposes described.

2. In combination with the furcated block A formed with a slot, *c*, in one of its legs, the latch or clamp C provided with one or more notches, *f*, and arranged to operate substantially as shown and set forth.

138,804.—*Balanced Valve for Steam-Engines.*—ALEXANDER HENRY, Richmond, Ind. Application filed February 12, 1873.

A hollow balancing-plate with a central vent is combined with hollow columns, made adjustable, which form additional steam-ports, and assist in balancing the valve which fits snugly between the balancing-plate and the valve-seat. The central vent-pipe passes through a stuffing-box in the back of the steam-chest cover.

Claim.—1. A slide-valve and balancing-plate, in combination with the hollow columns F, when said columns are so constructed and arranged as to admit of the adjustment of the balancing-plate upon the top of the valve and upon the columns, substantially as described.

2. The balancing-plate D, as shown and described, said plate having the openings V connecting with the columns F and the stem I attached to the top of said balancing-plate, in combination with the stuffing-box K, all arranged and operating substantially as described.

138,805.—*Lantern.*—GEORGE B. ISHAM, Burlington, Vt. Application filed March 27, 1873.

The ball is connected with the lamp, and has "keepers," into which a rod, passing through the chimney-cap, fits.

Claim.—The combination of the base or fountain A with ball or handle E attached to the same and provided with keepers *b b*, the burner B, holder C, chimney D, and cap G on the sliding rod or bar *a*, all substantially as and for the purposes herein set forth.

138,806.—*Combined Harrow and Seeder.*—LOREN G. JACKSON, Marion, assignor of one-half his right to CHARLES WOOD and ALBERT ELLIS, Woodman, Wis. Application filed March 31, 1873.

A harrow made in three parts, of V shape form, and pivoted between two driving-wheels. The center-beam of each harrow is pivoted in front to hangers suspended from a transverse rod. The rear parts are adjustably secured to beams, which beams are fastened to hangers situated about midway between the front and rear of the frame. The frames are each adjustable, separately or together, by suitable chains and levers.

Claim.—1. The harrows C C C, connected, by the arms *a a* and D D, to the frame A, substantially as herein set forth.

2. The combination, with the harrows C C C and arms *a a* and D D, of the chains *d d*, lever E, cords *e e*, levers G G, and foot-board G', all arranged as described, whereby all the harrows may be raised simultaneously or each one separately independent of the others, as herein set forth.

138,807.—*Wagon-Standard.*—JAMES H. KNISLEY and JOSEPH C. FERGUSON, Rainsborough, Ohio. Application filed March 27, 1873.

The standard is secured to a plate, which is hinged to the bolster so the standard may be secured horizontally, if desired.

Claim.—The combination of the bolster A, hinged plate B, standard F, and hasp I, substantially as and for the purpose specified.

138,808.—*Scroll-Sawing Machine.*—HUMPHREY LAWRENCE, Fredericton, Canada. Application filed March 25, 1873.

The saw is attached to one end of the arms of a vibrating frame, a straining-rod passing through the opposite ends to maintain the necessary tension.

Claim.—The combination of an adjustable spring-catch, H, thimbles A, rods T, forked holder *f*, saw-frame F, and plate E, the whole constructed and arranged to operate substantially as and for the purpose set forth.

138,809.—*Resin Box and Cooler.*—ARCHIBALD K. LEE, Galveston, Tex. Application filed May 3, 1873.

Box or receptacle for resin, oils, molasses, &c., which is so constructed and arranged as to permit of the liquid being surrounded by either steam or water, and also permits the desired degree of temperature being maintained to insure of the material being kept at such a state of liquidization as to permit of its being readily drawn off into barrels.

Claim.—1. The resin, oil, or molasses box A, having a steam-chamber, B, nozzles C C', and cocks *c c'*, the whole being constructed, combined, and arranged to operate substantially as described, as and for the purpose specified.

2. The box A, having a steam-chamber, B, and the series of faucets D D, the whole being constructed, combined, and arranged so as to operate substantially as described.

138,810.—*Apparatus for Steaming and Cleaning Barrels, &c.*—ARCHIBALD K. LEE, Galveston, Tex. Application filed May 5, 1873.

Constructing a vessel with a jacket or outer casing so arranged as to leave a steam-chamber, and which is provided with inlet and discharge tubes, arranged respectively at the upper and lower sections thereof, and which chamber furnishes a means of heating the vessel to such a degree as to soften the gummy material which adheres to the barrel, and which permits of the same being more readily removed by jets of steam emitted through the perforations of the rose, and which acts directly on the interior of the barrel.

Claim.—1. The vessel A having a steam-chamber, B, pipe D, tubes D' D', and roses *d d*, the whole being combined and arranged to operate substantially as described.

2. A vessel having steam-pipes D and E E arranged to heat the same, and at the same time serve as a supporting-frame for the barrels, in combination with the tubes D' D' and roses *d d*, the whole being constructed and arranged to operate substantially as described.

3. The vessel A having a steam-chamber, B, formed as shown, pipes D and E E, tubes D' D', and roses *d d*, the whole being combined and arranged to operate substantially as described.

4. In combination with a barrel-steamer, the frame H, constructed and arranged so as to operate in connection therewith, substantially as described.

138,811.—*Hoisting-Whim.*—JOSEPH C. MARSHALL, San Francisco, Cal. Application filed March 26, 1873.

Connecting or disconnecting the horse power and the hoisting-drum by means of the cross-bar, connected with a lever and ratchet mechanism.

Claim.—In combination with the drum D, with its lugs I, and the axle E with the cross-bar H and rod G, the lever J, cord or chain K, and hand-lever M with its holding-rack, substantially as and for the purpose herein described.

138,812.—*Lamp.*—CHARLES MAYER, Baltimore, Md. Application filed April 9, 1873.

A tube carrying a spring-valve slides over the wick-tube, and is operated by a jointed rod bearing a weight, which is moved upon the inner surface of the lamp-fount. In case the lamp is inclined, the tube is raised and the valve closes the end thereof, thus extinguishing the light.

Claim.—The slide C, carrying the spring-extinguisher *b d*, and connected by a jointed rod, *a*, with the weight D, which is suspended within the oil reservoir E, to operate the extinguisher by contact with the inner side of the reservoir, substantially as specified.

138,813.—*Fire-Proof Roofing.*—CHARLES PARKER, Wenona, Ill. Application filed March 3, 1873.

The composition consists of wood, coal or peat-ashes, salt, powdered clay, and powdered alum, or alum in solution, and it is laid upon the sheathing-boards, its side edges extending into the grooves in the wall, and the outer sheeting is then laid over it.

Claim.—1. The roofing-composition, when composed of the ingredients and compounded in the manner specified, and laid upon a foundation of wood sheathing or other known rafter-sheathing, and covered with tin or iron sheeting, tiles, or slating, or other known final weather-covering, substantially as described.

2. The combination of the roofing or its edge with the recesses *a* in the walls or parapets, to prevent the passage of fire downward into the house, as described.

3. The combination of the ingredients named, with or without water to incorporate them, to form a roof, and for other purposes, substantially as described.

138,814.—*Machine for Making Laminated Pipe for Gas, Water, &c.*—JOHN S. PATRIC, Rochester, N. Y. Application filed January 13, 1873.

Surrounding the core is a segmental jacket, internally ribbed, each segment having a presser-spring, under which the splints pass when fed to the core through openings in the jacket. The hollow shaft at the discharge end of the machine is provided with a clamping-head, which slides freely on the shaft and is made to revolve with it by means of spline, thus supporting the free end of the pipe while permitting its discharge from the core. Cold water circulates through the discharge-shaft, while the core is heated by steam.

Claim.—1. In a machine for making pipe formed of several layers of splints wound spirally, the revolving core, in combination with a fixed or stationary jacket, or vice versa, for the purposes set forth.

2. In laminated-pipe winding-machines, either a revolving or a fixed forming-core, constructed to discharge continuously the built-up pipe, and be heated by steam or other suitable means, as described.

3. In combination with the hollow heating and forming core C, or its equivalent, the hollow shaft J for ejecting cold water into the built-up pipe, for the purpose of hastening the cooling of the same as fast as it is forced off from the end of the core.

4. The devices, constructed and arranged to operate substantially as shown and described, for sustaining the outer end of the laminated pipe while it is being formed.

5. The rotary clamping and supporting head H, or its equivalent, in combination with the core C and governing-jacket F, whether either or both are fixed or rotary, for the purposes set forth.

6. The adjustable presser or layer spring *i*, in combination with the core C, constructed and arranged to operate substantially in the manner and for the purposes shown and described.

138,815.—*Lock-Cutting Machine.*—ISAAC L. PENNEY, Minneapolis, Minn. Application filed April 3, 1873.

A curved knife is attached to a vibrating bar, and so arranged as to be raised by a spring, but is forced down through the loop by the foot of the operator applied to a treadle or other similar device.

Claim.—The combination of the metallic frame B with the angular knife C with cutting-edge, as shown at *x x*, secured upon one end of the frame, and the inclined knife E attached to a bifurcated arm, D, hinged to a shaft at the other end of the frame, around which is coiled a spring, *d*, with one end projecting under the arm, all constructed and arranged substantially as and for the purposes herein set forth.

138,816.—*Bolster-Plate for Wagons.*—TOM PICKARD and JOSEPH PICKARD, Minonk, Ill.; said TOM PICKARD assignor to said JOSEPH PICKARD. Application filed January 10, 1873.

A device to be attached to the bottom of the wagon-box for holding the same to its place on the bolster and keep the bottom and sides of the box from wearing against the bolster and stake.

Claim.—The plate C, adapted to be fastened to the bottom of the wagon-box, and provided with the flange D, to extend up along the side of the box, and with flanges E E to fit over the bolster, substantially as and for the purposes herein set forth.

138,817.—*Metallic Column.*—JOHN L. PITER, Pittsburg, Pa. Application filed April 11, 1873.

Claim.—1. As a component part of a hollow post, column, strut, or girder, a plate, B, rolled to a curved form, and with lugs a rolled on each edge of the outer face, such lugs being broader on their outer face than at their bases, whereby, when two or more such plates are brought edge to edge, with or without distance pieces *p'*, the two contiguous lugs will form the male part of a dovetail-joint, substantially as set forth.

2. The hollow post, column, strut, or girder composed of three or more plates B, secured together by means of any known suitable device, arranged on the dovetail-shaped ribs *a*, substantially as set forth.

138,818.—*Hand Corn-Planter.*—JOHN PRESTON, Plymouth, Ohio. Application filed August 23, 1872.

The plow-beam is made of iron, and is so curved that if the lower end of the beam were continued without a change of curve it would cross the forward end at about the position of the clevis. The share is mounted upon a sole in such manner as to leave a space between its upper end and the beam. A rudder or guide-plate is attached below the share.

Claim.—The beam *a*, when curved as described, in combination with the sole *f g*, guide-plate *h*, and shovel *b*, all arranged as specified.

138,819.—*Sofa-Bedstead.*—CHARLES ROSSOW, Chicago, Ill. Application filed January 31, 1873.

When the folding portion is closed the pillow for that portion is concealed under the stationary pillow, but when said hinged portion is opened, the pillow is connected to the same by pins and a jointed brace, and to the stationary pillow by a hook.

Claim.—In combination with the stationary head *m* and hinged part T, the detachable pillow B, the jointed brace *a a*, the pins *w w*, and hook C, arranged in the manner and for the purpose set forth.

138,820.—*Cork for Bottles.*—IRA B. SAMPSON, Albany, N. Y. Application filed April 16, 1873.

The cork for about one-third of its length is made cylindrical, and the remaining two-thirds in the form of a truncated cone. By this construction a saving in material is effected. The fastenings for securing the cork converge more directly to the center of the cork, and leakage is prevented by the shoulder formed at the mouth of the bottle.

Claim.—As an improved article of manufacture, a cork combining together the forms of the cylinder and truncated cone, as and for the purposes specified.

138,821.—*Preparing Sawdust for Use in the Arts.*—FREDERIC H. SNYDER, Jersey City, N. J., assignor to THOMAS HYSLOP, New York, N. Y. Application filed February 14, 1873.

Claim.—As an article of trade, a block or bale of compressed sawdust incased in a wrapper of burlaps or other suitable material.

138,822.—*Pipe or Car Coupling.*—ABA G. STORY, Waterloo, N. Y. Application filed February 28, 1873.

Two cylindrical tubes, the ends of which are closed by means of screw-caps. Through the caps pass small steam-pipes having collars on their ends for preventing them from being drawn out of the tubes and the coupling-boxes. The pipes are for conducting steam from one tube to the other between the cars; they also carry steam to the heaters in the cars. The end of one of the pipes passes through a sleeved coupling-box, and the end of the opposite pipe passes through the head of a slide coupling box, on which is applied a hand-wheel. It is by means of the boxes that cars are coupled and uncoupled.

Claim.—The coupling D *g*, combined with steam-pipes C' C', packing-tubes A A, and steam-pipes C C, the same constituting a tubular, flexible, and telescoping car-coupling, substantially as described.

138,823.—*Rotary Sieves.*—THOMAS C. STRAWN and WILLIAM C. DRUM, Perry township, Fayette county, assignors to SPEER, CLARKE & CO., Pittsburg, Pa. Application filed March 1, 1873.

The material to be sifted is passed into the interior of the rotating sieve by means of a spout. Buckets are arranged at intervals on the internal periphery of the wheel, which carry the coarser particles to the upper side of the sieve and empty their contents into a trough, which carries them off. A jet of steam is directed into the meshes of the sieve to clean them.

Claim.—1. The buckets *f* arranged in the periphery of the wheel *a*, in combination with the discharge-spout *g*, substantially as and for the purposes set forth.

2. The wheel *a* supplied with buckets *f*, in combination with the supply-spout A and the discharge-spout *g*, substantially as described, and for the purposes set forth.

3. The steam-pipe *m*, in combination with the sieve a^1, for supplying a jet of steam for cleaning the same, substantially as described.

138,824.—*Machine for Preparing Pottery-Stock.*—SAMUEL R. THOMPSON, Portsmouth, N. H. Application filed February 8, 1873.

A machine so constructed that clay, pottery-stock, &c., after being deposited in a cylinder, is forced by a plunger through a screen, up and out of the mouth of a tube upon an endless feed-roller, and cut off in required size.

Claim.—1. A machine for screening, rolling, and otherwise preparing pottery-stock and relieving the same of air-bubbles or blisters, provided with a plunger, *p*, having an up-and-down movement within a receiving-cylinder, *f*, by which the clay or stock is pressed through a screen or perforated disk, *k'*, formed on or connected with the bottom of a curved tapering tube, *k*, up through and out of the said tube upon an endless feed-roll, *p''*, where the stock is cut in the exact size required for use by the operation of cutters adjusted to the desired width and raised above or lowered upon the said stock or clay, substantially as hereinabove specified.

2. In machines for preparing pottery-stock, a curved tube, *k*, tapering within toward its mouth, and arranged to turn back and forth horizontally on the top of a receiving-cylinder, *f*, substantially as and for the purposes described.

3. The combination of the screw-stem *w*, wheel *x*, or their mechanical equivalents, and their supporting-frame, plunger *p*, receiving-cylinder *f*, adjustable tapering tube *k* screen *k''*, feed-roll or chain *p''*, and adjustable cutters or wires *u*, all arranged and operating substantially as and for the purposes herein set forth.

138,825.—*Machine for Milling Pipe-Tips.*—ALBERT RICHARD WEISS, Brooklyn, E. D., N. Y. Application filed August 1, 1872.

Claim.—The eccentric cog-wheel E mounted on a spindle, C, which slides in a swinging head, B, in combination with a pinion

mounted on a fixed stud, and with a spindle, K, carrying a milling-tool, the whole constructed and operating substantially in the manner herein shown and described.

138,826.—*Attachable Rockers for Chairs.*—PATRICK J. WELSH and JOHN H. WELSH, Philadelphia, Pa. Application filed April 23, 1873.

One end of the rocker has a circular hole to receive the hind leg, and the other end an oblong hole to receive the front leg. The oblong hole has a clamping-piece, which is forced upon the outer side of the leg by means of a screw passing out at the end of the rocker, and provided with a head to operate it.

Claim.—A rocker, A, provided with holes *a b*, opening *c*, clamping-piece C, screw D, and revolving nut E, substantially in the manner and for the purpose set forth.

138,827.—*Valve Device for Steam and Air Brakes.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed February 1, 1873.

A triple valve, with a diaphragm at its upper end and coiled springs around the stem, is arranged in the brake-pipes for steam and air brakes, so that, by a continuous pressure of air in the pipes, communication is kept open to the reservoir and closed to the brake cylinder, but kept open from this to the atmosphere; also, by lowering the pressure from the pipe, communication is opened from the reservoir to the brake-cylinders, and all other communications closed.

Claim.—1. A piston, *m*, in combination with a flexible annulus, *m'*, and arranged in the communicating-chamber or air-brake apparatus, and operative in admitting air and opening and closing an escape-valve, *b*, substantially as set forth.

2. The combination of the valve-opening constituting the communication from the reservoir to the brake-cylinder, when such opening varies in area with the greater or less movement of the valve, with the valve operated by the difference in pressure on two sides of a piston, substantially as set forth.

3. In combination with a triple valve, a spring, *g*, or equivalent weight, suitably arranged, so as to keep the lowest valve *c* clear of its seat under an equilibrium of air or other fluid pressure in the upper valve-box, substantially as set forth.

138,828.—*Rotary Valve for Steam-Engines.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed February 15, 1873.

A rotary balanced valve is operated and reversed by a stem having a shoulder and passing through a bush in the side, and is connected, by a slot-shaped eye at its upper end, to a pin on the rotary valve. The rotary valve is conical in form, and rotates on a central stem having a collar with bearing on the smaller end, the opposite end passing through a stuffing-box.

Claim.—1. The conical valve *n* subject to steam pressure at its larger end, in combination with the stem *g*, on which it rotates, and the collar *e* on said stem with a bearing against the smaller end of the valve, the opposite end of the stem *g* passing through a stuffing-nut so as to have a free end play, substantially as set forth.

2. The stem *f* having a shoulder, f^1, and a reduced part, r^1, above, in combination with a bush, *r*, suitably seated or held in a fixed position, substantially as and for the purposes set forth.

3. The stem *f* connected by a slot-shaped eye at its upper end to a pin, i^1, in combination with the rotary valve *n*, substantially as set forth.

138,829.—*Measuring-Wheel for Wagon-Tires.*—TRUMAN WHITING, Niles, Mich. Application filed October 21, 1871.

The measuring-wheel is provided with a spring-pencil or marker in the prolongation of the handle for marking the starting-point on the wheel to be measured, as well as with an adjustable index for showing the terminal distance on the circular scale.

Claim.—In a device for measuring tires, the combination of the wheel A, having the scale of inches and fractional parts of an inch on one or both sides, with the handle B, having the sheath D containing a pencil and spring, as described, the sleeve E, and the movable index C, all as and for the purposes hereinbefore set forth.

138,830.—*Harvesters.*—JOHN D. WILBER, Ponghkeepsie, N. Y. Application filed May 3, 1872.

The driving-wheel rotates on a hollow axle, which is an extension of the main frame. Said wheel is made hollow to contain the driving-gearing. The reel-arms rotate around their axis, and are provided with teeth so that they may be used as rakes or beaters.

Claim.—1. The combination of endwise-movable pinion and shaft b^3 *b* with the hollow axle B, hollow drive-wheel A, and frame B^1, substantially as described.

2. The shoe D adjustably connected by its front upturned end to the tongue C and connected by its rear end to the finger-bar F, in combination with the hinge *j*, which connects this shoe D to the arched extensions B^9 B^3 of the axle-frame B^1, substantially as described.

3. The arms I applied to short hinged shafts *z*, so as to rotate about their long axes, in combination with notched spur-wheels *k* and spring-bolts g^4, and with a movable segment, g^2, and rail g^3, substantially as described.

4. The arms I rotating entirely around their own axis, in combination with the continuously-revolving combined rake and reel-head, substantially as set forth.

5. The anti-friction wheel *t*, as a support for each arm I upon its cam-way E, in combination with the spur-wheel A and a locking and unlocking device therefor, substantially as described.

6. The platform G hinged to the finger-bar at its inner and outer ends, and having its downward movement limited by stop 3, substantially as described.

7. The rake and reel arm I, constructed with long raking-teeth on one side and shorter reel-teeth on the opposite side, substantially as described.

8. The rake and reel arm forked at its outer end, substantially as and for the purpose described.

138,831.—*Lamp-Bracket for Sewing-Machines.*—LUDWIG M. N. WOLF, Avon, Conn. Application filed April 17, 1873.

To the corners of a sewing-machine is attached a holder, to which is pivoted jointed connecting-links. Between the two is attached, by pivots, an open link or holder for the lamp, which, by the pivoted device, may be moved and held for the convenience of the operator.

Claim.—The links *b*, socket *c*, with the table *a*, substantially as and for the purpose set forth.

138,832.—*Marine Safes.*—GEORGE F. ABRAHAM, Baltimore, Md., assignor to himself and DANIEL CLARIDGE. Application filed March 12, 1873.

Claim.—A marine safe or life-buoy, formed of metallic sheets D C, spaced with cork or other light material to render it buoyant, in combination with the copper or other non-corrosive sheet B, backed with rubber or other elastic substance, and provided with apartments for the reception of valuables, substantially as and for the purpose described.

138,833.—*Lid for Jelly-Glasses.*—JOHN ADAMS, Pittsburg, Pa. Application filed April 16, 1873.

A portion of the surface of a jelly-glass cup is made semi-opaque, so that the name of the jelly, which is printed on paper and inserted in the top of the cup, will be shown through the plain surface only.

Claim.—A slip-top lid for jelly-glasses provided with a semi-opaque surface, *e*, and a plain surface, *f*, and paper disk having the names of jellies printed thereon, substantially as herein described and for the purpose set forth.

138,834.—*Railroad Switch.*—JOHN R. ADAMS, Sacramento, Cal. Application filed March 15, 1873.

The inverted rail beneath the bed-plate is designed to obviate the effects of temperature expansion and contraction upon the operation of the switch. It ties the rail *a* to the plate D, so that the switch-rail may always clear the ends of rails C, while never leaving so great a gap as to admit of the hammering of the ends of the rails.

Claim.—1. The connection of switch-rail A, pivoted at end *a*, with inverted rail B, laid into the cross-ties and separated by lateral bed plates *b*, substantially as set forth.

2. The combination of inverted rail B with connecting bed-plate D and track-rails C, for the purpose of producing equal expansion and contraction, substantially as described.

138,835.—*Railroad Frogs.*—WILLIAM B. ATKINSON, Philadelphia, Pa. Application filed January 8, 1873.

Claim.—A compound frog, consisting of rails A A' B B', in combination with filling-pieces D D' extending the entire length of the frog and flush with the bottoms of the rails, all being permanently bolted together in their relative positions, as set forth.

138,836.—*Railway Snow-Plow.*—JAMES W. ARNOLD, Boston, Mass. Application filed February 27, 1873.

Upon the periphery of a revolving cylinder are arranged a series of blades extending from throats leading inward into tubes, these tubes having pistons that are driven inward and outward.

Claim.—1. In combination with a car-truck, the wheel *e* made with blades *f*, tubes *e*, and throats or openings *g*, substantially as described.

2. In combination with the tubes, the ejector-pistons *k*, substantially as described.

3. In combination with the wheel *e*, tubes *e*, and pistons *k*, the cam-wire for operating the pistons.

4. In combination with the wheel, tubes, and pistons, the steam or compressed-air tube *o*, substantially as described.

5. In combination with the tube, the pump *o* having a piston operated by an eccentric, *p*, on the shaft *q*, substantially as shown and described.

6. For driving the wheel *e*, the cranks a^2 *y*, connecting-rod *z*, shaft *q*, and the gears *v u t*, for connecting the shaft *q* with the truck-wheel axle.

7. The combination of the engine b^2, shaft d^2, gears c^3 f^2, and shaft g^2, for operating the truck-axle, substantially as described.

8. The construction of the wheel with a collapsible series of tube-supporting spokes and a flexible band, k^2, and the combination therewith of the movable half-rings l^2 m^2 for opening and closing the wheel, all substantially as described.

138,837.—*Breech-Loading Fire-Arm.*—JAMES ASTON, Hythe, England. Application filed September 6, 1872.

Combination of lever with breech-block and hammer, whereby the breech is operated and hammer cocked by a single movement.

Claim.—The claw-lever C, either with or without the stirrup D, when combined with the breech-block A and hammer B, as and for the purpose set forth.

138,838.—*Cultivator.*—DEWITT CLINTON BAKER, Fulton, N. Y. Application filed March 24, 1873.

A corrugated brace-bar, by means of which the distance between the plows can be regulated, and which allows the plow-standards to be turned so as to throw the earth to or from the plants.

Claim.—1. The corrugated brace-bar G, constructed and arranged in combination with the stocks D D, substantially as and for the purpose herein specified.

2. The combination of the adjustable and reversible hinged

wings E E, constructed and arranged substantially as specified, with the shovel-stocks D D and brace-bar G, substantially as and for the purpose herein specified.

3. The herein-described cultivator composed essentially of the central beam A, shovel-stocks C and D D, adjustable wings E E, corrugated brace-bar G, and beveled-edge shovels H H I, constructed and arranged substantially as herein specified.

138,839.—*Fare-Box.*—HENRY BARANGER, St. Louis, Mo., assignor to JAMES F. CHAPMAN and LAURA H. BARANGER, same place. Application filed October 22, 1872.

A glass case connects the upper part of the box with the treasury. Within it a detaining-shelf is supported by rods connected with two half-cylinders, which are rotated toward one another by a lever attached to one and carrying a shield closing the ticket-opening, which, when pushed away to receive a ticket, tilts the shelf and deposits the inspected fare, and rotates the cylinder to form a receiving-chamber for it. When returned to its normal position the fare drops onto the righted shelf.

Claim.—1. A fare-box consisting of two chambers, communicating with each other by means of a glass passage-way, when said passage-way is divided into two compartments by means of a tilting shelf so arranged, in connection with a fan-wheel or its equivalent below, that the fares will be automatically separated and detained singly in the upper compartment for inspection, and may afterward be collected and detained in the lower compartment for further inspection previous to being turned into the drawer, substantially as herein described and shown.

2. The combination of the cylinders E F with the plate or shield H, constructed and arranged to operate substantially as described.

3. In combination with the cylinders E F, the tilting shelf T, constructed and arranged to operate substantially as described.

4. In combination with the cylinders E F and shield or plate H, the alarm-bell and hammer, operated by a cam on one of the cylinders, substantially as described.

138,840.—*Folding Bedstead.*—ALFRED G. BATLES and JOHN W. H. CARROLL, New York, and GEORGE D. MINER, Williamsburg, N. Y. Application filed April 12, 1873.

The frames are hinged together; the lower frame has four permanent legs, and the upper frame has on its upper face a molding, partly stationary and partly hinged, so that when the bed is opened the hinged part of the molding forms the supporting-legs for said upper frame. A detachable board, provided with lugs and a knob-button, is combined with the recessed sides of the bed-body when folded up.

Claim.—1. An improved folding bed, formed of the two parts A B, hinged to each other, the stationary and hinged moldings D E, and the legs F, constructed and arranged in connection with each other, substantially as herein shown and described.

2. The detachable end board J, provided with lugs K and a knob-button, M L, in combination with the recessed sides of the folding bed-body A B C D E F, substantially as herein shown and described.

138,841.—*Explosive Compound.*—TREAT S. BEACH, New York, N. Y. Application filed April 11, 1873.

Nitrate of potash, wood fiber, and paraffine, or its equivalent, are separately reduced to a powder and thoroughly mixed. Then nitro-glycerine is to be added and all thoroughly incorporated.

Claim.—1. The explosive compound, made of the ingredients herein specified and compounded, as described.

2. An explosive compound, made with any three of the four classes herein specified.

138,842.—*Extension Settee.*—CORNELIUS BEATTY, Elizabeth, N. J. Application filed April 5, 1873.

The settee is provided with sectional extension side pieces, hinged thereto and to each other, and arranged so as to be folded back around the settee when not extended. Said side pieces are supported by legs, and connected together, when extended, by dovetail slats and brace-hooks.

Claim.—1. A settee with sectional extension side pieces hinged thereto and provided with legs, the same being so constructed and arranged as to be folded back around the settee and fastened together, as shown and described.

2. In combination with the sectional side pieces H H, the brace-hooks O O and Q and the dovetail slats M, as shown and described.

138,843.—*Reflector.*—JACKSON O. BELKNAP, Mobile, Ala. Application filed April 11, 1873.

A conical frame, holding plates of colored mica or other material, is suspended between the light and reflector in such manner that the refracted colors may be reflected to the eye.

Claim.—1. The combination and arrangement of reflector A, burner or lamp B, and cone or disk C of colored plates and figures, either stationary or movable, attached to either burner or reflector, substantially as and for the purpose set forth.

2. The arrangement of the stationary or movable colored cone or disk C entirely between the reflector and burner B, substantially as and for the purpose set forth.

138,844.—*Paper-Bag Machine.*—LORENZO D. BENNER, Boston, Mass., assignor to UNION PAPER-BAG COMPANY OF PENNSYLVANIA. Application filed February 7, 1873.

The flat former has grooved sides, into which the tube is folded as it is formed, so as to be four-ply. The lower ply lies under the lower cutting-plate, while the others are above it. The "striker" severs the tube thus disposed into bag-lengths, their ends being closed in the common manner.

Claim.—The combination of the grooved former-block *g*, former-plate *o*, severing-teeth *n*, severing-teeth *q*, and arm *r*, when the parts are so arranged that by upward movement of the arm *r* the full side of the bag end is first cut, and then the inward folding and lapping sides thereby form an end projecting beyond the folds and lapping sides, substantially as described.

138,845.—*Hydraulic Hose.*—LYMAN R BLAKE, Brooklyn, N. Y. Application filed September 25, 1872.

Claim.—A hose formed of a strip of woven material, the edges of which are lapped and united by stitches passing from the outside to the inside, or vice versa, substantially as shown and described.

138,846.—*Cooking-Vessel.*—LAURENCE P. BODKIN and JOHN S. BODKIN, Brooklyn, N. Y. Application filed March 15, 1873.

This vessel has a small grate fixed horizontally on the inside, immediately before a lip projecting from the upper edge.

Claim.—1. The grate E formed upon the inner side of the edge of the vessel A, substantially as herein shown and described.

2. The lip D formed upon the outer side of the edge of the boiler A, in combination with the grate E formed upon the inner side of said edge, substantially as herein shown and described.

138,847.—*Cartridge-Box.*—THOMAS F. BRABSON, Brooklyn, E. D., N. Y. Application filed April 9, 1873.

Claim.—The combination of the ejector *b* and gate *b* with a cartridge-box, A, both the ejector and the gate being operated by a trigger, *m*, substantially in the manner herein shown and described.

138,848.—*Car-Starter.*—STEPHEN R. BRADLEY and ARTHUR C. BRADLEY, Brooklyn, N. Y. Application filed November 26, 1872.

The draft-bar connects, through intermediate levers, with a pawl which engages with a ratchet-wheel, the same being rigidly attached to the axle. When the car is brought to a state of rest the pawl is released, and is held from contact with the ratchet-wheel by means of a hooked bracket.

Claim.—The vertical arms C' C' arranged upon the axle B and upon opposite sides of the ratchet-wheel A, and carrying the sheave R' and pawl C, in combination with the chain or rod P, springs O R, lever F, draft-rod G, spring N, bracket H, and pin K, all constructed, arranged, and operating substantially as described.

138,849.—*Paper Collar.*—CHARLES A. BROWN, Troy, N. Y. Application filed December 14, 1872.

Claim.—A paper or a cloth and paper collar with the extra pieces C and C', forming the double edges of the ends of the collar when extending beyond, and folded in the crease between the collar and the band, as herein described.

138,850.—*Billiard-Table.*—GEORGE BUNTIN, Boston, Mass. Application filed March 21, 1873.

The frame of the table and legs are of cast metal screwed together. The side sections of the main frame are of the same length as the end sections, one pattern serving for the whole six castings.

Claim.—1. The combination, in a billiard-table, of cast-metal end and side sections and cast-metal legs, all connected together so as to constitute the main frame of the table, substantially as set forth.

2. The combination of the main frame with the supplementary frame, composed of cast-metal bars G, connected together and to the said main frame, substantially in the manner described.

3. The combination of the main frame with the supplementary frame and plates H.

138,851.—*Shank for Boots, &c.*—FIELDING PETER BUREN, Trenton, Mo., assignor of one-half his right to SAMUEL MCGEE, Martinsburg, Iowa. Application filed March 14, 1873.

The shank is made of wire bent into proper shape and united at or near the center by soldering or otherwise. A spring or link of tempered wire is looped over the inner end of the wire forming the shank.

Claim.—1. A metallic shank for boots and shoes, made of one piece of round, oval, or flat metal wire, twisted to the desired shape and united in the middle, substantially as and for the purpose set forth.

2. In combination with a metallic wire shank, the spring B, consisting of a separate piece of tempered wire, made and applied substantially as and for the purpose hereinbefore set forth.

138,852.—*Fire-Kindler.*—ALVAH BUSHNELL, Iona Island, N. Y. Application filed October 23, 1872.

A block of wood or equivalent material provided with one or more sockets, which contain a quantity of tallow, paraffine oil, or other combustible material, combined with one or more wicks.

Claim.—1. A fire-kindler, composed of a block of wood or equivalent material, provided with one or more sockets, one or more of which contain a quantity of tallow, paraffine-oil, or other combustible materials, combined with one or more wicks, substantially as described.

2. The combination of a perforated bridge or cap with a block of wood or equivalent material, provided with one or more sockets, one or more of which contain a quantity of tallow, paraffine-oil, or other combustible material or materials, combined with one or more wicks, substantially as set forth.

138,853.—*Sectional Core.*—WILLIAM A. BUTLER, New York, N. Y. Application filed March 10, 1873.

The core is composed of sections, which are held in place by hinged links that reach from one to the opposite section. The links are tripped by means of wires, causing the sectional core to collapse, when it may be removed.

Claim.—1. The combination of the plates *e f g k*, when connected with each other by lap-joints and pins *l*, as specified.

2. A link, D, pivoted to the plate *k*, and held by the spring *j* to the opposite plate *f*, as specified.

3. The strings or wires *m*, combined with the links D of the sectional core, for tripping said links within the core, as set forth.

4. The pins *o*, applied to the sections of the core to connect the same longitudinally, in the manner specified.

138,854.—*Self-Loading Cart.*—ROBERT B. CANTRELL, Tenaſly, assignor to WILLIAM D. RUSSELL, Newark, N. J. Application filed September 16, 1872.

The scoop is connected by arms or rods with a crank-shaft, which is geared with the axle. The wheels are loose on the axle, but, by means of a clutch, are geared with it to rotate the crank-shaft and cause the scoop to assume the proper positions for loading, transporting, and dumping.

Claim.—1. The combination of the scoop or cart-body J, its tail-board M, the three-cranked shaft E, and the rods K K L, substantially as and for the purpose set forth.

2. The combination of the projections *f f* on the hub of one of the supporting-wheels, the coupling-plate O secured to the axle A, the sliding teeth *e e*, the stationary guard-plate N, and the crank-shaft E, geared with the axle, the whole arranged and operating substantially as and for the purpose described.

138,855.—*Electro-Magnetic Motor.*—SAMUEL C. CARTER, Richmond, Ind. Application filed January 17, 1873.

A series of concentric rings carrying coils and provided with radial arms or poles, acting successively as armatures to each other, has a fixed connecting-gear with each so as to secure a different rate of rotation for each, the outer and slowest of the rings being attached to the central shaft, and the necessary intermissions of the current through the revolving coils being effected by their rotations.

Claim.—The described arrangement of two or more concentric drums, having radial armatures, and furnished with insulated coils, having interrupted contact with one pole and continuous contact with the other pole of the battery, said drums being geared differentially to a common counter-shaft, substantially as and for the purpose set forth.

138,856.—*Paddle-Wheel.*—JAMES C. CHAFFEE, Titusville, Pa. Application filed February 21, 1873.

Claim.—The bent paddles D, the flanged hubs C *c'*, and disks E, in combination with each other and with the shaft A, substantially as herein shown and described.

138,857.—*Piano-Pedal Attachment.*—GEORG C. A. CLASS, Philadelphia, Pa. Application filed March 22, 1873.

To enable a child to operate the pedal.

Claim.—1. The stand B having the extension at the rear to pass under the pedal-lyre, and having the rising and outwardly-projecting arm C with lateral foot-rests *c*, substantially as shown and described.

2. The removable rod D for operating the pedal, in combination with the base B having the rear extension to pass under the lyre and retain the stand in position, and having the rising and outwardly-projecting arm C with lateral foot-rests *c*, substantially as and for the purpose described.

3. The screw *b*, in combination with the stand B having an extension to pass under the pedal, as shown, and having the arm C and foot-rests *c*, substantially as and for the purpose described.

4. The movable rod D secured to the pedal by means of an elastic band, in combination with the base and stand B, substantially as shown and described.

138,858.—*Argand Gas-Burner.*—THEODORE CLOUGH, New York, N. Y., assignor to himself, ALONZO T. WELCH, HENRY IDEN, and LORING P. HAWES, same place. Application filed December 18, 1872.

The gas is controlled by a double-beveled valve. The ends of the shade-holders pass through holes in a removable collar, and are beveled so as to fit snugly against the inclined surface of the lower collar.

Claim.—1. The valve having a double-beveled periphery and mounted on a shaft, *b*, in combination with a ring Argand burner, substantially as and for the purpose herein described.

2. As a new article of manufacture, a ring Argand burner having a valve with a double-beveled periphery mounted on a shaft, a strainer, and chimney and shade holders, as described.

138,859.—*Operating Steam or Air Brake.*—SAMUEL F. CLOUSER, Salt Lake City, Utah Ter. Application filed November 20, 1872.

Claim.—The steam-cylinders with their accompanying steam-chests, valves, and valve-working mechanism, in combination with a chain-winding shaft, chain, and continuous rod operating the brake-levers, said cylinders and shaft being directly connected by means of the pistons, piston, and connecting-rods, and the cranks or crank-plates, substantially as and for the purpose specified.

138,860.—*Sofa.*—WILLIAM R. CONGER, Newark, N. J. Application filed March 19, 1873.

The sofa is provided with a hinged front, back, and head, so that either or both the front and back may be let down; and a swivel-screw is arranged under the head so that the head may be adjusted to any desired inclination.

Claim.—1. The combination of the adjustable back C, front G, and head B in a lounge, substantially as shown and described.

2. The swivel-screw I and swivels J K, in combination with the adjustable head B, as and for the purposes described.

138,861.—*Umbrella-Support.*—GEORGE S. COOPER, Baraboo, Wis. Application filed November 14, 1872.

A pin projects transversely from the handle of the umbrella and is inserted into an upright socket, in which is a vertical internal groove leading to a horizontal groove or slot.

Claim.—The holder, composed of a base, A, and an upright socket, B, provided internally with a horizontal groove or slot, *c*, and a vertical groove, *c*, leading to it from the mouth of the socket, substantially as and for the purpose herein set forth.

138,862.—*Handle-Plate for Door-Latches.*—FRANK CORBIN, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed April 12, 1873.

Claim.—The handle-plate *a* and escutcheon *b* made in one piece of metal, and receiving the bow-handle *d* and thumb-lever *e*, as set forth.

138,863.—*Shoe-Fastener.*—JONATHAN COTKERDALL, Farmington, Ill. Application filed November 18, 1872.

An improvement upon patent granted to JONATHAN COTKERDALL, September 6, 1870.

Claim.—In the shoe A, open behind upward from the top of the counter, the flaps B C with their straps D *d*, arranged and fastened in the manner and for the purpose as herein shown and set forth.

138,864.—*Rotary Steam-Engine.*—WILLIAM CRAM, New York, N. Y. Application filed March 8, 1873.

A cranked cross-bar, journaled on the sides of the engine, is connected by a lever to the valves on each side, and operated by a cam-wheel on the shaft. A spring on the top, with a projecting end, holds the lever against the cam-wheel.

Claim.—The combination of the cross-bar or yoke K, the lever L, spring N, and cam-wheel M, with the shaft C and stems J of the two valves I, substantially as herein shown and described.

138,865.—*Revolving Cotton-Lint Room.*—WILLIAM T. CRENSHAW, Burton, Tex. Application filed April 5, 1873.

A receptacle for cotton-lint from the gin, divided by partitions, whereby the cotton may be removed from one apartment while another is being filled, and the whole receptacle revolved to bring the empty apartment under the supply.

Claim.—A revolving lint-receiver with two or more compartments, having inlet-passages F and discharging-doors G, arranged relatively to the gin stand and press, substantially as specified.

138,866.—*Sectional Steam-Generator.*—MARSHALL T. DAVIDSON, Brooklyn, N. Y. Application filed October 22, 1872.

A steam-generator having tubes in pairs, the tubes having right-and-left-hand screws, one end of which is screwed into return-bends, the other screwed into corrugated steam or water chamber; the chamber attached to steam and water drums; the whole arranged within the combustion-chamber.

Claim.—1. A water-tube boiler having the rear ends of the tubes coupled together in independent pairs by cast-iron return-bends B, and the front ends of said tubes inserted into a corrugated steam-chamber, substantially as described.

2. The arrangement of the several pairs of tubes having the return-bends and steam-chambers with relation to each other and to the fire-space, substantially as and for the purpose set forth.

3. The combination of independent corrugated steam or water chamber and cast-iron return-bends with water-tubes having right-and-left-hand screw-threads formed on the ends thereof, for the purpose described.

138,867.—*Hydraulic Hose.*—LEVERETT H. DOWNING, North Andover, Mass. Application filed May 9, 1873.

The cemented strip prevents leakage, and the pressure of water only forces it tighter against the same.

Claim.—A hose having the inner surface of the seam covered by the cemented strip *c*, substantially as described.

138,868.—*Stop-Motion for Drawing-Frames, &c.*—ANTHONY J. EARLE, Valley Falls, R. I. Application filed April 22, 1873.

When the slivers break or run thin the trumpet-lever falls, wringing the bolt-lever on its pivot, and projecting the lower bolt so that it will be struck by the wheel F and the motion of the machine be stopped. When the slivers run too thick, or a bunch is encountered, the trumpet is drawn toward the rolls, the trumpet-lever raised, and the upper bolt projected with a like result.

Claim.—The bolts E and D, the bolt-lever C, trumpet-lever B, and trumpet, in combination and arranged with relation to the belt-shipping or clutch-operating device of a drawing-frame, substantially as described.

138,869.—*Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J. Application filed October 22, 1872.

A stop on the type-wheel shaft is so arranged with an adjustable detent as to allow but a certain number of revolutions without the action of the impression-lever, but is released each time the said lever is moved. The paper-feeding pawl is connected with a slotted link so as to be lifted before the returning arm is moved back; and a cam-like slot in a slide, operated by the printing-lever, is so arranged as to move the type-wheel one letter forward or backward upon its shaft.

Claim.—1. The tooth *o'* and stop 50 upon the shaft *g*, in combination with the arm *o'*, teeth 54, and finger 53, moved by the printing-lever *w*, the parts being arranged and operated substantially as set forth.

2. The pawl *u* upon the arm *v'*, and connected by the link 66 with the lever *w*, in combination with the slotted link 62, that swings the lever *v'* to feed the paper, substantially as specified.

3. The cam 36 moved by the T-lever c' and pins 30 31 upon the printing-lever, in combination with the type-wheel f and sleeve e, substantially as and for the purposes set forth.

138,870.—*Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed March 13, 1873.

Electro-motor armatures and shaft can continue to revolve when the pulsator and type-wheel are arrested.

Claim.—The type-wheel and pulsator both upon the same shaft and revolved by friction, in combination with the type-wheel lever, escapement, and electro-magnet, substantially as and for the purposes set forth.

138,871.—*Hat-Press.*—RUDOLF EICKEMEYER, Yonkers, N. Y. Application filed March 31, 1873.

The upper die is moved vertically into contact with the lower stationary die by a pinion upon the main shaft, which engages a quadrant-shaped rack having a counterpoise-weight. As the curved part of the rack is propelled forward, carrying with it two vertical arms—which are guides in a slotted way—under locking-studs, the pressure of the dies is accomplished by the rotation of the cam-shaped quadrant-shaft bearing under said arms. The lower die has an adjustable screw-ring, which governs the space about its brim portion, into which the rubber "shape" is compressed to curl the brim.

Claim.—1. In a hat-pressing machine, a compression-chamber which has a variable and adjustable compressing capacity and incloses a confined elastic India-rubber shape or backing, substantially as described, whereby portions of the latter may be subjected to successively-variable degrees of pressure, as and for the purposes specified.

2. The combination, in the hat-pressing machine, of the elastic brim-curling flange G, the lateral brim-recess in the hat-shell, and the compressing-surface beneath the flange, substantially as described, whereby a lateral pressure is induced into the brim-recess of the hat-shell by the vertical pressure on the elastic flange, as and for the purposes specified.

3. The combination of a press-head with the cross-head of a press by means of a rack and locking-studs, substantially as described and for the purposes set forth.

4. The combination, with the shell or die of a hat-press, of an adjustable rim by which the brim of a hat may be curled and pressed, substantially as described and for the purposes set forth.

5. The combination with the press-head and rack, substantially as described, of a counter-balance, as described, and for the purposes set forth.

6. The combination, with the locking-studs of a hat-press, of the guides or spring-studs for forcing said levers into working position, as described, and for the purposes set forth.

138,872.—*Safety-Bridle.*—JAMES M. ELDER and PETER A. BISHOP, Elyria, Ohio. Application filed February 21, 1873.

Claim.—The chains H D, as arranged in relation to each other, and in combination with the lines L, bit A, and elastic cord K, substantially in the manner as and for the purpose set forth.

138,873.—*Horse-Power.*—WASHINGTON P. EMERSON, Pleasantville, Ky. Application filed March 22, 1873.

A series of vertical shafts arranged in a circle, with pulleys at the lower end, all in the same horizontal plane in which the driving-belt works, the horse attached to a belt working on pulleys, and the upper ends having transmitting-pulleys in different trains, from which the belts work onto a central vertical shaft, which is speeded up, and transmits the motion by a belt from a large pulley on it, thus obtaining rapid motion and dispensing with large wheels or pulleys.

Claim.—1. The combination of a series of pulleys, B, and a driving-belt, C, in the manner described.

2. The combination of a counter-shaft and pulleys H with the belts G, pulleys E, and the driving-belt C, as described.

3. The pulleys B arranged in radial adjustable bearings, as described.

138,874.—*Leather-Dressing Machine.*—JOHN A. ENOS, Peabody, Mass., assignor to JAMES M. CALLER, trustee. Application filed February 6, 1873.

The dressing-tool, cylindrical in form, is provided with a large number of steel blades, set about one-quarter of an inch apart and pitched at an angle of about forty degrees, so that opposite ends of each blade are nearly upon opposite sides of the axis of the cylinder, so that the edge of each blade comes to the work progressively and gradually. A grinding-roll is provided and means devised that it may automatically traverse across the working-face of the dressing-tool.

Claim.—1. In a leather-dressing machine, a tool having, in addition to a traversing movement in contact with the work and a return movement out of contact therewith, a positive rotation in a retrograde direction, by means substantially as described.

2. In combination with the traversing tool-stock, the system of shafts and pulleys, substantially as described, by which the rotating tool is driven.

3. The leather-dressing tool, provided with parallel spiral blades, arranged and constructed substantially as described.

4. In combination with the traversing tool-stock, the whitening or buffing tool and the grinding-roll, constructed and operated substantially as described.

5. The bed-block supported upon weighted levers, substantially as described.

138,875.—*Steam-Boiler Furnace.*—MICHAEL A. FOSTER, St. Louis, Mo. Application filed March 20, 1873.

The non-consumed gases collected in a chamber at the rear of and under the boiler are returned by means of steam-jets into a semi-elliptical combustion-chamber back of the fire, said gases being mixed with air, heated on its passage, and forced through a pipe which connects with the air at the outside and rear of the furnace.

Claim.—1. The return-pipes or passages B, in combination with steam-jets c and smoke-pit A, substantially as set forth.

2. The combination of the pipes B, jets c, and semi-elliptical smoke-pit A, substantially as set forth.

3. The combination of the pipes B, steam-jets c, smoke-pit A, and dampers b, substantially as set forth.

4. The pipes B, in combination with the pits A and D, steam-jets c and e, and air-pipes E, substantially as set forth.

5. The combination of pipes B, semi-elliptical pits A and D, steam-jets c e, air pipe or pipes E, and dampers b, substantially as and for the purpose set forth.

138,876.—*Crane.*—FRANKLIN FARREL, Ansonia, Conn. Application filed January 22, 1873.

A crane having a chain-wheel for a hoisting medium and a receptacle for receiving the slack chain, when the wheel and receptacle both bear the same relation to each other. The base of the jet is provided with rollers for bearing against the post.

Claim.—1. The combination, in a crane, of a chain-wheel as a hoisting medium, and a receptacle for receiving the slack chain when both wheel and receptacle bear the same relation to each other, no matter what position the crane may be moved to.

2. The base D of the jib, having rollers for bearing against the post, and a receptacle for receiving the slack chain.

138,877.—*Copy-Holder.*—STEPHEN FRENCH and RUFUS D. CHASE, Orange, Mass. Application filed April 12, 1873.

An inclined table provided with rolls at the upper end, which feed the manuscript line by line, drawing it between the table and a recessed plate.

Claim.—The combination of a board, table, or desk, A, slotted plate B, and carrying-rolls C, substantially in the manner described.

138,878.—*Curtain-Cord Fastener.*—CHARLES GAMMEL, Utica, N. Y. Application filed March 29, 1873.

The screw-rod bears the pulley at its upper end, and is slotted longitudinally to receive a pin projecting from the inner side of the socket-plate. The pulley is tightened by the nut on the lower end of the screw-rod.

Claim.—The slotted screw-rod B, having nut D and pulley C, combined with pin E and socket-plate A, as and for the purpose described.

138,879.—*Shutter-Worker.*—AUGUSTUS H. GIBBS, Norwalk, Conn. Application filed February 12, 1873.

A bent lever is pivoted upon the sill, inside of the sash, and its short arm is secured at any desired position by a set-screw working in a curved slotted guide. The outer end of the lever is pivoted to a curved link, which turns the corner of the shutter, and is then pivoted to the side of the frame.

Claim.—1. The bell-crank lever d e pivoted at f on the outside sill, one arm of which is pivoted to the curved link c of the bracket b, while its other arm connects with the adjustable button g, moving in the guide-plate A, secured to the sill inside of the window, the whole combined and arranged, substantially as described, for operating a window-shutter or blind, as set forth.

2. The bell-crank lever d e pivoted at f on the outside sill, in combination with the curved link c, said link being pivoted to the bracket and to the lever, as shown, for operating in connection with the button g moving in the guide-plate A arranged on the sill inside of the window, the several parts being constructed, substantially as described, for opening and closing a window-blind, as set forth.

138,880.—*Supplementary Heater for Steam Fire-Engines.*—RICHARD GILBERT and JOHN P. TOPHAM, Rochester, N. Y. Application filed February 21, 1873.

A heater consisting of a central magazine and an annular water-wall, between which are arranged a series of vertical dependent water-legs, each leg being provided with an inner circulating tube, and the water-wall, connected at top and bottom with the steam fire-engine boiler, is carried on the platform of the engine to heat the water and keep up a constant circulation, so as to be ready for instant use and assist in generating steam quicker than in the usual way.

Claim.—1. In combination with the main boiler of a steam fire-engine, a supplementary heater or boiler, C, connected with the main boiler by pipes E E' when said supplementary heater is constructed with vertically-arranged water-legs D, a water-jacket, b, and a central magazine, d, all constructed and operating substantially as described.

2. In a supplementary heater for fire-engines, the series of vertically-arranged water-legs D located between the central magazine d and the walls of the heater, each leg being provided with an inner tube, g, open at both ends, substantially as described, for the purpose set forth.

3. The supplementary heater C, constructed with the water-jacket b, depending hollow water-legs D D, and central magazine or fuel-chamber d, and connected with the main boiler of the engine by pipes E E', in the manner and for the purpose specified.

138,881.—*Sewing-Machine Brake.*—RUFF GLADNEY, Buena Vista, Miss., assignor to EDWARD H. HOTCHKISS, New York, N. Y. Application filed October 8, 1872.

Elastic roller with a flexible or swinging plate having a notch in one end of the plate to receive the journal when shifted.

Claim.—1. The combination, with one of the journals of the roller D, of a flexible or swinging bearing-plate, C, essentially as and for the purpose described.

2. The combination of the notch g in the end of the bearing-plate C', the journals of the roller D, and the head f, formed on the end of one of said journals, substantially as and for the purpose set forth.

138,882.—*Water-Gage and Feed-Indicator for Steam-Boilers.*—ANDREW S. GOODRICH, New York, N. Y., assignor to himself, ALEXANDER POLLOCK, and GEORGE VAN WAGENEN, same place. Application filed January 18, 1873.

The ordinary glass-tube water-gage is connected at its lower end with the feed-pipe of the boiler, so that the action of the feed-pump may be observed by the fluctuations of the gage. The connecting-pipe is provided with a cock for separating the gage from the pump when desired.

Claim.—The pipe C, connecting a water-gage, attached to a boiler or other receptacle, with a pump or feed-pipe, as set forth.

138,883.—*Channel-Opener for Boots, &c.*—FREDERIC GUSCETTI, New York, N. Y., assignor of one-half his right to CALVIN W. SMITH, same place. Application filed February 3, 1873.

A channel-opener is attached to the machine so as to follow the channeling-knife, pressing the raised lip down and over upon the surface of the sole preparatory for sewing.

Claim.—The above-described channel-opener D, when applied to a channeling-machine, and constructed and arranged to operate substantially in the manner and for the purpose set forth.

138,884.—*Picture-Frame.*—HENRY S. HALE, Philadelphia, Pa., assignor to HALE, KILBURN, & Co., same place. Application filed November 14, 1873.

Connects a projecting and protecting strip or strips of lacquered or water-proof material with the edges of the inner gilt portion or molding of the frame, so that the glass covering the picture can be washed without injury to such gilt edge or molding.

Claim.—The combination, in a frame or molding, of a gilt surface and a projecting rib or guarb, b, arranged at the inner or lower edge of the gilt portion, as and for the purpose specified.

138,885.—*Combined Adjustable Fire-Fenders, Grates, and Andirons.*—WILLIAM N. HALL, Mexia, Tex. Application filed March 22, 1873.

The fire-fender, andirons, and grate can be used together, or two of the parts may be combined, or the andirons used alone. The apparatus, as a whole, may be adapted for any-sized fire-place and for burning wood or coal.

Claim.—1. Andirons cast or made in two pieces, A and B, and locked by a pin, a, or other suitable device, as described.

2. Andirons provided with tenants or projections b, to receive and secure mortised grate-bars c, in the manner and for the purpose described.

3. Andirons provided with locks arranged to receive and hold the fender-bars, in the manner described.

4. The combined andirons, grate, and fender, constructed and arranged substantially as herein described.

138,886.—*Work-Box.*—ELANDER HEATH, San Francisco, Cal. Application filed April 3, 1873.

The holes form receptacles for spools. The central depression is rounded out to facilitate the removal of small articles. The edges of the box and lid, where they hinge, are beveled to prevent the hinges projecting beyond the box when closed.

Claim.—1. The box A provided with holes B B, and depression C having rounded ends, substantially as and for the purpose described.

2. The combination of the box and lid, when provided with beveled edges E F, as set forth, for the purpose specified.

138,887.—*Breech-Loading Fire-Arm.*—JOHN SIDNEY HEATH, Thomas street, Oxford street, Middlesex county, England. Application filed September 6, 1872.

Combinations claimed whereby the firing-pins are automatically withdrawn in the act of cocking the gun and caught or held back to prevent accidental discharge until released by the operator at the time of firing.

Claim.—1. The combination of a firing-pin, a lever, g^x, a locking-bolt, f^x, and suitable mechanism for operating the same, as specified.

2. The combination of the lever or thumb-piece No. 1, levers Nos. 2 and 3, and spring e' with the firing-pin, stop-bolts, and the levers g^x, as shown and described.

3. The combination, with the levers g^x and firing-pins f^x, of the tumblers M, a scar, and co-operating springs S g and M s, as specified.

138,888.—*Reciprocating Churn.*—GEORGE M. HEIM, Brownsville, Ind. Application filed March 22, 1873.

A barrel-shaped churn is eccentrically hung within a frame-work and receives an oscillating motion through a system of levers operated by a crank. Said mechanism is arranged within the frame so as to economize space.

Claim.—In combination with the oscillating or vibrating churn-body a, the crank-shaft f, crank i, levers n i, and pivoted rod o, when arranged to operate substantially as set forth.

138,889.—*Telegraph Cut-Out and Switch.*—ROBERT HENNING, Ottawa, Ill., assignor to himself and J. D. CATON, same place. Application filed February 8, 1873.

Two plates insulated from each other, having line and instrument connections, are cut through near their centers so as to break circuit. Insulated button, with two metallic stripe on base, pivoted at break, so that, by turning it completes circuit to or cuts out the instrument. Ground connected to either plate by switch-peg.

Claim.—A switch and cut-out formed of two parallel plates, with line, local, and ground wire connections, adjustable button, and metallic peg, as and for the purpose described.

138,890.—*Axle and Axle-Box for Vehicles.*—FRIEDERICH HUNSINGER, Morrisania, N. Y. Application filed March 15, 1873.

The grooves are parallel and disconnected, and a shoulder on the box and axle tends to prevent the escape of the lubricant.

Claim.—The box B having the parallel grooves C and offset D, in combination with axle A, as and for the purpose described.

138,891.—*Revenue-Stamp.*—ROBERT F. HUNTER, Staunton, Va., assignor to himself and A. F. RANDALL, Washington, D. C., assignors of part interest to THOMAS HOOD and ORIE F. PERRERT, same place. Application filed May 31, 1871.

Claim.—1. The method herein described of stamping cigars and insuring thereby the certain collection of the Government tax thereon, by means of a general stamp applied to the holding box or package having figures and characters imprinted on its face, indicative, respectively, of its own number and the number of cigars in the box or package to which it is attached, and detachable or accompanying coupons imprinted in like manner as the stamp-head, with corresponding numbers, figures, and characters applied to and attached to each individual cigar in such box or package contained, substantially as and for the purpose above set forth.

2. A cigar-stamp, constructed substantially as herein described and shown, applied in the manner and for the purpose specified and set forth.

138,892.—*Folding Chair.*—GEORGE HUNZINGER, New York, N. Y. Application filed April 29, 1873.

The chair is made of cross-legs, pivoted at the intersection and combined with a bow that constitutes the back and arms. The ends are connected to the slotted ends of the rear legs, and the rear part of the bow is connected by pivots to the upper ends of the front legs. The seat turns on the front cross-bar, and rests on the back cross-bar and also on the flexible straps extending from the back to the front cross-bar.

Claim.—1. The bow d connecting the top ends of the cross-legs a b and forming the back and arms of the chair, as set forth.

2. The flexible material extending from the back d to the cross-bar n, in combination with the seat A connected to the legs a c by the cross-bar k, and resting, when in use, on said cross-bar n, substantially as set forth.

138,893.—*Mechanism for Looms.*—THOMAS ISHERWOOD, and WILLIAM NUTTALL, Westerly, R. I. Application filed April 5, 1873.

In place of a stationary vertical grid on the lay at the sides of the loom two or more wires are presented between the path of the weft-thread and at the middle of the lay when the lay beats up, and are then withdrawn below the surface of the lay before the shuttle is thrown. The weft-fork is hinged to a vibrating arm on a rock-shaft supported in brackets on the lower cross-beam, and, after the picking movement, it is carried toward the weft-thread and withdrawn in time to be out of the way of the lay at the beat-up. When the weft fails the arm of the fork strikes the end of a vertical lever, also attached to a rock-shaft under the breast-beam, and through suitable connections the shipping-lever is operated.

Claim.—1. The combination, with the lathe, of the wires A and mechanism, substantially as described, for presenting them behind the weft and withdrawing them in the manner set forth.

2. The combination of the rock-lever O, arm Q, cam R, and feeler and latch with the lever N, for operating the shipper-lever, all arranged to operate in the manner described.

3. The combination of the wires A, arranged and operating with the lay, as described, and the feeler and latch, as set forth.

138,894.—*Ear-Protector.*—MORITZ ISIDOR, New York, N. Y. Application filed April 5, 1873.

Claim.—1. As a new article of manufacture, an ear-protector having its front side made partly of cloth and partly of gauze, as shown and described.

2. The elastic cord F, in combination with the ear-cover, constructed as described.

138,895.—*Plow.*—WILLIAM B. JACKSON, J. MORRIS CHILDS, and ORLANDO J. CHILDS, Utica, N. Y. Application filed March 21, 1873.

Claim.—A draft-clevis provided with a series of holes, and a tongue projecting inward from its head, for the lateral adjustment of a draft-hook, in combination with a clevis provided with a series of ratchet-teeth to engage said tongue, for the vertical adjustment of said draft-clevis, substantially as described.

138,896.—*Drawing-Board.*—WILHELM KEUFFEL and HERMANN ESSER, Hoboken, N. J. Application filed February 5, 1873.

The drawer containing the drafting materials, &c., is locked in place by the T-square passing sidewise through both it and the two supports in which the drawer is hung.

Claim.—1. The ribs a and drawer B, when notched or perforated to receive the T-square, as set forth.

2. The T-square combined with a drawing-board, A, and drawer B, to hold the latter closed, substantially in the manner described.

3. In combination with the drawing-board A, the pivoted rods or bars D D, applied to the back edge of said drawing-board, substantially as and for the purposes described.

138,897.—*Sewing-Machine Brake.*—CHARLES E. KIMBALL, New York, N. Y. Application filed March 10, 1873.

Claim.—The stationary hanger D, the wedge E fitted thereto, made of elastic material or faced therewith, the pin a, and the slot b, the whole combined and arranged for application in relation to

the fly-wheel of a sewing-machine, substantially as and for the purpose set forth.

138,898.—*Sewing-Machine*.—FREDERICK KOCH and ROBERT BRASS, Brooklyn, assignors to JOHN BOYLE, New York, N. Y. Application filed March 1, 1873.

The presser slides through a block, to which is pivoted an elbow-lever, the short arm of which, when the lever is turned by a cam, bears against the presser-shank and holds it firmly in the block, and so that the presser cannot rise.

Claim.—The lever and block, in combination with and for intermittently holding the presser, as set forth.

138,899.—*Railway-Car Seat*.—BERNARD J. LA MOTHE, Detroit, Mich. Application filed September 17, 1872.

The legs of the chair pass through the floor of the car and rest upon a spring underneath, the bottom of the slides in bearings, and is locked by means of a lever and rack. The back of the seat is reversible, and is composed of spring-wires strengthened by cross-pieces.

Claim.—1. The metal frame *h* of the seat sliding in and supported by the bearings *e*, and containing the spring-wires *i* bent double and connected in pairs, substantially as and for the purposes set forth.

2. The center-bar *k* and stop-lever *l*, in combination with the sliding metallic seat-frame *h* and springs *i*, substantially as set forth.

3. The end frames *a a*, passing through the floor or cleats and attached to the springs *c*, as and for the purposes set forth.

138,900.—*Feathering Paddle-Wheels*.—ALEXANDER LEFEBVRE, San Francisco, Cal. Application filed March 5, 1873.

A pinion on the end of the paddle-shaft operates a rack-bar reciprocally, which rack-bar gives motion, by the interventions of levers and cams, to sliding rods on the arms of the wheel and attached at their outer extremities to the paddle-floats. By these devices the floats are caused to be automatically moved inward toward the shaft, and outward again as they come in rotation to strike the water.

Claim.—1. The operating-bars I and K, connected with the sliding bar L by the joint M, in combination with the connecting and vertical bars, and the rack O and the pinion P, substantially as and for the purpose described.

2. The rack O, having its outer tooth at each end pivoted at *r*, so as to be operated by the pinion, substantially as and for the purpose described.

138,901.—*Veneer-Cutting Machine*.—JOHN W. LESLIE and GEORGE R. SMITH, Cairo, Ill. Application filed March 15, 1873.

The pressure or gage roll is supported by placing at its back two additional rolls.

Claim.—A small pressure-roller, C, arranged to bear upon the wood directly above the edge of the cutter, with the re-enforcing pressure-rollers acting upon it, substantially as specified.

138,902.—*Sewing-Machine*.—CYRUS LEWIS and JOSEPH SOOTHILL, Howard, Ill. Application filed January 11, 1873.

A shuttle-race of glass is sustained in a metallic support and between the two there is a layer of some elastic or holding substance.

Claim.—The combination, with a glass shuttle-race and its metallic support, of an elastic bed, as and for the purpose set forth.

138,903.—*Cheese-Cutter*.—JOHN LOCKE, Lewisburg, Pa. Application filed November 7, 1872.

To a suitable counter or stand is attached a bed-plate by a clamp and screw, the clamp-arm extending as a guide for the arm of the knife. The knife is operated by a spring-treadle.

Claim.—1. The guiding-clamp *c*, when used to secure the bed-plate to the counter, and to guide the knife, substantially as set forth.

2. The spring-treadle *h*, in combination with a cheese-cutting device, substantially as described.

3. A cheese-cutting machine consisting of a removable bed-plate and rotary table, a spring-treadle to operate the knife, and a guiding-clamp and set-screw to secure the bed-plate to the counter, when all are arranged to operate substantially as shown and described.

138,904.—*Folding Table, &c.*—HENRY LOTH, Philadelphia, Pa. Application filed March 25, 1873.

The whole of the legs are connected together by means of two compound hinges, one of the hinges being secured to the upper edges and the other to the lower edges of the legs. Each hinge is composed of as many sections as there are legs to the table.

Claim.—A folding table or other article, the whole of the legs of which are connected together by two hinges adapted to the upper and lower edges of the said legs, substantially as described.

138,905.—*Brick-Kiln*.—ALBERT W. M. MAASS, Chicago, Ill. Application filed January 11, 1873.

Improvement on patent to F. E. Hoffman, June 13, 1865. The smoke-channels or the radial partitions forming the compartments connect said compartments alternately at opposite ends. Two iron sliding or drop doors open or close connection between the compartments.

Claim.—1. The circular arch, divided into radial compartments, communicating with each other alternately at the inner and outer ends, and provided with the movable slides X X', as and for the purpose set forth.

2. The arrangement, with relation to the stack R, smoke-chamber P, and compartments A, B, C, &c., of the smoke-channels *a*, *b*, *c*, &c., valves *v*, openings T, channels *g*, gates *t*, air-channels *s*, covers *s'*, fuel-holes *u*, and draft-channels *r*, substantially as and for the purpose set forth.

138,906.—*Tan-Vat*.—CHARLES H. MANNING, Washington, D. C. Application filed March 17, 1873.

Claim.—A vat or cistern, with a frame-work of wood, or iron and wood, as shown and described, with its outer and inner sides covered with cement, substantially as and for the purpose herein specified.

138,907.—*Compound Explosive Projectile*.—FRANK A. MARKLEY, Waynesborough, Va. Application filed April 5, 1873.

Claim.—The explosive projectile, consisting of main cylinder A, in connection with auxiliary shells C, held together by rod B and plate F, substantially as described.

138,908.—*Carbonic-Acid Generator, Fountain, and other Vessels*. JOHN MATTHEWS, New York, N. Y. Application filed May 7, 1873.

An outer shell of cast-steel is lined with lead or porcelain, or, when lead would be objectionable, tin, or copper coated with tin or silver, is used for the lining. In some cases glass may form the lining. The object is to make these vessels very strong, light, and not liable to be corroded.

Claim.—The improved vessel or generator herein described, consisting of a shell of steel formed by casting in molds, and lined with lead or porcelain, substantially as set forth and described.

138,909.—*Hay and Cotton Press*.—WILLIAM H. MCBURNEY, Sacramento City, Cal. Application filed February 21, 1873.

Claim.—The levers C L, connected by bars I N, the jointed bars X Y, and the eccentric wheels, combined and applied as and for the purpose described.

138,910.—*Hoisting and Conveying Apparatus*.—OLIVER T. MCINTOSH, New York, N. Y. Application filed April 1, 1873.

The attendant within the box determines the starting and stopping of the car by means of the brake, and also operates the locking device, so as to regulate the raising or lowering of the block as may be desired.

Claim.—1. In a hoisting and conveying apparatus, the combination of brakes to the wheels for stopping the car with the blocks, pulleys, and rope for raising or lowering a weight and moving the car upon an inclined railway, substantially as set forth.

2. The strap *o* at the upper end of the block *k*, in combination with the conical opening *r* and the bolt *s*, moved by the lever *u*, and under the control of the attendant, as and for the purposes set forth.

3. The car *a*, containing a box, *d*, for the attendant, and supported by wheels upon an elevated railway, in combination with the brakes *e* for the wheels, the block *k* and rope *g* for raising the weight, and the hand-lever *u* and bolt *s* for sustaining such weight, as set forth.

138,911.—*Brick-Layers' Pointers*.—JOSEPH S. MERRIKEN, Baltimore, Md. Application filed October 7, 1872.

The "pointer" has a pair of chaneled rollers revolving in a cast-iron frame, and a brush is arranged on each side of the "point," to clear away surplus mortar.

Claim.—1. A pointer for brick-layers' use, consisting of a holder, two rollers, and one or more brushes between said rollers, substantially as herein set forth.

2. The holder A, cast in one piece with the handle B, and having mortises *a a* and dovetailed grooves between said mortises, substantially as and for the purposes herein set forth.

3. The roller C, provided with a circumferentially-grooved flange, *d*, around its center, and arranged in a suitable holder, substantially as and for the purposes herein set forth.

4. The combination of the holder A with handle B, rollers C C, with flanges *d d*, and brushes D D, all constructed and arranged substantially as and for the purposes herein set forth.

138,912.—*Car-Coupling*.—HIRAM MILLARD, Philadelphia, Pa. Application filed November 1, 1872.

To "set" this device for coupling, the pin is raised and passed obliquely forward in the slot on the top plate, from whence it is forced by the entering link, when it falls through it, and coupling is effected. When it is desired that the draw-heads should be together without being coupled the short arm is allowed to rest in the slot at right angles to *g*, and the foot-piece is turned into the step on the bottom of the plate B.

Claim.—1. The coupling-bolt E, having a foot, *h*, in combination with a draw-bar, having in its upper plate A a slot, *d*, hole *e*, and grooves *g g*^{2}, and in the lower plate B a slot, *d'*, hole *e*, and groove *g*^{1}, substantially in the manner and for the purpose set forth.

2. The combination of the inclined wings *a a* with ordinary bumper-plates C C for guiding the outer end of the link D into the right position for coupling, substantially as described.

138,913.—*Track-Clearers*.—JAMES H. MILLER, Fredericton, New Brunswick. Application filed January 2, 1873.

The front ends of the clearers are pivoted to the pilot, and the clearer may be raised or lowered by means of a rock-shaft.

Claim.—1. In combination with the pilot or cow-catcher of a locomotive, the clearers *b b*, consisting of flat metal plates with openings *c* therein, pivoted to the pilot, near the front end thereof, by a pivot passing through the forward end of the plate, allowing a vertical motion to the rear end of the clearer—the openings *c* to embrace the track so as to remove the snow from the sides or flanges as well as from the top—substantially as and for the purposes set forth.

2. In combination with the clearers *b b* secured to the pilot A, of rods *i i* and rocker-bar *j*, with its arm *k* and lever *l*, substantially as set forth.

138,914.—*Wood-Filling and Paint Compound*.—JOHN MILLER West Salem, Ohio. Application filed April 12, 1873.

Coachmaker's Japan, spirits turpentine, raw linseed-oil, English carriage varnish, French amber, white lead ground in oil, lampblack.

Claim.—The painting compound herein described, composed of the materials and in the manner substantially as specified.

138,915.—*Preparing and Packing Water-Colors*.—EDWARD L. MOLINEUX, Brooklyn, N. Y. Application filed April 19, 1873.

Sheets of card-board or other substance, prepared to prevent them from absorbing the colors, are painted with one or several coats of colors prepared with sufficient sizing, and as one coat dries another is added until the desired thickness is formed. The sheets are then dried, cut into pieces, and made into portfolios, &c.

Claim.—The method of preparing and putting up water-colors in sheets or tablets for painting and toilet uses, substantially as herein shown and described.

138,916.—*Journal-Boxes*.—JOSEPH R. MORRIS, Houston, Tex. Application filed April 3, 1873.

A journal-box having a two-part bearing with an intermediate oil-reservoir; also an arm which supplies the journal with oil at each revolution; and the annular disks, which prevent the lubricant from escaping from the box and return it to the recesses and thence to the reservoir.

Claim.—The combination of the journal-arm *e* and annular disks *f f*, in combination with the bearings A A, intermediate oil-reservoir, outside recesses, and inclined channels, all as and for the purpose specified.

138,917.—*Rubber Cements*.—WILLIAM MOSHIER, Norwalk, Ohio, assignor of one-third his right to CHARLES T. MERRY, same place. Application filed February 15, 1873.

Virgin rubber is dissolved in benzine and isinglass, and chloroform added.

Claim.—The rubber cement described, compounded of the ingredients in the proportion substantially as specified.

138,918.—*Farm-Gates*.—HORACE W. MULLENNEX, Alpine, N. Y. Application filed January 6, 1873.

A short gate-post, opposite the latch end, has two bracketed frames swiveled upon it, one near the base and one at the top. A horizontal gate-rail passes through each frame upon friction-rollers. The gate slides open and shut supported by these rails, but when partly open may be turned a quarter-circle, the brackets revolving upon the short post.

Claim.—The two frames B B, having rollers *b b* and sleeves *d d* swiveled on supports *c c* of a post, C, as and for the purpose described.

138,919.—*Reversible Latches*.—WALLACE T. MUNGER, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed April 12, 1873.

The latch-case is constructed with an opening through it, in which projects an arm that is operated for withdrawing the latch. This arm is central, so that the case may be reversed for the bevel of the latch to stand in either direction, thus adapting the latch to a right or left hand door.

Claim.—1. The latch-case made with an opening, *p*, through the same, in combination with the trident *k l m*, yoke *f*, and latch *d*, substantially as set forth.

2. The case of the latch made with an opening, *p*, through the same, in combination with the latch mechanism and the arm *w*, occupying a central position in such opening to allow the latch-case to be reversed, substantially as specified.

138,920.—*Car-Spring*.—EDWARD MYERS, Jersey City, N. J. Application filed April 26, 1873.

Concentric flanges formed upon the follower have their bearings upon graduated spiral springs, which are inclosed in corresponding concentric flanges formed upon the bearing-plate.

Claim.—1. The concentric graduated springs C, each inner spring being made shorter than the next outer one, arranged in spaces between concentric ring-flanges formed upon the end plate of one or both parts of the case, and to be operated upon by a similar set of concentric ring-flanges formed upon the end plate of the other part of the case, substantially as herein shown and described.

2. The combination of a central draft-rod, D, with the double concentric graduated spring A B C, substantially as herein shown and described.

138,921.—*Window-Sash*.—DAVID W. NOYES, Bennington, Vt. Application filed April 12, 1873.

The glass is retained in its place in the sash by means of a hinged frame in place of putty, and is edged with rubber so as to form a tight joint. The hinges are furnished with screw-threads, and the fastening-button is also screw-threaded, thus affording a means for adjusting the compression of the frame to the thickness of the glass used. The glass is interchangeable with wire-netting or other material.

Claim.—1. The combination of the frame A, door D, and screws *f f'* with the interchangeable glass C and wire frames *d* and A, substantially as specified.

2. The screw *f'*, having flanged head, as described, in combination with the frame A and door D, constructed and arranged substantially as and for the purpose described.

138,922.—*Type-Setting Machine*.—SAMUEL H. OWEN, Philadelphia, Pa. Application filed January 10, 1873.

The type are delivered from radially-arranged reservoirs by holders rocked by the keys, from which they are pushed by its toe into a receiver traveling in a circular path, and delivered onto a pusher-bar by an arm thereon. This bar is reciprocated by a cam-slot in the carrier, and discharges the type onto a ledge, which, rocking, delivers it onto a stick composed of winged spindles. A full line is dropped onto a spring-plunger by turning the spindles one-fourth of a revolution. A justifying-case filled with spaces is reciprocated over the line of type, and when its toe, passing freely through the nicks of the letters, is raised by the blank spaces, the case is moved in the other direction, moving part of the line and allowing a space to be pushed in by the vibrating lever.

Claim.—1. The combination of a series of type-holders, holding type lying horizontally and arranged radially, and a rotating carrier or carriers passing beneath the holders, receiving type which descend therefrom, and conveying the same to one point, substantially as specified.

2. A receptacle in which the type is deposited by the carrier, in combination with a pusher-bar, D, operating as set forth.

3. The combination, with the type-reservoir A, of a spindle, K, constructed substantially as described, and operated by means of a key through the medium of the devices described, or any equivalent devices.

4. The combination of the spindle K and its arms *b*^{1} with the projections *h h'* of the carrier.

5. The combination of the spindle K and its type-holding arms *b*^{1} with the projection *g* of the carrier.

6. The carrier B, constructed substantially as described, with a fixed portion, *c*, pivoted portion *c'*, and pocket for the reception and retention of the type.

7. The combination, substantially as described, of the stationary projection *f'* with the fixed and pivoted portions of the carrier B.

8. The combination of the rotating slotted plate E with the pusher-bar D, substantially as specified.

9. The combination, substantially as described, of the receptacle in which type is deposited by the carrier, the pusher-bar D, the tilting lever M, and the stick.

10. A stick for type-setting machines, consisting of two parallel spindles, F, having arms for the support of the type, and from which the latter can be discharged into a receptacle beneath, by a simultaneous move of the two spindles, all substantially as specified.

11. The combination, with the type-supporting spindles F, of a cross-head acted on by a spring or otherwise, and maintained in contact with the type.

12. The combination, with the stick and galley, of a justifying apparatus operating in the space beneath the stick and above the lines of type in the galley.

13. The intermittently-moving case H, with its projection or projections *t*, adapted to the nicks *v* of a line of type, but arranged when moved in one direction to strike the blanks *x* between the said type, and to thus separate the latter, for the purpose specified.

14. The combination, substantially as described, of the case H, its lever Q, the stops *q*, aperture *x*, and line of blanks *w*, maintained in contact with the said stops *q* by a spring-plunger *r* or equivalent device.

138,923.—*Vapor-Burner*.—FRANKLIN G. PALMER, Pittsburg, Pa., assignor to himself and JASON J. PALMER, same place. Application filed October 21, 1872.

The regulating-valve is attached to and movable with the burner-top, which screws upon the feeding-table. By turning the top the valve is made to approach or recede from its seat.

Claim.—The spindle or spindle-point *d d'*, attached to or forming part of a burner or burner-top, inverted and above the generator, and acting as specified, all substantially as set forth.

138,924.—*Manufacture of Cement*.—JOHN E. PARK, La Vergne, Tenn. Application filed April 6, 1871.

Composed of any of the forms of lime, with thirty to forty-five per cent. of clay, five to ten of fine sand, and five per cent. of soda (carbonate, muriate, or caustic) or potash. These materials are mixed together and moderately worked into union. The mass is then dried, then broken up, and burned in a kiln until it produces a bright sulphur color, both externally and internally.

Claim.—1. The hydraulic lime or cement composed of the ingredients in the proportions specified.

2. The process of preparing and calcining the cement, as set forth.

138,925.—*Candle-Lamp*.—JULIUS A. PEASE, Boston, Mass. Application filed May 1, 1873.

The outside shell of the candle is made of adamantine and filled with crude paraffine, tallow, or other more fusible candle-stock. The candle is placed in a tube having a coiled spring in the lower end. This feeds up the candle as it is burned away. At the upper end of this tube are placed the drip-cup, the short wick-tube, and the perforated cone. There is no metallic contact between the cone or the candle-tube or the wick-tube, so that the heat from the burner is not conducted to the candle-tube.

Claim.—1. The compound wickless candle, made of a shell of hard candle-stock and a central filling of other material, substantially such as specified.

2. The combination of the candle-tube and drip-cup with the wick-tube and perforated cone, in the manner described, so that the cone and wick-tube do not come in contact with the candle-tube, as and for the purpose set forth.

138,926.—*Shank-Laster.*—RICHARD B. PERKINS, Almond, N. Y. Application filed April 5, 1873.

A guard-wheel provided with a spring-locking device is attached to the fulcrum-arm, that it may be adjusted to boots and shoes of different sizes.

Claim.—1. The curved lever A, in combination with pincher end B having arm C, with spring-lever E, substantially as described.

2. Guard-wheel D having flange *f* connecting bridge *g*, with perforations for pin *h* to regulate it when turning on pivot *i*, substantially as described.

3. The combination of the curved lever A, hinged jaw B, arm C, wheel D, with flange *f*, spring-lever E, and pin *h*, as shown and described.

138,927.—*Boring-Machine.*—HIRAM PITCHER, Fond du Lac, Wis. Application filed February 8, 1873.

A series of augers is arranged to be adjusted at equal or varying distances, and secured by one clamp for the whole series.

Claim.—1. The combination of the movable driving-wheels *b* and movable bearings *d*, substantially as set forth, when connected together as described.

2. The combination of the lever *l*, adjustable rings *n*, and the movable bearings *d*, and forked levers *o*, so that the borers can be made to work at equal or unequal distances apart, substantially as shown and described.

3. The shaft, driving-wheels, pinions, adjustable bearings, forked levers, and adjustable rings, when all are combined to operate as set forth.

138,928.—*Washing-Machine.*—DANIEL B. POND, Woonsocket, R. I. Application filed April 12, 1873.

The washing-machine is constructed with corrugated wire-cloth, with a bed of rolls suspended under it, by coiled springs attached to the outer frame or sides of it.

Claim.—The washing-machine having the spring-rollers and the cylinder K, consisting of the shouldered ends and the wire-cloth, or similar meshed flexible material connecting said ends, substantially as specified.

138,929.—*Device for Stopping the Spindles of Spinning-Frames.*—HENRY T. POTTER, Norwich, Conn. Application filed February 27, 1873.

The pad is to be borne against by the knee of the operator when it is desired to stop the rotation of the spindle.

Claim.—The combination of a pendent or movable pad with the spindle, substantially as and for the purpose specified.

138,930.—*Stereoscope.*—ANTONIO QUIROLO, New York, N. Y. Application filed February 17, 1873.

The object-frame has laterally-swinging end clips, and is attached to the handle-staff by a pair of adjustable sliding tubes, whose extension is limited by an interior wire bent or knotted at its extremities.

Claim.—1. The wire G containing the hook *f g*, and applied through the tubes D E, to constitute a tension and stop, substantially in the manner set forth.

2. The cross-bar or picture-holder F, combined with the pivoted plates H H which carry the picture clasps I I, substantially as herein set forth.

138,931.—*Wheel-Cultivator.*—JOHN H. RANDOLPH, Jr., Bayou Goula, La. Application filed February 8, 1873.

The axle or shaft of the cultivator-frame revolves with the wheels, carrying a gear-wheel which gears into another wheel and shaft, on which are placed blades similar to those of a propeller, designed to throw the loose earth turned up by the plows among the plants. By a peculiar gearing the plows and the shaft carrying the revolving blades are raised simultaneously by the lever M.

Claim.—1. The combination of the gear-wheels T X, shaft W, and bracket V, with the propeller or screw-blades Y Z A′ and shaft E of the drive-wheel D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the keeper or long bearing G and loop B′ with the adjustable standard H, shaft E of the drive-wheel D, and bracket V of the propeller-shaft W, substantially as herein shown and described, and for the purpose set forth.

138,932.—*Wrench.*—HENRY F. READ, Brooklyn, N. Y., assignor of one-half his right to EDMUND BEACH, same place. Application filed September 16, 1872.

The movable jaw is adjusted by means of a screw-nut moving on screw-stem, which is attached to a holding device, all of which is movable back and forth on the jaw-bar. When interlocking teeth are relieved, and when the movable jaw is advanced to the desired point, said teeth will be again interlocked by means of spring holding the jaw firmly.

Claim.—1. The thumb-screw nut F, carried by and revolved upon the movable jaw D and screw-stem, in combination with the screw-stem E, carried by and sliding with the holding device G, as and for the purpose described.

2. The thumb-screw nut F, located and arranged between the arms D *d* of the jaw D, and upon the screw-stem as an axis, whereby the nut F is held in position and the jaw D moved over the screw-stem without the turning of the latter, as described.

3. The stop *i* of the movable jaw D, in combination with the shouldered recess *j* in the screw-stem E, to obtain a lock for preventing the separation of the jaw and screw-stem, as described.

4. The T-shaped head *h* of the screw-stem E and the ways of the slot *g*, when arranged to be interlocked through the inner open end of the slot *g*, as described.

5. The combination of the screw thumb-nut F, screw-stem E, holding device G H, interlocking T-head *h*, stop *i*, intermating teeth *a b*, the fixed and movable jaws B D, and the jaw-bar A, constructed and arranged for joint operation as described.

138,933.—*Water-Wheel.*—ALISHA B. REWIFF, Bingham's Mills, N. Y. Application filed April 19, 1873.

This wheel is formed of the body, inner rim, buckets, and outer rim constructed and arranged in connection with each other. There is a scroll or stationary wheel formed of the body, the inner rim, the chutes, and the flanged outer rim in connection with each other; it is made convex upon its upper side. On the inner rim of the scroll are the chutes, the inner edges of which are secured to the inner rim, and to their outer edges is secured the outer rim. The outer rim is made lower than the inner rim.

Claim.—1. The water-wheel formed of the body B, inner rim C, buckets D, and outer rim E, constructed and arranged in connection with each other, substantially as herein shown and described.

2. The scroll or stationary wheel formed of the body F, inner rim G, chutes H, and flanged outer rim I J, constructed and arranged in connection with each other and with the wheel B C D E, substantially as herein shown and described.

3. The gate K L, constructed substantially as herein shown and described, in combination with the scroll or stationary wheel F G H I J, as set forth.

138,934.—*Potato-Digger.*—JOHN D. RENSINK, Bridgeport, N. J. Application filed February 3, 1873.

A potato-digger constructed in the shape of an ordinary sled, provided with knives attached to the runners in front and extending back to the rear. Between the blades at the rear is secured a plow provided with a riddle. About midway and above the knives is secured a forked cutter for cutting off the vines.

Claim.—1. The combination of the cutting-blades B B and forked cutter D, arranged above and behind the blade, as set forth.

2. The combination of the runners B B, sharpened at the edges, forked cutter D, plow F, and riddle *a*, as set forth.

138,935.—*Snap-Hook.*—SAMUEL REYNOLDS, Allegheny, Pa. Application filed 5, 1873.

Improvement upon patent No. 124,628. The improvement consists in casting the journal-seats opposite the end of the hook.

Claim.—The snap-hook, having the journal-seats *c*, cast in the side bars opposite the end of the hook, the spring *k*, and the tumbler *z*, having the journals *s*, the base-flanches *v w*, and the trip-flanch *n*, in contact with the end of the hook, substantially as specified.

138,936.—*Steam-Heater.*—GEORGE B. RIGGINS, New York, N. Y. Application filed March 12, 1873.

The compound nozzle is composed of three pipes, one within the other; the inner is the water-pipe. When the water in the generating-coil is evaporated a suction is produced in the water-pipe, and water then flows forward from the supply-tank without interruption.

Claim.—The combination of a compound nozzle, H, with a supply-tank, C, and a generating-coil, B, substantially in the manner and for the purpose shown and described.

138,937.—*Washing-Machine.*—CLARANCE L. ROSE, Roseville, Ill Application filed April 5, 1873.

The washing-machine is constructed in a half-circular form, with its rubber suspended from the uprights by journals, and from it, at or near its center, is attached a pitman, and to the tub by which motion is given to it by the oscillation of the tub against beaters or a rack attached to it.

Claim.—The combination of the rubber C of the oscillating tub B with the beater, pitman *g*, and frame A, by standards *d* and pivots *f*, to produce motion of beater against rubber, substantially as described.

138,938.—*Separating Gold and Silver from Lead Containing the Same.*—CLEMENT ROSWAG and ALFRED NICOLLE DE PAUVILLE, Paris, France. Application filed January 2, 1873.

The dross is heated on an iron plate at a low temperature, and then pulverized, after which it is introduced, with mercury, into a rotary amalgamating-vessel, where the metals zinc, silver, and lead readily unite with the mercury.

Claim.—1. The employment, in recovering precious metals from lead, of aluminium alone or alloyed with other metals, as set forth.

2. Amalgamating the dross formed in treating the lead with a reacting metal or alloy, substantially as described.

3. The recovery of aluminium from the dross by treating the same with mercury, as set forth.

138,939.—*Chair.*—JOHN K. ROWLEY, Chicago, Ill. Application filed April 17, 1873.

A chair made of willow or other light elastic material, without any bottom or seat or hind legs, so as to be used on the seat of a carriage or any other permanent seat.

Claim.—An invalid-chair, of willow or other light elastic materials, having supporting sides and arms A A, back B, front legs C C, and bar D, substantially as described.

138,940.—*Bolt-Cutter.*—JACOB S. RYDER, Sing Sing, N. Y. Application filed March 29, 1873.

The movable handle is connected to the cutter-bar by a link pivoted eccentrically to the main pivot.

Claim.—The bolt-cutter, consisting of the lever A having the opening *b*, and the arm C extending at right angles, or nearly so, with its main length, the lever E, the cutter-bar D having the curved flange *e* and the link F, substantially as specified.

138,941.—*Apparatus for Freezing Liquids.*—FRANCESCO SAJNO, Milan, Italy. Application filed April 5, 1873.

The outer cylinder, having a non-conducting jacket, is contracted at the ends to receive screw-caps provided with cup-shaped flanges, upon which the cylinder rests in a vertical position when filling or emptying the receptacles. The inner cylinder is permanently attached to the outer at one end. Within the inner cylinder is a stationary rod provided with a scraper to clear the inner surface of the small cylinder. Partitions project into the space between the cylinders to prevent the shifting of the freezing mixture.

Claim.—1. The combination of the horizontally-revolving and outer cylinder A, inner cylinder E, and the caps C D, the said cylinder A and caps being arranged as described, to prevent the water from leaking out.

2. The combination of the cup-shaped flanges O with the caps, in the manner described.

3. The combination of the partition G with the cylinders A and E, substantially as specified.

138,942.—*Potato-Digger.*—LEWIS SCHAFER, Jr., Mount Carmel, Ill. Application filed March 27, 1873.

A potato-digger constructed with a curved beam, to the lower part of which is secured a shovel and sifting-screen. The shovel is made concave longitudinally and transversely. To the rear end of the shovel is secured one end of the sifting-screen, while the other end is supported by a brace from the beam.

Claim.—1. The potato-digger herein described, having the beam A, standard C, concave shovel D, and double-inclined screen E, as set forth.

2. The combination of the screen and handle-braces F and *a a* with the standard C, said braces being secured to the standard by a single bolt, as shown and described.

138,943.—*Pencil-Sharpener.*—ADAM E. SCHATZ, New York, N. Y. Application filed October 21, 1871.

A plate of metal is bent into conical form on one side to form a cutter for the wood, and similarly on the other side to form a cutter for the lead of a pencil.

Claim.—As an article of manufacture, the pencil-sharpener, constructed of a metal blank, bent at one side to form the wood-guide D and sharpener A′, and at the other side to form the lead-sharpener E, substantially as specified.

138,944.—*Sash-Cord Guide.*—WILLIAM SHAW, Brooklyn, N. Y. Application filed March 22, 1873.

A short screw-threaded tubular case has flat surfaces for the hub-bearings on opposite sides of the interior, together with the ordinary shaft and pulley or pulleys. These grooved pulleys have end chambers, in which anti-friction balls are loosely arranged in such manner as to bear directly against the shaft and lessen friction. The ends of the rod or shaft are riveted outside the case, thus closing the end chambers and retaining the balls inside the chambered hubs in working position.

Claim.—The case A having flat surfaces D, in which are journaled the rod or pulley-shaft E, and the rollers or pulleys F having end chambers G G, combined with sets of loose balls placed in said end chambers, as and for the purpose described.

138,945.—*Sinking Pneumatic Piles or Caissons.*—FREDERICK E. SICKELS, Marshall, Tex. Application filed October 15, 1872.

The air-lock is made of smaller diameter than the pile, and is located directly upon the air-chamber. An observation-glass in the floor of the air-lock permits inspection of the workmen in the air-chamber. A check-valve is located in the reservoir to prevent too great pressure in the pumps and irregularity in their action from injuriously affecting the workmen. The bags are provided with a collar for the purpose of completely stopping the pipe through which they are removed, each thus serving the purpose of a valve for its successor. Staves are driven obliquely under the foot of the pile to afford a better support. The guy-chains are carried down by the pile in its descent, and afford anchorage and stays for piles subsequently sunk.

Claim.—1. The combination of the air-lock A, the caisson or pile K, and the air-chamber H, as and for the purpose described and represented.

2. The reservoir F, with a regulating-valve, *f*⁴, interposed between the air-pumps and the chamber H, as and for the purposes described.

3. The guys E, carried down with and held by the pile or caisson being sunk, so as to serve as anchorages for subsequent or contiguous piles or caissons that are to be sunk to steady them in their descent, as described.

4. The staves M, in combination with the pile or caisson, substantially as and for the purpose described.

5. The combination of the pipe B with the bags or buckets C, formed as herein described, to co-operate with the same, for the purpose of removing the excavated matter and keeping said pipe always closed, as described.

6. The observation-glass N, arranged between the air-lock A and the air-chamber H, as and for the purpose described and represented.

138,946.—*Holder for Brushes, Mops, &c.*—ISRAEL SMITH, Rochester, N. Y. Application filed March 6, 1873.

The body of the brush is constructed in ordinary form, with screw attached to the lower end of the handle, passing through a nut with side projections and openings through which is passed wire braces or connections, which, by their ends, are turned inward to clasp the brush, which is firmly held by the handle with the screw and nut against the top of it resting in a countersink, and has a set-screw to hold it in its position for use.

Claim.—The mop or brush holder, consisting of the screw B, cross-head C, and clamping-wires E E, when said screw has a conical point, *a*, to bear direct upon the back of the device to be held, and said clamping-wires are made each of a single piece and looped through double holes of the cross-head, said holder being used either with or without the set-screw *g*, all as herein shown and described.

138,947.—*Expanding Mandrel.*—JAMES D. SMITH, New York, N. Y., assignor to JAMES D. SMITH and HUGH R. GARVIN, same place. Application filed August 1, 1872.

The mandrel, made tapering, has a cylindrical collar, the interior of which corresponds with the shape of the mandrel. Slots terminating in circular holes extend, alternately, from one end of the collar to near the other, to allow the collar to expand when drawn along the mandrel.

Claim.—The expanding tool, constituted by the tapering mandrel-piece and the cylindrical collar, formed with a tapering interior and slotted alternately from either end, the two combined and operating substantially as herein set forth.

138,948.—*Ore-Washer.*—REUBEN SOLLIDAY, Allentown, Pa. Application filed January 23, 1873.

The beaters of ore-washers, which usually wear out in a few days, are made in two parts, a base attached to the revolving cylinder, and a blade which can be replaced at will.

Claim.—The base A and blade B, constructed separately, and combined by means of the dovetailed groove and tenon, substantially as and for the purpose specified.

138,949.—*Supplementary Wheel for Car-Trucks.*—SMITH SPELMAN, Brooklyn, N. Y. Application filed February 21, 1873.

The flangeless independent wheels are adapted to run upon the flat outer rail of the curves in street railways.

Claim.—In a car-truck, the axle B, carrying the fixed wheels C C, in combination with the independent wheels D D, arranged to operate substantially as herein shown, and for the purpose described.

138,950.—*Hoisting and Conveying Apparatus.*—GEORGE STANCLIFF, New York, N. Y. Application filed February 8, 1873.

Truck carrying the weight and moving it back and forth on an inclined track by means of a windlass and rope or chain attached to the truck which operates the apparatus.

Claim.—1. The combination of the slotted arrow *b*, slotted funnel-plate *h i*, having guiding recesses for bolts I and *q*, and having lug *m*, pin *n*, and spring S, with pivoted lever H, projecting plate g^3, weighted arm f^3, and pin g^3, all constructed and arranged as and for the purpose described.

2. The sliding buffer-rods E, with pivoted arms—one with lug b^2, the other with projection A^2—and springs *y*, in connection with tongue-lever H, arm f^3, and pin g^3, and lever *w*, acting on bolts *q* and I, locking and unlocking the same at the points specified, as described.

138,951.—*Machine for Skiving Leather.*—EDWIN B. STIMPSON, New York, N. Y. Application filed April 9, 1873.

A rotary and circular pattern is hung upon a shaft supported in yielding bearings above the cutter, and over a yielding bed, and, as the leather passes underneath the pattern, revolves it, and the leather is depressed in conformity to the outlines of the pattern.

Claim.—1. The rotary pattern F, arranged on a skiving-machine in conjunction with the knife B, substantially as described.

2. The bed C, combined with the adjustable knife B and rotating pattern F of a leather-skiving-machine, substantially as specified.

138,952.—*Tire-Heater.*—FREDERICK STRATTNER, Wilmington, Del. Application filed March 22, 1873.

The case has removable sides and adjustable standards, and the inner pipe, which is perforated or supplied with burners, is connected with supply-pipes through the circumference of the case.

Claim.—A tire-heating apparatus, composed, respectively, of the case A, having the removable sides A′ A′ and adjusting standards C C, and the heating and supply pipes B D, substantially as described and shown.

138,953.—*Soap-Crutching Machine.*—STEPHEN STRUNZ, Birmingham, Pa. Application filed August 2, 1871.

Machine consisting of a barrel-shaped vessel having a dasher of the ordinary construction, and operated by means of a crank.

Claim.—A soap-crutching apparatus, composed of a cylindrical vessel, provided with an opening at the top and an opening at the bottom, and having within the cylindrical vessel a shaft with a series of spirally-arranged flat blades, as described.

138,954.—*Disinfecting Soap-Boiling Establishment.*—STEPHEN STRUNZ, Pittsburg, Pa. Application filed May 8, 1873.

Hoods are connected with the tops of the kettles, and a draft or blast fan forces the gases under the fire of a steam-boiler. The hoods may be raised during the working of the materials in the kettles.

Claim.—1. The combination, with a soap-boiling kettle or kettles, of a hood and flues, provided with one or more valves, and a blast apparatus, so as to take off and deliver to a furnace the gases and vapors, substantially as specified.

2. The method or system herein described for disinfecting soap-boiling establishments, the same consisting in attaching to the kettles collectors for gathering the gases, and combining therewith a blast or draft apparatus, so as to force the gases into or through a fire or furnace, substantially as specified.

138,955.—*Hay-Carrier.*—EUGENE B. TANNER, Attica, Ohio. Application filed April 12, 1873.

The lever is pivoted with its lower end to beam of the barn; near its upper end it is guided by a fulcrum or bar secured by braces to the rafters, and connected with a tackle block, which has a weighted pawl for suspending the load till ready to drop the same.

Claim.—1. The combination of pivoted lever C and guide-bar B, supported by bars *a*, with tackle-block D, rope E, and pulleys *d*, *d*¹, and *d*², for hoisting and conveying the hay, as described.

2. Tackle-block D, having pulley *d*, pin *g*, and weighted lever F, in combination with rope E, having ferrule *f* to lock the load to the block, as set forth.

3. The combination of lever C and weighted lever F with rope K, to disconnect rope E and fork G at the starting-point, substantially as described.

4. The combination of lever C and fork G with rope H, pendent arm I, and pulley *d*² for releasing the load and returning lever to starting-point, as described.

138,956.—*Fire and Water-Proof Composition for Ceilings, Walls, and Floors.*—LUCIEN A. TANTIERE, New York, N. Y. Application filed filed March 25, 1873.

Claim.—The compound composed of plaster of Paris and the hydraulic lime of Teil, with coke-dust or other suitable material, substantially in the proportions and for the purposes set forth.

138,957.—*Feed-Water Heater for Steam-Boilers.*—SIDNEY T. TAYLOR, Baltimore, Md. Application filed February 21.

A cone is arranged under the induction exhaust-steam pipe or tubes to spread the steam in a thin annular sheet. Under the cone is arranged an annular perforated cold-water pipe, by which the steam is condensed as it comes in contact with the sprays of water. In the bottom of the case is arranged a vertical well, provided with a perforated piston and valve for the withdrawal of the water.

Claim.—1. The induction and eduction steam tubes B G, annular perforated water-discharge tube F, and the cone C, combined as herein described, whereby the annular sheets of steam and water are caused to intersect, as specified.

2. The vertical well or cylinder attached to the bottom of the case A, and provided with the perforated piston H and valve h, as shown and described, for the purpose specified.

138,958.—*Device for Heading Bolts.*—WILLIAM M. THOROUGHGOOD, Salisbury, Md. Application filed March 15, 1873.

The tool at its end is, in cross-section, of the same shape and size as the head to be formed on the bolt, and has, in a slot through its center, a pivoted lever to force the bolt.

Claim.—1. A hand-tool for heading bolts, spikes, and nails, formed of a rod or bar recessed or bored at its end to receive the body or shank of the article to be made, and of an external shape and size at the extremity of said end on its sides to correspond with the size and shape of the head to be formed, substantially as specified.

2. The combination of an ejector with the rod or bar of the hand-tool constructed to receive within its end the shank or body of the article to be made and shaped externally on the sides of said end at its extremity to correspond with the head to be formed, essentially as described.

138,959.—*Rock-Drill Carriage.*—GEORGE E. TOWNE and WILLIAM W. BAILEY, Fitchburg, Mass., assignors to BURLEIGH ROCK-DRILL COMPANY, same place. Application filed February 7, 1873.

Claim.—A drill carriage having, in combination with an open frame, the pivoted drill-bar carrier, arranged to operate substantially as described.

138,960.—*Molder's Flask.*—CHARLES TRUESDALE, Cincinnati, Ohio. Application filed March 8, 1873.

An eccentric acts upon the pintle of the hinge and raises the cope vertically and secures a clean lift of the sand without the use of wedges.

Claim.—1. A hinge for molders' flasks, consisting of two separable members, one of which has pivoted within it an eccentric that is adapted to operate against the pintle of the other member, substantially as herein described, and for the purpose stated.

2. The combination of the plate D, cheeks E E', pivoted eccentric F *f* G, studs H H', interval I, plate K, cheeks L L', pintle M, and flanges *s s'*, as and for the purpose described.

138,961.—*Game-Table.*—FERDINAND UEBEL, Cedar Rapids, Iowa. Application filed February 5, 1873.

The table has a deep rim about its edge, and across it a treble gateway. At the further end is a skeleton cage, in which and about the table-bed numerous pins are placed. The pins are to be knocked over by a spinning top set in motion at the slotted head of the table, and are variously numbered in the order of accessibility.

Claim.—1. An oblong table, rounded at one end, having its head-piece O at right angles to sides, and having an upwardly-projecting flange there-around, to adapt it for the use specified.

2. The arch C, having three openings, D, the corner-arches E E at rear of table, having openings of the same size; and the castle F, having six pillars with equal and similar openings, all arranged as described, on a floor having the notated stars X Y Z, and within the flange of table, as and for the purpose described.

3. The wooden collar at the foot of slot, and the metallic collar P, applied together to the head-piece having slot *m*, and in connection with the flanged table, as described, to enable the top to be conveniently operated.

138,962.—*Rudder for Vessels.*—JOHN W. VANBANT, Le Claire, Iowa. Application filed September 13, 1872.

A balance-rudder has on its forward end a hinged portion, which may extend beyond the rudder or be withdrawn into it at pleasure. The forward extremity of the hinged portion has a projecting metallic lip, which fits into a curved groove or guide-way fastened securely to the under and after part of the run of the boat, and the rudder is thus guided in this groove, follows the curve of the run, and prevents passage of water between the forward end of the rudder and the boat.

Claim.—1. The movable section B, when combined to operate with the rudder, as specified and set forth.

2. The arrangement of the metallic ways A, in combination with the movable section B, for the purpose set forth and specified.

138,963.—*Combined Stop-Cock and Check-Valve.*—ASA T. WALDRON, Waterford, N. Y. Application filed January 25, 1873.

A common stop-cock, having a hollow socket with a valve-seat and hollow plug within it, in which there is a spring holding the valve to it, and may be used for stop-cock or check-valve.

Claim.—The plug A, having partition, water-passage, and valve-seat, the spring G, valve F, and the socket H, constructed, arranged, and applied together in the shell, as and for the purpose set forth.

138,964.—*Cultivator.*—WILLIAM T. WALKER, Fonteney Mills, Ga. Application filed March 22, 1873.

The side beams are pivoted at the center in such manner that the plowman by the handles can increase or diminish the width of the space cultivated while the machine is in motion. Springs attached rigidly to the center beam serve to restore the frame to its usual shape.

Claim.—The springs H H secured to the fixed central beam A, and connected at their free ends with the pivoted and handled side beams C C by means of staples or other equivalent guides, as shown and described, to operate as specified.

138,965.—*Electrical Burglar-Alarm.*—HORACE E. WALTER, Richfield Springs, N. Y. Application filed December 10, 1872.

A peculiar arrangement of latch and stop mechanism, in connection with an alarm-clock, is under the control of an electro-magnet, so that on the interruption of the electrical circuit by the burglarious opening of a door or window in suitable connection the armature is released by gravity and the alarm is sounded. A stop operated by the clock prevents the alarm being sounded after a given hour in the morning.

Claim.—1. The weighted armature *a* and electro-magnet *g*, in combination with the hook *c*, latch-plate *c*, and stop *d*, to the alarm-clock movement, substantially as set forth.

2. The slide 6, arm 7, link 8, and lifter 9, in combination with the latch *c c*, stop *d*, electro-magnet, and alarm-clock mechanism, substantially as set forth.

3. The springs *l l* upon the removable back *m* that supports the clock-movement, electro-magnet, and alarm mechanism, in combination with the circuit-stops 2 upon the case *a*, as and for the purposes set forth.

4. The pin 10 upon the clock-movement, and the slide-rod 11, in combination with the latch *c*, latch-plate *c*, electro-magnet *g*, and stop *d*, as and for the purposes set forth.

138,966.—*Rolling Wire.*—WILLIAM WALTON and JOHN T. FALLOWS, Haughton Dale Mills, Denton, near Manchester, England. Application filed February 27, 1873.

Reducing wires to angular forms by passing two wires together through an angular groove in a pair of rolls.

Claim.—The method of forming two wires simultaneously by passing them between grooved rolls, in the manner described.

138,967.—*Printer's Chase.*—EDMOND A. WARREN, Brooklyn, N. Y. Application filed April 17, 1873.

The wedge-shaped side and end quoins are driven by screws projecting through the chase and working in nuts bearing on the inner side of the chase.

Claim.—The combination of the wedges or quoins C C and the screws E E, working in tapped holes therein, and turning, but confined longitudinally in, the chase, substantially as and for the purpose herein set forth.

138,968.—*Railroad-Car Brake-Wheel.*—CHARLES A. WATERBURY, New York, N. Y. Application filed April 9, 1873.

The rim of the wheel is of peculiar form, that the brakeman may have a firm hold as he is tightening the brakes.

Claim.—A brake handle or wheel made with alternately vertical and horizontal undulations, substantially as and for the purpose herein shown and described.

138,969.—*Washing-Machine.*—PETER B. WATSON, Belvidere, N. J., assignor of two-thirds his right to THOMAS WEST, same place. Application filed March 22, 1873.

A washing-machine constructed with its center roll, with alternate ribs of rubber and zinc resting upon a spring-bed of rolls in ordinary form.

Claim.—The washing-roller having alternate zinc-covered ribs *k* and soft rubber puffs *l*, substantially as specified.

138,970.—*Washing-Machine.*—VOLNEY WHITE, Corry, Pa. Application filed April 4, 1873.

In a wash-tub is arranged a corrugated rubber resting on spiral springs. Above this is journaled, on the edges of the tub, a close hollow cylinder, on the face of which is a groove, in which is a rod held in place by yielding loops or staples.

Claim.—The combination of the close hollow cylinder C, having the removable rod E mounted in a groove in its face, and secured thereto by the yielding loops or staples, as described, with the corrugated spring concave B located centrally of the tub, and underneath the cylinder C, all constructed, arranged, and operating in the manner and for the purpose described.

138,971.—*Bed-Bottom.*—NELSON O. WILCOX, Omaha, Neb. Application filed April 19, 1873.

Lever spring-slats are placed at the sides, upon the ends of which are cross-bars notched to hold the longitudinal slats.

Claim.—The arrangement and combination of the spring-slats C, middle slats D, and cross-piece E, as and for the purposes described.

138,972.—*Row-Lock.*—GEORGE C. WILEN, Philadelphia, Pa. Application filed March 22, 1873.

Bail or hinged bearing, to be turned into the boat out of the way, forms, in connection with the plate B, the socket for the row-lock.

Claim.—The socket-plate B and bail C, combined with the row-lock of a boat, as and for the purposes described.

138,973.—*Stock for Drill or other Bits.*—HARRY B. WILLIAMS, Cincinnati, Ohio, assignor to himself, ALBERT G. CORER, LYMAN L. BENSON, and JOHN B. SCHRODER, same place. Application filed February 3, 1873.

The frame of the apparatus is adapted to clamp a railroad rail, and also to support a stock, which can be used as a wrench or for holding a drill to be used for drilling holes in the webs of railroad rails.

Claim.—1. The combination of the flanged bed or clamp-bar A C C' having the lips B B' and the sliding jaw D, wedge *d*, nut *e*, and lug E, and feed-screw F G having the recessed point *f*, substantially as shown and described.

2. In combination with the above, the reversible convertible drill and wrench, consisting of the parts h I *i* J L M *m* N O O' *o* P P' Q *q q'* R H, constructed, arranged, and operating substantially as shown and described.

138,974.—*Wash-Boiler Attachment.*—HENRY W. WILLIAMS, Grinnell, Iowa. Application filed October 5, 1872.

A metallic plate of the form to fit in a wash-boiler, with a large oval opening in the center, across which extend bars, and below these bars a short distance a close plate is supported on triangular partitions.

Claim.—The wash-boiler attachment herein described, having plates A and D connected, as described, together with the aperture B, guards C, and supporting partitions D', constructed and arranged substantially as and for the purpose specified.

138,975.—*Bush-Hammer.*—EDWARD J. WORCESTER, Worcester, Mass. Application filed March 1, 1873.

Claim.—In the manufacture of bush-hammers, a bar formed by rolling and planing, from which the hammer sections may be cut, substantially as shown and described.

138,976.—*Sieve.*—GEORGE WRIGHT, Savannah, Mo. Application filed January 11, 1873.

The free ends of the wire bottom are secured together and in the groove by solder.

Claim.—The sieve A, constructed with groove *b* to receive the sieve-bottom, the free ends of the wire being secured together and to the vessel by solder, as described and shown.

138,977.—*Step-Ladder.*—SAMUEL WRIGHT, Hillsborough, Mo. Application filed March 11, 1873.

The legs are connected below by a cross-bar, but move independently, rotating slightly on their own axes. The object is to allow of their being placed so as to stand firmly on uneven ground.

Claim.—A step-ladder, having its legs or braces secured to it by means of joints, so as to allow each leg a limited, free, and independent movement, substantially as set forth.

REISSUE PATENTS.

5,401.—*Machine for Forming Building-Blocks.*—JOSIAH S. ELLIOTT, Chelsea, Mass., assignor to UNION STONE COMPANY.—Patent No. 111,921, dated February 21, 1871. Application filed December 24, 1872.

The hopper being filled, the machine is set in motion. The feeder is carried under the ram. The bottom of the feeder withdrawn, the ram strikes a blow through the material, carrying it into a mold and partially condensing it. The blow is repeated and the ram raised for a third blow. The feeder is carried back under the hopper to its original position, when a third blow is given by the ram, which is then raised, the cone withdrawn downward. The mold is pressed upward against the face of the ram, which pushes out the molded article upon the table.

Claim.—1. The machine herein shown and described for manufacturing artificial stone, consisting of the ram B, mold C, feeder B', core *w*, and off-bearing table A, constructed, combined, and operating as set forth.

2. The combination, herein shown, of the ram B, reciprocating feeder B', movable mold C, and off-bearing table A, with their connecting and operating mechanism, as herein set forth.

3. The combination and arrangement of the mold C, shaft *d*, cams W, and their connections, as herein shown and described.

4. The arrangement of cams W and X, shaft *d*, and core *w*, with their connections, as herein shown and described.

5. The combination of the lever *e* and the pivots *u* and *t*, with the table A and the scraper *v*, as and for the purposes described.

6. In an artificial-stone machine, the combination, with the ram, of a cam acting directly thereon to lift and release the same, as herein substantially described.

5,402.—*Razor-Strop.*—OLIVER B. HOWARD, Deering, assignor of one-half interest to OLIVER P. SHEPHERD, Portland, Me.—Patent No. 117,421, dated July 25, 1871. Application filed April 3, 1873.

Claim.—1. A band of leather provided with a thin elastic, but non-extensible, base of metal cemented thereto, to be used in a razor-strop, in the manner substantially as shown.

2. The combination of the band *a*, constructed as described—that is, having a non-extensible base cemented thereto, with the handle *b*, rod *c*, and end piece *d*, in the manner and for the purposes substantially as shown.

5,403.—*Button-Fastening.*—EDWIN F. LEE, Bayonne, N. J., assignor of one-third interest to JOSEPH WERNHOLD, New York city.—Patent No. 109,134, dated November 8, 1870. Application filed March 27, 1873.

A metallic disk has a tongue struck up from one side. The tongue has an enlarged end, which, after being passed through the cloth and the eye of the button, is secured in a slot on the opposite side of the disk.

Claim.—A button-fastening composed of a disk, A, and tongue B, made in one piece, said tongue having an enlargement at its free end to fit a recess in the disk, for operation substantially as described.

5,404.—*Cotton-Bale Tie.*—JAMES R. MCCLINTOCK, Mobile, Ala., for himself, and as the legal representative of JOHN CUMBERLAND, deceased, assignor, by mesne assignments, to ANDREW J. AIKEN, New Orleans, La.—Patent No. 115,235, dated May 23, 1871. Application filed April 21, 1873.

Claim.—The buckle A provided with a central opening or slot, B, when the same is used for fastening the ends of metallic bands together around cotton-bales, in the manner substantially as herein described.

5,405.—*Stove-Door.*—DAVID N. MARTIN, Lawrence, Mass., assignor to D. N. and C. M. MARTIN.—Patent No. 116,334, dated June 27, 1871. Application filed June 20, 1872.

A rim or facing of brass or other non-conducting metal is placed on the inner side of the draft-door and on the edge of the opening in the stove or furnace, against which it shuts.

Claim.—A door, valve, slides, or other device for affording an opening below the grate of a stove or furnace when faced around the edge with brass or other non-corrosive metal, as above described, so that the said metal may close tightly against a similar facing upon the stove or furnace, for the purposes hereinbefore set forth.

5,406.—*Railway Oil-Car.*—SAMUEL W. MURRAY and BENJAMIN P. LAMASON, Milton, Pa.—Patent No. 100,056, dated February 22, 1870. Application filed December 26, 1872.

Through metallic tubes, which are connected to the car-stringers by means of brackets, extend tie-rods, which are secured to the end beams. A hand-rail surrounds the car, the posts by which the rail is supported being secured to the brackets. The car-body and truck are prevented from being laterally displaced by means of flanged bearing-plates on the car-body and truck-bolster and a king-bolt having a collar at its center, which is held between the plates.

Claim.—1. The combination, with the main frame of the car-body, of the brackets I, lateral tubes K, and the rods L, constructed and arranged substantially as and for the purpose set forth.

2. In combination with the brackets I, the posts O and hand-rail J, substantially as and for the purpose set forth.

3. In combination with the flanged center plates L K of the body of the car and the bolster of the truck, the king-bolt Q having a collar, R, substantially as described, for the object specified.

4. The combination, with the lateral tubes K and floor M, of the hooked bolts P, as and for the purpose set forth.

5. The man-hole cover X of a railroad oil-car, having a dovetailed groove for the reception of a packing-strip, V, as set forth.

5,407.—*Water-Wheel.*—JAMES P. COLLINS, Norwich, Conn.—Patent No. 26,339, dated December 6, 1859; reissue No. 979, dated June 12, 1860. Application filed June 16, 1871.

A number of buckets with central covering box or cap, in combination with central disk or lifting-plate, for counteracting the weight of water on the buckets. A flange or ring is placed between the stationary guide and the wheel for preventing the ingress of the water to and its consequent pressure upon the center of the wheel. There is also a packing-ring fitted within a recess or groove surrounding the wheel, and adapted to move laterally to compensate for wear or irregularities in the movement of the wheel.

Claim.—1. A water-wheel provided with annularly-arranged buckets and a central covering box or cap, in combination with a disk or lifting plate for relieving or counteracting the weight or pressure of the water on the buckets, substantially as described.

2. The ring or flange *n* interposed between the stationary guide and the wheel for preventing access of the water to, and its consequent pressure upon, the center of the wheel, substantially as and for the purpose specified.

3. The combination, with a water-wheel provided with annularly-arranged buckets, as described, of a lifting-plate for counteracting the weight of the water on the buckets, and a ring or flange interposed between the wheel and the stationary guide-box or cap for preventing the ingress of water between said wheel and guide-box or cap, as described.

4. The packing-ring *i* fitted within a recess or groove surrounding the wheel, and adapted to move laterally to compensate for wear or irregularities in the movement of the wheel, as described.

5,408.—*Machine for Graduating Carpenters' Squares.*—HORACE K. JONES, Kensington, Conn., assignor to THE HART, BLIVEN AND MEAD MANUFACTURING COMPANY, (formerly known as THE HART MANUFACTURING COMPANY.)—Patent No. 93,449, dated August 10, 1869. Application filed February 25, 1873.

The square to be marked is held by a clamping device at the lower part of the machine, and the cutters or gravers, arranged in suitable series, are mounted on horizontal bars carried by two revolving vertical disks supporting their extremities, and are controlled by cams and springs in such manner as to bring them into action and vary the lengths of their cuts as desired.

Claim.—1. The combination of the cams G and bars F with the tool-holders H and tools I, when the parts are constructed and arranged substantially as herein described.

2. The combination of the bars F, spring *s*, tool-holder H, and gage K, all constructed and arranged substantially as described.

3. The construction of the tool and socket so that the edge of the tool fits into a V-shaped recess, the angle of which is in line with the working-point of the tool, substantially as and for the purpose herein described.

4. The arrangement of the several sets of tool-holders and tools upon the successive bars F in the manner described, so that only one line is cut by the same graver, and the several lines of graduation are cut by successive tools at certain distance to the right or left, substantially as herein described.

5. In a machine for cutting graduations on squares, &c., the combination of the gravers I and their holders H with cams G and springs *d*, for throwing the gravers out of action at predetermined periods of time during the stroke of the same to cut graduation-marks of varying lengths, substantially as described.

6. The clamping device for holding squares of varying tapers to be graduated, consisting of the fixed jaw P, the rocking adjustable jaw M, and the cam N, in combination, substantially as described.

5,409.—*Machine for Bending Tires.*—JOSEPH TOMLINSON, Onslow, Iowa.—Patent No. 135,498, dated February 4, 1873. Application filed April 26, 1873.

Two posts, movable vertically by a screw, support the axle of the upper roll E, and hinged on this axle are two pairs of cheeks which support, respectively, the two rolls D, and also small adjustable side rolls. The cheeks rest on rails on the base-plate, and it results that by elevating the posts, cheeks, &c., the rolls D will be brought nearer together, while a contrary movement will produce a contrary effect. The three rolls are connected by gearing at both ends, and are driven by pinions on a supplementary shaft.

Claim.—1. The tire-bender composed of the hinged cheek-pieces B B, adjustable rollers D D, and movable roller E, all arranged in respect to each other as herein shown and described.

2. The subject-matter of the foregoing clause, in combination with the movable posts *b b* and screw *f*, for adjusting the instrument to produce circles of suitable size, as specified.

3. The laterally-adjustable rollers *g g*, arranged in the hinged cheek-pieces B B of a tire-bender, substantially as herein shown and described.

4. The shaft e^2, pinions b^2, straps d^2, collar e^3, and set-screw f^2, combined and arranged with the posts *b*, wheels *i*, and pin *d*, substantially as specified.

5,410.—*Curing and Packing Meats.*—ISAAC ATKINSON, Hamilton, Canada.—Patent No. 134,965, dated January 21, 1873. Application filed May 3, 1873.

Claim.—The process herein described for curing and packing meat, the same consisting in rolling the meat or meats in fine alum after being salted and washed, and packing with a sheet of paper or analogous material between or around each piece to prevent injurious contact, substantially as and for the purpose specified.

5,411.—*Buckle.*—JOHN A. MASHMEYER, Beardstown, Ill., assignor to SAMUEL S. SARGEANT, Newark, N. J.—Patent No. 77,064, dated April 21, 1868. Application filed December 5, 1872.

Claim.—1. In a harness or other buckle composed of a frame, a bail or bow, and a tongue, the arrangement, as described, of the bail or bow B in combination with the frame A to both slide therein and loop around the trace or strap over an opening in the said frame, substantially as herein specified.

2. A harness or other buckle composed of a frame, A, and a bail or bow, B, sliding therein, and having a tongue on the crossbar *a* that draws or presses on the trace or strap over an opening in the frame, substantially as herein specified.

3. In a harness or other buckle composed of an open frame and a bail or bow sliding in the same, the outward lateral projections on the bail or bow to prevent its sliding through the frame, substantially as herein specified.

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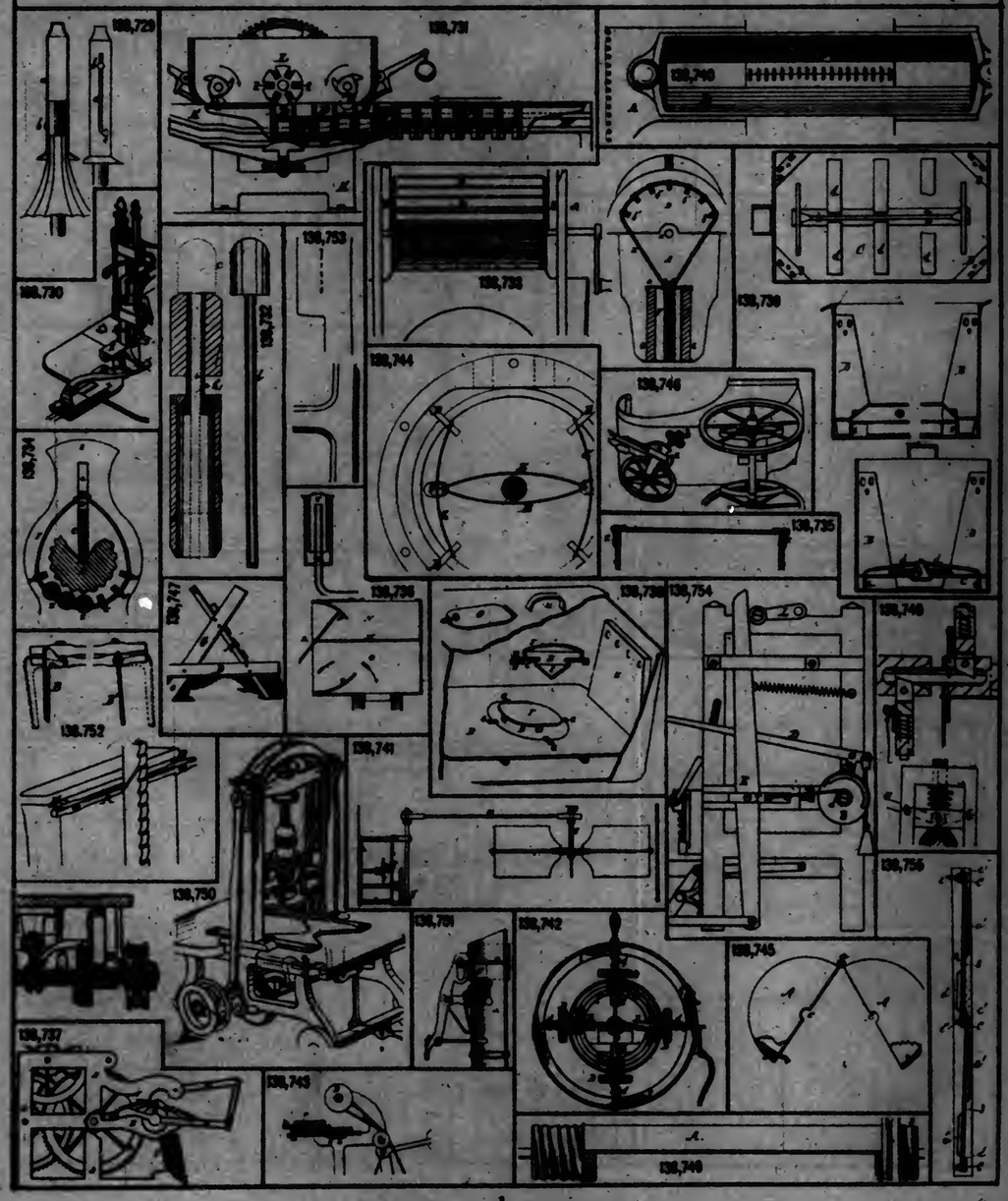
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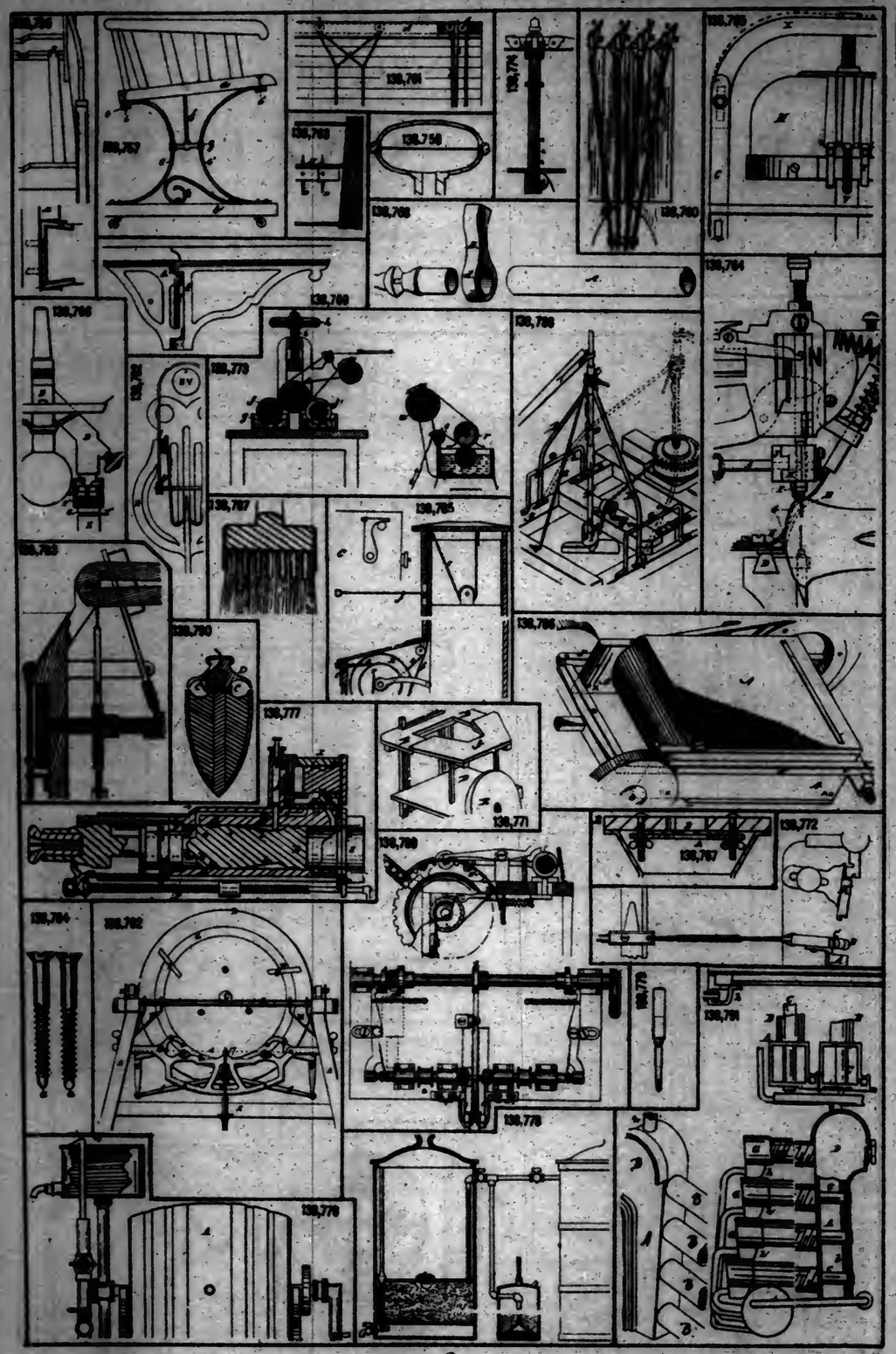
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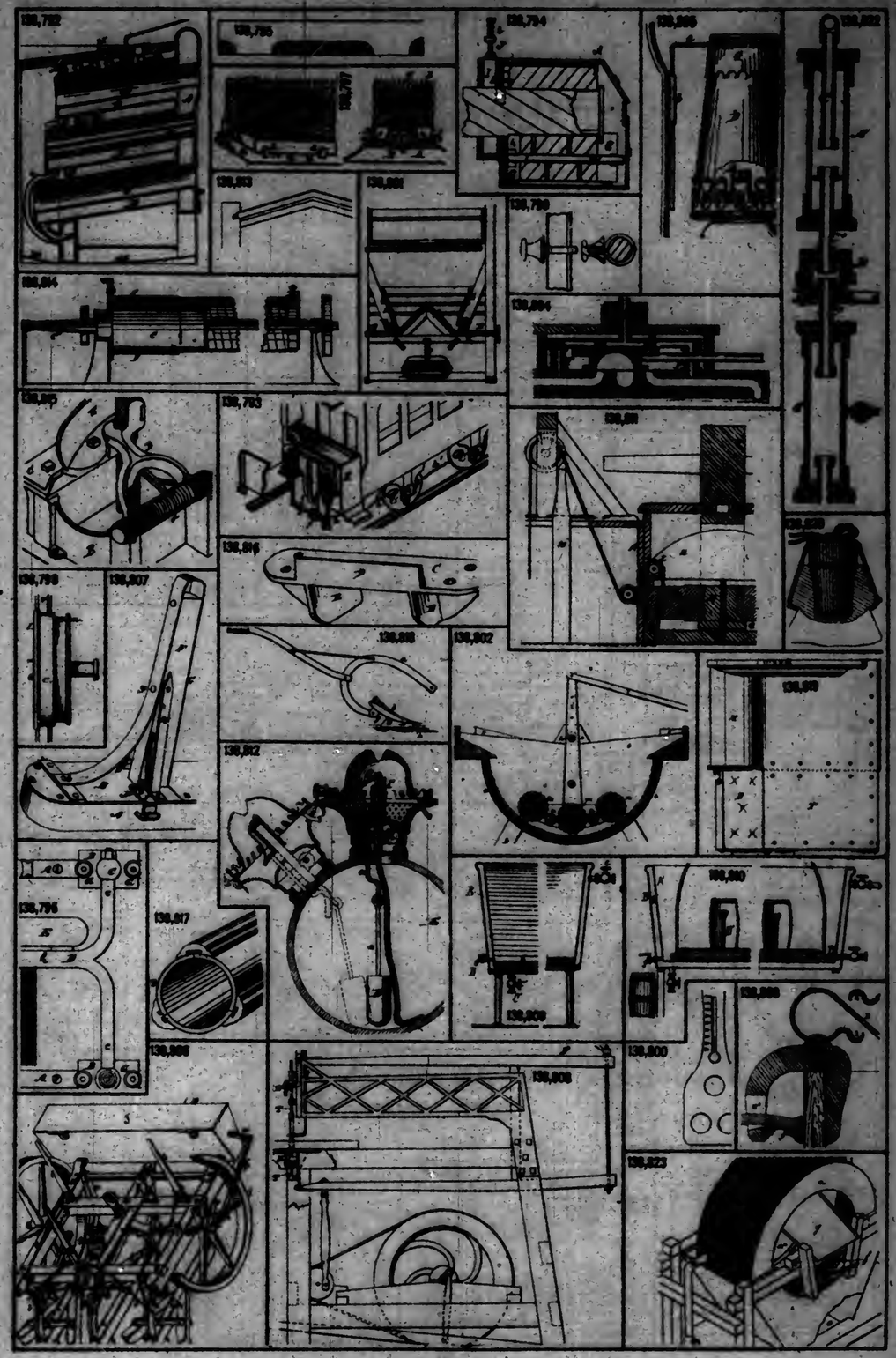


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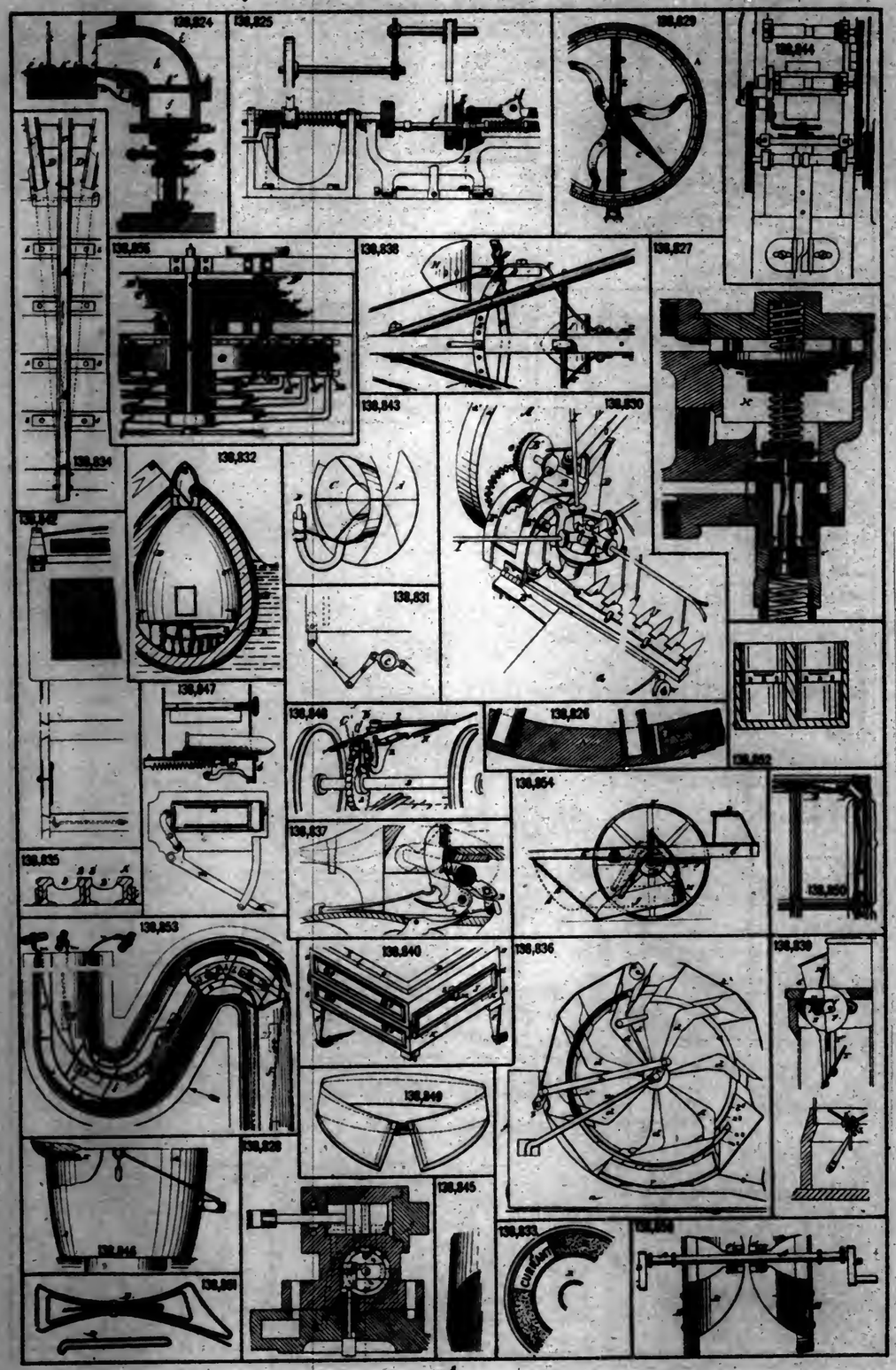
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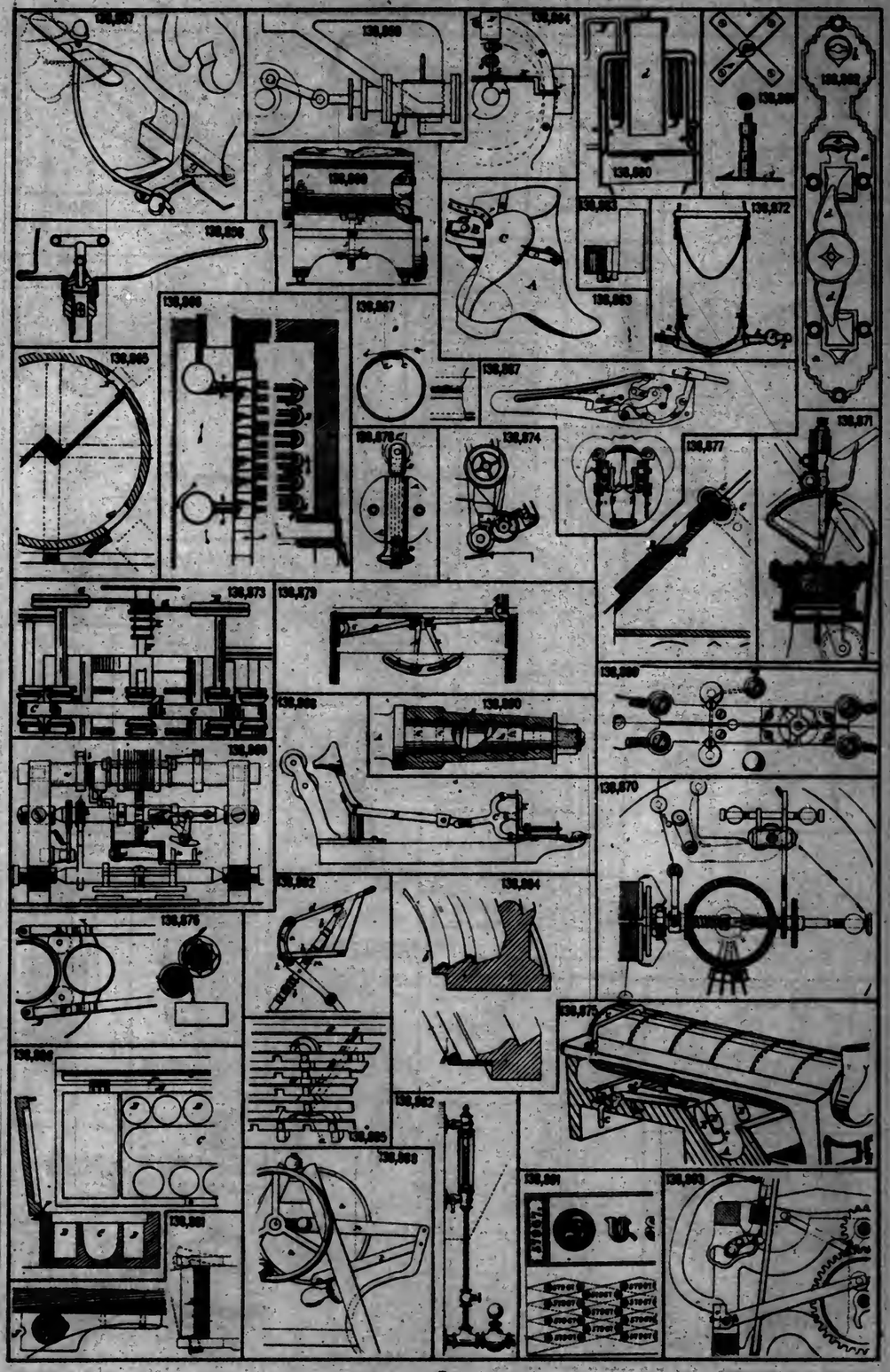
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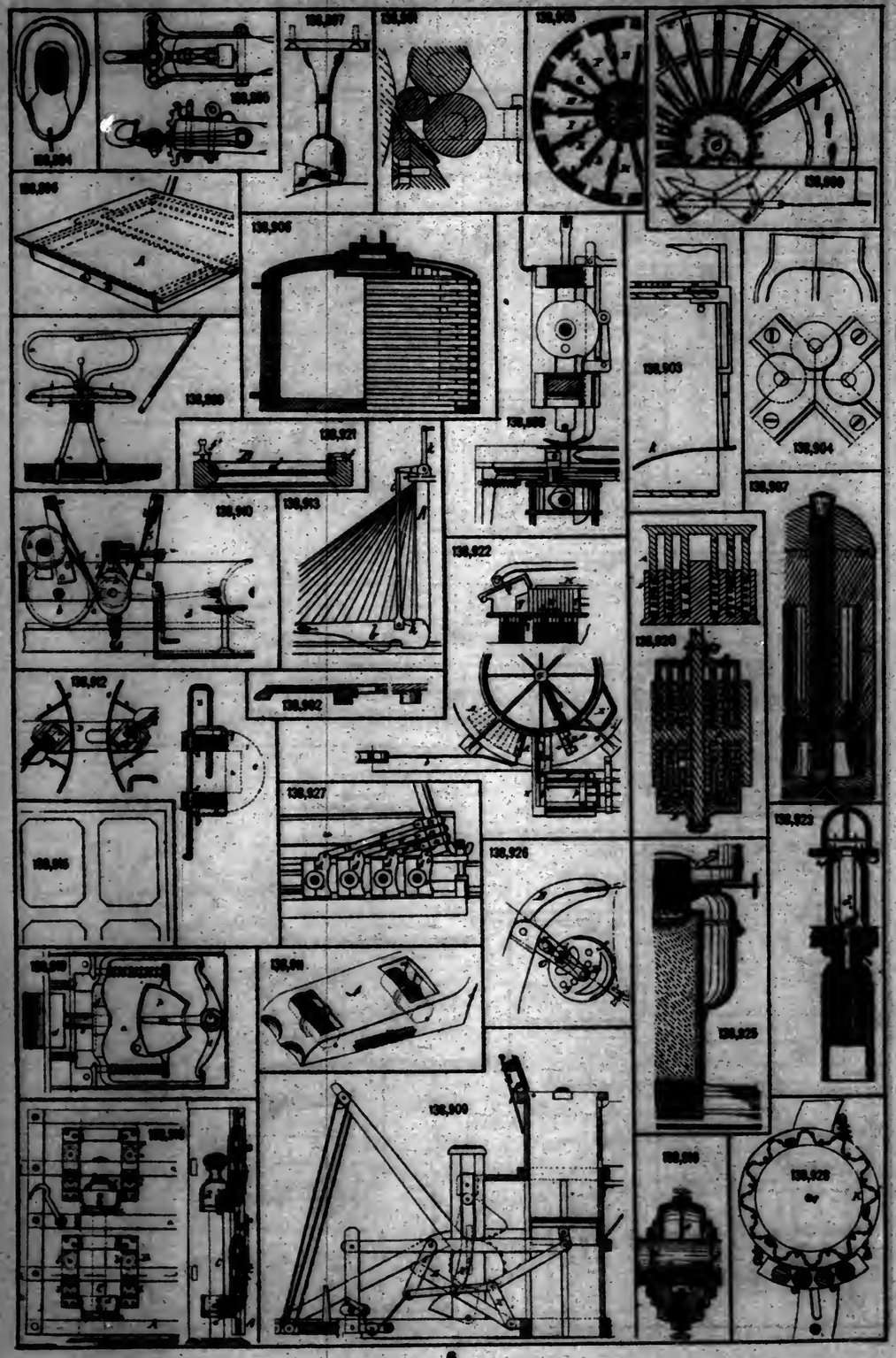
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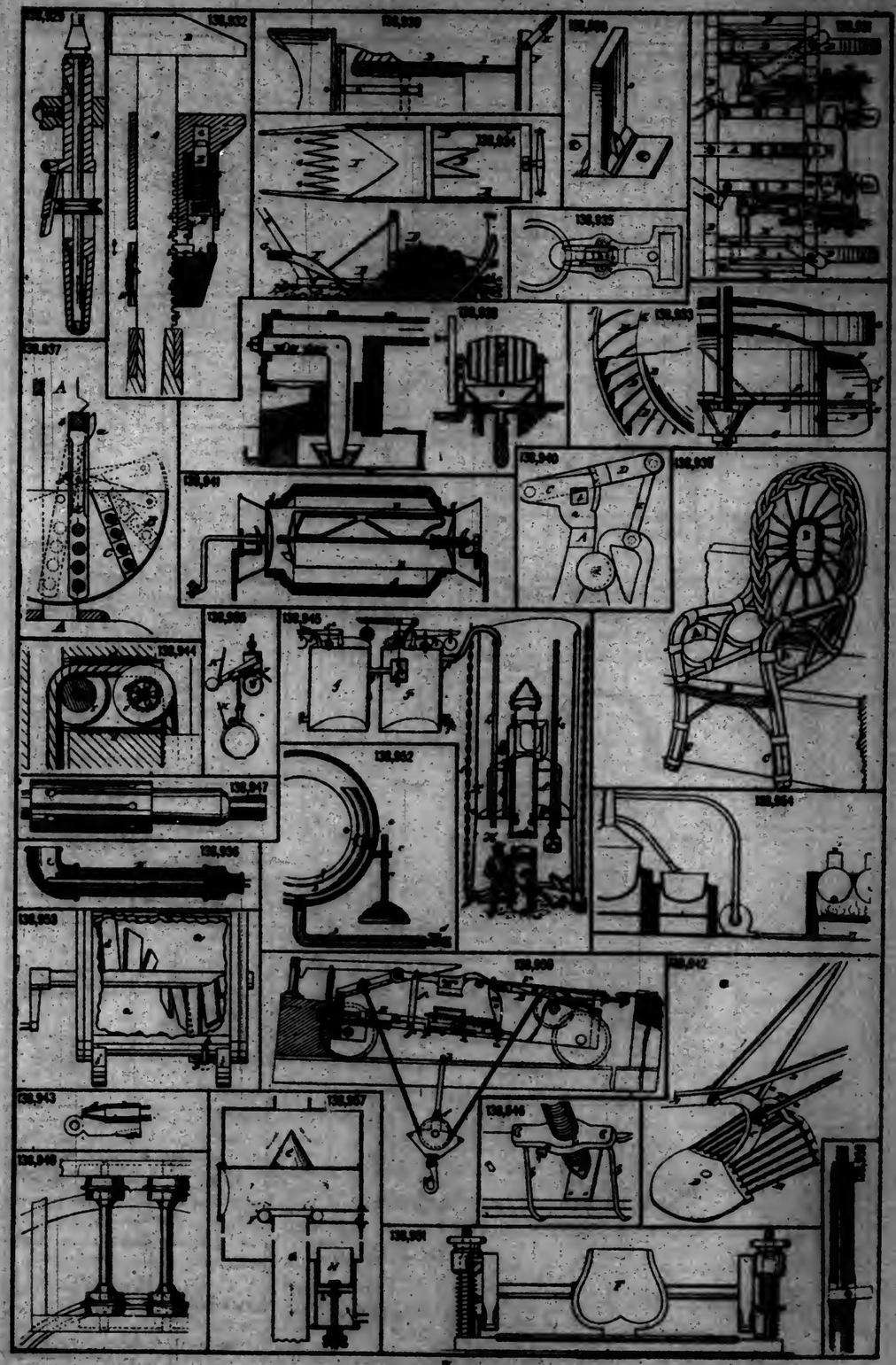
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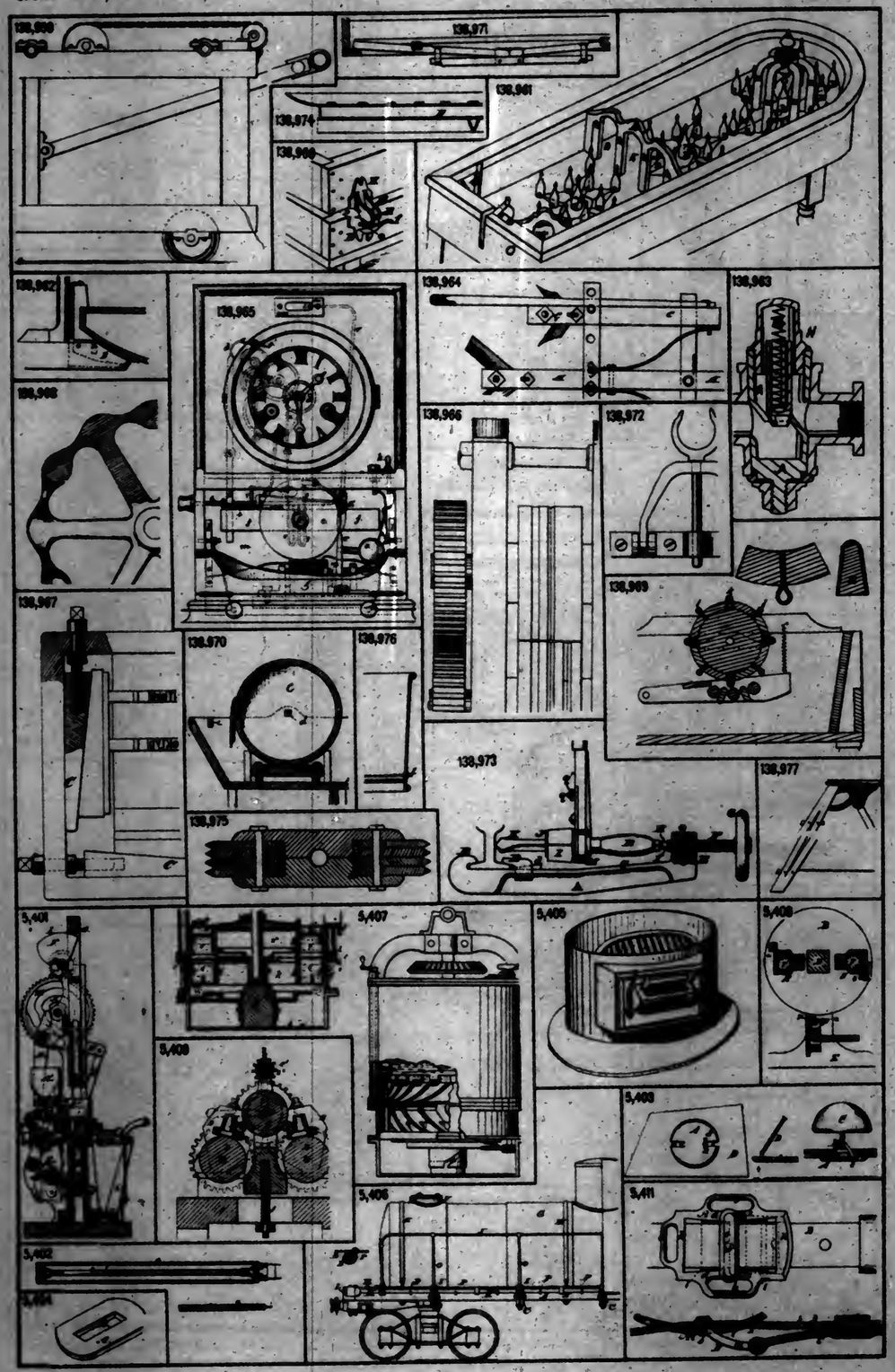
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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

GEO. C. ROBERTS *vs.* WM. F. RYER.

[In Equity.—Before Blatchford, Judge.—Opinion filed March 18, 1873.]

THE REISSUED PATENT OF D. W. C. SANFORD FOR REFRIGERATORS DECLARED VOID—SANFORD'S REFRIGERATOR COMPARED WITH LYMAN'S.

The claim for "the employment, in a refrigerator, of an open-bottom ice-box, or equivalent thereof, in combination with a dividing partition, open above and below, so placed that by means of self-operating internal circulation the whole of the contained air shall be kept in motion, and caused to revolve around this partition in currents, moving downward only on one side of this partition, and upward only on the other side, when the same is combined with a chamber for the refrigeration of food or provisions, placed directly under said ice-box," held to be infringed by a refrigerator in which there is no dividing partition distinct from the walls of the open-bottom ice-box, the construction being in other respects the same.

Sanford's refrigerator compared with the earlier invention of Asel S. Lyman.

A suit in equity, under the reissued patent of D. W. C. Sanford, granted April 21, 1857, the original of which bore date November 13, 1855, the alleged invention consisting of an improvement in refrigerators.

Besides the general issue, the defendant set up the special defense of prior invention by Azel S. Lyman, as set forth and fully discussed in the opinion of the Court.

[*Barrett & Redfield* and *Thos. A. Jenckes*, for complainant. *F. A. Betts, J. Gutman, Jr.*, and *J. N. Piper*, for defendant.]

BLATCHFORD, *J.*:

This suit is brought on reissued letters patent, granted, April 21, 1857, to D. W. C. Sanford, for an "improvement in refrigerators," the original patent having been granted to Sanford, as inventor, November 13, 1855, and the patent, as reissued, having been extended October 20, 1869, for seven years from the 13th of November, 1869. The reissued patent has three figures of drawings, which are referred to in the specifications annexed to it, figure 1 being a "perspective view, exhibiting the interior of the refrigerator," figure 2 "a vertical middle section," and figure 3 "a perspective of a smaller-sized refrigerator, with one of the apartments contracted." The specification says:

"My invention consists of an improvement in refrigerators, whereby the whole of the contained air is kept in continual rotation, purification, desiccation, and refrigeration, and with economy of ice. The circulation of the air of my refrigerator is entirely confined, and consists of a continuous movement, or rotation of the air confined within the apartment, without any communication with the external air, except when it becomes unavoidable, from opening the refrigerator. I have found, for purification, that external air is not necessary, and it is obvious, that any arrangement by which a current of external air, after being cooled, is passed through the refrigerator, must be attended with a great consumption of ice, and that any arrangement which admits of stagnation of air in any part of the refrigerator, and does not compel circulation of air throughout the entire apartments, is highly objectionable. Both of these conditions I have avoided, as will be seen from the following description."

Then follows the description, with references to the drawings. Within a suitable casing a partition is inserted, with an opening over the partition, at its top, and an opening under it, at its bottom, so that there is free communication between the two apartments formed by the partition. The drawings show the partition as being vertical and the openings as being of little vertical height. At a high point in one of the apartments an ice-receptacle is placed. This receptacle is perforated in the sides and bottom, so as to allow free passage of air through, and in contact with, the ice. The ice is prevented from coming into contact with the sides of the receptacle, by projections indicated, which, in this case, are stated to be made by punching the holes in such a way that a portion of the metal is protruded. The bottom of the ice-receptacle is funnel-shaped, so as to conduct the water of the melting ice to a central discharge, whence it falls into the cup, or flaring end, of an escape-pipe, which passes directly out through the

side of the refrigerator. It is stated to be important that the escape-pipe should occupy as little room as possible, in order not to obstruct the motion of the air. The shelves in the two apartments are perforated, to allow of the free transit of air. The apartment above which is the receptacle is designated as apartment C. The apartment on the other side is designated as apartment D. The opening at the top of the partition is designated as B′, and the opening at its bottom as B″. The specification then proceeds:

"When the ice is placed in its receptacle, and the refrigerator closed, the whole of the contained air will be set in motion, and continue to circulate or revolve as long as there is any ice or refrigerating material in the receptacle. The operation is as follows: The denser air in contact with the ice and walls of the receptacle descends, and its place is immediately supplied with warmer air from the apartment D, through the opening B′. The denser air, descending through the entire apartment C, and passing through the opening B″, keeps up a continual displacement of the whole of the contained air of the refrigerator. The apartment D has a higher temperature than apartment C, and the temperature varies, with a gradual rise from the time the air leaves the receptacle until it arrives at the upper part of apartment D. It is evident, that the rotation of the air will continue until the ice is melted and an equilibrium of temperature takes place throughout the entire refrigerator. As the air passes through the apartments, it imbibes moisture from fruits, vegetables, meats, and other articles, and, when it comes into contact with ice, its capacity for moisture is diminished by condensation, and the moisture is condensed upon the ice, and passes off with the waste water. The circulating air thus being continually desiccated, every part of the apartments is kept from mold and dampness. The exhalations and odor of meats and other articles are also precipitated upon the ice with the condensed vapor, and thus the entire apartments are kept sweet.

"It is well known, that mold will not generate in a current of air, and it is known, that, when once formed, it propagates itself and spreads with rapidity. Therefore, if any one part of the refrigerator be out of the direct course of circulation, the air will stagnate there, and develop mold, which will contaminate the whole apartment. The apartment D may vary in width, and it may be, as shown in fig. 3, so narrow as to serve merely as a passage for the ascending current of air, the greatest benefit being always derived from the downward current, in apartment C.

"I am aware, that various devices have long since been known for causing the internal circulation of air in apartments of houses and refrigerators, but I am not aware, that, in any instance, a complete and continued rotation, purification, desiccation, and refrigeration of the whole of the contained air of a refrigerator has been compelled under the same arrangement as in my improvement. Therefore, what I claim as my improvement in refrigerators, is the employment of an open-bottom ice-box, or equivalent thereof, in combination with a dividing partition open above and below, so placed, that, by means of self-operating internal circulation, the whole of the contained air shall be kept in motion, and caused to revolve around this partition in currents, moving downward only on one side of this partition, and upward only on the other side, when the same is combined with a chamber for the refrigeration of food or provisions, placed directly under said ice-box, as set forth. I do not claim, by itself, a partition dividing vertically one compartment of a refrigerator from another, nor do I claim placing articles to be refrigerated in a descending current of air; but, I do claim placing shelves or fixtures for holding articles to be refrigerated, or the articles themselves, in the descending current directly under an open-bottom ice-box, in combination with a dividing partition open above and below, as set forth. I claim, in combination with said shelves or fixtures, so placed, constructing the open bottom of the ice-box in such manner that the air may pass freely down through the same, and fall directly from the ice upon the articles to be refrigerated, while, at the same time, the drip of the water is prevented, as set forth."]

The figures 1 and 2, in the figures of drawings in the reissued patent, represent the vertical partition as in the middle of the width of the refrigerator. Figure 3 represents the apartment C, under the ice-receptacle, as occupying nearly the entire width of the refrigerator, and the apartment D as a mere flue, without shelves, and too narrow for any other use. Figure 1 represents the shelves in each apartment as constructed of parallel rods, each rod as long as the width of the apartment, and parallel with the width of the refrigerator. There are, in figure 2, arrows, pointing vertically downward in apartment C, and vertically upward in apartment D, indicating the course of the air.

In the drawings of the original patent, there are but two figures. In each of them, the vertical partition is in the middle of the width of the refrigerator. The shelves in figure 1 are represented as, each of them, one-half of it, in a direction parallel with the width of the refrigerator, solid, and the other half of it perforated with holes, and so arranged that each solid half has a perforated half immediately above it and a perforated half immediately below it, and each perforated half has a solid half immediately above it, and a solid half immediately below it. There are, in both figures, arrows, representing the currents of air as passing diagonally from one perforated part to another perforated part. The specification of the original patent, after its reference to the drawings, contains everything that is above set forth as contained in the specification of the reissue, and in the same words, with the exception of what is above put in brackets, as quoted from the reissue, and that is not found in the original specification. Instead of it, the original specification contains this language:

"I am aware, that various modes have been tried and used for circulating air in refrigerators, but I am not aware, that, in any instance, a complete and continued rotation, purification, desiccation, and refrigeration of the whole of the contained air in the refrigerator has been compelled, as it is in my invention, and I, therefore, claim the arrangement herein set forth, for causing the perpetual rotation of the whole of the air contained within the refrigerating apartments, said arrangement consisting, when the refrigerator is closed, of an endless passage or chamber, the walls, shelves, and ice-receptacle of which are so placed and constructed, that the air is compelled to circulate through the entire apartment or apartments, and from which the water of the melting ice is discharged immediately from the refrigerator, instead of flowing between its walls, the whole being constructed as hereinabove set forth."

It is apparent, from the language of the specification of the original patent, that Sanford, when he applied for his original patent, believed that he was the first inventor of any arrangement in a refrigerator, whereby there was effected a complete and continued rotation, purification, desiccation, and refrigeration of the whole of the contained air of a closed refrigerator. He, therefore, claimed, in that specification, the use, in a closed refrigerator, of an endless passage, furnished with walls, shelves, and ice-receptacle, so placed and constructed as to compel the perpetual rotation or circulation, throughout the entire apartment or apartments, of the whole of the air contained therein, with the provision described for the discharge of the water of the melting ice, the whole being constructed as set forth. The rotation of the air in a closed refrigerator, through the ice-receptacle, was the great feature dwelt on by Sanford, in the original specification, and the statement of the invention, in that specification, and in the reissue, in the same words, shows, that, when applying for the reissue, the same idea was entertained by Sanford, namely, that he was the first person to make an improvement in refrigerators, whereby the whole of the contained air, in a closed refrigerator, should be kept in continual rotation, purification, desiccation, and refrigeration, or, in other words, the first person to make such an arrangement of ice-box and dividing partition, that, by means of self-operating internal circulation, the whole of the contained air, in a closed refrigerator, should be kept in motion and caused to revolve around the partition. This is further shown by Sanford's statement, made September 16, 1868, and filed in the Patent Office October 7, 1868, in his application for the extension of his patent, in which he says, that he made his improvement because he had seen, in Schooley's refrigerator, a defect, in introducing external air, cooling it by the ice, and suffering it to escape, thus allowing a continuous stream of warm air to enter the refrigerator and a stream of cold air to flow out of it, and wasting the ice; that he set himself to overcome such defect; and that he did so "by closing the external openings of Schooley's refrigerator, and making, instead thereof, an opening in the top of the partition, above the ice, so as to have a free communication from one side of the partition to the other, through the openings at the top and bottom of the partition, thus causing, by means of the ice, a continuous rotation of the air contained in the refrigerator, by which contrivance a lower temperature was produced, with less consumption of ice, than when the air was allowed to escape as soon as it was cooled, as in Schooley's." The economy of ice necessarily follows from establishing the rotation of the air in the closed refrigerator, and that rotation is established by causing the air to rotate through the ice-box, from top to bottom, and then down, and under the bottom of the partition, and then up, and over the top of the partition, and into the top of the ice-box again. In the rotation, the air is, necessarily, by frequently coming into contact with, and passing through, the ice, purified, dried, and made cold. The cooling of the air initiates the rotation, if there be an open bottom to the ice-box, and a dividing partition open above and below. When the rotation has once commenced, it must continue, and the other consequences described must follow.

With this general view of the invention, we are prepared to consider what the reissue claims. There are but two claims, really, in the specification. The first claim is a claim to a combination of three elements—(1.) An open-bottomed ice-box, constructed in such manner, that, by the perforation of holes in the sides and bottom of the box, the air will pass freely down through, and in contact with, the ice in the box, so that it can fall directly from the ice upon articles to be refrigerated; (2.) A dividing partition, open above and below, so placed, in relation to such ice-box, that, by means of self-operating internal circulation, in a closed refrigerator, the whole of the contained air shall be kept in motion, and caused to revolve around such partition, in currents moving downward only on one side of such partition, and upward only on the other side; (3.) A chamber for the refrigeration of food or provisions, placed directly under the ice-box, whether there are shelves or fixtures in such chamber, to hold the articles in the descending current, directly under the open-bottomed ice-box, or whether such articles are placed in such current, in such chamber, under the open-bottomed ice-box, not by means of shelves or fixtures placed there, but by being suspended there, or placed on the floor, or otherwise kept in position. The claim which immediately follows the two disclaimers is the same thing as the claim which precedes such two disclaimers, and must be read as an explanation of it. The second and last claim is a combination of three elements, namely, the first and third elements of the first claim, combined with the described arrangement for carrying off the water, whereby the cold air can fall directly down upon articles to be refrigerated, while the water is prevented from dripping into the apartment.

This construction of the specification is that indicated in the case of *Roberts* vs. *Harnden*, (2 Clifford, 500.) In that case, the partition in the defendant's machine did not extend downward below the lower end of the side of the ice-box, and, in fact, the side of the ice-box constituted the partition; and it was urged, that the defendant had no device or partition, to keep separate the ascending currents and the descending currents. But, the Court held, that, so long as the general tendency of the air in the compartment containing, and beneath, the ice-box, was downward, and the general tendency in the other compartment was upward, the difference in the arrangement of the partition was not such as to relieve the defendant from the charge of infringement, it appearing that he extended the side of the ice-box downward far enough to perform the same function, in substantially the same way, and to produce the same result, as the plaintiff's partition.

In the case of *Roberts* vs. *Harnden*, it is stated, that the novelty of the invention was denied by the answer. On that point, all that is said, in the decision of the Court, is, that the defendant had not introduced any satisfactory evidence tending to show that the patentee was not the original and first inventor of what is described in the reissued patent as his invention. It is understood, that the principal defense relied on was the alleged prior invention of one Thaddeus Fairbanks. An *ex parte* affidavit of Azel S. Lyman, made April 6, 1864, with a drawing annexed to it, is shown to have been introduced in evidence, in the case against Harnden, on the point of a prior invention by Lyman, and to have been the only evidence introduced in that case on that point. That affidavit contained only a description of a refrigerating car, two of which were fitted up, in 1853, under the direction of Lyman, and were used by him, in July and August, 1853, in carrying oysters and a dressed sheep, by rail, from New York to Cincinnati, and in being loaded, near Columbus, Ohio, with dressed beef and lambs, and started for home. On the contents of that affidavit alone, no Court could hold the Sanford patent to be void for want of novelty.

The defendant has a refrigerating-room which he uses in his business as a butcher, and which is alleged to infringe the plaintiff's patent. The room is eight feet three inches long, six feet two inches wide, and six feet high. The ice-box, at one side and in one corner, elevated, is five feet ten and a half inches long, on the long side of the room, three feet six and a half inches high, and two feet six and a half inches wide. On the two sides of this ice-box which are toward the room, there is a space between the top of each of such sides and the ceiling of the room, of eight inches in height, and the length of such two sides, for the ingress of the air of the room into the ice-box. A door from without opens into the ice-box, by which to put ice in. Another door opens into the room from without. The ice in the ice-box rests on a wooden rack on its bottom, which affords a free passage for air. Below the rack is a cold-air chamber, the roof of which is the bottom of the rack, and the bottom of which is formed by two inclines, which slope downward and toward each other, and toward a center line midway of the width of the ice-box, so as to leave a central opening five feet eight inches long, and two and a quarter inches wide, through which the cold air finds its way downward. The water from the melted ice falls on these inclines, and runs down them and through this central opening, where it is caught by a trough five feet ten inches long and

six and a half inches wide, and set three and a half inches below such central opening. This trough is one foot eight inches above the floor of the room. There are no shelves below the central opening, but there is a rack on the floor, on which meat is placed. The water from the trough is conducted, by a pipe, out of the room. The room has been used in this way for more than nine years.

There can be no doubt, that the defendant's refrigerating-room contains, in combination, the three elements which are found in combination, as before explained, in the first claim of the plaintiff's patent, and that it also contains, in combination, the three elements which are found in combination, as before explained, in the second claim of the plaintiff's patent. The heat given out by articles placed in the room warms the air, which then ascends, and passes over the tops of the sides of the ice box, and thus around the partition, and into contact with the ice, and is thus cooled, and dried, and purified, and descends through the open bottom of the ice-box, and then through the central opening, and, descending further, according to the law governing the action of cooler air, displaces the warmer air, and pushes such warmer air before it, and upward, around the partition, and, so, a rotation or circulation of the contained air in the closed room is established, which goes on so long as any part of the contained air is warmer than any other part of it. The cooled air can fall directly down upon such articles as are placed under the central opening, without being interfered with by, and without interfering with, the disposition of the water from the melted ice, and such water is carried off and not allowed to drip into the room. The modes of operation of the combinations found in the defendant's room, are the same as the modes of operation of the like combinations found in the claims of the plaintiff's patent.

The defense principally relied on in this case is, that, as to both of the combinations in the claims of the plaintiff's patent, he was anticipated by Azel S. Lyman, in inventions and structures previously made by Lyman, and that the defendant, in using a refrigerating-room constructed and operating as above described, has done no more than he was fully instructed to do by such structures of Lyman.

The earliest date sought to be assigned to Sanford's invention is the summer of 1855. That date is the one given by him in his statement, before referred to, filed in his application for extension, as the date previous to which he had paid no attention to the subject of refrigerators.

It is in evidence, that Lyman, on the 20th of August, 1852, filed, in the Patent Office, a caveat for "improvements in railroad freight-cars, for transporting fresh meats, and other articles, which require a very low temperature and pure air." Such caveat contains a description, and drawings referred to therein. The object of the arrangement is stated, in the caveat, to be, to transport dressed meats. The walls, sides, and top of the car are made double, and filled in with a bad conducting material, the car is closed, and the air in it is reduced in temperature, by passing it, in rotation and circulation, through ice, or other cooling material, contained in a box in the car, or through tubes immersed therein. A fan driven by a cord from the axle of the car drives the air down through the cooler. After the air leaves the bottom of the cooler, it passes through a box containing disinfecting material. The air is stated, in the caveat, to be preserved cool, pure, and dry by being passed frequently through the cooler and the disinfecting material, so as to keep the meats from putrefying, the moisture from the meats being deposited on the cold surface, and flowing down, and being caught in a pan below the bottom of the cooler, whence it is carried off, by a tube, to the outside of the car. The caveat states, that Lyman proposes to claim the providing for a constant circulation of air from the car, through the cooler, and through the disinfecting-box, back into the car, by means of a fan, or some other similar mechanical arrangement; the drying of the air, by the precipitation and condensation of the water held by it in solution, by passing it through the cooler; the cooling of the air through the same process; and the construction of a cooling-house, or refrigerator, in the manner above described, except that there would be other arrangements for driving the fan.

Between the date of this caveat and the year 1855, Lyman constructed, and put into successful operation, refrigerating-cars and stationary refrigerators, embodying the principle set forth in such caveat, and constructed substantially on the plan therein stated, the cars being arranged with fans, to assist in the circulation of air, and the stationary refrigerators having no fans, but depending, for such circulation, on the law governing the movements of cooler and warmer airs, free to communicate with each other through an ice-box open above and below. All of these structures embodied the combinations and modes of operation before stated as found, in common, in the defendant's refrigerating-room and in the plaintiff's structure.

In the summer of 1852, Lyman constructed a closed refrigerator, with the open-bottomed ice-box, the bottom of which was horizontal, and the dividing partition extending down no further than the lower end of the side of such box, and a charcoal filter on top of the ice-box. The water was conducted down two inclines, and fell into a pan on the floor of the refrigerator, and was thence carried, by a pipe, through the bottom. He used this refrigerator for some time in his house in Brooklyn, N. Y., and, finding that the space under the ice-box through which the water fell was not utilized, he raised the pan up, and placed it as near to the cold-air opening, and below it, as it could be placed, without interfering with the downward flow of the cold air. Under the pan a wooden shelf was placed, to receive articles. Holes were bored through this shelf, for the passage of the air. The water passed from the pan to the outside, by a pipe running through the side of the refrigerator. In this refrigerator, the opening between the lower edges of the inclines was a central one, as in the defendant's structure. Lyman used this refrigerator, as thus altered, for some time, in his family, placing the principal part of the food he wished to preserve on the shelf referred to, and under such shelf. In the fall of 1852, he put into it a new ice-box, the bottom of which, being open, sloped toward the interior. Below that there was a single incline, sloping toward the outside, to catch and conduct the drip. The opening through which the cold air went down was at the side, and not central, and a flange raised around the edges

of the opening carried the water around the opening, and it was discharged, by a lead pipe, to the outside. Thus the pan was dispensed with. The shelf below the opening remained as before, and so did the charcoal filter above the ice-box. In the summer of 1853, Lyman had a number of these ice-boxes made, and placed one of them in a refrigerator in a grocery store in New York, and showed it to several persons when in operation.

Prior to this, and in August and September, 1852, Lyman had a closed refrigerating-car fitted up. It had two ice-receptacles, each with an open bottom. One operated with the aid of a fan. A pan under the grate on which the ice rested caught the water, and it was conducted out of the car. The air entered that ice-box through a charcoal filter. The other ice-box had no fan. Under the grate of that box was a descending conduit, and the water was caught by a flange. The height of the lower part of the conduit, from the floor, was twenty-six inches. On the floor, directly under the opening, was a rack for meat. The opening was ten inches wide. This ice-box depended entirely on gravity for its circulation. It held nearly a ton of ice, and was placed as near the top of the car as it could be, and yet allow a space twelve inches high, for the passage of air from the car over into the ice-box. The lower end of the descending conduit was fourteen inches below the grate. In September, 1852, this car, so arranged, was taken from New York city to Watertown, N. Y., and there laden with dressed meat. In the summer of 1853, Lyman had two other refrigerating-cars fitted up, being the two referred to in the affidavit made April 6, 1864, before mentioned. In each of these cars there were two open-bottomed ice-boxes, and a conduit under the grate conducted the cold air down to within about eighteen or twenty-four inches from the floor. The air from the car was impelled into the top of both ice-boxes by a fan. The drip was carried out as before. These cars were taken from New York city to Cincinnati, Ohio, in July, 1853, laden with oysters in the shell, and a dressed sheep, which arrived at their destination in good order. They were laden, at Columbus, Ohio, in August, 1853, with dressed beef, and dressed lambs, and taken to New York city, where the meat was sold.

In September, 1853, Lyman put up a closed refrigerator in Syracuse, N. Y., 16 feet long, 16 feet wide, and 16 feet high on one side and 20 feet high on the other side. The ice-box was placed near the top of the highest side of the refrigerator, and was 8 feet long, 5 feet wide, and 3 feet high. The ice was supported by a grate which sloped toward the interior, and, below the grate, was an incline, sloping from the lowest point of the grate in a reverse direction. The cold-air chamber or space thus formed below the grate terminated below in a conduit 16 inches wide and 8 feet long. The lowest part of the conduit was four or five feet above the floor. A shelf was placed about three feet below the opening, and in the descending current of air, and on this shelf articles to be preserved were placed. The drip was prevented by catching in a trough the water which flowed down the incline, and carrying it outside, by a pipe. There was an opening above the sides of the ice-box, through which the air from the refrigerating-room passed into the ice-box. This structure had the open-bottomed ice-box, the partition open above and below, the prevention of drip, the descent of cooled air, the rotation and circulation, the downward currents on one side, the upward currents on the other side, and the chamber for refrigeration directly under the open-bottomed ice-box.

In April and May, 1854, Lyman caused to be constructed for one Tilton, a closed refrigerator, which was put in use by him in Franklin market, New York, during the summer of 1854, and was used by Tilton there for several years afterward. It embodied the same principles of construction and mode of operation as the Syracuse refrigerator. It had a descending conduit five or six inches wide and about three and a half feet long, and the lower end of which was about sixteen inches above the floor. It was used to preserve poultry, which was placed on three shelves. One of the shelves extended under the conduit. This refrigerator stood in the open market for several years after the summer of 1854. Lyman personally showed it to a great many persons, and explained its internal arrangements, and its principle and mode of operation.

In the summer of 1854, Lyman caused to be built nine closed refrigerators, for domestic use, which were like the Syracuse refrigerator in construction and mode of operation, except that they had no shelf below the cold-air opening, but had a space or chamber there, for articles to be refrigerated. These refrigerators were built at Mount Vernon, Westchester county, N. Y. Lyman used one of them in his family, for a dozen years or more from and after July, 1854. Some of the others were sent to New York and disposed of to various persons, and some were used in Mount Vernon.

Between 1852 and 1855, at least a dozen closed refrigerators, of like construction, were made at the Novelty Iron Works, in the city of New York, according to plans furnished by Lyman. In some of them the conduit extended down only one and one-half inch below the cold-air chamber under the ice-grate, and in others it extended down to within twelve or sixteen inches of the floor of the refrigerator. These refrigerators were delivered to various parties for whom they were made. Of the above number, eight or ten were constructed at such Works during the year 1854, and one of those, made there by one Hadden, for his own use, is still in existence, and has been put in evidence, and produced for the inspection of the Court. This refrigerator was used by Hadden in his family for four or five years. It was and is, in construction, like the Syracuse refrigerator before described, except that it has no shelf below the cold-air opening. In using it, however, Hadden placed on the floor, in and under the descending current of cold air, articles which he desired to keep the coldest. The cold-air opening at the bottom of the conduit is fifteen and three-fourths inches long, and two and one-eighth inches wide, and is eleven and one-half inches above the floor of the refrigerator.

On the 21st of September, 1854, Lyman filed, in the Patent Office, an application for a patent, for an "improved mode of cooling, drying, and disinfecting air for ventilators and refrigerators." It consisted of a petition, specification, oath, and drawing (of 3 figures.) A model was filed November 1, 1854. The specification says:

"My improvement in refrigerators consists in so arranging them, that, as fast as the air becomes warm and moist and impure, by contact with the meat, it is drawn off, and passed through

the material, where it is cooled, dried, and disinfected, and then returned to rise again among the articles in the refrigerator, collecting moisture and impurities, which it deposits in the receptacle intended for that purpose, thus keeping up a full circulation, and thoroughly ventilating the refrigerator with dry, pure, cold air. It is found, that meat, instead of becoming wet in a few days, in this refrigerator, becomes gradually dry."

The drawings represent a refrigerator constructed substantially like the Syracuse refrigerator, and the Hadden refrigerator, before mentioned. There is an ice-receptacle, high up, an open, grated bottom thereto, a cold-air chamber below, a conduit below that, for the exit of the cold air, an arrangement for catching the water and conducting it to the outside, without interfering with the downward flow of the cold air, and an opening over the top of the dividing partition, through which the air which has passed under the open bottom of the dividing partition can find its way into the ice-box, the inner side and bottom of the ice-box, and the inner side of the conduit, forming the dividing partition. The specification states, that, the receptacle being filled with fragments of ice, the air among such ice will be cooled, and, becoming more dense, will settle down through the grate on which the ice rests, into the cold-air chamber below such grate, and thence down the conduit; that, so long as the air in the ice-box is colder and heavier than that in the refrigerator, it will continue to fall down the conduit, mingling with the lower strata, and forcing the upper strata, or warmest air, through the opening above the dividing partition, into the ice-receptacle, and that, when this air comes in contact with the cold surfaces of the ice, its capacity for moisture is lessened, and the moisture is deposited on the ice. The specification proceeds:

"By this arrangement of the ice-receptacle in the upper part of the refrigerator, with an opening for receiving air in its upper part, and a grate at the lower part, on which the ice rests, a cold-air chamber below the grate, and a descending conduit from this cold-air chamber, or with an arrangement of parts substantially the same, so that the air shall be caused to circulate rapidly, from bottom to top, in the refrigerating-chamber, and from top to bottom in the separate combinations, as described, the air is not only cooled, but it is, by being frequently passed through the interstices of the ice, thoroughly dried, and it is washed as by a hail storm, a decided improvement in its smell is effected, and the apparatus becomes not only a cooling and drying, but, to some extent, a disinfecting apparatus, and meat placed in it is preserved fresh and pure a longer time than in any other refrigerator in common use, where both are kept at the same temperature, and use the same quantity of ice."

The claim in the specification is, to "the combination of the reservoir of cooling, drying, and disinfecting material, with the descending tube or conduit, so that the cold condensed air in this conduit shall, on account of its increased weight, cause the warmer air to pass more rapidly through the material where it is cooled, dried, and disinfected, and, in its turn, to fall down the conduit, being, by its sides, kept separate from the other air until it mingles with the lower strata, substantially as described, for the purposes specified." This application was rejected on the 27th of November, 1854, for want of novelty, on the strength of three prior rejected applications, made by Thaddeus Fairbanks, James Lentell, Jr., and John Lewis, respectively. On the 20th of February, 1855, Lyman filed, as an amendment, a new specification, drawings, petition, and model. No copy of such new specification is furnished. On the 10th of March, 1855, the Patent Office, in examining the case, expressed a doubt whether the difference of temperature between the descending column from the ice-chamber, and the air in the body of the refrigerator, would afford motive power or draft practically sufficient to maintain a current. Lyman, on the 28th March, 1855, wrote to the Office, that he had actually demonstrated that the difference in temperature between the air in the ice-box and descending flue, and the air in the body of the refrigerator, produced a circulation; that he had made several refrigerators on his plan; and that, in all, an abundant circulation existed, producing a remarkable effect in drying and purifying the air. In June, 1855, Lyman appears to have dropped the prosecution of such application; but, on the 1st of December, 1855, eighteen days after the granting of the patent to Sanford, he filed a petition, specification, oath, drawing, and model, in a new application, the fee paid on his caveat of August 20, 1852, being allowed to him as a payment toward the fee on this application. The specification and drawing are the same that are annexed to the patent afterward granted to Lyman, March 25, 1856, for an "improved method of cooling and ventilating rooms, &c.," and the drawing is the same, substantially, as that annexed to Lyman's application of September 21, 1854. On the 5th of December, 1855, the Patent Office rejected the new application of Lyman, assigning, as the only reason, that it was anticipated by the patent granted to Sanford November 13, 1855. In reply, the Office was reminded, that, in granting Sanford's patent, either Lyman's prior application must have been overlooked, or must have been deemed not to interfere with Sanford's; that Lyman was, according to the records of the Patent Office, the first person to construct a refrigerator in which the whole of the contained air was compelled to circulate through the ice-box, thereby securing perfect ventilation and drying; that a caveat for the invention was filed by Lyman August 20, 1852; that the application for a patent was filed by him September 21, 1854; that the papers in the application now rejected were in strict accordance with the invention as first submitted; and that yet a patent had been issued to Sanford, without notice to Lyman, and for what was now declared to be the same invention. Thereupon, on the 25th of March, 1856, a patent was granted to Lyman, as above stated. The specification of that patent says:

"My improvement in cooling, drying, and disinfecting consists in the peculiar construction of the box or reservoir for holding the ice or other cooling material. The object sought to be accomplished, by this construction, is the production of a blast or current of cool air in a determined direction, without mechanical aid, and irrespective of place. The principle I employ is that which is exemplified in the hydrostatic column, and my use of it may be understood by the following comparison: If we suspend a cake of ice freely in the air, and near to the ceiling of a closed room, slight currents would soon be produced by the disturbance of the equilibrium, consequent upon the cooling of the air in contact with the ice. These currents would be feeble, because the cold descending air would spread out over a wide base, and the temperature soon become equalized, by mixture with warm air. If, however, we place under the ice a pipe of sufficient size to surround the ice, the air, as it cooled, would fall down and soon fill the pipe, but still have a tendency to spread laterally, in consequence of its gravity, and, therefore, it would exert pressure on all sides, similar to a non-elastic fluid. If a plug were now pulled out of the bottom of the pipe, this air would pour out with a certain force, due to the difference of temperatures outside and inside, and to the height of the column, obeying precisely the same laws which would govern a non-elastic fluid. The construction of a refrigerating-box on this principle enables me to employ it to various useful and valuable purposes, such as the preservation of meats and vegetables, ventilating, cooling, drying, and disinfecting apartments in hospitals, sleeping and other rooms, all which will appear in the following description of the construction and operation of my refrigerating apparatus. This apparatus consists of three parts, viz.: A reservoir, or receptacle, for the cooling material, a cold-air chamber, and a conduit or blast pipe. The reservoir, when adapted for holding ice as the cooling material, is a box open at the top, and as shown at D, Fig. 1. This is divided into two compartments, by a grating, the latter serving to support the ice, while the space beneath forms the cold-air chamber E, which allows of the free settling of the cold air from all parts of the grate. At F is the conduit. This is a trunk or pipe attached to the cold-air chamber, and may be of differing lengths, according as the blast is to be more or less forcible, the higher the column the greater being the weight and velocity of the discharge. I will now describe the manner of application, together with some of the various uses to which the instrument may be put. When inclosed within the air-tight compartment, (as shown in figure 1, at A,) and the box, D, is charged with ice, the moisture will be extracted from the air at the same rate that its temperature is reduced, in the following manner: The air in A is, at first, of the temperature of the surrounding media, and its hygrometrical condition is the same. Ice being now introduced into the box, D, the air in contact will be immediately reduced in temperature, condensation takes place, and moisture is deposited. The condensed air being of greater specific gravity, falls into the air-chamber, E, flowing thence into F. Here, as it cannot spread out and commingle with the external and lighter air, it drives that already in the pipe before it, and out at the bottom, finally pouring out itself in a continuous stream. Once out, it still continues to act similar to the flow of water, spreading over the floor, and, in doing so, displaces the lighter and warmer air, forcing the latter upward toward the top of the apartment. As it there comes in contact with the ice, the condensation and precipitation of moisture goes on until a minimum temperature is reached. Thus, a continual circulation is kept up, in such a manner that the whole of the air must circulate through the ice-box. Of course, all articles, such as meats and vegetables, would be deprived of their moisture in a like degree with the air, the latter being brought to the condition of great purity and dryness. As the water collects, it falls to the bottom of the cold-air space, E, when it is discharged to the outside, by a suitable pipe."

The claim of the patent is, to "the combination of a descending conduit or cold-air flue, with a reservoir for containing cooling materials, substantially in the manner, and for the purpose, described."

There is nothing in the patent of 1856, to Lyman, that is not found fully developed in his application of September, 1854. In view of that application, the patent to Sanford, of November, 1855, ought not to have been granted. Lyman's application contained everything claimed by Sanford in his patent, namely, the arrangement, in a closed refrigerator, of an endless passage or chamber, running through an open-bottomed ice-box, and out at the bottom of it, and down, and under a partition, and up, and over such partition, and into such box again, the construction being such, that the whole of the contained air circulates through such passage, and the water of the melting ice is discharged immediately from the refrigerator. If the patent of 1856, to Lyman, was properly granted, with the claim it contains, a patent ought to have been granted to him on his application of 1854, with the claim then asked for. The evidence shows, that Lyman was the first inventor, as between him and Sanford, of what is claimed in Lyman's application of 1854, and of what is claimed in Sanford's patent of 1855, and of what is claimed in Lyman's patent of 1856.

So, too, everything that is claimed in the claims of Sanford's reissue of 1857, as those claims have been heretofore explained, is found in Lyman's application of 1854.

Lyman never abandoned his invention. He devoted much time to perfecting it, commencing in 1852, and, after his refrigerators of 1854 had been constructed, and he regarded his invention as perfect, he applied for a patent.

It is urged, on the part of the plaintiff, that Lyman's structure did not contain a chamber of refrigeration, with shelves or fixtures for holding the articles to be refrigerated, placed in the descending current, directly under an open-bottomed ice-box. As before explained, it does not require that the chamber should have shelves, in order to be Sanford's chamber. The Syracuse refrigerator of Lyman had such a chamber, with such a shelf, and so did the Tilton refrigerator of Lyman. Some of his other structures had such a chamber, and so much of the chamber as was directly in the descending current could be, and was, used for the deposit of articles to be cooled. The question is merely one of degree. In the Syracuse refrigerator, such descending current was sixteen inches wide, eight feet long, and four or five feet high. In the Tilton refrigerator, it was five or six inches wide, three and a half feet long, and sixteen inches high. In the defendant's refrigerator, it is only five feet eight inches long, two and one-fourth inches wide, and twenty inches high. In the Hadden refrigerator, it is fifteen and three-fourths inches long, two and one-eighth inches wide, and eleven and a half inches high. In Sanford's original specification, there is no suggestion of the especial advantage of the use of a descending current. Such suggestion, in the reissued specification of Sanford, is an interpolation, and there is as much warrant for saying that Lyman's conduit may vary in width, so as to be as wide as the width of the ice-box, and thus become exactly like Sanford's conduit in the drawings of his original patent, occupying half of the width of the refrigerator and the entire width of the ice-box, as there is for saying, as is said in the reissued specification of Sanford, that the apartment not under the ice-box may vary in width, and may be so narrow as to serve merely as a passage for the ascending current of air. In the structure shown in the drawings of Sanford's original patent, he exhibits a conduit as wide as the ice-box, extending down to the very bottom of the interior, and conducting the descending stream of cold air to the opening through which it passes into the other apartment. That conduit is so wide that shelves to hold articles to be refrigerated, or the articles themselves, may be placed in the conduit, and none of the apartment under the ice-box is outside of the conduit. In Lyman's structures, he made his conduit shorter in length, and narrower in width, so narrow that no shelves could be placed in it and no articles could be refrigerated in it, but, a part of the apartment under his ice-box was outside of the conduit, and a portion so outside of the conduit was directly under the conduit, and in the descending current, and in such current shelves and articles to be refrigerated could be and were placed.

The conclusion at which I have arrived, after a careful consideration of all the evidence and of the argument of counsel, is that the Sanford reissue is void for want of novelty.

As to the questions made respecting the want of notice, in the answer, as to some matters put in evidence, I think, that, in any view, the case is a proper one to allow the amendments to the answer, which were moved for at the hearing, on notice, *nunc pro tunc*, as of the time the answer was filed.

The bill is dismissed, with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,446.—*Straw-Cutters.*—Granted to REUBEN DANIELS, June 21, 1859. Hearing June 4, 1873.

24,451.—*Attachment of Handles to Tin Pails.*—Granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868. Hearing June 4, 1873.

24,456.—*Apparatus for Heating Buildings by Steam.*—Granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872. Hearing June 4, 1873.

24,478.—*Machines for Sawing Stone.*—Granted to ANDREW T. MERRIMAN, June 21, 1859. Hearing June 4, 1873.

24,484.—*Apparatus for the Manufacture of Paper-Pulp.*—Granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued in two divisions, numbered 996 and 997, July 3, 1860, No. 997 having been again reissued December 15, 1863. Hearing June 4, 1873.

24,488.—*Brakes for Power-Looms.*—Granted to R. and GORDON B. REYNOLDS, June 21, 1859; antedated February 8, 1859. Hearing June 4, 1873.

24,493.—*Door-Frames for Furnaces.*—Granted to PAUL A. SABATON, June 21, 1859. Hearing June 4, 1873.

24,495.—*Harvesting-Machines.*—Granted to WILLIAM and THOMAS SCHERELY, June 21, 1859. Hearing June 4, 1873.

24,512.—*Body-Bolsters for Railway Cars.*—Granted to AMBROSE WARD, June 21, 1859. Hearing June 4, 1873.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,683.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OTIS TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JENKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

24,161.—*Improvement in Platform-Scales*, granted to FRANCIS M. STRONG and THOMAS ROSS, May 24, 1859.

Claim.—1. The employment of an auxiliary frame, substantially such as described, in combination with and interposed between the platform and levers, substantially as described, and for the purpose specified.

2. Constructing such intermediate frame in two parts connected by movable joints at the angles, substantially as and for the purpose specified.

3. The manner of constructing and inserting the bearing-blocks that rest on the knife-edges, substantially as and for the purpose specified.

4. Bringing the ends of the arms of the levers immediately one above the other, in combination with the mode of connecting the two with the beam by single and double connecting-rods, substantially as described, and for the purpose set forth.

24,182.—*Channeling Soles of Boots and Shoes*, granted MARTIN WESSON, May 24, 1859; reissued December 1, 1863, numbered 1,586.

Claim.—1. The combination of one or more feed-rolls E F, knife or knives *b b*, and guide R, or its mechanical equivalent, when operating substantially in the manner and for the purpose herein set forth.

2. The combination of lever L, sliding pieces *h h'*, and knives *b b'*, when arranged and operating as described, and forming a knife-holding arrangement, for the purpose specified.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date May 20, 1873.]

6,651.—*Stocking Fabric.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed May 6, 1873.

6,652.—*Stocking Fabric.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed May 6, 1873.

6,653.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed April 24, 1873.

6,654.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed April 24, 1873.

6,655.—*Carpet.*—CHARLES A. RIGHTER, Philadelphia, Pa., assignor to DORNAN, MAYBIN & Co., same place. Application filed April 26, 1873.

6,656.—*Floor-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y. Application filed April 30, 1873.

6,657.—*Floor-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y. Application filed April 30, 1873.

6,658.—*Chair-Frame.*—BENJAMIN J. HARRISON, New York, N. Y. Application filed April 1, 1873.

6,659.—*Stocking Fabric.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed May 6, 1873.

6,660.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,661.—*Floor-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y. Application filed May 13, 1873.

6,662.—*Floor-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y. Application filed May 13, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date May 20, 1873.]

1,270.—*Flue for Draft, Ventilation, &c.*—HENRY R. FARMER, Danville, Va. Application filed May 10, 1873.

1,271.—*Metal.*—HARTELL & LETCHWORTH, Philadelphia, Pa. Application filed April 22, 1873.

1,272.—*Salve.*—L. HARWOOD & SON, Warren, Mass. Application filed May 10, 1873.

1,273.—*Watch-Glass.*—JOSEPH B. LAURENCOT, Hoboken, N. J. Application filed May 10, 1873.

1,274.—*Black and Galvanized Sheet-Iron.*—MARSHALL BROS. & CO., Philadelphia, Pa. Application filed March 26, 1873.

1,275.—*Plow.*—JAMES OLIVER, South Bend, Ind. Application filed April 3, 1873.

1,276.—*Salt.*—STONE & SPENCER, Syracuse, N. Y. Application filed April 30, 1873.

1,277.—*Toilet and other Brushes.*—THOMSON, LAFGDON & Co., New York, N. Y. Application filed May 9, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date May 20, 1873.]

ORIGINAL PATENTS.

138,978.—*Adjustable Chute for Turbine Water-Wheels.*—JOHN ABELL, Woodbridge, Canada. Application filed September 20, 1872.

Upon a stationary ring rests a flanged cast-iron ring, to which is riveted a steel plate that forms one side of each chute and extends the full depth of the rings. The two steel plates hinged together, the lower one of which is riveted to the stationary ring and to the inner casting, form the other side of the chute. By turning a shaft the plates hinged to the cast-iron ring will close upon or recede from the hinged plates to regulate the supply of water.

Claim.—1. Combination of the movable cast-iron ring A, steel plate C, and inner upper casting, of which the rack G forms part, operated by the pinion F on the vertical shaft H, substantially as and for the purpose specified.

2. The combination of the stationary part B and lower steel plate D with the upper steel plate D, hinged at E, and held between the bar *d* and plate C, substantially as and for the purpose specified.

138,979.—*Water-Wheel.*—JOHN ABELL, Woodbridge, and ASHLEY D. COLE, Toronto, Canada. Application filed November 7, 1872.

The stationary part of the chute is cast with the inner and outer shells. The movable portion is hinged to the top of the stationary part. Studs fastened to the hinged plates pass through the slots in the inner shell and through holes in an annular casting, which is fitted within the inner shell and works on the center shaft. By turning the annular casting the hinged plates will be moved and open or close the mouth of the chutes to regulate the supply of water.

Claim.—The combination of the hinged plate B, stud C, and movable annular casting E, substantially as and for the purpose specified.

138,980.—*Friction-Clutch.*—EDWIN ALLEN, Norwich, Conn., assignor to ALLEN MANUFACTURING COMPANY, same place. Application filed April 24, 1873.

Claim.—The friction-pulley formed by the combination and arrangement, with the flat-rimmed loose pulley A, shaft B, and sliding sleeve E, of the friction-arcs C C, which are pivoted at *c c* upon the center piece D, and guided by the slots and screws S S, when operated by the ball-and-socket joints N N and adjustable screw-connections I K *e* I K *e*, substantially as and for the purposes herein set forth.

138,981.—*Machine for Darning Stockings.*—BENJAMIN ARNOLD, East Greenwich, R. I. Application filed September 26, 1870.

The comb is semicircular, and has on the edge which is within the overhanging arm a rack, the teeth of which are engaged by the feed-lever so as to move the comb back and forth, the feed-lever being operated by a cam on the main shaft. The stocking is drawn over the standard, between its top and the overhanging arm, and the row of loops at one side of a square hole placed on the teeth of the comb. The needle passes up through the loops, carrying a thumb, which the looper, operated by a cam on the main shaft, forms into new loops and deposits on the teeth of the comb as the latter is moved along.

Claim.—1. The comb *s*, in combination with the needle *m*, constructed and operating substantially as and for the purpose set forth.

2. The combination of the feed-lever *e* with the comb *s*, substantially as specified, and for the purpose set forth.

3. The looping and casting-off lever *k* and needle *m*, in combination with the comb *s*, substantially as and for the purpose specified.

4. The combination of the feed-lever *e* and lever *k* with the needle *m* and comb *s*, as and for the purpose specified.

5. The combination of the needle *m* with the standard A and slotted plate *n*, substantially as described and for the purpose set forth.

138,982.—*Machine for Darning Stockings.*—BENJAMIN ARNOLD, East Greenwich, R. I. Application filed September 26, 1870.

The comb is a toothed strip of metal, wound helically and made into a semispherical form. The loops around the hole in the stocking are placed on the teeth in the periphery of the comb. The needle passes up through these loops successively, carrying a yarn which the looper forms into a chain-stitch and deposits onto another tooth as the comb is fed around by the levers named in the third clause, one being provided with a diagonal slot, which, as this lever vibrates, moves up and down and back and forth, the under lever to feed the comb around. The clamp, when turned down, is slid under a projection on the frame to keep it in place.

Claim.—1. The spiral or involute comb F, constructed and operating substantially as herein described, and for the purpose specified.

2. The combination of the needle *f* and looper I with the comb F, substantially as and for the purpose specified.

3. The combination of the two levers *e* and *i*, operating substantially as shown and described, to produce a motion suitable for a feed-motion.

4. The clamp N, made so that it can slide and be turned up out of the way when not in use, substantially as shown and described.

138,983.—*Paper-Feeding Machine.*—JOHN THOMAS ASHLEY, Williamsburg, N. Y. Application filed November 28, 1870.

The paper, supported upon longitudinally-adjustable table which is pivoted in vertically-adjustable bearings, is held against flexible supports by its heavier part, and the upper sheet is removed by pneumatic lifter, a revolving wheel with flexible arms bearing against the ends of the pile, preventing more than one sheet from being removed at the same time.

Claim.—1. The self-adjusting table B, supported by means of an oscillating bar C, and adjustable bearings *e*, substantially as described.

2. The stripping flexibly-pointed wheels *h*, in combination with the table B, substantially as described.

3. The arrangement and combination of the strippers *h* with the feed-table B, and reciprocating gripers L, substantially as described.

4. A feed-table, B, which is supported by oscillating bearings and arranged beneath a paper picker-up device, in combination with fingers *g*, against which the paper on the table is pressed by the weight of the outer or rear end of the table, substantially as described.

138,984.—*Means for Closing Hatchways.*—JAMES S. BALDWIN, Newark, N. J. Application filed March 17, 1873.

The elevator-car is combined with an endless apron stiffened by cross-slats, which closes all the the openings except the one opposite the car-platform. The apron is intended to be prepared with a fire-proofing solution.

Claim.—1. A car, in combination with an endless apron, for the purpose of closing all hatchways except the one in use, and for the purpose of preventing a draft by means of open hatchways, substantially as shown and described.

2. The endless apron *c*, provided with slats *i*, and endless rope *h*, in combination with the car *a*, substantially as shown and described.

138,985.—*Elevator.*—JAMES S. BALDWIN, Newark, N. J. Application filed March 17, 1873.

To each of the several drums over which the rope passes is a rotary pump attached, which controls the speed of the elevator.

Claim.—1. The method of regulating the speed of elevators by connecting hydraulic pumps with the several pulleys or drums, substantially as set forth.

2. The pump connected to the drum and pulley of an elevator, so as to check its speed, substantially as set forth.

3. In combination with the elevator, the shells *c* in which the

rotary pistons operate, having partitions *e*, automatic valves *i*, drums, and pulleys, substantially as shown and described.

4. The automatic valve *i*, provided with valve-rod *k*, for the purpose of starting the elevator, substantially as shown and described.

138,986.—*Metal Can for Oil, &c.*—GEORGE W. BANKER, New York, N. Y. Application filed February 5, 1873.

Access is had to the nozzle and faucet of a can inclosed in a wooden case through openings provided with shields, thereby avoiding the necessity of removing the cover to reach the nozzle and faucet.

Claim.—The can B, having a faucet, *b*, and nozzle *d*, both in the top, but on opposite sides, of the can, inclosed in the case A, the curve or top of which is permanently secured to the body of the case and not designed to be removed either in filling or discharging the can, there being openings made in the case for the nozzle and faucet, which are closed respectively by shields *c* and *c'*, or their equivalent, all constructed, combined, and operating substantially as and for the purposes specified.

138,987.—*Stop Mechanism for Looms.*—CHARLES E. BARNES, Boston, Mass. Application filed March 3, 1873.

A weft-fork, hinged to a slide working in brackets on the breast-beam, is placed on each side of the loom, and on one slide is pivoted a vertical arm attached rigidly to a rock-shaft, which extends across the loom below the beam, and carries at its opposite end a corresponding arm, which operates the other slide when the hooked end of the weft-fork falls within its path by reason of the absence of the weft-thread. By this arrangement the usual actuating cam and lever are required on one side only, each fork is acted on by the thread independently of the other, and on whichever side the weft fails the fork on that side will immediately stop the loom through the well-known lever connections. Upon the breast-beam is arranged an oscillating hooked arm for the purpose of removing from the lay the threads of the idle shuttles.

Claim.—1. The slides and their weft-detecters, placed on the breast-beam, when connected and operated substantially as herein described, so that each detecter acts independently of the other, as set forth.

2. The slides and their weft-detecters, placed on the breast-beam, and connected and operated as described, in combination with the oscillating hook H, the latter being arranged to fall on the weft-threads already beaten up when it is necessary to prevent their contact with the detecters.

138,988.—*Machine for Extracting Spikes.*—JOSEPH BARSALOUSE and ROBERT GRAHAM, Kingsbury, assignors to GUSTAVUS A. PRESCOTT, Sandy Hill, N. Y.

A T-shaped bar has on the pivots two jaws operating counter to each other by which a spike is extracted when the lever is pressed down on the fulcrum.

Claim.—The handle A, provided with the T-shaped end and journals *g g*, in combination with the jaws D D and fulcrum C, all arranged in the manner and for the purpose herein specified.

138,989.—*Station-Indicator.*—CHARLES BARTON, Philadelphia, Pa. Application filed February 25, 1873.

The name-stripe are transparent, and are detachable by means of elastic loops. The apron is operated by an air cylinder, supplied from the engine, a piston, and a pivoted slide, the shifting of which from one side to the other, where it is then locked, reverses the movement of the apron. The head of the slide, by falling between the teeth of the ratchet-wheel on the driving-roller, serves to lock this in position.

Claim.—1. The combination of transparent name-plates D with the apron C, the name-plates being detachable therefrom by means of elastic loops connected with the apron, substantially as and for the purpose set forth.

2. The combination of the air-cylinder L and piston M, the slide H, hinged plate I, pawl G, and toothed wheel E, for operating the endless apron C, substantially as and for the purpose above described.

3. The combination of the head *e* of the slide H with the toothed wheel F for holding the roller B securely in position, substantially as described.

138,990.—*Metallic Sweat and Collar Pad.*—JOHN M. C. BENNETT, Ovid, Mich., assignor to himself and WILLIAM C. BENNATT, same place. Application filed August 14, 1872.

Claim.—The adjustable collar cap and shield A, made distinct and separate from the collar, and adapted to be applied between any ordinary collar and the neck of a horse, as and for the purpose set forth.

138,991.—*Manufacture of Whip-Handle Caps.*—GEORGE A. BURR, Florence, Mass. Application filed March 15, 1873.

Claim.—Caps for whips and other similar purposes made out of a composition of which shellac or its equivalent gum or resin is the cementive ingredient, and whether united to a metallic ferrule to form a part of the cap or not, as herein described and represented.

138,992.—*Balanced Valve.*—FRANK P. CADY, Cleveland, Ohio, assignor of one-half his right to SETH M. CADY, same place. Application filed February 21, 1873.

A central disk over the valve is provided with a boss or core, and supports the packing-rings bearing against the steam-chest cover, and they are forced against it by spiral springs bearing on the disk.

Claim.—The disk E, provided with a boss or core, F, supporting-ring G, packings *a b*, and springs H, constructed and arranged, in combination with the valve C and cover I, as and for the purpose set forth.

138,993.—*Electrical Stop for Spinning Machinery.*—HENRY A. CHAPIN, Bridgeport, Conn. Application filed December 31, 1872.

A pivoted finger, forming one electrical pole (and surrounded loosely by a sliding yoke) by resting against the thread, is kept from contact with a plate forming the other electrical pole, but, on the breaking of the thread, makes the contact, and, thus completing an electro-magnetic circuit, causes an armature detent to be withdrawn from the spring shipping-lever, which thus stops the machinery. The said shipping-lever, by the same movement acting on the yoke surrounding the finger, withdraws it from its contact-plate, and thus immediately opens the circuit, so as to be instantly ready for the action of any other thread finger.

Claim.—On machines for spinning or doubling and twisting, especially, and other descriptions of machines mentioned in the specification, the combination of a circuit-opener with, and operated by, the shipping-device, which, instantly that a thread breaks, pulls or pushes the latches or fingers off from their electrical connecting-points, thus reopening the circuit which had been closed by their falling, substantially as described.

138,994.—*Elevating, Conveying, Storing, and Shipping Grain.*—HENRY I. CHASE, PHILANDER F. CHASE, and EDWIN D. CHASE, Peoria, Ill. Application filed March 5, 1873.

Grain-elevator house having on each side grain-bins arranged in rows. Between each double row of grain-bins, extending from the ground upward, is a passage in which the screw-conveyers are placed, extending from the elevator to the rear of the bins.

Claim.—1. The system described of receiving, conveying, storing, and shipping grain, &c., in rows of bins, C D, of one story in height, arranged on either side of an upper and lower line of conveyers, E^1 E^2, one line for receiving and distributing grain, the other for discharging the same, whereby danger and damage from fire is greatly lessened, and storage greatly reduced in cost, all substantially as described.

2. The system described of a combination of elevator-houses, G G, &c., in one line, of not more than two stories in height, from each of which runs back, at a right angle, a double line of store-bins, having an upper and lower line of conveyers, E^1 E^2, built on independent foundations, substantially as described.

3. The construction and arrangement of the bins C D, &c., walls *d d*, stays *e e e*, &c., floor *i*, spouts *f f*, &c., passages, *g g*, &c., conveyers E^1 E^2, posts *k k*, spout *b*, platforms *g h*, and elevator A.

4. The construction and arrangement of the metal or metal-line conveyer-trough Z, cross-pieces *r r*, keys *s s*, rods *w w*, journal-boxes *t t*, trap-doors *o*, continuous flight *y y*, so attached to the axle or shaft as to form a continuous band to prevent the splitting of the axle when heavily worked.

138,995.—*Hair-Curling.*—ELLEN T. CRAIN, Kansas City, Mo. Application filed February 21, 1873.

Claim.—The process of converting straight hair into permanent curls by the employment of the materials and in about the proportions named, and by baking and boiling the hair, substantially in the manner herein before described.

138,996.—*Sewing-Machine.*—JOB A. DAVIS, Brattleborough, Vt. Application filed March 10, 1873.

Makes chain-stitch. A projection on the hook back from its point carries one-half the loop of needle-thread across the other half, twists the loop, and the needle passes through it.

Claim.—1. In a chain-stitch sewing-machine, a vibrating looper, constructed substantially as described, moving in a path transverse or across the plane of the line of stitching, and operating in connection with the needle and feed to give to the loop a twist, substantially as and for the purpose described.

2. The combination, with the removable cloth-plate, of the stitch-making devices, substantially as described, employed beneath the table, so that the removal of such plate shall carry with it such devices without the need of deranging or loosening them.

138,997.—*Stove-Pipe Damper.*—JOHN EMMERT, Chicago, Ill. Application filed November 29, 1872.

When the device is inverted the disk K drops into the circular opening in the plate B, and the plate B falling at the same time upon the plate A, the projections on the plate B close the openings in the plate A, the whole thus forming in effect a close plate.

Claim.—The stove-pipe damper and spark-arrester, composed of the two rings A and B and disk K, connected and applied in the manner set forth.

138,998.—*Thimble for Protecting Boiler-Flues.*—JAMES C. FARMER, Providence, R. I. Application filed February 3, 1873.

The thimble which protects the ends of the tubes from the heat is provided with a lip to receive the blows while being driven, and is held by frictional contact.

Claim.—1. A thimble for the protection of the ends of boiler-tubes molded in one piece from cast or malleable iron, or other suitable metal, and formed with flange *a*, set below the projecting edge *b*, for the purpose set forth, as a new article of manufacture.

2. In a thimble for the protection of the ends of boiler-tubes, the projecting edge *b*, for the purpose of receiving blows of the hammer, and as a means of avoiding the fracture of the flange in driving, substantially as described.

138,999.—*Mode of Attaching Roofing-Slates.*—SAMUEL FARQUHAR, Boston, Mass. Application filed April 4, 1873.

The device forms a readily-detachable fastening for securing slates to the nearly vertical sides of Mansard roofs.

Claim.—The within-described fastening for slates, consisting of the bent plate D, so constructed as to hook over or around a purlin, in combination with a bolt, *b*, one end of which is provided with a head, 9, and the the other end secured by a screw-nut, *c*, or otherwise, substantially as described.

139,000.—*Machinery for Rolling Metal.*—WILLIAM GEORGE and WILLIAM F. DURFEE, Philadelphia, Pa. Application filed February 3, 1873.

The two ends of the table move, when rising or falling, at different rates of speed, and assume properly-inclined positions in virtue of the greater length of the arms *c* than of the arms *c'*, while the approaching and receding movements at such times are due to the links, which, hinged to the housing and to the table, compel the latter to move in the arc of a circle.

Claim.—1. For movement of the tables at the front and back of the rolls of a rolling-mill, the lever-arms *c* and *c'*, combined with the rods *z* and *z'*, and the radius-bars *r r'*, or their equivalents, so that the said tables vary their inclination as they rise and fall, and at the same time approach and recede from the rolls of the rolling-mill, the whole operating substantially in the manner, and for the purpose hereinbefore described.

2. The construction of the tables of a rolling-mill with re-entrant angles, substantially in the manner hereinbefore described.

139,001.—*Cultivator.*—EVANDER M. GRAHAM, Vernon, La. Application filed May 16, 1872.

A frame adapted to receive interchangeable cultivating devices, so that the implement may be used in cultivating different crops.

Claim.—1. The combination of the frame A B, wheels D, axles *x*, hooks I, rod L, and rack or frame E, adapted to receive plows H or other cultivating devices, substantially as shown and described.

2. The combination of the bars E^2 E^3, bolts and nuts 1 2 3 4 5 6 7 8 9 10, and blocks F with the frame A B, substantially as shown and described.

3. The grooves *y* in the frame A B, in combination with the notches *b* in the rack or frame E, substantially as and for the purpose described and set forth.

139,002.—*Spark Arrester and Extinguisher for Locomotives.*—JOHN W. GRAY, Harrisburg, Pa. Application filed February 25, 1873.

A closed top, with a cone attached to it, is arranged on the smoke-stack and combined with inclined guides and the central draft-pipe, by which the sparks are conveyed into a discharge-pipe, into which a steam-pipe enters for extinguishing the sparks.

Claim.—The combination of the arrester F, constructed as set forth, in combination with the draft-pipe I, inclined disk *n n*, discharge-pipe C, steam-pipe *b*, and cock C, as and for the purpose described.

139,003.—*Submerged Force-Pump.*—ABIEL T. HAFFORD, St. Louis, Mo. Application filed March 25, 1873.

The piston-rod and sliding cylinder are connected by side rods. When the piston rises, the sliding cylinder also rises and lifts the water into the main cylinder and piston-cylinder. On its descent the piston forces the water up the discharge-pipe.

Claim.—An improved submerged force-pump, consisting of a main cylinder provided with top and bottom cylinders, having valves, the piston being connected to side rods which further connect to said bottom cylinder, said parts being arranged and constructed to operate as and for the purpose set forth.

2. The combination of cylinders A B C, valves b^1 b^2, and valves a^2 a^3, piston D, as and for the purpose set forth.

3. The combination and arrangement of cylinders A B C, valves b^1 b^2, a^2 a^3, piston D, rods E, and discharge-pipe G, all constructed to operate as and for the purpose set forth.

139,004.—*Adjustable Step-Ladder.*—JOHN J. HARDENBROOK and SAMUEL BELFORD, Columbus Grove, Ohio. Application filed April 5, 1873.

The steps are made adjustable on pivots to correspond with the inclination given to the ladder. A slotted semicircular plate is attached to one or more of the axles, and, in conjunction with a thumb-nut, serves to lock the steps at the required angle, the steps being all connected together by a rod hinged to them at the back.

Claim.—1. The step A made adjustable within the side-pieces F, substantially as and for the purpose hereinbefore set forth.

2. The semi-continuous lever H provided with the thumb-nut K, in combination with the step A provided with the strap B, and made adjustable within the side pieces F, substantially as and for the purpose hereinbefore set forth.

3. In combination, the rod E provided with hinge-joints D, a series of adjustable steps, A, provided with straps B B', and the semi-continuous lever H provided with the thumb-nut K, substantially as and for the purpose hereinbefore set forth.

139,005.—*Machine for Forming Railway Coupling-Links.*—PATRICK H. HEALY, Chicago, Ill., assignor of one half his right to WM. H. BRYANT, same place. Application filed August 6, 1872.

An eccentric on the main shaft forces forward two oppositely-inclined blocks, one on each side of the machine, and a U-shaped former. These inclines cause two rollers (one on the end of each of two oppositely-projecting levers) to converge. The bar is laid in front of the former with the rollers resting upon it in the rear, so that the reciprocations of the former cause the rollers to bend the bar around its outer surface.

Claim.—In a link-forming machine, the combination of the following instrumentalities, to wit: Means for cutting the iron rod to length; means for bending the middle of the same to form one of the semicircular ends of the link; and means for rolling or pressing the ends to a parallel with each other; all the parts constructed, arranged, and operating substantially as described, as herein shown and set forth.

139,006.—*Auger-Handle.*—SAMUEL W. HEMENWAY, Lansing, Iowa. Application filed April 4, 1873.

This handle is designed, by the use of a double ratchet and four pawls controlled by cams, to operate boring-bits in corners or close to joints by a reciprocating movement of the hand where a rotary motion would be impossible.

Claim.—1. The combination of the double-ratchet wheel A, spring-pawls *d d*, and cam-pins D D, constructed as described, and arranged within the bisected casing B C, substantially as and for the purposes herein set forth.

2. The slotted annular plate G, provided with lips *m m*, used in combination with the ratchet-wheel A, for fastening the socket H to the same, substantially as herein set forth.

139,007.—*Windmill.*—THOMAS R. JACKSON and ASHERET C. JACKSON, Sabine Pass, Tex. Application filed January 13, 1873.

A wind-wheel, with adjusting devices, arranged beneath a semicircular case. The wings radiate from a vertical shaft, and are secured to hubs causing rotation in a horizontal plane. The shaft is stepped below on a suitable bearing, and has a spur-wheel keyed to it for transmitting motion to machinery.

Claim.—The pulley D, applied fast to the bottom of the semicircular case C, and receiving freely through it the shaft B^1 of the wind-wheel B, in combination with the pulley E and belt *d*, substantially as and for the purpose described.

139,008.—*Grain-Binder.*—SYLVANUS D. LOCKE, Hoosick Falls, N. Y. Application filed March 17, 1873.

Claim.—A revolving knotting-hook, provided with a retaining-shoulder, *g*, combined with an inflexible jaw, *f*, and a flexible jaw, *e*, constructed so as to yield and release the loop when the severed ends are retained in the knot, substantially as set forth.

139,009.—*Treating Heavy Petroleum.*—JOHN JAY LOONEY, St. Petersburg, Pa. Application filed November 2, 1872.

Claim.—The treatment of crude or heavy petroleum, previous to distillation, with a compound or mixture of benzine and sulphuric acid, in the manner and for the purpose substantially as set forth.

139,010.—*Cleaning Oil-Wells.*—JOHN J. LOONEY, St. Petersburg, Pa. Application filed November 2, 1872.

By pouring into the well a solution of potassa, also a certain amount of sulphuric acid, and a quantity of benzine and sulphuric acid.

Claim.—1. The within-described process of removing the paraffine and other resinous deposits from oil-wells, for the purpose of increasing the flow of oil.

2. The use of the compound or mixture of benzine and sulphuric acid, in the manner and for the purposes set forth and described.

139,011.—*Razor-Strop.*—JOHN B. LUCAS, Portland, Me. Application filed March 19, 1873.

The leather strap is provided with a non-extensible base, composed of paper or paper and cloth combined.

Claim.—The combination, with the strop *d* having the filling *k*, made of strong Manila paper, or paper and cloth combined, as described, of the handle *a*, screw-rod *b*, cylinder *f*, end pieces *e e'*, and rod *h*, as herein set forth, and for the purposes described.

139,012.—*Porcelain Block for Dental Fillings.*—CHARLES H. MACK, New York, N. Y. Application filed January 29, 1873.

A small plate of porcelain is cemented into the cavity of a tooth after it has been nearly filled with gold. Thus a grinding-surface of porcelain is furnished instead of one of gold, and the filled tooth is, to all appearances, an ordinary sound one.

Claim.—Porcelain blocks for dental fillings, when made and used in the manner described.

139,013.—*Rotary Cultivator.*—ROBERT MCKINLEY, Hyde Park, N. Y. Application filed February 7, 1873.

The frame is rectangular. The forward end is supported upon traction-wheels, which, by a system of gears, give motion to a rotary-cylinder harrow. An adjustable transverse blade raises the turf, and the rotating cylinder tears it to pieces.

Claim.—The hoe *a*, and its rock-shaft and links, in combination with the rotating rake I, as and for the purpose set forth.

139,014.—*Elevator-Hatchway Protector.*—JOHN W. MEAKER, Detroit, Mich. Application filed March 19, 1873.

The hatches are hinged on opposite sides of the opening, and part in the center on the approach of the elevator to allow its passage, being actuated by a system of levers operated by a cam-plate on the elevator so as to open in opposite directions, one rising while the other falls. They thus balance each other when moving, and can be operated with but little power.

Claim.—1. The brackets *a a'*, levers *b b'*, provided with the flanges *f f'* and friction-rollers *g g' h h'*, the said levers being pivoted to the bar *d*, which in turn is pivoted to the arms *c c'* on the doors E E', hung in opposite sides of a hatchway, and actuated by a flanged cam-plate, G, on the moving platform D, substantially as described and shown, and for the purpose set forth.

2. The doors E E', hung in an elevator-hatchway so as to open in opposite directions by the cam G actuating a system of levers, substantially as herein described, for the purpose of having one door balance the other, as described and shown.

139,015.—*Fruit-Picker.*—HENRY MEWES, Binghamton, N. Y. Application filed October 24, 1872.

On one side of the rim is an arrangement for attaching the picker to the pole, and on the other side a fork for detaching the fruit.

Claim.—The rim A, provided with the shank, driving-pin, and forked ends, as described.

139,016.—*Car-Coupling.*—BENJAMIN D. MOODY, Darksville, Mo. Application filed May 28, 1872.

The coupling-pin is held above the mouth of the draw-bar by a sliding spring-block, which, being struck by the end of the adjacent draw-head and forced backward, allows the pin to drop into place.

Claim.—The draw-head A having the recess E, with tapering walls and throat *c*, in combination with the weighted link *c c'* and T-shaped block B, operating in a separate recess, and with the spring C and pin D, all constructed and arranged to operate as specified.

139,017.—*Water-Proofing Compound for Canvas and other Fabrics.*—PETER H. MORGAN, Baltimore, Md., assignor to THE GRANITE ROOFING COMPANY, same place. Application filed March 24, 1873.

Gas-tar, North Carolina tar, and prickly-pear tar are mixed together; then sharp sand, calcined and ground clay, and marble-dust are mixed together and sifted into the above. Pulverized asbestus, soapstone, charcoal, and refuse fibers from looms are combined and then incorporated with the above mixture. Sulphur is then added, and then calcined plaster and hydraulic cement. The mass is cooked by slow fire, and the compound, while hot, is spread by machinery over the fabric to be water-proofed.

Claim.—1. The compound herein described, for the purpose substantially as herein set forth.

2. Prickly-pear tar combined with one or more of the ingredients herein set forth, for the purpose substantially as described.

3. The combination, with calcined clay, of the ingredients herein described, for the purpose herein set forth.

139,018.—*Driven or Bored Well.*—JOSEPH EDWIN MORRISON, Willington, Conn. Application filed November 18, 1872.

A valve-seat with a conical base, surrounded by a covering of leather, and a tube whose upper end forms a collar, against which rests the valve-seat.

Claim.—The wedge-shaped valve-seat D, surrounded by the leather H, in combination with the tube A and collar C, constructed and operating substantially as and for the purpose specified.

139,019.—*Paper-Clip.*—THOMAS ORTON, Chicago, Ill. Application filed March 29, 1873.

The inwardly-beveled edge of the clip is serrated so as to hold the ends of the spread sheets, upon which it is clamped tightly by a thumb-screw.

Claim.—1. A paper-clip spring having a serrated beveled edge, substantially as described.

2. The spring *b* having the beveled edge *c*, in combination with the thumb-screw *e* and base *a*, substantially as set forth.

3. A spring with beveled edge, in combination with a base, substantially as shown and described.

139,020.—*Cane.*—MILTON OSBORN, Albion, Mich. Application filed December 31, 1872.

The body of the cane is hollow, into which slides a tubular case, partitioned to receive bottles of medicine. The sliding case is attached to the handle, on which it turns partially around.

Claim.—The combination of the handle A, body B, and case C, the case being relatively secured to the handle as described, and adapted to slide within the body A, and for the purpose set forth.

139,021.—*Folding Seat.*—WILLIAM W. PARKER, Minneapolis, Minn. Application filed October 16, 1872.

A horizontal longitudinal beam is attached to the standards of the settee so as to support the seat when in use, and to which the folding seat is hinged.

Claim.—A portable bench, consisting of two or more standards, A, supporting the horizontal longitudinal beam B, to which the folding or turn-up seat is hinged, in the manner and for the purpose substantially as described.

139,022.—*Thill-Coupling.*—JAMES H. PARKHURST, St. Louis, Mo. Application filed September 13, 1872.

The T-head is eccentric, flattened on one side, and rests upon a rubber cushion. A washer, provided with a projection on one of its ends, serves as a guard to prevent the withdrawal of the thill-head.

Claim.—1. The combination of the thill-iron A, slotted box *m m'*, and cushion *r*, arranged to prevent the escape of the head *t* in a vertical direction, permit its insertion or withdrawal laterally when the thills are elevated, and cause it to compress the cushion by its own eccentricity when the thills are lowered into working position, all as set forth.

2. The open washer *u* having the projection *y*, in combination with the thill-iron A and slotted box *m m m'*, substantially as described.

139,023.—*Casting Ornaments for Sword-Scabbards.*—VIRGIL PRICE, Woodside, N. Y. Application filed March 27, 1873.

The ornaments are cast around the scabbard and afterward removed for the purpose of polishing, and are then replaced and secured.

Claim.—The process, herein described, of forming ornaments on sword-scabbards by casting them directly upon the scabbards, and subsequently removing them therefrom, as set forth.

139,024.—*Clothes-Line Pulley.*—GEORGE H. EYER, New York, N. Y. Application filed October 24, 1872.

Two pulleys, one larger than the other, are placed on two upright axles within a yielding iron frame that is firmly fixed to a wall or post. Opposite are placed similar pulleys, or a common pulley, and over the two an endless line is passed. At the lower ends of the pulleys are India-rubber rings, which, with the iron frame, yield, when the line is revolved, so that the clothes may pass between them.

Claim.—The two pulleys A and B, with India-rubber bands or rings at the lower ends, inserted in a frame fastened to one end or wall, substantially as and for the purpose hereinbefore set forth.

139,025.—*Basket-Form.*—ANTON F. SCOW, Chicago, Ill. Application filed April 2, 1873.

The standards of the basket are held in a position by the wire, and are manipulated for weaving at the opening between I I, which hold the ends of the wire.

Claim.—The combination of the block A, band N, forked standard I I H, provided with one or more anti-friction rollers, G, and bearings P, wire R, and frame-piece K, as and for the purpose set forth.

139,026.—*Whip-Socket.*—ANSON SEARLS, Newark, N. J. Application filed September 30, 1872.

Claim.—1. The straight tubular socket A provided with the projections C and *d*, and incline *e*, constructed and arranged substantially as and for the purpose herein set forth.

2. The fastener, consisting of the perforated part *b'*, loop or hook portion *a'* forming the detachable hinge *d'*, and provided with the set-screw *c'*, substantially as and for the purpose specified.

139,027.—*Wagon-Seat.*—JOHN U. SHULTZ, Shelby, Ohio. Application filed April 18, 1873.

The inner ends of the braces, which connect with the spring-supports, are secured to the ends of diagonally-arranged levers, by means of which compensation of the connecting-rods is effected.

Claim.—The diagonally-arranged compensation-levers *i i*, braces *e*, and cross-pieces *c*, when constructed to operate substantially as shown and described.

139,028.—*Lathe for Turning Wood.*—OTIS S. SMILEY and CHARLES O. SMALL, Augusta, Me.; said SMALL assignor to said SMILEY. Application filed April 15, 1873.

The cutting-chisels are secured in a rotating tool-post, which is itself adjusted in a revolving head.

Claim.—The combination of the head A, the rolling or turning posts B B', the nuts C C', knives D D', slots E E', hollow shaft F, set-screw G G', bushing H, and screw I, all combined and arranged substantially as herein set forth and described.

139,029.—*Box-Lifter.*—BENJAMIN H. SMITH, Ipswich, Mass. Application filed April 11, 1873.

A curved bar provided at its lower end with toothed foot or claw, and at its upper with a stirrup or open handle; also a fork, so secured as to slide up and on down the bar to accommodate different sizes of boxes; also a forked lever, bent at right angles at forked end, the notch fitting closely on the bar, and the arm of the lever passing through the stirrup of the bar.

Claim.—1. The box-lifter, substantially as described, composed of the curved bar *a*, the claw *b*, the handle *c*, and the movable fork *d*, constructed, arranged, and applied together essentially as shown and explained.

2. Combined or for use therewith, as set forth, the bent and notched lever A, as represented.

139,030.—*Lantern.*—THOMAS SMITH, Cleveland, Ohio. Application filed March 10, 1873.

The upper horizontal guard-wire is bent into ears, which pass through rings of two vertical wires, thence above the cap or deflector, where the bail is attached. By this construction the strain is transmitted to the base independently of the cap, and the center of gravity is thrown considerably below the line of suspension.

Claim.—The ring C, consisting of one or more pieces of metal loops or ears, E, formed from a part of said ring C, and extending above the cap or reflector G, in the manner substantially as described, and for the purpose set forth.

139,031.—*Railroad Tie.*—WILLIAM H. STERLING, San Francisco, Cal. Application filed September 9, 1872.

A compound for railroad ties, composed of finely-powd red ashes, about one and one-half part; linseed or cotton-seed oil, one part; asphaltum, sixteen parts; pressed in a mold. Bushings of wood for screws or spikes are inserted while plastic.

Claim.—1. The within-described ingredients for railway ties and permanent ways, when mixed and compounded in about the proportions and manner herein specified and set forth.

2. The employment, in a composition tie, of a plug or plugs of wood, A, provided with threads and countersunk holes C C or upward-projecting head, substantially as and for the purpose specified.

139,032.—*Wheel-Plow.*—CHARLES B. STEVENS, Donnelson, Iowa. Application filed January 16, 1873.

The driver, by throwing his weight on the rear of the frame, tilts it on the axle, thereby raising the heel of the plow so that it may come out of the ground in the same manner that it entered.

Claim.—The frame A B, supporting-wheels E F and sliding seat L, in combination with pivoted plow N, the seat being arranged so that the driver may throw his weight on the rear of the frame to assist in raising the plow, all substantially as described and for the purposes set forth.

139,033.—*Rotary Valve and Cut-Off.*—JOSEPH W. STRANGE, Bangor, Me. Application filed December 5, 1872.

A rotary valve, consisting of a head at each end of a cylindrical chest and connected by a stem, is provided with inlet and outlet ports to admit and exhaust the steam to the opposite ends of the cylinder. Combined therewith is a sleeve on the stem, having a flat disk at each end with openings to cut off the steam from the valve, and operated by a pinion on the sleeve, which meshes into a rack on the end of the stem of the governor and controls the speed of the engine.

Claim.—1. The combination, with the governor and rod J, of the sleeve *e*, with its disks *f*, when constructed and arranged to operate substantially as and for the purposes specified.

2. The combination of the rotary heads *d* and the disks *f*, when constructed and arranged to operate substantially as and for the purposes specified.

139,034.—*Edge-Plane for Trimming the Soles and Welts of Boots and Shoes.*—BENJAMIN J. TATMAN, Philadelphia, Pa. Application filed September 28, 1872.

Two knives are secured by the same screw in a hand-plane, one for trimming the sole, the other for the welt, arranged with a guard for the protection of the upper.

Claim.—The combination of the welt-cutter F with the guard D, provided with the inclined groove *d* and set-screw *b'*, substantially in the manner and for the purpose set forth.

139,035.—*Heating-Stove.*—CHARLES G. THOMPSON, Memphis, Tenn., assignor of one-half his right to ALBERT B. PUSH, same place. Application filed February 7, 1873.

A grate of crescent form embraces one side and the ends of the lower portion of the oval heating-chamber of the stove. A flue, open at its flaring lower end, covers the front and entire upper portion of the stove, and conducts away the products of combustion.

Claim.—1. The combination of the grate *a*, main cylinder or chamber *b*, bed-plate *c*, external jacket *d*, enlargement or mouth d^1, and chamber or passages d^2, *e*, and *f*, substantially as and for the purposes described and set forth.

2. In a heating and cooking stove, the combination of an external grate, *a*, main cylinder or chamber *b*, bed-plate *c*, external jacket *d*, enlargement or mouth d^1, chambers d^2, *e*, and *f*, ovens i^1, dampers or slides i^2, *i*, and i^1, and doors *j* and j^1, all arranged and constructed substantially as and for the purposes specified.

139,036.—*Plow.*—GEORGE B. VAUGHAN, Peoria, Ill. Application filed October 15, 1872.

The axis of the roller is adjustable at its lower end so as to vary the angle. A projection of the mold-board forms a shield for the axis.

Claim.—1. An adjustable plate, in combination with roller D, for regulating its angle so as to facilitate the discharge of weeds or stalks from the plow, substantially as set forth.

2. The combination of the adjustable plate *g*, shield *e*, roller D, standard C, and beam B, substantially as set forth.

139,037.—*Door-Spring.*—MILTON L. WEBSTER, Albany, N. Y. Application filed April 17, 1873.

One end of a spring is attached to the door, and the other to the pivoted end of a crank-lever, which is likewise secured to the door, and arranged about at right angles with it. A draw-bar is securely fastened one end to the top of the door-frame and the other to the outer end of the crank-lever, at an acute angle with the same, being arranged a little back of the pivot of the lever and toward the edge of the hinged stile of the door. Under this construction the opening of the door, drawing on the crank-lever, increases the tension of the spring, and the draw-bar, up to a certain point, operates to close the door; but when the door is set wide open the same devices hold it in that position without removal of the spring.

Claim.—The device for closing a door, consisting of the crank-lever C pivoted to the door at about right angles with the same, and the draw-bar E pivoted at one end to the door-frame, and its opposite end to the outer end of the lever C, and at an acute angle with the same, and the spring G attached at one end to the door, and its other end to the pivoted ends of the lever C and draw-bar E, with or without the link F, substantially as and for the purpose set forth.

139,038.—*Machine for Stretching and Drying Cloth.*—WILLIAM BAILEY, Brooklyn, assignor to GEORGE B. SLOAN, Oswego, N. Y. Application filed December 13, 1872.

During the movement of the chains the rollers of the sheaves are caused to act, those of one line on the upper and those of the other line on the under guide-rail, and the strain on the chains is in a line with the center of the sheaves.

Claim.—The combination, with the endless carrier-chains and the tracks above and upon which they move between the drums, of the flanged side guide-rails and the sheaves attached to the exterior opposite faces of the carrier-chains in a line coinciding with the line of draft of the tenter-hooks, and independent single-flanged rollers, (two for each sheave,) formed and arranged therein, as described, to engage said guide-rails, substantially in the manner and for the purposes shown and set forth.

139,039.—*Dental Drill.*—JONATHAN W. BAXTER, Vevay, Ind. Application filed February 1, 1873.

The drill is rotated by a pitman-crank which is worked by the thumb of the operator. The pitman is at its upper end connected to a pawl. A coil-spring is placed just below the thumb-rest.

Claim.—The combination of the worm E, driving-wheel F, a pawl mechanism, and a retracting-spring with the drill-spindle A of a hand dental drilling-machine, substantially as specified.

139,040.—*Sewing-Machine.*—EUGENE W. BERRE, Evansville, Wis. Application filed March 29, 1873.

The feed-plate is at the end of a bent arm pivoted to a reciprocating bar operated by means of a vibrating lever engaging lugs on the bar, and the feed-plate is raised by means of the rock-stand; also connected to the vibrating lever.

Claim.—The combination of a bar, D, feed-plate A, lugs G F, and rock-stand H with the feed-plate D, link L', and the lever E, as and for the purpose described.

139,041.—*Lifting-Jack.*—WILLIAM A. BRUNKER, Farmersburg, Ind. Application filed January 10, 1873.

A hinged lever connected by stirrup to a lever pivoted on an upright frame, to which first lever is hinged, the pivoted lever having a self-locking device, consisting of a keeper on one side, which engages with a ratchet-bar secured to the standard of the lifter.

Claim.—The combination of the hinged lever D and stirrup E with the pivoted lever A'' and a locking device, B, substantially as shown and described, to operate as specified.

139,042.—*Stock for Drilling or Tapping Instruments.*—GEORGE BUNCH, Bonnot's Mill, Mo. Application filed March 8, 1873.

A trunnion, having sockets in each end, is turned by means of a large gear situated below upon a hand-crank shaft, which meshes with a pinion midway on the trunnion. One of these sockets can be used as a wrench to take off and put on nuts, while the other is adapted to receive a die or tap, whereby the device may thread bolts or nuts.

Claim.—1. The double-socketed trunnion F, arranged to rotate in a frame, as and for the purpose specified.

2. The trunnions F, in combination with the pinion *b*, cog-wheel *d*, crank E, prongs C, and pieces D of frame A, for the purpose of loosening and tightening nuts and threading nuts and bolts, substantially as described.

139,043.—*Machine for Entering Blind-Slats.*—JAMES CHURCH, St. Louis, Mo. Application filed October 30, 1872.

The slats are adjusted regularly in the notches of the frame, which are made to conform to the mortises on the stiles.

Claim.—The combination and arrangement of horizontal bars A B with inclined planes or faces *a b*, shoulders *a' b'*, and cross-bar C, as and for the purpose set forth.

139,044.—*Sample-Holder for Displaying Boots, &c.*—JACOB CLOES, Decatur, Ind. Application filed March 22, 1873.

The V-shaped foot gives a firm base to the holder and allows a rigid connection to the boxes; the guard secures the return of the clamp to its proper place, so that the clamp-bar cannot be bent or work loosely.

Claim.—The sample-holder B, of wire, having clamp ends *c*, spring *a*, foot *b*, and guard *d*, substantially as and for the purpose described.

139,045.—*Medical Compound.*—JOHN CONKELMAN, St. Louis, Mo. Application filed August 9, 1872.

Glycerine, concentrated lemon extract, oil of sassafras, alcohol, carbolic acid, muriatic acid, tincture ledum palustre, pulverized citric acid.

Claim.—The medical compound composed of the ingredients above described, in or about the proportions set forth.

139,046.—*Railroad-Switch Signal.*—JOHN CULLEN, Oxford, Miss. Application filed February 21, 1873.

Two reflectors attached to the switch-lever at different heights serve to show to the locomotive-driver the position or direction of the said lever to considerable distance at night by means of the illumination from the head-light.

Claim.—1. The reflectors G, two or more, in combination with the lever A, as and for the purpose specified.

2. In combination with the reflectors G, the bar H, hinge J, and clamp I, or their equivalents, as and for the purposes described.

139,047.—*Stove-Polish.*—JACOB L. DANFORTH, Newburyport, Mass. Application filed April 9, 1873.

Two parts of powdered copperas, one part pulverized bone-black, one part black lead, by weight, and mixed with water to the consistency of cream.

Claim.—The herein-described enamel for polishing stoves, &c., compounded of the ingredients specified, substantially as set forth.

139,048.—*Eyeleting-Machine.*—ALFRED DAWES, Hudson, assignor to HENRY ELMER TOWNSEND, Boston, Mass. Application filed January 9, 1873.

The machine is operated by cam mechanism. The levers actuating the plungers are pivoted in sleeves below their fulcrums so that they may have both a lateral and a reciprocating vertical movement. The head-block slides in a groove, and by its motion gives the plungers their the lateral movement. It is adjustable by the connecting-rod and lever. The setting-anvil rests upon a spiral spring, and a guide-post passes through a slot in the bed-plate, and is made movable by a retracting spring underneath the lid.

Claim.—1. The lever B having the joint *b* and the sleeve D.

2. The lever B jointed below the fulcrum so as to be capable of being moved laterally and vertically.

3. The sliding block I with the plates G and G′, and the plungers E and F.

4. The sliding block I with the plates G and G′ and the plungers E and F, in combination with the jointed levers B and C.

5. The adjustable connecting-rod J, in combination with the sliding block I.

6. The adjustable connecting-rod J, in combination with sliding block I and the lever K.

7. In an eyelet-setting machine, a setting-anvil resting upon a spring.

8. The guide-post V upon the slide *r*, in combination with a retracting spring.

9. The movable guide-post V.

10. In an eyeleting-machine, the jointed levers B and C; the adjusting-plate G; the adjustable connecting-rod J, in combination with the adjustable lever K or other device for actuating the feed.

11. In an eyeleting-machine, a movable guide-post.

139,049.—*Stucco Cornice.*—ANDREW DERROM, Paterson, N. J. Application filed January 6, 1873.

Cornices of stucco or plaster of Paris are molded upon a frame of rods so as to be portable. They are attached to their places by screws, or in any convenient manner, the screw-heads being afterward covered.

Claim.—The rigid frame A arranged within cornices, panels, or other ornaments of plaster or equivalent material, substantially as set forth.

139,050.—*Mold for Forming Building-Blocks.*—ANDREW DERROM, Paterson, N. J. Application filed January 6, 1873.

A large or concrete block is formed in a jointed mold on a "face"-piece. After "setting" a while the mold is turned so as to bring the false bottom below the molded block and opened out. The block is now removed by and on the false bottom for drying, and the operation repeated.

Claim.—The face-piece *a* and false bottom *b*, combined with the hinged sides, constructed as shown and specified, for the purpose described.

139,051.—*Spinning-Mule.*—JOHN J. DEWEY, Queechee, Vt. Application filed February 15, 1873.

The gearing is to enable the operator, after a set of cops has been completed, to run the carriage in slowly by hand, instead of pushing directly against it, so that he may at the same time, by means of the lever on the follower, direct the yarn lower down on the spindles than it would be possible in the ordinary operation of the self-acting devices, so as to wind several layers about the spindles to form a packing for holding the new bobbins, which are to be applied in place of the full ones.

Claim.—1. The combination, with a spinning mule or jack, of a band-crank and reducing-gearing, arranged substantially as described, and adapted for running the carriage in by hand when the driving-belt is thrown off, substantially as specified.

2. In a spinning mule or jack having gearing for running the carriage in by hand, as above described, a lever, K, combined with the follower-rod L, substantially as specified.

139,052.—*Compound Steam-Engine.*—CHARLES E. EMERY, New York, N. Y. Application filed November 9, 1872.

Arranges rocking valves in the heads of an annular compound engine, by which the ports are shortened. Also connects the valves through a universal joint with its spindle.

Claim.—1. In an annular compound engine, the combination with and arrangement in or upon the cylinder head or bottom of one or more valves, regulating the admission or release of the steam to or from the interior cylinder, substantially as and for the purposes specified.

2. In an annular compound engine, one or more valves arranged in or upon the cylinder-heads, as described, and operated in whole or in part from the valve-operating mechanism of the outer cylinder, substantially as set forth.

3. The combination of a rocking or circular valve with its spindle through a universal joint, substantially as and for the purposes specified.

139,053.—*Spark-Arrester.*—EUGENE FONTAINE, Fort Wayne, Ind. Application filed April 17, 1873.

The smoke is deflected by a curved cap or plate into a double cone-shaped chamber with a deflector across its upper opening and one near the bottom. The latter stops the downward currents. A rim descending and a wire-gauze prevent the escape of cinders, which fall to the bottom of the chamber and are carried off by a pipe.

Claim.—1. The combination of the smoke-stack, the deflecting-cap with curved top, the smoke-chamber with wire-gauze cover and hopper-shaped bottom having no opening in the inclined side opposite the smoke-stack, and the escape-flue for the cinders, all constructed and arranged to operate substantially as described.

2. In combination with the deflecting-cap B, the smoke-chamber C, and escape-flue D, the hinged cinder-box E, constructed and arranged to operate substantially as described.

3. In combination with the adjustable curved plate *b* of the deflecting-cap and the smoke-chamber C, the deflecting-plate I′, in said chamber.

4. In combination with the deflecting-cap with its curved plate *b*, and the smoke-chamber with its hopper-shaped bottom having no opening in the inclined side opposite the smoke-stack and discharge-flue, the deflecting-plate J, arranged to operate substantially as described.

5. In combination with the deflecting-cap B and smoke-chamber C, the annular conical flange I, substantially as and for the purpose described.

6. In combination with the escape-pipe D and hinged cinder-box E, the flexible and detachable joint *e*, substantially as described.

139,054.—*Nut and Coffee Roaster.*—D'ALEMBERT T. GALE, Fort Wayne, Ind. Application filed December 9, 1872.

There are connected with the roasting-cylinder an escapement-wheel, pendulum, &c., in combination with spring-driving mechanism, whereby an intermittent rotary motion is given to the cylinder. When the springs are wound up the cylinder revolves in the reverse direction.

Claim.—In a nut and coffee roaster, constructed as described, the driving mechanism *b p* and pendulum attachment F *m n o*, arranged in relation to the roasting-cylinder B in such manner that the several springs are wound up by a single movement of the shaft C, whereby, also, the contents of the cylinder are given reverse motion, substantially as and for the purpose specified.

139,055.—*Governor.*—ROBERT W. GARDNER, Quincy, Ill. Application filed February 1, 1873.

A stop-motion, by which the valve is closed, when the belt breaks, consists of a rotary frame and supporting weight-lever fulcrumed in a vertical slide supported on a tapering arm, that is itself held in position by the strain of the belt, and when said belt breaks the valve closes. The valve-seat has a central stem and rests on a rebate in the shell, and is held to its place by a spider and reverse ring on the under side and nut screwed onto the stem. The face of the valve and guide are held to the valve by a clamp and nut on the guide.

Claim.—1. The combination, with valve-rod E, of the rotary frame I and supporting weight-lever F fulcrumed in a vertical slide supported on a tapering arm that is itself held in position by the strain of the belt, substantially as and for the purpose described.

2. The valve-seat *a* having stem *d*, and resting on rabbet of casting combined with a spider, *b*, fitted on a reverse rabbet of said casting, and a nut, *c*, applied as and for the purpose described.

3. A face, *f*, and a guide, *i*, secured to valve A by the same clamp *g k*, as described.

4. A valve, A *f*, having guide-pin *i* combined with a valve-seat, *a*, having socket *d*, as and for the purpose set forth.

139,056.—*Dyeing Madder Colors.*—FREDERICK A. GATTY, Accrington, England. Application filed April 14, 1873.

The cloth or yarn is first printed or otherwise prepared with the mordant, and the fatty acid combined therewith afterward, taking the place of the operation commonly called dunging.

Claim.—The improvement in the art of coloring cotton fabrics and yarns by treating with neutral soap or emulsions of fatty acids, or of oils or fats, either saponified or in their natural state, or the two combined, in the manner and for the purpose described.

139,057.—*Knife-Cleaner.*—TIMOTHY GINGRAS and LOUIS GINGRAS, Buffalo, N. Y. Application filed March 22, 1873.

A box with a drawer, above which is placed a divided-hinged board in two parts, with their inner surfaces covered with leather, with a cover which extends down to inclose the devices and form the box, which is inclosed in a frame into which it slides, and may be detached or suspended upon the wall by screws.

Claim.—The stationary outer case A, the inner movable box B, the drawer *a*, the superposed leather-lined and divided board *d e*, the leather-lined lid *f*, and the cover C, combined, constructed, and arranged as and for the purpose described.

139,058.—*Heeling-Machine.*—CHARLES W. GLIDDEN, Lynn, and HADLEY P. FAIRFIELD, Boston, assignors to JAMES W. BROOKS, trustee, Boston, Mass. Application filed April 19, 1873.

The carriage supporting the cutters is reciprocated around the curved part of the heel automatically upon a stationary plate, in which are two pattern or guide grooves, into which pins from the carriage project, the pins keeping the cutters at a proper angle along the curved edge upon or to be produced upon the heel. The nailing and turning mechanism operated by compressed air.

Claim.—1. The plate *k*, made with the two grooves, *p q*, for controlling the presentation of the cutting mechanism, substantially as described.

2. In combination with the boot-holding mechanism and the guide mechanism for controlling the movement of the cutting mechanism, the reciprocating rotary cutter and its bearings a^3 and guides e^3 x^3, all arranged substantially as shown and described.

3. The cutter z^2, having the adjustable guide A^3, arranged substantially as shown and described.

4. In combination with a boot-holding and heel-nailing mechanism, a trimming mechanism automatically reciprocated by means substantially as described.

5. In combination with the boot-holding and heel-nailing mechanism, the trimming mechanism driven by the belts and wheel and crank-connections, substantially as shown and described.

6. In combination with the trimming mechanism and the nailing mechanism, the wheel z^3, thrown into and from connection with the driving-wheel f^6 by means substantially as shown and described.

7. The heel-nailing mechanism and the heel-trimming mechanism, actuated directly and indirectly from the driving-shaft e^4 by means substantially as described.

8. In combination with the nailing mechanism, the piston-cylinder g^3, piston f^7, valve-chest A^3, valve or valves n^3, and tank p^3, substantially as described.

9. The last a^3, made with the yielding toe-piece pressed forward by the spring and jointed, substantially as shown and described.

10. The combination and arrangement, substantially as shown and described, of the nailer-rod e^3, piston f^7, cylinder g^3, ports, valves, and valve-chest, tank p^3, pump p^4 and its piston, connecting-rod q^4, crank-wheel r^4, and driving-shaft e^4.

11. In combination with the nailing mechanism actuated by the piston f^7, the valve mechanism operated by the foot-levers, substantially as shown and described.

12. In combination with the wheel r^3, the brake g^4 and the mechanism for effecting the rise and release of the wheel, substantially as shown and described.

139,059.—*Wheel-Plow.*—ISAAC B. GREEN, Gillespie, Ill. Application filed March 15, 1873.

The guide prevents lateral movement of the plow.

Claim.—The pendent standard K and guide Q, arranged under the axle, in combination with a two-barred plow-beam, as and for the purpose described.

139,060.—*Detachable Boot and Shoe Tip.*—MICHAEL R. HANLEY, Providence, R. I. Application filed January 6, 1873.

The tip is made of spring-metal, having teeth at right angles to its vertical plane. Two of the teeth are hook-shaped, and when the tip is applied between the sole and upper of a shoe they engage on pins or hooks in the sole.

Claim.—The metallic shoe-tip A, provided with the lips or teeth B, and the hook-lips C C on its lower edge, as shown and described.

139,061.—*Mail-Bag.*—THOMAS J. HARDAWAY, Macon, Ga. Application filed March 22, 1873.

Claim.—As the improvement in mail-bags, hereinbefore described, the locking label-piece C *g*, attached to one of the four-hinged bars near the joint B by means of loop-wire loop *f* and staple *e*, and the slots *b′ d′* and staples *b* and *d*, all arranged as specified, whereby said piece is adapted to cover the joint and lock the bars together, as shown and described.

139,062.—*Cotton-Worm Destroyer.*—JACK. HELM, Hochheim, Texas, assignor to himself and CHARLES TIM, same place. Application filed November 16, 1872.

An insect-destroyer mounted on two driving-wheels. Over these wheels and receiving motion therefrom is pivoted a shaft provided with jointed brushes. In the rear of the rotary brushes are secured stationary brushes, which receive the insects knocked from the cotton-plants by the rotary brushes, and from thence down to the earth, where they are covered with earth by means of jointed bottoms. The inside joints are each provided with a share. The jointed bottoms accommodate themselves to the side-hill.

Claim.—1. The frame A, lever B, wheels C, boards *a a*, and wings *e f*, combined with each other, and arranged to operate substantially as set forth and specified.

2. The jointed bottom *a e f*, and brushes E relatively arranged on a frame of the machine, as and for the purpose described.

3. The brushes F F, arranged, in combination with the rotary brushes E, on the frame of a cotton-worm destroyer, as set forth.

139,063.—*Reversible Street-Car.*—WILLIAM T. JENKS, Toledo, Ohio. Application filed April 19, 1873.

A flat metallic ring, having its sides depressed, is secured to the under side of the car-body, and is supported by rollers which are arranged at the sides of the truck; the car-body, when reversed, is thus raised clear of the wheels.

Claim.—The circle E, the flanged segment F, the rollers G, and the guard D, in combination with the car-body A, truck-frame B, and king-bolt C, substantially as herein shown and described.

139,064.—*Ruffler and Gatherer for Sewing-Machines.*—ALLEN JOHNSTON, Ottumwa, Iowa. Application filed February 18, 1873.

The piece to be ruffled is placed between the holding and separating-plates. The gathering-blade engages it beyond the end of the separating-plate, and the position of the latter determines the fulness of the ruffle. The gathering-blade is not slotted as usual for the passage of the needle, and it is drawn back through the lever and link just as the needle commences to descend.

Claim.—1. The vibratory lever, deriving a positive motion in both directions from the needle-bar, and the reciprocating gathering-blade jointed to said lever so as to move back upon commencement of the downward movement of the needle-bar, in combination with an upper slotted stationary holding blade or plate, and an intermediate adjustable separating-plate, the said holding-blade being arranged with its edge in advance of the separating-plate to hold the gather when the gathering-blade recedes before the needle enters the cloth, said parts being arranged for joint operation, as set forth.

2. The separator-plate, supported and arranged to slide on the frame of the attachment, substantially as described, in combination with the adjusting cam or eccentric pivoted to the frame and working in a recess in the said plate, substantially as and for the purposes set forth.

3. The holding-plate and false foot, carried by an arm pivoted or hinged to the frame, as described, in combination with the reciprocating gathering-blade, substantially as shown and set forth.

139,065.—*Harrow.*—THOMAS M. KING, Murfreesborough, Tenn. Application filed January 6, 1873.

Two harrows, the frame of each being formed of a straight bar and a semicircular bar, and attached to a beam by bolts so as to be adjustable at various angles to each other.

Claim.—The improved harrow, consisting of the two like parts, each formed of a straight bar, D, perforated semicircular bar F, central brace-bar G, and teeth E, attached to the beam A by two adjusting bolts, *f*, as shown and described, whereby they may be set at various angles to each other horizontally, and adjusted so as to leave a wide or narrow space between them at their front ends, as specified.

139,066.—*Chandelier.*—JOSEPH KINTZ, West Meriden, assignor to JOSEPH KINTZ, Meriden, and P. J. CLARK, West Meriden, Conn. Application filed November 30, 1872.

The top plate, which holds the arms in place, is swiveled upon a nut which moves on the screw-threading tube placed upon the central rods. The ornamental tube surrounding central rod need not be disturbed while adjusting the arms.

Claim.—1. The combination of the screw H and the nut F with the rod A and the top D of the center-piece, the screw H being secured to the rod and the nut F swiveled to the top D, substantially as specified.

2. The ornamental tube K, screw H, and nut F, arranged in such manner that the nut can be raised and lowered to connect and disconnect the arms without disturbing said tube, substantially as specified.

139,067.—*Sewing-Machine.*—LEMBRUS W. LATHROP, Philadelphia, Pa., assignor to LATHROP COMBINATION SEWING-MACHINE COMPANY, New York, N. Y. Application filed October 19, 1872.

The oscillating looper first carries the loop of needle-thread across the path of the spool-case, then the revolving looper engages the loops so distended and draws down its lower portion when the spool is passed through, and, in the continued rotation of the hook, the thread-guide, and bulged plate control and deliver the loop. The shifting pin is allowed to project through the plate when it is desired to retain the loop to form a chain or interlocked chain-stitch instead of the lock-stitch. The machine-plate is hinged to swing away from the throat-plate to gain access to the working parts.

Claim.—1. The combination, with the needle and spool-carrier, of the oscillating looper I and revolving looper O, the latter having the thread-guide U^3 and bulged plate U, substantially as specified.

2. The combination, with the oscillating looper, revolving looper, thread-guide, and the bulged plate, of the shifting pin *a* and plate Y, for making the chain-stitch, substantially as specified.

3. The arrangement of the driving-shaft D, oscillating looper, revolving looper, pendulum, wrist-pin, and feed-cams, substantially as specified.

4. The top of the case, composed of the fixed parts *t′* and hinged parts *u′* and *v′*, substantially as specified.

139,068.—*Apparatus for Detaching Horses.*—HEZEKIAH LATSHAW, McKnightstown, Pa. Application filed March 14, 1873.

By means of the strap the slides are drawn toward each other, and the inner ends of the catches are released so that the traces may be drawn over the cockeyes as the horse leaves the shafts.

Claim.—The combination of the levers C C, pivoted to the ends of the whiffletree, and having cockeyes on their outer ends, the boxes *a a*, and the angular and slotted slides *e e′ a a′*, all constructed as and for the purposes set forth.

139,069.—*Screw-Driver.*—CHARLES LAW, Pittston, Pa. Application filed April 30, 1873.

Claim.—As a new article of manufacture, a screw-driver having a self-adjusting or swinging end or bit pivoted to the blade, substantially as shown and described.

139,070.—*Compound Steam-Pump.*—ARTHUR J. L. LORETZ, Brooklyn, N. Y. Application filed July 22, 1872.

Two vertical high and low pressure steam-cylinders with pistons, chests, and valves are connected to a horizontal crank-shaft. The lower part of said cylinders form the pumps, with inlet and outlet valves. The hollow plunger forms a valve, at its top seating on a piston, which is held by friction in the enlarged upper portion of the cylinders, and has another valve in its lower end. Steam being admitted, the hollow plunger rises until the piston strikes the head and opens the lower valve, allowing steam and vapor to pass through and to be condensed. The water is forced out by the downward stroke.

Claim.—1. The combination of the cylindrical pump-chambers A^3 and B^3, steam-chambers A and B with the hollow plunger K, high-pressure compartments C C′, and low-pressure compartments L L′, arranged substantially as shown, and for the purpose set forth.

2. The combination of the valves P and U and hollow plunger K with the chambers B B^3, constructed and arranged for operation substantially as shown, and for the purpose set forth.

3. The combination of the chambers A A^2 B B^3 forming compartments L L′ C C′, the plungers K, and valves P U with inlet-valves G and outlet-valves Q, all arranged as and for the purpose set forth.

139,071.—*Compound High and Low Pressure Steam-Pump.*—ARTHUR J. L. LORETZ, Brooklyn, N. Y. Application filed October 9, 1872.

Steam passes into stationary chest, flows through tube, enters upper chamber, raising the combination piston, and causing valve to close passages to upper low-pressure cylinder, the steam previously used escaping into side vacuum-chamber, the high-pressure steam in lower chamber passing through apertures in compound piston into lower low-pressure cylinder, the lower valve opening the ports for this purpose. Valve and steam chest is given an initial movement by piston operating tappets thereon, the lower valve is closed thereby, the upper is opened; equilibrium

in chamber being thus destroyed, steam valve opens to full width, and piston descends.

Claim.—1. The arrangement of the pistons G^1 G^2 in their cylinders A and B, connected by tubular piece H, the partition Q of the vacuum and pump chamber C, the steam-chest I^1 I^2, and chambers N^1 N^2, M^1 M^2, and L^1 L^2, all constructed to operate substantially as and for the purpose set forth.

2. The combination of the double valve R, its packing and spring rings, the tubes J^1 J^2, with the cylinder N^1 N^2 and M^1 M^2, all arranged substantially as shown and for the purpose specified.

3. The combination of the annular valve U, provided with packing-rings, with the double valve R, arranged substantially as shown, and for the purpose described.

4. The combination of the steam-chests I^1 I^2, having grooves F^1 F^2 and packing, with the double valve O, tappets Y, connecting-tube H, tubes J^1 J^2 secured to cylinders A and B, and suitable openings, substantially as and for the purpose herein described.

5. The cylinders A B bolted with flanges D^1 D^2 to the chamber C containing the suction and delivery rollers, in combination with the pistons G^1 G^2, passages S T, tube H, double valve R, annular valve U, steam-chest I, valve O, and tubes J, all arranged substantially as and for the purpose specified.

139,072.—*Milk-Boiler Alarm.*—SAMUEL MANGOLD, New York, N. Y. Application filed December 14, 1872.

The vessel for containing the milk to be boiled supports a standard, on which a bell is hung by an oscillating frame so as to be rung when allowed to fall by a suitable limiting slot. A small floating vessel within the larger one is pivoted to the standard by an arm carrying a detent pin, and is depressed so as to release the bell and give the alarm, when the ebullition of the milk causes it to overflow into the smaller vessel.

Claim.—1. The bell F, applied to the plate E, having a zigzag slot, and serving as an alarm attachment to milk-boilers, as set forth.

2. The vessel D applied to the pivoted arm C, which carries the pin *g* to lock the slotted plate or shank E of the bell, as specified.

3. The combination of the adjustable shank *b* and plate B with the pivoted arm C, vessel D, slotted plate E, and bell F, all arranged to operate substantially as herein shown and described.

139,073.—*Sacking Attachment for Thrashing-Machines.*—WALTER MASTERTON, Stockton, Cal. Application filed February 6, 1873.

Sacks suspended clear of ground and properly stretched while being filled by griping attachments, which are adjustable to accommodate sacks of different sizes, and so arranged that the sacks cannot be torn. An automatic vibrating lever striking blows in rapid succession against the bottom of the sack to assist in filling the whole bottom of the sack.

Claim.—1. The griping attachment, consisting of the transverse shafts A A with their griping-plates *i i*, lever-arms *j j*, and operating-levers *p*, in combination with the stationary vertical plates *s m*, when said plates are provided with a yielding or ribbed surface, substantially as and for the purpose above described.

2. The adjustable rack-bars *k k* with their movable sack-griping attachment, in combination with a stationary griping attachment upon the opposite side of the opening *d*, substantially as and for the purpose above described.

3. The vibrating lever R, substantially as and for the purpose above described.

139,074.—*Seed-Drill.*—ELBRIDGE G. MATTHEWS, Oakham, Mass. Application filed February 21, 1873.

Claim.—1. In combination with the hopper, the plunger, having an automatic, positive, and intermittent downward movement to carry its foot into or toward the delivery-orifice, substantially as described.

2. In combination with the hopper and delivery-orifice, a plunger shod with rubber or rubber compound, substantially as described.

3. In combination with the hopper and conductor, the gage-disk *n* placed upon the flange e^2, which forms an integral part of the conductor, and is fastened to the frame between the hopper and conductor, substantially as described.

4. In combination with the sowing mechanism, the coverer, formed with the converging blades *t*, having the shoe *u*, substantially as described.

5. The markers *z* formed with the radiating blades a^2, substantially as described.

6. The conductor *p*, cast with the flange e^2, for sustaining the hopper and gage-plate, and uniting the handles *d* and arms b^2, substantially as described.

139,075.—*Straw-Feeding Attachment for Furnaces.*—DAVID MOREY, Watsonville, Cal. Application filed February 17, 1873.

A removable spout is provided with a hinged valve which closes against the external air, when the straw is forced or fed into the furnace.

Claim.—The removable tube or funnel A, having arranged within it the diagonal valve with its lower edge turned up, in combination with a furnace, as set forth.

139,076.—*Turning-Lathe for Wood.*—ANDERSON R. PARK, Columbia, Texas. Application filed July 30, 1872.

The material is placed between revolving centers, which are secured upon a sliding bed, and is cut to the required shape by a rotating cutter guided in its movements by a guide-wheel and pattern.

Claim.—1. The combination, in a lathe for turning irregular forms, of a pattern, O, for the sides of the saddle, constructed as described, a carrier-plate, P, and suitable plates or holding devices M S, substantially as specified.

2. The combination, with the carrier *h*, of the steady-pins *k* and the lever *l*, substantially as specified.

3. The combination, with the feed-screw and the slide D, of the divided nut O' P', lever Q', double dog R', and racks S', substantially as specified.

139,077.—*Wire Mattress.*—EMERY PARKER, New Britain, Conn. Application filed March 1, 1873.

Triangular springs are connected alternately at their base and points and attached to coiled loops, which are suspended from the end bars.

Claim.—1. A bed-bottom formed from a series of triangular links, A C, connected alternately at their base and points, and combined with a spring or springs to impart the necessary elasticity, substantially as set forth.

2. The herein-described spring for bed-bottoms, consisting of a pair of coiled loops, E F, united at their ends to form a combined spring, substantially as described.

139,078.—*Manufacture of Sugar.*—AUGUST F. W. PAETZ, Oakland, Cal. Application filed March 1, 1873.

After sugar has been refined in a centrifugal machine it is subjected to a solution of dextrine to render it adhesive, after which it is pressed into cubes.

Claim.—The application of a solution of dextrine to granular sugar in a centrifugal machine, substantially as and for the purpose herein described.

139,079.—*Hand-Punch and Cutting-Nipper.*—JOHN O. REILLEY, Jersey City, N. J., assignor of one-half his right to HENRY M. MARTIN, New York, N. Y. Application filed August 16, 1872.

The punch is arranged at the side of the jaws opposite to the cutters, so that the shoulder on one die or punch, coming in contact with the top of the sleeve of the other, forms a stop for the knives and prevents their edges from injury.

Claim.—The arrangement of the cutting nippers and punch relatively to each other, whereby the latter forms a stop for the former, substantially as and for the purpose set forth.

139,080.—*Chimney-Cowl.*—JOSEPH H. RICHARDSON, Philadelphia, Pa., assignor of one-half his right to DAVID HARDIE, same place. Application filed September 30, 1872.

The wind enters the ventilator and surrounds and moves parallel with the sides of the inner cylinder.

Claim.—The combination of the outer cylinder A, provided with the openings C, D, and E, with the inner cylinder F, closed at the upper end, and provided with openings G G, adapted to operate substantially in the manner as herein shown and described.

139,081.—*Jelly-Glass.*—DANIEL C. RIPLEY, Pittsburg, Pa. Application filed April 30, 1873.

Claim.—1. A jelly-glass, having a base and lip of such shape that the same may be used in forming a pile of similar glasses, in which the base of each glass forms a cap or lid for the next lower one, substantially as and for the purposes described.

2. A pile or column of jelly-glasses, arranged one above the other, the base of each glass forming the cap or lid of the glass directly under it, the glass at the apex of the column being closed by any suitable detached lid, substantially as and for the purposes described.

3. As a new article of manufacture, a jelly-glass, the diameter of which exceeds the height, substantially as described.

139,082.—*Door-Check.*—GEORGE E. RITTENHOUSE, Akron, Ohio. Application filed April 12, 1873.

A metallic plate with notched circular flange is attached to the inside of the door near the knob and casing. A short lever, having at one end a button or knob, is pivoted centrally to this plate, the knob end being slightly bent up to pass freely over the notches, a pawl being applied at its lower side. At the opposite end of this short lever is pivoted a long rod or bolt, which slides in a guide-staple near the bottom of the door, and has rubber capping attached to its floor end. There is also a bolt-hole in the floor—the device operating either as a positive fastening or as an adjustable check to hold the door at any desired angle or position.

Claim.—In combination with the plate B, provided with a toothed circular flange, *a*, the lever C pivoted thereto at *d* and having the catch *c*, and the rod D with capping *h*, all arranged to operate as specified.

139,083.—*Manufacture of Gas.*—FREDERICK A. SABBATON, Troy, N. Y. Application filed April 27, 1873.

To save fuel, the tarry deposit in the hydraulic main is utilized by means of a tube or siphon, which conducts the deposit to a steam-injector plated beneath the retort and communicating with the fire-box. A funnel-shaped pipe surrounds the injector, and has its outer end closed by a slotted disk to regulate the amount of air admitted to the upper part of the fire-box.

Claim.—1. The combination of a steam and air injector with the hydraulic main and tar-conveying tube for feeding the contents of the hydraulic main to the furnace, as set forth.

2. The air-register *f* applied to the perforated face of the box *e*, in combination with the tube *g* and pipes *a b*, as specified.

139,084.—*Self-Measuring Oil-Tank.*—JACOB SCHALK, Jr., Guttenberg, N. J. Application filed January 6, 1873.

A measuring-chamber beneath the tank is filled, when desired, through a valve connected with a lever, which is operated by rod passing down through the top or cover of the tank and connecting outside with a crank. The kerosene or oil is drawn from the measuring-chamber by a faucet in the usual way.

Claim.—The crank W, reciprocating frame U V T, and lever mechanism R M P O, arranged in connection with the receptacle and valve mechanism, as and for the purpose specified.

139,085.—*Filter for Water-Coolers.*—CHARLES SCHNEIDER, Newark, N. J. Application filed April 26, 1873.

Filter so constructed that the impurities contained in the water may be excluded.

Claim.—1. The water-cooler filter C, having conical spout B', detachable top D, and adjustable legs *f*, substantially as and for the purpose described.

2. The combination of filter C with faucet B and cooler A, to produce filtering of all the water drawn off, as set forth.

139,086.—*Wagon-Brake Shoe.*—HENRY SEITZ, Palmyra, Mo. Application filed March 22, 1873.

The sections of the brake-shoe are securely held by means of a clamp against the serrated edge of an adjustable plate, which is secured to the brake-bar.

Claim.—1. The brake-bar A, having the slot *a'* and the stirrup or link B arranged therein, as shown and described.

2. The stirrup or link B, the plates E, and the blocks C, in combination with the bar A having the slot *a'*, substantially as herein shown and described, and for the purpose set forth.

139,087.—*Adjustable Reamer.*—ALFRED SHEDLOCK, New York, N. Y. Application filed August 7, 1872.

A tapered mandrel, rectangular in cross-section, is inclosed by two grooved blocks having cutting-edges, held together and to the stock by screws that pass through all. A feed-screw inserted axially in the end of the stock, and a nut through which it passes project into each block and serve to adjust the blocks upon the tapered mandrel.

Claim.—1. The two blocks *b* and *b'* having the cutting-edges formed thereon, capable of being adjusted on the body of the reamer *a*, constructed and operating substantially as described.

2. The screw *d* and nut *e*, with its screws *e' e'* and nuts, in combination with the blocks *b* and *b'* and body of the reamer, substantially as described.

3. The adjustable reamer, as before claimed, in combination with the collar A, forming the steady-pin when it is desired to use the tool as a counter-bore.

139,088.—*Manufacture of Umbrella-Stretchers.*—JOSIAH SHEPARD, New Britain, Conn. Application filed December 27, 1872.

The superior stiffness and elasticity imparted to the stretcher by hammering warrants, it is said, the use of lighter wire than would otherwise be required.

Claim.—As an article of manufacture, the herein-described stretcher for umbrellas, tempered or made elastic from the center toward each end by the process of hammering or pressing, substantially in the manner described, from the center toward each end.

139,089.—*Ruffler and Gatherer for Sewing-Machines.*—FREDERICK SIEVERS, Fort Wayne, Ind., assignor of one-half his right to WILLIAM H. HILDEBRANN, same place. Application filed March 20, 1873.

The spring-plate which bears on the material and moves it to form a plait or gather is secured to the bar or case provided with a ratchet, and the case is moved on a guiding-ledge of the presser by a pawl worked by a bell-crank lever moved from the needle-bar. A dog in advance of the pawl holds the case and prevents it coming toward the presser with the cloth under the action of the coiled spring in the case until it is relieved by the pivoted bar, which is operated by the projection on the adjustable nut.

Claim.—1. Ratchet *i*, in combination with pawl *h* and dog *j*, adjustable arm *x*, and rocking axle E, each being constructed in the manner specified, for the double purpose of giving the outward movement to the bar or case C, and also increasing or decreasing the fullness of the plaits, in the manner described.

2. Ratchet *i*, pivoted bar S, adjustable projection *p*, and stop F, for the purpose of reversing the motion of case C.

3. The spiral spring K, adjustable nut *l*, and projection *p*, for the purpose of increasing the pressure of the spring increasing or decreasing the width of the plaits.

139,090.—*Photographic Camera.*—EMILE P. SPAHN, Newark, N. J. Application filed March 31, 1873.

A sliding jointed frame attached to the top of the camera is arranged with curtains and elastic bands in such a manner that when drawn forward it entirely screens the object-glass, and when drawn backward uncovers the same and forms a dark chamber at the rear of the instrument for facilitating focusing on the ground glass.

Claim.—1. The arrangement of the sliding frame C, in combination with curtains D, substantially in the manner and for the purpose hereinbefore described.

2. The arrangement of the hinged bars L L on the end of the sliding frame C, in combination with suitable India-rubber bands or springs N N, and the curtains D, substantially as and for the purpose described.

3. The arrangement of the movable bar E, with rods F, and curtain G, in combination with the movable frame C, operating in the manner and for the purpose substantially as specified.

139,091.—*Machine for Forming the Lips of Augers.*—JAMES SWAN, Seymour, Conn. Application filed April 15, 1869.

The dies terminate in projecting horns, which, when placed together, are in form the counterpart of that which the inner surface of the lips is to have; and the former is a mandrel or section of shaft, having in its end a cylindrical hole with a flat bottom, but with the re-entering angle filled out so as to unite the wall and the bottom by a curved surface.

Claim.—The combination of the crimp-dies, having the projections E F, with the rotary former I, substantially as specified.

139,092.—*Shaft-Coupling for Earth-Augers.*—THOMAS UREE, Corning, Iowa. Application filed September 7, 1872.

The coupling-pin is of rhomboidal form, being square in section and tapering both ways. It fits into corresponding sockets in the shaft sections, and is retained in place by screws. By this means the shaft sections are all made alike at both ends, and when joined possess a smooth surface.

Claim.—The coupling-pin D and sections of the shaft C, combined and relatively constructed substantially as herein shown and described, and for the purposes set forth.

139,093.—*Washing-Machine.*—GEORGE W. WAGEONER, of Scotland county, Mo., assignor to ANDREW R. CUSHMAN, same place. Application filed February 19, 1873.

The machine is constructed with a box in ordinary form, with a bed of rolls attached by screws inside at one end, and the other connected with an upright frame extending outside the box, and connected by staples to the treadle, by which tension is given to the roller-bed. The upper roll resting upon the bed is corrugated and has crossed arms to give it motion. The springs are attached to the upper edge of the tub.

Claim.—The combination and arrangement of the several parts, as follows: Roller I, wash-board frame L L, rollers O O O, bevel boards P P, rollers O' O', sash-frame C C, D D, and E, treadle F, and springs *f f*, when constructed and operating substantially as and for the purpose set forth.

139,094.—*Case for Law-Blanks.*—CORNELIUS L. WALKER, Charleston, S. C. Application filed March 29, 1873.

The leaves have metallic corner-brackets, under which the blanks are held. The leaves are bound together by linen guards clamped upon them by thick wooden strips.

Claim.—1. The combination, with the leaves A, of the raised corner-pieces B, back strips C, and the covers, as shown and described, to form a case for holding law-blanks, &c.

2. The mode of binding together the leaves A by means of stripe D of cloth applied to the adjacent sides of two adjacent leaves, and the rigid guard-strips C placed over these and secured to the leaves, as shown and described.

139,095.—*Glass Coffin.*—JOHN N. WALLIS and THEODORE WALLIS, Fleming, N. Y. Application filed April 12, 1873.

The coffin, composed of glass, is made in sections, which are joined and held securely together by vertical flanges on one side, which slide into clamping-recesses upon the other. The parts can be readily separated for packing, and by means of cement adjusted together air-tight and held without the aid of screws or bolts.

Claim.—In a burial-casket, the sides A A, provided with the vertical flanges *d* and clasps *e*, respectively, interlocking, as shown and described.

139,096.—*Steam-Engine Governor-Valve.*—ELIJAH WARE, Norfolk, Mass. Application filed February 15, 1873.

The oscillating valve is provided with openings in the side for regulating the flow of steam, and small apertures in the top for balancing the valve, and is connected by an arm and suitable mechanism to the governor, which operates it and regulates the flow of steam.

Claim.—The oscillating valve B, having one or more apertures K in the top and openings C in the side, arranged in a shell, A, and constructed and operated by suitable connections from the governor, as and for the purpose described.

139,097.—*Brake for Coal-Cars.*—DAVID WETSEL, Morris, Pa. Application filed April 12, 1873.

That only one pair of wheels may be locked, one of the prongs on each side is made shorter than the other, so that by moving the heads J a certain distance apart only one prong will be applied, while if the heads J are forced up against the bar E both prongs will be made to take effect, as before.

Claim.—1. A pair of bolts, F F, rigidly attached to the head-piece J, to slide through a beam, E, one to pass between the spoke of a front and the other of a rear wheel, substantially in the manner and for the purpose described.

2. A lever, K, connected with two pairs of wheel-locks, F F J, by rods pivoted on different sides of its fulcrum, to lock all four of the wheels, in the manner and for the purpose set forth.

139,098.—*Mechanism for Operating Screw-Propellers.*—JAMES WILCOXEN, Russellville, Ill. Application filed January 25, 1873.

Stationary frames are attached to the vessel having propeller and rudder frames jointed or pivoted thereto, the vibrating frames also carrying gearing, whereby the propellers are operated in any desired position, so as to steer the same by the joint action of the propellers and rudders. These frames may be readily attached to any character of vessel already built.

Claim.—1. Twin propellers E, mounted on vibrating frames B, having attached thereto the rudders D, and geared with the crank-shaft by horizontal wheels pivoted in the axes of the frames, the said frames being connected together, and the propellers geared to revolve in opposite directions, combined and operating substantially as specified.

2. The combination, with the vessel, of the stationary frames A and vibrating frames B, arranged and adapted for the support and operation of the propellers, substantially as specified.

139,099.—*Road-Scraper.*—LEVI P. WRIGHT, Chicago, Ill. Application filed October 11, 1872.

The scraping-plates are guided and stayed by means of a perforated frame which is secured above them and is held in place by braces fastened to the under side of the scraper-frame. A foot-lever releases the pawl which retains the elevating drum, thereby allowing the scraper-frame to descend.

Claim.—1. The combination of the supporting-rods b with the braces c, secondary frame B, and cross-heads a, substantially as specified.

2. The combination of the foot-lever n with the shaft or rod m and projections o for disengaging the pawl A, substantially as specified.

139,100.—*Washing-Machine.*—WALTER S. YOUNG, Park's Corners, Ill. Application filed April 10, 1873.

A washing-machine, constructed with its tub or box in ordinary form, with a rubber pivoted at one end by an adjustable hinge or hinged belt. The rubber is constructed widest at its pivoted point or end to admit of lateral or side motion, and in form of an angle with its sides and end closed to retain the steam when in use.

Claim.—1. The washer, consisting of the bar *c*, walls *i*, and sections of slats or rollers, substantially as set forth.

2. The combination of the bolt *l*, bar *c*, thumb-screw *n*, walls *i*, and sections of rollers or slats, substantially as specified.

139,101.—*Bureau and Ironing-Table Combined.*—WILLIAM W. ADAMS, Rockford, Ill. Application filed April 7, 1873.

A bureau with a folding top; a space in the rear, over which is a detachable ironing-board that can be placed in a recess in the rear.

Claim.—A combined bureau and ironing-table, provided with a removable skirt-board, B, the hinged top and ironing-table C, the recesses or sockets *a*, and gains *b*, all arranged and operating substantially as described.

139,102.—*Steam-Condenser.*—JOHN L. ALBERGER, Buffalo, N. Y. Application filed April 2, 1873.

A condensing apparatus in which the water and air from the condenser intermittingly flows into an auxiliary vessel, from which it is expelled by the direct pressure of steam from the boiler, supplied thereto by an oscillating valve, over the auxiliary vessel, whereby the use of the air-pump is dispensed with.

Claim.—1. The combination, with a steam-condensing vessel and the auxiliary water and air expelling vessel, communicating therewith at the bottom, and provided with water inlet and outlet valves, of the valve-chamber H and steam-valve L, by which steam from the boiler is admitted to said auxiliary vessel for expelling the water and air therefrom, and thence exhausted into the condenser, substantially as hereinbefore set forth.

2. The combination, with the condenser and auxiliary water and air expelling vessel and foot-valve *d'*, of the air pipe or pipes *n*, arranged substantially as hereinbefore set forth.

139,103.—*Steam-Pump.*—WALES ALDRICH, Dayton, Ohio. Application filed March 22, 1873.

The main valve has combined with it an auxiliary valve having on its back a rack, into which a segment-pinion gears, held down by a balance-spring. The valve is operated by a tappet-arm on the piston-rod and tappets on the valve-stem. The spring forces the auxiliary valve with the rack and segment backward to its central position as the main valve moves forward.

Claim.—The combination, with the auxiliary valve G, main valve E, valve-rod, and stop-connections, of the rack *e*, pinion *v*, and balance-spring *z*, substantially as specified.

139,104.—*Paper-Bag Machine.*—HORATIO G. ARMSTRONG, Trenton, N. J. Application filed October 9, 1872.

Improvement on his patent 31,191 of October 2, 1860. The overlapping ends are folded into the bite of two rolls by a vibrating knife-edge box, from which the paste is fed by an intermittingly-revolved roller, and the operative parts of said folder and the striker are so geared together as to adjust their relative movements in accordance with the length of bag made.

Claim.—1. In a paper-bag machine, the combination of drawing-rolls with a device for pasting and folding the bottom of the bag, and a striker for severing the tubes, and the appliances described, or their equivalents, for changing the speed of said paster in respect to that at which the tube traverses, for the purpose specified.

2. The vertically-vibrating paste-reservoir Q, having near its lower end a roller, *i*, actuated by the mechanism described, or its equivalent, for inducing the paste to pass to the creaser at the lower end of the reservoir, as specified.

139,105.—*Grater for Cider-Mills.*—WATSON BARR, Ypsilanti, Mich. Application filed March 17, 1873.

Grater-drum with a series of longitudinal dovetail-grooves for the reception of wooden staves provided with projecting steel teeth, the said staves being secured in place by a wedge driven in the groove under each one.

Claim.—The staves C, provided with grating-teeth and the wedges D, in combination with the dovetail-grooves *a* in the drum A, as and for the purpose set forth.

139,106.—*Packing-Box.*—DAVID L. BARTLETT, Ogdensburg, N. Y. Application filed March 17, 1873.

The box is constructed with ends fitted within the rabbet or shoulder and held by bolts, which may be removed and the box packed into small space for reshipping.

Claim.—The combination of the end piece C, having cleats, as described, the bolts *b*, and the sides, top, and bottom of the box, the parts being detachable from each other, as and for the purpose described.

139,107.—*Washing-Machine.*—LEVI BEAULIEN, Woonsocket, R. I. Application filed April 29, 1873.

The washing-machine is constructed in half-circular form, with three rubbers to correspond with the inner surface of it, which are pivoted at their centers to the tub, and having uprights, to which a pitman is attached, and connected to a crank-shaft supported by curved uprights at the end of the tub or box. The inner side of the tub and the rubbers have corrugated surfaces.

Claim.—The combination, with a tub having the inner arms C parallel with its side walls, of the independently-journaled washers H, levers *h*, pitman *k*, and crank-shaft *x*, having several cranks, *l*, one for each washer, arranged in an angular relation to each other, substantially as specified.

139,108.—*Centrifugal Machine.*—E. JOHN M. BECKER, New York, N. Y. Application filed March 15, 1873.

The cleansing-liquid is poured upon the articles or material in the basket, from whence by centrifugal action it is caused to pass through the material into the outer case, collects in a depression or well in the bottom thereof, is raised by an Archimedean screw into the perforated central cylinder, from whence it passes again and again through the material in the basket. The mantle is finally lowered to close the well, and the dirty liquid drawn off.

Claim.—1. The Archimedean screw D, arranged within the inner rotary chamber B of a double centrifugal machine, as set forth.

2. The well G, formed around the inner rotary chamber B of a double centrifugal machine, as specified.

3. The up-and-down-adjustable mantle F, arranged in connection with the two rotary chambers A and B in a centrifugal machine, as specified.

4. The stationary chamber, provided with a recess, H, in the bottom for the collection of the suds, in combination with the well G, for operation substantially as described.

139,109.—*Shoe-Fastening.*—MAXIMILIAN BOCH, New York, N. Y. Application filed April 5, 1873.

The folding-link is pivoted directly to the loop of the flap, without any intervening metallic plate, and prolonged beyond the point where it is pivoted to a bifurcated metallic plate attached to the other flap.

Claim.—The herein-described shoe-fastening, composed of the curved bifurcated piece C, having a cross-bar, *b*, for securing it to one flap of a shoe, and the curved link B, which has a similar cross-bar, *b*, for pivoting it to the other flap, and is prolongated beyond the point where it is hinged to the piece C, to form a lever-arm or handle, *c*, substantially as specified.

139,110.—*Machine for Pulverizing Clay.*—GEORGE C. BOVEY, Chillicothe, Ohio. Application filed January 9, 1873.

Clay is pulverized between the gravitating-rollers, loosely hung from the shaft of cylinder and the bars of the cylinder.

Claim.—In combination with a clay-pulverizer, constructed substantially as herein described, one or more gravitating-rollers, O O', journaled to slotted arms P P', and working within the screening-cylinder, as explained.

139,111.—*Chimney and Fire-Place.*—JOHNSON BRIGGS, Toronto, Canada. Application filed October 7, 1872.

A shaft extending below the fire-place from the chimney increases its ventilating action.

Claim.—The supplemental ventilating-shaft M, in combination with the chimney A, as and for the purposes set forth.

139,112.—*Rocking-Chair Fan.*—OTTO BRUECK, Union Hill, N. J. Application filed February 6, 1873.

Adds a rack and pinion or cord and pulleys to the weighted lever and frame of his previous patent, No. 132,345, instead of pivoting the fan-holder itself.

Claim.—The combination of a screw-clamp, B, arm C, pendulum D, and rotary arbor *f* carrying a fan, E, said pendulum being connected with the fan-arbor either by rack and pinion or by a cord and pulleys, substantially in the manner herein shown and described.

139,113.—*Machine for Re-Pressing Bricks.*—JOHN K. CALDWELL, Philadelphia, Pa. Application filed August 3, 1872.

Molds arranged on a wheel, to which motion is imparted by a cam on a horizontal driving-shaft, the crude bricks being pressed at each revolution of the shaft between the platen and follower of the mold; brushes arranged between molds to clean platen.

Claim.—1. The combination, with the horizontal mold-wheel, of the cross-bar and platen, the followers carried by said wheel, and the driving-shaft or equivalent mechanism, such shaft operating the disk, bar, and followers, all as set forth.

2. The combination, with the horizontal mold-wheel, of the reciprocating cross-bar, secured to vertical arms F F', one of which extends through the center of the disk and forms the axis thereof, as described.

3. The combination, with the reciprocating platen, of stationary brushes *n* arranged upon the wheel so as to pass beneath and in contact with the platen as the wheel revolves.

4. The combination of the followers with molds, the sides of which are reduced in width, as described, so as to present openings when the followers are depressed.

139,114.—*Knitting-Machine.*—WILLIAM CAMPION, Nottingham, and WILLIAM CAMPION, Sneinton, England. Application filed August 23, 1872.

There are two sets of cams on a cam-shaft, one of which is in operation when ordinary knitting is being done, and the other when the narrowing apparatus, which is brought into operation by a Jacquard, is at work. The subject-matter of the first and second clauses of the claim is for operating the locker and lifting bars; that of the third, for supporting, operating, and adjusting the needle-bar so as to knit slack courses, when desired; that of the fifth, for reciprocating the thread-carrier and depressing it at the end of its traverse; and that of the sixth, for operating the narrowing mechanism.

Claim.—1. The combination of the locker-bar *m* in the rear end of lever *h*, the shaft *i*, lifting-arm h^1, and the cams h^2 and h^3 upon the main shaft, for ordinary and narrowing operations, respectively.

2. The arrangement, substantially as described, whereby the lifting-bar *l* is connected to the hook-bar *f'*, so as to lift the jacks *d* at the same time that the hooks *j* rise.

3. The needle-bar a^2, supported by rods b^1, which project upwardly from a shaft, *b*, provided with eccentrics b^2, said needle-bar a^2 being also fixed to arms a^3 fastened to a shaft, a^4, carried at the upper ends of levers a^5, substantially as and for the purpose described.

4. In combination with the needle-bar and the devices for supporting and operating it, the segment b^3, having teeth or notches b^4 b^5 on its periphery and side, respectively, which teeth b^4 receive a gravitating catch or stop-lever, b^6, and which teeth b^5 receive a spring-catch, b^8, in order to enable the stiffness of the work to be varied and the same restored after a slack course has been taken, as herein explained.

5. The combination of the elements for reciprocating the thread-carrier and those represented in Fig. 10, for giving the dip to the same, as described.

6. The automatic narrowing apparatus, consisting of the devices *t* to t^{13}, inclusive, *u* to u^3, inclusive, main shaft *c*, and Jacquard apparatus *v* to v^6, inclusive, substantially as set forth.

139,115.—*Fruit-Jar.*—THOMAS B. CARROLL, Indianapolis, Ind. Application filed April 26, 1873.

The lower end of an elliptical cap-neck is provided with beveled lips, which engage with wedges placed on the lower sides and the widest portions of a flange on the inside of the throat of a jar.

Claim.—The combination, with the elliptical throat-flange *a*, having the wedges *b* on the widest portions of its under side, of the cap C, having the flange *c*, rim *f*, neck *d*, and beveled lips *e*, extending outward from the opposite sides of the lower edge of said neck, substantially as specified.

139,116.—*Preserving and Packing Compound for Eggs, Wood, &c.*—JAMES CONNELL, Jr., Collingwood, Canada, assignor to himself and WILLIAM CONNELL, same place. Application filed April 26, 1873.

Ground alum, white sugar, salt, Glenfield starch, charcoal, carbonate of iron; add water.

Claim.—1. A preserving composition, termed "Carbureted Alumen," composed of ingredients and in proportions substantially as herein specified, for the purposes set forth.

2. An aqueous solution or mixture of said composition, as described.

3. Packing material impregnated with the composition, substantially in the manner specified.

4. A mixture of petroleum-tar for wood paving-blocks, as described.

139,117.—*Shaft for Vehicles.*—SAMUEL P. CONNOR, Conshohocken, and PHILIP D. PFISTERER, Philadelphia, Pa. Application filed March 15, 1873.

Within a duplex frame, which is rigidly secured to the axle, the shafts are so arranged that they may be turned either to the right or left.

Claim.—1. A vehicle having the shafts or tongue secured to the duplex frame by two detachable pins at the sides of the frame and in front of the wheels, and upon either of which the shafts may be turned, as set forth.

2. The duplex frame, consisting of the upper and lower series of bars, between which the shaft or pole frame may be turned to either side.

139,118.—*Lock for Sliding Doors.*—ALONZO W. CRAM, St. Louis, Mo. Application filed February 3, 1871.

The spring-catch and key-block turn on the same pivot, and are so arranged that the hasp, on being inserted, will raise the catch without moving the key-block, thus permitting it to be locked without adjusting the tumblers.

Claim.—1. The spring-catch *F f f''*, in combination with the key-block H A I *i* and pivot G, common to both, all substantially as described.

2. The tumblers *J j l* M, in combination with the key-plate I *i*, block H, and catch *F f f''*, substantially as described.

139,119.—*Pruning-Knife.*—JOSEPH S. CRUM, Palmyra, Ill. Application filed April 28, 1873.

Both the blade and the hook are pivoted by their shanks to an upright handle, and the cutting is effected by pulling downward upon this single handle. The circular blade is slotted, and moves upon a bolt attached to the hook.

Claim.—The hook B and slotted convex-edged blade C connected by sliding bolt, and having their respective shanks pivoted between the straps of handle, as and for the purpose described.

139,120.—*Milk-Safe.*—JOHN P. DALE, Battle Creek, assignor to himself and DELEVAN E. DOANE, Ann Arbor, Mich. Application filed March 8, 1873.

An upright frame with reticulated exterior; a shaft, pivoted centrally at top and bottom, having radial arms with transverse pieces near the outer extremities, forming crucial rests for the pans; near the top a series of circular shelves, narrowing successively as they ascend, the topmost having upward flanges to hold ice, and a flanged radial slot that it may be withdrawn at pleasure.

Claim.—1. The shaft D, having bars F and G, shelves H H and I, arranged as described, for the purpose set forth.

2. The combination of the revolving parts above claimed with the safe, as and for the purpose set forth.

139,121.—*Fastening Pocket-Openings.*—JACOB W. DAVIS, Reno, Nev., assignor to himself and LEVI STRAUSS & Co., San Francisco, Cal. Application filed August 9, 1872.

To prevent the pocket giving way at the corners.

Claim.—As a new article of manufacture, a pair of pantaloons having the pocket-openings secured at each edge by means of rivets, substantially in the manner described and shown, whereby the seams at the points named are prevented from ripping, as set forth.

139,122.—*Harvester.*—JOHN S. DAVIS, Toledo, Ohio. Application filed March 12, 1873.

The driver's seat is made adjustable, so that his weight is exerted upon a lever for the purpose of balancing the heel of the cutter-bar.

Claim.—1. The combination of the seat I, hinged seat-support P, levers W W', and drag-bar N, substantially in the manner and for the purposes herein set forth.

2. The adjustable fulcrum *y*, in combination with a hinged seat-support and lever, W W', for the purpose of regulating the pressure of the inner shoe upon the ground by the weight of the driver, substantially as herein set forth.

3. In combination with a driver's seat adjustably connected to the frame of the machine, the scale *a'* and adjustable pointer, so that the driver can readily adapt his weight to the proper balancing of the heel of the cutter-bar, substantially in the manner described.

4. The pivot clamp-washers *w w*, the hollow casting X, and the levers W W', constructed, arranged, and combined substantially in the manner and for the purposes herein set forth.

5. The handle *d'*, hook *b'*, and projection *c'*, in combination with the hinged seat-support P, arranged substantially in the manner and for the purposes herein set forth.

6. The adjustable foot-hangers V V, placed under the main frame, in combination with the adjustable seat I, for the purposes set forth.

7. The combination of the bar *L*, lever O, pipe M, hinged to the gear-frame, and ratchet-plate *s* cast thereon, substantially as and for the purposes herein set forth.

139,123.—*Center-Slide Drop-Light.*—CHARLES DRAVO, New York, N. Y., assignor to THE ARCHER AND PANCOAST MANUFACTURING COMPANY, same place. Application filed February 6, 1872.

The cords of the drop-light pass around spring drums or barrels placed within the upper canopy. The conducting-tube of the drop-light slides within the main supply-pipe, and through the gas-chamber, to which the side pipes are coupled.

Claim.—1. The combination in a gasalier of the inclosing-case J, the distributer E, the stationary branch-light ducts C, one or more, and the drop-light duct H, and the spring drums or pulleys G, and cords S, substantially as herein specified.

2. The relative arrangement of the inclosing-case J, spring drums or pulleys G, cords S, and center drop-light duct H, whereby the said cords S are substantially concealed within the case J when the drop-light is not drawn for use, substantially as herein specified.

3. In a drop-light gasalier, the combination of the spring drums or pulleys G, one or more, with the drop-light duct H, when the latter is arranged to slide within and not upon the main supply-stem A, substantially as herein specified.

4. The combination in a gasalier of the following elements or parts: A supply-stem, A, a distributer, B, branch arms C, (one or more,) for conveying gas to stationary branch-lights, sliding pipe H, for conveying gas to a center drop-light, spring drums or pulleys G, one or more, provided with cords S for regulating the relative position between the stationary light or lights and the drop-light, substantially as herein specified.

139,124.—*Saw-Setting Machine.*—WILLIAM H. DOBSON, Cincinnati, Ohio, assignor to J. A. FAY & Co., same place. Application filed March 21, 1873.

The setting device is a bifurcated lever, the dies being inserted in the extremities of its limbs, while the latter are placed between two screw-pins, which serve alternately as fulcrums to the lever, causing the dies to close upon a tooth and the tooth to be set at every vibration of the upper end of the lever; the saw, meanwhile, being fed along by a pawl connected to another lever, with which a stud in the setting-lever comes in contact at every vibration. The fulcrum-pins are tapered, in virtue of which their distance apart may be regulated to suit saws of different thicknesses.

Claim.—1. In combination with suitable supporting, feeding, and setting devices, the L-formed clamp or vise E E' *a a' a''*, occupying the tapering recess *f*, and having the described (or equivalent) adjusting screw or bolt G.

2. In combination with the subject-matter of the preceding claim, the collar *g* and rubber washer H.

3. In combination, substantially as set forth, with suitable supporting, feeding, and clamping devices, the provision of handle J, blade K L L' l' M m M' m', and adjustable conical studs N N' for setting the saw-teeth, in the manner explained.

139,125.—*Piano-Lid Prop-Stick.*—MICHAEL DOHERTY, Cambridgeport, assignor of one-half his right to CHARLES SKINNER, Boston, Mass. Application filed February 6, 1873.

The prop-stick is hinged to the lid. Upon raising the latter the foot of the stick runs along a horizontal groove in the end casing, and rests in a notch at its inner end. The said foot withdraws itself upon the lid being pushed back still further; and then, upon closing the lid, returns to its place.

Claim.—1. The prop-stick C, hung by pin *b* to top A, and connected through pin *c* to a slot or groove, *d*, of case B, having a downward-projecting notch, *g*, the whole substantially as described, for the purpose set forth.

2. In combination with the prop-stick C, the groove *d* provided with the upwardly-projecting notch *h*, substantially as and for the purpose described.

139,126.—*Ventilating Grain.*—BROOKS DUNWIDDIE, Monroe, Wis. Application filed February 11, 1873.

To the ends of two hollow tubes is fastened a coil of wire, which is covered with wire-gauze, cable-wires are also fastened to the tubes to prevent stretching. The tubes extend through the walls of the building, so as to permit the air to enter and be distributed through the perforated wire-gauze.

Claim.—The wire coil or reel, the extremities of which are provided with suitable tubes, in combination with the linked cables and wire-gauze cover, the whole being arranged to operate as set forth.

139,127.—*Composition for Pavements.*—GEORGE L. EAGAN, San Francisco, Cal. Application filed April 6, 1871.

Claim.—1. The process of preparing concrete by first boiling pretroleum and pitch together, and then adding cement, clay, and gravel, in the proportions described, as herein set forth.

2. The concrete produced by the process herein described.

139,128.—*Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed February 18, 1873.

Escapement, printing, and locking electro-magnets in same circuit. Printing-lever drawn away from type-wheel by its magnet. Escapement-magnet smaller than other two, so that when once charged it will respond to quick making and breaking of the circuit; but the others remain active from residual magnetism until there is a prolonged break in the circuit, when the locking-armature releases printing-lever, and the spring *l* pulls it up against type-wheel. Feed regulated by end of rocking arm *s* taking against small-wheel on type-wheel shaft.

Claim.—1. Three magnets in the main-line circuit, operating as set forth, in combination with the type-wheel lever, printing-lever *k*, spring *l*, and latch *i'*, substantially as and for the purposes set forth.

2. The sliding pawl *s*, in combination with the snail-wheel upon the type-wheel shaft, and the printing-lever *k*, substantially as set forth, for feeding the paper.

3. A printing-lever and an electro-magnet arranged in connection with the type-wheel and its magnet, substantially as set forth, so that the printing-lever is drawn away from the type-wheel by the electro-magnet, and the printing is effected by breaking the circuit to the electro-magnet.

139,129.—*Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed February 18, 1873.

Two relay-magnets in main-line circuit, one with spring of strong tension, so that it responds to all main-line pulsations, and closes circuit to escapement magnet; other, having weak spring, is held to its magnet by residual magnetism, keeping printing-circuit broken until a prolonged break occurs in main-line circuit.

Claim.—1. Two relay-magnets in the main circuit, with retractile springs to the armatures of different tensions, in combination with relay circuits to the type-wheel and printing electro-magnets, respectively, of a printing-telegraph instrument, substantially as and for the purposes set forth.

2. Two relay-magnets in the main circuit, with armatures adjusted differently, in combination with a local circuit, effecting distinct and different operations, according to the length of pause between pulsations in the main line, substantially as specified.

139,130.—*Doll-Joint.*—JOEL A. H. ELLIS, Springfield, Vermont, assignor to THE CO-OPERATIVE MANUFACTURING COMPANY, same place. Application filed February 21, 1873.

The tenon of the joint is divided centrally by a saw-cut; this divided tenon, being slightly compressed in fastening together the body and limbs, holds the members, by friction, in any position in which they may be placed.

Claim.—A doll-joint constructed and formed substantially as shown and described—that is, with the slot A and tenon B, the latter having the saw-kerf D, as set forth.

139,131.—*Gas Purifier and Regulator.*—JOHN A. ENOS, Peabody, Mass., assignor of three-fourths his right to GEORGE HOLMAN, GEORGE PLUMER, and JAMES O. WHITTEN, same place. Application filed April 30, 1873.

Perforated basket filled with finely chopped or divided sponge, and incased in a tubular casing, constructed of two cones, with their bases united and made separable.

Claim.—1. In a gas purifying and regulating apparatus, arranged for attachment to the gas-pipe between the meter and the burner, the cylindrical casing A, consisting of two cones with their bases united by flanges, nuts and screws, and packing-rings, in combination with the interior metallic basket B filled and closely packed with fine-cut sponge, substantially as and for the purpose specified.

2. In a gas purifier and regulator, the conical basket B, of sheet or cast metal, having perforated ends and holding flange, as described, and filled with finely-cut and closely-packed sponge, substantially as specified.

3. As a filling for a sheet or cast metal basket of a gas-purifying machine, the finely-cut sponge G, applied and packed as described.

139,132.—*Burnishing-Press for Photographs.*—WILLIAM G. ENTEKKIN and JAMES BRAMBLE, Jr., Philadelphia, Pa. Application filed April 19, 1873.

The cards are prevented from stopping while passing through the burnisher, and are afterward pressed.

Claim.—1. In a photograph-burnishing apparatus, the combination of a burnisher and roll with independent feed and pressure mechanism, substantially as described.

2. The plate F provided with a recess, in combination with the removable burnisher *f*, substantially as described.

3. The wedge-yoke G, in combination with the lugs H H, by which the burnishing-plate is adjusted to the roll E, substantially as described.

4. The combination of an adjustable burnisher and roll with independent feed or pressure mechanism, and a heating apparatus, substantially as described.

139,133.—*Machine for Blocking Hats.*—E. COPELAND FALES, Foxborough, Mass. Application filed January 22, 1873.

A sectional ring, adjustable by means of and encircling band placed around the side crown of a hat-body, is pressed downward till in contact with the brim. The sectional ring is provided with ductile uprights, to the upper ends of which a head is attached, and provided with a yielding tip-block swung from the under side upon pendent guide-rods.

Claim.—1. In a hat-blocking machine, a block, A, and a sectional ring, B, arranged as described, in combination with the tip-block K, the whole operating substantially as described.

2. The sectional ring B with its encircling band E, spring-bands G, and head I, all arranged together, substantially as described, in combination with a block A, as specified.

3. The tip-block K having yielding spring *n* and guide-stems *o o*, all carried by the head I, in combination with a sectional ring, B, of said head I, and a block, A, the whole substantially as described, for the combined purpose specified.

139,134.—*Car-Starter.*—GEORGE FETTER, Philadelphia, Pa. Application filed December 20, 1872.

The power which is exerted to stop the car is absorbed in a spring, and is brought into operation when required to start the car, a spring forcing outward a converging rack, which engages with a pinion secured to the axle.

Claim.—1. The converging racks *m m* forming a permanent part of the spring-bar D and supported by the axle, in combination with a pinion, B, on the said axle, the whole being applied to a street-car, substantially as and for the purpose herein set forth.

2. The bar D and the slide H connected to an operating-lever, G, by a link, *i*, and having an inclined slot, *x*, adapted to a plate, I, embracing the axle A.

139,135.—*Washing-Machine.*—ABRAHAM FILKINS, Ypsilanti, Mich. Application filed November 13, 1872.

A slatted cylinder revolves on the edges of box, bearing against two curved roller-frames. A floating rubber-board is under the cylinder, and is borne by the water up against.

Claim.—The arrangement of the box A, slatted drum B, curved roller-frames C C', floating rubbing-board D, and crank E, when the parts are arranged to operate substantially as and for the purposes set forth.

139,136.—*Condensing and Feed Apparatus for Steam-Boilers.*—FRIEDRICH AUGUST FISCHER, Harsburg, Germany. Application filed November 30, 1872.

A cylinder and condenser with pipes and valves is arranged so that the steam, after having performed its duty on a piston, after it has moved the piston to the end of its stroke, passes to a condenser with a pump, and not only causes the atmospheric pressure of the piston to be counterbalanced, but, by a vacuum produced by condensation, induces an upward flow of the water from a well or cistern.

Claim.—The combination of the water-cylinder and its piston E or E', set in motion either directly or indirectly by the pressure of steam from the boiler, as described, the elevated condenser F, the steam-pipes *d* and A, and valve or valves *g*, the water-pipes *c e* *f*, and valves *b f*, the whole being arranged for operation in relation with each other, substantially as and for the purposes herein set forth.

139,137.—*False Mantel.*—JOHN T. FLEHARTY, Baltimore, Md., assignor of one-half his right to CHARLES S. COLLINS, same place. Application filed January 23, 1873.

Between the fire-place or the fire-place stove, and the mantel is placed a false mantel, made hollow to contain water for the protection of the mantel proper, and for moistening the atmosphere of the apartment.

Claim.—The combined false mantel and water-evaporator A with the means of attachment to the stove, holes E, knobs D, and opening *a*, substantially as and for the purposes named.

139,138.—*Window-Screen.*—WILLIAM H. FLETCHER, Washington, D. C. Application filed April 30, 1873.

The screen slides within its own frame like a sash, so that it may remain permanently in the window, and be capable of being opened to close blinds, &c.

Claim.—A window-screen, constructed to slide within its own frame, and adapted for application in manner substantially as and for the purposes set forth.

139,139.—*Saw-Sharpening Machine.*—FREDERIC E. FREY, Bucyrus, Ohio. Application filed March 20, 1873.

The frame carrying the grinding-wheel is made flexible by ball-and-socket joints, and adjustable by means of a slotted U-shaped plate, through which the belt passes. The holding-clamp is made adjustable upon its supporting arm and upon a second center or pivot arranged at right angles thereto.

Claim.—1. The slotted open arc or U-shaped plate C, in combination with the flexible wheel-frame or frame-bars D D hinged thereto, substantially as described, whereby the usual central pivotal support for adjusting the angle of said frame is dispensed with, and all cramping of the driving-belt avoided.

2. The parallel links or bars D D of the flexible wheel-frame, united at their inner or heel ends to the adjustable arc or sector plate C by the ball-and-socket joints C', and at their outer swinging ends with the bar E, in the manner and for the purpose described.

3. The flexible wheel-frame, in combination with the overhanging stationary frame or arm G' and counterpoise for balancing the wheel-frame, arranged and operating substantially as described.

4. The holding clamp or vise S S', made adjustable upon or around its supporting arm or rod, and upon a second center or pivot arranged at right angles to said rod or arm for adjusting the position of the clamp or vise, as described.

139,140.—*Lamp-Heater.*—WILLIAM FRIEL, San Francisco, Cal. Application filed March 13, 1872.

The sides of the polygonal flame-dish are inclined slightly more than ninety degrees with the bottom plate. An auxiliary flame-dish is placed upon the burner beneath the principal one, and serves also as a drip-cup.

Claim.—The dish F, constructed as described, in combination with the dish *e* and generator D, arranged substantially as and for the purpose set forth.

139,141.—*Music-Leaf Turner.*—JAMES H. GERRY, Boston, Mass. Application filed March 15, 1873.

The carriers or shells are moved to the left by a torsion-spring. At the bottom of the shell the turning-arm is pivoted, and each has an eye running upon a diagonal guide-wire, which deflects the arm from a nearly upright down to a horizontal position.

Claim.—1. The folder C connected with the vibrating plate D and combined with the guide wire or track E, substantially as described.

2. The vibrating plate D of a music-leaf turner, when connected with the spring-pivot *b* of an independently-moving folder, C, and with the projecting arm *f*, as specified.

3. The adjustable slide F, carrying a lever, G, and the shoulder G, when applied to operate in combination with the folders of a music-leaf turner, as described.

139,142.—*Edging-Machine.*—OTTO H. GRONBERG, Ferrysburg, and WILLIAM M. FERRY, Grand Haven, Mich. Application filed April 8, 1873.

The saws are moved upon the arbor by the operator through the agency of a system of levers or lazy-tongs.

Claim.—1. In gang edging and ripping machines, the combination of lazy-tongs with the saw-collars for adjusting the saws on their mandrel, substantially as herein shown and set forth.

2. The combination of the movable saws F F, the lazy-tongs D D', the levers G G, and the quadrants H H, arranged as described, for the purpose set forth.

139,143.—*Seed-Dropper.*—EUGENE L. GROSS, Springfield, Ill., assignor to himself, JOHN M. FORDEN, JAMES K. WELTER, JOHN O. SLOAN, and JAMES RATBURN, same place. Application filed April 15, 1873.

A rotary dropper-disk receives motion from a reciprocating slide, the flexible cut-off rotating with the disk.

Claim.—The seed slide C provided with an annular perforated recess, in combination with the annular detachable disk D, with seed-cells *a b*, and the flexible rotating cut-off E, all constructed and operating substantially as and for the purposes herein set forth.

139,144.—*Wheel for Vehicles.*—JAMES HAGEMAN, Williamsburg, Ohio. Application filed February 25, 1873.

The felly is bound with a sheet-iron protector before the tire is put on to prevent the burning of the felly in setting the tire.

Claim.—In a vehicle-wheel, the combination of the felly *a*, binding *c*, and tire *b*, all constructed and arranged substantially as set forth.

139,145.—*Carpet-Beater.*—WILLIAM H HANKINSON, New York, N. Y. Application filed April 25, 1873.

Rigid metallic links are fastened to a horizontal shaft and have their beating-surfaces parallel, or nearly so, to the axis of said shaft. The links or beaters are U-shaped, and are attached to arms radiating from the shaft.

Claim.—1. A carpet-beating machine, made with rigid jointed beaters, whose striking-surfaces are nearly parallel to the axis of the shaft that carries them, as described.

2. The U-shaped beaters *g* jointed to the radial arms *f* of the rotary shaft C, substantially as specified.

139,146.—*Die for Paper-Collar Machinery.*—GEORGE HARRINGTON and GEORGE D. ROLLINS, Springfield, Mass. Application filed February 26, 1873.

To the under side of the button-hole die-head is attached a secondary head by means of a "dovetail way" carrying a triangular die, whose counter-die is formed in the bed, as is also that of the button-hole die, the former and its counter-die being adjustable to fixed positions to or from the latter.

Claim.—The combination of the fixed plunger C and base E, provided, respectively, with a button-hole die and counter-die, with the movable plunger D and base F, provided, respectively, with a die, *d*, and corresponding counter-die, substantially as described.

139,147.—*Bell-Ringing.*—JAMES HARRISON, East Hampton, Conn. Application filed December 4, 1872.

An annular guard is firmly fixed within the bell, and, as the bell is slowly rotated mechanically on its axis during its swing, the clapper is supported from it in whatever direction it may fall.

Claim.—The combination of an annular clapper-guard with a bell, substantially as and for the purpose described.

139,148.—*Machine for Bending Pipe Stems.*—JOSEPH HARVEY, Philadelphia, Pa., assignor to himself, MONTGOMERY FORD, same place, and WILLIAM HARVEY, New York, N. Y. Application filed February 8, 1873.

The article to be bent, previously prepared, is placed in the jaws, and then, by bringing levers into position, the pin is inserted to hold the levers together.

Claim.—A bending instrument in which a plate, A, provided with projections *b b'*, is combined a lever, B, provided with projections *d d'*, and having a shifting fulcrum upon the said plate, all substantially as specified.

139,149.—*Saw-Filing Machine.*—CHARLES F. HENIS, Baltimore, Md. Application filed October 21, 1872.

The file-holder, supporting-plate, frame, coil spring, and vise or clamp for holding the saw.

Claim.—1. The file-holder, consisting of the end pieces B B', sockets *a a*, rods *b b*, on which the end piece B' slides, and set-screws *c c c'*, all arranged, constructed, and operated as set forth.

2. The combination of the file-holder with the plate D and adjustable cam E, as described.

3. The combination of the frame H F, plate D, file-holder, and stop *k*, as set forth.

4. The combination of the frame H F, plate D, adjustable stop *g*, and spring *k'*, as explained.

5. The combination of the frame, file-holder, adjustable plate *l*, stop *k*, and swinging plate D, as specified.

6. The combination of the frame H F, pivoted arm H', nipping-plates *i j*, catch *i'*, and handles I I', as described.

7. The combination of the file-holder, plate D, frame H F, and clamping apparatus, as set forth.

139,150.—*Pipe-Coupling for Railroad-Cars.*—MARSHALL HERSHEY, Jr., Philadelphia, Pa. Application filed March 27, 1873.

The pipes, which project from the adjoining ends of two railroad-cars, are connected by means of a nut swiveled to one of the pipes and adapted to screw-threads on the other. One of the pipes is made with an enlargement, which serves as a receptacle for packing to a pipe which slides within and has a bearing at each end of said enlargement, to prevent lateral movement and compressing the packing.

Claim.—1. The within-described coupling, in which are combined two pipes, A and A', a nut, B, swiveled to one of the said pipes, and a mass of packing, *x*, contained within the nut, and surrounding one pipe, and arranged to be forced against the end of the other pipe, substantially as herein set forth.

2. The combination, with the pipe *a* and its enlargement *a'*, of the sliding pipe *b* having a bearing at each end of said enlargement, and surrounded by a packing, as set forth.

139,151.—*Chain-Machine.*—BENJAMIN HERSHEY, Erie, Pa. Application filed February 14, 1873.

The chain-link to be welded has its open ends scarfed, and, after being heated, is placed between the dies in this machine; the treadle is then depressed, which simultaneously raises a mandrel into the link, and draws the supporting-pin from under the plunger, carrying the upper die which falls upon the link, the blow being increased by a spring. The plunger is elevated and supported above the lower die automatically.

Claim.—1. The combination of the detachable curved dies *b d*, having their faces formed as shown, die block B, plunger C, collar D, and cam-wheel G, operating substantially as described.

2. The die B, having a detachable curved steel packing, B', when the latter is secured so as to operate in connection with the dies *b d*, substantially as described.

3. The combination of the hinged base-board H, having a torsion or other spring attached, and so relatively arranged as to act in connection with the upper section of the plunger, as stated, pivoted arm K having a series of openings, *k k*, crank-arm *l* having a like series of openings, *l' l'*, and axle L, the same operating substantially as described and for the purpose specified.

4. The combination of sliding bar P having a slot, *p*, and stop-pin P', arm K, base-board H, and plunger C, the same being so arranged that, as the plunger is elevated, the sliding bar shall be so moved as to arrest its motion at the proper time, substantially as described.

5. The combination of the sliding stop-bar P, arm K, base-

board H, axle L, crank-arms *l* M, and treadle-arm M', operating substantially as described.

6. The combination of the double treadle N N', the pivoted arm N², traveling bearing-tongue O, and hollow die-block B, operating substantially as described.

7. The combination of the double treadle N N', pivoted connecting arm N², tongue bearing-pin O, rod M', axle L, arm K, bed-piece H, and plunger C, operating substantially as described.

139,152.—*Cigar-Trimmer.*—ALBERT HETTINGER, Philadelphia, Pa., assignor to GEORGE W. EDWARDS and JOSEPH M. PATTERSON, same place. Application filed February 3, 1873.

The upright part of the frame carries a curved lever-knife, bent to fit closely to the counter shear-rib, which is shaped to hold the cigar. The steps which limit the throw of the knife are formed upon the knife-lever near the fulcrum.

Claim.—The within-described cigar-trimmer, consisting of the frame B, with a recess, *y*, edged with a rib, and the laterally-bent cutting-lever A, having shoulders *a a'* and a curved edge, of the character described, maintained in close contact with the said rib by the fulcrum-bolt *d*, all as set forth.

139,153.—*Automatic Time-Printing Machine.*—JOHN C. HINCHMAN, Brooklyn, N. Y. Application filed October 2, 1872.

A ratchet-wheel, continuously moved by the clock-shaft, releases a vibrating lever once a minute, which, through a ratchet, rotates the minute-wheel the proper distance to bring to the printing point its successive numbers. This wheel, at each revolution, moves the hour and meridian wheel forward one number. The month and day wheels are moved by hand-levers. Dies representing the exact time are thus brought into line each minute, and, being covered by an inked ribbon, imprint the time at each depression of the platen.

Claim.—1. In an automatic time-printing machine, having a clock-movement motor, the combination therewith of an intermediate device, G, having no fixed connection therewith, but transmitting an intermittent time movement of one to the other.

2. In an automatic time-printing machine having a clock-movement motor, combining, with said motor and its transmitting-lever device G, a revolving-toothed wheel, L, having minute or other divisions, and arranged to operate the communicating lever G, in accordance with such divisions.

3. The lever device G, arranged to operate as described, provided with an adjustable-point, *i*, at one end, and a pivoted-pawl, *j*, at the other, and combined with an adjusting-spring, or its equivalent, as and for the purpose set forth.

4. The forked lever H H', in combination with the minute, hour, and meridian wheels *c a b*, and arranged to operate the two latter, as described.

5. The arrangement of the hand-slides I, with their spring-pawls I', for operating and limiting the movement of the date and month printing-wheels *c d*, as described.

6. The automatic time-printing machine having all its parts constructed and arranged for joint operation, as described.

139,154.—*Automatic Time-Printing Machine.*—JOHN C. HINCHMAN, Brooklyn, N. Y. Application filed October 2, 1872.

The type-dials are concentrically arranged in a horizontal plane, and are operated by bevel-gears connected with the main shaft. Each revolution of the minute-dial moves the hour-dial one space, while one revolution of the latter moves the vertically-arranged meridian-wheel and the disk indicating the day of the month each one space, and the latter in turn moves the month-disk. When the platen is depressed to make an impression and the rotation of the shaft is suspended, the clock-movement winds up a spring within one of the cog-wheels connecting said shaft with that of the clock, which spring, as the shaft is released, communicates to it its lost motion.

Claim.—1. In a time-printing machine, the type-dials, arranged and operated within concentric circles, essentially as and for the purpose described.

2. The outer concentric dial E of the timing-machine, arranged within an annular opening, *e'*, in the top plate C, and supported thereon, so as to be adjusted to indicate the month with respect to a fixed point, essentially as described.

3. The date, hour, and minute dials, each having a separate and distinct controlling-axis, one within the other, and operated with respect to each other, as and for the purpose set forth.

4. The meridian-wheel J, arranged at right angles to the concentric dials, and operated as described.

5. The meridian-wheel J, having every alternate indicator arranged to indicate the meridian divisions of every twelve hours, as described.

6. In combination with a time-printing machine and a clock or watch movement, a device for receiving and restoring the lost motion of the type-dials when arrested by the pressure of the stamp.

7. The device for restoring the lost motion of the type-dials, consisting of a toothed wheel, N, having a winding and unwinding spring, Q, upon the driving-arbor O of the motor, independent of the motion of the latter, the reaction and restoring motion of the dials being effected by the spring, as described.

8. In combination with a timing-machine and a clock or watch movement, the driving connecting shaft or rod I of the former, united to the latter by means of a universal joint, S, to render the motion of the transmitting-shaft I steady, essentially as described.

9. The combination in a stamping-machine of the connected levers T T' and slide U with the presser-stamp and the endless inking-ribbon M, arranged to operate the latter by the spring-pawl *s*² and ratchet-connection V', substantially as described.

10. Finally, the timing-machine, with its connected clock or watch movement, having all its parts constructed and arranged, for joint operation essentially as described.

139,155.—*Inking Attachment for Chromatic Printing.*—EDWARD A. HEWITT, Whitewater, Wis. Application filed April 1, 1873.

A series of ink-distributing straps and fountains, so hung in a supporting-frame as to be detachable and adjustable to and from each other, which frame has a lateral reciprocating motion to change the distributing-surface.

Claim.—1. A chromatic inking device, consisting of a series of ink-distributing straps, fountains, and ink roller, so combined with a printing-press as to have a lateral reciprocating movement, as described.

2. In combination with the series of ink-distributing straps, the series of detachable ink-fountains, as described.

3. The ink-distributing straps and fountains, so constructed as to be independently adjustable, laterally, upon the frame, as described.

139,156.—*Printing-Press.*—GEORGE W. HUNT, Newburg, N. Y. Application filed May 31, 1872.

The platen, adjustable on its arm, is moved into position to receive impression through cam and vibrating segments, and remains stationary while the form, secured to pivoted arm, after having been inked by roller-frame guided by adjustable ways, is thrown forward to complete the impression by toggle-levers. The distributing-rollers receive their ink from a cylinder which is supplied by a roller, which in turn receives its supply from an intermediate drum supplied by a supplemental roller from the fountain duct.

Claim.—1. The platen D, moved directly toward the bed till nearly in contact therewith, where it remains stationary, in combination with the bed B, moved toward the platen to complete the impression, all substantially as specified.

2. In combination with the above, the vibrating mechanism for the platen, having the rods G, cranks H H', segment K, arm *k*, and cam *l*, arranged to give a lateral motion to the platen from the same shaft M which operates the bed, and to hold it with the crank on the center during the motion of the bed, as set forth.

3. A platen vibrating from a nearly horizontal to a nearly vertical position, and remaining stationary in each extreme position, when mounted on a fixed axis, *e*, arranged a little in front of the plane of face, as and for the purpose specified.

4. The fountain-roller Y, distribution-cylinder Z, and inking-rollers, in combination with the intermediate ink-cylinder W and traveling rollers 3ª and 3ᵇ, substantially as and for the purpose specified.

5. The bed and the distribution-cylinder Z, in combination with the form-rollers and the angular ways R, which are obliquely adjustable for the purpose of removing the form-rollers from both the form and the distribution-cylinder, substantially as specified.

6. The combination of beam U, arm T *t*, cam S, lever 9, pitman 10, crank 11, and rock-shaft 13 12, operating substantially as specified.

7. The impression-beam U, link V, and bed B, in combination with crank-shaft J, which passes through, and has its bearings in, said beam U, cranks H H' attached to the projecting ends of said shaft, connecting-rods G, and platen D, connected substantially as and for the purpose specified.

139,157.—*Jack-Screw and Clamp Combined.*—THOMAS R. JACKSON, ASBERRY C. JACKSON, and CLAUDIUS S. WATSON, Sabine Pass, Texas. Application filed January 13, 1873.

Claim.—1. The head and foot-pieces A A' and their jaws *a a*, formed on screw-sockets B B, which are applied on screws C C, in combination with a lever-handle and pawls, substantially as described.

2. The right-and-left pawl-plate F, ratchet-wheel E, spring S, and cam-levers G, combined and applied to the lever-handle of the implement, substantially as described.

139,158.—*Trunk.*—GEORGE B. JENKINSON, Newark, N. J. Application filed March 14, 1873.

The strips, being of heavy material, and placed upon the portions most subject to strain and wear, permit the use of lighter leather for the body of the trunk.

Claim.—The strips C and D of heavy leather riveted and barred around the valance and edges of leather trunks, as and for the purpose set forth.

139,159.—*Washing-Machine.*—AMOS W. JENNINGS, Ravenna, Ohio. Application filed April 19, 1873.

Claim.—1. In a washing-machine, the combination of the frame A, corrugated rollers A', B, C, and D, guide-hand H, and fastening-blocks *g* and *h*, arranged, with reference to each other, substantially as specified.

2. In a washing-machine, the spring Y, having hooked rod W, in combination with the stop-plate L, the roller A', and its journal, constructed as specified.

139,160.—*Safety-Stirrup.*—LEMUEL R. JONES, Carthage, Ind. Application filed April 17, 1873.

Claim.—1. A stirrup having an arm or loop extending across the front, to act as a lever for disengaging the hinged bottom, substantially as set forth.

2. The stirrup *a*, bottom *c*, catch *e*, and arm *i*, when the parts are combined to operate as specified.

139,161.—*Machine for Elevating Building Materials.*—JOHN KING, Quincy, Ill. Application filed April 11, 1873.

A horizontal base-beam having at one end an upright extending upward beyond the point to which the building material is to be elevated. A pulley-wheel is secured to the top of each upright, and on the inner sides of the uprights near the top are pins. Each upright is surrounded by a frame consisting of two beams at right angles with the uprights bolted together, and having two raised metal yokes, which, extending upward, support a pulley-wheel revolving between them. A rope fastened to the pin above described passes under the pulley-wheel; attached to the frame, and then over the pulley-wheel at the top of the upright, thence around the drum of a windlass secured to the base-beam between the two uprights; and thence to the opposite pin around corresponding pulley-wheels of the other upright, thus forming an endless belt, by which one frame is raised and the other lowered by turning the crank of the windlass. V-shaped notches to support beds are cut in the beams of the frames, from which also depend metallic supports having platforms secured thereto to convey lumber and other material.

Claim.—1. The frame D, consisting of the beams E, bolts F, strips K, pulley-wheel L, pendants H, platforms I, and beams X, substantially as shown and described, and for the purposes specified.

2. The frame D, consisting of the beams E, bolts F, strips K, pulley-wheel L, pendants H, platform I, and beams X, in combination with the rope N, windlass M, pulley-wheel *c*, upright C, and pin *d*, when arranged and operated substantially as shown and described.

3. The beams X, when arranged relatively, one to the other, substantially as shown and described.

4. The parallel inverted V-shaped strips K, for the uses and purposes shown and described.

5. The supports H, when constructed and attached substantially as shown and described.

139,162.—*Shingle-Machine.*—SAMUEL M. KING, Lancaster, Pa. Application filed December 19, 1872.

The reciprocating planing-knife passes over the shingle, which is held in place by a spring-catch.

Claim.—The combination, on a shingle-planer, of the rest K, having recess *k* thereunder, and the spring-support O, arranged with respect to each other, the table, and the knife, as and for the purpose set forth.

139,163.—*Automatic Regulating-Valve.*—GEORGE L. KITSON, Philadelphia, Pa., assignor to himself and GEORGE W. CAER, same place. Application filed January 29, 1873.

If a portion of the work which an engine is designed to perform be taken off a momentary pulsation occurs in the pipe leading to the engine, the pressure on the lower end of the weighted valve becomes less than the constant boiler pressure exerted upon its upper surface, thereby moving the said valve which contracts the steam passage in the chest constructed to receive it. If, on the other hand, the work to be performed is greater than that for which the engine is adjusted, there is a momentary recoil of steam in the pipe leading to the engine, creating a pressure beneath the valve greater than the constant boiler pressure exerted upon its upper end, which, moving said valve, opens the passage and admits the proper quantity of steam to the engine.

Claim.—The combination of a steam-pipe, a loaded valve, and a steam-chest adapted to the valve, substantially as described, so that one end of the said valve shall be exposed to the action of the steam from the boiler and only of the pipe, while the other end of the valve is exposed to the steam at both boiler and engine ends of the pipe, as set forth.

139,164.—*Running-Gear for Carriages.*—RUFUS KLINE and ROBERT M. JACK, Pottstown, Pa., assignors of one-third their right to FORTUNATO G. POMPEJI, same place. Application filed November 25, 1872.

The axle, reach, and bolster are made U-shaped in cross-section, and are strengthened by means of thin metallic strips fastened to their under sides.

Claim.—1. The combination, with a U-shaped metallic axle, of a subjacent strip, welded to the under side of each journal, as and for the purpose described.

2. The U-shaped thin metallic perch-plates J, filling-pieces K, and clips L, combined as and for the purpose set forth.

3. The U-shaped plate M and flat plate N, constructed and combined with clips, as and for the purpose specified.

139,165.—*Manufacture of Shafting.*—CHRISTIAN F. KOERSLEY and WILLIAM WENSTHOFF, Dayton, Ohio, assignors to FARMER'S FRIEND MANUFACTURING COMPANY, same place. Application filed April 12, 1873.

Claim.—Bars of iron for shafting having slots or grooves formed in them, or an elevated rib formed upon them, during the process of rolling, for the purpose of receiving pulleys or wheels thereon.

139,166.—*Striking-Work for Clocks.*—GIDEON H. LEEDS, West Chester, and CHARLES N. THORP, Philadelphia, Pa. Application filed February 5, 1873.

The tripping-lever, which is raised by the hour-wheel, is so formed and arranged with starting and stopping pins and a projection resting on the pattern-wheel as to serve also as the detent-lever, thus combining the lifting and the starting and stopping actions in a single arm.

Claim.—1. The lifting-lever T, consisting of a single bar carrying the pins *h h'*, and formed with the knife-edge *f* between the pivot and free end of the lever, and having said free end raised by the projection *d* on the hand-arbor U, when arranged with the dividing-wheel F and wheel M with its pin *i*, as herein set forth.

2. The combination of the dividing-wheel F with the great-wheel E by means of the screw X and slot *l*, as and for the purpose above set forth.

139,167.—*Artificial Stone.*—WILLIAM H. LEWIS, Philadelphia, Pa., assignor of part interest to H. E. THAYER, same place. Application filed March 28, 1873.

Sulphur, alum, Portland cement, and sand.

Claim.—The within-described process for making artificial stone of the ingredients mentioned.

139,168.—*Refrigerator.*—WILLIAM H. LEWIS, New York, N. Y., assignor to JOHN K. LEWIS, same place. Application filed April 28, 1873.

A frame containing wire-gauze forming a door for the refrigerator when ice is not required, and a closed door of the ordinary kind when the refrigerator contains ice, made so as to be easily exchanged.

Claim.—The frame *g* and gauze A, applied to and combined with a refrigerator and the ordinary door *f* thereof, substantially as and for the purposes set forth.

139,169.—*Post-Hole Digger.*—AARON E. LINDSLEY, Paw Paw, Mich. Application filed April 1, 1873.

The handle is made in halves, attached together like a pair of shears, so that the earth can be compressed between the blades by operating the levers. A guard, F, surrounds and protects the handle-levers from too great separation, and the ratchet-bar, operated by the rod *m*, serves to retain the blades in their hold upon the earth after compression, so that it can be withdrawn without difficulty.

Claim.—1. The combination of the blades A A, hinged base B B with shank *b b*, and handles C C', all constructed and arranged substantially as and for the purposes herein set forth.

2. The blades A A, base B B, shank *b b*, and handles C C', in combination with the guard *f*, ratchet A, and rod *m*, substantially as and for the purpose herein specified.

139,170.—*Sealing Fruit-Jar.*—ROBERT S. MANNING, Trenton, N. J. Application filed March 25, 1873.

A jar is provided with a water-tight cover and a rubber cap to exclude air.

Claim.—A self-sealing jar provided with a locked water-tight cover, B, and an external rubber cap, C, to exclude air, substantially as and for the purposes herein set forth.

139,171.—*Lithographic Press.*—CHARLES C. MAURICE, New York, N. Y. Application filed March 12, 1873.

A printing-cylinder composed of a series of segmental stones arranged on a cylinder, which has its bearings in oblong slots in the frame, is kept in contact with an impression-cylinder by weights or springs. Moistening and inking is accomplished by an apron, which transmits the liquid to a series of rollers.

Claim.—In combination with the printing-cylinder D, composed of a series of segmental stones arranged upon the cylinder C, having the bearing in oblong slots *a*, as described, the weighted lever H, impression-cylinder E, rollers P Q R, endless apron I, and the moistening and inking apparatus, substantially as described.

139,172.—*Combined Heating and Cooking Stove.*—BERNARD MCCONNELL, Philadelphia, Pa. Application filed February 11, 1873.

The hot-air chamber, suitably provided with inducts and educts, is placed at the sides and above the oven in the elevated chamber over the rear of the stove between the air-chamber and the outer casing, and between it and the oven the products of combustion can pass freely. The heated air from this chamber is taken to upper rooms.

Claim.—1. The combination of an oven or ovens, an outer casing, flues, or passages, through which the products of combustion can pass in direct contact with the oven and casing, and an intermediate air-flue, H, as set forth.

2. The combination, with the said flue H, of inlet and outlet passages, as described.

3. The combination, with the oven, outer casing, and flue H, of the passage E communicating with the fire-place A, as specified.

139,173.—*Vegetable-Grater.*—ANDREW S. MCNEIE and WILLIAM D. STOCKTON, Philadelphia, Pa. Application filed April 11, 1873.

The longitudinal box or frame is provided with grooves to receive the movable grater-plate, and also with grooves to receive the sliding box having open top and bottom, said sliding box being provided with a self-adjusting follower having a handle on its upper end and a grater-plate on its lower end, and pins on its sides to engage in slots on the inside of the sliding box. The main box has a cover to allow the withdrawal of the sliding box and removable grater.

Claim.—The combination of the box A, having grooved sides A' to receive the box D and grater C, and a hinged door, B, closing one end, as shown, with the reciprocating box D having open top and bottom, side flanges d^1, and slots d^2, the self-adjusting follower E having pins e^2 *d*, handle e^3, and grating-plate e^1, and the removable grater C placed within the grooves *a*, all constructed, arranged, and operating substantially as shown and specified.

139,174.—*Pipe-Tongs.*—FRANK H. MERRILL, San Francisco, Cal. Application filed March 19, 1873.

An adjustable serrated chisel is arranged in one of the jaws of the wrench to adapt the instrument to different-sized pipes. A detent-pawl retains the chisel in position, which is released when the jaws are opened.

Claim.—The jaw A, in combination with the jaw B, having the sliding chisel C, arranged to be released by the pawl *i* when

the jaws are opened, substantially as described, and for the purpose set forth.

139,175.—*Elevating Ladder.*—ALEXANDER MILLER, New York, N. Y., assignor to GRAFTON T. NUTTER, Jersey City, N. J. Application filed December 26, 1872.

Claim.—In combination with a sliding ladder or series of ladders, a piston fitted to slide in a tube or a series of tubes, and operated by hydraulic power, substantially as and for the purpose specified.

139,176.—*Rotary Paper-Cutter.*—HENRY S. MILLER, Philadelphia, Pa. Application filed January 28, 1873.

The blades are beveled on alternate opposite faces, and binding is, therefore, prevented.

Claim.—The rotary cutter, constructed with cutting-sections increasing in radius toward their heels, so as to produce a draw-cut, substantially as herein described.

139,177.—*Pipe-Wrench.*—GEORGE P. MOLONEY, Detroit, Mich. Application filed March 5, 1873.

The bolt is constructed with a rib on the under side of the head, which meshes into the notches on the adjustable jaw.

Claim.—The combination of the bolt B, having rib *e* and sleeve *d*, with the levers A A', constructed as described, for the purpose set forth.

139,178.—*Polishing Device.*—JOHN C. MORRISON, Chicago, Ill., assignor of one-half his right to NELSON C. GRIDLEY and FRANCIS F. WARNER, same place. Application filed December 30, 1873.

Claim.—1. A scouring-utensil provided with a scouring-surface consisting either wholly or in part of India rubber.

2. A scouring-utensil provided with a scouring-surface consisting partly of India rubber and partly of a soft fibrous material.

3. A scouring-utensil provided with a scouring-surface consisting of India rubber and a soft fibrous material arranged together in alternate layers, and so attached to the utensil that the edges of the layers will constitute the scouring-surface, substantially as specified.

139,179.—*Railway Axle-Box Cover.*—EDWARD MOYEL and JAMES HOWELL, Wyandotte, Kan. Application filed July 22, 1872.

The spring, by means of which the cover is held in place, is secured to the axle-box instead of the cover as ordinarily, so that broken covers may be easily replaced.

Claim.—The axle-box A having the open sockets, in combination with the cover B having the shaft *a* and flattened places *c c'* and spring C, the spring being removably attached to the axle-box, as described.

139,180.—*Angling-Fly.*—JOHN MULLALY, New York, N. Y. Application filed January 25, 1873.

The wings serve to keep the fly right side up, in still water at least, and the hook-point lies hidden between them.

Claim.—An artificial fishing-fly and an attached hook arranged with the bend a^2 outside of the body and between the wings, so as to be concealed by the same, substantially as shown and described.

139,181.—*Can.*—CHARLES A. MURDOCK, Milwaukee, Wis. Application filed February 10, 1873.

The can has a flat shoulder on the top of the vertical side. Within this is a raised portion, into which is hooked a bail that rests on and within the circumference of the sides of the can, so as to be out of the way in packing many together.

Claim.—The pail A, having the shoulder D formed around its top, and the raised portion D, and the bail C hooking into it, the shoulder and bail being so arranged in relation to each other that the bail will fall and rest within the circumference of the top of the pail, as shown and described.

139,182.—*Animal-Trap.*—GEORGE A. NORMAN, Baltimore, Md. Application filed February 15, 1873.

The catch-bar upon the hood operates within a shorter radius than the bulk of the hood, and therefore reaches the animal sooner. The bait-hook is also provided with a guard to prevent easy removal of the bait.

Claim.—1. The combination of the base B, fixed portion A, hinged hook D, and spring *d*, said parts being constructed and arranged to operate substantially as described.

2. In combination with the fixed portion of the cage A and the hinged hood D, the cross-bar E on the hood, said bar being arranged to strike the animal as the hood descends, substantially as set forth.

3. The combination, in an animal trap, of the latch-piece, the bait-hook, and the trigger-piece, arranged as described, to prevent the withdrawal of the bait, and also to operate upon the hook to aid in springing the trap, substantially as set forth.

139,183.—*Step-Ladder.*—JOSEPH S. OAKLEY and BENJAMIN M. POST, Passaic, N. J. Application filed April 3, 1873.

The stiles are placed diagonally for strength, and have metallic connecting-pieces, which sustain the steps. The ladder is connected to the top platform by means of the dovetailed pieces E. Claim 4 covers the peculiar construction of the hinge, and claim 5 the mode of connecting the stiles at foot.

Claim.—1. The stiles A A, when set diagonally or in diamond form and used in combination with the notched steps C C, substantially as and for the purposes herein set forth.

2. In a step-ladder, metallic brackets B B to support the ends of the steps and connect and brace the stiles, substantially as herein set forth.

3. The combination of the stiles A A, platform D, and cross-bars E E, said cross-bars being dovetailed into the platform, and the ends of the stiles inserted in the cross-bars, substantially as herein set forth.

4. The hinge formed of the strap *a* and screw-hook *b*, the strap being secured to the back leg G, and the screw-hook passed through the cross-bar E into the platform D, to secure the same together, substantially as herein set forth.

5. The combination of the stiles A A, double cap J, and rivet *x*, for the purposes herein set forth.

139,184.—*Speed-Gage.*—JOHN W. OSBORNE, Washington, D. C. Application filed September 3, 1872.

A vane made to revolve within a chamber transmits, by the motion given to the contained air or other fluid, a pressure upon a spring resisting vane, which indicates by a pointer on a dial the rate of speed of any driving mechanism with which it may be connected.

Claim.—The combination of a revolving mechanism for producing within a chamber a vortical motion in a fluid; a resisting vane or disk, actuated by the motion of said fluid; a spring or its equivalent, giving said vane its resisting power; and a pointer, or other moving device, by which the motion or position of said vane is indicated; the whole constituting a rate or speed gage, substantially as described.

139,185.—*Medical Compound or Bitters for Treating Chills and Fever.*—THOMAS B. OWENS, Gatesville, Tex. Application filed April 5, 1873.

Dogwood-bark, wild-cherry bark, cinnamon-bark, calumba-root, gentian-root, orange-peel, nutmegs, cloves, red saunders, alcohol, water.

Claim.—The bitters compounded of the ingredients in the proportions substantially as specified.

139,186.—*Combined Refrigerator and Sideboard.*—GRANVILLE L. PACKARD, Everett, Mass. Application filed February 26, 1873.

The ice-receptacle is placed in one side of the sideboard. A dry compartment is formed by a vertical partition in one side of the refrigerating-chamber. Drawers are placed above the drying and refrigerating chambers.

Claim.—The improved refrigerating-sideboard, as described, the same consisting of the case A, constructed internally so as to serve as a refrigerator, and provided with the dry-air chamber D and one or more drawers, I, the said case having a flat top and a back-piece, all as shown and described.

139,187.—*Cooking-Range.*—JOHN L. PFAU, Jr., Quincy, Ill. Application filed March 17, 1873.

The horizontal sections of the metallic fire-pot are so set one upon another by the rabbeted edges, protected by encircling flanges, that sufficient space is left at the joints to allow the sections to expand or contract without breaking.

Claim.—The sectional fire-pot C, each ring having an encircling flange, *c*, at the outer and a rabbet at the inner top edges, a space being formed between the flange and top, and a lip, *c'*, at the lower inner edge, as and for the purpose set forth.

139,188.—*Watering-Column for Railroad Water-Tanks.*—JOHN N. POAGE, Cincinnati, Ohio. Application filed February 10, 1873.

A double incline is formed upon opposite sides of an enlargement upon the discharge-pipes, so that when the discharge-pipe is turned in either direction until the inclines bear upon rollers arranged upon the top of the column the weight of the parts, pressing downward, will cause said pipes to revolve until they reach their normal position, and thus render it impracticable for the discharge-pipe to remain at an angle to the track, except when purposely placed in such position. A tube extending below the freezing-point surrounds the valve-rod, which is provided with a piston that opens or cuts off communication between the drain and discharge-pipes as the valve-rod is moved up or down.

Claim.—1. In combination with the casing A, and with the watering-column C and C', provided with the projecting shoulder *c*, the double inclines *c'* and journaled rollers E, substantially as and for the purpose shown.

2. In combination with the column C and valve-rod N, the pipe or tube O secured within the upper end of said column, and extending downward within the same to a point near the valve-box, substantially as and for the purpose shown.

3. In combination with the pipe O and column C, the waste-water pipe R, substantially as and for the purpose set forth.

4. In combination with the valve-rod N, tube O, and waste-water pipe R, the piston *n* secured upon and moving with said rod, substantially as and for the purpose shown and described.

5. In combination with the pivoted operating-lever P, the slotted weight S provided with the arms T pivoted to or upon the legs Q', inclosing said lug and lever, and caused to engage with the latter by means of the pin *t* passing through the ends of said arms, substantially as and for the purpose specified.

6. The hereinbefore-described device, as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose shown.

139,189.—*Wind-Wheel.*—ALBERT RAYMOND, Waupun, Wis. Application filed April 5, 1873.

A wind-wheel is so arranged on a pivoted frame, which is provided with a sail or blade and with a weighted arm, that, when the wind increases, it tips it over and backward by means of the sail or blade, and when the wind decreases the weight brings the wheel back again to its vertical position. There is also an arrangement of parts by which a uniform stroke is communicated to a pump-rod, notwithstanding the tipping motion of the wheel.

Claim.—1. In combination with the pivoted head-block or frame C, having the wind-wheel mounted thereon, the blade or sail J and the weight K, when arranged to operate as described.

2. In combination with the wheel, mounted on the pivoted head-block C, and arranged to tip or turn backward, as described, the standards T, jointed rod R, link *u*, and pitman P, arranged substantially as described.

3. In combination with the pivoted head-block C, having the wheel mounted thereon, the rock-shaft V, provided with the arms *i* and *j*, the rod *k*, and the link *l*, when arranged as described, for the purpose of tipping the head-block up.

139,190.—*Breech-Loading Fire-Arm.*—THOMAS RESTELL, Birmingham, England. Application filed September 30, 1871.

When the lever and plate are drawn back to open the breech for the insertion of the load or cartridge the hooked end of the trigger will enter the notch in the stem of the striker, and retain the same back until the trigger is pulled, which releases the striker, and a spring impels the same forward and explodes the cartridge.

Claim.—The lever *a* carrying the plate *b*, the notched stem *d* of the striker *e*, and the trigger *h*, with its hooked end *j*, combined as shown, and operating substantially as set forth.

139,191.—*Washing-Machine.*—JORDAN RIGGSBEE, Chapel Hill, N. C. Application filed March 22, 1873.

A washing-machine attached to a tub by a hinged cross-piece, with an opening in its center near its entire length, held by a bolt and nut. Through its center is fitted a hollow screw, and through the screw a spindle which is connected with the rubber, each having a lever or crank on its top to increase or diminish its tension upon the clothes being washed, and for operating it.

Claim.—1. The combination of a cross-piece, B, hollow screw D, and a shaft, J, inclosed within and suspended upon said screw, and bearing the rubber at its lower end, substantially as and for the purpose specified.

2. The combination of the cross-piece B, hollow screw D, rubber-shaft J, and levers D' E, substantially as and for the purpose specified.

3. The cross-piece B, having a fissure, K, extending lengthwise of the same past the tapped orifice through which the screw passes, in combination with the bolt G, hollow screw D, shaft J, rubber F, and nut H, substantially as and for the purpose specified.

139,192.—*Treating Explosive Compounds to Render them Safe for Blasting and other Purposes.*—EDWARD A. L. ROBERTS, Titusville, Pa. Application filed May 7, 1873.

That class of explosive compounds which detonate by sudden agitation, produced by another explosion going off near them, are prevented from exploding by friction or by a spark by mixing them with water so as to form a paste. The well-known white gunpowder is of this class; also the chlorate-of-potash powder, and many others usually considered dangerous.

Claim.—1. The process herein described for treating explosive compounds and composition, the same consisting in combining with them water or other liquid, or with a hygrometric salt, so as to form a paste, as and for the purpose specified.

2. The method described for exploding moist or wet compounds, such as described, by igniting near them or in contact a fulminating or detonating material, as described.

3. The combination, in the same charge, of moist or wet compounds, such as described, with dry powder, capable of being exploded by a spark or with a percussion-powder, as set forth.

4. The explosive compounds herein described, made by combining dry powders with water or other liquid, so as to render them safe in handling and in use, as described.

139,193.—*Cultivator.*—REUBEN RUST, Odessa, Del. Application filed September 28, 1872.

A central beam, prolonged into a handle, carries a solid triangular tooth which lies in nearly a horizontal plane, and is connected to the rear end of the beam by means of a cutting-shank or standard. This may be used alone, or two more like shares, attached to short diverging beams, may be attached to either side, forming a hand implement.

Claim.—The hand-cultivator described, having the central beam A, provided with the handle B and tooth D, removable side beams B', and solid triangular-pointed teeth D', having upright shanks E, together with the coupling-band C, substantially as specified.

139,194.—*Water-Regulator and Alarm for Boilers.*—ROBERT SAFLEY, Seneca Falls, N. Y. Application filed March 12, 1873.

A cylinder containing a float is connected with the water in the boiler. A piston-rod connects the float with a cross-head, which operates a series of catches that hold up weights. When the water falls the first weight is detached, and, by means of a cord and pulleys, opens the valve that starts the pump. If the water falls still more, a whistle is blown by a second weight falling, and when raised to the proper level a third weight is detached and by the same means stops the pump.

Claim.—1. The cylinder C having a float inclosed, which is connected by the rod *a* with the cross-head *b* moving on the guides *c c*, said cylinder being removed from and connected with the boiler by the pipes D E, substantially as and for the purposes herein set forth.

2. Cross-head *b* attached to the float-rod *a* and provided with the bar *d*, having adjustable pin *f*, in combination with the hook A, cam *i*, weight H, cord *m*, and lever J, for closing the stop-cock in the steam-pipe connected with the pump, substantially as herein set forth.

3. The cross-head *b* attached to the float-rod *a*, and provided with the bar *d* having pin *f'*, in combination with hook A^1, cam i^1, weight H^1, cord m^1, and lever J', for opening the stop-cock in the steam-pipe connected with the pump, substantially as herein set forth.

4. The cross-head *b* attached to the float-rod *a*, and provided with the bar *d* having pin *f'*, in combination with the hook A^2, cam i^2, weight H^2, cord m^2, and whistle-lever *p*, for sounding the alarm, substantially as herein set forth.

5. The combination of the valve-stem *s*, wheel *w*, with notches *y y*, levers J J', and weighted arms O O with projections *f f*, substantially as and for the purposes herein set forth.

139,195.—*Corn and Cotton Planter.*—JOHN W. SAVAGE and FRANCIS M. DOTY, Parmitchie, Miss. Application filed February 5, 1873.

The plates *a* and *b* in the bottom of the hopper are connected by parallel levers, by which the space between them may be enlarged or diminished to regulate the quantity of seed.

Claim.—The combination of the hopper D with stirrer *f i*, movable plate *b*, stationary plate *a*, guard *d*, and lever E, all constructed and operating substantially as set forth.

139,196.—*Last.*—ISAAC N. C. SAVILLE, Worcester, Mass. Application filed March 3, 1873.

A pin or plug of wood is inserted in the heel of the last, with its grain transversely of the grain of the wood composing the last. The hole for the jack-spindle extends into or through the plug.

Claim.—A wooden last, provided with a wooden piece or plug, C, inserted and secured in the heel, in the position described, with the spindle-hole D extending into or through it, substantially as and for the purposes set forth.

139,197.—*Refrigerator and Mode of Cooling.*—JACOB F. SCHNEIDER, Brooklyn, N. Y., assignor to himself and PHILIP LENNART, same place. Application filed May 5, 1873.

The sides of the refrigerator are formed of porous plates made of clay, sand, sawdust, charcoal, pulverized glass, and sulphur. The bases of the plates rest in metallic boxes containing water, and by capillary attraction and evaporation the air in the refrigerator is cooled.

Claim.—1. In refrigerators, the combination of the porous plates B with the boxes C, set into the sides of the frame A, for placing the evaporating liquid therein, substantially as described.

2. The composition described, for producing the porous plates B, substantially as and for the purpose described.

139,198.—*Guttering-Tongs.*—JOHN SCHWARTZ, Philadelphia, Pa., assignor to himself and HENRY SCHWARTZ, same place. Application filed October 26, 1872.

The pins are adjustable independently of each other, so that a bend may be made at an angle with the edge of the plate.

Claim.—1. The combination, with one blade of the tongs, of independently adjustable stop-pins *g*, extending to and through elongated slots in the opposite blade, as set forth.

2. The combination, with the blade and its elongated slots *f*, of pins *g*, having external thumb-nuts *j* and collars *k*, fitting recesses at the inner side of the blade.

139,199.—*Harvester.*—HARVEY J. SILVERNALE, Golden Lake, Wis. Application filed January 3, 1873.

The platform is provided with an endless apron which carries the cut grain to the elevator, by which it is carried up and delivered to the dropper, and when a sufficient quantity has accumulated therein the driver, by a foot-lever, rotates the dropper and delivers the gavel upon the ground.

Claim.—1. The combination of the hinged platform, endless apron thereon, and elevator with the universal jointed extension-shaft and spur-wheels *u u u*, for driving said platform and elevator, substantially as and for the purpose set forth.

2. The combination of the foot-lever A, provided with spring-pawl, shaft O, provided with ratchet N, beveled wheels R and S, and dropper-shaft T, for the purpose of rotating the dropper, substantially as set forth.

3. The combination of the foot-lever A, locking-bar D, provided with springs H and F, and notch E, with the locking-lever K, for the purpose of holding the dropper in position while the gavel is being gathered, substantially as set forth.

139,200.—*Clothes-Wringer.*—HAMILTON E. SMITH, Fitchburg, Mass. Application filed January 8, 1873.

A clothes-wringer constructed with a loose flexible India-rubber roller, and located in the frame between three metallic rolls to allow it free motion, and motion given them by connection with the pinion on an independent shaft connected with the crank, and the gears covered by a boxing attached to the side of the frame.

Claim.—1. In a wringer composed of a flexible roller, R, rigid rollers C C^1 C^2, and gear-wheels *c* c^1 c^2 *b*, the arrangement of a hand-crank, pulley, or other equivalent device on the axle of the intermediate gear-wheel *b*, substantially as and for the purpose set forth.

2. The cap F, in combination with the axle *d* of the intermediate gear-wheel *b*, and with the gear-wheels *c* c^1 c^2, rigid rollers C C^1 C^2, and flexible roller B, all constructed and operating substantially in the manner described.

139,201.—*Machine for Pressing Clothes.*—HAMILTON E. SMITH, Fitchburg, Mass. Application filed January 8, 1873.

Two sides or ends are constructed, resting upon feet, with arms projecting, in the ends of which are rolls with tension-screws. From the projecting arms, and in connection with the

sides, are rolls, extended in their diameter, to receive the cylinder; and on its outer edge projecting blocks are constructed to receive the journals of small rolls, which are located outside of it. An endless apron is passed over the center cylinder from the roll in the extended arms, and another passing over the smaller rolls, which holds the article to be operated upon in close connection with the cylinder, and in their revolution carries the articles to the table for further operation. Motion is given to the machine by gears and crank.

Claim.—1. The combination of a receiving and of a pressing apron, the former being stretched over a central roller and over a tension-roller, and the latter over a series of pressing-rollers, arranged around the central roller and geared together with the same, substantially in the manner and for the purpose herein shown and described.

2. The discharge-roller G, combined with the pressing-apron H, receiving-apron F, and table I, substantially in the manner and for the purpose set forth.

139,202.—*Mattress.*—HAMILTON E. SMITH, Fitchburg, Mass. Application filed January 8, 1873.

The mattress is composed of a number of separate envelopes filled with hair, in the form of columns, and the columns are all inclosed in a large envelope to keep them in proper position for a mattress.

Claim.—In combination with a mattress having a series of columns, *a a*, as set forth, the envelope B for covering and supporting said columns, substantially as herein described.

139,203.—*Union-Coupling.*—WILLIAM B. SNOW, Brooklyn, assignor to EATON & COLE, New York, N. Y. Application filed April 9, 1873.

The pipe extension-piece is provided with internal and external screw-threads, a screw socket or sleeve, and jam-nut, whereby both sections of pipe may be fitted with a limited length of screw-thread, and the same provision for coupling the two sections of pipe obtained.

Claim.—The independent pipe extension-piece B, having a female thread, *b*, and male thread *d*, as described, in combination with the coupling-screw socket or sleeve C and jam-nut D, for operation, in relation with the externally screw-threaded ends of the pipe sections or lengths A A', substantially as specified.

139,204.—*Ore-Feeder for Grinding and Crushing Mills.*—CHARLES P. STANFORD, San Francisco, Cal. Application filed November 4, 1872.

As the tappet falls it strikes the upper end of a rod connected to a hinged section of the bottom of a chute, and jars the chute, causing the ore to fall under the stamp. As the tappet is raised a spring retracts the rod and hinged section to their original position.

Claim.—The angular rod J, with its turn-buckle T and spring *k*, for the purpose of operating the ore-feeding device by the drop of the stamp, substantially as above described.

2. The angular rod J, with its turn-buckle T and spring *k*, in combination with the hinged section A of the bottom of the chute, substantially as and for the purpose above described.

The chute G, with its hinged bottom section A, substantially as and for the purpose above described.

139,205.—*Corn-Planter.*—ABRAHAM H. STARK, Nevada, Iowa. Application filed August 17, 1872.

The machine is supported upon two wheels. The axletree carries a cam, which gives motion to the seed-slide by means of a forked head hinged to the vibrating bar, so that when the head is thrown back the motion of the seed-slide is arrested.

Claim.—The combination and arrangement of the cam-wheel D, lever E having the forked-piece E' hinged thereto, and transverse slide F, operating substantially in the manner shown and described.

139,206.—*Door-Bell.*—ADDISON A. STUART, Cedar Rapids, Iowa. Application filed March 28, 1873.

Two small pendent bells are attached to springs, which are moved by the arms of a T-shaped lever pivoted near the middle of its upright portion, the foot of the said lever being tripped in either direction by a star-wheel secured to the spindle of the door-knob.

Claim.—The mechanical arrangement, composed of the bells G G, attached to the wire C, forming springs confined by the pins c^6 c^5 c^4 c^3, the lever A, with its associate parts, the spring B, the bells G G, and the star-cam attached to the knob-spindle, all arranged as described, for the purpose set forth.

139,207.—*Apparatus for Treating Horses.*—DENNIS SULLIVAN, Washington, D. C. Application filed November 4, 1872.

Steam, generated in a boiler that is mounted on the same platform as the closet or stall, is admitted through a pipe arranged to pass between the horse's legs. The stall is provided with a window for releasing or confining the horse's head, and with a thermometer and ventilator for maintaining the proper degree of heat.

Claim.—An apparatus for treating horses with pure or medicated steam, having a close box or stall, C, and constructed and operating substantially as herein set forth, for the purpose specified.

139,208.—*Churn-Motor.*—JEROME B. SWEETLAND, Pontiac, Mich. Application filed February 27, 1873.

A chain upon a rock-shaft, the rock-shaft connecting by a pitman and a crank to a train of gearing, which, in turn, by means of a fly-wheel, and pitman and crank, operates a lever, which reciprocates the dasher-rod vertically, the chair having a back, and a transverse bar in front, upon which the operator may throw his weight by alternations, a pivoted foot-bar being adjustably connected to the frame.

Claim.—The combination of the oscillating seat C, provided with the round or handle L and attached to the shaft B, the arm D, pitman E, crank *a*, and the gearing, as described, connecting with the lever K and the adjustable foot-rest M, substantially as and for the purposes herein set forth.

139,209.—*Safety-Valve.*—GUSTAF SWENSON, Hackensack, N. J. Application filed January 30, 1873.

Used on water-backs of ranges. Constructed so that valve-spring and stem can be readily removed for repairs, &c.

Claim.—The semi-spherical valve *c*, arranged upon the extreme lower end of the valve-stem *f*, the upper end of which projects through the stuffing-box, in combination with each other, and with the spring *h*, shell A, and seat *d*, all constructed and arranged as herein shown and described, for the purpose specified.

139,210.—*Stove-Pipe Thimble.*—FREDERICK TARRANT, Saratoga Springs, N. Y. Application filed March 22, 1873.

The two sections of the thimble are held together by the spiral bead on the one interlocking in the spiral depression on the other.

Claim.—A telescopic stove-pipe thimble, the tubes A and B of which are provided at their outer ends with flanges A' and B', and have interlocking spiral beads *a* and *b*, substantially as and for the purpose specified.

139,211.—*Feather-Renovator.*—SOLOMON G. THANHAUSER, Baltimore, Md. Application filed February 21, 1873.

The steam-chamber entirely surrounds the interior chamber except at L. By means of the valves *a* and *a'* steam may be admitted to the renovating-chamber.

Claim.—1. In combination with the hollow cylinder A, the shell extending around its entire surface, the revolving shaft K, with wings L L, and valves *a* and *a'*, substantially as and for the purpose specified.

2. The hollow double-shell cylinder A, provided with doors B M, valves *a* G, and thermometer H, substantially as and for the purposes herein set forth.

3. The hollow cylinder A, with the shell extending around its entire surface, the valves *a a'*, pipes C and *b*, and the perforated bottom J, the several parts being constructed and arranged as and for the purpose specified.

139,212.—*Caster.*—JOHN TOLER, Newark, N. J. Application filed April 17, 1873.

The wire or rod spindle of a furniture-caster has a groove cut entirely around it, near its lower end, and the flange, of malleable iron, has a projecting sleeve formed on it; which sleeve or thimble tapers toward its end, and is pressed or crowded into the groove around the spindle; and the lower end of the spindle-rod is struck up or riveted in the usual manner. This construction of the caster, joining it very firmly, making its two parts relatively one, and preventing longitudinal displacement or the turning of the flange on the spindle.

Claim.—The grooved spindle A, combined with the flange B of malleable metal, which has a projecting sleeve, *b*, forced to partly enter said groove to retain the thimble, substantially as and for the purpose described.

139,213.—*Spittoon.*—HENRY TONGUE, Chicago, Ill. Application filed February 18, 1873.

The spittoon is in ordinary form, with open top, with angular bars crossing it, and so arranged that the smaller or intermediate bars or strips shall conceal the interstices between the larger, having the passages sufficiently open for the free passage of saliva, &c. On one side of it is attached a hollow handle with cover, through which its contents may be discharged.

Claim.—A spittoon, G, provided with the strips J and I L and hollow handle C, for concealing and emptying the contents, as set forth.

139,214.—*Box or Can for Paints, &c.*—HIRAM TUCKER, Newton, Mass. Application filed March 28, 1873.

A wooden box has its inner surface coated with glue, and also has paper glued to the inside of the ends and the whole of the outer surface. The paper on the inside of the box is covered with a coating of glue.

Claim.—1. A box for putting up paints and other like materials, made of wood and lined with glue or other material not soluble by the paint, and closed with a cover of wood, united thereto, substantially as described, so that it may be readily severed or removed from the box, as set forth.

2. A wooden can, formed as described, and having, between each or either end piece *e f* and the adjacent ends of the strips *a b c d*, interposed paper or paper-board, which is cemented to the end piece and to the strips *a b c d*, substantially as described.

139,215.—*Hedge-Hook.*—EDWARD S. TURNER, Palmyra, Mo. Application filed December 21, 1872.

Claim.—The hedge-hook herein described, provided with the fork E, as a new article of manufacture.

139,216.—*Railway-Scale Platform.*—CHARLES C. WARREN, Earl, Ill. Application filed November 23, 1872.

A dumping-platform is so arranged with a railroad-scale that grain may be transferred from a car upon the dumping-platform to another car standing on a lower and parallel track.

Claim.—An elevated railroad dumping scale-platform, provided with the rocker-beam B and stay-lock *d*, in combination with the frame A, adapted to operate in conjunction with a lower and parallel track, substantially as and for the purpose specified.

139,217.—*Cake-Cutter.*—JEREMIAH WEBSTER, Charlestown, Mass. Application filed March 26, 1873.

A table constructed with its top fitted to the frame and within it, resting upon thumb-screws for its adjustment for the different thickness of cake, &c., with its cutting-plate and former.

Claim.—The combination, with the cutting-plate, of the table D, composed of a platen, E, arranged within a frame, to be adjusted substantially as described, for the purpose specified.

139,218.—*Thrashing-Machine.*—HARVEY WEHLER, Hampton, Pa. Application filed March 12, 1873.

The straw is picked up and passed over an endless-toothed carrier that is arranged above, and revolving in the same direction as the slotted carrier that takes the grain and straw from the thrashing-cylinder.

Claim.—1. The straw-carrier *g h*, constructed and operated substantially as described, in combination with the carrier *b d*, all substantially as set forth.

2. The combination of the two carriers *b d* and *g h*, constructed and operated as described, with the beater H, all as and for the purposes set forth.

3. In combination with the carriers and beater, constructed and operated as described, the shoe or separator, as and for the purposes set forth.

139,219.—*Farm-Gate.*—JOHN W. WESTBROOKS and ALVEUS J. CLEMMONS, Aberdeen, Miss. Application filed March 1, 1873.

A latch adapted to a gate, which, sliding open half way, moves a quarter turn into a side position, the rack in which the rails glide being hinged to the fixed post. One end of the latch is pivoted in this rack, and when the gate is closed the latch end falls into its detent at the center of the gate.

Claim.—The combination of the fixed post B, rack A hinged to the said post, bar H, pivoted within the said rack and extending between the uprights I of the gate, so as to furnish a support for the latter to slide on, and the sliding and oscillating gate, substantially as and for the purpose specified.

139,220.—*Railroad Switch.*—CHARLES H. WHITE, White Station, Mich. Application filed April 3, 1873.

The shifting portion of the switch is made in two parts connected in the middle by a ball-and-socket joint, and co-operates with the converging points of the frog in a manner dependent upon the extent of the throw. The movement takes place at the joint, and is effected by means of a shifting-bar and switch-lever. The shifting-bar makes connection with the joint through a spring-wedge and a rounded block which allows play. A wood bed is placed across the track under the whole switch.

Claim.—1. A railroad switch provided with guide or guard rails *g h* secured between the rails of the main track, and connected together by means of a ball-and-socket joint, as described.

2. The combination of the wood bed *d* extending across the track from rail to rail, with frogs A, ties *c*, and bar *e*, as herein shown and described.

3. The guide-rails secured at the joint to the moving bar, in combination with the block *m*, and a wedge, substantially in the manner and for the purposes set forth.

139,221.—*Car-Coupling.*—EUGENE WILEY, Philadelphia, Pa., assignor of two-thirds his right to C. D. ALEXANDER and E. R. WINSHIP, same place. Application filed January 24, 1873.

The hooks have elongated pivot-holes, that their front ends may bear upon the face of the draw-head when draft is applied.

Claim.—1. The hooked levers D D with elongated pivot-holes *x x*, and secured to the plate A by the pivots *a a*, so that their front ends *b b* will bear against the flange B to relieve the strain on the pivots, substantially as herein set forth.

2. The combination, with the bed-plate A, ears G G, flange B, and bumper C, of the laterally-operating hooked bars D D, pivoted as set-forth, with their front ends fitting snugly against the flange B, the block E, springs *d d*, and cam H, all constructed substantially as set forth.

139,222.—*Combination of Center and Bilge Keels for Vessels.*—SAMUEL P. WILLEBY, Philadelphia, Pa. Application filed July 31, 1872.

Claim.—In a vessel-hull, the combination of the rounded center-keel and curved concave supplementary keels, as set forth.

139,223.—*Hose-Coupling.*—THOMAS WILSON and LUCIUS B. KENDALL, Kalamazoo, Mich. Application filed April 2, 1873.

Each butt is provided with a valve so arranged that when coupled together the valves are opened, and when uncoupled will automatically close by the pressure of the fluid or air within the pipe. A rubber ring or gasket projects from the face of each section of coupling, and the couplings are brought together and locked by eccentric or cam levers upon each section of pipe.

Claim.—The described coupling, consisting essentially of the parts A, having recesses for the gasket D and united by links B, and eccentric lever C, in combination with the cylinder F, having the apertures *e*, as described, for the purpose set forth.

139,224.—*Variable Cut-Off for Steam-Engines.*—WILLIAM WRIGHT, New York, N. Y. Application filed January 4, 1873.

The rock-shaft is placed horizontally below the cylinder, and is made adjustable lengthwise. On said shafts are arranged toes with reversely-inclined faces, which operate the slide-valve on vertical stems by coming in contact with toe-pieces thereon.

Claim.—The lifters E E arranged on reverse sides of the longitudinally-adjustable rock-shaft D, and constructed with upper outer surfaces or edges *n*, which are oblique in direction of their length relatively to the axial line of the shaft, in combination with the toe-pieces *m m*, the toes F F, the valve-stems *l l*, and the valves B B, substantially as shown and described.

139,225.—*Carriage-Top.*—GEORGE H. YOUNG, New York, N. Y. Application filed November 16, 1872.

The front portions of the top and sides are detachably secured to the fixed portions of the top and body.

Claim.—A carriage having a permanent top with an open front, and a removable or detachable front top portion, the whole adapted to be used in the manner and for the purposes described.

REISSUE PATENTS.

5,412.—*Lamp.*—JOSHUA E. AMBROSE, Colorado Springs, Col. Ter., assignor, by mesne assignments, to SARAH T. AMBROSE, same place, and EDWARD MILLER, Meriden, Conn.—Patent No. 30,381, dated October 16, 1860. Application filed February 12, 1873.

In connection with the wick-tube, having wick-raising mechanism, there is an auxiliary tube or passage to conduct gas from the oil-chamber to the flame. In the top of the burner are two conical plates or heaters above the wick-tube, and having air-space between them. Each has a central-flame slot. At the top of the wick-tube is a collar with perforated wings. The usual air-distributing plate is below. The burner is used without a chimney.

Claim.—1. In combination with the wick-tube and a mechanism for adjusting the wick, an auxiliary tube or passage leading from the lamp upward to conduct the gas from within the lamp to the flame, substantially as set forth.

2. The arrangement of the heaters G H with a space between them communicating directly with the external air, in connection with the collar *p* and plates *q q* fitted on the top of the wick-tube E and the perforated cap C, substantially as and for the purpose set forth.

3. The shaft *s* provided with the rod *f* and spurs *g*, which are within the chamber *d* of the wick-tube, in connection with the plates *h j k* and spring *i* on the said shaft, all being arranged to operate as and for the purpose set forth.

5,413.—*Machinery for Attaching Heels to Boots and Shoes, and Polishing the same.*—GEORGE W. ELLIS and CHARLES W. GLIDDEN, Stoneham, Mass., assignors, by mesne assignments, to JAMES W. BROOKS, trustee.—Patent No. 36,607, dated October 7, 1862. Application filed April 25, 1873.

Nails are forced through the inner sole into the heel from within; also, from the outer or wearing surface down through the heel-lifts by means of rods arranged to pass through nail-plates. Trimming and burnishing devices, actuated by a lever, move around the surface of the heel guided by a plate of the form of the finished heel.

Claim.—1. The perforated plate T having a shank or neck, *v*, fitted to work up and down in the tube O, which terminates at its lower end in a plate, S, provided with rods *v*, the perforated plate being forced downward to hold the heel of the shoe or boot firmly upon its last by a helical spring within the tube, in combination with the last or bed I, sliding tube G, rods *k'*, and cam H, when arranged for joint operation in the manner and for the purpose described.

2. The slotted lever Q fitted upon the tube O, and having a hinged knife, R, attached to its outer end by a shank or neck, *s*, fitted to work in a curved slot, *q*, in the plate P, when the whole is combined and arranged to operate in the manner described.

3. In combination with a mechanism for holding a boot or shoe, a burnisher arranged to move around and be held against the curved surface of the heel-edge by means substantially as described.

4. The strap or guard I' attached to the last I at its back part when used in combination with the rods *k'*, for the purpose specified.

5. The clamp M attached to the slide L, in connection with the plate N or its equivalent, when arranged to operate in connection with the knife R, substantially as and for the purpose specified.

6. The cutter *d'* provided with a gage, *e'*, attached to the adjustable arm U, which is connected to the plate S, as and for the purpose herein set forth.

5,414.—*Hemmer for Sewing-Machines.*—EDWARD HOWELL, Ashtabula, Ohio.—Patent No. 96,809, dated November 16, 1869. Application filed June 3, 1870.

Claim.—1. The hemmer, composed of portions D B E, folded and twisted as shown, and operating as described, to determine the width of hem, to fold the material as it enters the hemmer, to turn it again on itself, and to prevent the edge of the first fold from being turned against or entangled with the next fold.

2. The combination, with the twisted and folded hemmer, hereinbefore described, of the arm G, to prevent the uppermost fold from rising.

3. The combination, with the folded and twisted hemmer, hereinbefore described, of the presser-foot H, arranged and operating as described.

5,415.—*Fluting-Machine.*—JAMES W. MADDEN and JOHN DODSWORTH, Buffalo, N. Y.; said DODSWORTH assignor, by mesne assignments, to JOHN HEWITT.—Patent No. 123,156, dated June 18, 1872; antedated June 8, 1872. Application filed March 17, 1873.

Claim.—1. A fluting-machine, consisting of the base-plate A

and counter-die B, said parts having varying flutes on their opposite faces, and being reversible for conjoint operation, substantially as described.

2. A fluting-machine, consisting of two separate parts or sections, A B, having corrugations on one or more of their faces in the same plane, constructed and arranged substantially as described, so that the material to be fluted when laid upon the part or base A, besides being fluted, is rubbed down and polished by a reciprocating action given to the part or die B, as described.

5,416.—*Bustle.*—HARRIET H. MAY, Birmingham, Conn.—Patent No. 128,412, dated June 25, 1872. Application filed April 21, 1873.

Provides an interior web resting closely against the back of the wearer below the waist-line, and furnishing a holding device and means of support for one or more radial springs connected at their outer ends with an exterior web, and which is kept pressed outward from the body by such springs.

Claim.—1. The under web B employed for the attachment of the springs D, and to retain them in proper position, as described and shown.

2. The springs D combined with the webs A and B, in manner substantially as and for the purpose set forth.

3. The convex outer web A, formed, as herein described, of sections cut with a gradual taper from the wide end to a point at or beyond the midlength, and from thence tapering more rapidly to the narrow end, for the object specified.

4. The vertical springs E applied within pockets in the web A, and receiving the outward pressure of the spring, substantially as set forth.

5. The combination of the inner web B, the convex outer web A, and the springs D, substantially as set forth.

5,417.—*Letter-Copying Press.*—GEORGE C. TAFT, Worcester, Mass.—Patent No. 28,020, dated April 24, 1860. Application filed April 9, 1873.

The platen and its threaded screw-socket are cast in one piece, and the frame is recessed to receive its end when raised.

Claim.—1. The copying-press platen D and socket E, cast in one piece, and in which the opening for the screw is cast, substantially as set forth.

2. The socket *b* in the arch cross-piece C, in combination with the screw-socket E and screw F, as and for the purposes set forth.

5,418.—*Coal-oil Stove.*—JAMES H. THORP, New York, N. Y.—Patent No. 129,436, dated July 16, 1872. Application filed April 3, 1873.

The water-wicks, constantly saturated, are in direct contact with the interior surface of the oil-wick tubes, and serve to prevent them from becoming highly heated.

Claim.—1. The tubes *f f f* so arranged that the water-wicks shall absorb the water only from the bottom of the water-reservoir, in combination with the toothed wheels *b b*, and having between them spaces to allow a free movement of said wheels, as and for the purpose set forth.

2. The auxiliary lamp I, with one of the sides of its oil-reservoir curved inward, provided with metallic hooks *k* to support it on the rim of the water-vessel of the stove, as and for the purpose set forth.

3. The mica side lights in the lamp-chimneys, with corresponding lights in the outer cylinder or jacket, as and for the purpose set forth.

5,419.—*Tilting Chair.*—MARTIN VAN BUREN HOWE, Gardner, Mass., assignor to HEYWOOD BROTHERS & CO., same place.—Patent No. 73,721, dated January 28, 1868. Application filed May 10, 1873.

The seat is connected to the rear posts of the chair, or their cross-bar, by torsional rod-springs, and a stop is affixed to the front round of the chair, and passes under the seat and receives the rear of the seat when tilted backward.

Claim.—1. A chair, constructed so that the seat thereof is connected to the rear posts of the same or their cross-bars by means of torsional rod-springs, substantially for the purpose set forth.

2. In combination with the above, the stop *c*.

3. A tilting chair, constructed with torsional rod-springs, whereby the tilting of the same is facilitated by the torsional elasticity of said springs.

5,420.—*Branding Apparatus.*—J. WESLEY DODGE, Malden, Mass. Patent No. 89,829, dated May 4, 1869. Application filed March 7, 1872.

The brand is upon one face of the heater-case, to which is rigidly fixed the arms of a bail. It is pressed against the barrel-head by a hook at the end of a handle entering an eye on one side of the case.

Claim.—1. The arrangement and combination of hooked handle, the eye, and the bail with a brander or branding-box, provided with branding devices, and made to receive a heater, as described.

2. A brand, having the box or case that receives the heater-iron rigidly attached, at its opposite sides, to the opposite arms of a bail, substantially as shown and described.

5,421.—*Plow.*—LEWIS GIBBS, Canton, Ohio, assignor to himself, JOHN R. BUCHER, and WILLIAM A. WIKIDAL.—Patent No. 130,292, dated August 6, 1872. Application filed March 15, 1873.

The standard of the plow has a seat for the nut of a diagonal bolt, the head of which presents an acute angle, thus grasping one side of the colter-arm, the opposite edge of the arm being embraced in an angular seat.

Claim.—1. A plow-standard having on its inner side the enlargement or projection K provided with an upward diagonal bolt-hole, its upper side forming a seat for the bolt-nut, substantially as specified.

2. The bolt I with the hook-shaped head *i* at its lower end, forming, with the lug B of the standard, a dovetailed depression for the reception of the colter-arm, substantially as shown and described.

3. The standard A, when constructed with the overhanging colter-lug B and inclined nut-seat K, substantially as and for the purpose specified.

5,422.—*Paper Washer.*—EDMUND S. HANNA, Pittsburg, Pa.—Patent No. 119,604, dated October 3, 1871. Application filed December 14, 1872.

Claim.—A washer made of paper which has been previously treated with the concentrated mother-water of the chloride of zinc, &c., substantially as hereinbefore described.

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HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
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WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
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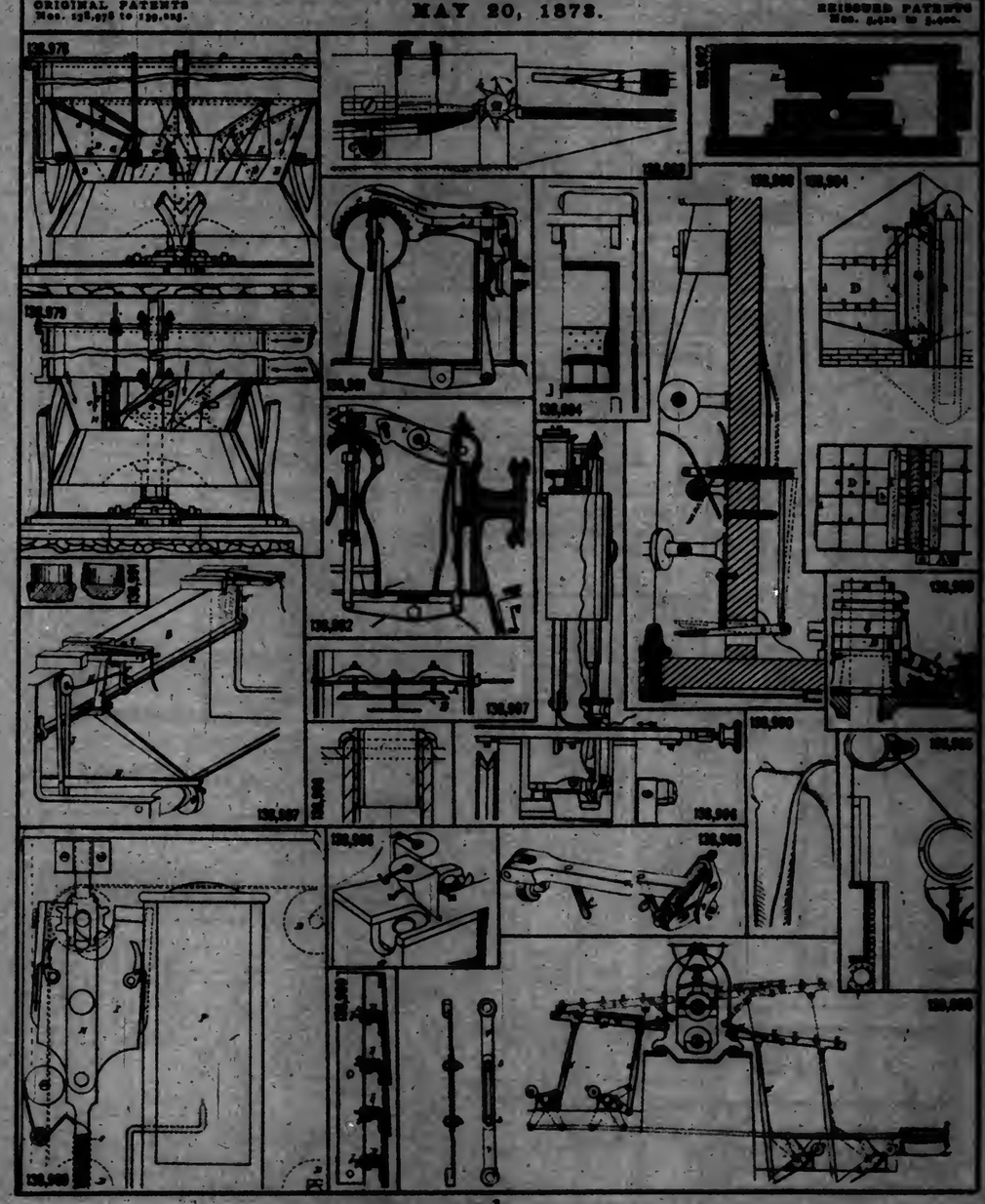
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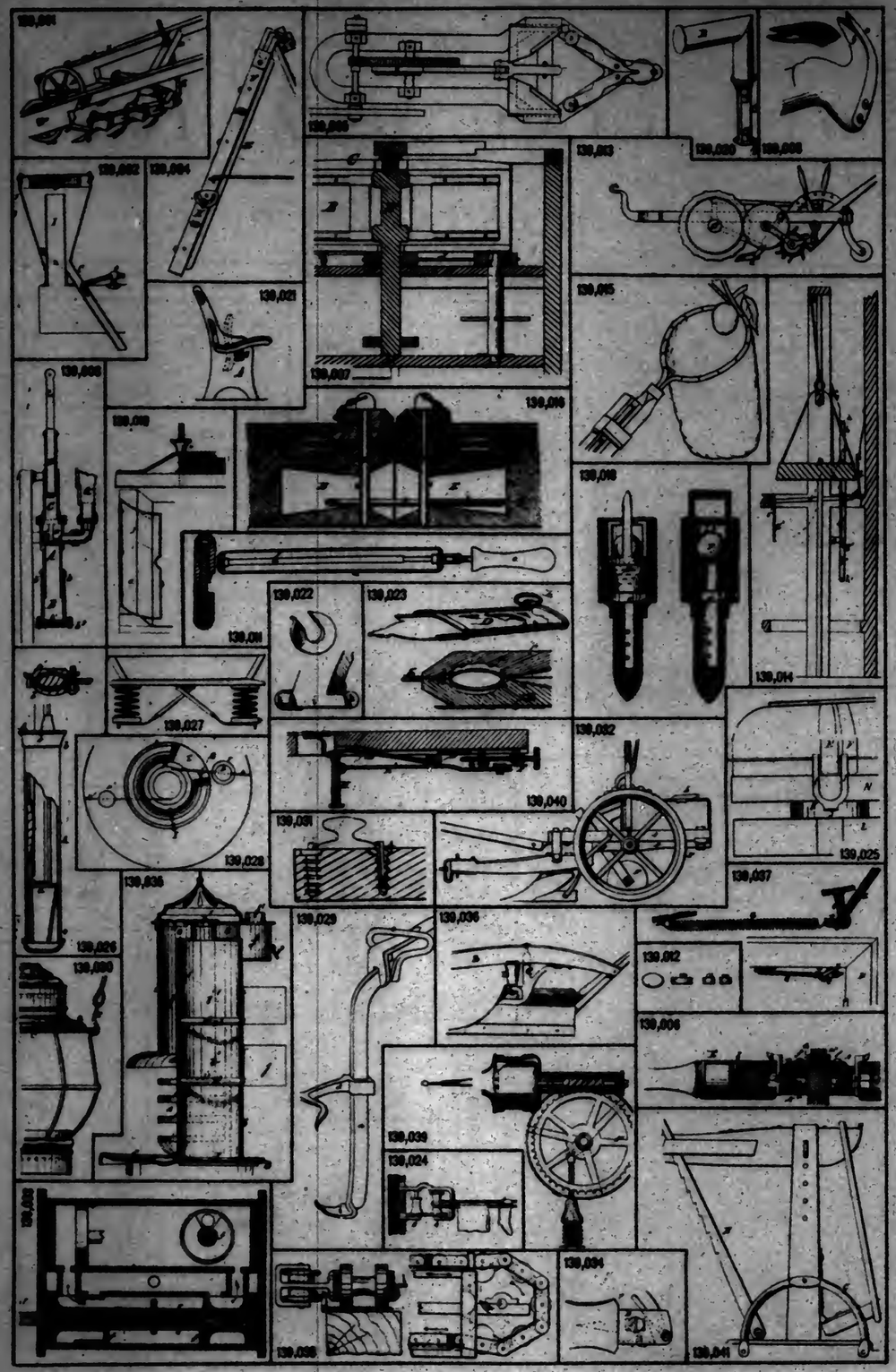
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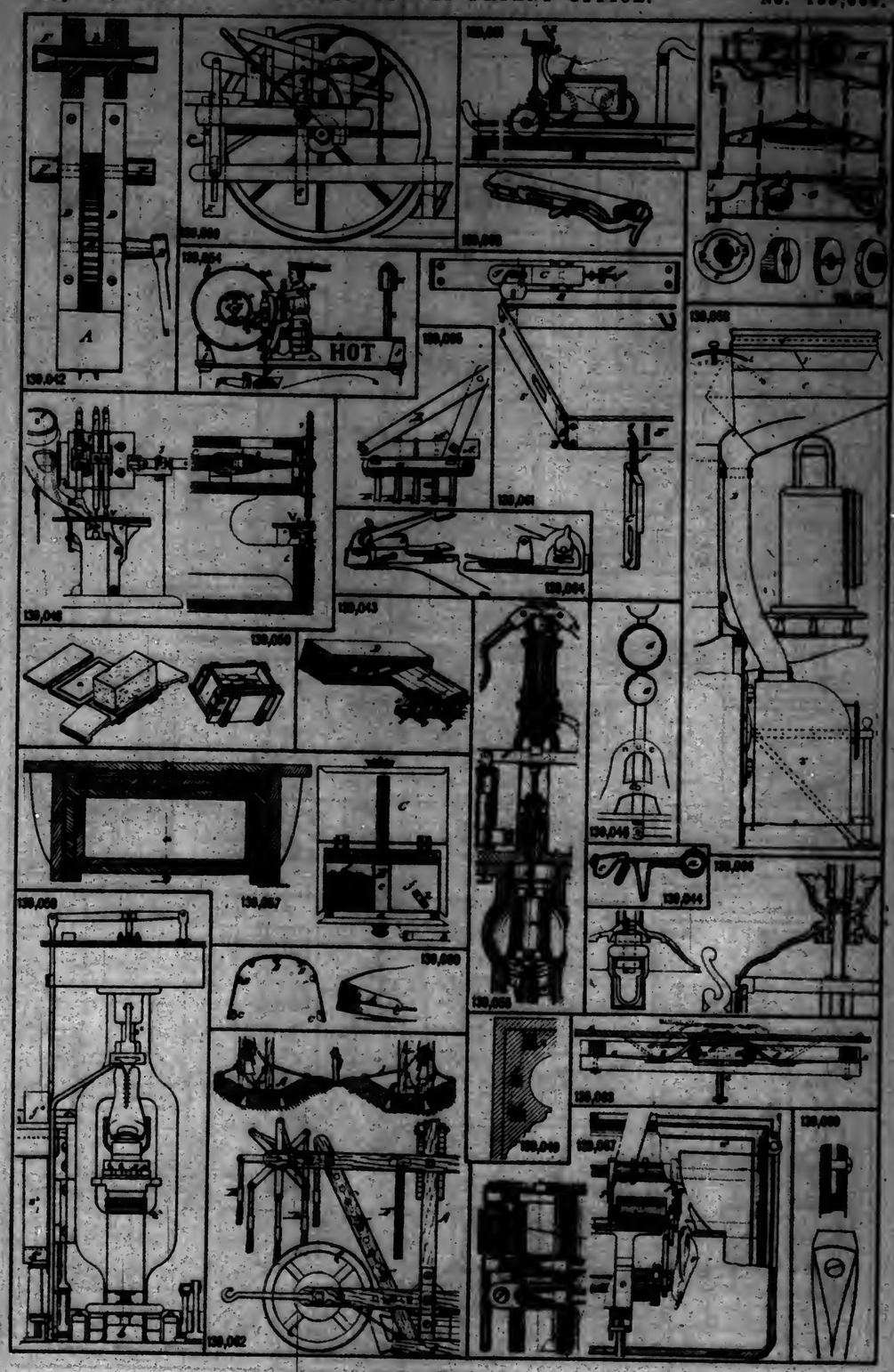


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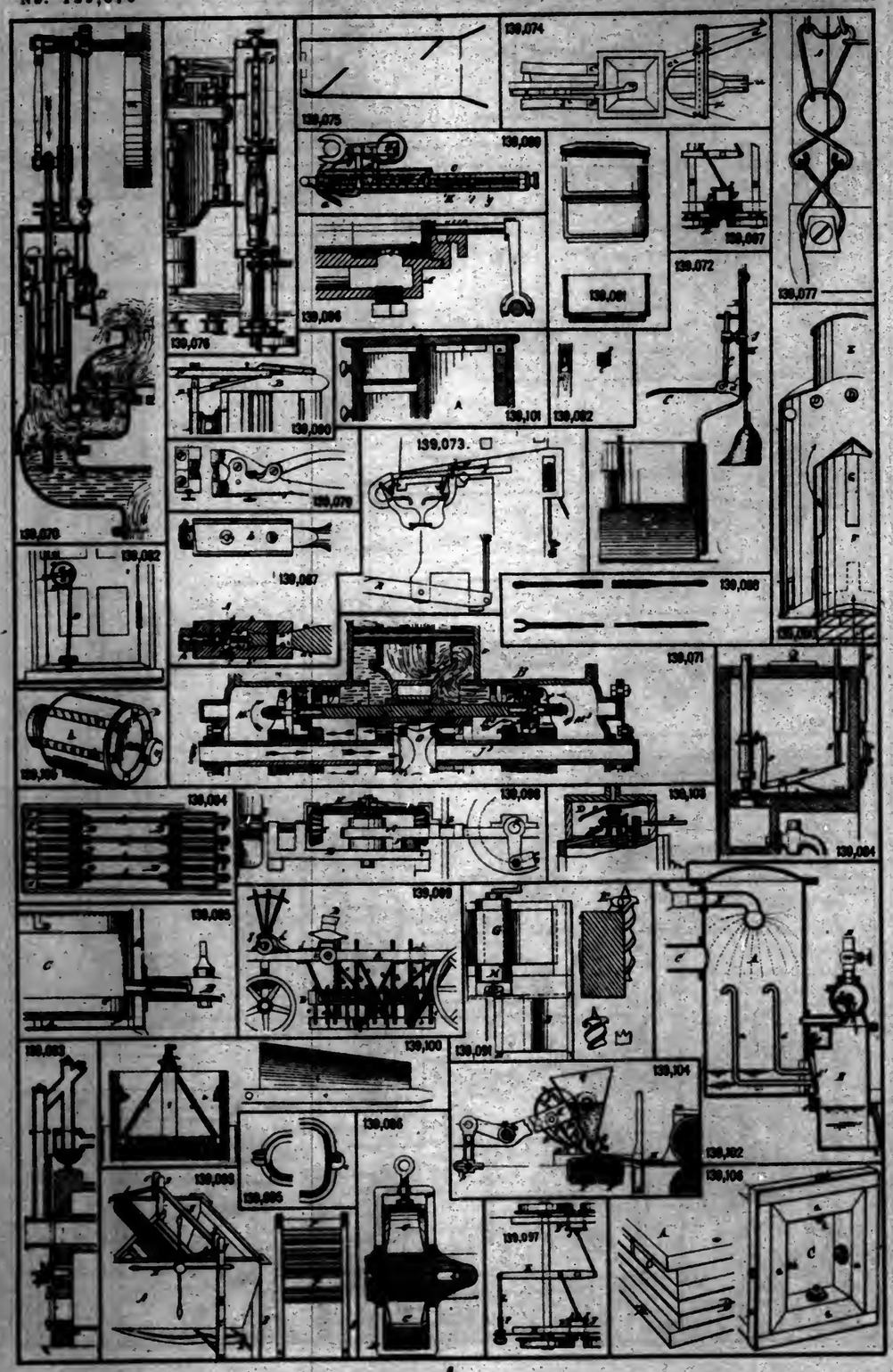
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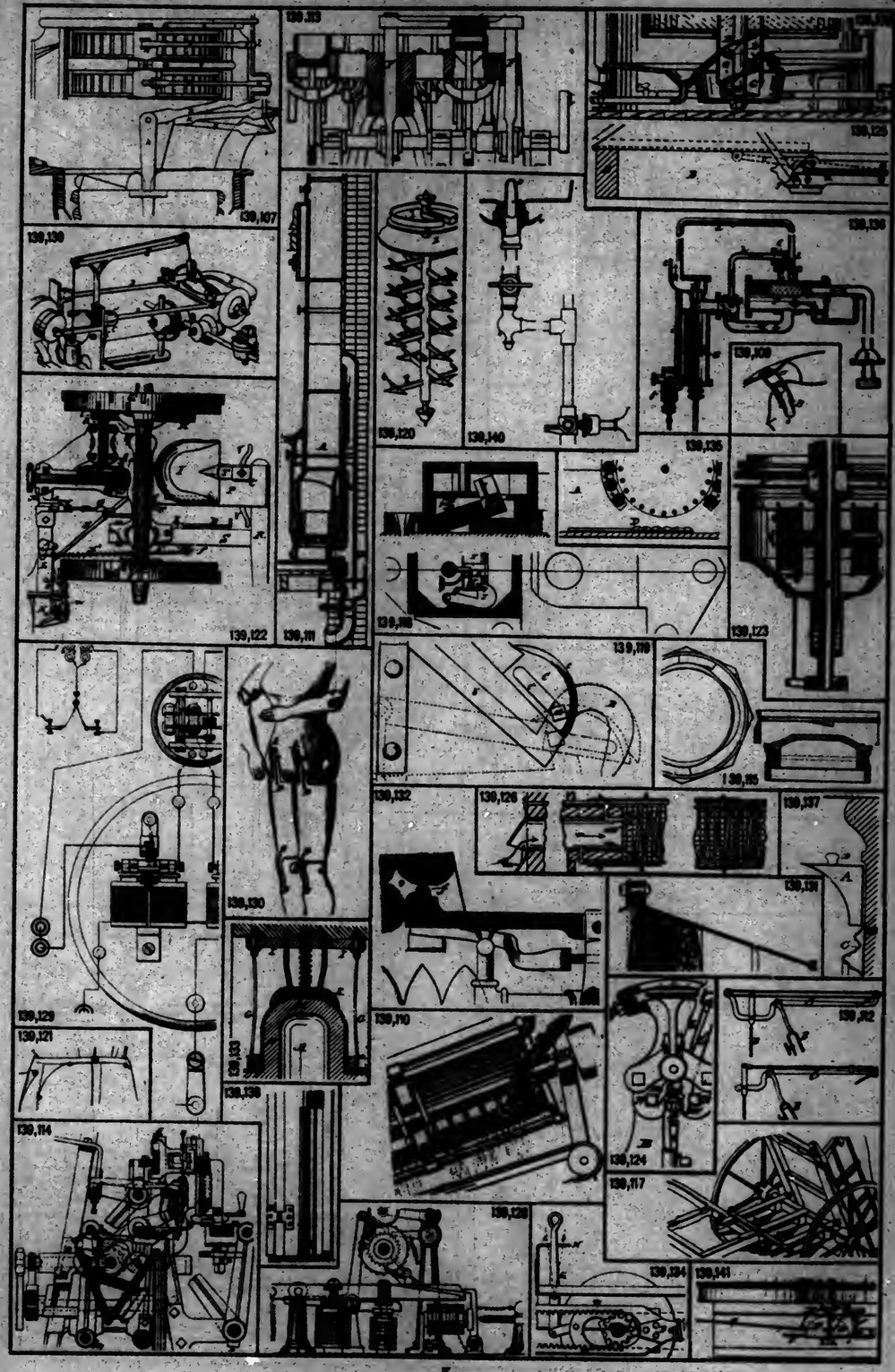


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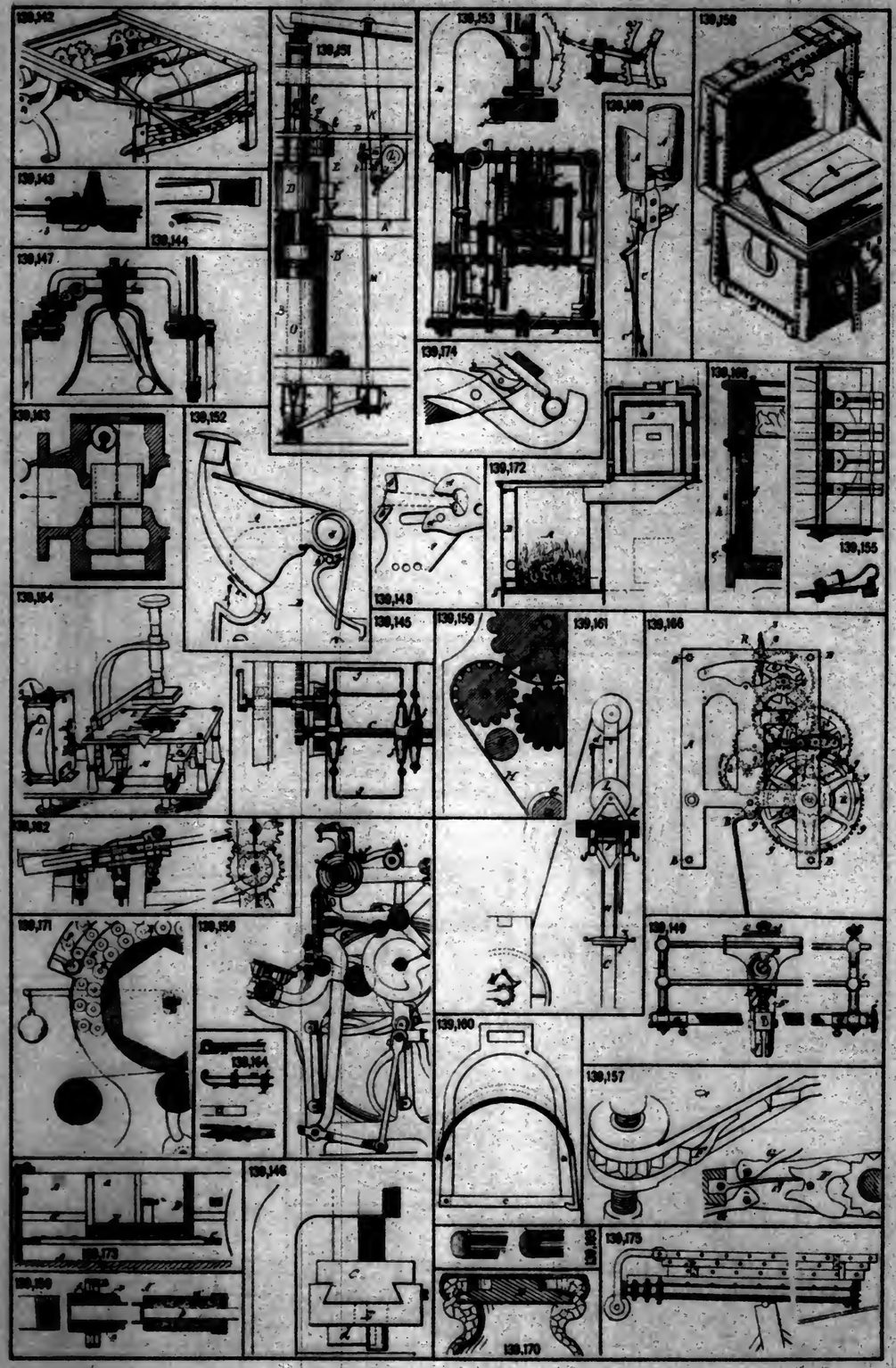
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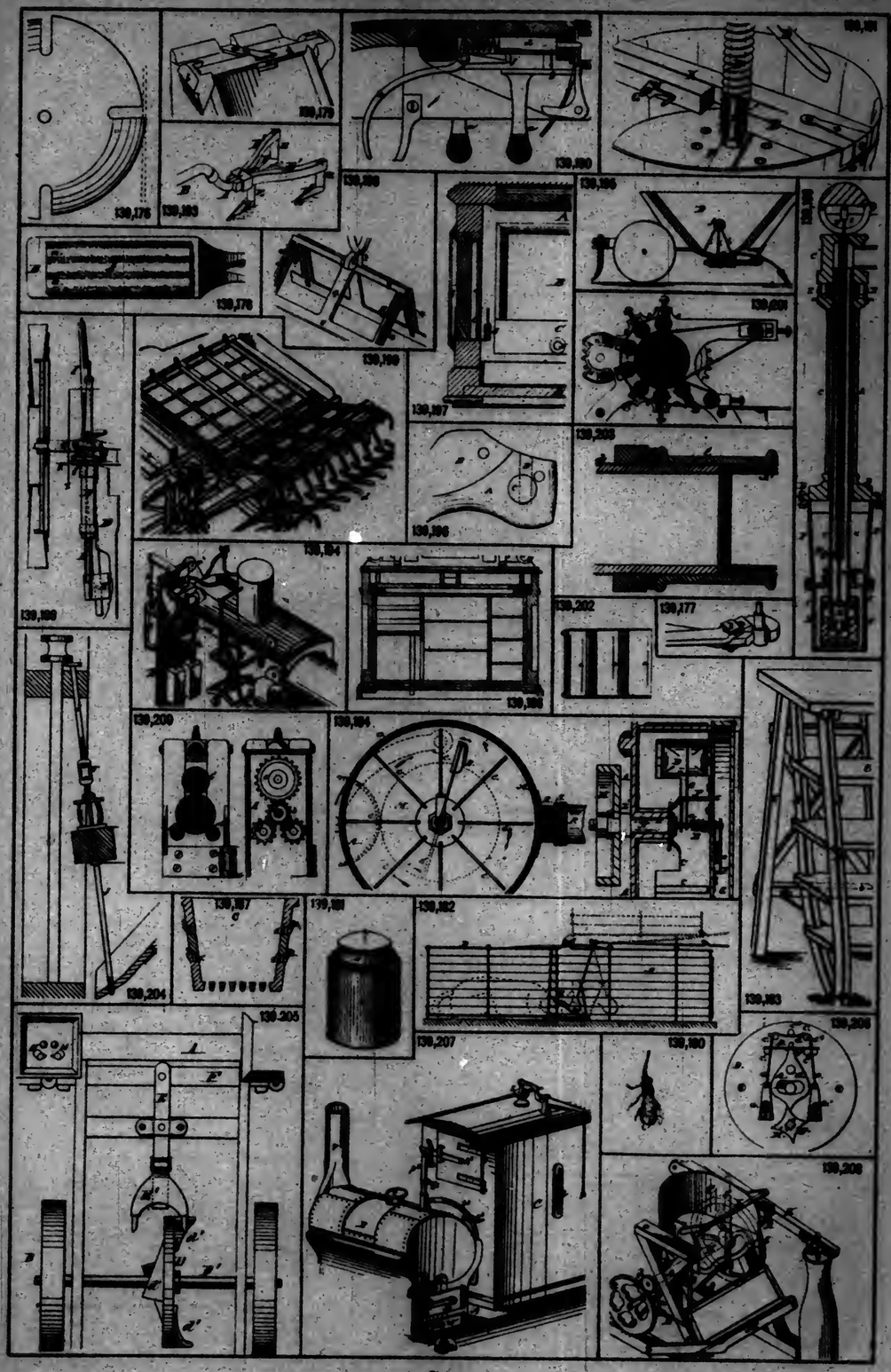
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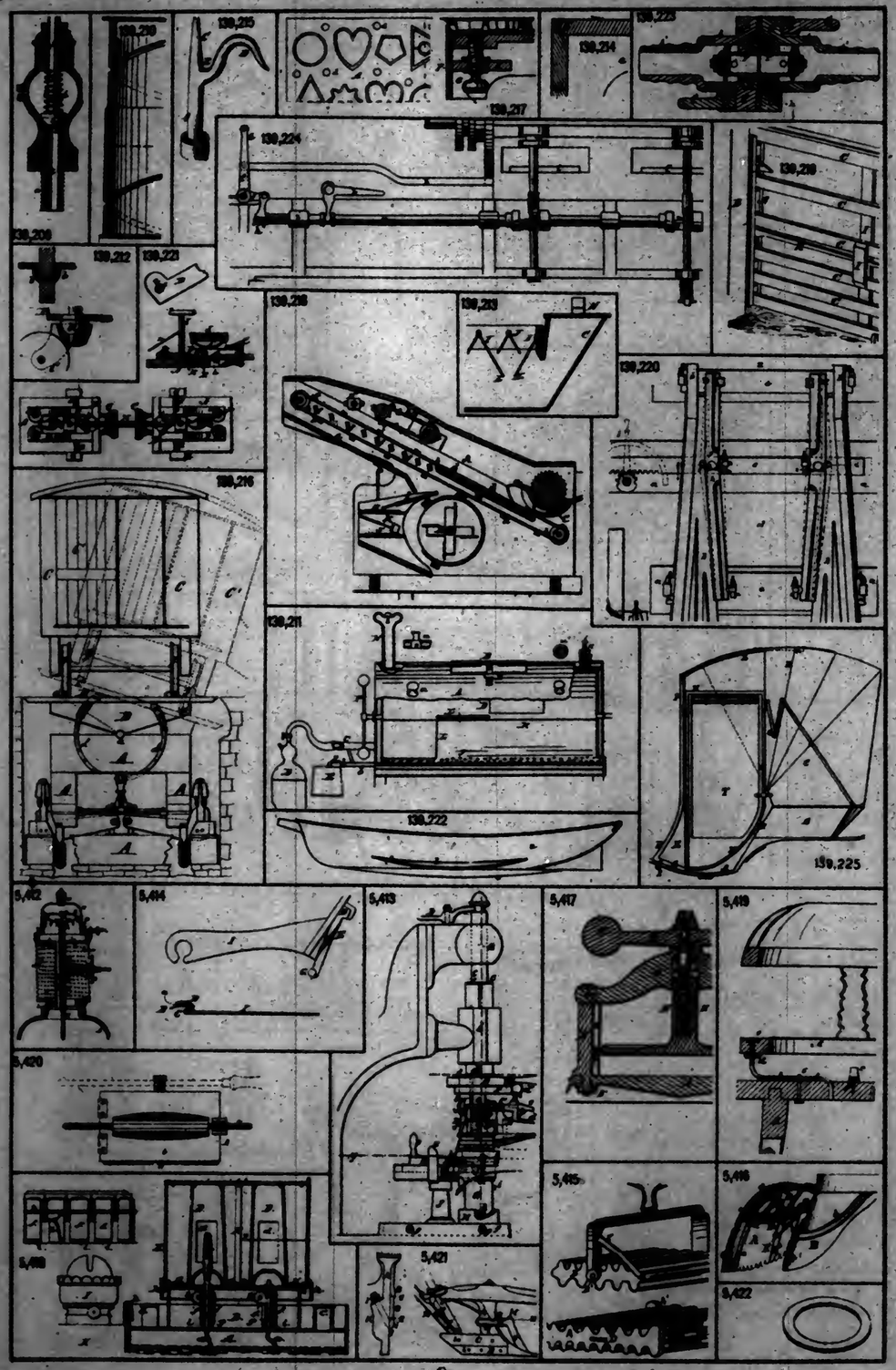
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ALB. PHOTO-LITHOGRAPHIC CO. N.Y. (GERMANIA PROCESS)

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NOTICE.

RULE IN EXTENSION.

On and after the first of July next, in all applications for extension the statement in writing, under oath, of the ascertained value of the invention, and of receipts and expenditures on account thereof, provided for in rule 72, must be filed with the petition.

COMMISSIONER'S DECISIONS.

R. J. HOLLINGSWORTH AND J. B. BURLEIGH, JR.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of R. J. Hollingsworth and J. B. Burleigh, Jr., for patent for* IMPROVEMENT IN SOLDERING-IRONS.—*Decided May* 21, 1873.]

LEGGETT, *Commissioner:*

The device for which a patent is sought by the respective parties to this interference is a hollow soldering-block, provided with lateral openings for the escape of the steam or other vapors generated in soldering the covers upon cans.

Burleigh's application was filed December 29, 1871, and Hollingsworth's May 2, 1872. Hollingsworth, however, appeared in the Office as a joint applicant with one McMurray in an application, showing but not claiming this invention, July 25, 1871. McMurray also filed an application, showing but not claiming this invention, December 26, 1871. That application was placed in interference with Burleigh's February 14, 1872, while the joint application of McMurray and Hollingsworth was pending. There existed the same reason at that time, so far as appears from the record, for including the joint application in the interference as for placing the sole application in interference. Both showed the invention claimed by Burleigh, but it was claimed in neither. In both, however, it was included as an element in certain different combinations of parts constituting a soldering-tool, for which combinations claims were respectively presented.

On the 5th of April, 1872, McMurray and Hollingsworth presented an amendment embodying a claim for the lateral openings, but they withdrew it the next day, April 6. At the same time they entered a special joint disclaimer of this invention, and their joint patent was granted upon other subject-matter April 23, 1872.

After the decision of the interference in Burleigh's favor by the Examiner, McMurray filed a statement setting forth that he was informed Hollingsworth had an application pending for the invention in question, as claimed by Burleigh, and acknowledging him, (Hollingsworth,) "as disclosed in the testimony in the interference," to be the prior inventor; whereupon the interference between McMurray and Burleigh was dissolved and the present one declared.

Burleigh originally made no claim to the soldering-block with lateral openings. His specification did not even allude to the lateral openings, although they were shown in his drawing. His claim, now in interference, was induced by the following suggestion of the Examiner, in a letter of rejection of his claims dated January 16, 1872: "Applicant shows a lateral opening through the head of the tool, which allows the gases generated in the annular space to escape. This seems to be an improvement, and a claim made for it will be considered."

In response to this, Burleigh submitted an entirely new specification, with a claim embracing the lateral openings. This claim was not accompanied with a supplemental oath, as required by rule 11 of August 1, 1871, and such an oath was not appended until April 1, 1873. In view of the nature of this claim and the irregularity of its presentation, the Board made the very pertinent remark that they have "grave doubts whether Burleigh can take advantage" of his action

"to obtain and maintain the status now assumed by him on this case."

These facts of record have been used as a basis for argument, and are important in connection with the testimony and the respective theories of the case advanced by opposing counsel. It appears as a fact, although it is of no special advantage to him here, that Hollingsworth preceded Burleigh by more than five months in presenting an application for patent embodying the invention in dispute.

While Burleigh was first, as a matter of fact, to make definite claim to it, he was apparently wholly prompted to do so by the Examiner, and can only be considered as legally precedent to Hollingsworth upon the record by regarding his supplemental oath of April 1, 1873, as having been admitted *nunc pro tunc*. It appears, also, that the claim of Hollingsworth to the lateral openings as his invention, in his present application, is not inconsistent with his previous joint application with McMurray, for in that application it was only claimed, as would seem, inadvertently, for it was immediately disclaimed without having been considered by the Office. Furthermore, the disclaimer of McMurray—who is now a witness for Hollingsworth—in favor of Hollingsworth, argues no collusion with him, and is entirely consistent with his previous action. That McMurray is equally interested with Hollingsworth in this case, appears from the assignment to him of one-half interest in the invention. But that fact of itself, or in connection with the facts above referred to, is not necessarily any indication of collusion between these men. So far as appears from the foregoing, their testimony should be considered without prejudice on account of their connection, but with that caution with which the testimony of parties in interest must always be received and scrutinized.

Burleigh's preliminary statement dates his invention in the winter of 1870 and 1871, and alleges that he explained it to McMurray and Hollingsworth in April, 1871. Hollingsworth alleges in his preliminary statement that he conceived the invention several years ago, and explained it fully to several parties, Burleigh among the number, in the fall of 1870, and that the first pattern of the tool embodying the invention was made in November, 1870, by J. J. French.

Burleigh swears that he made the invention in December, 1870; that he then made a model and sketches; that he began making a soldering-iron in the shop of one Stewart in January following, and completed it soon after.

Stewart, however, does not corroborate Burleigh as to dates, and his testimony conflicts with that he previously gave in the interference with McMurray. Burleigh is also disputed by E. M. Lang, who, he says, did the turning of his block at Stewart's. He does not produce his alleged model and sketches of December, 1869, nor satisfactorily explain why he does not. He does not deny that he was, as Hollingsworth alleges, supplied by him (Hollingsworth) with the tools which he used and exhibited in the summer of 1871.

On the other hand, Hollingsworth's proof is not much more satisfactory to my mind. Leaving out of the account the testimony of his assignee, McMurray, which is so directly in conflict with his previous record testimony as to be wholly unworthy of belief, there are still abundant discrepancies. He relies upon French to show that a pattern and a tool were made in November or December, 1870. French swears in behalf of Hollingsworth that he thinks he made neither until May, 1871. One of French's employees, however, dates the making of the pattern the middle of March, 1871. But this only adds another discrepancy. French says that Burleigh was brought to him by Hollingsworth, and that previously Hollingsworth had ordered patterns for the tool. Burnett is the only witness who corroborates the statement of Hollingsworth that he embodied the invention in a model in November or December, 1869. He does not swear positively, and upon cross-examination the force of his "belief" in the matter is very much weakened.

A further discussion of the testimony will afford no additional light. As the Examiner remarked, the proof is very unsatisfactory. The imagination must be powerfully invoked in order to make a consistent explanation of the testimony on either side. But stripping off the mass of contradictions on both sides, I think there is left of proof, such as it is, more to support the belief that Hollingsworth is the prior inventor.

The decision of the Board of Examiners-in-Chief is therefore sustained.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,531.—*Gas-Retorts.*—Granted to WILLIAM BEAUMONT, June 28, 1859. Hearing June 11, 1873.

24,563.—*Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, June 28, 1859. Hearing June 11, 1873.

24,571.—*Machines for Finishing Hair-Brush Handles.*—Granted to THOMAS MITCHELL, June 28, 1859. Hearing June 11, 1873.

24,588.—*Machines for Making Hay.*—Granted to JOSHUA C. STODDARD, June 28, 1859; reissued June 1, 1869. Hearing June 11, 1873.

24,598.—*Harvesting-Machines.*—Granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870. Hearing June 11, 1873.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1859. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1859. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1859. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STEARNS, July 5, 1859. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1859. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Stiles.*—Granted to LEONARD WORCESTER, July 5, 1859. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. REMWICK, July 5, 1859. Hearing June 18, 1873.

24,700.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OLIN TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JANKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,300.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,473.—*Scales*, granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars*, granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

26,415.—*Machines for Winding Thread on Spools.*—Granted to HEZEKIAH CONANT, December 13, 1859. Patented in England, June 22, 1859. Hearing June 4, 1873.

EXTENSIONS GRANTED.

24,199.—*Improvement in Gas-Regulators*, granted to E. HALL COVEL, May 31, 1859.

Claim.—1. The combining of the rotary pump or air forcer with the air-receiver and its fluid valve arrangements, in the manner herein set forth, whereby the one controls the action of the other, and through their joint action the charging apparatus is controlled, substantially as described.

2. Connecting the commingling-chamber of the charging apparatus with the air-receiver, for the purposes set forth.

24,200.—*Improvement in Hydrocarbon-Vapor Apparatus*, granted to E. HALL COVEL, May 31, 1859.

Claim.—1. Constructing the apparatus, for the purposes herein set forth, of detachable parts or chambers, substantially as described.

2. The arrangement of the feed pipes or tubes and outlet-pipes, whereby I am enabled to pass in the material to any one of the chambers, or to let out material and to examine the interior while the apparatus is in operation and the process of charging going on, as herein set forth.

24,227.—*Improvement in Cultivators*, granted to REUBEN M. MELTON, May 31, 1859; reissue No. 4,875, dated April 16, 1872.

Claim.—1. The adjustable links A and adjustable slides c, constructed substantially as described, and arranged to operate with and for the purpose of adjusting the distance between the plow-beams, as set forth.

2. The colter D, constructed substantially as described, with shovels or plows F, when both colter and shovels are independently and freely adjustable up or down the curved beams, so as to run deep or shallow, or at different depths, as set forth.

24,257.—*Improvement in Seats and Couches for Railroad Cars*, granted to THEODORE T. WOODRUFF, May 31, 1859.

Claim.—1. The combination and arrangement of the two frames with each other and with the supports therefor, connected with each compartment of a car, the said frames, when spread out, forming couches for two persons on the same level with the seats, and when transformed, one of the said frames forming seats, and the other the back for such seats, substantially as described.

2. Connecting the frame which forms the seats with the frame which forms the backs by means of links connected with one of the said frames by means of hinged joints, and with the other of the said frames by means of sliding hinged joints, substantially as and for the purpose specified.

3. In combination with the frame for the main seats, the auxiliary seats which slide under the frame for the main seats, substantially as and for the purpose described.

4. The frame for an elevated couch, when combined with the car, by means of sliding hinged joints, substantially as and for the purpose specified.

5. The combination with the elevated couch next to the side of the car or the equivalent therefor, the front elevated couch so connected with the car, substantially as described, as to admit of being let down to form part of a double couch, and thrown up toward the roof of the car when not wanted as a couch, as set forth.

DESIGNS PATENTED DURING THE WEEK.

(Omitted last week, bearing date May 20, 1873:)

6,663.—*Floor-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWD. C. SAMPSON, New York, N. Y. Application filed May 13, 1873.

6,664.—*Stocking-Fabric.*—JOHN W. PARKS, Philadelphia, Pa., assignor to THOMAS DOLAN & CO., same place. Application filed April 26, 1873.

[Designs bearing date May 27, 1873.]

6,665.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,666.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,667.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,668.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa Application filed May 13, 1873.

6,669.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,670.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,671.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,672.—*Stocking Fabric.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 14, 1873.

6,673.—*Scarf.*—CONYERS BUTTON, Philadelphia, Pa. Appplication filed May 13, 1873.

6,674.—*Scarf.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,675.—*Scarf.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,676.—*Scarf.*—CONYERS BUTTON, Philadelphia, Pa. Application filed May 13, 1873.

6,677.—*Organ-Case.*—LEVI K. FULLER, Brattleborough, Vt., assignor to J. ESTEY & CO., same place. Application filed February 19, 1873.

6,678.—*Ends of an Organ-Case.*—LEVI K. FULLER, Brattleborough, Vt., assignor to J. ESTEY & CO., same place. Application filed April 25, 1873.

6,679.—*Organ-Case.*—SAMUEL HAYWARD, Boston, Mass., assignor to J. ESTEY & CO., Brattleborough, Vt. Application filed April 25, 1873.

6,680.—*Ends of an Organ-Case.*—SAMUEL HAYWARD, Boston, Mass., assignor to J. ESTEY & CO., Brattleborough, Vt. Application filed April 25, 1873.

6,681.—*Cape.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed April 8, 1873.

6,682.—*Floor-Cloth.*—JOSEPH BARRETT, New York, assignor to D. POWERS & SONS, Lansingburg, N. Y. Application filed May 17, 1873.

6,683.—*Floor-Cloth.*—JOSEPH BARRETT, New York, assignor to D. POWERS & SONS, Lansingburg, N. Y. Application filed May 17, 1873.

6,684.—*Slate-Frame.*—JOHN M. COFFIN, Danielsville, Pa. Application filed April 22, 1873.

6,685.—*Cooking-Stove.*—REUBEN R. FINCH, Peekskill, N. Y., assignor to UNION STOVE WORKS, same place. Application filed May 5, 1873.

6,686.—*Bracket.*—ALBERT D. JUDD, New Haven, Conn. Application filed May 20, 1873.

6,687.—*Carpet.*—HUGH S. KERR, Philadelphia, Pa., assignor to LEEDOM, SHAW & STEWART, same place. Application filed May 5, 1873.

6,688.—*Carpet.*—HUGH S. KERR, Philadelphia, Pa., assignor to LEEDOM, SHAW & STEWART, same place. Application filed May 5, 1873.

6,689.—*Stocking Fabric.*—MARTIN LANDENBERGER, Jr., Philadelphia, Pa. Application filed May 6, 1873.

6,690.—*Casing for Soda-Water Apparatus.*—GEORGE F. MEACHAM, Newton, assignor to JAMES W. TUFTS, Medford, Mass. Application filed May 15, 1873.

6,691.—*Floor-Cloth.*—JEREMIAH MEIER, Lansingburg, N. Y., assignor to D. POWERS & SONS, same place. Application filed May 14, 1873.

6,692.—*Cooking-Stove.*—JOSEPH PECKOVER, CINCINNATI, Ohio. Application filed February 27, 1873.

6,693.—*Monument.*—JAMES SHARKEY, Brooklyn, N. Y. Application filed May 5, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

(Omitted last week, bearing date May 20, 1873:)

1,278.—*Cigars, Tobacco, and Snuff.*—BATCHELOR BROTHERS, Philadelphia, Pa. Application filed May 5, 1873.

1,279.—*Bourbon Whisky.*—HIRAM LIVINGSTON, Albany, N. Y. Application filed May 5, 1873.

1,280.—*Fish.*—THE AMERICAN SARDINE COMPANY, New York, N. Y. Application filed May 15, 1873.

[Trade-Marks bearing date May 27, 1873.]

1,281.—*Files and Rasps.*—G. & H. BARNETT, Philadelphia, Pa. Application filed April 28, 1873.

1,282.—*Medical Compound.*—EDWIN R. BURNHAM, Chicago, Ill. Application filed May 19, 1873.

1,283.—*Braids, Gimps, Fringes, Trimmings, &c.*—TOBIAS KOHN, Hartford, Conn. Application filed May 19, 1873.

1,284.—*Medicine.*—PACIFIC BALM COMPANY, New York, N. Y. Application filed May 17, 1873.

1,285.—*White Zinc-Paint.*—WADSWORTH BROTHERS & CO., New York, N. Y. Application filed May 17, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date May 27, 1873.]

ORIGINAL PATENTS.

139,226.—*Railway-Car Axle.*—RICHARD N. ALLEN, Pittsford, Vt. Application filed March 3, 1873.

Car-wheels are secured to the journals of independent sleeves, which revolve around a hollow axle, and are secured thereto by lock-nuts.

Claim.—The hollow shaft A, nuts B, sleeves C D, and collar E, all constructed and combined to operate in the manner as and for the purpose set forth.

139,227.—*Apparatus for Preventing Rapping Noise in Machinery.*—GUSTAVUS AMES, Rochester, N. Y. Application filed February 5, 1873.

Combined with the rotating cam or other device, the dropping of the rod of which or the cam-wheel causes the rapping noise to be obviated, is a surrounding case containing liquid tar, oil, or other suitable liquid, which, being interposed between the lower end of the rod and the cam-wheel, insures noiseless motion.

Claim.—The case for containing liquid tar or equivalent liquid, in combination with the vibrating frame and cam-wheel, substantially as and for the purpose specified.

139,228.—*Curtain-Cord Fastener.*—JOHN P. ARNOLD, Philadelphia, Pa. Application filed February 17, 1873.

The bracket has a longitudinal recess in its face and a nut near its lower end, through which passes the adjusting-screw having on its upper end a sliding piece carrying the cord-pulley.

Claim.—The combination, in a window-shade fixture, of a bracket, A, having a longitudinal recess, c^1, in its face, and a nut, A′, at or near its lower end, with the sliding bearing-piece B, and an adjusting-screw, C, to operate it, in the manner and for the purpose herein shown and described.

139,229.—*Stop-Cylinder Printing-Press.*—HENRY BARTH, Cincinnati, Ohio. Application filed October 16, 1872.

As the rack of the type-bed engages the cogs of the cylinder the feed-table is moved forward and the gripers seize the sheet. The type-bed and cylinder now move together to make the impression, until a half revolution of the latter causes its large tooth to engage the jaw of a lever and the cylinder to stop. The bed moves on to receive ink from the fountain-rolls and back in contact with the distributing-rollers, when the operation is repeated. As the paper is fed by the gripers the preceding sheet is released and fed out of the top of the machine by friction-belts.

Claim.—1. The hangers O, in combination with the connecting-rod N, having on its end the spring 107, and the double-armed lever L ending in the female stop-and-start tooth *f*, substantially as and for the purpose set forth.

2. The cam *u* on the cam-shaft *z*, in combination with the cam-rod *v*, the elbow-lever *s*, the rod *p*, arms *n* and A, and feed-board F, for the purpose set forth.

3. The shaft 14, in combination with the shaft 13, operating substantially as described, to cause the tips of the fingers 21 21 to follow the motion of the India-rubber band, in their descent.

4. The mode of vibrating rollers longitudinally, by laying them between two vibrating arms, the one at one side and the other at the other side of the press.

5. The adjustable bearings 56, in combination with the bearing-holders 57, the bars 61, and the set-screws 60, substantially as and for the purpose set forth.

6. The elastic bands or tapes 108 108, Fig. 4, under the cylinder, attached to the rods 103 and 109 for the purpose of holding the paper to the cylinder smooth and free from wrinkles.

7. The arrangement by which the blankets and the tympan-sheets are fastened to the cylinder, consisting in the clamping-bars 114 114, Fig. 4, and 115 115, and the blanket-winders 110 110, with the hooks 112 112, or similar devices, for holding regrets around which the blankets or tympans are laid.

8. The mechanism by which the ink-fountain roller 38 can be turned by hand, and by which the amount of turn of this roller may be regulated from the feeder's stand.

139,230.—*Thimble for Ships' Rigging.*—THOMAS G. BELL, Brooklyn, N. Y. Application filed March 18, 1873.

The thimble is prevented from turning or becoming loose.

Claim.—As a new article of manufacture, the solid or cast thimble described, provided with the oblong pin-hole B and the groove formed upon a straight line from *c* to *a*, and terminating at the point *a*, substantially as and for the purpose specified.

139,231.—*Base-Burning Stove.*—FREDERICK W. BORN, Cleveland, Ohio. Application filed February 7, 1873.

Claim.—A stove provided with a cone-shaped magazine, B, a fire-pot, A, of similar form, air-flue E, pipes C, and drum D, so constructed and arranged as to conduct the draft through the live fire, and thus consume the smoke, as described.

139,232.—*Nursery-Gate.*—JOHN W. BOUGHTON, Philadelphia, Pa. Application filed November 4, 1872.

Two racks are formed of vertical end bars, and horizontal rods arranged so that the rods slide in holes through the inner uprights, and have thumb-screws for adjustment. A supplementary bar is connected with one end, and is connected by a tightening screw or lever.

Claim.—A nursery-gate, formed of the sliding racks A B, rods *c d*, in combination with the thumb-screws *e e*, supplementary tightening-bar *l*, and tightening screw or lever, substantially as herein shown and described.

139,233.—*Reciprocating Steam-Engine and Saw-Mill Combined.*—ISAAC BROWN, Glenville, Md. Application filed April 9, 1873.

The piston-rod, projecting through both ends of the cylinder, is operated by side rods moving in guides in the side of the cylinder. The side rods are provided with pins, to which the connecting-rod with forked end is attached, and connects below the cylinder to the crank of the saw-arbor. The side rods are connected together by a cross-head at one end and a U-shaped connection at the other.

Claim.—The combination of a steam-cylinder, detached piston-rod, cross-head, and forked connecting-rods, as described.

139,234.—*Moccasin-Boot.*—EDWARD A. BUCK, Bangor, Me. Application filed January 28, 1873.

One side of an ordinary moccasin is left open where the seam is usually made. A flap or welt is sewed to one side of the front quarter, and one side of the back quarter is inserted in the pocket thus formed.

Claim.—In combination with a moccasin of the ordinary boot-pattern, as shown in the drawing, having one side seam left open and unstitched, the lap-welt or flap *c*, attached and arranged as set forth and shown, to cover said opening, as and for the purposes described.

139,235.—*Steam Vacuum-Pump.*—WILLIAM BURDON, Brooklyn, N. Y. Application filed August 9, 1872.

Two water-cylinders and their connected pistons are arranged with valves to admit steam to each cylinder above its piston, and afterward exhaust said steam into the cylinders. Hollow perforated pistons retain part of the water until it is expelled, when the water remaining in the pistons condenses the steam. Additional cups, also perforated, are arranged below the pistons to finish the condensation of the steam.

Claim.—1. The combination, with the two water cylinders or chambers and their connected pistons, of valves constructed and arranged to admit steam to each cylinder above its piston, and afterward to exhaust such steam into the same cylinder or chamber below its piston, substantially as and for the purpose herein set forth.

2. In combination with hollow pistons, the perforated water-receptacles, constructed for operation substantially as and for the purpose specified.

3. The combination, with the cylinder and hollow pistons, of perforated cups arranged below the pistons, substantially as and for the purpose herein described.

139,236.—*Friction Mechanism for Yarn-Beams.*—HELIM CHILSON, Ware, Mass. Application filed April 30, 1873.

The pressure of the friction-brake and band upon the wheel may be suddenly relieved, so as to admit of the ready forward or backward movement of the yarn-beam.

Claim.—1. The combination of the brake D, the lever F, and the friction-band B, arranged as set forth.

2. The combination of the screw C and nuts *b c*, the brake D, the lever F, and the friction-band B, arranged as represented.

3. The combination of the clamp-jaw *a* E, the screw C, the nuts *b c*, the brake D, the friction-band B, and the lever F, all being arranged and applied together substantially in manner, and to operate with the yarn-beam head or wheel A of a loom, as stated.

139,237.—*Device for Teaching Drawing.*—ADELIA C. COVELL, New York, N. Y. Application filed March 6, 1873.

Regular and irregular figures, plain or solid, formed of wire, are provided also with projecting wire axes, to indicate to the pupil copyist more distinctly its exact position and perspective.

Claim.—1. The combination, with the device A, of the wire B, substantially as and for the purpose described.

2. The combination, with the device A, of the wire C, substantially as and for the purpose described.

3. The combination, with the device A, of the wires C and D, substantially as and for the purpose specified.

4. A device for teaching perspective outline-drawing, composed of a series of different-colored wires, or wires formed of different metals, combined substantially as described.

139,238.—*Heel-Stiffener.*—LUTHER C. CROWELL, Boston, Mass. Application filed March 19, 1873.

Claim.—As a new article of manufacture, a heel-stiffener, composed of two pieces, having notched and thin edges, as set forth, and united as described.

139,239.—*Manufacture of Bleaching-Liquor.*—HENRY DEACON, Widnes, England. Application filed May 16, 1873.

Chlorine gas is passed into water in which is mixed precipitated carbonate of lime, such as results from causticising carbonate of soda. Other carbonates may be employed. The resulting liquor may be used for bleaching or for making chlorate of potash.

Claim.—1. The use of carbonate of lime, such as lumps of limestone or of chalk or of carbonate of lime in a state of fine division, such as that which is obtained by causticising solutions of the carbonates of soda and of potash by means of lime, for the absorption of chlorine, as herein described.

2. The employment of carbonates of lime in a similar manner for the purpose of absorbing chlorine when the chlorine is mixed with carbonic-acid gas, or is otherwise diluted.

139,240.—*Tool for Cutting Leather.*—JACOB DEMAREST, Belleville, N. J. Application filed February 10, 1873.

The divided clamp is applied, one section on each side of the blade to be held, and screwed into the ferrule until the blade is firmly clamped.

Claim.—As a new article of manufacture, a hollow handle, *a*, provided with ferrule *b* and divided clamp *c*, constructed and operating as described, so that the blade *c* can be adjusted back and forth.

139,241.—*Vault-Cover.*—JAMES C. FRENCH, Chicago, Ill. Application filed November 21, 1872.

Claim.—The ribs C C, in combination with a vault-light, for the purpose of strengthening the iron plate, substantially as described.

139,242.—*Machine for Jointing and Planing Staves.*—ROBERT W. GEORGE, Boston, Mass., assignor to CHARLES P. GEORGE, same place. Application filed May 8, 1873.

The staves are carried through the machine by dogs attached to an endless chain passing, first, under the revolving cutter which forms the outside, thence between the jointers, and then over another cutter which shapes the inside.

Claim.—1. In a stave-jointing machine, the dog D made with the cross-head D″ and combined with the feed-chain E and table B, substantially as described, and for the purpose set forth.

2. In a stave-jointing machine, the compound adjustable cam K^2 K^3, operating substantially as described, and for the purpose set forth.

3. The combination of the planer cutter-head H^2 with the frame H^4 H^5 and the eccentric H^7, operating substantially as described, and for the purpose set forth.

4. The self-centering guides F F and F^4 F^4, Fig. 1, operating substantially as described, and for the purpose set forth.

5. The vibrating pivoted frame L^2, carrying the cutter-head and shaft L^3 L^5, in combination with the sliding frames L and cams K^2 K^3, substantially as and for the purpose specified.

6. The adjusting-screw L^{12}, in combination with the sliding frame L and cams K^2 K^3, substantially as and for the purpose set forth.

7. The combination of the revolving cutter-head H^1, feed-chain E, jointing-cutters L^3 N^3, cams K^2 K^3, and vertically-adjustable rotating cutter-head H^3, all being constructed and arranged as and for the purpose herein shown and described.

139,243.—*Railway Freight-Car.*—RICHARD H. GORDON, Sr., Cleveland, Ohio. Application filed March 24, 1873.

The car is provided with an inner and outer door. The latter is held against the side of the car by means of a T-shaped fastening device. The inner wall of the car is provided with hinged sections to allow of the escape of grain which has worked between the sheathings.

Claim.—1. The car-hook F having a screw-stem, in combination with the railway car-door B having the lugs *c b*, substantially as set forth.

2. The guard I, having the lugs *c c* secured to the inner side of the doorway-frame by means of the cross-hooks A′, substantially as set forth.

3. In a railway freight-car constructed with wainscoting, the lower hinged section I of the wainscoting, substantially as and for the purpose specified.

4. A railway freight-car constructed with wainscoting, having the lower sections I′ thereof hinged to the side of the car, to allow of their being opened, for the purpose specified.

139,244.—*Door and Bit of Puddling and Boiling Furnaces.*—JOHN G. HABERFIELD, Wheeling, W. Va. Application filed March 24, 1873.

The roller guides the door when raised or lowered. The slides upon the inner vertical sides of the door-frame engage with corresponding slides upon the door, supporting and locking it when in place. The bit is triangular, having beveled edges to fit like sides and edges in the door to which it is keyed.

Claim.—1. The combination, consisting of the door-frame A, provided with the door-slide plates G, whether with or without the catch A, and the door B provided with slide plates or bars to correspond with those on the frame, as herein specified.

2. The combination of the door B and the door-bit L, the latter constructed and adjusted to the former, as herein described.

3. The combination of the door-frame A, door B, and the roller F, as herein specified.

139,245.—*Sewing-Machine.*—THOMAS HENDERSON and WILLIAM G. WRIGHT, Hamilton, Canada. Application filed February 21, 1873.

The shuttle-thread is moved, as described, to prevent it from becoming twisted.

Claim.—1. A shuttle, H, arranged within the circular race G, and adapted to have a continuous rotary movement, combined and operating in connection with the thread-shifter J, substantially as described, whereby the shuttle-thread is moved to the right and left of the shuttle as the shuttle revolves in its race.

2. The shuttle H, circular race G, thread-shifter J, and spring *s*, in combination with the cam L and gears N O, substantially as and for the purpose specified.

139,246.—*Rolling-Mill.*—HENRY R. HINKLEY, Milton Junction, Wis. Application filed March 11, 1873.

A pair of horizontal rolls, the lower one of which can be worked vertically, as its journals rest in the short arms of cam-levers. The levers are cam-shaped under the bearings of the rolls, and the frame of the machine is made to correspond. A foot-lever works the long arms of the levers.

Claim.—The combination, in a rolling-mill, of the cam-levers, having variable fulcrums, with the lower roll, substantially as and for the purpose set forth.

139,247.—*Self-Rocking Cradle.*—CARL HOLTZ, St. Louis, Mo., assignor to JOHN H. VORNBROCK, same place. Application filed November 15, 1872.

The cradle, arranged upon its frame and furnished in its end with spring and gearing like or similar to clock-work, is attached to a graduated crank or arm connected with the driving-wheel and cradle, by which motion is imparted to the swinging or suspended cradle.

Claim.—The combination of the arm *g*, crank or wheel G, clock-work mechanism herein shown and described, standard parts *a* a^1 a^2, angle-braces H, and pivoted cradle B, all constructed and arranged to operate as set forth.

139,248.—*Machine for Cleaning Grain, Nuts, &c.*—JOSEE JOHNSON, New York, N. Y. Application filed February 20, 1873.

Cleaning-cylinder suspended by and in the belts which rotate it.

Claim.—The cylinder *a*, suspended by, mounted in, and driven by, the belts *b b*, substantially as and for the purposes described.

139,249.—*Tuck-Creaser for Sewing-Machines.*—WILLIAM D. KANE, Chicago, Ill. Application filed October 23, 1872.

Claim.—As an article of manufacture, a tuck-creaser, consisting of the plate A, having the backwardly-inclined lip B, the spring C *e*, and spring-arm D, formed as shown, the end E of the arm acting to move the cloth down on the lip, and compress and crease it over the end of the spring, all as described.

139,250.—*Machine for Making Horseshoe-Nails.*—EDWARD W. KELLEY, Lowell, Mass. Application filed November 11, 1872.

A pin on each of the movable jaws enters an oblique slot in each of the transverse bars *i*, and the latter are reciprocated by contact of their projecting extremities with fixed stubs on the frame, and the stationary jaw, being located on a surface inclined to that of the other jaw, permits the stationary jaw to be sharpened when required, and yet preserve its relationship to the other jaw.

Claim.—1. The combination of the clipping-wheel *k*, jaws *g g*, grooved bar *i*, and inclines or rollers *o*, as and for the purpose specified.

2. The arrangement of the jaws *g* and *q*, of each pair, on anticlinal surfaces of the wheel *k*, as and for the purpose set forth.

139,251.—*Loom-Filling Fork.*—JACOB H. KNOWLES, Lawrence, Mass. Application filed August 2, 1871.

Claim.—The new manufacture of filling-fork, composed of the two wire forks, constructed, arranged, and combined together in manner substantially as specified.

139,252.—*Dish-Pan.*—SUSAN L'AFFERTY, Chicago, Ill. Application filed April 26, 1873.

The pan is divided into two compartments, and in one of them a rack is placed to receive the dishes to be drained. The compartments are provided with faucets to draw the water off.

Claim.—The pan *a* divided into compartments, in combination with a suitable rack for draining the dishes, substantially as set forth.

139,253.—*Harness-Buckle.*—CHARLES C. LEE, Falls Church, Va. Application filed February 13, 1871.

The buckle is of a shape that can be cast without a core, and is to be riveted to the strap.

Claim.—The harness-buckle above described, constructed with the bed-plate A, stationary tongue B, loops C C, extending beyond said bed-plate, so that the whole may be cast in one piece without cores, and holes through said bed-plate, whereby the buckle may be secured to the strap by rivets *a'*, and without sewing.

139,254.—*Hook for Hanging Flower-Pots, &c.*—IRA A. LOVEJOY, Lynn, Mass. Application filed April 11, 1873.

The two upper rods of the bracket are furnished with eyes which pass over screw-heads upon the window-seat. The lower or brace rod rests with a broad surface against the wall without defacing it.

Claim.—The suspending-hook hereinbefore described, composed of the bent rod *a a' a''* and the bracing-rod *b b'*, said rod *b b'* being prevented from marring the window-frame by means of the plate *c* or equivalent device, as and for the purpose above set forth.

139,255.—*Lamp-Lighting Apparatus.*—MICHAEL A. LYNCH, Boston, Mass. Application filed March 6, 1873.

The discharger, pivoted a little above its center, is operated by a bell-crank through the medium of a connecting-link. Upon the end of the shaft is a single tooth for raising the fuse.

Claim.—The shaft *g*, its tooth *i*, and crank *f*, the connecting link *e* and the lever or discharger *d*, constructed and arranged together and with the fuse-tube *a*, substantially as and to operate as described, such fuse-tube and shaft being applied to a lamp-burner, as represented.

139,256.—*Heating-Stove.*—DARWIN N. MASON, Indianola, Iowa. Application filed January 10, 1873.

Claim.—The combination of the air-chamber below the fire, formed by the turret B and the false bottom C, and the tubes *c c c d d d*, with the upper air-chamber, formed by the plate D and the cap E, and the ventilator A, substantially as and for the purposes hereinbefore set forth.

139,257.—*Grain-Cleaner.*—STEPHEN MOORE, Rochelle, Ill., assignor of two-thirds his right to M. D. HATHAWAY and E. GARDNER, same place. Application filed February 26, 1873.

Foul stuff and light substances are separated from the grain while passing through the hopper, drawn up into the fan-case, and expelled through the spout D by the suction-fan.

Claim.—The arrangement of the horizontally-revolving fan C upon a vertical fan-shaft in the case A, in combination with the spout D, box E, hopper H, flue G, and slides I J, all constructed and arranged substantially as shown and described, and for the purposes herein set forth.

139,258.—*Reciprocating Steam-Engine.*—ROBERT G. NICOLL and GERWARD H. HOLLMANN, Hazelhurst, Miss. Application filed July 27, 1872.

The steam-valves, of the puppet kind pivoted to a rocking-lever, and are provided with steel-pointed blunt pins extending through the cylinder, and are operated by the piston. The valves are double-seated, and have the usual wings. A hollow piston and rod form an exhaust-outlet. The steam is admitted to said outlet by projecting valves in the piston, which are actuated by coming in contact with the cylinder-heads.

Claim.—1. A steam-valve provided with bearing on top of seat, and plug H having flat head L resting on the bottom thereof, as described.

2. A cylinder having lift-valves B B to admit steam, combined with a piston having means M N Q for exhausting steam, as described.

139,259.—*Tag-Machine.*—CORNELIUS M. O'BRIEN, Hightstown, N. J. Application filed August 10, 1872.

A strip of paper is divided longitudinally in its passage by a pair of constantly-operating shears, the separated strips being fed forward by intermittingly-moved rollers. A type-platen, descending, prints the ends of one pair of tags, while a cutting-bed attached to it presses the tags previously printed upon the circular-shaped knives, one adjustable to vary their size, which sever the tags from the strip.

Claim.—1. The frame J, carrying the type and cutting-bed, in combination with the adjustable knives M', substantially as described.

2. In a tag-machine, the combination, with the shears C, cam a^1 and spring a^2, of the feed-rollers b^1 b^2, shaft F, cam c^2, and the intermittent clutch *c*, substantially as specified.

3. In a tag-machine, the combination, with the slotted bed, and the operating-cam a^1 and spring a^2 arranged under said bed, of the shears, vertically and longitudinally arranged in the central line of the bed, and working through its slot, substantially as and for the purpose specified.

4. The inking-rollers K^3 attached to the pivoted block L, in combination with the beveled stop L^1, springs L^2, and supply-rollers L^4, substantially as described.

5. In combination with the shears C, arranged to divide the paper to form the ends or butts of the tags, the knives M M', the latter adjustable, as shown, bent to cut the tops, sides, and corners of two tags simultaneously, substantially as specified.

6. The adjustable frame m^1, recessed blocks m^2, screws P, frame O', and adjusting-screw O, in combination with the bar m^1, substantially as specified.

139,260.—*Nut-Lock.*—ALBERT PORTER, Chicago, Ill. Application filed March 29, 1873.

Claim.—The perforated locking-plate, bent and arranged so that the extreme ends shall lock the inside nuts, while the ends formed by the bend shall lock the outside nuts, for the purpose herein explained.

139,261.—*Inkstand.*—WILLIAM READ, Jr., Cambridge, assignor to WILLIAM READ, Boston, Mass. Application filed October 4, 1872.

The bottom of a square bottle is raised from side to side, providing two ink cavities, so that in use the ink free from sediment may be projected into the dipping or forward cavity. A block on one side carries an elastic band as a pen-holder, and is mounted with a pin to hold the cork.

Claim.—1. An inkstand or bottle having its bottom divided into compartments *c c'*, substantially as and for the purpose specified.

2. An inkstand or bottle having a pen rest, *f*, formed with projections *f' f'*, and provided with an elastic band or spring, *g*, substantially as specified.

3. An inkstand or bottle having a pen-rest, *f*, provided with a cork or stopper support, *k*, substantially as described.

139,262.—*Hanging Signal-Cord of Railroad Cars.*—JOHN F. RICE, Fitchburg, Mass. Application filed March 10, 1873.

A pulley or spool is attached at each end of the car to the ceiling, upon which is wound either end of the cord extending through the car. The connections between cars are made by separate cords attached to and wound upon the adjacent spools, the object in view being the avoidance of the inconvenience of having a continuous cord to be passed through each car.

Claim.—A series of signal cords *d s* connected indirectly with each other by a series of spools or pulleys around which they are wound, so as to operate substantially in the manner and for the purpose described.

139,263.—*Hand-Pump or Syringe.*—WILLIAM B. ROBINS, No. 17 Richmond Terrace, Shepherd's Bush, Middlesex, England, assignor to EDWARD HAYNES and HENRY HAYNES, Edgeware Road, England. Application filed February 21, 1873.

The outer tube communicates with the induction-pipe, so that when the piston is making its down-stroke water rushes up the outer tube and through the openings in the top of the barrel, filling the barrel above the piston. On the upstroke, the openings in the piston being uncovered, this water rushes into the space below the piston; thus the lift is divided between the up and the down stroke, while water is expelled only during the latter.

Claim.—1. The combination of the barrel, the outer tube, the hollow piston-rod, and the tubular handle, substantially as before set forth.

2. The combination of the barrel, the outer tube, the hollow piston-rod, the tubular handle, the traversing-piston, and the valves, substantially as before set forth.

139,264.—*Saw-Mill Head-Block.*—ALEXANDER RODGERS, Muskegon, Mich. Application filed May 3, 1873.

The log is secured upon the carriage by a pair of peculiarly-arranged dogs, and is then moved forward upon the head-blocks by a setting-jack, which is operated by two reciprocating racks acting upon a series of pawls attached to the jack, the extent of the movement being regulated by a partially-rotating gage, against which the racks strike in their reciprocations.

Claim.—1. The dogs N and M', in combination with their operating mechanism and the setting-jack C, substantially as and for the purpose specified.

2. The chain-tightener T, constructed and operated substantially as herein shown and described.

3. The slide-dog S, constructed and operating substantially as and for the purpose herein set forth.

4. The setting-shaft D, fusee E, and chain *e*, in combination with the setting-jack C, substantially as and for the purpose specified.

5. The gage-cylinder F, in combination with the setting-racks *b* and *b'*, and the indicator A, and movable arc A', as and for the purpose described.

6. The reciprocating racks *b* and *b'*, and their operating mechanism, in combination with the stationary rack *a*, substantially as specified.

7. The rack G, constructed as shown and described, in combination with the eccentric *p* and pawls *n m*, as set forth.

8. The setting-jack C, provided with the two sets of dogs S and M M', and the mechanism for operating the same, in combination with the block B and carriage A, all the parts being constructed and operating substantially as and for the purpose specified.

139,265.—*Floor-Clamp.*—JOHN G. ROGERS, Niles, Mich., assignor to himself and SILAS S. WHITE, same place. Application filed February 17, 1873.

One of the levers is curved, and is operated by the pin in lever E and retained in position by it.

Claim.—The floor-clamp, consisting of the levers A A, one of which is curved at the point of contact with pin F, the lever E, cross-bar G, brace H, and adjustable U-shaped yoke D, all constructed, arranged, and combined as and for the purposes set forth.

139,266.—*Writing-Tablet.*—AUGUST SCHINDLER, Lancaster, Pa. Application filed February 18, 1873.

Paper coated with a composition of sixteen parts alcohol, two and one-half parts gum sandarac, one part white shellac, and one and a quarter castor oil.

Claim.—The specified transparent composition for coating white paper-tablets, substantially in the manner and for the purpose specified.

139,267.—*Self-Waiting Table.*—JOHN F. SCHULTZ, Chicago, Ill. Application filed March 18, 1873.

A stationary frame, combined with a central revolving and vertically-adjustable top, and an outer detachable rim. The spindle of the adjustable top rests on a lever that is connected by a cord with a rod that passes out to one side of the table. Said rod has a ratchet near its outer end, with which a pawl attached to the frame of the table engages. The end of the rod has a milled head.

Claim.—The combination of the ratchets *g*, pawl *h*, rod *f*, cord *e*, bridge-tree *d*, and spindle *c* with the stationary frame, central revolving and vertically adjustable top, and outer detachable rim, as described.

139,268.—*Harvester.*—JOHN F. SEIBERLING, Akron, Ohio. Application filed November 20, 1871.

Devices are arranged to enable the driver to rock the finger-beam by raising or lowering the front end of the main frame. By lifting the coupling-frame the outer end of the finger-beam is raised by means of a ratchet-link connecting the heel of the finger-beam with the main frame. The reel is supported on an adjustable lever and provided with devices for regulating the tension of the driving-band. The cut-off is pivoted near the fulcrum of the reel-supporting lever.

Claim.—1. The combination of the main frame oscillating on the main axle, the tongue hinged to the front inner corner of said frame, the lifting-lever pivoted on the frame and linked to the tongue, the locking detent, the hinged coupling-frame, and the finger-beam, these members being constructed and operating substantially as hereinbefore set forth, to rock the guard-fingers.

2. The combination of the oscillating main frame, hinged tongue, coupling-frame, and finger-beam with the lifting-lever link and chain, these members being constructed and operating substantially as hereinbefore set forth, to rock and lift the inner end of the finger-beam simultaneously by a single lever.

3. The combination of the main frame hinged tongue, coupling-frame, finger-beam, lifting-lever and chain, with the ratchet-link hinged to the finger-beam and acting on the main frame, these elements being constructed and operating substantially as hereinbefore set forth, to lock and tilt the finger-beam.

4. The combination of the reel-post, the pivoted supporting radius-arm, the lever pivoted to the arm, and the reel mounted on the lever, these elements being constructed and operating, substantially as hereinbefore set forth, to render the fulcrum of the lever adjustable.

5. The combination of the reel, its supporting-lever, and pivoted supporting radius-arm with the guide-rail on the reel-post, and a guide-pin on the lever, these parts being constructed and operating in combination, substantially as hereinbefore set forth, to secure the proper relation between the supporting-lever and reel-post.

6. The longitudinally-adjustable sectional tension-arm constructed with a guide-rail and ferrule, and operating substantially as set forth.

7. The combination of the tension-arm, vibrating around the reel-driving axle, with the guide *r* on the reel-post, substantially as hereinbefore set forth.

8. The combination, with the adjustable reel, of the cut-off pivoted near the fulcrum of the reel-supporting lever, substantially as hereinbefore set forth.

9. The combination of the reel, the supporting-lever, the cut-off hinged near the fulcrum of the lever, and the dropping platform, substantially as hereinbefore set forth.

139,269.—*Corn-Planter.*—HIRAM A. SHARP, Harlem, Mo. Application filed March 3, 1873.

A rectangular frame has a pair of carrying-wheels in front and one behind; on each end of its axle a revolving marking-arm. In the middle of the frame is the hopper, and beneath it the spout, opener, and coverer. Seed-slide operated by cam on the hind wheel.

Claim.—1. In combination with a seed-delivering apparatus constructed with two slides, N and P, one traversing above and the other below, the perforated stationary plate J, the movable block *a*, constructed and arranged to operate substantially as described, for the purpose set forth.

2. The marking-arms H H, arranged on the rear axle F, to mark in the tracks of the fore wheels E, so that the marks will not be obliterated by a shower of rain.

3. The spurs or projections on the wheel G, arranged each side of the tread of the wheel, in combination with the scraper I, provided with scores and prongs to clear projections and tread of the wheel.

139,270.—*Tag-Machine.*—JOHN H. SILVERS, Hightstown, N. J. Application filed May 29, 1872.

Improvement on No. 87,261. The knives for cutting the head of the tag are capable of adjustment, so as to cut different-sized tags. The paper is forced down upon them by a reciprocating bed operated in unison with the reciprocating printing-platen.

Claim.—1. The clipping device *n n* and reciprocating die *l*, in combination with the cam-wheel A, pin *r*, and arm S^2, substantially as and for the purpose herein specified.

2. The cutters *n n*, one fixed and the other adjustable by means of the slide *p* and set-screw *m*, in combination with a tag-printing device, substantially as and for the purposes herein specified.

139,271.—*Railroad Frog.*—HENRY J. SKINNER and SAM. J. GIFFORD, Dunkirk, N. Y. Application filed March 20, 1873.

The channels for the flanges are rounded at bottom, and shallow, so as to partially support the wheel, and co-operate with the curved wings to give an easy transition through the frog, where the change of direction of motion occurs.

Claim.—In a railroad frog the channel *a* rounded to conform to the shape of the flange of the wheel, and partially support the same, and the gradually-rising point from *b* to *c* used in connection with the curved rails B B, having the narrow throat at *b*, all constructed and arranged as and for the purpose specified.

139,272.—*Laying Concrete Pavements.*—JESSE W. SNYDER, Chicago, Ill. Application filed March 15, 1873.

Claim.—The method of laying concrete pavements, by molding the concrete, in connection with an iron frame having cross-bars with beveled projections on their under sides, which extend half way through the concrete, so that when the frame is withdrawn V-shaped grooves will be left in the concrete, to be filled with sand or other analogous material, in the manner and for the purpose specified.

139,273.—*Heel-Breasting Machine.*—VIVIAN K. SPEAR, Lynn, Mass. Application filed April 3, 1873.

The knife-carriage is susceptible of both lateral and vertical adjustment. The jack-carriage is pivoted at its rear end to a sliding bed, its forward end being slotted to admit of lateral motion, its extent being controlled by a pivot passing through the slot into the center of the sliding bed. The last portion of the jack is composed of three parts, a detachable heel-seat, an arm pivoted to the base of the jack and adjusted to the heel seat, and an extensible toe-piece.

Claim.—1. In a heel-breasting machine, the combination, with the vertically-moving breasting-knife, of a jack or jack-carrier movable upon a vertical pivot and adjusting devices, whereby the said jack when moved on its pivot may be adjusted and held in position to adapt the machine to the breasting of rights and lefts or straights, substantially as set forth.

2. In combination with the jack and the carriage *a*, to which the jack is jointed at *i*, as described, the jack-screws *k*, under the arrangement substantially as and for the purposes shown and set forth.

3. In machinery of the kind specified, a jack having a last portion constructed and mounted, substantially as described, so that the horizontal slope of the fore part may be varied with respect to the heel seat or post to adapt the jack to varying curvatures of soles, as set forth.

4. The combination of post *h*, arm *l*, and horn *n*, said parts being constructed and arranged for joint operation, substantially as herein shown and set forth.

5. In a heel-breasting machine, a jack provided with a detachable or removable heel-seat, substantially as and for the purposes set forth.

6. The combination, with post *h*, arm *l*, and horn *n*, of the movable or adjustable heel-seat *t* and movable or adjustable toe-rest *s*, substantially as and for the purposes shown and set forth.

7. The breasting-knife, combined with and applied to its stock, substantially in the manner shown and set forth, whereby either the vertical slope or lateral bodily adjustment of the said knife is varied, substantially as and for the purposes stated.

8. The combination, with the guide L and carriage *a*, of the stop-bolt *f'*, or its equivalent, essentially in manner and operating as stated.

139,274.—*Process of Making Artificial Stone.*—DANIEL M. SPROGLE, Annapolis, Md. Application filed October 30, 1872.

Process of making stone artificially by alternately subjecting the calcareous concrete to the action of carbonated vapor and a moderate degree of heat.

Claim.—The process of making artificial stone by alternately subjecting the calcareous concrete to the action of carbonated vapor and a moderate degree of heat, substantially as described.

139,275.—*Fire-Extinguisher.*—JEROME B. STILLSON, Chicago, Ill. Application filed October 5, 1872.

The acid-receptacle is made large enough to contain several charges, and is properly connected with the chamber containing the alkaline solution. A suitable valve allows of communication between the two. A gage, graduated to indicate the number of charges, is connected to the acid-receptacle.

Claim.—The acid-receptacle B, when provided with a valve, *a*, and gage *b*, in combination with the alkali-receptacle A, all constructed substantially as and for the purpose specified.

139,276.—*Railroad Rail-Joint.*—GEORGE A. STURGES, Delhi, N. Y., assignor to himself and DEXTER PETTINGILL, same place. Application filed May 2, 1873.

The joint is held by a metallic ring inclosing the convex splice-pieces, which are keyed up by driving in a broad flat wedge. The lips formed on the splice-pieces and on the wedge are then bent down to secure all in place.

Claim.—1. The combination, with convex splices B B B′, of a ring or circular tie, C, and a bifurcated wedge, D, substantially as described.

2. The lips *a a* formed on the upper beveled side of the splice B′, in combination with the splices B B, ring C, and wedge D, substantially as described.

3. The splices B B constructed with lips *b b*, and combined with the rail sections notched at *b′ b′*, and with ring C and base-splice B′, substantially as described.

4. The base section B′, recessed or notched at *d d′*, in combination with wedge D lipped at *d d*, and with the ring C, substantially as described.

139,277.—*Insect-Destroyer.*—SHERMAN W. THOMAS, North Royalton, Ohio. Application filed 21, 1873.

The frame is mounted upon a wheel upon one side and a runner upon the other, the runner passing close to the row of plants. A pendent striker is operated by means of a crank and connecting-rod, which gives a sudden blow to the plants, thus knocking the insects into the pan, and thence between the rollers, where they are crushed.

Claim.—The combination of the beater K, lever H, link J, pitman I, gearing D F, rollers N E, drive-wheel B, and shoe R, in the manner as and for the purpose set forth.

139,278.—*Pocket Car-Ventilator and Dust-Screen.*—JOHN B. TIMBERLAKE, Salem, Ohio. Application filed March 1, 1873.

The screen is made of two pieces of pasteboard covered with cloth and hinged in the middle. To it is pivoted an arm having an oval belt attached to one end and a rubber band and metallic hook attached to the other. When in use the belt is placed between the two window-strips, the arm is brought down level, and the hook fastened on the outer edge of the screen. The whole can be folded up in compact form.

Claim.—The combination of the screen, the arm, the metallic belt, the metallic rivet, the rubber band, the metallic hook and staple, as shown, and for the purpose described.

139,279.—*Railroad Switch.*—CHARLES D. TISDALE, Boston, Mass. Application filed December 17, 1872.

The approaching train throws the switch into line with the main track if wrongly placed, and accomplishes the result through a lever and rod by the side of the track, which operate the spring-stop H pivoted to the top of the switch-bar, thus allowing said bar to move back upon the slots *f f*, under the stress of the spring D. The switch is set for the siding by means of the crank-shaft.

Claim.—The combination of the spring D, the cranked shaft E, bars F G, lever H, the spring K, rod I, and lever L, all applied to or combined with a switch and its turnout and main-track rails, as and for the purpose set forth.

139,280.—*Cigar-Machine.*—HANS E. TYLANDER, Keokuk, Iowa. Application filed February 12, 1873.

The leaf is fed in upon a guide-apron and wrapped around a roughened spindle, then pushed along between forming-rollers, where the cigar is shaped and receives the wrapper.

Claim.—1. The wrapping-spindle H and guide-apron G in a cigar-machine, substantially as set forth.

2. The combination of wrapping-spindle H and forming-rollers N N′ N² in a cigar-machine, as set forth.

139,281.—*Sash and Door Clamp.*—THOMAS S. UNIK, Hubbardston, Mich. Application filed November 16, 1872.

One side is fixed and the other three adjustable by means of levers, slides, and lazy-tongs, which are made fast by the pawl and rack on lever F.

Claim.—1. The combination of the lever F, movable frame pieces B C D, and fixed frame piece A with the lazy-tongs *f f* and braces A A, all arranged substantially as herein shown and described.

2. The extension guides *d e* and *i j*, in combination with the subject-matter of the foregoing clause.

139,282.—*Securing Pulley to Shaft.*—WILLIAM B. VAN VOORHIS, New York, N. Y. Application filed November 14, 1872.

An eccentric clutch secured in the hub of the pulley, arranged to bind the pulley to the shaft.

Claim.—The clamping cam-lever C arranged to fit loosely within the socket *b* in the hub or corresponding portion of the device to be attached for automatic hold on the shaft, substantially as specified.

139,283.—*Pantaloon-Tree.*—ELLEN B. VIETS, Boston, Mass. Application filed March 15, 1873.

A press-block on which to shape pantaloons.

Claim.—1. In a pantaloon-tree the separate thigh-part A, the rear leg and ankle part *c*, and front leg and ankle portion B, all arranged to operate together substantially as described.

2. The parts B and C, provided respectively with the swell *d*, and corresponding concavity *e*, in combination with the expander *d*, substantially as and for the purpose described.

3. In combination with the thigh-part A and leg-part B, the part *c*, constructed and arranged to extend up between the parts A and B, and below and against the portion A, all essentially as shown.

4. The pantaloon-tree composed of the separate thigh-part A, the ankle and leg parts B C, and the expander D, constructed and arranged substantially in the manner and for the purpose as specified.

139,284.—*Scroll-Saw.*—EDWARD A. WALKER, Minneapolis, Minn. Application filed March 31, 1873.

The saw is attached to the lower cross-head by two wedge-shaped jaws operated by a set-screw, and is connected at the top to a peculiarly-formed straining apparatus.

Claim.—1. The saw-clamp, composed of the combination of the triangular case D, triangular jaws *d d*, and set-screw *d′*, substantially as and for the purpose shown and described.

2. The combination of springs *h* and *h*², vibrating arm I, and links *i i* with the flexible band *i′* and saw E, substantially as and for the purpose described.

3. The combination of the springs *h* and *h*², vibrating arm I, and links *i i*, flexible band *i′*, and saw E with the sliding adjustable frame H, substantially as and for the purpose described.

4. The combination of the temper-screw *h*‴, sliding block *o*, and spring *h*² with the vibrating arm I, links *i i*, and spring *h*, substantially as and for the purpose described.

139,285.—*Paper-Clip.*—M. ALLISON WHEELER, San Francisco, Cal. Application filed March 5, 1873.

A metallic tube, longitudinally split, is forced over the edge of a board, and its under edge attached thereto, while the upper is left free to clamp the paper with equal pressure by reason of openings in its side.

Claim.—A clip or holder formed of the single elastic cylindrical piece C having the openings made so as to leave the side and central strips E and F, when the whole is constructed, to operate substantially as and for the purpose herein described.

139,286.—*Lubricator.*—HENRY V. AIKEN, Gibsonburg, Pa. Application filed April 12, 1873.

A drip-cup formed on the body of the lubricator, below the middle oil-chamber, to receive the waste escaping from the cock and reservoir.

Claim.—The lubricator as constructed, having the oil-drip cup formed with the body of and surrounding the central oil-chamber C, as and for the purpose set forth.

139,287.—*Journal-Box.*—JOHN A. ALTHOUSE, New Harmony, Ind. Application filed February 15, 1873.

The sectional box which incloses the shaft is tightened by means of wedges and set screws when, from wear or other cause, it has become loose.

Claim.—The sides C D, provided with flanges F F, lips H H, and inclined edges, combined with screw I, inclined blocks J, and pillow-block G, as and for the purpose described.

139,288.—*Artificial Fuel and Methods of Burning the same.*—ALFRED BERNEY, Jersey City, N. J. Application filed May 17, 1873.

Claim.—1. The improved processes herein described for combining, mixing, and using anthracite coal-dust, slack or screenings, with or without bituminous coal-dust or other fuels, to generate heat in railroad-locomotive furnaces, substantially as described, and for the purpose set forth.

2. The improved processes herein described for using anthracite coal-dust, slack, or screenings, alone or with anthracite coal, in railroad-locomotive furnaces, as set forth, or in any other furnaces.

3. The processes herein described, alone or in combination, for the purpose of economizing fuel and burning anthracite coal-dust in railroad-locomotive furnaces or other furnaces, substantially as described, and for the purposes set forth.

4. The combination of a hot-air chamber with water-grates and other grates, a feed-water heater, a superheater, a spark, steam, smoke, heat, and oxygen conductor with a furnace, so as to burn anthracite coal-dust or screenings, alone or with other coals or bituminous dust, to generate heat, as described, and for the purpose set forth.

139,289.—*Dust-Conveying Attachment for Thrashing-Machines.*—JACOB BIERBOWER, Philadelphia, Pa., assignor of one-half his right to AARON KAUFFMAN, same place. Application filed December 17, 1872.

Perforated tubes so arranged as to draw the dust arising from the thrashing-machine (by means of a suction-fan) from the front, rear, and sides of the machine into a fan-case, from which it is discharged through a wind-trunk to any desired point.

Claim.—In a dust-conveying attachment for thrashing-machines, the combination of the fan, perforated tubes C C, and trunk F, substantially as and for the purpose described.

139,290.—*Hinge.*—HENRY D. BRADLEY, Forrestville, Conn., assignor to THE BRISTOL BRASS AND CLOCK COMPANY, same place. Application filed May 9, 1873.

One leaf is formed with its edge coiled to form the pintle-eye in the usual way. The other leaf is slotted near one edge, and portions of it are swaged in one direction, and of the size to receive the pintle, and the remaining alternate portions swaged in an opposite direction, and left of a size to receive the eyes of the other leaf. At the edge the metal is left solid to form a stop to prevent the hinge being too widely opened.

Claim.—The improved stop-hinge herein described, consisting of the ordinary leaf A, pintle *c*, and the leaf B, formed with the sockets 2 2, 3 3 3, and stop *b*, as and for the purposes set forth.

139,291.—*Railroad Frog.*—JAMES BRAHN, Jersey City, N. J. Application filed April 26, 1873.

The brace-bars maintain the point in place by connection with the rails. The U-shaped bars brace and strengthen the inner angles of the frog similarly.

Claim.—1. The brace-bars G, in combination with the point C and guard-rails B of the frog, substantially as herein shown and described.

2. The U-shaped bars H, in combination with the rails of the tracks and with the rails of the frog, at either or both ends of said frog, substantially as herein shown and described.

139,292.—*Automatic Fire-Alarm.*—HENRY L. BROWN, Middletown, Conn. Application filed March 15, 1873.

The detent-lever of a wound-up alarm-bell mechanism is connected with the arm of an inflated bellows or air-chamber, which is in air-tight connection with a tube of fusible metal running through the rooms to be protected. On the melting of the closed tube by a fire at any point the escape of air collapses the air-chamber, and the alarm is sounded.

Claim.—The combination of a collapsible air-holder, a lead or other fusible pipe, D, a lever, I, a spring, J, a detent, K, and an alarm mechanism, substantially as specified.

139,293.—*Musical Instrument.*—MARSENA CANNON, Salt Lake City, Utah Ter. Application filed March 22, 1873.

Claim.—The keys C and coiled wires B, relatively arranged as specified, for the purpose set forth.

139,294.—*Apparatus for Reproducing Motion.*—CHARLES T. CHESTER, Englewood, N. J. Application filed May 13, 1873.

A cylinder having a piston connected at one end by a pitman with crank-wheel and pin, securing reciprocating motion of the piston, which forces compressed air through a pipe to another similar cylinder, the piston of which is connected with a ratchet-wheel and pawl by means of a lever, producing intermittent rotary motion.

Claim.—1. The reproducing of a reciprocating motion, substantially in the manner, by the means and for the purpose specified.

2. The combination of the cylinder and piston A C, and the actuating mechanism E D *a*, with the cylinder and piston B H, as and for the purpose specified.

3. The combination of the mechanism last above claimed with the wheel I, lever J, and pawl L, as and for the purpose specified.

139,295.—*Combined Umbrella and Cane.*—T. R. LAMBERT CHEVERS, Hoboken, N. J. Application filed March 29, 1873.

The top notch with the frame and cover unscrews from the stick, and they are inclosed in the hollow handle, which is used as a cane.

Claim.—1. The combination of the runners D G, ribs E, braces F, wire H having a head upon one end and a catch-loop upon the other end, the spring-catch hook I, and open hook-sleeve J with each other to adapt them for detachable attachment to the handle, substantially as herein shown and described.

2. The cover K provided with eyes L and open-ring springs M to adapt it for detachable attachment to the umbrella-frame, substantially as herein shown and described.

3. An umbrella having an end-threaded handle, A, an end-threaded runner, D, and an internally-threaded ferrule, C, as and for the purpose specified.

139,296.—*Fire-Proof Safe.*—NATHANIEL CONSTABLE, Carrollton, Ill. Application filed November 14, 1872.

The safe is inclosed within an air-chamber, the walls of which are provided with apertures and flues arranged so that, when the safe is heated, no matter what its position may be, a current of air is caused to pass through the air-chamber.

Claim.—The box A, air-chamber E, flues B B B B and C, apertures *a a a a a′ a′ a′ a′*, with space F, constructed and arranged as described, for the purpose set forth.

139,297.—*Soldering Compound.*—CARY COX, Covington, Ga. Application filed April 19, 1873.

Sal-ammoniac, one part; zinc, four parts; sulphate copper, one part; muriatic acid, twelve parts. This composition is allowed to stand twenty-four hours uncovered, and is then poured off the dregs, and three pints soft water added.

Claim.—A compound for soldering, composed substantially as described—that is to say, by combining muriatic acid, sal-ammoniac, sulphate of copper, zinc, and water, in about the proportions named.

139,298.—*Card-Rack.*—DELOSS A. DANFORTH and FRANK M. WINCHESTER, Elkhart, Ind. Application filed January 4, 1873.

Claim.—1. A card or picture rack made of a series of slats, A A, woven together edge to edge, and provided with narrower slats C C on the front side, substantially as and for the purposes herein set forth.

2. A card or picture rack made of a series of slats woven together edge for edge, and provided on the front side with narrower slats, as shown, all of said slats being warped and the rounding sides placed together, substantially as and for the purposes herein set forth.

139,299.—*Dovetailing-Machine.*—ASAHEL DAVIS, Lowell, Mass. Application filed February 6, 1873.

The cutters and guide-pulleys are placed upon adjustable stands, which are secured to an oscillating bar, the whole being so arranged that the cutters and guide-pulleys may be turned down below the level of the table, if desired.

Claim.—1. The bar A, provided with lugs at each end, in which are inserted the pivot-pins P, in combination with the frame E, having projections which receive the pivot-pins of the bar, substantially as described.

2. The adjustable stands K K′, in combination with the hinged bar A, as and for the purpose specified.

3. The cutter-shaft D, provided with the divided pulley O O, in combination with the stand K and bar A, as specified.

4. The guide-pulley L, provided with bushings, as shown, and carried upon the stud T, in combination with a supporting stand upon the bar A, substantially as described.

5. The guide-pulley L and driving-pulley O O upon the shaft D, in combination with the adjustable stands and hinged bar A, all the parts being constructed and arranged as and for the purpose specified.

139,300.—*Blast-Furnace Alarm Apparatus.*—EDWIN DAVIS, Millerton, N. Y. Application filed March 29, 1873.

To the forward edge of the cover is attached one end of a chain, which passes over guide-pulleys, the other end being secured to a weight which nearly counterbalances the cover. From the weight a second chain passes over a guide-pulley, down through an opening in the cover, and is attached to a small weight resting on the charge in the furnace. When the charge falls the last-named weight draws upon a cord attached to a lever, actuating the hammer of a gong. When the cover is raised the counterbalance-weight sinks, pulling the small weight out of the way of the fresh charge.

Claim.—1. The cover H, in combination with the furnace-top A, to cover that part of it outside of the air-heating chamber, as specified.

2. The combination of the chain I and balance-weight K with the cover H of the furnace-top A, substantially as herein shown and described.

3. The combination of the weight L, chains M O, lever P, chain Q, and spring, hammer, and gong, R S T, with the cover H and balance-weight K, substantially as herein shown and described.

4. The combination of the weight L, cords, lever, and gong, as and for the purpose specified.

139,301.—*Wash-Boiler.*—JOHN W. DEMIKO, Paris, Me. Application filed April 29, 1873.

The wash-boiler is constructed with a bottom, resting upon supports attached to the sides of it, with openings covered with a valve upon its under side, and upon the upper side with stripe, upon which rest a perforated cover or bottom. At each end are conducting-pipes for water and steam supported upon a raised flat top chamber or steam chest.

Claim.—In a wash-boiler, the combination of the perforated bottom G, supported upon the cross-strips *c*, with the chamber H and the flat top end steam-chests D, the valved bottom C, and the exit-pipes E, the several parts being arranged to operate as described.

139,302.—*Electro-Magnectic Telegraph.*—GEORGE D'INFERVILLE, New York, N. Y. Application filed August 10, 1872.

The line-wire is in connection with the similar poles of the two batteries at its extremities, so as to neutralise the current when both keys are down. Local relays are in action when the main wire is interrupted, recording the interruptions from simultaneous depression of the opposite keys, the object being to transmit messages simultaneously in opposite directions.

Claim.—1. The connection of one line-wire with the similar poles of two batteries, as and for the purpose set forth.

2. The combination of the relay B having the two screws *p* and *q*, with the lever D having the pins *f f*², and with the springs *d d*² and plates *g g*², substantially as herein shown and described.

139,303.—*Grain Rake and Loader.*—GEORGE S. DUDLEY, Dixon, Cal. Application filed November 9, 1872.

The cut grain is raised from the ground by dragging teeth, when it is lifted by rotating teeth to the elevator-apron, which carries it to the receptacle.

Claim.—1. The combination of the slotted bars B, pivoted teeth C, guides E, shaft H, arms I, elevator J K L, guides W, and carrier S U V with each other, and with the frame-work of the machine, substantially as herein shown and described, and for the purpose set forth.

2. The combination of hook X, lever Y, the sliding shouldered bar Z, spring A′, sliding bar B′, and lever C′, applied as and for the purpose set forth.

139,304.—*Saw Sharpening and Setting Machine.*—EDWARD DUFFY, Oakland, Cal.

The segmental file is made adjustable and advances the saw one tooth at every revolution. The bed is capable of adjustment to accommodate itself to different-sized saws. The setting-arms are operated by cams and anticipate the filing operation.

Claim.—1. The file, consisting of the adjustable segments K K secured to the face-plate, and operating substantially as and for the purpose herein described.

2. In combination with the segments K K, the sliding plates M for minute adjustment, substantially as herein described.

3. The movable standards P with their guides T T, and the steadying-pin V for holding and guiding the saw, when made adjustable, substantially as and for the purpose above described.

4. The bed O, with its standards P and the guides T, when made adjustable to or from the file, for the purpose of accommodating the different-sized saws, and for changing the angle at which the file cuts the teeth, substantially as herein described.

5. The oscillating disk W with its adjustable setting-arms X, together with the cams *a* and C, for the purpose of setting the teeth, substantially as herein described.

139,305.—*Treadle-Movement.*—JOHN EVANS, Rosenbayn, N. J. Application filed February 21, 1873.

The slotted spring is so connected with the treadle and the crank pin and piston of a fly-wheel, that the latter must always move forward when turned.

Claim.—The spring F, slotted at the upper end and applied to treadle E and crank-pin C, as and for the purpose described.

139,306.—*Trunk-Catch.*—HENRY C. FABER, Utica, N. Y. Application filed April 19, 1873.

A catch intended to take the place of straps in a trunk, as a re-enforcement to the lock.

Claim.—An improved trunk-catch formed by the combination with each other of the top plate A provided with a tongue, *a'*, having a slot formed in it, the bottom plate B having a wide transverse slot formed in it, the hinged bar C c^1 c^2, the spring D, the latch E, and spring F, substantially as herein shown and described.

139,307.—*Hatchway.*—GEORGE FOLLETT and ADOLPHUS BRUMMEL, Brooklyn, N. Y. Application filed May 5, 1873.

Toothed racks are attached to the upper and under sides of the elevator-carriage, which engage with pinions operating upon racks attached to the horizontally-sliding hatches, so as to separate them upon the approach of the elevator, and close them behind it after its passage.

Claim.—The combination, with an elevator-carriage and the hatchway-doors, of one or more toothed wheels on opposite sides of the hatchway gearing with the sliding door (or doors) by one or more toothed racks, and a toothed rack or racks on each end of the elevator carriage engaging with said wheel or wheels in advance of the carriage and opening the doors therefor; also engaging said rack or racks after the elevator has passed, and closing the doors both in the up and down movements, substantially as specified.

139,308.—*Wrapper for Bottles.*—ALLAN E. FRANCIS, Ravenna, Ohio. Application filed February 7, 1873.

Claim.—The wrapper for bottles, constructed smaller at the top than at the bottom, all the sides being formed of one piece of paper, closed at the top by the adhesive top piece, and open at the bottom, with an adhesive part, D, for closing the bottom, substantially as and for the purpose herein set forth.

139,309.—*Harrow.*—JAMES FRANKLIN GAZLEY, Canyonville, Oregon. Application filed December 27, 1872.

An axletree supported upon wheels, has mounted upon it the driver's seat, and levers for lifting the harrow from the ground. The forward end of the harrow-frame is swiveled to the under side of the tongue, the rear end containing the harrow-teeth being free.

Claim.—1. The swiveled tongue A and harrow-head C, in combination with the main tongue B.

2. The swiveled tongue A and head C, in combination with the spring G, lever J, and stud H, substantially as described, and for the purposes set forth.

139,310.—*Beer-Cooler.*—JACOB GIMLICH, Pittsfield, Mass. Application filed April 19, 1873.

The ice-chamber has openings which permit the cold air to circulate around the cock. The drop water enters the lower tube, passing through the cask, escaping by the upper. The beer is forced up into the cooling-cask. Any compressed air or gas will rise into the air-chamber, from whence it can escape by a blow-off cock.

Claim.—The cask C, provided with three or more wooden tubes F, the flexible end pipes G, the inlet-pipe D, the outlet pipe or faucet E, the pipe H, and the air-chamber J, in combination with the ice-box A, and ice-chamber B, substantially as herein shown and described, and for the purpose set forth.

139,311.—*Bracelet.*—JOSEPH W. GRANT and CHARLES H. COOK, Providence, R. I. Application filed February 13, 1873.

The lower portion or rear strap is made of thinner, and may be of less valuable material than the front portion.

Claim.—As a new article of manufacture, a bracelet consisting of the box-front A and the rear strap-piece B, constructed and combined substantially as described, for the purpose set forth.

139,312.—*Envelope-Opener.*—GLOVER S. HASTINGS, Jr., Plainville, Conn., assignor to himself and EDWARD N. PIERCE, same place. Application filed November 20, 1872.

Part of the handle just opposite the point of the blade is grooved or cut away, so that the ordinary knife-blade when closed may be used to open envelopes.

Claim.—A new and improved article of manufacture, a pocket-knife, having the portion immediately opposite the point of one or more of its blades, grooved or cut away to a distance a little below said point, when said cut-away potion is arranged with an otherwise ordinary pocket-knife handle and its folding-blade, in the manner and for the purpose described.

139,313.—*Washing-Machine.*—ELIAS M. HODGSON, Stanhope, N. J. Application filed April 19, 1873.

The washing-machine is constructed with its tub in ordinary form, with the inside of the cover corrugated, which, by turning over, may be used for a wash-board. The beaters, one which is rigidly attached to the inside at an angle, by which the working-beater, by being suspended by a pivot near its upper end, is brought in contact by the operation of the connecting-levers. The beaters are formed with projecting faces, and with openings for the free circulation of water through it.

Claim.—The combination of the vibrating presser-board H with the fixed board G, each provided with a series of rows of holes, blocks, and grooves, as specified, and so arranged relatively that when the boards come together the said rows of blocks and grooves will be opposite each other, as set forth.

139,314.—*Apparatus for Separating Quicksilver from Amalgams.*—MARCUS B. HOWARD, Ellsworth, Nev. Application filed January 24, 1873.

Claim.—1. The upper and lower pipes C E connected at their outer ends with the vertical discharge-pipe D, when attached to the retort B, in the manner and for the purpose above described.

2. The upper and lower pipes C E and vertical discharge-pipe D, in combination with one or more water-jackets, G, substantially as and for the purpose above described.

139,315.—*Medical Compound or Ointment.*—JOHN G. HUCKS, San Francisco, Cal. Application filed March 28, 1873.

The destructive distillation of resins obtained from the different species of pine trees, of which is distilled his No 1 and No. 2 oils, and to which is added pure fresh lard, sifted hydrate of lime, distilled water, alcohol, fresh palm oil, Canadian balsam; grind and add the following ingredients: Alum, gum camphor, sulphur, concentrated potash.

Claim.—1. Crude or refined resin-oils as a base, in combination with healing drugs or medicines to form an ointment, substantially as set forth.

2. A healing ointment, composed of the ingredients above enumerated, mixed and compounded in the proportions specified.

139,316.—*Wardrobe-Bedstead.*—EDWARD HUNTER and DANIEL VAN SICKLE, Chicago, Ill. Application filed November 16, 1872.

The two hinged parts of the bedstead are locked together by means of a square tenon on the inside of one end of the swinging leg which enters into a square mortise on the side of one of the main parts, and by a dowel-pin on the inside of the other end of the leg, which enters into a corresponding hole in the other part of the bedstead.

Claim.—The clamping-screw *l*, foot-legs *i* provided with the tenon *j* and dowel-pin *m*, in combination with the two hinged and folding parts A and B of the bedstead, as and for the purpose specified.

139,317.—*Hub-Band for the Wheels of Vehicles.*—GEORGE H JOHNSON, Bridgeport, Conn. Application filed March 29, 1873.

The outer end of the band is covered by a wide collar of bright metal.

Claim.—A soft-metal trimming-band for wheel-hubs, constructed with the main part B, the collar C, and the flange F turned over so as to form a groove, G, as and for the purpose described.

139,318.—*Oil-Can.*—HENRY KELLER, Sauk Centre, Minn. Application filed April 5, 1873.

Claim.—A sheet-metal can, consisting of a horizontal cylinder, A, with legs B, filling-tube C, spout D, and handles arranged thereon, substantially as specified.

139,319.—*Coloring-Metal.*—JOSEPH KIETZ, West Meriden, Conn., assignor to himself and P. J. CLARK, same place.—Application filed April 5, 1873.

The iron is blackened and coated with a sizing, when pulverized black lead is applied and the surface brushed until polished; the lead is now lacquered and the iron heated.

Claim.—The process of coloring metal by sizing it, covering the size with pulverized black lead, polishing the lead, lacquering the polished lead surface, and heating the whole, all substantially as specified.

139,320.—*Cultivator.*—PHILIP LONG, Penn Township, near Junction Railroad Station, county of Lancaster, Penn., assignor of one half his right to JOHN M. PHILIPS, same place. Application filed January 25, 1873.

The side beams of the cultivator are pivoted at the front by a plate-hinge, which adds strength to the beam. The large number of teeth or shovels are narrow and pointed, set upon long standards for the purpose of deeply pulverizing the entire soil through which it passes.

Claim.—The above-described three-beam cultivator, with long standards passing through inserted bush-plates, and narrow pointed shovels; the frame adjustable as to width at the front by means of the peculiar hinge and plate, with the curved slotted-bar and set-screws at the rear, all combined and arranged substantially as set forth.

139,321.—*Gaiter.*—WILLIAM LOVE, McConnellsville, Ohio. Application filed April 1, 1873.

The elastic is inserted forward of the ankle-bone and to the rear of the median line of the front, to escape wear and give an easy fit, the leather front and rear receiving the principal wear.

Claim.—A shoe or gaiter, made substantially as described, with the elastic gores inserted forward of the ankle-bone.

139,322.—*Car-Axle Box.*—HENRY E. MARCHAND, Pittsburg, Penn. Application filed April 25, 1873.

The cover is curved, and slides in grooves in the ends of the box.

Claim.—1. The curved lid B of the journal-box, having one or more recesses or cavities, H, in combination with a supporting and locking pin, E, substantially as described, for the purpose specified.

2. The curved lid B of the journal-box, having the stop D, substantially as and for the purpose specified.

139,323.—*Breech-Loading Fire-Arm.*—AGOSTINO MARELLI, Milan, Italy, assignor of one-half his right to SANTE MERELLI, same place. Application filed February 27, 1873.

The breech and lock mechanism are attached to the guard-lever and move with it when thrown down to open the breech for loading; this movement also serving to cock the hammer so that the gun is ready for firing as soon as the lever is brought back to its position.

Claim.—1. The hammer Q provided with projection *r*, and pivoted to the guard-lever *a*, in combination with the stationary appendage *g'*, the parts being so arranged that the dropping of the guard-lever will cock the hammer, substantially as described.

2. The hammer Q pivoted to the guard-lever, and having a conical nose fitting a correspondingly-shaped opening in the recessed sliding breech-block R, the breech-block, the tooth *c* of the guard-lever, the stationary appendage *g'*, and extractor *i k l*, the parts being constructed and combined substantially in the manner described, so that the dropping of the guard-lever will simultaneously cock the hammer, open the breech, and extract the cartridge-shell.

3. The combination of the hammer Q, detent of trigger T, spiral spring S, and trigger guard-lever having a chamber formed in the upper portion of the same, the parts being constructed and arranged substantially as described.

4. The channel L in the butt end of the fire-arm to lead and collect the shells of the exhausted cartridges, as described and shown.

139,324.—*Metallic Gutter.*—THOMAS MCCLUNIE, Hartford, Conn. Application filed October 7, 1872.

Claim.—An improved manufacture of metal curb or gutter *a*, held in place or position in the ground by supports or rods *d* attached or secured to base-timber *e*, substantially as and for the purpose set forth.

139,325.—*Carriage-Spring.*—THOMAS MURGATROYD, Hiawatha, Kansas. Application filed February 15, 1873.

Brace springs are secured at each end to the main springs by means of buckles and pins.

Claim.—1. A horizontal brace-spring, D, applied to and between each pair of main springs, B B, for the purpose described.

2. The means for connecting the brace-springs D and the main springs B, consisting of the buckles *f h*, pins *g*, and bends *i*, as set forth.

3. The brace-spring D, cross piece E, vertical rods K, brace-rods *l*, and rests *e*, combined with springs B B, as and for the purpose specified.

139,326.—*Ribbon-Block.*—WILLIAM OBRIST, New York, N. Y. Application filed April 26, 1873.

The ribbon-block is a tube made of layers of paper glued together, and having wooden heads at the ends.

Claim.—The ribbon-block, consisting of paper tube A, produced as set forth, and wooden side-disks B, substantially as and for the purpose described.

139,327.—*Shoe-Nail.*—JOHN F. PAINE, Providence, R. I., assignor, by mesne assignments, of one-half his right to ROBERT MORROW, same place. Application filed September 28, 1872.

Nails cut in the usual way are case hardened by being packed in bone-dust, heated in a charcoal fire, and while still hot, immersed in cold water.

Claim.—As a new article of manufacture, carbonized shoe-nails, formed of iron and hardened or steelified, substantially as specified.

139,328.—*Loom for Weaving Piled Fabrics.*—EDWARD PICKFORD, New Brunswick, N. J. Application filed April 19, 1873.

From the side of the hook of the withdrawing-instrument a guard-piece is so extended that the head of the wire is prevented from shifting laterally out of position, and the necessity of making the head thicker than the wire is avoided. To secure the head still more perfectly the face of the hook and the corresponding face of the head are so beveled that the parts are locked together during the act of withdrawal.

Claim.—1. The combination of the guard E with the wire-puller C and its hook, D, substantially as specified.

2. The hook D provided with a beveled face, and the plates or wire-heads provided with beveled shoulders F, in combination with the said guard E, substantially as specified.

139,329.—*Child's Photograph Chair.*—MARK H. PRESCOTT, Jr., La Crosse, Wis. Application filed April 26, 1873.

A child's chair is provided with an adjustable head-rest and an adjustable waist-holder.

Claim.—The combination of an adjustable head-rest, A, with a chair having a waist-holder, I *j*, substantially as specified.

139,330.—*Cross Paddle Propeller-Fan for Ventilating Mines.*—DANIEL RISINGER, Mahanoy City, Pa. Application filed April 14, 1873.

A cylindrical casing supported in a horizontal position by any suitable means. Around the interior of this casing are secured in a diagonal or winding position a series of paddles, which terminate at the front end of the casing close up to a ring or flange projecting inward from the casing, and of the same width as said paddles. On the front end are secured a series of pockets, and at the rear end of the casing is inserted a ring with a series of wind scoops, which stand in about the same position as the outer stationary wind-paddles.

Claim.—The combination of the casing A, ring or flange C, paddles B B, air-pockets D D, scoops E E, and revolving paddles G G, all constructed and arranged substantially as and for the purposes herein set forth.

139,331.—*Machine for Finishing Horseshoe-Nails.*—ROBERT ROSS, Vergennes, Vt., assignor to NATIONAL HORSE-NAIL COMPANY, same place. Application filed January 6, 1873.

The nail-blank is fed along by means of a screw, which is adjustable longitudinally, and as the threads of the same gradually increase in width the nails become separated when in front of the dies. The first set of dies bevel the nail, and then the nail runs off the screw and is held against its end by suitable supports in front of two pairs of side-trimming dies, when two punches advance and drive the nail through said dies, which complete it.

Claim.—1. The hollow screws C E and nut D, combined with feed-screw A, swiveled therein, and held in a bearing, F, as and for the purpose described.

2. The feed-screw A, having the threads widened as they approach die G, as and for the purpose set forth.

3. The spring I, combined with die G and screw A, as described, to hold down the nail while being pointed by the hammer H.

4. The guard W', block W, head-block X, and inclined holder Y, combined with the screw, as described, to hold the nail in its proper position in front of dies K L.

5. The shaft, having wrist-pin working in block Q, that moves in curved slot P, in combination with slide O, as and for the purpose described.

6. The receiver *f*, combined with trimming-dies K L, as and for the purpose specified.

139,332.—*Machine for Swaging and Trimming the Points of Horseshoe Nails.*—ROBERT ROSS, Vergennes, Vt., assignor to NATIONAL HORSE-NAIL COMPANY, same place. Application filed July 27, 1872.

The blank nail is fed along, point downward, to the dies, by the threads of a rotating screw. The first pair of dies bevels the point as the blank moves along past them. Finally the blank drops into a pair of retaining-dies, which take hold upon its edges and support it in front of a pair of female trimming-dies until the male trimming-die advances and forces it through the female dies and from the machine.

Claim.—1. The combination of the feed-screw A, bar B, and the point-beveling dies C E, substantially as specified.

2. The combination, with the above, of the weighted lever G, substantially as specified.

3. The combination, with said feed-screw and bar, of the holding-dies I K, and point-finishing dies H L, substantially as specified.

4. The arrangement of the dies H' I K on a supporting-block pivoted to the machine, substantially as specified.

5. The driving-shaft S, arranged in its bearings and with the stock P to disconnect from the latter by sliding therefrom, as described, and the combination, with said shaft and one of its bearings, of the latch W and collar V, substantially as specified.

6. The feed-screw A and bar B, arranged to be adjusted relatively to the point-beveling dies, substantially as specified.

7. The combination of the guard M with the holding and point-finishing dies, substantially as specified.

139,333.—*Varnish or Bronze Coating for Articles of Plaster, Iron, Wood, &c.*—CHARLES ROTTER, East Birmingham, Pa. Application filed May 5, 1873.

Claim.—The bronze varnish obtained by combining mica silver or aurosit with collodion in the proportion described, in connection with the different colors of aniline, substantially as and for the purpose described.

139,334.—*Beer-Cask.*—MICHAEL SEITZ, Williamsburg, N. Y. Application filed April 26, 1873.

A rod having a head on one end and a nut on the other, and screw-threads of the same pitch and running in the same direction on both ends, passes longitudinally through the cask for strengthening the heads of the same.

Claim.—The combination of the rod D having a head upon one end, a nut upon the other end, and screw-threads of the same pitch and running in the same direction upon both ends, with the cross-bars C and heads B of the cask A B, substantially as herein shown and described, and for the purpose set forth.

139,335.—*Compound for Treating Iron, Steel, &c.*—WILLIAM A. SKINNER and JOHN E. GOODSON, Callao, Mo. Application filed May 5, 1873.

Pulverized borax, two parts; muriate of ammonia, two and one-half parts; nitrate of potash, one part; prussiate of iron, one-quarter of one pint, (one gill.)

Claim.—1. A compound, substantially as herein described, for use in the fire, but not in direct contact with the metal operated upon, as specified.

2. The combination of the ingredients described, or their equivalents, in substantially the proportions specified.

139,336.—*Reach for Bob-Sled.*—JOHN W. SMITH, Battle Creek, Mich. Application filed March 14, 1873.

The reach has pivoted to it a curved iron bar, through which the king-bolt is inserted. This is intended to allow the bobs to move independently, and relieves the bolster of strain.

Claim.—In a reach for bob-sleds, the bent arm A, plate D, straps I I, pin P, and arm or reach B, combined substantially as specified.

139,337.—*Mode of Fastening Diamonds into Blocks or Saw-Teeth.*—TERRENC SMITH, New York, N. Y., assignor of one-half his right to RICHARD NEVILLE, same place. Application filed April 12, 1873.

The diamonds are inserted, by means of screw-clamps, into holes drilled in the block, which is then brought to a cherry-heat. Part of the metal around the diamond is then filed away. The block is reheated and the metal hammered around the diamond, and filed to the proper shape.

Claim.—The manner and process of fastening diamonds into blocks, saw-teeth, or saw-blades, substantially as and for the purpose hereinbefore described.

139,338.—*Mortar Mixer and Grinder.*—EDWARD SPAULDING, Keene, N. H. Application filed April 12, 1873.

A series of rotary mixers suspended, in a mixing-vat, from a reciprocating carriage; a vat adjoining the mixing-vat, at one end of which is a grinding mechanism, into which lime and sand, after being mixed, are discharged.

Claim.—1. The combination of a series of reciprocating and revolving mixers, B, with a vat, as described.

2. The combination, with mixing-vat A and grinders G H, of the intermediate vat F, arranged to receive the mixing material and allow it to be fed therefrom to the grinders in the manner described.

3. The combination of rotary grinder H, pinion M, wheel O, crank-shaft N, connecting-rods Q, reciprocating carriage C, stationary racks D, wheels E, and mixers P, as described.

4. The adjustable stationary grinder H, presser J, adjusting-screw K, and rotary grinder, combined and arranged substantially as described.

139,339.—*Steam and Other Valves.*—E. FRANK SPAULDING, Cambridgeport, Mass. Application filed November 14, 1872.

A supplemental screw and nut is employed to cause one portion of the valve to move in advance of and close before the other.

Claim.—The above-described improved stop-valve, consisting of the case A, the stem B provided with the annular shoulder *e*, the screw *e'*, and nut *f*, arranged as described, the valve-plates or disks G G' furnished with ears *g* A, disposed thereon as shown, and the wedge *c*, formed and applied to the disks as specified, the whole being combined and arranged for conjoint action, as set forth.

139,340.—*Corn-Planter.*—DANIEL F. TAFT, New Bedford, Mass. Application filed January 25, 1873.

The machine is borne upon a pair of wheels. The seed-box is attached to the axletree upon the rear, and extends below. The furrow-openers with the covering-rollers, are articulated to the lower end of the seed-box, and the seed-valve is worked by a cam on the covering-wheel.

Claim.—The hinged spout E and wheel I, combined with piece J having seed-slide and bow-spring, as and for the purpose described.

139,341.—*Book-Rest.*—LIDA TARRING, Washington, D. C. Application filed May 19, 1873.

The rest is pivoted at its ends between two arms that may be pivoted on the top or sides of a desk.

Claim.—The combination of the arms *a*, thumb-screws *c*, and the book-holder B, as and for the purpose specified.

139,342.—*Washing-Machine.*—SYLVESTER J. TAYLOR, Rome, N. Y. Application filed February 5, 1873.

A washing-machine constructed with its upper rubber attached to the upright shaft by a braced spider, and pivoted to it, and rests upon a spiral spring surrounding it. To the face of the rubbers the arms or projections are attached by staples, by which they adjust to the different forms of clothes being washed.

Claim.—The rubbing-board *e* adjustably attached to standard *d*, and provided with rocking-rubbers *g g*, in combination with rocking-rubbers *b*, substantially as shown and described.

139,343.—*Last and Shoe Holder.*—BENJAMIN J. TAYMAN, Philadelphia, Pa. Application filed April 17, 1873.

The shoe is secured upon the last by a circular spur, which takes hold upon the lining at the heel, the spur being locked to prevent its turning while the shoe remains upon the last. The cutter-stock is provided with a knife and welt-trimmer, each made adjustable, and provided with suitable guides and gages for protecting the upper, and to limit the depth of cut.

Claim.—1. The last-holder A having pins C C and locking-bolt D, provided with a cross-pin, *f*, and lever *e*, in combination with the plate *e'* of the last B, having holes *d d* and *g* and inclines A A, substantially in the manner and for the purpose above described.

2. The combination of the circular spur F and the rod H with the heel of the last for securing the shoe thereon, the rod having inclines *i* which engage with inclines *i'* of the plate *e'*, substantially as described.

3. The combination and arrangement of the knife J, welt-trimmer K, gage L, guide M, guard N, levers P and Q, and stock I, substantially as and for the purpose set forth.

4. The combination of the adjustable collar *y*, stop *z*, rod V', and casting W having a socket, *p*, and pin *x*, substantially in the manner and for the purpose described.

139,344.—*Water-Wheel.*—SAMUEL T. TEACHOUT, Troy, N. Y., assignor to himself and JOEL C. PECK, same place. Application filed July 20, 1872.

The buckets of the wheel have a double curvature, and are attached to a flange, which is cast with them, and which terminates a little above the flaring part in an annular recess in the inner edge of the lower guide-rim to leave space for the water to enter the buckets.

Claim.—1. The guide rim M provided with annular recess L, arranged as and for the purpose described.

2. The combination of the said bucket E F and the flaring flanges D' K, substantially as specified.

139,345.—*Rotary Churn.*—GEORGE WALKER, Whitley's Point, Ill. Application filed February 8, 1873.

The dasher-shaft is vertical and carries vertical flanges, flat on their forward sides and inclined rearward; also, horizontal arms in series, so arranged that the uppermost arms move in advance to induce the fluid to pass between and beneath said arms.

Claim.—A dasher-shaft having vertical ribs and reversely-inclined arms, as and for the purpose described.

139,346.—*Automatic Vent-Opener for Air-Springs.*—JOHN WALTHER, Brooklyn, E. D., N. Y., assignor to CALVERT B. COTTRELL, Westerly, R. I. Application filed February 8, 1873.

A conical valve in an air-chamber, secured to the end of the hollow piston-rod of an air-spring cylinder, is automatically opened by either gravitation or suction of the piston, and closed by the air compressed to form the spring without intervention of other mechanism. To be used in printing-presses.

Claim.—The conical valve G decreasing from its upper working-face downwardly, in combination with a superposed seat having vent F, an air-chamber, D, and a hollow piston-rod, E, as and for the purpose described.

139,347.—*Liquid-Sealed Valve.*—LOUIS WINTERBAUER, New York, N. Y. Application filed February 8, 1873.

Upon drawing liquid from the cask, air enters bent tube, and, raising the weighted flap-valve, passes through liquid in the case, and, by flexible pipe and hollow plug, is conveyed to said cask.

Claim.—The case C *c'* having flap-valve and open tube D, the flexible pipe B, and the hollow plug A, combined and applied to a cask of fermented liquor, substantially as and for the purpose described.

139,348.—*Carriage-Spring.*—THOMAS H. WOOD, New York, N. Y., assignor to J. B. BREWSTER & CO., same place. Application filed January 6, 1873.

The body is supported by upwardly-bent springs suspended between the two side bars, which in turn are supported by downwardly-bent end springs which are secured to the rear axle and front bolster.

Claim.—A frame, consisting of the longitudinal side bars F F, downwardly-bowed end springs E E, and upwardly-bowed middle springs G G, constructed, arranged, and applied as and for the purpose described.

139,349.—*Wash-Boiler.*—JOSEPH ADAMS, Newark, assignor to himself and O. H. FRENIER, Granville, Ohio. Application filed May 14, 1873.

A wash-boiler, constructed with an oval or convex false bottom having attached to the supporting-flange side pipes or conductors on its inside, with openings at each end, over which is fitted a perforated cover with conducting perforated pipes for water and steam.

Claim.—1. A top convexed false bottom, B, constructed with subjacent channel-ways b^2 b^2, open on top to communicate with surface *b*, and open at each end to discharge water into the steam-generating chamber C, as shown and described.

2. The perforated clothes-shelf D, having the holes *d d*, combined, as described, with a false bottom, B, having the vertical pipes b^1 b^1, so that the former will fit over the latter, and be held in the manner set forth.

139,350.—*Cutter for Sewing-Machines.*—LESTER H. ALLEN, Farmington, N. H. Application filed May 17, 1873.

The knife cuts the material parallel with seam being sewed. The presser beside the needle-hole has a slot for the passage of the knife, and the former bears on and holds the material at all points about the portion being cut, thereby preventing it from displacement under the action of the knife.

Claim.—A presser-foot, provided with a needle-hole and an inclosed slot for the reception of a trimming-knife, in combination with a reciprocating knife attached to the needle-bar.

139,351.—*Printers' Quoin.*—CHAUNCEY W. AMES, New York, N. Y. Application filed August 9, 1872.

The plates are spread apart by wedges operated by right and left hand screws.

Claim.—The side plates A A', in combination with the wedges B B' and the right and left hand screw and nut D, substantially in the manner and for the purposes set forth.

139,352.—*Gas-Burner.*—BERNHARD ANDREAE, Frankfort-on-the-Main, Germany. Application filed January 8, 1873.

The illuminating gas is conducted through the interior pipe and oxygen through the exterior. A perforated adjustable cap covers the two pipes, serving to govern the size of the flame and the direction of the flow of oxygen.

Claim.—A burner or tip, F, provided with a flange, *e*, having incisions *e*, and attached to a central pipe, D, surrounded by a concentric pipe, E, in combination with a cap, J, fitted over the external pipe E, substantially in the manner and for the purpose hereinbefore set forth.

139,353.—*Eye-Glass.*—ARTHUR D. ANSELL, Hartford, Conn., assignor to LAZARUS, MOSES & CO., New York, N. Y. Application filed February 17, 1872.

The nose piece or bridge is connected with the glass or sight frames by a recurved spring on either side, attached by its extremity so as to leave the side clasps for the nose separated from the eye-glasses.

Claim.—The re-enforcing suspension-springs B B, attached to glass-frames at one end and to bow-spring at the other, as and for the purpose described.

139,354.—*Machine for Molding Boot and Shoe Bottoms.*—STEPHEN W. BALDWIN, Yonkers, N. Y. Application filed August 8, 1871.

Claim.—1. A die-block and an edge-forming mold, operating simultaneously to compress and compact together between them the layers of the blank, and to form the edges thereof to shape, by combined vertical and lateral pressure, substantially as described.

2. An adjustable edge-forming mold combined with a die-block to compress and compact together the layers of the sole-blank, and to form the edges thereof to shape, by combined vertical and lateral pressure, substantially as described.

3. An edge and sole forming mold composed of parts adapted to move to and from each other laterally, for the purpose of compressing the sole-blank laterally and holding it in place while subjected to vertical pressure, substantially as described.

4. A yielding die-block in combination with an adjustable edge-forming mold, substantially as described.

5. The piercers or awls combined with a yielding die-block and an adjustable edge-forming mold, substantially as described.

6. The adjustable incline in combination with the adjustable edge-forming mold, substantially as described.

139,355.—*Thrashing-Machine.*—ISAAC T. BARTON, Union City, Mich. Application filed May 10, 1873.

The blast created by the rapid revolutions of the beater-fans more thoroughly separates the unthrashed grain from the straw.

Claim.—1. The series of fans F, arranged as herein described, to conduct the straw from the thrashing-cylinder, and constructed with flat radial wings to produce a current of air beneath the straw to assist in separating the grain, as explained.

2. The combination of the beater-fans F, constructed, as described, with the thrashing-cylinder B, grain-carrier L, and winnowing apparatus D E S, all arranged to operate substantially as and for the purposes set forth.

139,356.—*Puddler's Ball Roller.*—ROYAL M. BASSETT, Birmingham, Conn. Application filed March 21, 1873.

Two segmental lugs on the lower dished surface of the roll interlock with two corresponding lugs on the surface of the plate, and two segmental lugs on the shaft interlock with two similar lugs on the plate projecting from the wall of the hole.

Claim.—The combination of the shaft, roll, and plate by means of the flanges, lugs, and recesses described, and in the manner shown.

139,357.—*Piston-Valve for Steam-Engine.*—ALEXANDER BAUMANN, London, England. Application filed February 14, 1873.

The steam is cut off from the main cylinder, before the end of stroke, by detached leading valves, one at each end of the main cylinder, and an intermediate one, all moved by the pressure of the steam that fills the main cylinder at or near the completion of each stroke. The piston-valves cut off the exhaust of the main cylinder before the end of each stroke, and form a cushion which checks the momentum of the main piston. The outer piston-disks are a little smaller in diameter than the middle ones, to allow the steam to operate them.

Claim.—1. The main cylinder G, provided with exhaust ports b^3 c^3 arranged therein at a short distance from each end, as described, so that the piston will cut off the exhaust-steam before reaching the end of its throw, and thereby form a cushion for itself at each end of the cylinder.

2. The automatic valve mechanism, consisting of the valves A B C constructed and arranged in cylinders D E F, connected with one another and with the main cylinder G, as and for the purpose set forth.

139,358.—*Machine for Rolling Blooms.*—GEORGE W. BILLINGS, Chicago, Ill. Application filed June 29, 1872.

A set of three-high rolls, each divided by collars into four spaces, the middle roll cogged in all of its spaces, and the top and bottom roll cogged in one space each.

Claim.—The combination of the three welding-rollers *d*, *e*, and *f*, each of which is divided by bosses *g* into spaces whereof the cogged spaces of the upper roller *d* are the same in diameter as the respective corresponding or opposite spaces of the middle roller *e*, and the cogged spaces of the lower roller *f* are the same in diameter as the respective corresponding cogged spaces of the middle roller *e*, so that the pile can be passed back and forth between the rollers and thoroughly welded without material elongation of the pile, substantially as set forth.

139,359.—*Process of Manufacturing Rolled Iron.*—GEORGE W. BILLINGS, Chicago, Ill. Application filed August 12, 1872.

To dispense with the formation of muck-bars, and the cutting, piling, and heating of the same, a set of three-high cogged-rolls are used, which takes the bloom as it emerges from the squeezers and subjects it to an operation of kneading, that, without materially elongating it, expels the cinders and fits it for immediate conversion into merchant or other bar.

Claim.—The described process of working puddled or scrap-billets into merchant bar-iron without cutting and repiling the iron, substantially as set forth.

139,360.—*Rotary Printing-Press.*—SAMUEL H. BINGHAM, Philadelphia, Pa., assignor to himself, EDWARD B BINGHAM, of NEWARK, N. J., GEORGE W. VAN ALLEN, New York City, and WILLIAM N. STONE, Philadelphia, Pa. Application filed January 30, 1873.

Claim.—The combination with each other of two lithographic or chemically-prepared printing-cylinders A B, which are so arranged in one frame as to constitute pressure-cylinders for each other, for printing with their smooth and unengraved surfaces different or like matter upon opposite sides of one or more sheets, substantially as specified.

139,361.—*Manufacture of Joint for Bracelets.*—JAMES B. BLACK, Providence, R. I., assignor to A. O. BAKER, same place. Application filed March 29, 1873.

A strip is rolled out and cut into pieces of the proper length for a joint or hinge. To the groove in the center of one piece is soldered a single section of tubing, and to another piece a section at each end thereof, as shown in Fig. 4. The two pieces are then put together by a rivet running through the sections.

Claim.—The method herein described of forming a joint for bracelets, consisting in the rolling of metal into suitable strips of the form shown, and the subsequent cutting and soldering thereto sections of tubing, in the manner substantially as specified.

139,362.—*Dumping-Car.*—THEODOR BOOTSMANN, New Brighton, N. Y. Application filed March 28, 1873.

The truck is constructed with a double set of longitudinal side timbers, between which are secured the axle-boxes. Fenders are secured to these timbers and the bolster. The body is supported by rockers, which have their bearings upon the bolster.

Claim.—1. The combination of longitudinal timbers *a a*, having cross-timbers *b* clamped between them, with a central longitudinal beam, *g*, fenders *i*, and sleepers *f*, connected together by screw-bolts A, substantially as set forth.

2. The lever-catches *t*, mounted on rods *u*, which extend transversely under the bottom of the box C, and carry stops *v*, in combination with chains *r* and with the swinging doors *p* of a box, C, supported by rockers *q*, substantially as set forth.

139,363.—*Buckle for Hanging Reciprocating Saws.*—HENRY W. BROWN, Warren, Pa. Application filed November 21, 1870.

The lower saw-buckle is pivoted to the pitman-connections in such a manner as to afford a ready means of ranging the saw.

Claim.—1. A muley-saw buckle or connection composed of the following parts, namely, a stirrup provided with a bearing, B B', adapted to be mounted on a sliding cross-head or on a pitman, and to vibrate thereon, and a clamp in which the saw is secured, this clamp being attached to the stirrup by a pivotal connection, as shown, or its equivalent, whereby the clamp can be adjusted upon the stirrup for ranging the saw, substantially as described.

2. In combination with the stirrup A and pivoted clamp D, in which the saw is secured, the screw H, or its equivalent, for ranging the saw, substantially as described.

139,364.—*Carriage-Protector.*—GEORGE B. BROWN, Newburg, N. Y., assignor to himself and LEWIS J. BAZZONI, same place. Application filed April 5, 1873.

To the under side of the metallic plate is attached a rubber pad intended to scrape the mud from the wheel. The metallic plate will then deflect the mud so that it may not be thrown upon the carriage.

Claim.—The combination of the plate E, rubber F, and the curved arm G, having a bifurcated piece, H, which is bolted to the end of spring, as and for the purpose set forth.

139,365.—*Printing-Type.*—DAVID W. BRUCE, New York, N. Y. Application filed March 17, 1873.

The figures are cast upon a block equal to two-thirds of an "em." The line separating the numerator from the denominator of fractions is omitted to enable the face of the figures to be increased in size.

Claim.—1. Figures and fractions in printing-type cast upon a block equal to two-thirds the width of the body of the "em" or standard type.

2. Fractional figures in printing-type, constructed without a dividing-line without regard to width of body.

139,366.—*Shoulder-Brace.*—NELSON C. BURNAP, Argusville, N. Y. Application filed January 2, 1873.

Claim.—A shoulder-brace, in which are combined a pad, A, provided at its opposite ends with tubes D, inclosing spiral or other springs E, and straps F with their ends G passing through said springs and retained therein, substantially as and for the purpose herein set forth.

139,367.—*Corn-Harvester.*—JAMES CARROTHERS and WILLIAMSON CARROTHERS, Newton, Iowa. Application filed April 11, 1873.

A series of gathering fingers or knives, with washers interposed to preserve uniformity in the spaces, are vibrated vertically by eccentrics placed on the pivoting-shaft, so disposed that adjacent fingers simultaneously move in opposite directions.

Claim.—1. The combination of the knife A, eccentric B placed on the shaft C, and the washers D D, all constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the knives A A, operated by eccentrics

B B, and provided with slots *b b*, and the shaft *d* passing through said slots, as and for the purposes herein set forth.

139,368.—*Sewing-Machine.*—RUFUS CHANDLER, New York, N. Y. Application filed April 1, 1873.

A screw with a cam-projection at one end is secured to the lower shaft. A plate whose normal position is against the gage, it being retained there by a spiral spring, has a projecting rib that enters the screw-thread, and, as the screw is rotated, moves the plate back until the plate comes over the cam, when it is elevated, and with it a rod which is connected with the presser-operating arm. In this way the presser is raised after any desired number of stitches.

Claim.—1. The screw D, plate C, cam G, and spring K, when combined and arranged as and for the purpose set forth.

2. The screw D, cam G, plate C, spring K, rod B, and arm A, when combined and arranged as and for the purpose set forth.

3. The gage F, spring K, screw D, plate C, and cam G, with the thumb-screw E and graduated scale upon the bed-plate of the machine, when combined as and for the purpose set forth.

139,369.—*Turpentine-Tool.*—JOHN G. COBB, Shoe Heel, N. C. Application filed December 12, 1872.

A curved thin blade is attached to a bifurcated shank, and by that secured to a pole or handle.

Claim.—The described double-edged reversible turpentine-scraper, provided with a handle arranged in a plane nearly parallel to that of the blade, as set forth.

139,370.—*Feeder for Quartz-Mills.*—THOMAS A. COCHRANE, Jamestown, Cal. Application filed June 10, 1872.

A hopper is mounted above an endless apron, which moves forward automatically by means of a pawl working in a ratchet, and operated by a projection upon the tappet, so that, upon each drop of the stamp, the pawl is urged forward, and motion thereby imparted to the apron.

Claim.—The hopper A, in combination with the horizontal endless belt or band F, operated automatically by means of the ratchet *g*, adjustable spring-bar H, and tappet I, substantially as and for the purpose above described.

139,371.—*Hobby-Horse Swing.*—JESSE A. CRANDALL, Brooklyn, N. Y. Application filed March 24, 1873.

The middle portion of the horse is fastened securely to the base, and has a cross-bar firmly attached thereto. The cradle is loosely hung to the hoofs of the movable fore and hind quarters, which are in turn pivoted to the ends of said cross-bar.

Claim.—1. The carriage D, connected with the vibrating parts B C of the horses below, and respectively in front and back of the points of suspension of said carriage, whereby it is made to move in a reverse direction to the upper portions of the parts B C, substantially as and for the purpose described.

2. The combination of the central uprights *a a* with the vibrating portions B and C, seat or cradle D, and brace *d*, all arranged to operate in the manner indicated.

139,372.—*Druggist's Scale.*—ALBERT CURANI and CHARLES REINHARDT, Brooklyn, N. Y. Application filed March 29, 1873.

The scale-beam is supported by a rod or stem fitting within a tubular standard, and a set-screw, passing through a slot in the outer tube into the sliding rod, forms a handle for raising and holding the same when the scales are to be used.

Claim.—The screw D and head or nut *d*, in combination with the fulcrum-rod B and longitudinal slot *a'* of the standard A, for the purpose set forth, arranged and constructed substantially as described.

139,373.—*Shears for Cutting Paper.*—WALTER P. DEANE, Canton, Mass. Application filed March 24, 1873.

The socket of the shear is centered on its bearing-box by means of adjustable set-screws.

Claim.—The stationary stud-pin *f*, in combination with the quill *g* and sleeve *k* and set-screws *l*, substantially as described.

139,374.—*Tube-Expander.*—COLLINS W. DEANE, Philadelphia, Pa. Application filed March 11, 1873.

The expander is formed in two parts, one part carrying the projections for forming the rib against the inside of the tube-sheet, while the other portion, having a curved projection, binds the end of the tube. The instrument is turned to different positions when operated.

Claim.—1. A two-part tube-swage, on one portion of which ribs *x x* are combined with a curved projection, *n*, as and for the purpose herein set forth.

2. The within-described tool, consisting of the portion A of the swage with its ribs *x x*, the portion A' with its projections *m* and *y*, and the wedge B, all combined for joint action, as and for the purpose herein set forth.

139,375.—*Machine for Rolling Tobacco.*—DAVID W. DE FOREST, Petersburg, Va., assignor of one-half his right to WELLINGTON M. LEWIS, same place. Application filed October 19, 1872.

One of the rollers is carried in a hinged frame, and, when closed against the other roller, the filler is held in a fold of the endless apron underneath. Another roller beneath imparts motion to the apron, tightened by a tension-roller, and to the inclosed bunch of tobacco, which is thus rolled and pressed into shape. The wrapper is then inserted, the motion of the apron carrying it around the pressed bunch. Sponges are arranged to moisten and clean the apron.

Claim.—1. The adjustable tension-roller E, sliding blocks D D, arms *e e*, screw-rods F F, and connecting gear-rod G, in combination with the apron J, substantially as set forth.

2. A guard, consisting of a plate arranged across the apron and attached to the arms of the hinged or pivoted frame B, substantially as and for the purpose set forth.

3. The combination of sponges K with the endless apron J, substantially as and for the purpose set forth.

4. The hinged frame B, roller with pulley *b*, roller C with pulleys *a' a*, standards A A, roller with pulley *c*, apron J, arms *e e*, sliding blocks D D, tension-roller E, screw-rods F F, and lever-rod G, all constructed and combined substantially in the manner and for the purposes as set forth.

139,376.—*Electric Railway Signal.*—JEAN D. DIGNEY, THEODORE DIGNEY, HENRY LARTIGUE, and HENRY FOREST, Paris, France. Application filed March 20, 1873.

Signal turned in one direction closes one break in an electric circuit, another break in which is completed through a plate fixed near or between the rails and a wire-brush carried by locomotive. This circuit passes a magnet controlling a whistle, so that the signal being turned the whistle is sounded calling engineer's attention thereto.

Claim.—1. The combination, with the movable contact, of the automatic steam-whistle alarm apparatus, constructed and arranged as herein shown and described, said parts being carried by the locomotive, and designed to operate in connection with a fixed contact on the track or road over which the locomotive runs, under the conditions and in the manner herein shown and described.

2. The combination of the electro-magnet, the two levers, their connecting-rod and spring, and the steam-admission valve, the same being arranged together and operated substantially in the manner and for the purposes shown and set forth.

139,377.—*Coffee-Roaster.*—GEORGE W. DODSON, Mitchell, Ind. Application filed March 14, 1873.

Improvement on his patent of April 23, 1872. Two elliptical cases, one inside the other, each with a suitable door or opening in the upper side. The body of the inner case is made of wire-gauze, the ends of flat pieces of metal, and inside are broad inclined wings, which act as stirrers when the inner case is revolved.

Claim.—The combination of the elliptical-shaped cases A A', the shaft D, and the interior screen-case E, provided with door G and inclined wings H H, all constructed substantially as set forth.

139,378.—*Folding-Guide for Sewing-Machines.*—JOHN E. EARLE, New Haven, Conn., assignor to the ELM CITY COMPANY, same place. Application filed March 7, 1873.

The strip of material to be used for trimming is passed through the flat guide-tube; then between the rollers, one of which is flanged and acts to fold the edges of the material at right angles, and then the material passes through the conductor, which acts to fold the edges under and against the main portion of the strip.

Claim.—1. A folding-guide for sewing-machines, consisting of the flanged roll A, and a rolling or other surface, between which and the said roll, by means of the flanges *a*, the edge or edges of the fabric passing between are turned at right angles to the surface to define the width of the finished fold, and the guide-tube C, for the purpose of properly presenting the material to the roll, substantially as set forth.

2. In combination with the flanged roll A, and a rolling or other surface, between which and the said roll the fabric passes, as before described, the conductor D, constructed and arranged relatively to the said roll, substantially as set forth.

139,379.—*Mechanical Movement.*—RUDOLF EICKEMEYER, Yonkers, N. Y. Application filed May 13, 1873.

A radially-vibrating crank-arm is hinged at the end of a rotating shaft, on an axis which is set at right angles to the axial line of the shaft, and it is connected with a longitudinally-reciprocating rod by means of a universal joint, whereby the continuous rotation of the shaft will impart to the rod a smooth and easy reciprocating movement.

Claim.—1. The radially-vibrating crank-arm D, pivoted or hinged to the crank-shaft, substantially as described.

2. The combination, substantially as described, of a crank-shaft, a radially-vibrating crank-arm, a longitudinally-reciprocating rod, and a universal-joint connection, whereby the longitudinal movement of the rod, or the rotation of the shaft, will respectively rotate the shaft, or impart to the rod a longitudinally-reciprocating movement, as and for the purposes specified.

3. The combination of a crank-shaft and a radially-vibrating crank-arm with the adjustable collars fitted to the crank-shaft, in close relation to the bearing, substantially as described, whereby the end strain on the shaft may be borne by the collar, and the wear thereon be compensated, as set forth.

4. The combination of the hinged crank-arm, the ball-headed wrist-pin and its socket, substantially as described.

5. The combination of the vibrating crank-arm with the longitudinally-adjustable hinge-pin, substantially as described.

6. The combination of the bow-shaped crank-arm, the hinge-pin, the sleeve-nut or hollow bolt *f*, substantially as described, whereby the parts may be kept in proper relation with each other and with the crank-head without undue compression on the sides of the crank-arm, as set forth.

7. The socket-connection, constructed in two sections, in combination with the main bolt, hollow bolt, and jam-nut, substantially as described.

8. The combination of the crank-shaft, the crank-arm, and the reciprocating rod, with a socket-connection, which is keyed or fastened to the rod, substantially as described, whereby the rod may be partially rotated during the longitudinal movement, as set forth.

9. The combination of the crank-shaft, the crank-arm, and the reciprocating rod, with a socket-connection, which is loosely mounted on the rod and free to partially rotate thereon, substantially as described, whereby the rod, while being moved longitudinally cannot be rotated by the connection, as set forth.

139,380.—*Neck-Yoke.*—PETER EPLER, Collumsville, assignor of one-half his right to JOHN ZERBE, Limestone township, Pa. Application filed April 12, 1873.

By moving the free end of the spring D from the yoke the martingale or hold-back strap may be placed on the spring, which being released returns to its place and effectually locks the strap upon the neck-yoke.

Claim.—The neck-yoke A having the springs D and *d*, substantially as and for the purpose specified.

139,381.—*Clevis Bar and Hook.*—ROBERT GIBBS, Spring Hill, Mo. Application filed February 19, 1873.

Claim.—1. A clevis-bar having front piece E' with the hook *h*, combined on a plow-beam with the yoke-nut C and screw-rod D, as and for the purpose described.

2. A staple, F, having shank *f* with two reversed hooks at the end and a single pin, *f'*, combined, as and for the purpose set forth.

3 A hook having the shank *f* swiveled in front piece B' of clevis-bar, and combined rigidly with a laterally-adjustable plate, G, as and for the purpose specified.

139,382.—*Machine for Manufacture of Boot and Shoe Heel Blanks.*—CHARLES W. GILDDEN, Lynn, assignor to JAMES W. BROOKS, trustee, Boston, Mass. Application filed May 6, 1873.

A series of molds varying in size are cut in the face of a horizontal rotating wheel. The material from which the heel is to be made is placed in the molds, solidified by a plunger, and as the compressed material is forced down below the lower surface of the mold sufficiently for a lift, a cutter-blade sliding in the plane of the bottom of the wheel is advanced, slicing off a lift-forming portion. When a lift has been cut from each mold, as above described, the several lifts are automatically collected and nails forced through them by the nailing mechanism.

Claim.—1. The die-wheel *d*, follower *i*, piston *p*, plunger *k*, and nail-block *u*, combined and operating substantially as shown and described.

2. In combination with the plunger *k*, the dies *e*, block *u*, and cutter *v*, operating substantially as described.

3. The combination of the plunger *k*, nail-block *u*, cutter *v*, driver-block *h*, and drivers *z*, operating to cut, assemble, and nail the successive lifts, substantially as described.

4. The improved method of making boot and shoe heels, consisting in forming material for the various lifts in successive dies, cutting the respective lifts in succession, and assembling and uniting them by means substantially as described.

139,383.—*Plasterers' Float.*—LOUIS A. GOODELL, New Haven, Conn., assignor to himself and ANDREW J. RAMSDELL, same place. Application filed April 3, 1873.

Claim.—The herein-described improvement in plasterers' floats, consisting of the posts B C having each a hook-shaped foot, and the handle D attached to the said posts, so that by turning the handle the posts may be drawn together or forced from each other, substantially as set forth.

139,384.—*Shuttle-Box Mechanism for Looms.*—ROBERT B. GOODYEAR, Wilmington, Del., assignor of one-half his right to BARTON H. JENKS, Philadelphia, Pa. Application filed December 2, 1872.

To reduce the extent of the box movement, under certain circumstances, in a loom provided with rotating shuttle boxes, the number of steps or gradations on the pattern-wheel, which controls the box-motion, exceeds by one the number of compartments in the series of boxes, and the steps on the actuating levers are made to correspond in number with those on the pattern-wheel. A vertical spring-arm, pivoted on the axis of the lay, is so arranged that, on the back movement of the lay, two of the division-plates of the box series strike curved projections on the upper end of the arm, by which means the boxes are adjusted and held in position.

Claim.—1. A loom in which a rotating shuttle-box is operated by a pattern-wheel or chain through the medium of levers K K' and a chain, and in which there is one more step upon the chain and on each lever than there are compartments in the box, all substantially as and for the purpose described.

2 The combination of a rotating shuttle-box with the adjusting and retaining arm N, arranged and operating substantially as described.

139,385.—*Boots.*—ISAAC HALL, Boston, Mass., assignor to himself and DAMON, THOMAS & LEWIS, same place. Application filed April 16, 1873.

Improvement on patent No. 55,799. The improvement consists in applying a stay-piece on the inside of a boot or shoe made under said patent. The stay is secured between the inner and outer soles and passes over and above the counter, and thus covers and strengthens the back seam.

Claim.—1. In combination with the boot having a foot and leg piece, *c*, and a counter-piece, *d*, cut and united substantially as shown, the protector *f*, extending from the soles *a a*, across the seam *h*, and united to the soles, to the counter, and to the leg and foot-piece, substantially as shown and described.

2. The protector-piece *f*, applied as described, and made as the inwardly-folding flap, to be used in connection with the strap *i*, or equivalent fastening device.

139,386.—*Middlings-Purifier.*—CHARLES M. HARDENBERGH, AMOS L. MINER, and WILLIAM J. FENDER, Minneapolis, Minn. Application filed May 10, 1873.

Middlings fed into the hopper fall upon a revolving cone, from which they are scattered in every direction in the air-cylinder by a current of air that is forced through the tube C'', the light particles of bran, &c., being drawn off by an exhaust-fan, the middlings passing onto a shaker, from which any particles of bran, &c., still adhering to them will be separated and drawn off by the same exhaust-fan, while the middlings will pass through the shaker.

Claim.—1. In a middlings-purifier, the air-cylinder B, having the hopper-shaped bottom, composed of annular reverse conical rings *b*, having air-spaces *b'* between them, in the manner substantially as and for the purposes described.

2. The revolving air-tube C'', having stirrers *c c c*, and conical base *u*, in combination with the receiving-hopper C, having the cylindrical base surrounded by a feed-sleeve, I, to regulate the amount of middlings fed into the machine, substantially as and for the purposes described.

3. The receiving-hopper C, having the cylindrical base and feed-sleeve I, and the air-tube C'' revolving therein when suspended within the exhaust-cylinder B, in the manner substantially as and for the purpose described.

4. In a middlings-purifier, the frame E having a horizontal or nearly horizontal reciprocating movement, and the bolt-cloth frame E within and reciprocating therewith, and having a perpendicular jarring movement independently from frame E, substantially as and for the purpose described.

5. The combination of the revolving-cams *g'''*, pivoted levers F and F', adjustable lugs H, and springs *h'*, with the bolt-cloth frame E', and jar-plates *f⁵*, in the manner substantially as and for the purpose described.

6. In a middlings-purifier, the arrangement of an air-forcing fan, *j*, a revolving air-tube, C'', a receiving-hopper, C, within an air-cylinder, B, having a hopper-shaped bottom of annular angular rings with air-spaces between them, the bolt-cloth frame E' having a reciprocating and a sudden vertical rising-and-falling motion with an exhaust-fan, *k*, constructed to operate in the manner substantially as herein described.

7. In a middlings-purifier, the air-forcing fan *j* and the exhaust-fan *k*, when arranged upon the same shaft J', in the manner and for the purpose substantially as described.

139,387.—*Machine for Dressing Hoops.*—SILAS L. HEYWOOD, Minneapolis, Minn. Application filed February 20, 1873.

The devices which guide and steady the hook are attached to oscillating bars or levers, by which means they readily adapt themselves to the bends and inequalities of its surface.

Claim.—1. The combination of the feed-rollers E and E' with the vibrating arms F and F', in which they are sustained and revolve, together with the actuating means for revolving them, and so that they can freely vibrate in either direction laterally, or be separated from each other, substantially as shown.

2. The swinging-arm H having the upright presser-foot *h* and springs *h⁴* and *h⁵*, in combination with the guide-way *h'* having stop *h''*, in the manner substantially as described and shown.

3. The sliding gage I having the upright gage-piece *i*, in combination with the cutter-head B, constructed to operate in the manner and for the purpose substantially as described.

4. The combination of the sliding bar I, sliding gage *i* with the cutter-head B, when operating substantially in the manner and for the purpose described.

5. The combination of the adjustable notched stop-plate *l*, lever L with the sliding gage I and bar I', in the manner substantially as and for the purposes described.

6. The combination of the pivoted arm G and yoke-plate *g''*, with the feed-roller E' and slotted plate *f'*, all constructed to operate in the manner substantially as described.

139,388.—*Machine for Cutting and Punching Leather Straps.*—JOHN F. HOLLISTER, Plano, Ill. Application filed April 14, 1873.

Two disks or segments are so pivoted relative to each other that one forms an opposing face for the action of the puncher as the strap is fed between them. A reciprocating knife, in combination with the pivoted segments, is operated to cut the strap, when punched, of a uniform length; also to skive the ends when required to adapt them for attachment to another thickness of leather, as for bucket-straps, &c.

Claim.—1. The pivoted segments B C, provided one with the holding jaw or clamp K, and the other with the punches *a*, combined and operating substantially as and for the purpose described.

2. The segments B C, in combination with the straps *b c*, applied and operating substantially as described.

3. The combination of the knife G with the punching-segments B C, for cutting the straps of uniform lengths, as described.

4. The skiving-knife D, in combination with the eccentric *d²* on the segment or disk C, substantially as and for the purpose set forth.

5. The dog or clamp K, in combination with the segment C, for holding the strap to the segment, operating as described.

6. The tension-spring L, operating in combination with the strap-segment C, for holding the strap, as described.

139,389.—*Settee.*—JULIUS HOLZER and EDWARD R. HOLZER, Philadelphia, Pa. Application filed August 27, 1872.

The seat is weighted or balanced so as to assume an upright position when not occupied, and is pivoted on its under side to extension supports on the end frames. These end frames are

formed with recesses to permit the tilting of the seat, said recesses being curved at the back side and straight at the front side.

Claim.—The combination of the seat, weighted or balanced, as described, with the sides, having the extension supports and recesses, as set forth.

139,390.—*Ore-Washer.*—WILLIAM HOOPER, Ticonderoga, N. Y. Application filed January 21, 1873.

The buddle is arranged within a suitable frame, and is provided with gudgeons, upon which it may be revolved, and has arranged beneath a series of partitions for separating the contents of the buddle when the same is dumped. A mixing-tub, oscillating-feeder, and distributing-apron is also arranged for receiving the ore from the stamp and transmitting it to the buddle.

Claim.—1. A dumping-buddle, constructed substantially as herein shown and described.

2. The combination of a mixing-tub, an oscillating feeder and apron, with a dumping-buddle, substantially as set forth.

139,391.—*Toy Pistol.*—OTIS W. HOBE, Chicopee Falls, Mass. Application filed March 19, 1873.

Claim.—The cylinder A provided with the spring *e*, and with the piston *m* and spring *k* operating therein, in combination with the trigger *b* provided with the point *s* and its operating-spring, and the hinged barrel B having the projection *c* thereon, and provided with the sliding rod *f'*, all constructed and operating substantially as described.

139,392.—*Plate-Printing Press.*—GEORGE C. HOWARD and AMANDA J. DAINTY, (administratrix of estate of JOHN DAINTY, deceased,) Philadelphia, Pa., assignors to GEORGE C. HOWARD. Application filed November 23, 1872.

A series of plates, resting on an annular rack, which is driven by a pinion, traverse in annular ways on a bed, and their movement is arrested at intervals for applying paper, for inking, and for making the impression, by a pin on each plate successively striking a rod, and thus releasing a bar carrying a belt-shifter, which then, by a spring, throws the belt from the driving pulley upon a loose pulley. The belt is shifted back by means of a treadle attached to the bar. After inking the engraved plate dry paper is placed upon it, and on the paper is placed a damp pad. A quadrangular frame is then placed over the pad in order to depress its edges and hold it in place.

Claim.—1. A printing-press in which a number of plates are caused to traverse a continuous path and beneath a platen, or its equivalent, substantially as described.

2. The combination, with the above, of the belt-shifter, lever *q*, rod *t* and its stud *u*, or equivalent mechanism, whereby the traversing plates are rendered the means of arresting their own motion.

3. The combination of a stationary bed, D, having annular, or partly annular and partly straight, ways and grooves, with a revolving rack, A, and plates B, adapted to the grooves and to the rack, as herein set forth.

4. The process of printing from an engraved plate by the application thereto of a sheet of dry paper, and above the latter a sheet of absorbent material from which moisture is transmitted to the paper on the application of pressure, as set forth.

139,393.—*Stereotype-Plate Holder.*—CHARLES HURST, Philadelphia, Pa. Application filed May 2, 1873.

A stereotype-plate holder made of wood covered with a metallic casing.

Claim.—1. The block, composed of the cast metal casing D and the wooden core A B C, constructed substantially as and for the purpose described.

2. The sleeves I I, in combination with the block composed of the metal D and wood A B C, substantially as described and set forth.

139,394.—*Street-Lamp.*—CHARLES F. JACOBSEN and ALOIS BURGER, New York, N. Y., said BURGER assignor to said JACOBSEN. Application filed March 29, 1873.

The conical globe, made in sections or in one piece, is held between two plates, to one of which the ventilating top is attached, and the other serving to attach the lantern to the post. When the globe is made of a single piece the rods are so bent that by taking off the top plate they may be turned in parallel directions, thus allowing the globe to be removed.

Claim.—1. A street lamp consisting of an inverted truncated cone of glass, either solid or formed in pieces, as set forth, surmounted by a dome-shaped top, having a ventilating-chimney, the several parts being supported and held in place by rings and rods formed and connected in the manner described and represented.

2. In a street-lamp a frame for supporting a truncated cone of glass formed in one piece, said frame consisting of upper and lower metallic rings united by rods placed inside of the glass cone, and bent as described, so that when turned in the manner stated they will allow of the ready removal of the cone.

139,395.—*Harvester-Dropper.*—NILS JOHNSON, Newburg, Minn. Application filed April 11, 1873.

A lever, connected at one end with a hinged dropping platform, has its other end bearing against the periphery of a sectoral disk revolving on an independent axis. The lever is released once at each revolution of the disk, and thus allows the platform to drop the gavels.

Claim.—The relative arrangement of the dropper A, link D, lever E, and revolving sectoral disk F, turning on an independent axis, all the parts being combined and operating substantially as and for the purpose specified.

139,396.—*Sleigh-Runner.*—JACOB W. KARN and EUGENE W. KARN, Watkins, N. Y. Application filed April 9, 1873.

Each runner, with its braces and top rail, is made in one piece by bending a single bar of iron into the proper shape.

Claim.—In a sled or sleigh the top rail A, shoe B, and intermediate braces or supports C, all formed of a single continuous piece of metal, substantially as and for the purpose set forth.

139,397.—*Middlings-Purifier.*—NICHOLAS LACROIX, Milwaukee, Wis. Application filed April 12, 1873.

Feed-board attached to shaking-frame. Bolt-cloth vibrated both longitudinally and vertically; air-draft regulated by overlapping valves in inclined sides of case below cloth.

Claim.—1. In a middlings-purifier, the inclined board or feeder b^2 attached to and operating with the shaker *c*, substantially as and for the purposes shown.

2. The means of regulating the tension of the bolt-cloth c^1 lengthwise, viz., the bar-plate or rod c^4, and screw attachments c^3, substantially as set forth.

3. In a middlings-purifier, the combination of the series of bars or rods c^3 provided with screw-threads for regulating the tension of the bolt-cloth c^1 transversely with the reciprocating shaker, substantially as and for the purposes described.

4. The conveyer-case *n*, constructed with inclined overlapping surfaces n^2 and openings n^3, substantially as and for the purposes set forth.

5. In a conveyer-case, the combination of the inclined overlapping surfaces n^2, openings n^3, trough n^4, opening *o*, elongated opening *p*, and sliding shutter or valve p^1, substantially as set forth.

6. A middlings-purifier having the exhaust-chamber *j*, fan k^1, shaker *c* vibrating upon hangers *d*, and a reciprocating wiper, *g*, actuated by a double-threaded screw, *i*, constructed and operating substantially as and for the purposes described.

139,398.—*Lamp-Extinguisher.*—RALPH LANGE, Baltimore, Md. Application filed April 14, 1873.

An auxiliary tube slides upon the wick-tube. It bears a light spring-valve to close the inclining top thereof, a finger-piece, and is weighted at its lower extremity in such manner that when the lamp is inclining the tube rises, allowing the valve to act in extinguishing the light. Notches are cut in its frame, into which the finger-piece may be locked.

Claim.—1. The combination of a weighted extinguisher-tube and a spring-valve to close the same, substantially as set forth.

2. The combination of a weighted extinguisher-tube, a valve to close the same, and a finger-piece for operating the extinguisher-tube, substantially as set forth.

3. The combination of a sliding extinguisher-tube, a valve to close the same, and a finger-piece for operating the extinguisher-tube, and the locking device for securing the extinguisher in either position, substantially as described.

139,399.—*Spark Arrester.*—EDWARD LANNAY, Lima, Ohio. Application filed April 1, 1873.

The upper part of the stack-shell is bent inward and downward, forming an annular chamber, which deflects the sparks down between the shell and a screen. An inverted cone, flanged at the top, is suspended in the stack to deflect sparks through the screen.

Claim.—The described arrangement of flanged conical shell A A' A'' B *b*, slatted screen C, chamber D, and axial deflector F *f*, for the purpose set forth.

139,400.—*Apparatus for Drying Sugar, Salt, &c.*—DANIEL LEE, Boston, Mass. Application filed May 6, 1873.

The steam-pipes and heads have no fixed connection with the cylinder, but revolve centrally within it, one axis and the steam-inlet passing centrally through the head of the cylinder.

Claim.—1. In combination with the rotary drum *a*, the series of steam-pipes *f* connecting the two heads *c* having rotation independently of the rotation of the drum, substantially as described.

2. In combination with the heater-pipes *g*, the lower head *c* acting as a receiver of the condense-water, substantially as described.

139,401.—*Apparatus for Drying Sugar, Salt, &c.*—DANIEL LEE, Boston, Mass. Application filed April 16, 1873.

Within a horizontally-revolving cylinder, open at one end, and having an air-escape pipe provided with a steam-jet at the other, a series of steam-pipes extend from steam-heads fixed to and moving with the cylinder. The steam inlet and exit pipes have stuffing-boxes. The sugar is admitted at the highest closed end, and is fed forward, falling from shell to pipes and from pipes to shell, the moisture being carried off by a current of air induced by the steam-jet and heated by the pipes.

Claim.—1. The rotary cylinder or shell *a* having extending through it the series of steam-pipes *k*, fixed with relation to the shell, and arranged and operating substantially as shown and described.

2. In combination with the shell *a* and pipes *k*, the air-escape pipe *g* having the controlling steam-jet pipe *h* connected with it, substantially as shown and described.

139,402.—*Bleaching Resin.*—ARCHIBALD K. LEE, Galveston, Texas. Application filed May 15, 1873.

Black resin, broken in small lumps, or pulverized, or reduced to a fine powder, and placed in a heated vessel, and while under agitation, is subjected to direct action of jets of steam, either with or without the fumes of sulphur or chlorine. The resin thus treated is passed through a strainer and run into a reservoir or other receptacle.

Claim.—1. The herein-described process of reducing the resin to small lumps, or pulverizing the same to powder, to facilitate the operation of bleaching the same by the direct action of steam and heat, substantially as and for the purpose specified.

2. The process herein described of bleaching resin by the direct action of steam and heat, either with or without the fumes of sulphur or chlorine, while the mass of resin is under agitation, or is being so stirred as to insure its positive and continued disintegration, substantially as set forth.

3. The herein-described processes of bleaching, clarifying, and refining resin—first, by reducing it to a powder or small lumps and then bleaching by the direct action of steam and heat while the mass is under agitation; and then, in a suitable vessel, freeing the liquid resin from the water incorporated therewith through its evaporation, substantially as and for the purpose specified.

139,403.—*Harness-Saddle Pad.*—HENRY LEREW, Panora, Iowa. Application filed March 1, 1873.

Claim.—A harness or saddle pad consisting of the usual leathers, made convex in the center and trimmed down to a thin edge faced with a zinc pad-plate, made concave to receive said leathers, and attached by having its edge turned over their edges, substantially as shown and described.

139,404.—*Curtain-Cord Fastener.*—HARVEY LULL, Hoboken, N. J. Application filed April 15, 1873.

The slide, bearing a cord-knob, has spring-holding fingers that pass through the mortise of the rack and receive a folded spring acting within the rack to press the pawl-tooth into the rack-teeth to hold the same at any position.

Claim.—The folded spring *e* applied between the fingers *e e* that project from the plate of the cord-knob through the slot in the slide, in combination with the pawl-tooth *l* and ratchet-teeth *c*, substantially as specified.

139,405.—*Umbrella-Tip Retainer.*—COMEGYS C. LUSBY and WILLIAM W. WINTER, Philadelphia, Pa. Application filed March 21, 1873.

An elastic cup on the handle for closing over the tips of umbrella and parasol ribs.

Claim.—1. The umbrella-tip retainer having the stiff collar *a*, thin elastic body a^2, and spring-band a^1, constructed substantially as described, and applied to the umbrella or parasol handle in such manner that it may be sprung back from the tips, but not turned inside out or reversed, substantially as specified.

2. The elastic umbrella or parasol tip-retainer having the metallic band a^3 applied to the outer surface of the spring-band a^1, substantially as shown and described, and for the purpose specified.

139,406.—*Churn-Dasher.*—GEORGE W. MCCORMICK, St. Francis county, Ark. Application filed August 20, 1872.

Cross-bar of dasher has air-spaces, and terminates in segmental-shaped ends, which are recessed and perforated for the passage of air. Hinged and perforated flaps work between the end pieces.

Claim.—A churn-dasher, consisting of the recessed cross-bar provided with perforated segmental-shaped ends and the hinged and perforated flaps, substantially as specified.

139,407.—*Lubricator.*—ELIJAH MCCOY, Ypsilanti, Mich., assignor of one-half his right to SULLIVAN M. CUTCHEON and EDWD. P. ALLEN, same place. Application filed April 2, 1873.

Within the upper end of the central tube, extending up into the cup, is a valve, the stem of which passes through and is guided by a bridge. When steam is on, it presses the valve closely against the regulator screw-cap, closing the aperture. When steam is exhausted, the valve drops to the bridge, and allows oil to escape through the tube to the steam-chest. In the side of the cup, near the top, is an opening, in which are placed two pieces of glass, separated so as to leave a chamber between them, to prevent breaking from sudden change of temperature.

Claim.—1. The slotted central tube C, in combination with the bridge *d* having central opening and wings *e e* fitting in the slotted tube, substantially as and for the purpose specified.

2. The central slotted tube C and bridge *d*, constructed as described, in combination with the valve *b*, substantially as and for the purpose herein described.

3. The central slotted tube C and bridge *d*, in combination with the valve *b* and screw-cap D with opening *a*, all constructed and arranged as and for the purpose set forth.

4. The chamber *i*, formed near the top of the cup A by the two pieces of glass *h h* placed in such position as to form the chamber *i* between, substantially as and for the purpose specified.

139,408.—*Bracket for Shelving.*—JOE V. MEIGS, Lowell, Mass. Application filed April 1, 1873.

The bracket is constructed with a projecting support, and connected with the upright by a clasp fitted to its flanged edge, and adjustable to conform to required distances between the shelves, and is supported by its brace below it, having on its end a projection fitted to a ratchet to hold in position.

Claim.—The combination of a bracket-strip having notches, guides, and a detent rack, and a movable bracket having a pawl and clasping-jaws, these members being constructed and operating in combination, substantially as set forth.

139,409.—*Machine for Planing Stone.*—ANDREWS T. MERRIMAN, Chicago, Ill. Application filed April 30, 1873.

Two upright tool-supporting frames are arranged upon a carriage which moves in front of a platform, upon which the stone is supported. The tools carried in the frames are arranged to cut in opposite directions, alternately, from the end toward and to the center, motion being imparted to the carriage upon which they are supported by a screw, which is operated by means of a train of wheels, which is arranged in such a manner as to revolve the screw in either direction, as may be desired.

Claim.—1. The stone-planing machine, consisting of two or two series of cutting-tools, moving in the same plane, and arranged to cut from the corners, alternately, in opposite directions to the center, substantially as specified.

2. The combination of the movable frame M, carrying the friction-wheels L L', geared to revolve in opposite directions, and the large friction-wheel K, substantially as specified.

3. The combination and arrangement of the sliding carriage D, tools G G', screw J, wheel K, wheels L L', gearing P P', trunnioned frame M, weighted rock-shaft T, lever U, and segment *t*, substantially as specified.

139,410.—*Fire-Escape.*—IRA MERRITT, North Bridgewater, Mass., assignor to himself and WILLIAM A. SWEETSER, same place. Application filed May 6, 1873.

A forked lever-clamp is adapted for instant attachment to a window-opening, from which, as from a crane, is suspended a windlass controlled by a screw-brake carrying a rope, by which the person wishing to escape descends.

Claim.—1. The clamp, having the fork *a*, plate *b*, fork-lever *c* and hooked lever *h*, all constructed and arranged substantially as shown and described.

2. In connection with such clamp, the suspended case *m* containing the hook *n*, the shaft *p* and its winch *w*, the barrel *q*, the wheel *s*, brake *t*, spring *u*, and screw *r*, arranged and operating substantially as described.

139,411.—*Drawing-Board.*—HERMAN H. MEYER, Denver, Colorado Ter. Application filed February 17, 1873.

The front edge of the board and a hinged piece at the back have both a strip screwed on to clamp the paper edges. Set-screws then open the hinged back piece, and thus stretch the paper tight for use. It may be double-faced and both adjustable.

Claim.—1. The combination of the board furnished with a clamping-piece, C, the swinging stretch-piece E, likewise furnished with a clamping-strip and the thumb-screws G G, substantially as and for the purpose set forth.

2. The side strips B B, in combination with the boards A and J, the clamping-pieces and stretch-pieces, essentially as and for the purpose set forth.

139,412.—*Fly-Trap.*—ROBERT P. MILLER and WALTER IRWIN MILLER, Lineville Station, Pa. Application filed April 26, 1873.

A circular cap or cover perforated, with an inner case perforated, and an opening on its top for flies to pass into the outer cover or cap; both located upon a base or bottom with openings, which may be closed by a turn of the cover to secure the flies.

Claim.—The fly-trap, consisting of the base A having the inner flange *b* with openings *c*, the rotating case B having its lower edge notched at *c* to coincide with the openings *c*, its top, the passage tube *e*, and the perforated reservoir-cap D, constructed and arranged as specified.

139,413.—*Die for Swaging Carriage-Okps.*—ROBERT R. MILLER, Plantsville, Conn. Application filed December 3, 1872.

The die proper for the formation of the strap part is wholly in the lower block, and the surface of the other block being smooth, a free expansion of the metal to fill the dies is permitted, and any surplus is equally free to be forced out as fin, while the curvature of the blocks aids the movement of the metal from the middle toward the extremities.

Claim.—The swaging-dies A and F provided with the grooves D and *g*, and made respectively convex and concave longitudinally, substantially as and for the purpose specified.

139,414.—*Fire-Proof Safe.*—JOHN E. MULFORD, New York, N. Y. Application filed February 25, 1873.

The safe is surrounded with a frame-work of flanged bars, and the cells between the bars are filled with fire-resisting material.

Claim.—A safe or similar structure surrounded with a frame-work of flanged bars, disconnected at the corners to permit expansion and contraction, and holding a body of fire-resisting material which forms the exterior surface of the safe.

139,415.—*Fire-proof Building.*—JOHN E. MULFORD, New York, N. Y. Application filed February 25, 1873.

A fire-proof plastic composition is used, consisting of asbestus and calcined gypsum united by lime putty, which is held in place by studs of mushroom form attached to walls, girders, doors, or other parts of buildings which are to be protected.

Claim.—1. The fire-proof or fire-resisting composition herein described, adapted for application in the form of plaster to walls or structures of any description.

2. The flanged anchoring-studs C, employed in combination with a fire-proof plaster, substantially as herein specified.

139,416.—*Fire-Escape.*—JAMES O'BRIEN, New York, N. Y., assignor to himself and CHARLES D. LAMARCHE, same place. Application filed May 6, 1873.

A telescopic tube or chute for the conveyance of persons or goods in case of fire. It is mounted on wheels, and is adjustable to any required angle on trunnions by means of a rack and pinion and an adjusting-screw. It has a curved terminus to break the force of the arrival. Its lower extremity is furnished with a lid, and its upper opening with a handle to assist persons in entering.

Claim.—1. The fire-escape for the bodily downward conveyance of persons and goods, when composed of telescoping tubing whose lower section is made with an upward curvature, substantially as herein shown and described.

2. The handle *l* applied to the upper end of the telescopic tubing, which is intended for the bodily downward conveyance of persons, as described.

3. The adjusting-screw E and adjustable brace and rack F arranged on the truck A, in combination with the pivoted telescopic tubes C H I, as and for the purpose described.

4. The lid O applied to the bent lower end of the tube C of a fire-escape, as specified.

139,417.—*Reversible Rotary Cutter.*—EDWARD V. O'NEILL, Philadelphia, Pa., assignor to himself, JAMES KELLY, and ROBERT PILKINGTON, same place. Application filed February 27, 1873.

The cutting-blades are moved radially for use or otherwise by the partial rotation of the hub, and held in position by the set-screw.

Claim.—1. A reversible rotary cutter, in which two sets of blades are arranged radially, and are combined with operating devices, as described, so that one set of blades is retracted when the other is extended, as set forth.

2. In a rotary cutter, the combination, substantially as described, of two sets of adjustable blades, A and A′ with an adjustable hub, B, formed with recesses and projections *a* and *b*, adapted to the inner ends of the said blades.

139,418.—*Flood-Fence.*—AUSTIN ORVIS, Ellington, Iowa. Application filed November 14, 1872.

The lower parts of the posts are stationary, the upper parts pivoted in them so as to bend down stream with the current, extensible bars pivoted on the front or under sides of the posts, and pivoted stakes on their inner sides serving to hold the fence in an inclined position while the flood is passing over.

Claim.—1. The posts A jointed at *a′*, the pivoted bars C C, sections A^1 A^2, and stakes D D, combined to form a flood-fence, as described.

2. The bars C C pivoted to sides of upper sections A^2, and locking in the grooves *a a* of lower sections A^1, as and for the purpose set forth.

139,419.—*Desk and Book-Case.*—JOHN A. PAYNE, New Orleans, La. Application filed May 3, 1873.

The revolving desk, table, and book-case are mounted on an upright pivot and on a horizontal frame or plate, which rests on vertical racks or gear-wheels, by which the desks and book-case may be elevated or lowered at pleasure.

Claim.—The combination of the standard-frame D, shafts F, wheels G, H, and K, racks L, extensible pivot-tube I P R, and frame M with the reading-desk O, writing-desk N, and book-case Q, substantially as specified.

139,420.—*Combined Trunk and Wardrobe.*—JOHN A. PAYNE, New Orleans, La. Application filed April 19, 1873.

Extensible posts, sliding telescopically within each other, are secured in the corners of a trunk, and support a frame to which curtains are attached, thus forming a wardrobe when the trunk is open.

Claim.—The combination, with a trunk, of the extensible posts and wardrobe-frame, substantially as specified.

139,421.—*Shuttle for Sewing-Machines.*—GEORGE REHFUSS, Philadelphia, Pa., assignor to THE AMERICAN BUTTON-HOLE OVERSEAMING AND SEWING-MACHINE COMPANY, of same place. Application filed March 11, 1873.

The lip on the hinged-plate covers the outer side of the recess in which the thread is laid, and allows the needle-thread to slip freely over the shuttle. The elliptic tension-spring bears against the thread between it and the partition, and the spring is adjusted by the nut on the spindle.

Claim.—1. The hinged plate *m* adapted to cover the side opening of the shuttle and confine the bobbin, when provided with the lip *c* to overlap and partly close the recess *b* in the shuttle-case, as specified.

2. The elliptic tension-spring D, constructed substantially as described, and adapted for attachment to a shuttle, as set forth.

3. The shuttle-case having a recessed partition, *d*, and a spring, D, constructed substantially as described, arranged and operating in connection with the partition, as described.

4. The combination, with the spring D, of the screw-spindle *i* and nut *h*, or equivalent devices, for regulating the pressure of the spring against the partition *d*.

139,422.—*Breech-Loading Fire-Arm.*—WESTLEY RICHARDS, Birmingham, England. Application filed May 2, 1873.

Claim.—1. The combination herein described, with the vertically sliding breech-block and hand-lever linked to the same, of the vibrating hammer and tumbler mounted on the axis of the hand-lever, and the vibratory extractor, said parts being constructed and arranged together for operation, substantially as shown and set forth.

2. In combination with the hand-lever provided with a lip on its horizontal arm, as described, the cranked lever-bolt for fastening said hand-lever under the trigger-guard, substantially as shown and set forth.

139,423.—*Ruche-Holder.*—JAMES V. ROCKWELL, New York, N. Y. Application filed March 27, 1873.

A drum for holding ruches and other like trimmings, having an opening at either end for putting in a surplus quantity of the goods.

Claim.—The drum A provided with projecting flanges *a a*, and perforated at one or both ends to receive a filling and an outer layer of ruches or other fine goods, substantially as described.

139,424.—*Corset-Fastening.*—GEORGE OTTO SCHNELLER, Ansonia, Conn. Application filed November 22, 1872.

The eye has a lateral movement by swinging upon a single rivet, and has a lip overlapping the steel to restrict its movement. The metal caps to the steels are secured by being pressed into indentations upon the ends of the steels. Metal clamps secure the binding and fabric at the edges of the spring ends.

Claim.—1. The loop *e* pivoted on the corset-spring, and provided with the overlapping lip A to limit its motion, and with an eye to engage the button *f*, as herein shown and described.

2. The soft metal caps *i i* secured in position upon the ends of the corset-springs A A, by means of the curved seats or recesses *j j*, formed upon the latter, as herein shown for the purpose specified.

3. The metallic clamps *m m*, covering the edge and a portion of each side of the corset-springs A, and secured thereon by means of indentations or compression, for the purpose of securing in position the interposed binding *l* of the covering *k*, as herein shown and described.

139,425.—*Game-Table.*—SIEGFRIED S. SCHINDLER, West Meriden, Conn. Application filed February 21, 1873.

The game-board, which can be played on either side, is pivoted to swing through an entire circle, and is adjustable vertically as a fire-screen, or at an angle to serve as a music and reading desk.

Claim.—The herein-described game-table, consisting of the base A, the hollow pedestal B, adjustable rod C carrying the frame D E E, and with the table F pivoted in the said frame for adjustment to different positions, substantially as described.

139,426.—*Saw.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed November 25, 1872.

Two alternately-reciprocating saws are arranged side by side and operate in the same saw-kerf.

Claim.—1. The combination, substantially as described, of two saws arranged side by side for operation in the same kerf.

2. The combination of the saws A A′ with a holding-guide, B, substantially as described.

3. The combination of the saws A A′ with a holding-guide, B, shaft E, opposite cranks C C′, connecting-rods D D′, substantially as described.

139,427.—*Twine-Cutter.*—FREDERICK J. SEYMOUR, Wolcottville, Conn., assignor to TURNER, SEYMOUR and JUDDS, same place. Application filed April 8, 1873.

The cutter is made of a single piece of metal curved upon itself. One end is furnished with a stop to limit its motion, and the other is riveted upon the side of a metal twine-holder just below a slot, into which the edge of the blade projects.

Claim.—1. The blade *d*, with a stop, *e*, at one end, and the spring *f* extending from the other end and returning at the back of the blade, and bent and attached to the plate, the blade, stop, and spring being made of a metallic wire or strip, as set forth.

2. A metal twine-holder having a slot in the same, in combination with the twine-cutting blade secured to such holder, and having the cutting-edge within such slot, as set forth.

139,428.—*Refrigerator.*—MATHEW SHAW, Lawrence, Kan. Application filed March 25, 1873.

The provision-chamber connects with flues within the walls and between the lids of the refrigerator for carrying off the foul air.

Claim.—The arrangement of the flues or passages *b b* within the walls of a refrigerator, connecting the interior of the same with the chamber *a* between the lids, in combination with the outlets *i i* from said chamber, as shown and described.

139,429.—*Seam for Leather-Work.*—SAMUEL W. SHOREY, Boston, Mass. Application filed November 2, 1872.

Claim.—A seam for leather-work, consisting of the series of single nails having adjacent points held by twisting them together, substantially as described.

139,430.—*Hasp-Lock.*—ALFRED B. SMITH, Memphis, Mich. Application filed April 11, 1873.

A turning locking-plate is arranged upon the key-post in rear of the spring-bolt, and is held in the locked or unlocked position by a spring which causes projections on the key-post to engage in notches or recesses in the locking-plate.

Claim.—The combination of the turning, locking, and unlocking plate H, having the notches *b* therein, with the locking-pins *c* of the key-post I, and the spring *d*, substantially in the manner and for the purpose described.

139,431.—*Egg-Carrier.*—SETH H. SMITH, North Adams, Mich., assignor of one half his right to W. H. WILLBER, same place. Application filed March 12, 1873.

An egg-carrier formed of rectangular strips of pasteboard, having straight slots alternately arranged on each edge, and folded strips cut and woven into the slots, forming half-pockets, alternately arranged on the upper and under side of the tray.

Claim.—The combination of the flat strips B B with notches *b b*, alternating on both edges as shown, and the bent strips C C cut and fitting into said notches, as shown, and forming half-pockets, all substantially as set forth.

139,432.—*Trace-Fastening.*—FRANCIS M. SNIVELY, Bellaire, Ohio. Application filed February 26, 1873.

The cross-head *d* is inserted in the groove C until it reaches the socket *b*, when it is swung round at right angles to the whiffletree.

Claim.—The socket *a* for the end of the whiffletree, having the two slots *b c* running at right angles to each other, in combination with the cross-head *d*, substantially as specified.

139,433.—*Cooking Utensil.*—EDWIN J. SPRAGUE, Youngstown, Ohio. Application filed March 22, 1873.

On the periphery of the inner pot and extending part way down are several ribs. These are adapted to pass through corresponding slots in the cover of the larger vessel, or, when the inner vessel is raised up and turned so that said ribs are free, to sustain it upon the cover.

Claim.—In a cooking-vessel, such as described, an inner vessel with vertical ribs upon its periphery passing through corresponding notches in the cap-plate of the outer vessel, so that the inner one may rest thereon in the manner and for the purpose described.

139,434.—*Billiard-Cushion.*—WILLIAM ST. MARTIN, Cincinnati, Ohio. Application filed May 23, 1873.

For regulating the tension of a wire, cord, tape, or ribbon, arranged in the cushion, and compensating for the varying lengths of such wire or ribbons, &c., induced by different degrees of heat and cold.

Claim.—1. The mitered corner, made of brass or other suitable material, substantially as and for the purpose set forth.

2. The combination of the metallic ribbon with the compensating-spring, whereby the tension of the ribbon is preserved under the varying conditions to which it is subjected.

3. The mitered corner B, in combination with the arm F and nut G, or their equivalents, for straining a wire, cord, tape, or ribbon, substantially as and for the purpose set forth.

4. The mitered corner B, in combination with the spring K, arm F, and nut G, substantially as and for the purpose set forth.

139,435.—*Lid-Supporter for Trunks.*—JOSEPH STOTT, Norwich, Conn. Application filed January 8, 1873.

Claim.—The lid-supporter herein described, consisting of the knee-jointed bars D C, when the bar C has the slot E made in its lower end, so as to allow the slotted bar to slide upon the screw I to prevent the knee-joint being caught on its center, and to facilitate its attachment for use, substantially as herein set forth.

139,436.—*Insulator for Telegraph-Lines.*—ISAAC I. TATOM, West Point, Ga. Application filed December 7, 1872.

The cylindrical glass insulator, divided so as to inclose the telegraph wire, is secured in a recessed hinged clamp, provided at its outer end with a pivoted latch for locking the clamping-jaws together, and at its inner end with a screw-thread for fastening the whole to the pole.

Claim.—The insulator having the frame B provided at its lower end with the threaded shank D, and its upper end having the offset *a′* and shoulder *b*, hinged block *c*, with the shouldered latch *e*, all constructed and operating in the manner shown and described.

139,437.—*Button-Hole Cutter.*—CHARLES F. TEBBETS and GRANVILLE NUTTING, Fitchburg, Mass., assignors to THE SHOE-MACHINERY MANUFACTURING COMPANY OF CONNECTICUT. Application filed April 16, 1873.

Claim.—A button-hole punch mechanism, consisting of the stationary slotted bed and the vertically-acting blade *d* and punch *e*, moving relatively to the blade and its movement, and combined and arranged to operate therewith, substantially as shown and described.

139,438.—*Carriage-Curtain Fastener.*—NATHANIEL M. TERRY, Lyme, Conn. Application filed May 10, 1873.

☞ When the curtain is to be attached, the button-head is turned at right angles to the studs. The button-hole is then passed over the head, which, upon being forced back into position, is held there by the tension of the curtain.

Claim.—The recessed head A, mounted on and pivoted to the stud or standard B, substantially as and for the purposes specified.

139,439.—*Valve-Gear for Direct-Acting Steam-Engines.*—JOHN TESSEYMAN and EDMUND I. HOWARD, Dayton, Ohio. Application filed January 4, 1873.

A reciprocating cross-head is provided within one of its vertical sides with two substantially horizontal grooves connected at their ends, and diverge vertically at their centers to a distance equal to the throw of the valve, and through suitable mechanism impart motion to said valve. At each end of said grooves is pivoted a spring cut-off for the purpose of changing the course of the wrist-pin that travels therein.

Claim.—1. In a direct-acting engine, a reciprocating cross-head provided with two longitudinal grooves, intersecting at their ends and diverging at their centers, and through suitable mechanism connected with and imparting motion to the steam-valve, substantially as and for the purpose specified.

2. In combination with the grooves H within the plate G, the pivoted cut-offs *h* and springs I, substantially as and for the purpose shown.

3. The valve-gearing described, as a whole, consisting of the reciprocating cross-head E, provided with the groove H, the rock-shaft L and L′, and the valve-rod K, when said parts are constructed and combined substantially as and for the purpose set forth.

139,440.—*Portable Burglar-Alarm.*—JAMES H. TEORE, St. Louis, Mo. Application filed March 12, 1873.

A small portable bell attached to a base, and containing a spring alarm-gear within it, is provided with a spurred hinged bar, adjusted to be set under the edge of a door, so that any attempt at opening the door will, by depressing the bar, release a detent and sound the alarm. The hinged bar is arranged to fold up under the alarm-bell when not in use.

Claim.—In combination with an alarm-bell, the bar G, hinged to the case of the bell, and provided with teeth *a a* and holes *i i*, and the bar G′, hinged to the outer end of the bar G and provided with teeth *b b*, all constructed and arranged as described, so as to be folded within the case when the alarm is not in use, and operate upon the detent of the bell when in use, as herein set forth.

139,441.—*Machine for Cutting Out Pegs.*—JOSEPH D. VINNEDGE, Indianapolis, Ind. Application filed April 1, 1873.

Cutters are attached to the journals of cog-wheels upon the outer ends of horizontal arms, and operated by suitable bevel-wheel gearing. Arms supported by the upright post or standard.

Claim.—1. The arrangement of the double cutters A A′, attached to the opposite ends of the horizontal arms C C′, operated by the drum-shaft F, bevel-wheel O, and the incased gearing S S S S, substantially as shown and described.

2. In a peg-cutting machine, the frame, consisting of the upright post D, horizontal arms C C′, with the housed gearing-cases B B′ attached to the outer ends of said arms, constructed and arranged as specified.

139,442.—*Machine for Staking, Glassing, and Perching Skins.*—WILLIAM A. WATSON, Beverly, Mass. Application filed March 3, 1873.

The skin is forced over the edges of the stakes by the beam, which is provided with vertical reciprocating movement.

Claim.—The reciprocating beam *k*, in combination with stakes *l m*, substantially as and for the purposes specified.

139,443.—*Tool for Inserting and Withdrawing Faucets.*—KARL A. WATTENDORF, New York, N. Y. Application filed April 24, 1873.

A slotted frame provided with several holes for the fulcrum-pin is attached to the wall or other suitable place. To this is attached, by the fulcrum-pin, a lever provided with a hinged cap-piece. The free end of the lever is forked and provided on the under side with a projection, which serves as a fulcrum when withdrawing a cock, the lever being detached from the frame for that purpose.

Claim.—The lever B, capable of being hinged at one end to a suitable frame, and having its other end, D, forked and provided with a hinged cap-piece, C, and a rounded projection, *m*, at the under side near the forked end D, substantially as and for the purpose hereinbefore set forth.

139,444.—*Sewing-Machine.*—GEORGE WEBSTER, Jr., and JOHN F. WEBSTER, Hamilton City, Canada. Application filed February 27, 1873.

The horizontal lever, pivoted to the under side of the bed-plate, and vibrated through the pivoted upright lever and rod, is at its outer end connected with, and it reciprocates, the feeding-bar horizontally. A pin on the shuttle-carrier raises and lowers the feed, and the lower side of the feed-bar, near its connection with its actuating-lever, is supported on an eccentric cam, by which the vertical position or height of the bar when feeding is determined.

Claim.—1. A cam, *c*, on needle-shaft, a pivot-lever, c^1, a rod, c^2, and a Lever, L, combined with the feed-bar in a sewing-machine, as and for the purpose described.

2. The combination, with mechanism c c^1 c^2 and lever L that moves the feed-bar H, of the screw M, applied through the arm N, and to the part c^1, to regulate the extent of movement of said bar, as set forth.

3. The combination, with the feed-bar H, of the subjacent adjustable cam I, as described, for regulating the vertical position of the feed-bar.

139,445.—*Vapor-Generator.*—WILLIAM WELLS, Salem, Mass. Application filed March 26, 1873.

A vessel containing bisulphide of carbon is concentrically arranged within an upright boiler and surrounded with water, by the heat of which vapor is generated. Circulation of the water is kept up by means of a winged wheel revolving in the water within the boiler.

Claim.—The vessels A B, arranged one within the other, in combination with the revolving shaft L and partitions *a*, with or without the pipes F and G, substantially as described, for the purpose specified.

139,446.—*Carrier for Excavators.*—JOSEPH WILLIAMS, Hemmingford, Canada. Application filed February 3, 1873.

The leaves of the aprons are closely fitted together at the joints, in the manner claimed, to prevent the earth from falling through, and the pieces J and K prevent the earth from falling on the track on which the apron travels.

Claim.—In excavating-machines, the construction of the endless apron of leaves E having close-fitting knuckle-joints united by pintles or rods F, and provided with overlapping end pieces composed of side pieces J and quadrant-shaped pieces K, as and for the purposes set forth.

139,447.—*Stop-Motion for Drawing-Frames.*—PLINY J. WRIGHT and JAMES THOMPSON, Holyoke, Mass. Application filed January 21, 1873.

A break in the material passing through the trumpet or the overflow of the can will cause the weighted end of the lever H to be depressed so as to strike the rear end of the loop on the lever Q, and cause its hook to fall and engage a wheel to stop the motion of the machine. Lumps endeavoring to pass through the trumpet will cause the weighted end of said lever H, and consequently the inner end of lever Q, to be raised with a like result.

Claim.—1. The combination and relative arrangement, substantially as described, of the levers H, Q, and P, and trumpet L, to operate as set forth.

2. In combination with the levers H, Q, and P, the adjustable regulating-spring O.

3. In combination with levers H and Q the extension R, provided with roller *r*, or equivalent device, for receiving the upward pressure of the drawing in the can.

REISSUE PATENTS.

5,423.—*Wax-Thread Sewing-Machine.*—EDWIN E. BEAN, Abington, assignor, by mesne assignments, to THE SHOE MACHINERY MANUFACTURING COMPANY, Boston, Mass.—Patent No. 51,363, dated December 5, 1865. Application filed February 20, 1873.

The end of the rocking-shaft above the table is connected by a link with the awl conveying bar, and a cam on the same shaft engages a pivoted latch secured to the presser-foot bar and raises it. A crank-pin on the end of the lower rotating shaft travels in a slot in a pivoted arm which has a pin that enters a groove in a block attached to and which moves the needle-bar, and the cast-off is operated by the projection on the needle-bar. The upper and lower shafts are connected by a link.

Claim.—1. The shaft above the table, in combination with the shaft below the table, and with intermediate connecting devices, operating substantially as described, whereby the two shafts impart the respective movements to the awl and presser-foot above the table, and to the needle and cast-off below the table.

2. The shaft above the table and the presser-foot and thread-guide combined, substantially as described, whereby the shaft imparts motion, as described, to the presser-foot and thread-guide.

5,424.—*Machinery for Trimming the Heels of Boots and Shoes.*—CHARLES H. HELMS, Poughkeepsie, N. Y., assignor, by mesne assignments, to JAMES W. BROOKS, trustee.—Patent No. 31,666, dated March 12, 1861; reissue No. 1,740, dated August 16, 1864. Application filed April 25, 1873.

The boot or shoe is jacked in a vertical frame pivoted to and sliding upon the face of the standard which supports the center shaft. A pattern-plate attached to the heel of the boot or shoe, impinging on a rotating guide attached to the center shaft, limits the action of the cutter in shaping and trimming the heel-blank. The sliding frame is held in position by means of a suitable spring.

Claim.—1. In a heel-trimming machine, the combination, substantially as described, of a rotary-cutter or cutter-stock, and a vertical jack or frame for holding the boot or shoe to be heel-trimmed.

2. The rotary cutter, the vertical jack-frame, and a pattern-plate or its equivalent, combined to operate substantially as described.

3. In combination with the rotary cutter or cutter-stock, fixed or turning on a horizontal shaft supported in a suitable bearing, a sliding jack-frame, substantially as described, that holds the heel-edge up to the cutter against the stress of a spring, and that enables the shoe to be drawn down or controlled in position by the operator by pressure upon the treadle.

4. In combination with the pattern-plate *l*, a roll or circular projection upon the cutter-shaft, substantially as described, against which the pattern-edge bears.

5. In combination with the rotary cutter and the boot or shoe holding mechanism, a guide for running in the rand-crease and a guide, substantially as described, for running upon the counter.

5,425.—*Life-Preserving Stool.*—HENRY T. PRATT, New York, N. Y. Patent No. 100,501, dated March 15, 1870. Application filed September 17, 1872.

Claim.—1. A life-preserver stool having an air-chamber with a tough incorrodible wall of paper material, substantially as before set forth, the same being a new article of manufacture.

2. The combination of the life-preserver stool with the handles projecting beyond the peripheries of the seat and base, substantially as before set forth.

3. The combination of the wooden heads of the life-preserver stool with paper bands for strengthening the same, substantially as before set forth.

5,426.—*Sash-Holder for Carriage-Windows.*—SILAS. E. TOTTEN, Jr., New York, N. Y., assignor to WINFIELD BLODGOOD.—Patent No. 136,793, dated March 11, 1873. Application filed April 25, 1873.

In order to prevent the rattling of the segmental glass windows of a coach-front, a sliding stop is arranged upon a bracket on the sill, and held at any required position against the glass by a set-screw which passes through a slot in the body of the stop.

Claim.—A sliding stop, C, moving on a bracket, E, in combination with a set-screw, D, with or without an elastic pad, F, substantially as described, for the object specified.

5,427.—*Tucker for Sewing-Machine.*—JOSEPH H. BEAN, Cincinnati, Ohio, assignor to FRANCIS W. BROWN, same place.—Patent No. 132,235, dated October 15, 1872. Application filed April 11, 1873.

The tuck, being sewed, is guided by the folding hook-plate, and the tuck previously sewed is guided by the sliding hook-guide, and the plate and guide are adjustable to accommodate tucks and spaces of the desired widths.

Claim.—1. The adjustable folding hook-plate C and sliding hook-guide *b*, in combination with the slotted main plate A of the tucker, substantially as herein set forth.

2. The combination of the hook-plates B C with the plate A and set-screw D, the plates B C both being held in place upon the plate A by the screw D, as described.

3. The adjustable plate C having the hook *c* and gage-arm *c'* so constructed that the former may be arranged in rear and the latter upon one side of the line of the needle, whereby the narrowest tucks can be made, substantially as described.

4. The combination of the adjustable shield E with the hook-plate C, as described.

5. The tucker described, consisting of the main plate A, hook-plates B C, set-screw D, and shield E, constructed and operating substantially as described.

5,428.—*Harvester.*—CHARLES CROOK, New Hope, Pa., assignor to MOSES G. HUBBARD.—Patent No. 17,305, dated May 5, 1857; reissue No. 548, dated May 4, 1858; reissue No. 3,393, dated April 20, 1869; extended seven years.—Division A. Application filed February 20, 1873.

The driving-wheel is provided with changeable gearing to drive the cutters at different rates of speed. The cutting apparatus is free to rise and fall relatively to the main frame.

Claim.—1. Two driving-gears of unequal size or diameters for changing the rapidity of vibration of the cutters.

2. A concentric arrangement of two driving-gears of unequal size for changing the rapidity of vibration of the cutters.

3. The combination of changeable gearing permitting a reduction of the speed of the cutters for reaping, with the cutting apparatus of a combined reaping and mowing machine.

4. A combined reaping and mowing machine, provided with cutting apparatus which is free to rise and fall relatively to the main frame in mowing, and which can be adjusted to any desired height for reaping, and changeable gearing, permitting a change in the speed of the cutters, for purposes and substantially as set forth.

5,429.—*Harvester.*—CHARLES CROOK, New Hope, Pa., assignor to MOSES G. HUBBARD.—Patent No. 17,305, dated May 5, 1857; reissue No. 548, dated May 4, 1858; reissue No. 3,393, dated April 20, 1869; extended seven years.—Division B. Application filed February 20 1873.

The rear brace of the platform-frame extends across and is journaled to the rear end of the main frame, so that the cutting apparatus can be adjusted vertically.

Claim.—The rear sill of the cutter-frame extended across the rear of the main frame, and suspended thereto in brackets or bearings which permit the adjustment of the different heights of cut, substantially as described.

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In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
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PRINTING; including presses, type, and printers' furniture.	2,500
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The specifications of patents have been reprinted back to November 20, 1865; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

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The following abbreviated form of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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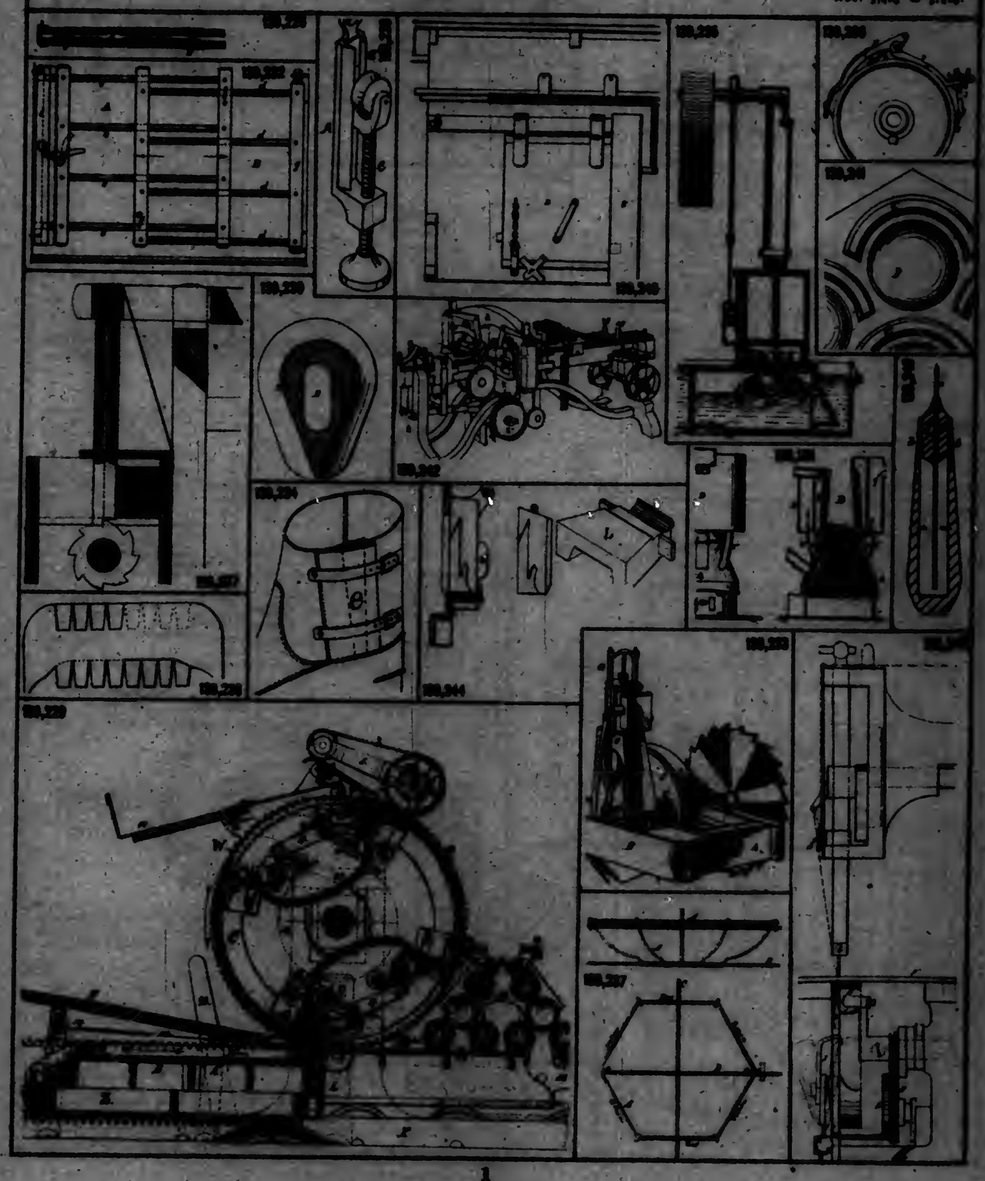
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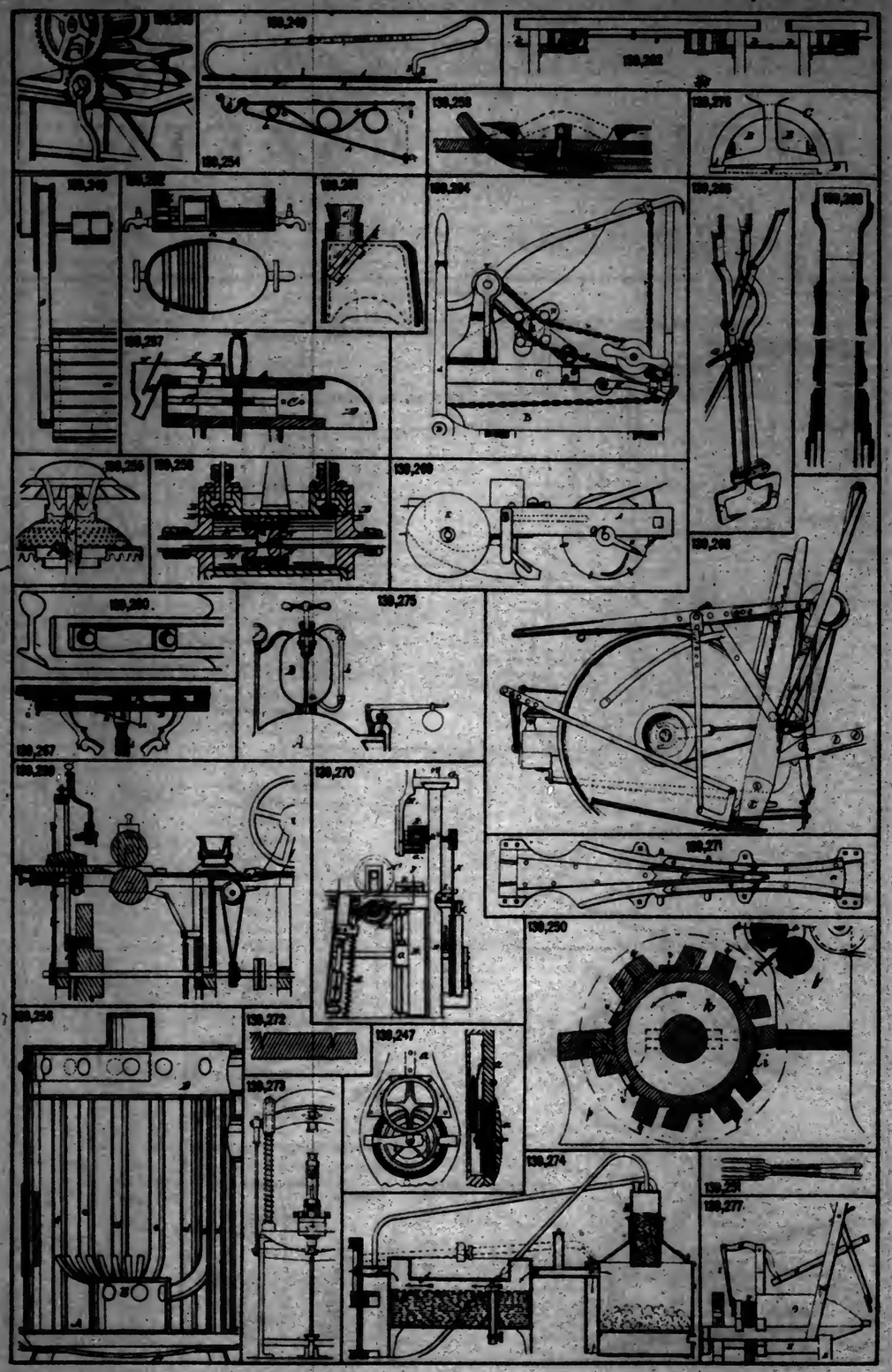
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ORIGINAL PATENTS Nos. 130,000 to 130,647. MAY 27, 1873. REISSUED PATENTS Nos. 5,484 to 5,490.

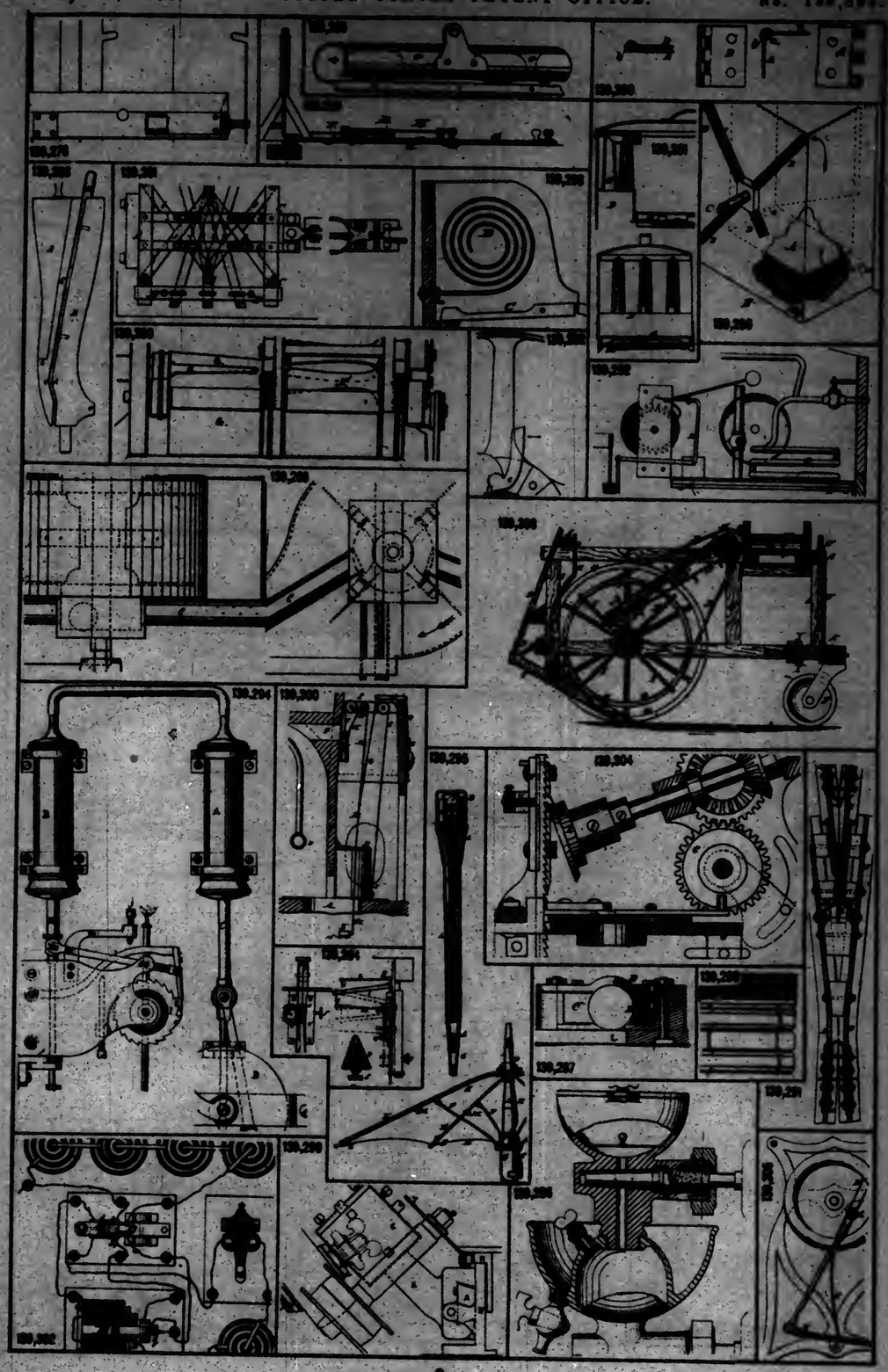


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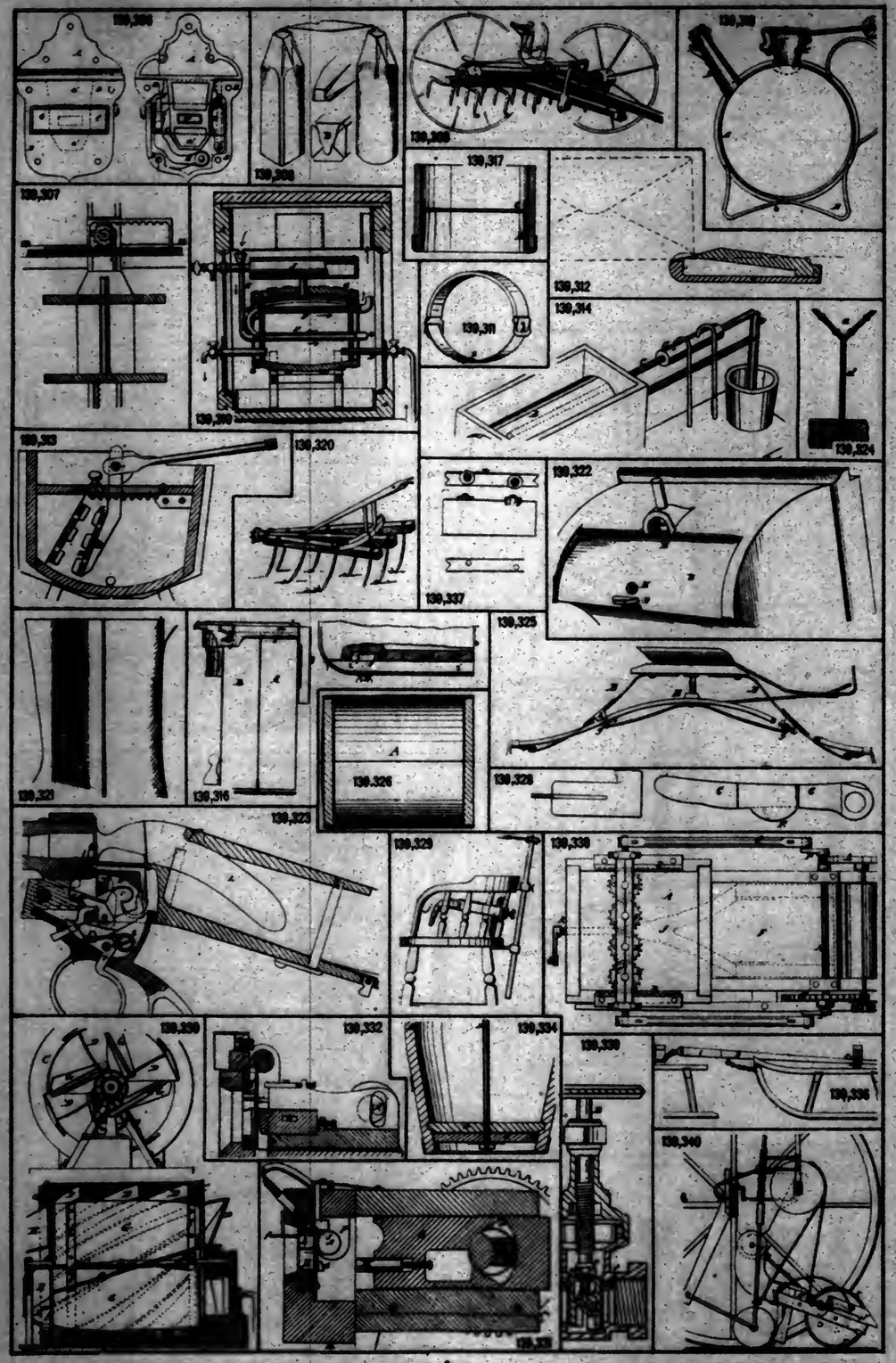
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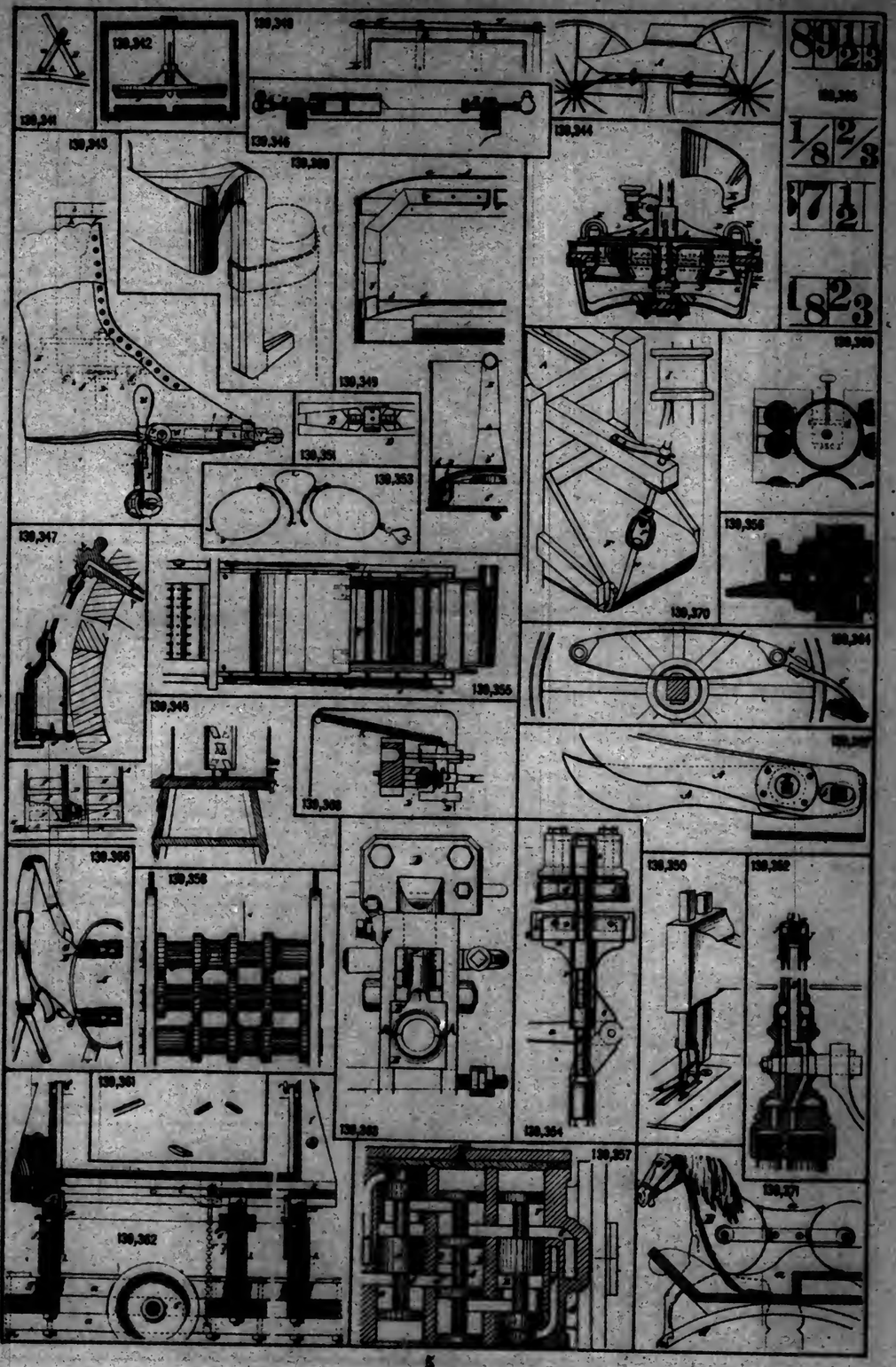
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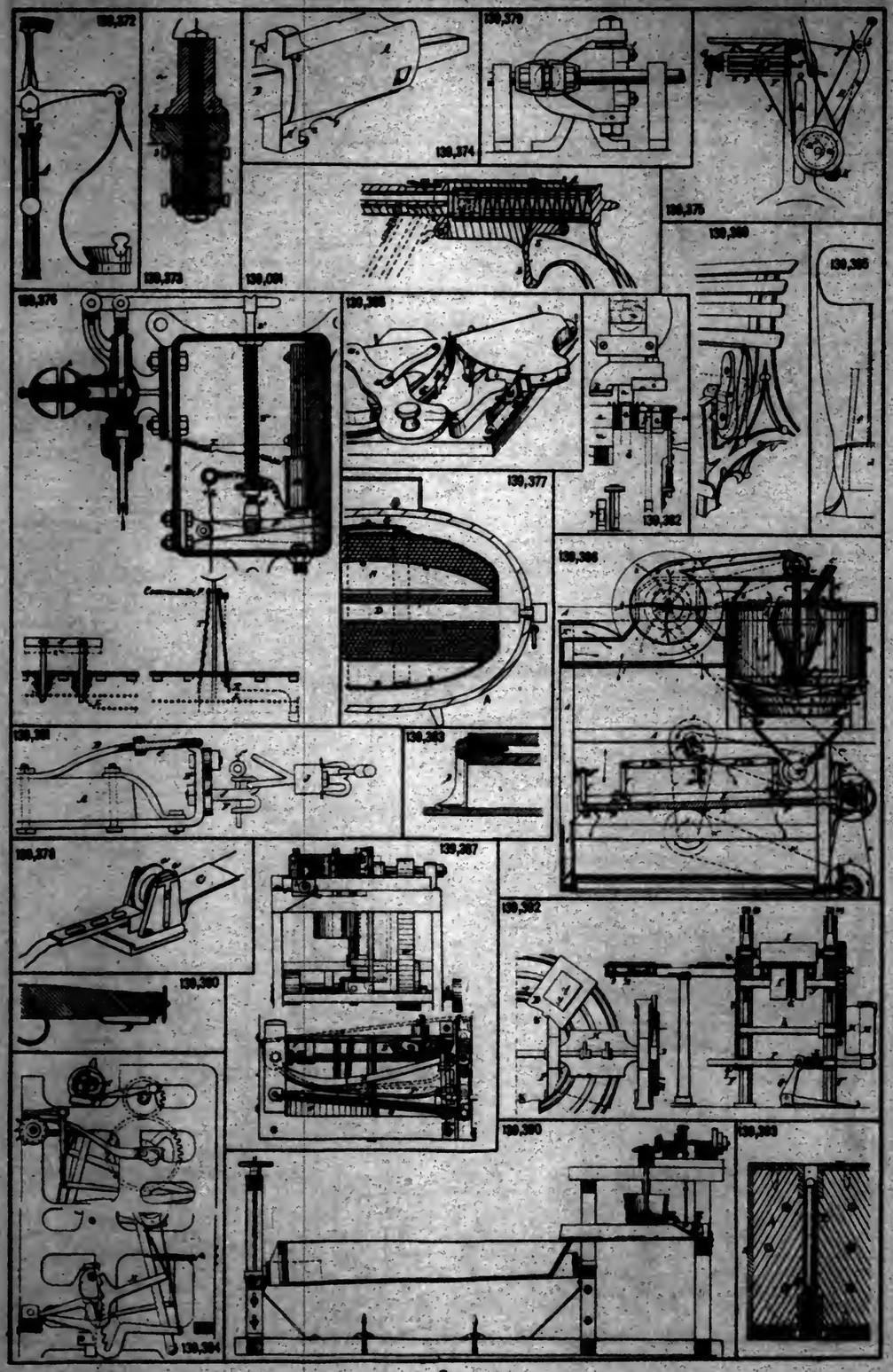
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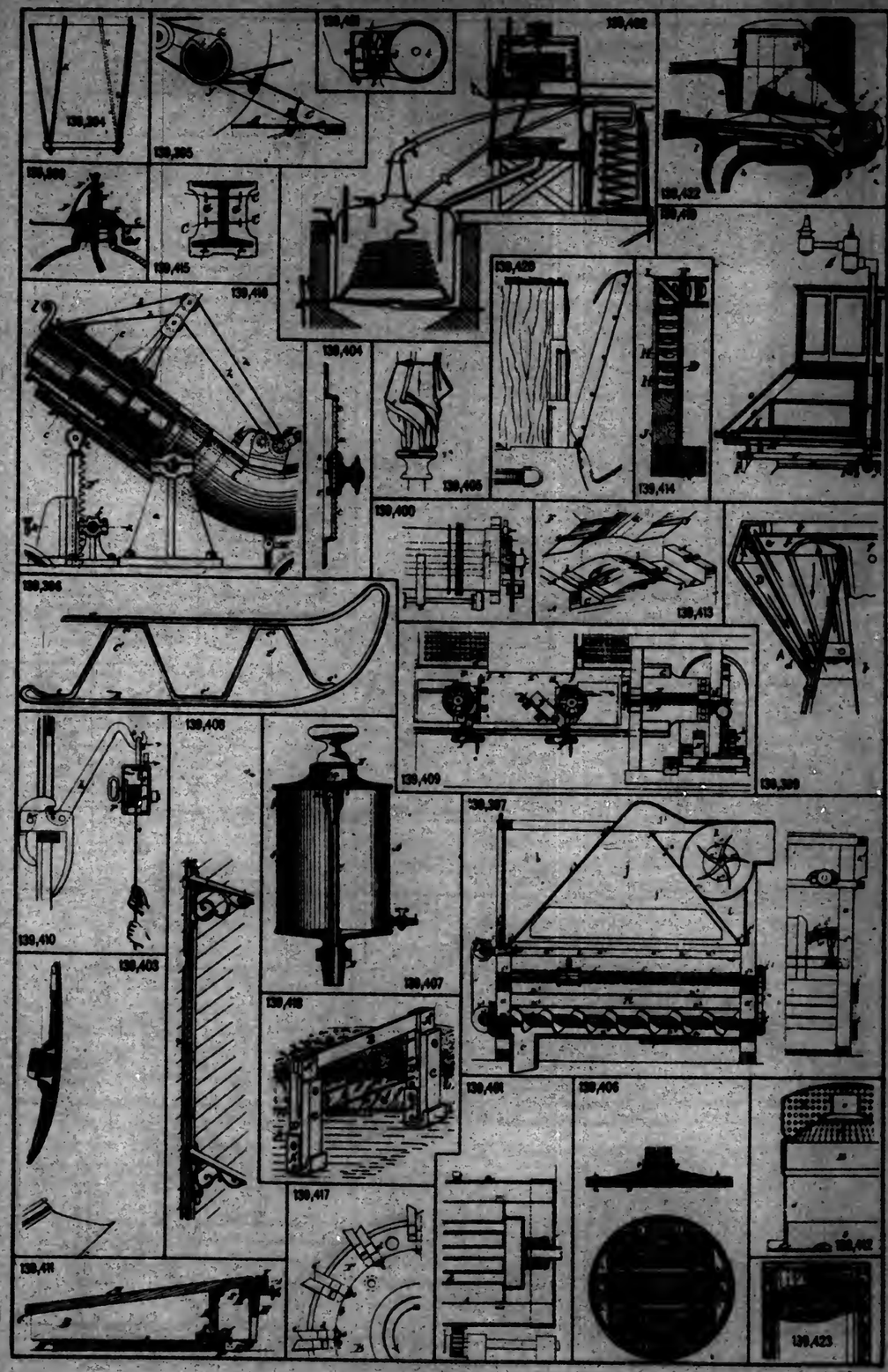
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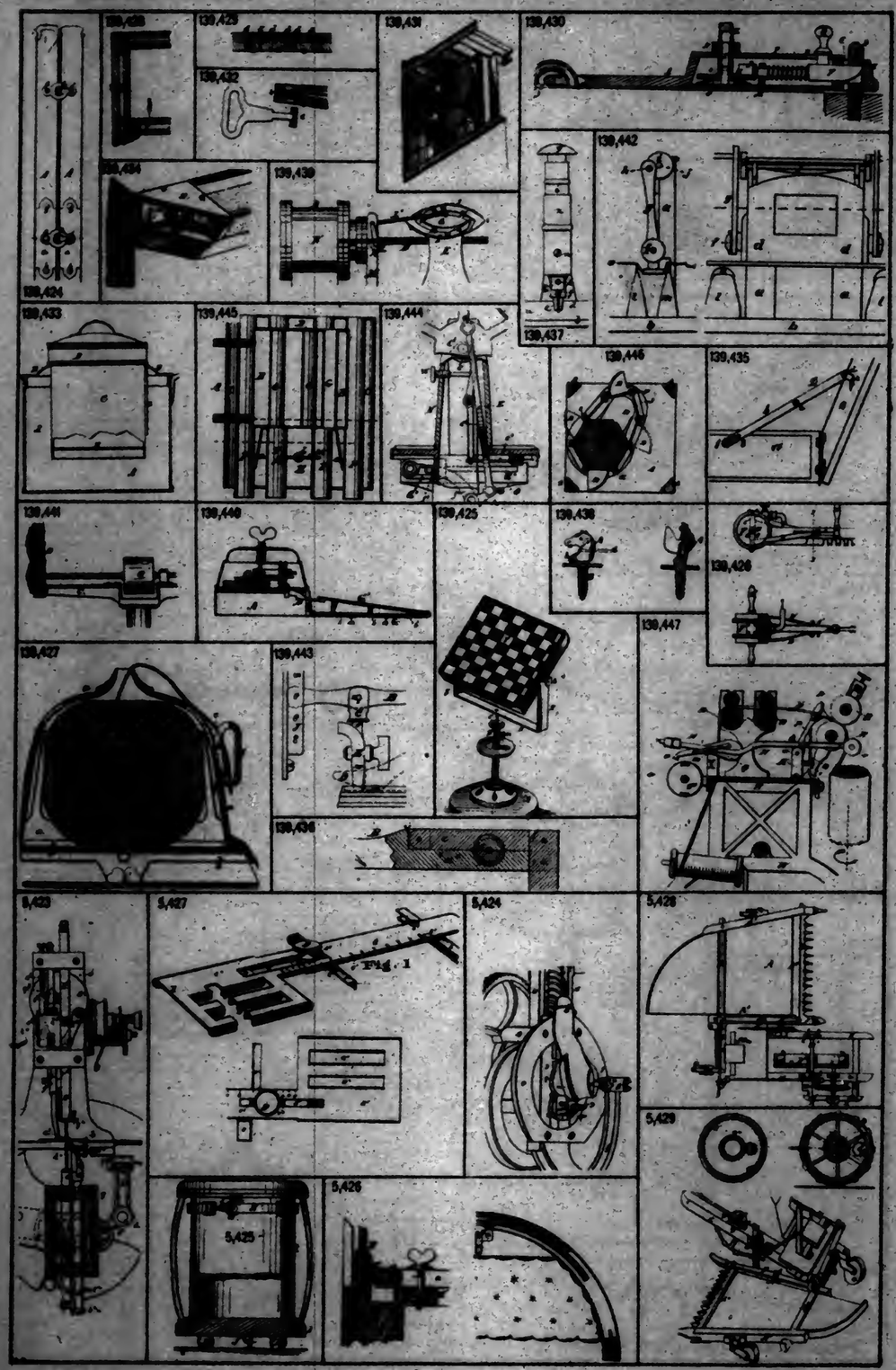
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OFFICIAL GAZETTE

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COMMISSIONER'S DECISIONS.

HORACE BEACH.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Horace Beach for an alleged* IMPROVEMENT IN STOVE-PLATES, *filed December* 23, 1872.—*Decided May* 23, 1873.]

It is not enough that an article of manufacture is new, in the ordinary sense, to render it patentable; it must possess novelty, as the word is understood in the statute, and give evidence of the exercise of invention.

The case of Charles A. Moore (*Commissioner's Decisions*, 1871, p. 249,) commented on and explained.

THACHER, *Acting Commissioner:*

The alleged invention consists in ornamenting sheet-iron for stoves or other articles by etching thereon any ornamental design. The claim is as follows:

"As a new article of manufacture, sheet-iron plates for stoves, upon which figures or configurations of any desired kind have been etched, substantially as and for the purposes herein set forth."

It was urged in argument at the hearing of this appeal that the process itself is new, but no intimation of this appears in the specification or claim. The Examiner cites as references, anticipating the invention claimed, numerous instances of the application of the well-known process of etching, among which are included metallic articles, such as blades of swords, razors, &c. While admitting the correctness of the Examiner's statement, applicant insists that the article manufactured and put upon the market by him is new, as such, and is therefore patentable under the decision of the Commissioner in the case of Charles A. Moore, (*Commissioner's Decisions*, 1871, p. 249.)

Applicant has evidently mistaken the test of novelty which is suggested in the decision referred to above. Since its publication it has been frequently urged that, if an article of manufacture is new in the sense of never having been produced before, it comes within the requirements set forth as necessary in the decision of Moore's appeal.

This interpretation of the decision is erroneous. The third requirement mentioned therein demands that an article of manufacture, to be patentable, shall differ from other articles of the class to which it belongs "*in essential points.*" From this it is understood that the invention must exhibit novelty in the sense in which this word is used in the patent law—that is, there must be evidence of invention to establish patentable novelty in an article of manufacture just the same as in any other alleged invention that is held to warrant the grant of a patent. In the present instance the alleged invention does not offer such evidence of invention as will entitle applicant to a patent therefor. Nothing is claimed for the process. Articles of iron or steel have been ornamented before by the process of etching. This application, therefore, presents a very clear instance of "double use," and is totally devoid of such essential features of novelty as would render it patentable.

The decision of the Examiners-in-Chief is affirmed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,635.—*Construction of Sheet-Metal Coffins.*—Granted to ISAAC C. SHULER, July 5, 1850. Hearing June 18, 1873.

24,654.—*Pin-Sticking Machines.*—Granted to JOSEPH W. NARAMORE, July 5, 1850. Hearing June 18, 1873.

24,664.—*Elastic Railroad Frogs.*—Granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1850. Hearing June 18, 1873.

24,665.—*Protecting Surfaces of Articles of Iron.*—Granted to THADDEUS SELLECK, July 5, 1850. Hearing June 18, 1873.

24,668.—*Picker-Motion for Power-Looms.*—Granted to WILLIAM STRAMM, July 5, 1850. Hearing June 18, 1873.

24,685.—*Alarm Attachment for Tills.*—Granted to EDWIN B. WHITE, July 5, 1850. Hearing June 18, 1873.

24,688.—*Machines for Boring and Mortising Blind Slats.*—Granted to LEONARD WORCESTER, July 5, 1850. Hearing June 18, 1873.

24,689.—*Corrugating Sheet Metal.*—Granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859. Hearing June 18, 1873.

24,709.—*Harvesters.*—Granted to LEWIS and JACOB MILLER, July 5, 1859. Hearing June 18, 1873.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WICKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OLIN TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STUART VANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,158.—*Carding Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JANKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHILA B WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing,* granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—*Nail Machines,* granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,343.—*Stoves.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins,* granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,473.—*Scales,* granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars,* granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1850. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,304.—*Improved Machine for Moving Iron at the Rolls,* granted to CHARLES HEWITT, June 7, 1859.

Claim.—The movable floors, platforms, or supports A B for moving iron or other metal at the rolls while in process of manufacture, constructed and operated as herein described, or otherwise substantially the same.

DISCLAIMERS FILED.

90,973.—CALVIN C. UDELL, Chicago, Ill.—*Improvement in Step-Ladders,* dated March 22, 1870. Disclaims:

"The stiles U, formed of single pieces of material, slotted out at their central parts, and so sprung outward as to form segments T T, as set forth."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 3, 1873.]

6,694.—*Hat and Coat Hook.*—ALBERT D. JUDD, New Haven, Conn. Application filed May 20, 1873.

6,695.—*Striped Fabric.*—CHARLES H. LANDENBERGER, Philadelphia, Pa. Application filed May 17, 1873.

6,696.—*Nubia.*—JAMES PHIPPS, Philadelphia, Pa., assignor to MARTIN LANDENBERGER & Co., same place. Application filed May 8, 1873.

6,697.—*Heating-Stove.*—JACOB BEESLEY, Philadelphia, Pa., assignor to SAMUAL SMITH, same place. Application filed May 24, 1873.

6,698.—*Watch-Hands.*—BADWELL A. GOODELL, Waltham, Mass. Application filed May 24, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date June 3, 1873.]

1,286.—*Petroleum.*—BROWN BROTHERS, Erie, Pa. Application filed May 14, 1873.

1,287.—*Watches.*—COURVOISIER, WILCOX & Co., New York, N. Y. Application filed May 9, 1873.

1,288.—*Shirts.*—WARREN A. FARR & Co., Boston, Mass. Application filed May 16, 1873.

1,289.—*Seats for Chairs, Settees, and Cars.*—GARDNER MANUFACTURING COMPANY, Glen Gardner, N. J., and New York, N. Y. Application filed May 29, 1873.

1,290.—*Tooth-Brushes.*—SAMUEL L. MINTZER, Philadelphia, Pa. Application filed May 6, 1873.

1,291.—*Soap.*—JESSE OAKLEY & Co., New York, and Newburg, N. Y. Application filed May 23, 1873.

1,292.—*Whisky.*—WALSH, BROOKS & KELLOGG, Cincinnati, Ohio, and Covington, Ky. Application filed May 27, 1873.

1,293.—*Whisky.*—WALSH, BROOKS & KELLOGG, Cincinnati, Ohio, and Covington, Ky. Application filed May 27, 1873.

1,294.—*Whisky.*—WALSH, BROOKS & KELLOGG, Cincinnati, Ohio, and Covington, Ky. Application filed May 27, 1873.

1,295.—*Grinding-Mills.*—ALEXANDER W. WINALL, Cincinnati, Ohio. Application filed May 20, 1873.

1,296.—*Medicine.*—CASPER C. ZIMMERMAN, Shoemakersville, Pa. Application filed May 6, 1873.

1,297.—*Whisky.*—JOHN T. M. ORENDORF, Baltimore, Md. Application filed May 26, 1873.

1,298.—*Beverage.*—SAMUEL F. STOWE, Providence, R. I. Application filed May 26, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date June 3, 1873.]

ORIGINAL PATENTS.

139,448.—*Steam-Engine.*—GEORGE H. BABCOCK, Plainfield, N. J., and STEPHEN WILCOX, Brooklyn, N. Y. Application filed November 7, 1872.

A universal-joint bearing on the main shaft, with a universal-joint bearing on the crank, is combined with a cross-head provided with circular bearings so as to form an engine adapted to work perfectly when out of line in any direction. Also has a spherical eccentric with the universal-joint bearing. The spherical boxes of the connecting-rod are combined with cheek-pieces.

Claim.—1. The boxes or brasses I I, forming a cylinder at right angles to the crank-pin, fitted upon the same and inclosed within cheeks g^1 g^2 formed and adjusted in the connecting-rod G, as and for the purposes specified.

2. The combination of the universal-joint bearing on the main shaft B, with the universal-joint bearing on the crank, and with the turnable cross-head bearing *e*, so as to form a complete engine, adapted to work perfectly when out of line in any and all directions, as specified.

3. The combination of a spherical eccentric with the universal-joint bearing on the main shaft B and the universal-joint bearing on the crank-pin, substantially as and for the purposes specified.

139,449.—*Retort-Furnace for Separating Zinc from Gold, Silver, &c.*—EDWARD BALBACH, Jr., Newark, N. J. Application filed May 3, 1873.

Improvement on patents 64,934 and 108,695.

Claim.—1. An oscillating retort-furnace, provided with a hinge, D, at its rear end, upon which it oscillates, and a vent, B, in its top for discharging the products of combustion into the chimney of the furnace, substantially as described, for the purposes set forth.

2. The combination of a hinged discharge-pipe or flue, G, with an oscillating retort-furnace, substantially as and for the purposes described.

139,450.—*Carriage-Top.*—GEORG BOCKSTALLER, Chicago, Ill., assignor of one-half his right to CARL BEER, same place. Application filed October 29, 1872.

The loops are secured to the under side of the top, and the ends of the expanders are passed through them, thereby stretching the top smooth in all directions.

Claim.—A folding top, A, secured to the standards D by means of the loops B E, and expanders C, substantially in the manner and for the purposes set forth.

139,451.—*Construction of Buildings.*—HEZEKIAH H. BRYANT, Boston, Mass. Application filed December 6, 1872.

The flooring-joists are covered with rough boarding, over which is spread a water-proof layer. Furring-strips are laid on this layer, and the spaces between the strips filled with non-combustible material. The ordinary flooring is then laid, resting on the strips and non-combustible material. Furring-strips are secured to the lower edges of the joists at right angles thereto, and a metallic ceiling is nailed to the strips. A liquid coating of fire-proof and water-proof cement is then poured in between the strips to make the joints tight, leaving spaces between the cement and the edges of the joists for the circulation of water or steam. Furring-strips and laths are attached to the lower side of the metallic ceiling to receive plaster.

Claim.—1. The combination of a water-tight shed or substructure provided to the floor of a building, with a metal ceiling, substantially as or for the purposes set forth.

2. The combination of a metal ceiling rendered substantially water-tight, with the joists of a building, wherein the spaces between the joists are kept in communication with each other, substantially as and for the purpose shown and specified.

3. The combination of a water-tight deck, with a superposed layer or coating of non-combustible material and the ordinary floor of a building, substantially as and for the purposes specified.

4. The combination with a metal ceiling of the furring-strips and laths to receive plaster, substantially as shown and described.

139,452.—*Charging and Tamping Platforms for Submarine Blasting.*—JAMES BUSSON, Yates City, Ill., assignor of one-half of his right to HENRY WHITAKER, New York, N. Y. Application filed June 29, 1872.

A temporary cap or cover of large dimensions for the charge to be exploded, which will confine the force of the explosion to the rock; said cap to be submerged by its weight and raised again by a derrick or otherwise.

Claim.—1. In combination with platform A, rim B, substantially as described and shown, and for the purposes intended.

2. In combination with platform A, ribs or braces J J, substantially as described and shown and for the purposes specified.

3. In combination with platform A and rim B, stay F, substantially as shown, and for the purpose specified.

4. In combination with platform A, plate P, and tube *r*, substantially for the purpose set forth.

5. In combination with platform A and braces or stays F, stirrups K K, substantially for the purpose set forth.

139,453.—*Ice-Cream Freezer.*—HOMER B. CAMPBELL, Racine, Wis. Application filed May 3, 1873.

By the first combination the dasher remains stationary, while the cream-can is caused to revolve rapidly and by turns in opposite directions. By the second combination both the dasher and cream can revolve, but in opposite directions and with a reversible motion. The dasher is cast so as to have sharp or knife edges in two directions to facilitate scraping and trituration.

Claim.—1. The frame E having the uprights *a a*, transverse bar *a'*, lever D, and bevel-wheel or segmental rack C', in combination with the pinion *y*, cream-can B', and stationary dasher-shaft *c*, all arranged and operating substantially as and for the purpose shown and described.

2. The frame E having the uprights *a a*, transverse bar *a'*, lever D, and two bevel-wheels or segmental racks, C and C', one of a smaller diameter than the other, with or without the guides *f* or their equivalent, in combination with the pinions *x* and *y*, cream-can B', and rotating dasher-shaft *c*, all arranged and operating substantially as and for the purpose shown and described.

3. The dasher, consisting of the central shaft *c*, scraper *d*, and slotted parallelogram *g*, arranged, constructed, and operating substantially as and for the purpose shown and described.

139,454.—*Parlor-Bedstead.*—FRANCIS E. COFFIN, Boston, assignor of one-half his right to WILLIAM R. HOYT, Chelsea, Mass. Application filed March 13, 1873.

The toilet-case on the top of the bed-frame is combined with a hinged shelf, which serves as a receptacle for toilet articles, and when the bed-frame is turned down, said shelf serves as a support for the frame. The two parts of the folding bed-frame are connected by a double hinge with socket-joints and stops.

Claim.—1. The combination of the toilet-case C, provided with shelves and doors having mirrors M N, with the top R and hinged shelf B, supports *b* and *i*, said hinged shelf forming a portion of the top of the case A, and a support for the part D when turned down, when constructed and arranged to operate in combination with each other, substantially in the manner shown and described, as and for the purposes set forth.

2. The combination of the socket-joints composed of pieces F F' and G G', and provided with end bearings H H' and stops P P' upon the connecting-piece S, with folding side pieces D and E of a turn-out or folding parlor-bed, substantially in the manner described, as and for the purposes set forth.

139,455.—*Manufacturing Picks.*—DANIEL COLLINS, Newark, N. J. Application filed February 14, 1873.

The blank is clamped and swaged by two laterally-sliding dies operated by vertically-reciprocating wedges; the socket is then formed by a descending punch, which is prevented from carrying the blank upward in its ascent by means of a stripper-plate arranged upon the dies.

Claim.—The combination of the reciprocating pieces H, sliding in the recesses formed in the blocks G, sliding wedge-shaped frames F, stripper-plate *e* and piercing tool P, all constructed and arranged for operation substantially as and for the purpose specified.

139,456.—*Friction-Clutch Pulley.*—JOHN D. CROCKER, Norwich, Conn. Application filed March 31, 1873.

A flanged hub, on which a circular sliding wedge is applied for adjusting the clutch or clamping-jaws outwardly against the rim of the pulley for clutching the latter to its shaft; independently adjustable clutching or clamping jaws which are acted on by springs.

Claim.—The pivoted levers C, which are formed with clutching extensions, and are withdrawn from contact with the pulley by springs *s*, in combination with the flanged pulley A, the flange B, hub *a*, and sliding turning-wedge G, substantially in the manner and for the purpose described.

139,457.—*Machine for Cutting Matches.*—PERLEY D. CUMMINGS, MANASSEH SMITH, and JAMES C. JORDAN, Portland, Me.; said CUMMINGS assignor to said SMITH and JORDAN. Application filed March 14, 1873.

Match-card blanks are split by rotary sectional blades and placed alternately, heads and butts, just far enough past each other to allow their being dipped without sticking, requiring no intermediate layers of other material to separate them.

Claim.—1. The combination of the hoppers *a a'*, plungers *c c'* in the mash *e*, with the spring-plunger *m'*, as herein set forth.

2. The combination of the knives *d d'*, plungers *c c'*, spring-plunger *m'*, and the trough *b*, as herein set forth.

3. The slotted hoppers *a a'*, in combination with the carriages D, levers C, tracks E, fingers B, to operate as and for the purpose herein described.

4. The method of slitting match-cards and stacking them in positions ready for dipping at one and the same operation, and in one and the same machine, as herein set forth.

5. The combination of the slotted hoppers *a a'* with the feeding devices herein described, plungers *c c'*, knives *d d'*, spring-plunger *m'*, and trough *b*, as herein set forth.

6. The combination of the gear *n* on the main shaft *g* with the gear *o* on the shaft *p*, pinion *r*, bevel-gear *s* on the shaft *t*, cam *u*, and projections *v* on the vertical shafts *w w'*, as and for the purpose herein set forth.

7. The combination of the gear *n*, the main shaft *g* with the gear *o* on the shaft *p*, pinion *r*, bevel-gear *s* on the shaft *t*, with the cam *x*, and projections *v* on the vertical shaft *w w'*, as and for the purposes herein set forth.

8. The combination of the gear *n* on the main shaft *g* with the gear *o* on the shaft *p*, pinion *r*, bevel-gear *s* on the shaft *t*, cam or projection *y*, and the projections *v*, and the spring *y'*, as and for the purposes herein set forth.

9. The combination of the spring-plunger *m*, the stud *x*, the lever *q'*, cam *v'* having the elevations *o' p'*, and all as herein specified.

10. The guide K, with its points L, in combination with the stacking-trough *m'*, as and for the purpose herein set forth.

139,458.—*Door-Spring.*—DAVID DICK, New York, N. Y., assignor to BARBARA M. BARMORE, same place. Application filed April 15, 1873.

A cylinder containing a spiral spring is secured to the door-frame a little above and near the inner end of the door. A bracket fastened to the door near its top carries a flanged roller, in which works a lever extending out from and attached to the lower portion of the cylinder. In the construction of the cylinder an upper and lower cap and an inside tube are used, the upper end of the coiled-wire spring being inserted in a hole in the upper cap, while the lower end extends outward between the cylinder and the lower cap in the form of an arm, having its outward end bent downward to bear upon and hold the lever rigidly against the roller. There are also ratchet-teeth and notches to regulate tension of the spring, and the general construction serves to make the pressure on the door strongest when it is closed and lightest when open.

Claim.—The combination of the cylinder C, top cap C, spring D, arm *y*, lever H, and roller J, all constructed as described, and arranged on the door-frame and door in the position and for the purposes herein set forth.

139,459.—*Metallic Hose-Coupling.*—EDWARD S. ELMER, Hudson, N. Y. Application filed February 24, 1873.

Recessed locking-lugs are formed upon the interior of the coupling, so when the lugs on the socket part reach the recesses they are thrown into them and held there by the force of a spring-washer.

Claim.—1. The combination of the casing or female part A, having recessed locking-lugs *b b' b b'*, collared swivel B *a*, spring D, and male part C having locking-lugs *c c*, all constructed and operating substantially as and for the purpose specified.

2. The herein-described hose-coupling, composed of the parts A, B, C, and D, the inner end of the male part C, the bore of which is somewhat enlarged, being provided with a packing-ring, *e*, to encircle the extreme end of the swivel B when the parts are locked together, substantially as and for the purpose specified.

139,460.—*Trunk and Strap Fastener.*—JAMES FAIRMAN, New York, N. Y. Application filed March 15, 1873.

A roughened or serrated plate has flanges or lugs on two sides, and is adapted for attachment to a trunk. A screw with an enlarged head, and operated by a key, engages in a central hole in the plate and secures a slotted strap, which is passed between the lugs. A strap that is not slotted may be used by constructing the device with a plate extending across the top from one lug to the other. A headless screw, with its lower end flattened, is then passed through an aperture in this plate and clamps the strap.

Claim.—1. The screw C, constructed with an enlarged or overlapping head, in combination with plate A, so arranged that a strap passed between said parts may be clamped, substantially as and for the purpose set forth.

2. The frame H, in combination with headless screw D, the lower end of said screw being flat, and its upper end being flush with, or little below, the surface of the frame, both parts constructed and operating as set forth.

139,461.—*Revolving Fire-Arm.*—CHARLES FOEHL, Philadelphia, Pa. Application filed April 23, 1873.

A spring pawl attached to the hammer operates upon a ratchet on the end of the shaft upon which the cylinder is rigidly mounted, said shaft having its rear bearing in and extending through the recoil-plate, for the purpose of giving rotation to the cylinder.

Claim.—The spring-pawl *c''* in the hammer *c'*, constructed and arranged to operate upon the ratchet-wheel A, substantially as and for the purpose herein before set forth.

139,462.—*Building-Block.*—SAMUEL T. FOWLER, Brooklyn, N. Y. Application filed April 12, 1871.

The mortar forming the bond for the masonry is held in grooves near the center on all sides of the blocks. Grooves on the perpendicular ends each side of the mortar grooves, between it and each face, receive dry cement or plaster. Dry materials form a bed for the block and an absorbent for any moisture that might otherwise escape to soil the surface of the block.

Claim.—The grooves *b* for the reception of the dry cement, in combination with the mortar-grooves, for the purpose of constructing a wall of building-blocks with wet mortar and dry cement, in combination substantially as described.

139,463.—*Piston-Valve.*—GEORGE H. GIBBS, Nunda, N. Y. Application filed March 13, 1873.

The valve consists of two heads, composed each of a sectional ring tapering toward both ends, and an outer ring, which can be adjusted by two tapering washers fitting into the ends of the sectional taper ring, and made adjustable by nuts on the stem. The steam is admitted between the heads and through annular ports, and is exhausted through the outer open ends of the chest.

Claim.—The valve B, constructed, as described, of the sectional ring *a* tapering at both ends, washers *b b*, and split exterior ring *d*, in combination with the nuts *f f*, substantially as and for the purposes herein set forth.

139,464.—*Sheet-Metal Hinge.*—WILLIAM H. HART, New Britain, Conn. Application filed May 13, 1873.

In a sheet-metal hinge, those portions which have to be removed from the hub of one leaf to make room for the hub of the other are bent out, (instead of being cut out and wasted, as usual,) and form a rigid arm at right angles to the main leaf. This arm passes around the edge of the door and is secured thereto by screws, thus affording a very secure and permanent fastening for the hinge.

Claim.—As a new article of manufacture, the strap or T-hinge, herein shown and described, in which the portion or portions which have to be removed from the hub of one sheet-metal leaf, in order to make room for the hub of its fellow, are bent out instead of cut away, and form a rigid arm, B, standing at about right angles to the leaf, substantially as and for the purpose set forth.

139,465.—*Burial-Casket.*—HOSEA HENIKA and MYRON F. CARDER, Kalamazoo, Mich. Application filed April 15, 1873.

The top of the casket is made of two sections in the form of arcs of a circle. These two sections are attached to pivoted arms, and each rotates independently of the other, if desired.

Claim.—A casket, provided with a top or cover made in two sections, C C', pivoted to the lower portion of the case, and adapted to be independently raised and lowered in combination with supporting-catches *a a*, as described.

139,466.—*Device for Traversing Card and other Cylinders.*—FERDINAND HERBOTH, Newark, N. J. Application filed February 20, 1873.

The bearing has irregular or cam-shaped ends, against which the collars on the shaft bear.

Claim.—In a wool-carding or other similar machine, a shaft-bearing, A, constructed in the manner substantially as described, in combination with collars B B, or equivalent pins or studs, secured to a revolving shaft, C, whereby a reciprocating motion is given to the shaft C simultaneously with the revolution thereof, substantially as and for the purposes described and set forth.

139,467.—*Nut-Lock.*—ABRAHAM C. HULL, St. Louis, Mo., and JOHN S. BROWN, Mount Pleasant, D. C., assignors of one-third their right to ISAAC H. STURGEON, St. Louis, Mo. Application filed April 25, 1873.

The threaded aperture of the nut is made conical. The bolt is split at the end and spread.

Claim.—The combination of a split screw-bolt, A, and a nut, B, having a partially conical and partially cylindrical screw-threaded aperture, substantially as and for the purposes herein specified.

139,468.—*Explosive Compound, or Giant Powder.*—EGBERT JUDSON, San Francisco, Cal., assignor to THE GIANT POWDER COMPANY and ATLANTIC GIANT POWDER COMPANY, same place. Application filed May 13, 1873.

Claim.—The composition of matter, hereinbefore described, consisting of nitro-glycerine intimately mixed with pulverized infusorial earth, nitrate of soda, rosin, and sulphur, or their equivalents, substantially as described, as a new explosive compound.

139,469.—*Iron Post for Wire-Fences.*—DANIEL KAUFMAN, Boiling Springs, Pa. Application filed January 11, 1873.

The end view of the post presents the letter A, formed of angle-iron, the lower ends resting on shoes, cross-bars strengthening the post. Between the top cross-bar and the apex fits the only horizontal rail. Wires passing horizontally through the bars coil on rollers at the end of the section or panel, by which they are stretched.

Claim.—1. An improved fence-post, formed by the combination of the bent angle-iron bar A and cross-bars *a'* with each other, substantially as herein shown and described.

2. In combination with the angle-iron post, constructed as described, the adjustable wires E running through holes in the cross-bars *a*, and vertical bar G, which is notched at its upper end to receive the rail D, substantially as shown and described.

139,470.—*Apparatus for Cooling Rooms.*—ALEXANDER M. LESLEY, New York, N. Y. Application filed March 31, 1873.

Within an upright cupboard closed at the bottom by doors, and perforated at the top, an ice-box is hung by means of pulleys and counter-weights so as to be pushed up out of the way. Object—to lower the temperature and cause a circulation of air in the room.

Claim.—The combination of the closet A A' A'', having doors C C, and perforated at its top, with the ice-box E perforated at its upper part, having perforated partitions *b*, and movable up and down on the guides *d d* by means of the ropes and weights, all substantially as set forth.

139,471.—*Cultivator.*—JOHN P. MANNY, Rockford, Ill. Application filed March 21, 1872.

Claim.—1. The combination, in a cultivator, of the bifurcated tongue-frame, the vertically-adjustable draw-bars E pivoted to the horizontally-swinging pivoted brackets E', and the hinged connecting-rod *e*, all these members being constructed and operating substantially as set forth.

2. The combination of the swing-frame G *g*, drag-bars H, suspension-rods K, and radius-bars J, substantially as set forth.

3. The combination of the swing-frame G *g*, shields M, suspension-rods K, radius-bars J, and drag-bars H, substantially as set forth.

4. The combination of the swing-frame G *g*, radius-bars J, drag-bars H, suspension-rod K, and locking-treadle L, substantially as set forth.

5. The combination of the drag-bar H, cap *j*, radius-bar J, thimble j^2, and bolt j^3, substantially as set forth.

6. The combination of the drag-bar H, the friction-socket h^1, the conical hollow plug h^2, the eye-bolt h^3, and the standard *i*, all these parts being constructed and operating as set forth.

7. The combination of the drag-bar H, the crank-shaped standard *i*, the socket i^2, and the shovel I, these parts being constructed as set forth.

139,472.—*Button-Hole Cutter.*—WILLIAM C. MCGILL, Cincinnati, Ohio. Application filed May 1, 1873.

A triangular cutter is secured to the upper blade of the scissors, and a bar is attached to the lower blade and bent outward at right angles to said blade and then returned upon itself and bent parallel with the main shank. The upper side of the bar is a cutting-edge. The recess formed by the bar gages the distance of the button-hole from the edge of the cloth.

Claim.—In combination with the upper cutting-edge of a button-hole cutter, a lower shank bent at right angles, when arranged to operate substantially as herein shown and specified.

139,473.—*Windmill.*—WILLIAM D. NICHOLS, Batavia, Ill. Application filed April 21, 1873.

A stationary horizontal screw-gear wheel is mounted upon the tower which sustains the mill and upon the movable carriage which carries the two large wind-wheels; a cross-shaft bearing two small wind-wheels, one at each end, placed at right angles to the plane of the large wheels. Upon the said cross-shaft is a worm pinion-wheel which takes into the stationary screw-gear wheel and causes the entire carriage to revolve around said wheel when the wind acts upon the small wind-wheels.

Claim.—1. The combination, with a double-header mill, C C', of a stationary gear-wheel, A, and the two small wind-wheels, E E, borne upon a transverse shaft, D, which is furnished with a worm-pinion, G, all constructed and operating substantially as specified.

2. The combination of the transverse shaft D provided with two small wind-wheels, E E, the worm-pinion G, and stationary gear-wheel A, substantially as specified.

139,474.—*Brush.*—CHARLES W. PALMER, Cleveland, Ohio. Application filed May 5, 1873.

A brush, with one side covered with Brussels carpet, secured with wire-bands to the body; the other side covered with plush, except a portion of one end which has a mirror.

Claim.—The strip A, plush B, carpet C, mirror D, and wire-bands E E, all combined and arranged as described, and for the purpose set forth.

139,475.—*Envelope.*—CHARLES PINK and MARCUS SILVERBERG, Cairo, Ill. Application filed March 8, 1873.

Claim.—An envelope having its sides and ends secured together by means of an inner and an outer adhesive flap, and provided around its interior edge with a strengthening-cord, substantially as and for the purpose specified.

139,476.—*Machine for Tapping Pipe-Fittings.*—JOHN L. POPE, Cleveland, Ohio. Application filed December 12, 1872.

The plate on which the taps are arranged is attached to a circular carrier, which, as it revolves, causes the pinion on the back of the wheel gearing with the pinions on the mandrels to engage with a toothed segment situated on the lower side of the frame, which causes the mandrels to revolve in one direction to enter the taps, and another segment on the opposite upper side of the frame reverses the motion and withdraws the taps. A clamp holds the fitting while being operated upon, and is opened by a cam to drop the joint when finished. Seven systems, of three taps each, are attached to the carrier.

Claim.—1. The rotating carrier C, having, or provided with, a system of teeth, C', and pinion R, in combination with the segmental gears O and P, substantially as and for the purpose set forth.

2. The frame or bed A, constructed as described, in combination with the rotary carrier C and pinion D, as and for the purpose specified.

3. The gears N R and gears K in combination with taps G I H, as arranged, and operating in relation to, and in connection with, the rotary carrier, as and for the purpose substantially set forth.

4. The spindle or mandrel J, nut J', in combination with the feed-screw L, pinion R, and gear N, as arranged and operating substantially as set forth.

5. The cam F', lug E', spring *f*, and slide *i*, in combination with the arms or levers *d f* and jaw *a*, substantially as specified, for the purpose set forth.

6. The spindles J, gears K, driving-gears N R, in combination with the rotary carrier C and segmental gears O P, all constructed and arranged to operate in the manner as and for the purpose set forth.

7. The stationary feed-screw L, in combination with jam-nut M', spindle J, and nut J', as and for the purpose substantially described.

139,477.—*Bouquet-Holder.*—ALBERT F. RANSOM, Glen's Falls, N. Y. Application filed May 7, 1873.

A bouquet-holder constructed of two semi-cylinders, with a band placed near the top, to which a pin is attached, and provided with an eccentric head, by means of which the semi-cylinders are opened and closed.

Claim.—A bouquet-holder formed of the two semi-cylinders A and B, ring or band D, in combination with the pin F with eccentric head E, eye G, and opening C, substantially as and for the purpose hereinbefore set forth.

139,478.—*Cultivator.*—GEORGE R. RICHARDSON, Earlville, and JACOB BEBEL, Rockford, Ill. Application filed November 9, 1869.

The shovel-standards are swiveled to a rocking bail and controlled by handles which are pivoted to the lower part of said standards and suspended from the main frame by a swivel-link.

Claim.—1. The combination of the rocking bail D, pivoted on the tongue-timbers C, the inner shovel-standards E swiveled on the rocking-bail, outer shovel-standards E'', each pivoted to its respective inner standard at top, and connected with it by a link, *b*, near the bottom, and draft-rods *a* connecting each standard with the tongue-timbers, these members being constructed and operating substantially as set forth.

2. The combination of shovel-standards E, swiveled on a rocking-bail, D, with hand-levers G pivoted to the standards and suspended from the main frame by a swivel-link, H, these members being constructed and operating substantially as set forth.

139,479.—*Device for Leveling Millstones.*—WALTER RING, Owen county, Ind. Application filed September 9, 1872.

For setting the spindle perfectly true and leveling the burr-stone.

Claim.—1. In combination with the staff, the staff-block, consisting of two parts, c^1 and c^2, having a vertical and longitudinal adjustment, as herein shown and described.

2. The clutch-box F, provided with the annular collar *f*, eccentric *g*, chuck A, eccentric plate *h*, set-screw *i*, lugs *m* working in the eccentric apertures of the plate *h*, the spindle *o*, the upper clutch-box *p*, and the staff, all constructed and operating as described.

139,480.—*Machine for Corrugating Sheet Metals.*—FRANKLIN ROYS, East Berlin, Conn. Application filed March 6, 1873.

The corrugating-rolls are each supported at their centers, between the bearings, to prevent them from springing, by yoke-shaped adjustable pieces, which run in annular grooves formed in said rolls. In the rear of the rolls is a hinged curved table, which receives the plate as it comes from the rolls in such manner as to prevent it from bending up or down.

Claim.—1. The adjustable center-surface bearings as supports at center of the corrugating-rolls, substantially as set forth.

2. The adjustable hinged table, arranged and operating substantially as and for the purpose set forth.

139,481.—*Gas-Burner.*—DANIEL E. RYAN, Cincinnati, Ohio. Application filed November 5, 1872.

Claim.—A gas burner and pillar having a special or grasping surface of angular or equivalent form on its outer sides, constructed in the manner shown and described, and for the purpose set forth.

139,482.—*Wheel-Quartering Machine.*—WILLIAM SELLERS, Philadelphia, Pa. Application filed December 11, 1872.

The combinations are novel in that the devices for supporting and adjusting the boring-tools are outside of and not between the wheels; spindles or centers and not journal-bearings are used for centering the work; the boring-cylinders are on horizontal surfaces of the adjustable brackets, and not on inclined surfaces, in virtue of which they may be set nearer to the axial line of the work; and the devices for clamping the rims of the wheels support the weight of the work and thus relieve the centers of any strain.

Claim.—1. In a wheel-quartering machine, the combination of a centering-head having inclined slides, a horizontal base-plate bracket movable upon said slides, and boring mechanism mounted upon said bracket, the bracket being arranged substantially as hereinbefore set forth, so as to permit the adjustment of the boring mechanism to bore the crank-pin holes in the driving-wheels at different distances from their centers, and with either crank leading.

2. In a wheel-quartering machine, the combination of a centering-head, a bracket base-plate movable thereupon, boring mechanism mounted upon said bracket, and a centering-spindle mounted in a tubular support on the frame, under which spindle-support the bracket base-plate slides, substantially as set forth.

3. In a wheel-quartering machine, the combination of sliding heads, centering-spindles for accurately centering the wheels to be bored, and adjustable clamping-supports to sustain and hold the rims of the wheels while being bored, substantially as set forth.

4. In a wheel-quartering machine, the combination of centering-heads having symmetrical sides, spindle-supports mounted in the heads, and interchangeable boring mechanism, substantially as set forth, to adapt the machine to the boring of either right or left hand leading-cranks.

5. In a wheel-quartering machine, the combination of the vertically-adjustable supporting-bracket D, flanges for clamping the inner and outer faces of the rim of the wheel, and the clamping bolt and nut, by which all the parts are securely clamped upon the centering head and wheel, substantially as set forth.

139,483.—*Reed-Organ.*—ANDREAS J. SORENSEN, Erie, Pa., assignor to BURDETT ORGAN COMPANY, same place. Application filed March 14, 1873.

The music-rack is hinged at the top and has a chamber for music behind it.

Claim.—The reed-organ top, provided with the hinged door D, its frame-work E E, and having the music-receptacle in the rear of said door, substantially as described.

139,484.—*Fire-Escape.*—JOSEPH A. TALPEY, Somerville, assignor to JOHN HITCHCOCK, trustee, Boston, Mass. Application filed April 23, 1873.

An endless rope is carried over a serrated pulley inclosed in a metallic case, to the axle of which is attached a disk of a diameter considerably larger than the pulley. To the inner face of this disk are attached a number of frictional governor arms, which, by centrifugal action on the inner surface of the case, control the rotation of the pulley. A right-angled pivoted double-arm carries the two portions of the rope in its looped ends and holds them from entanglement during descent.

Claim.—1. In an apparatus for lowering goods, or to be used as a fire-escape, the drum F, provided with the arms *e*, arranged as and for the purposes set forth, the flange F′ and the disk G, in combination with a single rope, J, passing over said drum and held between said arms when the flange F′ and the disk G are of considerably larger diameter than the drum F, for the purpose of increasing the resistance to the revolution of the drum, substantially as described.

2. In combination with the drum F, provided with the arms *e*, and the rope J passing over said drum, and arranged to impart motion thereto in either direction, the friction-weights I I, mounted upon the inner face of the disk G and arranged to operate in conjunction with the casing C, to prevent accelerated motion in the descending object, substantially as described.

3. In combination with the drum F and the rope J, the elbow-lever A, arranged and operating substantially as described, for the purposes specified.

139,485.—*Latch for Coach-Doors.*—JOHN THIELEMANN, Newark, N. J. Application filed March 8, 1873.

A latch that can be opened from the inside of the coach, by simply pushing or pulling in one direction the handle of a lever on the inner side of the door.

Claim.—In a coach-door lock or latch, the bent levers B and C, journaled upon separate pins *a a*², and forming, by the contact of their short arms, one compound lever, in combination with the lock-bolt E, whereby the said bolt E is retracted in the manner substantially as described, for the purposes set forth.

139,486.—*Hand Canceling-Stamp.*—ERNEST H. THOMAS, Louisville, Ky. Application filed May 21, 1872.

Upon the depression of the central rod, the cylinder to which the stamp-holder is secured is rotated, and the arms in which the ink-distributing roller is journaled, are vibrated by bars connecting with the central rod and with the arms and cylinder respectively, the latter of which receives ink from a roller supplied by the fountain-roller. Spring-bearings permit the distributing-roller to follow the irregular periphery of the cylinder.

Claim.—The revolving cylinder C, with its stamp J, inking-rollers D D′, fountain F, and delivering-roller P, in combination with the frame B, the arms H H′, and links G G′, by which they are operated, spiral spring N, and stem L, by which the whole device is operated, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

139,487.—*Drill Gage.*—ALVAH C. TRAFTON, Worcester, Mass. Application filed March 10, 1873.

The device is constructed in one solid piece and will gage the bevel of the two sides, at the point, of a drill, equally, no matter what may be the diameter of the latter, and will also gage the point as regards its angles, and indicate when it is central.

Claim.—As a new article of manufacture, a drill-gage, constructed with a centering-trough, composed of two plates, A B, connected together at right angles, and a bevel-regulating gage, composed of two plates, C D, connected together and permanently affixed to the centering-trough A B, substantially as shown, and for the purposes described.

139,488.—*Step-Ladder Chair.*—HENRY WILLGOHS, New York, N. Y. Application filed May 15, 1873.

Two parts formed step-like and attached by links, so as to be adapted for a chair, a step-ladder, a couch, and a table.

Claim.—1. The parts A and C, having the forms as described, and connected by the links B B, so as to be capable of folding into the several positions described, for the purposes specified.

2. The folding-piece D, hinged to the part C, as shown, in combination with the parts A and links B B, and adapted to serve in broadening the step for the step-ladder, and lengthening the structure for a lounge, as herein specified.

139,489.—*Blast-Furnace.*—JOHN V. WOODHOUSE, Mine La Motte, Mo., assignor to himself, RADCLIFFE B. LOCKWOOD and WM. A. SCOTT, same place. Application filed May 1, 1873.

The furnace is made in three divisions: a detachable hearth, consisting of a sheet-iron carriage filled with brick and lining, in which the pot is formed; an intermediate section connected with the tuyeres, and in which the reduction takes place; and an upper portion or stack supported upon a bed and columns. The hearth supports the intermediate portion, and the two are raised into place by jack-screws. The several parts can be removed for repair.

Claim.—1. A detachable hearth or bottom or floor, as and for the purposes set forth.

2. The cupola or stack independent of the hearth, as and for the purposes set forth.

3. The furnaces in which the reduction takes place, formed independent or detachable from its stack or cupola, as set forth.

4. The combination of a detachable hearth, H, furnace F, and stack S or cupola, as and for the purpose set forth.

139,490.—*Flux for Solder.*—CHAS. E. YAGER, Hudson, N. Y. Application filed February 8, 1873.

Claim.—As a new article of manufacture, a dry granulated soldering salt or flux prepared by first dissolving zinc in muriatic acid, then expelling the acid by evaporation, and finally adding sal-ammoniac, substantially as specified.

139,491.—*Sun-Bonnet for Horses.*—JOHN ANDERSON, Brooklyn, N. Y. Application filed March 25, 1873.

Claim.—1. The new article of manufacture of an elevated sun-bonnet for horses, the body of which is composed of a suitable material having sufficient strength to retain its proper form or shape without the use of the wire or other frame heretofore employed, and strengthened at the edges, substantially as herein specified.

2. The combination, with the body A, of the fastening C D E F G for securing the bonnet to the bridle of the horse in an elevated position, substantially as herein specified.

139,492.—*Currency and Postage-Stamp Holder.*—SAMUEL V. BECKWITH, Brooklyn, N. Y., assignor to himself and T. B. CARPENTER, New Haven, Conn. Application filed January 17, 1873.

A cylinder carries a spring-clamp hinged to one end to hold currency rolled thereon, and a pair of spring-tongs clasping stamps which are inserted within it.

Claim.—As an article of manufacture, the herein-described currency and stamp holder, consisting of the cylinder A, the bar B hinged thereto, the spring *b*, head C, and springs E.

139,493.—*Invalid-Bedstead.*—ABNER BRAY, Chicopee, Mass. Application filed May 10, 1873.

The slats are jointed near the center. Upon the ends of the head-bar are pivoted toothed segments. Plates with retaining-flanges are attached to the rails, and a shaft with a toothed wheel is operated by a winch.

Claim.—The combination, in a spring-bed having the slats hinged or jointed at *d*, of the bar *c*, having the toothed segments *f f* pivoted thereto, with the plates A A provided with retaining-flanges *g*, and the shaft *m* provided with the toothed wheels *n n*, and operated by a winch, *t*, substantially as described.

139,494.—*Clothes-Washer.*—WILLIAM R. BROOKS, Phelps, N. Y. Application filed May 13, 1873.

This boiler attachment is constructed with a crowning false bottom with openings covered with slightly-raised wire over their center, with side pipes and a horizontal perforated tube containing a sliding valve by which the steam and water are regulated.

Claim.—The horizontal perforated tube C, containing the sliding valve or diaphragm D, when arranged upon perpendidular tubes, in connection with a false bottom, substantially as described, and for the purposes specified.

139,495.—*Machine for Skiving Leather.*—JOHN W. CHANDLER, East Corinth, Me. Application filed March 27, 1873.

The table is supported upon an inclined bed, both bed and table moving under a skiving-knife. The table may be adjusted in its inclination, that a long or short tapering cut may be effected, as required. The leather is held in place by a spring tension-roll.

Claim.—1. The combination of the table *b* and bed A with the lip *d* having notches or holes *e e* therein, and set-screw *f*, as specified.

2. The combination of the adjustable table *b*, knife *j*, and bed A with the adjustable spring tension-roll, as set forth.

3. The combination of the lips *f f* on each side of the table *b*, with the clamp *u*, as shown.

139,496.—*Measuring-Funnel.*—JOHN K. CONIC and DAVID H. SHAETZER, West Hempfield township, Lancaster county, Pa. Application filed March 29, 1873.

The rod or stem of the funnel-stopper is supported at its upper end by a cross-arm attached to a hooped handle or bail, which is connected with the sides of the measuring-vessel by removable pins, so that the whole may be conveniently detached from the vessel when desired.

Claim.—The detachable handle B, connected at *b* to the upper edge of the vessel A *a′* by a pin, P, in combination with the cross-brace C, rod F with its flange *c*, spring E, draw-ring D, and stopper G, all arranged and operated in the manner and for the purpose described.

139,497.—*Washing-Machine.*—PHILLIP G. DAHMER, New York, N. Y. Application filed May 15, 1873.

The washing-machine is constructed with a box in usual form, having within it two rotary brushes pivoted by journals through it. From the outside of the box is a thumb-screw operating upon a spiral spring and the journals by which the distance between the brushes is regulated. Over the brushes are two plain rolls. Between them the clothes are passed to the brushes with journals, one working in a slot for adjustment, having a reduced revolution, to hold the clothes for rubbing when in use by the brushes.

Claim.—The pair of rotary brushes E E′, one of which is adjustable relatively to its fellow, as described, and the pair of rollers G G′ rotating at a lower rate of speed, the whole combined and organized substantially as and for the purpose herein set forth.

139,498.—*Whip-Socket Attachment.*—ROBERT DODS, Southington, (Milldale Post Office,) Conn. Application filed April 17, 1873.

The whip-socket is formed with a fillet upon each end, into which the screws are secured.

Claim.—The combination of the straps C C, the washers D D, the screws E E, and fillets *a a* of the whip-socket B for fastening the whip-socket to the dash-board A, substantially as and for the purpose set forth.

139,499.—*Mechanical Movement.*—JAMES B. DOOLITTLE, Wallingford, Conn. Application filed April 3, 1873.

Two segments are arranged upon opposite sides of the crank-pin or eccentric, so that when the crank-pin revolves the said segments rock to and fro in the stirrup, imparting to the plunger, within which the stirrup is formed, a reciprocating movement corresponding to the throw of the crank-pin or eccentric.

Claim.—In combination with the crank-pin or eccentric F and frame D, the two segments H and H′ working within the said frame, so that the rotary movement of the shaft imparts a reciprocating movement to the frame, substantially as set forth.

139,500.—*Heel-Plate.*—HENRY L. DRAKE, Lynn, Mass. Application filed February 8, 1873.

The cutting-edge secures a clean cut upon the lower edge or lift of the heel.

Claim.—A top plate of a boot or shoe heeling machine formed with a cutting-edge, *a*, substantially as described and shown, and for the purposes specified.

139,501.—*Cutter for Meat and Vegetables.*—MARTIN L. EDWARDS, Salem, Ohio. Application filed March 8, 1873.

The lever, carrying the cutting-blade at one end, has a horizontal slot for the crank-pin to work in, and bell-crank at its pivoted end for operating a pawl which engages with a ratchet upon the cutting-block. The pivoted end of the knife-lever is adjustable in a slotted standard. The pawl and the bearings of the crank-wheel are also adjustable. The end of the lever operating the pawl is guided by a slotted arm.

Claim.—1. The knife-lever *i* having a horizontal slot for crank-pin *h* and arm *l*, in combination with slotted standard *j*, substantially as shown and described.

2. The combination of the slotted knife-lever *i*, slotted arm *l*, pawl *m*, and slotted guide *n* with the ratchet *v*, substantially as shown and described.

139,502.—*Kettle.*—WILLIAM J. EVANS and WILLIAM PERRY, New York, N. Y. Application filed April 4, 1873.

A cast or pressed metallic ring is riveted or fastened steam-tight to the top of the kettle for the cover to rest in and upon. The ring has ears to which the bail is attached.

Claim.—The metallic ring B with ears C C, in combination with the top A, substantially as and for the purpose hereinbefore set forth.

139,503.—*Case for Containing Indexes.*—CHARLES E. FELLOWS, Philadelphia, Pa. Application filed April 22, 1872.

The drawers are held within the case by springs at their rear ends, and are provided or not with folding spring-seated leaves or covers.

Claim.—1. The box A, provided with the retractile index-slides B, when constructed substantially as herein shown and described.

2. The double folding retractile index spring-slides B C, when constructed substantially as herein set forth.

139,504.—*Lamp-Post.*—LYMAN A. GOUCH, Yonkers, N. Y. Application filed October 1, 1872.

The post is made of three parts. The trunk beneath the ground is of usual form, its top being conical. The main section has two series of flanges of different diameters, those in the lower part being adapted to receive the upper end of the trunk, and those in the top to receive the lower conical end of the upper section. The parts are adjusted vertically and secured in place by iron wedges.

Claim.—A lamp-post composed of a separate main body, A, a separate upper part, B, and a separate trunk or lower part, C, when said parts or pieces are constructed to have a tapering fit, one within the other, by means of internal flanges in the main body and tapering extensions of the upper and lower parts, essentially as specified.

139,505.—*Hot-Air Furnace.*—WILLIAM O. GROVER, Boston, Mass. Application filed February 14, 1873.

The furnace is made in two entirely distinct parts. The fire-pot and ash-pit and grate can be readily dismembered and access had to the smoke and flame chambers.

Claim.—The air-tight chamber, composed of the metal plates riveted together, and having within it the removable fire-pot and ash-pit plates, the whole being constructed and arranged substantially as shown and described.

139,506.—*Ice-Creeper.*—ABRAM HEULINGS, Philadelphia, Pa. Application filed January 30, 1873.

The creeper is composed of the arms A and B, pivoted together and held open or shut by a spring. Arm B is secured to the shank of a boot or shoe, and arm A opens on the tread or sole, and by means of points or studs on its under side prevents slipping.

Claim.—A folding ice-creeper composed of the arm A, tops or points *b*, sole-plate B, jaws *c*, and the spring E, substantially as and for the purpose shown and described.

139,507.—*Drawing-Board.*—ALONZO HITCHCOCK, New York, N. Y. Application filed September 27, 1871.

The board revolves upon a central pivot. Upon the base, to the left, is a fixed scale, and with the T square and circles minutely subdivided, which are drawn upon the upper right and lower left corners of the board, angles may be drawn upon the paper, as desired.

Claim.—A revolving drawing-table, composed of the board A, the portable frame B, the fixed rest C, the catch A, and the graduated circle F F, one or both, all constructed, combined, and operating substantially as specified.

139,508.—*Work-Basket.*—THOMAS V. HOBBS, Chicago, Ill. Application filed November 11, 1872.

The basket is supported and rotates upon a standard. The basket-rim has pins for holding spools on the under side.

Claim.—1. A combined work-basket and spool-holder, when the basket is provided with pins to receive the spools, substantially as specified.

2. A combined rotary work-basket and spool-holder, when the basket is provided with pins to receive the spools, substantially as described.

139,509.—*Spark-Arrester.*—THOMAS D. KENDRICK, Boston, Mass. Application filed March 22, 1873.

An inverted conical chamber is provided with an annular space, through which water is projected in a sheet across the smoke-stack to extinguish the sparks passing therethrough.

Claim.—A vessel, *d*, provided with an annular or partial opening, *f*, through which a sheet of water is forced for the purpose of extinguishing sparks and cinders, the said vessel *d* being in communication with the water in the boiler by means of the pipe *i*, stop-cock or cut-off *k*, and rod *l*, as herein set forth and described.

139,510.—*Hoop-Skirt.*—GEORGE W. LOCKWOOD and ALBERT CARTER, New York, N. Y., assignors to C. C. CARPENTER & CO., same place. Application filed March 17, 1873.

A series of transverse wires rest on the back of the wearer to prevent the skirt being thrown forward. A series of central braces support the pannier of the skirt.

Claim.—1. The combination, with a pannier hoop-skirt, of a series of spring-braces, I, arranged and operating in the manner described.

2. In a hoop-skirt having a series of transverse wires A B, the vertical central connecting-tape J and spring-braces I, as and for the purpose specified.

139,511.—*Washing-Machine.*—MELVIN N. LOVELL, Erie, Pa. Application filed November 21, 1872.

Attached to the inside of a tub by cleats is the frame of the machine, in which work smooth and corrugated rollers, the upper one yielding by rods and springs over the journals.

Claim.—The combination of the pieces A, the uprights B, the top piece C, the journal-boxes I with projections K, rods L, and springs M, rollers D E, tub F, and pieces N O, as and for the purpose specified.

139,512.—*Turn-Table.*—CHARLES MACDONALD, Hoboken, and CARL O. H. FRITZSCHE, Paterson, N. J. Application filed March 29, 1873.

The radial arms are connected to the cap by the vertical rods, and their outer ends are supported by the tension-rods passing over the cap, so as to throw most of the weight upon the central bearing-surface and reduce the friction between the rails and track.

Claim.—The combination of radial arms C C and rods D D and E E, sustaining said arms upon a central friction-surface, substantially and for the purpose herein set forth.

139,513.—*Card-Case.*—HARRY H. MILLER and THOMAS BENNETT, St. Louis, Mo. Application filed April 9, 1873.

This case consists of a series of pockets which are partially open at the front to disclose their contents, and are strung together with strings or ribbons in such manner that they may all be drawn out to discover their open front, or may be slipped one upon another and be covered by suitable flaps to render the device convenient to carry in the pocket.

Claim.—A ticket or card case composed of a series of open-faced pockets, ribbons, or strings, by which they are strung together, and a cover for inclosing the same, essentially as and for the purpose set forth.

139,514.—*Gas-Governor and By-Pass.*—PETER MUNZINGER, Philadelphia, Pa. Application filed March 11, 1873.

When the pressure of gas becomes too great in the governor it raises the float A, which, by means of the rods *b b* and *c c*, and the levers E, depresses the float G, and thus forces water into the

chamber K so as to seal the end of cylinder O and stop the flow of gas. The valve U may be turned so that the floats are not operated and the flow of gas not interfered with.

Claim.—1. The float A, tank B, levers E, fulcrum F, floats G, tanks H, and the rods *b b c c*, for the purpose shown and described.

2. The floats G, tanks H, pipes M, and the conical chamber K, for the purpose shown and described.

3. The chamber K, in combination with the conical projection L, as shown.

4. The chamber J, composed of the concentric cylinders N O, the inlet and outlet nozzles P P', deflector R, horizontal division-plate R', deflectors S S', and the plate T, for the purpose shown and described.

5. The circular valve U, composed of the concentric cylinders U^1 U^2, radial partitions V^1 V^2, and the deflectors V^3 V^4, for the purpose shown and described.

6. The vertical slot W in the cylinder U^1, for the purpose shown and described.

7. The valve-chamber J, valve U, and conical chamber K, as and for the purpose shown and described.

139,515.—*Landau-Carriage Hook.*—OLIVER S. OSBORN, New Haven, Conn. Application filed April 30, 1873.

The hooked lever is pivoted to a plate secured on one section of a landau-carriage top, and this lever has an eccentric on the under side of its pivoted end; this eccentric forms a bearing for the hook proper. By means of the hooked lever and the eccentric the hook is thrust forward, and after it has caught the stud on the opposite section is drawn back and the two sections are brought into contact.

Claim.—In combination with the hook D attached to one part of the carriage-top, and a securing device, C, upon the other part, an eccentric, F, which forms a bearing for the hook D, and a lever, E, by means of which the said eccentric is made to cause the two points of attachment to approach or recede from each other, substantially as set forth.

139,516.—*Blind-Slat Staple.*—CHARLES H. PALMER, New York, N. Y. Application filed March 12, 1873.

This staple or hook has a long shank, which is screw-threaded to enter the slat, and a short pointed prong, which is forced into the slat, after the long one has been inserted, by a blow from a hammer, which prevents the staple from turning and working out of the slat.

Claim.—The blind-slat staple, substantially as described.

139,517.—*Cigar-Drying Mold.*—NEWTON W. PALMER, New York, N. Y. Application filed March 12, 1873.

The mold has hinged perforated jaws, between which the cigar-bunch is pressed and left to dry. The points of the jaws are extended for receiving a securing-ring, one point having a head for retaining the ring.

Claim.—A sheet-metal cigar-drying mold consisting of hinged jaws having staple C and projecting headed stem *d*, combined with the ring or link clasp *e*, as herein described and shown.

139,518.—*Railroad Tie.*—WATSON PECK and HENRY C. RICHMAN, Lombard, Ill. Application filed April 12, 1873.

A means of economizing timber in railroad ties by using as a rail-bed short blocks hollowed on the under side, and having a dovetailed channel on the upper side, into which a metallic flanged tie-strip is inserted and confined by a corresponding dovetailed block, to which the rail is spiked.

Claim.—The combination of the chairs A, constructed with or without recesses, with the connecting-plate E and blocks D, substantially and for the purpose described.

139,519.—*Billiard-Cue.*—HENVEY PLATTS, Ithaca, N. Y. Application filed March 24, 1873.

Relates to the manner of securing the tips to billiard-cues, and consists in securing a band of any suitable material around the end of the cue that will harmonize with the wood, so as to not injure the effect of the stroke; and in securing the tip to the end of the cue by means of rough or barbed points, projecting out from the end.

Claim.—In combination with a billiard-cue, the non-elastic band *c*, roughened points *i*, and tip, when constructed substantially as shown.

139,520.—*Pipe-Wrench.*—JOHN RIGG, Cleveland, Ohio. Application filed April 4, 1873.

The jaws are capable of adjustment to different-sized pipes. The griping surfaces are always parallel to each other.

Claim.—The herein-described wrench, consisting of the bar A having a disk, B, and a permanent jaw, C, the movable and adjustable jaw D having disk E with holes *e e*, the bar G having disk H and pins *i i*, and the bolt J, when constructed, combined, and arranged substantially as shown, and for the purpose set forth.

139,521.—*Thread Dressing and Winding Machine.*—JAMES SHORT, New Brunswick, N. J., assignor to himself and R. N. WOODWORTH, New York, N. Y. Application filed December 31, 1872.

The thread-beam or spool is mounted on, and easily removable from, the axle, which is squared centrally. Outside the flanges the axle is rounded to rest in the open bearings, and then outside the rounded bearing one end is again squared to enter a mortise in the driving-shaft. As the beam is filled the weighted roller rises, and when full, the pins which connect the weighted arms with the shaft are withdrawn, and the arms provided with the friction-rollers are turned back to permit the removal of the beam.

Claim.—1. The axle C of the thread-beam B, made with rounded bearing parts, and with squared end *d*, in combination with notched bearings in standards *a b*, and the driving-shaft D provided with mortise *e*, substantially as and for the purpose specified.

2. The arms F, carrying friction-rollers *f*, and fixed on the shaft E, in combination with the weighted arms H mounted loosely on the projecting ends of the shaft, and removable pins *g* for locking said parts together, in combination with the roller G and beam B, arranged as shown and described, for the purpose specified.

3. The combination with the spool B mounted on a removable spindle, the roller G placed above and resting on the spool and prevented from longitudinal movement by the flanges or disks of the spool, of the hinged arms F, provided with friction-rollers that bear on the body of the roller, and are retained against said rollers at all times by the weighted arms, as and for the purpose described.

139,522.—*Boiler-Furnace.*—AMOS B. SMITH, Geneva, N. Y. Application filed October 8, 1872.

A series of rakers, balanced by a weight and connected to the safety-valve lever, automatically rake the fire when the pressure falls by the fire becoming clogged with ashes. A coal-reservoir, arranged over the front of the boiler, is provided with chutes passing the fuel to grate, and the fuel becomes heated by outgoing products of combustion in the chimney. The boiler is a return-flue, by which the heat is passed alongside of the reservoir.

Claim.—1. The automatically-acting rakers *h*, constructed and operated substantially in the manner and for the purposes set forth.

2. The arrangement of the coal-reservoir L, provided with one or more chutes, M, in relation to the boiler A, smoke-flue G, and furnace B, substantially as and for the purposes herein shown and described.

139,523.—*Ore-Feeder for Grinding and Crushing Mills.*—CHARLES P. STANFORD, San Francisco, Cal. Application filed November 4, 1872.

An arrangement by which the feeding is accomplished automatically, by the lifting of the stamps stem instead of by the drop, as heretofore, thus supplying the ore at the instant the stamp is raised and out of the way.

Claim.—1. The toothed cylinder E, in combination with the chute D, substantially as and for the purpose above described.

2. The adjustable toothed cylinder E, in combination with the chute D, for the purpose described.

3. The adjustable toothed cylinder E, ratchet-wheel J, and pawl-carrier I with its pawl K, in combination with the rod L and stamp-stem B, substantially as and for the purpose above described.

4. The above-described or equivalent device for feeding ore to crushing-mills, when arranged to be operated by the lift of the stamps, as above described.

139,524.—*Back-Band Hook.*—JACOB STRAUS, St. Louis, Mo. Application filed March 3, 1873.

To increase the efficiency and ease of adjustment of the device employed for attaching traces to, and suspending the same from, the back-band of a harness.

Claim.—The combined buckle and hook described, in which the bars A A and B, and spurs *b* are so arranged as to enable the back-band strap when engaged therewith to occupy a straight line, substantially as and for the purpose specified.

139,525.—*Cutting Attachment for Sewing-Machines.*—JOHN E. WIGGIN, Stoneham, Mass., assignor to HUGH H. MAWHINNEY, same place. Application filed March 29, 1873.

Designed to cut fabrics in a line parallel with the seam being sewn. The stationary blade is secured to a plate provided with a needle-hole, and at such a distance from such hole as it is desired to cut the cloth from the line of stitching. The movable blade is connected with a rocking shaft supported in an adjustable frame, and the shaft is moved from an eccentric and by connections, as shown. The notched arm allows the operator to readily connect or disconnect the operating parts.

Claim.—1. The movable shear E, its shaft F and shaft-box G', adjustable and fixed to the table A by means as set forth, in combination with the stationary shear D and its perforated plate C, applied to the table in manner as explained.

2. The combination of the eccentric lever I, the stud *m*, screw *g*, nut *l*, spring *k*, slotted arm G, and notched arm H.

3. The combination of the shear-shaft F and the eccentric A of the driving-shaft with the eccentric lever I, the stud *m*, screw *g*, nut *l*, spring *k*, slotted arm G, and notched arm H, all constructed and arranged substantially in manner and to operate as specified.

139,526.—*Bag-Lock.*—HERMANN AHREND, Newark, N. J. Application filed April 25, 1873.

The flange on the knob is provided with a notch which, when brought in line with the post, allows the knob and spring-bolt to be pressed inward, and thus release the catch.

Claim.—The spring-bolt E, and flanged knob G, arranged to move in the same vertical line as described, in combination with the post H, for locking the frames A B, with or without the notched disk F, substantially as described.

139,527.—*Railway Car-Brake.*—JOHN S. ANDERSON, Flintville, Wis. Application filed January 25, 1873.

The wheels are journaled independently of each other on short axles, and are prevented from jumping the track by means of the half-elliptic spring which is secured to the under side of the car-body, and the ends of which bear upon the ends of the brake-bar.

Claim.—In an automatic car-brake, the combination of the independent wheels D D' journaled to the frame E, the pivoted truck-frame H, the transverse bars K K', the brake-bar A, and the flat spring B, all constructed and arranged as described, and operating in the manner set forth.

139,528.—*Offal-Drier.*—MATTHEW ANDERSON, Chicago, Ill. Application filed March 3, 1873.

For drying and deodorizing the offal of packing-houses. A jacketed steam-heated cylinder, in which the offal is inclosed, the said cylinder containing an agitator to stir the offal rapidly, and having air-pipes for discharging heated air throughout the mass at the same time, the air being heated in a coil surrounding the steam-jacket, and connecting with the shaft of the agitator, which is hollow and conducts the air, which is to be forced in by a pump or blower, to perforated tubes on the agitating-blades, from which it is distributed so as to circulate thoroughly through the substance to be dried, and then escapes through a pipe to carry off the odor to a fire, if preferred, where it may be burned.

Claim.—The pipe-coil M, applied, as described, around the steam-jacket D, the said coil being connected by suitable tubing with the inside of cylinder A to furnish a supply of air.

139,529.—*Car-Pusher.*—ALVA S. BAILEY, Paxton, Ill., assignor of one-half his right to EDWARD LITTLE, same place. Application filed April 19, 1873.

The main beam is provided at its lower end with a clutch for griping the rail when pressure is applied, and at its upper end with straps, through which a slide-lever is operated. This lever is provided at its upper end with a hook for engaging with the edge of the car, and with a rack upon its upper side, in which the gear upon the end of the hand-lever operates, so that by successive applications the car is moved forward on the track.

Claim.—A car-mover, consisting of beam C, slide D, hand-lever E, and clutch-plates G H I, combined, constructed, and arranged to operate as described.

139,530.—*Till-Alarm.*—JOHN F. BALDWIN, Nashua, N. H., assignor to himself and MILES ALARM TILL MANUFACTURING COMPANY, Providence R. I. Application filed March 19, 1873.

Two vertically-swinging plates, arranged one in front of the other, transversely within the drawer, and operated by pull-rods beneath, have notches in their peripheries, with removable closing pieces, which being shifted make different combinations of the open spaces. A pivoted spring-hook, attached to the under part of the counter, slips over and hangs in front of these plates, so that an open space in each plate, when properly set in line with the hook, permits the drawer to be opened, but when not in line cause a bell to be sounded.

Claim.—1. The combination of one or more swinging notched plates, B C, notch-closers K, a hook, D, and an alarm mechanism, substantially as specified.

2. The notched closers of the front plate or plates, provided with a notch, L, and the hook with a point, M, to operate in the manner described.

3. The rear plate, arranged to be pushed back by the hook against the push-pin N' of the trip-catch, substantially as specified.

4. The arrangements of the pull-rod O, bell-crank N, and the plates B C, substantially as specified.

139,531.—*Portable Water-Closet.*—THOMAS BARRETT, New York, N. Y. Application filed December 11, 1872.

The case of the closet is divided by a partition in two compartments, one forming a water-tank, in which is situated a pump, the piston-rod extending up through the top of the case, and provided with a handle to operate the pump and force the water through a pipe connected to a receiving-bowl arranged over a reservoir, the bottom of the bowl being closed by a trap-valve, balanced by a weight, so that it may be opened whenever the bowl is partially filled, and when empty close automatically.

Claim.—The pump D provided with a handle, *d*, and suspended within the tank B below the top of the case, in combination with each other and with the pipe *c*, bowl F, and tank G, substantially as described, for the object specified.

139,532.—*Bin for Preserving Sweet Potatoes, &c.*—HEDGEMON T. BAETE, Dyersburg, Tenn. Application filed June 27, 1872.

The moisture arising from the potatoes is condensed upon the cover, runs down into the gutters, and escapes.

Claim.—In a bin for preserving sweet potatoes, the inner open-top crib or bin A, with an outside surrounding gutter B, in combination with a cover, E, fitted to rest in said gutter and with a space, H, intervening between the cover and the straw-covered potatoes, as shown, and for the purpose described.

139,533.—*Toy.*—ALBERT R. BATCHELDER, Newburyport, Mass. Application filed March 22, 1873.

The balls are arranged to be rotated in opposite directions at the same time.

Claim.—The toy formed of the balls E E, flexible cords or strings *d d*, wire hooks D, revolving piece C, rod *a*, and handle A, all constructed and arranged as and for the purposes specified.

139,534.—*Folding Stereoscope.*—JAMES A. BAZIN, Canton, Mass. Application filed May 31, 1872.

The staff of a portable stereoscope is hinged so as to be held with the forward portion forming an obtuse angle with the rear or object portion, the eye-glasses swinging on the inclined forward portion, and having a lateral adjustment.

Claim.—1. In a folding stereoscope, a combination of the base A and the plate B hinged at an angle extending outward, with the lens-frame, Fig. 5, either hinged or fixed in a vertical position across the end of the plate B, as described, and for the purpose set forth.

2. In a folding stereoscope, the base A and plate B hinged at an angle extending outward, in combination with the lens-frame, Fig. 5, and adjustable glasses D D.

139,535.—*Manufacture of Cultivator-Teeth.*—JACOB BEBEL, Rockford, Ill. Application filed November 13, 1872.

The blades are cut from a strip of steel of the required width, the two edges of which are beveled, the point swaged, and the tooth slightly curved.

Claim.—1. The shovel steel, hereinbefore described, made in strips, with a beveled cutting-edge on each side, constituting a new article of manufacture.

2. The improvement in the art of making cultivator-teeth, hereinbefore set forth, by cutting the blanks from a strip formed with beveled edges, and then swaging and tempering the edges and points, and finishing the teeth in the manner described.

139,536.—*Mail-Bag Fastening.*—BRICE X. BLAIR, Huntingdon, Pa. Application filed December 19, 1872.

A bag-frame is constructed with a rod on one of its jaws and a rib on the other, on which two clamps are arranged to slide. The clamps meet in the center of the frame, and have eyes at their adjacent ends for the purpose of locking them together.

Claim.—1. The clamps B B, arranged to slide on rod C and rib *a* and hold the two jaws securely together, as set forth.

2. The slides B B, provided with eyes b^2 b^2 on their opposite adjacent ends, applied to a traveling-bag, mail-bag, or their equivalents, as and for the purpose described.

139,537.—*Soldering-Iron.*—GEORGE F. BLAISSE and JAMES BRANNEN, Philadelphia, Pa. Application filed March 20, 1873.

The clamp for holding the iron is provided with flanges and tightening-screws.

Claim.—In combination with the recessed iron E, the clamp D, having the arms d^2 connecting the collars d^1 and d^3, the latter being made in sections, and provided with screws d^4, substantially as specified.

139,538.—*Apparatus for Forcing Water by Direct Condensation of Air.*—JOHN M. BROOKE, Lexington, Va., assignor of one-half his right to THOMAS T. MUMFORD. Application filed January 6, 1873.

An arrangement of pipes, in connection with a double-acting air-pump and water-reservoirs, to permit the condensed air to be transferred alternately from one reservoir to the other, and the water to be expelled at each stroke of the piston of the air-pump.

Claim.—1. The two containing-vessels A and B, in combination with the double-acting air-pump, and the ports, valves, pipes, and cocks, by means of which condensed air is transferred, alternately, from one containing-vessel to the other, to expel the water therefrom at each stroke of the piston of the air-pump, substantially as described.

2. In combination with the containing-vessels A B, the air-pump, and induction and eduction pipes, valves, ports, and cocks, the floats *n* and *n'*, with the weights O and O', valves *f* and *f'*, cylinder *r*, piston *s*, rack *t* engaging with the toothed sectors on cocks Z and Z', and the connecting air-pipes *q* and *q'*, arranged to operate substantially as described.

3. In combination with the containing-vessels, air-pump, induction and eduction pipes, valves, and cocks, the float *n*, mass O, and counterpoise *d* for operating the valve *f*, substantially as described.

4. The combination of the containing-vessels, air-pump, pipes, valves, stop-cocks, and cylinder and piston, by which the stop-cocks are operated, all constructed, combined, and arranged to operate automatically, substantially as described.

139,539.—*Soldering-Machine.*—WILLIAM D. BROOKS, Baltimore, Md., assignor to MARY C. BROOKS and GEORGE D. BROOKS, same place. Application filed May 8, 1873.

The series of burners are arranged to extend obliquely downward from the gas-chamber for the purpose of soldering can-tops of different sizes by placing the cans nearer or farther from the jets of flame.

Claim.—The series of burners C attached obliquely to the gas receiving chamber B, as and for the purpose described.

139,540.—*Egg-Carrier.*—ABNER H. BRYANT, Chicago, Ill. Application filed April 12, 1873.

The strips of one series have slits extending from each edge toward the center, leaving a space undivided. The strips of the other series cross the first and interlace with them, the middle portion of each strip having a slit to receive the corresponding part of the cross-strip, and an irregular-notched slit extending to one edge for introducing and holding the same interlocked.

Claim.—In an egg-carrier interlacing strips, having slits arranged substantially as specified, so that the intersecting parts are interlocked in position.

139,541.—*Coal-Mining Machine.*—WARREN CASE, Troy, Ill. Application filed April 30, 1873.

Claim.—1. In combination with the saw K, clearers *n*, attached to the back of the saw, for the purposes herein set forth.

2. The combination of the shaft E, cog-wheel G *d*, elongated pinion *f*, movable shaft H, wheel I with projection *h*, post *i*, and spring *i*, all constructed and arranged substantially as and for the purposes herein set forth.

3. The combination, with the shaft E, cog-wheel G *d*, elongated pinion *f*, and movable shaft H, of the gears O *t*, shaft *v*, eccentric

w, lever P with box *x*, spring-arms *y y*, and post *k*, all constructed and arranged substantially as and for the purposes herein set forth.

4. The fly-wheel M arranged upon an independent shaft, L, standing at right angles with the driving-shaft H, and connected with it by the worm *s*, and pinion *p*, substantially as and for the purposes herein set forth.

5. The combination of the swinging frame S carrying the saws T T, the bail *i'*, spring *m'*, elbow-lever V, cord or chain *n'*, and windlass W, all substantially as and for the purposes herein set forth.

6. The saw T, constructed, as described, of the disks *s'*, teeth *p'*, and shoes *t'*, all substantially as herein set forth.

139,542.—*Printer's Chase.*—LOUIS G. CHAPUT, New York, N. Y. Application filed May 13, 1873.

Supplemental chases, having wedge-shaped furniture attached, are made of different sizes and provided with arms to fit into the main chase.

Claim.—The supplementary or inner chase B provided with arms C, arranged to interlock with the angles or sides of the main chase A, substantially as described.

139,543.—*School-Desk.*—JOHN W. CHILDS, Kansas City, Mo. Application filed April 22, 1873.

The desk-top has side braces, made of metal, each one having a perpendicular slot, and below said slot a double-curved slot, its two curves being connected together by a vertical part. To the side of the desk-frame is attached a pintle which works in the vertical slot, and a stop-pin which slides in the double-curved slot.

Claim.—The side brace E of the desk-top, having the slot *e* and curved slots e^1 e^2, constructed and combined with the pintle *a* and stop a^1, as and for the purpose described.

139,544.—*Method of Adjusting Circular Saws.*—SANFORD W. CLEMENS, Cleveland, Ohio. Application filed March 22, 1873.

An additional collar is placed upon the saw-arbor, having set-screws passing through it by which the saw is adjusted.

Claim.—The loose collar F, adjustable by a series of screws passing through a fixed collar, C, and the nut-binding device D E, combined with an end-threaded mandrel, B, as described, so that the saw may be made to work true, and prevented from wabbling, in the manner set forth.

139,545.—*Clothes-Wringer.*—DAVID M. COLE, Elgin, Ill. Application filed May 9, 1873.

On one end of the frame is pivoted, near its top, a lever extending down and connecting with the lower roll by a slot in the hub. On top of the lever are arms extending from the pivoted point above and below it, resting upon a plate connected with the journal of the lower roll, by which the gears are thrown into connection by the separation of the rolls in passing through them articles thicker and requiring more power to force them through.

Claim.—1. A clothes-wringing machine provided with gear-wheels adapted to be automatically thrown into and out of operation, substantially as described, for the purpose specified.

2. The gear-wheel I, constructed as described, and attached to the shaft of the lower wringing-roll by means of the recess and pin *j k*, so as to have a slight rotatory movement upon said shaft, substantially as described, for the purpose specified.

3. In combination with the wringing-rolls and gear-wheels, the shipping-lever and sliding cam-plate, substantially as described, for the purpose specified.

4. The guide-bracket O, in combination with the sliding cam-plate and the shipping-lever, substantially as described, for the purpose specified.

5. The shipping-lever, constructed with the arms *u u*, in combination with the irregular raised surface *v v*, substantially as described, for the purpose specified.

139,546.—*Corn-Row Marker.*—ADOLPHUS COOKE and DAVID W. CROSS, Brooklandville, Md. Application filed April 21, 1873.

The wheels are so arranged with reference to the markers that one of the wheels, travelling in a mark previously made, serves as a guide to the machine, and when turned to mark across the field in the reverse direction the sliding frame carrying the markers is moved over to the opposite side.

Claim.—1. In a row-marker which has its outer marking devices arranged to operate in the track of the wheels, the interior marker or markers, which are arranged to operate at row-space distance from the wheels, and the exterior markers, which are arranged to alternately operate simultaneously with the interior markers, and in the track of the wheels, in combination with a lifting-bar, which is common to all the markers, substantially as described, and for the purposes specified.

2. The combination, on the main frame and axle of a row-marker, of the several markers with the sliding frame, the lifting-bar, and its operative lever, substantially as described.

3. The retaining-bolt *d* arranged to engage with and retain a marker in an elevated position, in combination with the spade-lifting device, as and for the purposes specified.

139,547.—*Apparatus for Preserving Fruit.*—LE ROY C. COOLEY, New York, N. Y., assignor to AMANDA T. JONES, Clinton, Wis. Application filed March 1, 1873.

The fruit-cans are connected by means of small tubes, fitting air-tight, to a large central tube, and are ranged on either side of it, extending its whole length. This large tube has two other tubes, provided with suitable stop-cocks, which connect it with the air-pump and preserving-liquid.

Claim.—The apparatus herein described for conveying air and vapor from the preserving jars or vessels and conducting the liquid into said jars after exhaustion, without disconnecting, as specified and shown.

139,548.—*Apparatus for Assorting Nails.*—JOHN COYNE, Pittsburg, assignor to himself and ROBERT CRESSMAN, Etna, Pa. Application filed March 23, 1872.

Claim.—1. An improved nail separating and assorting apparatus, formed of the inclined side plates B B and the central angle and dividing plate A, arranged as shown and described to form longitudinal openings or slots E E, one on each side of the angle-plate, whereby the imperfect nails will be delivered through said openings into suitable receptacles, and the perfect nails will be delivered at the lower end of the apparatus, as specified.

2. The combination of inclined plates B, angle-plate A, and slotted traverse straps D with their set-screws, by means of which the said plates B are made adjustable, as shown and described, for the purpose specified.

3. In an apparatus for assorting and separating nails, the inclined plate or plates B, made adjustable laterally with respect to the plate forming the opposite side of the trough for reception of the nails, as shown and described, whereby the width of the longitudinal opening or openings E E may be varied according to the special work to be done, as set forth.

139,549.—*Compound Steam-Engine.*—WELLSLY W. CRANE, Auburn, N. Y. Application filed April 12, 1873.

A trunk-engine with the high-pressure steam on the trunk side of the piston, and the low-pressure steam exerting its force on the large side of the piston, to which steam is alternately admitted by a single valve. The exhaust steam is admitted by an auxiliary port to the condenser, which forms the bed-plate. The connecting-rod is hollow, and has a rod through its center for adjusting the journal-boxes when worn.

Claim.—1. The combination, in a trunk-engine, of the piston D, ports *a b*, exhaust-port *d*, valve C, and the condenser E placed under one head of the cylinder, all constructed substantially as and for the purpose set forth.

2. In combination with the piston and trunk of a trunk-engine, a hollow connecting-rod in combination with an internal tightening-rod, constructed as and for the purpose specified.

139,550.—*Compound Hose-Pipe.*—MARTIN CRONIN, Washington, D. C. Application filed December 14, 1872.

The lines of hose from several engines are connected to a compound hose-pipe having several branches at its base, in order to throw a stream of greater volume.

Claim.—The compound branch hose-pipe, composed of the main delivery-pipe A, and two or more entering-branches, B, provided with connections, substantially as described, whereby two or more streams of water, through separate lines of hose, may be combined in one, and delivered with increased volume and force, as and for the purposes specified.

139,551.—*Towel Rack and Boot-Jack Combined.*—CLEMENS DARNSTAEDT, Meriden, Conn. Application filed December 19, 1872.

The towel-rack is composed of four upright posts and a series of horizontal bars. Between two of the posts is rigidly secured a boot-jack, and to the bar over the boot-jack is secured a toe-brace. The bar is pivoted so that the toe-brace can be adjusted to the required position over the boot,

Claim.—A combined towel-rack and boot-jack, constructed substantially in the manner shown and described.

139,552.—*Fly-Protector.*—ISAIAH DAUGHERTY, Rocky Station Va. Application filed March 1, 1873.

A protector from flies and other insects constructed with a frame and covered top, with opening above its center covered with wire-cloth, or other open material, for the free circulation of air, mounted on casters for free movement, with a door for entering at its end.

Claim.—The fly-protector, formed by the combination, with a frame, A *b d e f*, supported on casters *a*, of the door B and wire-gauze sides, all as shown and described.

139,553.—*Flour-Mill.*—JEREMIAH DEAN, New Baltimore, N. Y. Application filed February 1, 1873.

Ribs, as constructed on bottom of lower runner-stone, carry the meal around to the discharge-orifice in the curb, and also prevent clogging of the runner.

Claim.—The straight ribs a^1 attached to the under side of the runner A, so as to be tangential to the shaft against which their inner ends abut, and having their outer ends a^2 extended beyond the edge of the shaft, and beveled, as shown and described.

139,554.—*Sawing-Machine.*—WILLIAM DETRICK and JACOB D. CULVER, Greencastle, Ind.; said CULVER assignor to said DETRICK. Application filed November 21, 1872.

The frame of the machine is cast in one piece, and the operative mechanism so constructed as to be reversed, converting it into a right or left hand machine, as may be desired.

Claim.—1. The combination of the frame A with the parts *a b d f*, cast in one piece, the fly-wheel B, reversible guide-bar G, slide D, saw E, and pitman F, all substantially as set forth.

2. The combination of the pivoted dog-bar I with reversible head J, and the pivoted brace K with loop *n*, arranged substantially as and for the purposes herein set forth.

139,555.—*Apparatus for Drying Powdrette.*—LEONIDAS DUVALL, Philadelphia, Pa., assignor of one-half his right to ALFRED T. CLARK, same place. Application filed April 18, 1873.

The excrement mixed with charcoal, being placed in the furnace-heated pan, is lifted, agitated, and moved forward by the hooked spirally-arranged beaters; the dried mass, escaping by an outlet in one end, falls upon a screen, which permits the finer matter to fall through the meshes into a trough, where it is pulverized by revolving blades, the bricks, &c., falling from the screen out of the apparatus.

Claim.—1. The combination and arrangement of the heating-pan A, revolving shaft F, and hook-shaped teeth G, substantially as and for the purposes set forth.

2. The sieve or screen K, arranged in relation to the drying-pan A and the breaking and grinding apparatus L, substantially as and for the purpose set forth.

3. The toothed blades N and the receiver M, in connection with a heating apparatus, for the purpose stated.

4. The pan A, beaters G, sieve K, and breaking and grinding apparatus L, combined and operating substantially as and for the purpose stated.

139,556.—*Apparatus for Separating, Concentrating, and Amalgamating Ores.*—HENRY H. EAMES, Gold Hill, N. C. Application filed April 10, 1873.

Several chutes are placed one above the other, and the lower end of each chute (except the bottom one) is just above the highest point of the one below it, with which it communicates by an opening. Each chute is oscillated horizontally by a cam on one of the shafts at either end of the apparatus, and has a ledge across its bottom to break and equalize the velocity of the current, and to serve as a dam for the mercury used. Each chute is made adjustable by a screw-bolt. When the machine is used as an amalgamator the second and third chutes from the top are lined with copper.

Claim.—1. The inclined zigzag plane formed of adjustable chutes or tables B, ledges *c* with or without copper lining or troughs, and supported in and by frame A, head-block C, and screw-bolt *c* having the "panning" movement, and constructed and operating substantially in the manner and for the purposes set forth.

2. The shafts E and cams D for giving a horizontally-oscillating movement to the chutes or tables B, constructed and operating substantially in the manner and for the purposes specified.

3. The adjustable screw-bolts *c* for adjusting the chutes or tables B to different degrees of inclination, constructed and operating substantially in the manner and for the purposes described.

139,557.—*Automatic Railroad-Car Brake.*—GEORGE ES-EARL, Boston, Mass., assignor to "THE AUTOMATIC CAR-BRAKE MANUFACTURING COMPANY," New York, N. Y. Application filed September 20, 1872.

The brake is applied to the wheels by a cord or chain wound upon a drum when thrown into connection with worm-gear on the axle by means of an electro-magnetic armature. Provision is made, by the automatic separation of the clutch carrying a catch, for locking the brake at a given tension without further winding up the chain.

Claim.—1. The combination of the worm 1, worm-wheel 6, shaft 9, clutch 11, and drum 14 with the chain 34, arranged to effect the automatic unclutching of the drum in the manner explained.

2. The spring-catch 18 and locking arm or button 19 combined with the notched flange 16 of the drum 14, to arrest the rotation of the latter, as explained.

3. The rock-shaft 23, with its arms 22 and 26, operating in combination with the armature-lever 28, and pawls 32, 33, as set forth.

4. The combination of the spring 29 with the weighted arm 26, and armature-lever 28, to receive increased tension after the forward movement of the lever, as explained.

5. The spring 24 and winding-chain 25, arranged as described to produce tension on the said spring by the winding of the brake-pulley in readiness for the restoration of the parts to their normal positions when the armature-lever is released.

139,558.—*Bobbin.*—ANTHONY L. EARLE, Valley Falls, R. I. Application filed May 10, 1873.

The re-enforcing rings are made of a composition of glue, glycerine, and sulphate of lead, or equivalent, so as to be unaffected by heat or oils, and yet so as to be capable of contracting and expanding with the wood of the bobbin, but prevent it splitting.

Claim.—A wooden bobbin, provided with one or more seamless re-enforcing rings or bands, composed of a glue compound possessing substantially the characteristics specified.

139,559.—*Stop-Cock.*—GEORGE W. EDDY, Waterford, N. Y. Application filed March 8, 1873.

Two disks with inclined slotted ears are pivoted to a cross-head which is operated by a double screw-rod. A cam is pivoted to each disk, and is operated by the head of the screw-rod, which forces said disks against the valve-seats.

Claim.—1. The right and left screw P P, the cross-head H, and the disks combined, constructed and operating together in the manner and for the purpose described.

2. The combination of disks C C having obliquely-slotted ears G G, with cross-head H having pivot-pins K K, as and for the purpose set forth.

3. The combination of cams M *d*, slotted cross-head H, and stem-disk N, as and for the purpose specified.

139,560.—*Stop-Mechanism in Looms.*—WILLIAM E. SON, Boston, Mass., assignor to THE AMERICAN STOP-MOTION COMPANY, same place. Application filed April 30, 1873.

To prevent the weft-threads connected with the idle shuttles from passing back onto the lay and interfering with the action of the weft-detector, a guard is attached to the lay consisting of two pieces with a narrow opening between them, so arranged that the threads in front of it cannot pass back through the opening, while the thread last thrown can pass out as the lay falls back.

Claim.—The guard, composed of the parts C, E, and D, or their equivalents, arranged to operate in conjunction with the lay, substantially as described, and for the purpose set forth.

139,561.—*Car-Seat.*—FRANCIS FARRELL, Cincinnati, Ohio, assignor to himself and ABA J. NICHOLS, same place. Application filed April 16, 1873.

The oblong rectangular wooded frame is stayed on its under side with transverse depressed metallic bars, and covered with a cane web or filling.

Claim.—The car-seat bottom, composed of the oblong rectangular frame A, depressed stays B, and cane-web C, as represented.

139,562.—*Bed-Bug Exterminator.*—CALVIN L. FEWELL, Coreicana, Tex. Application filed May 5, 1873.

A cup has an inverted conical cup and chimney passing through its center. Near the bottom of the cup is a grate, and below that an ash-pan. When water is put in the conical cup and fire on the grate, steam is raised, which passes freely through a spout.

Claim.—The combination of the ash-pan A, fire-pot B with grate C, hinged water and steam pot D, chimney G, handles E, and spout *b*, all constructed and arranged substantially as and for the purposes herein set forth.

139,563.—*Car-Starter.*—GEORGE W. FIELD and JOSEPH STEGER, New York, N. Y. Application filed October 8, 1872.

A pawl having a lug at its center to which a chain is attached, and connects with the brake-shaft. The pawl is attached to a bell-crank lever, the same being operated by its connection with the draft-bar. The brake being applied, the pawl is raised and engages with a ratchet on the axle. The draft bar being drawn out in starting again and the brake-shaft released, the pawl acts as a lever, turning the axle partly around, and is then thrown out of connection with the ratchet.

Claim.—The propelling-pawl *a*, cord or chain *d*, windlass *f*, and ratchet-wheel D, in combination with the connections *h j* and draft-tongue E, all arranged and operating substantially as described.

139,564.—*Plow-Truck.*—JOHN FLANAGIN, Pawnee City, Neb. Application filed March 1, 1873.

A triangular frame mounted on wheels, to which plows of different kinds may be conveniently attached.

Claim.—The triangular plow-truck A B B placed upon wheels, having one or more sets of perforations at each end of bar A, and the clevis-bar at the junction of bars B B, as and for the purpose described.

139,565.—*Seed-Dropper.*—JOHN M. FORDEN, Springfield, Ill., assignor to EUGENE L. GROSS, JNO. M. FORDES, JAMES K. WELTER, JOHN O. SLOAN, and JAMES RAYBURN, same place. Application filed May 7, 1873.

The seed-slide is provided with an annular recess, into which the rotating disk fits, the cut-off being stationary upon the slide.

Claim.—The seed-slide C, provided with an annular recess, in combination with the perforated and rotating disk D, and the stationary cut-off G, all constructed and operating substantially as and for the purposes herein set forth.

139,566.—*Machine for Introducing Water and Gas Pipes.*—JOHN FRITZ and WILLIAM C. POOLEY, Memphis, Tenn. Application filed February 20, 1873.

The earth is penetrated horizontally, without disturbing the surface of the roadway or sidewalk for the insertion of water and gas service-pipes, by this machine, which has the usual train of differential gearing, by which the auger-shaft is rotated and at the same time fed slowly forward through the spline and feather, and the screw-thread cut upon it. The long shaft D and bevel-gears transmit motion from the surface to the working point. By reversing the machine, after the drilling is accomplished, the tubes can be drawn through the opening which the auger has made.

Claim.—The combination of the vertical shaft D, gears *d e*, screw-threaded auger-shaft N, rotating cylinder F, feeding-cylinder M, differential gearing G H K L, frame A, and platform B, when constructed in the manner set forth, for the purpose of boring horizontally under the streets and sidewalks for the insertion of gas and water pipes without disturbing the surface, substantially as specified.

139,567.—*Spring Bed-Bottom.*—CHARLES GAMMEL, Utica, N. Y. Application filed March 29, 1873.

The squares and springs are hinged at top and bottom, and the whole is hinged in sections, and is covered with a thick fabric.

Claim.—The combination of the springs, the hinged squares and sections, and the subjacent fabric, as and for the purpose described.

139,568.—*Chair.*—WILLIAM GARDNER, Glen Gardner, N. J., assignor of two-thirds his right to OLIVER L. GARDNER and GEORGE GARDNER, same place. Application filed March 7, 1873.

The seat and back are made from one piece, the front end of said piece resting on the front rail of the chair, and the top of said piece on the top rail of the back-frame. The combined seat and back is supported at the curve by the legs and the lower part of the back-frame.

Claim.—The seat and back A A' composed of one piece, in combination with the rail *a a'* of the front legs, hind legs C, the rail *d*, the back standards D, and the arms E, substantially as and for the purpose set forth.

139,569.—*Device for Removing Sand-Bars in Rivers.*—ALFRED GARNHAM, St. Louis, Mo. Application filed November 1, 1872.

A cable carrying the revolving beaters or arms is anchored in the river-channel above the sand-bar which it is desired to reduce. The radial arms carry fans so inclined as to be rotated by the surface-current, and at the same time to deflect the water radially. The arms when passing near the bottom thus cut away the sand by mixing it with the disturbed current, in which condition it is carried away.

Claim.—The device, having a beater, B, provided with fans C, arranged, when properly submerged and anchored, to be automatically revolved by the current of the stream, substantially as and for the purpose hereinbefore set forth.

139,570.—*Ore-Washer.*—ROBERT GIDLEY, Moore's Mill, N. Y. Application filed April 29, 1873.

Intended for washing the fine iron-ore which passes through the large machines commonly used at the beds.

Claim.—1. The tapering revolving cylinder B provided with internal longitudinal ribs m m, in combination with the interior tapering revolving cylinder D provided with twisting-grooves n n, substantially as herein set forth.

2. In combination with the revolving cylinders B and D, constructed and operating as described, the slotted tapering revolving cylinder C provided with interior perforated lining G, substantially as herein set forth.

139,571.—*Butter-Worker.*—WARREN N. GOLDEN, Coldwater, Mich. Application filed March 17, 1873.

The butter-tub and two horizontal rollers within, in line, one on each side of the center, revolve so as to press the butter between them, inclined projecting flanges on the rollers adding to their efficiency. The crank-shaft, which revolves one roller, carries a pinion which meshes with an annular ratchet on the periphery of the tub. This in turn revolves a pinion on the opposite side, and thus operates the opposite roller.

Claim.—1. The butter-workers, having paddles, with the end-curve c^1 and flat surface c^2, as and for the purpose described.

2. The bar E^2, hinged or secured, detachably, to uprights $a^1 a^1$, and combined with the middle bearing D, as and for the purpose set forth.

3. Two butter-workers, having independent shafts revolving in opposite directions, and each with its own pinion combined with a racked butter-holder, F, as described, so that one crank, operated by a single person, can turn two butter-workers, as well as the butter-holder, by the same movement, and thus do nearly, or quite, double the usual amount of work.

139,572.—*Animal-Traps.*—JOHN GOULD, Clinton, Pa. Application filed March 29, 1873.

An automatic cage-trap, self-setting by the aid of the prisoner's efforts to escape.

Claim.—The combination of the pivoted or tilting platform E K, connecting-rods F N, levers G O, pivoted rods H P, bent lever-catches I Q, cam-levers J R, stop-springs S T, gear-wheel V having pins U projecting alternately from its opposite sides, coiled spring Z, gear-wheel B', shaft C', cranks D', and connecting-bars E' with each other and with the three boxes A B C, drop-doors F', and wire drop-gate M, substantially as herein shown and described.

139,573.—*Dyeing Fabric.*—FRANZ G. GRAUPNER, Evansville, Ind. Application filed May 3, 1873.

Muriatic acid and anvil-dust are placed in a stone jar and subjected to a sand-bath to evaporate, and to this mixture is added water, quercitron, logwood, and chromate of potash.

Claim.—1. The combination of oxyduloxyd of iron or anvil-dust with muriatic acid, as a base for dye, substantially as specified.

2. The dye, herein described, compounded of the materials and substantially in the manner set forth.

139,574.—*Mangling or Wringing Machine.*—THOMAS HALL and JAMES NEWTON, of Lawrence, Mass. Application filed March 1, 1873.

A machine with rolls, table, and endless band in ordinary form, having suspended from the upper roller journals, rods, or stirrups connected with an adjusting-screw pivoted to a lever having a fulcrum within the supporting-frame and extending to its center, and then connected to a pivot extending into cells in the cross-bar of the frame, by which pressure is given to the rolls by a spiral spring surrounding it.

Claim.—The combination of the springs K, levers H, adjusting-screws G, and stirrups F, with the pressure-roller C, substantially as specified.

139,575.—*Dumping-Car.*—JOHN M. HANFORD and JOHN WOOD, Middletown, N. Y. Application filed April 12, 1873.

The car-body is divided into two sections, each of which is longitudinally pivoted. The sides are supported at their ends upon the bolsters, and may be either attached to or detached from the pivoted bottoms by means of suitable fastening devices.

Claim.—1. The combination of the bolsters, the centrally and longitudinally-pivoted bottoms, the sides extending over the bolsters at each end, substantially as specified.

2. The combination with the bolsters and centrally-pivoted bottom of the sides, the detachable fastenings, and the radial arms or braces, substantially as specified.

3. The combination with the centrally-pivoted bottom and side pieces G, extending over the bolsters, of the segment ends, and the guard corner-plates c, substantially as specified.

139,576.—*Washing-Machine.*—JAMES W. HANNAH, Sticklerville, Mo. Application filed April 26, 1873.

The rubber is constructed in semicircular form, with its ends and intermediate plates scalloped upon their convex edges, and is suspended upon journals over the bed, composed of rolls, with an outer cover of zinc.

Claim.—The rubber formed by the combination of the semicircular end plates F and the semi-ring intermediate plates H, scalloped upon their convex edges, the cross-rounds F, the shaft G, the levers I, and handle J with each other and with the box A B C, substantially as herein shown and described.

139,577.—*Sole-Pressing Machine.*—CHARLES M. HAYDEN, Hanover, assignor to himself and ZENAS M. LANE, East Abington, Mass. Application filed May 6, 1873.

Upon a horizontal wheel is placed a number of bed-plates of the configuration of a boot or shoe sole. The wheel has an intermittent rotary movement in conjunction with the downward intermittent movement of the platen.

Claim.—In combination with the vertically-reciprocating pattern or die-block e, the intermittently-rotating wheel o with its die-plates p, operating substantially as shown and described.

139,578.—*Machine for Moving Logs.*—GEORGE M. HINKLEY, Milwaukee, Wis., and ALEXANDER RODGERS, Muskegon, Mich. Application filed February 1, 1873.

The log-turning device is provided with means for pushing the logs from the log-way onto the saw-carriage.

Claim.—1. The bar A having the pivoted and weighted push-bar E arranged on it, in the manner shown and described.

2. The combination of the bar A and its actuating devices, in the manner and for the purpose specified.

3. The combination of the cross-head M, rod Q, ways N, chain T, and chain-drum U, and the driving-drum V, and the reversing driving-gear, substantially as specified.

139,579.—*Gas-Regulator for Vulcanizers.*—GEORGE M. HOPKINS, Albion, N. Y. Application filed October 19, 1870.

An adjustable index attached to a steam-gage is arranged so as to (at a given pressure) strike the stem of a float resting on the surface of mercury in a closed vessel, causing the liquid to rise and cover the end of a gas-inlet. The gas entering will be but a small amount escaping from a minute opening in the upper part of the inlet-pipe.

Claim.—The combination of the gas cut-off C with the steam-gage A, substantially as and for the purpose hereinbefore set forth.

139,580.—*Fruit-Jar.*—AMANDA T. JONES, Clinton, Wis. Application filed February 15, 1873.

A hole in the top of the cover, for exhausting the air from the jar, is closed by a removable plug having a button at its lower end for holding it in place. The cover is provided with lugs to fit into recesses in the top flange of the jar to prevent the cover from turning.

Claim.—1. The lugs g on the cover B, as shown and described, for the purpose specified.

2. The combination of the jar A, having the flange a, provided with the recesses or depressions d, the cover B with the lugs g, and the bar E with the hooked ends f, substantially as described.

3. In a concavo-convex cover for fruit jars, the removable plug or stopper J having at its lower end the button j, which passes through a slot in the bottom of the circular opening in the cover B, adapted to be turned transversely in said slot and hold the plug in place, as specified.

4. The fastening-bar F, having a circular central opening fitting around a shoulder in the top of the cover, and held in place by the means of the removable plug J, as shown and described.

139,581.—*Preserving Fruit, Vegetables, &c.*—AMANDA T. JONES and LE ROY C. COOLEY, New York, N. Y. Application filed January 11, 1873.

The fruit is placed in the vessel and the air exhausted by a pump, the vessel filled with fluid at 120° Fahrenheit. When air-bubbles cease to rise the vessel is sealed.

Claim.—The process herein described for preserving fruit, vegetables, and other perishable articles of food, substantially as specified.

139,582.—*Lamp-Bracket.*—GEORGE JONES, Peekskill, assignor to THOMAS J. FISHER, New York, N. Y. Application filed April 19, 1873.

A lamp-bracket, in two parts, connected by a screw, the joint so constructed that the connection serves to brace the lamp-holder to prevent sagging, and that the part, if broken, can be replaced without the expense of both.

Claim.—The ring, connected with the bracket by overlapping lugs, held detachably, as described, so that the parts may be disconnected in packing, and be easily and separately replaced when either is broken.

139,583.—*Stove-Grate.*—WILLIAM J. KEEP, Troy, N. Y. Application filed April 4, 1873.

The transverse bars may have a horizontal vibratory motion, and also a vertical rotary motion. The bearings of the grate are so protected as not to become obstructed by ashes or other substances.

Claim.—1. A stove-grate provided with transverse bars, which are capable of a vibratory motion in a horizontal plane, and of a semi-rotation in a vertical plane, upon or around the center of vibration, substantially as and for the purpose specified.

2. In a stove-grate a series of transverse grate-bars suspended from or upon a central longitudinal supporting-bar, so as to be capable of horizontal vibration at their points of suspension, substantially as and for the purpose shown.

3. The connecting or vibrating bar E provided with the openings c, in combination with the grate-bars D provided with the curved spurs d''', substantially as and for the purpose set forth.

4. In combination with a central, pivotal, or supporting-bar, a shank so arranged that by vibrating its outer end sidewise its inner portion shall communicate to the ends of the lateral grate-bars a vibratory motion in a contrary direction, substantially as and for the purpose shown and described.

5. The shank F capable of the motion described, and combined with the pivotal bar C, and the vibrating or connecting bar E, substantially as and for the purpose specified.

6. In combination with the bar C provided with the recess C' and with the shank-bar F, the lips c''' secured upon said pivotal bar, and extending over said shank-bar, substantially as and for the purpose shown.

7. The pivoted end grate-bars D', provided with the spurs d''', in combination with the ends A' of the bed-plate provided with the spurs a', substantially as and for the purpose set forth.

8. The hereinbefore-described fire-grate as a whole, when its several parts are constructed and combined to operate in the manner and for the purpose shown and described.

139,584.—*Sewing-Machine Fan Attachment.*—EDWARD KEMPE, assignor to himself and NORTON C. NEWTON, same place. Application filed April 16, 1873.

A clamp is adjusted to the edge of the table and supports a rocker-shaft attached by pivoted connections to the wheel or needle-arm, all being above the table.

Claim.—The combination of the detachable standard A and rock-shaft B with the operating-wheel or arm of a sewing-machine, by means of the rods f and i, or other suitable connecting devices, substantially as specified.

139,585.—*Middlings-Purifier.*—EDMUND N. LACROIX, Minneapolis, Minn. Application filed May 28, 1873.

Reciprocating air-tube or tubes connected by flexible tubes with a blow-fan, so arranged under a screen or screens as to concentrate a narrow blast of air, which keeps the meshes clean and stirs up the material on top of the screens.

Claim.—1. The combination of the traveling air-tube or tubes E E with the separator or separators B B, said air-tubes being arranged so as to concentrate the blast and force it through the meshes in a thin line, as herein shown and described, and for the purpose specified.

2. The construction of the air-tube E, with the enlarged body a, contracted top b, and narrow slit or opening c extending longitudinally of the tube, as and for the purpose specified.

3. In combination with the traveling air-tube or tubes E E, the pipe or pipes L L, and a blower, fan, or other device for forcing air through the pipes, as herein shown and described, and for the purpose specified.

4. The combination, with the screws G G and with the clutch-coupling, of the rod P provided with stops s s, the elbow N, and lever M provided with the slots k p, the whole arranged and operating as herein described.

139,586.—*Corn-Husker.*—CHARLES A. LANG, Palmyra, Me. Application filed February 15, 1873.

Ears of corn being placed in ear-holder the shaft is revolved, carrying the knives up; the knives are opened outwardly until end of ear is reached, when knives are automatically closed, cutting off the butt of the ear and releasing it from the husk.

Claim.—1. The double-bladed knives C C, arranged and operating substantially as shown and described.

2. The semicircular bars J J, in combination with the arms B B carrying the knives C C, substantially as shown and described, and for the purpose specified.

3. The bars l l for compressing the rear ends of the pivoted bars B B, and separating the knives C C, substantially as shown and described.

4. The loop L for releasing the ear from the knives, arranged substantially as shown and described.

5. The stripping-knife k, on the board K, arranged substantially as shown and described, and for the purpose specified.

139,587.—*Sleeping-Car.*—JAMES T. LEIGHTON and DOMINICUS R. LEIGHTON, New Haven, Conn. Application filed December 13, 1871.

The couches are of canvas, and adapted to be rolled up and stowed out of the way without removing them from the sections, and so to be concealed, and not interfere with the seats for day travel.

Claim.—1. In sleeping-car couch, the angle-rail F F', in combination with the canvas bottom H, the holding and tightening rod c, and hooks d, substantially as and for the purpose described.

2. The angle-rail F having lip projections e e for interlocking with the posts L, to effect an easy and secure connection in forming the couch without fastenings, as described.

3. The angle-rail F, constructed to receive and hold the rolled canvas bottom H, and to form a seat, F', for sustaining it in the side recess I of the car, as described.

4. The detachable hinged partition P R S, in combination with the upper buttress having receiving-groove i, and the supporting and holding seat-back T, as and for the purpose described.

5. The roller N for the canvas bottom N', located and arranged within an opening, n, in the seat-back T, and between two adjacent seat-backs, for the inclosure of the roll N and canvas when rolled, as described.

139,588.—*Running-Gear of Wagons.*—ANDREW LEWIS, Minneapolis, Minn. Application filed December 17, 1872.

Midway between the front and rear axles the reach is divided, and its ends connected by means of fifth-wheels.

Claim.—1. The combination of wheels D and D', with the parts C and C' of a reach or perch of a wagon, constructed to operate substantially in the manner and for the purpose described.

2. The combination of the parts C and C', wheels D and D', with the link e, substantially as and for the purpose described.

139,589.—*Railroad Switch.*—JOHN F. LINTHICUM, Vallejo, Cal., assignor of one-fourth his right to IRA GILCHRIST, same place. Application filed December 12, 1872.

The switch is operated from the train through levers and connecting-rods acting on a triangular crank-lever plate, which when moved shifts the switch-bar, and also brings a chock into line to hold the rails rigidly in position.

Claim.—The attachment plate, in connection with the chock and bar, for moving the switch-rails and holding them in position.

139,590.—*Sad, Fluting, and Band Irons.*—AUSTIN S. MANN, Pittsburg, Pa. Application filed December 2, 1872.

A sad-iron with one smoothing and one corrugated face. The handle is pivoted by a rod running through the body of the iron, and held in different positions by a set-screw. The corrugated face of the fluter is covered with a corrugated sheet of metal, and the grooves are of variable depth from end to end.

Claim.—1. A combined smoothing and fluting iron, composed of the separately-cast thin corrugated plate a^{10} and main body A, united together by casting them on each other, substantially as and for the purpose specified.

2. A reversible sad and fluting iron hinged to the handle and secured rigidly thereto by a set-screw, a^9, the point of the iron entering a groove, a^7, in the handle, and the set-screw entering a groove, a^8, in the heel of the iron, substantially as specified.

3. A fluting-iron having grooves of variable depth form end to end, substantially as specified.

4. A sad-iron composed of the perforated plate A and a handle, which, being cast or formed in a single piece with inwardly-projecting studs a^4 and a^5 on its arms, is "sprung" on the plate, substantially as specified.

5. The perforated plate A of a sad-iron and its handle formed and sprung on the plate, as described, in combination with the rod a^3, substantially as specified.

139,591.—*Ladies' Work-Stand.*—GILBERT S. MANNING, Danville, Ill. Application filed April 26, 1873.

A stand composed of legs and boxes or trays, and an inclosed revolving top with a cover in two parts opening and closing on pivots at one end, which secure a base-plate upon the covers, whereon is a revolving inclosed spool-stand.

Claim.—1. A stand for a table, composed of legs and trays or boxes M N, substantially as specified.

2. The revolving inclosed box-top with cover C, pivots E, base F, and revolving spool-stand G, constructed and arranged substantially as specified.

139,592.—*Paper-File.*—CHARLES MASON, New York, N. Y. Application filed April 12, 1873.

A device bent of suitable wire in such a manner that the top part holds, in connection with the spring action of the bottom and side parts, the papers placed on file between them.

Claim.—The paper-filer, formed of the two right-angled end portions d e f, and connecting portion a b, the said parts forming spring-jaws, as shown and described.

139,593.—*Telegraph-Pole.*—THOMAS JENNINGS MCCARVER, JAMES ATHEY, and BENJAMAN JENNINGS, Oregon city, Oreg. Application filed May 18, 1872.

A telegraph-pole made of tapering angle-iron, joined at cross-sections by collars, into which the upper and lower parts are socketed.

Claim.—A telegraph-pole made of metallic sections, constructed substantially as described.

139,594.—*Machine for Cutting Hoop-Locks.*—JOHN MCGREW, Ravenswood, W. Va. Application filed February 19, 1873.

A reciprocating frame carries a series of cutters for forming the lock in the hoop, which rests during the operation upon a sliding bed, moved by inclines upon the reciprocating frame so as to be always in advance of the cutters.

Claim.—1. The series of vertically-reciprocating knives E, combined with an intermittently and horizontally moving gage, F, as and for the purpose set forth.

2. The arrangement of the inclines on reciprocating knife-holder, so as to operate the sliding gage in the manner described.

139,595.—*Process for Preserving Corn.*—LOUIS MCMURRAY, Baltimore, Md. Application filed May 20, 1873.

Claim.—1. The process of preserving corn by first mixing it with the prepared juice, then heating or cooking the same, and then putting it into cans and subjecting it to final heating at the temperatures stated, substantially as described.

2. The use of the flavored liquid obtained from the cob in preserving corn, substantially as set forth.

139,596.—*Harvester.*—WILLIAM K. MILLER, Canton, Ohio. Application filed March 14, 1873.

A guard-point is arranged in front of the friction-roller, on the rake-arm, to open the switch and prevent the roller from catching on the switch.

Claim.—1. The guard-point 1 on the rake-arm above and in front of the friction-roller to insure the opening of the switch, and to prevent the roller from catching on the end of the switch, as described.

2. The combination of the rake-arm, its plate V', and the arm v', provided with means for adjusting the rake-arm vertically.

139,597.—*Harvester.*—WILLIAM K. MILLER, Canton, Ohio. Application filed March 14, 1873.

A hinge joint machine.

Claim.—The adjustable locking stop-bar K, mounted on the shoe and resting on the coupling-frame, as set forth.

139,598.—*Manufacture of Leather-Board.*—STEPHEN MOORE, Sudbury, Mass., assignor to himself and HOMER ROGERS, same place. Application filed March 5, 1873.

Forms the board of two kinds of stock—a filling of cheap material and a skin or covering of superior. The superior stock is taken upon the felt and wound upon the cylinder until a sufficient number of layers is obtained; then takes the filling from a second vat, conducts it to and winds it upon the cylinder over the layers of superior stock. The felt is then disconnected from the filling-vat, and again connected to the first vat containing the superior stock for the opposite surface.

Claim.—The improvement in the manufacture of leather-board, consisting in forming the board with a filling surfaced by the layers upon the cylinder, substantially as described.

139,599.—*Electrical Gas-Lighting.*—CHARLES G. MUELLER and HEINRICH MEIER, Hanover, Germany; said MEIER assignor to said MUELLER. Application filed December 5, 1872.

The gas-burner, attached to a glass bell which is immersed in the fluid of a galvanic battery, rests upon a mercury-valve which thus cuts off its connection with the gas-tube opening under the bell. When the gas is turned on through the tube its pressure within the bell depresses the surface of the liquid therein, and, correspondingly raising the surface of the liquid outside the bell, brings it in contact with the suspended annular zinc element thus exciting a current which heats a platinum wire above the burner. The glass bell, being at the same time elevated by the pressure, raises the gas-burner, and, thus opening the mercury-valve, allows the gas to escape and become ignited.

Claim.—1. In an automatic gas lighting and extinguishing apparatus, the gas burner tube H, arranged to have a direct vertical adjustment between guides M N by the action of the diving-bell D on its lower end, and which forms an integral part therewith to open and close, through said adjustment of the burner-tube, the valve Q, which it also carries, substantially as and for the purpose described.

2. In combination with the bell D, the guides U and pins T, arranged and operating essentially as herein described.

3. The combination of the bell D with the gas-valve Q, both arranged to operate essentially as herein described.

139,600.—*Food from Wheat and Process of Preparing the Same.*—ERASTUS H. MURRAY, St. Paul, Minn. Application filed November 13, 1872.

Cracks and bolts as usual; then cleans, polishes, and grades.

Claim.—1. As a new article of manufacture, cracked wheat, possessing the uniform granular character, substantially as set forth.

2. The process of preparing the granulated wheat, by first cracking and bolting, and then scouring and fanning the same, substantially as described.

139,601.—*Draftsman's Ruling-Gage.*—AUGUSTUS F. NAGLE, Providence, R. I. Application filed March 27, 1873.

A rule or scale is provided with a small lateral projection at one end, and with an adjustable slide or gage-piece, between which two points a small square or ruling triangle may play over the space allowed by the set of the gage, while being kept, as usual, in contact with the rule. The latter is moved step by step alternately with the triangle as each parallel line is drawn.

Claim.—The combination of the rule with a longitudinally-adjustable slide fitted thereto, so as not to obstruct or affect the straight line on one edge, and the lateral projections or shoulders, substantially as and for the purposes specified.

139,602.—*Combined Step-Cover and Wheel-Fender.*—FRANCIS H. NIEMANN, Cincinnati, Ohio. Application filed August 28, 1872.

When the door is shut the spring presses the cover closely over the step and when the door is open it holds the fender in position in relation to the wheel.

Claim.—1. The spring *a*, in combination with the fender *b*, as a cover for the step *g*, and a fender for the wheel *e*, substantially as set forth.

2. The combination of the spring *a*, the fender *b*, and the door *f*, substantially as set forth, and for the purpose specified.

3. The spring *a*, in combination with the fender *b* and the door *f*, to which it is fastened at the point *d* as a cover for the step *g* and a fender for the wheel *e*, substantially as set forth.

4. The combination of the spring *a*, the knob *c*, and fender *b*, substantially as set forth, and for the purpose mentioned.

139,603.—*Speeder.*—GEORGE W. OLNEY, Lincoln, R. I. Application filed October 16, 1872.

The long bolster is fitted closely within the long bearing, and they effectually maintain the reciprocating spindle, moved by the copping-rail projection with which it is loosely connected, as shown, in a vertical position.

Claim.—The combination, with a vertically-reciprocating live-spindle and a bow-flier, of a copping-rail connection which loosely engages with the spindle and the driven bolster F, which is closely fitted at top and bottom thereof within a long vertical bearing, and which is arranged to actuate the spindle and firmly maintain it in a rigidly-vertical position, substantially as described.

139,604.—*Endless Chain for Animal-Power.*—GEORGE N. PALMER, Greene, N. Y., assignor to H. A. LYON and L. E. ST. JOHN, same place. Application filed March 21, 1873.

The treads are arranged in step form, so as to present level surfaces to the feet of the animal, while the power is inclined.

Claim.—1. The treads A, having formed upon each end the diagonal tenons H, so that while the power is inclined the upper surface of the treads will be held in a level position, substantially as and for the purpose specified.

2. The links F F having shoulders *b b*, in combination with the treads A having diagonal tenons H H, all constructed and arranged for operation as and for the purpose described.

139,605.—*Gas-Retort.*—JOSEPH D. PATTON, Treverton, Pa. Application filed April 26, 1873.

An arrangement for gradually heating the resin or volatile oil in a partially-protected retort previous to its exposure to full heat in a subsequent retort.

Claim.—A retort or retorts for gas-making purposes, protected wholly or in part from the direct heat of the furnace, in combination with one or more retorts wholly exposed to the heat, the said protected retorts being wholly or partly inclosed by the masonry, or partly by the same and partly by other retorts which are partly inclosed by the masonry, all substantially as specified.

139,606.—*Sewing-Machine Caster.*—JOHN H. PLANK, Bloomfield, Iowa. Application filed March 1, 1873.

Two bars upon each side of the machine are adjusted in length by a slot and set-screws near the center, so as to be used for all-sized machines. The four outer ends of these two pairs of bars are furnished with cups or sockets in which the feet of the machine are inserted, and each socket provided with two holes for the pintles of the casters.

Claim.—The device for supporting sewing-machines formed of the slotted bars A A, bolt F, foot-rests B, and casters E E, arranged as specified.

139,607.—*Fire-Proof Roof.*—NIELS POULSON, New York, N. Y. Application filed February 15, 1873.

The external surface is formed of the metallic plates A, the joints of which are covered by the rib B, the ribs and plates being connected by clamping-bolts with the internal wire-gauze on which the plaster is spread.

Claim.—Plates A, having front and rear flanges *a* and *b*, held in connection with ribs B and wire-gauze C by means of lugs *c*, bolts *f*, washer-clamp *g*, and nuts *h*, forming the fire-proof French roof, substantially as described.

139,608.—*Caster for Sewing-Machines.*—GEORGE K. PROCTOR, Salem, Mass. Application filed January 22, 1873.

As an improvement on this party's patent, No. 120,098, October 17, 1871, the lever-bar is hung to and upon the treadle-rod, securing greater steadiness or rigidity of movement, and is so disposed as to turn around a common longitudinal center or axis. This lever-bar is placed in combination with either one or both the operating-levers, when they are interlocked by stop and pin or detached from each other, each of the three levers carrying their respective casters. Additionally, the lever bar is channeled or made concave, to serve as a dripping-pan for drippings of oil from the bearings.

Claim.—1. The lever-bar C, hung as described, in combination with lever F, or lever G, or both, and their respective casters, all substantially as described, for the purpose specified.

2. In combination with the elements of the above claim, the bar C, adapted to serve as a dripping-pan, substantially as described.

139,609.—*Machine for Working Waste, Fibrous Material, &c.*—JOSIAH K. PROCTOR, Philadelphia, Pa., assignor of one-half his right to CHARLES R. LINDSAY, same place. Application filed December 21, 1872.

In advance of the main cylinder is a set of drawing-rolls, the teeth of each pair of which intersect with each other and with those of each preceding pair to hold the stock firmly while being drawn and to clear each other. The described arrangement of the feed-roll teeth is to prevent the stock binding in them, and that of the stripper-teeth to give them a carding as well as a cleaning action. Each group of workers has, progressively, finer teeth to refine the stock as it is advanced. The main cylinder is expansible to securely hold the toothed rings, and a supplemental head is used, which, being filled with toothed rings, is moved endwise into place on the cylinder to pack the rings closely together.

Claim.—1. In a machine for working woolen rags, hard waste, and other similar fibrous substances, a series of toothed drawing-rollers intersecting in pairs, and each succeeding pair so arranged as to clear their predecessors, substantially as and for the purpose described.

2. The arrangement of the feed-rolls, as described, the lower roll having relatively coarse teeth and wide spaces between them, and the upper roll finer teeth and narrower spaces, for the purpose specified.

3. The arrangement of the feed-roll stripper with its teeth pointing in the same direction as the teeth on the feed-roll which it clears and on the cylinder against which it works, substantially as specified.

4. The described arrangement of workers, growing finer as they recede from the feed-rolls, as and for the purpose described.

5. In a machine for working woolen rags, hard waste, and other similar fibrous substances, the arrangement of the workers so that their teeth will intersect for the purpose of clearing, as described.

6. The arrangement of the workers in groups of different grades, for the purpose set forth.

7. The arrangement of the upper feed-roll and its stripper, and of the workers, with their teeth intersecting and pointing in the same direction as those on the main cylinder, so that the feed-roll will clear the stripper and each worker will clear the adjacent one, as described.

8. In combination with the toothed rings and packing, a cylinder having a fixed and a movable head, and so constructed that it may be contracted and expanded, for the purpose specified.

9. In combination with the cylinder sections connected at one end by a joint or hinge to a sized head, the conical block for expanding the cylinder, as described.

10. The supplementary sliding cylinder-head, constructed and arranged as specified.

139,610.—*Grain-Drills.*—GEORGE A. PURSLY, Pittsfield, Ill. Application filed March 8, 1873.

The seed-conducting tubes are slung on the rear of a rectangular carriage-frame, and are connected by drag-rods to a lateral beam in the middle of the frame, above which, standing by means of rods within spiral springs on each drag-rod, is another beam with a pin at each end working in a slot of a plate pivoted to the frame. The slots being eccentric to the pivots, pressure on the drag-bars will regulate the depth of work in the ground.

Claim.—The combination of the pivoted and slotted plates I, pivoted connecting-bar J, and lever K, with the bar E, guide-rods D and F, springs H and G, draft-rods C, hakes B, and frames A, substantially as herein shown and described.

139,611.—*Harvester.*—WILLIAM K. RAIRIGH, Plumville, Pa. Application filed December 7, 1872.

A two-wheeled front-cut side-draft machine has a sliding seat connected to the lifting-lever by an intermediate link, so that the position of the driver is changed when the cutting apparatus is raised or lowered; also, the shaft which drives rotating cutters is formed in sections connected by screws.

Claim.—1. The pinion-shaft D made in three sections, as and for the purpose described.

2. The combination, with the cutter-bar and sliding seat I, of lever K connected with each and arranged as described, so that the seat is thrown rearwardly whenever the cutter-bar is raised.

139,612.—*Harvester.*—WILLIAM K. RAIRIGH, Plumville, Pa. Application filed August 23, 1872.

Claim.—1. The sliding reel-block *m*, the racked and sliding pulley-block P, and the hand crank-shaft Q having pinion and drum thereon combined with cords and pulleys, as and for the purpose specified.

2. A pivoted sliding rake, S, having projection *s*' that is held by rod T and acted upon by spring *t*, substantially as and for the purpose specified.

139,613.—*Dumping Apparatus.*—GEORGE W. REED, Middlesex, Pa. Application filed April 19, 1873.

The platform upon which the car rests is pivoted into the hoisting-frame, and is provided at either end with suitable locking devices for preventing the car from running off during the ascent and descent of the same. To the frame-work around the hoisting-frame is arranged a device for locking such hoisting-frame, so as to prevent the descent of the same during the process of dumping. A device is also arranged for opening and closing the door of the car automatically.

Claim.—1. Slide-lever F, slotted and pivoted to platform E, substantially as set forth.

2. Side rails G having car-stops H, in combination with pivoted lever I and rods *k*, substantially as described.

3. Frame A, having projecting arm *d* to act on lever *m* of car-door for opening the same, as set forth.

4. Car L with door *d*, having pivoted lever *m* and circular piece O, as described.

5. Chute D, having bottom extension *b* to act on car-door for closing the same, as specified.

139,614.—*Hoisting-Machine.*—SAMUEL REYNOLDS, Pierrepont Manor, N. Y. Application filed May 9, 1873.

A small and compact machine especially adapted for use in stores and buildings.

Claim.—1. The combination of the wheels *a d e g i* with the spool or drum, substantially as specified.

2. A hoisting-machine in which the various parts are arranged and combined to operate substantially as shown and described.

139,615.—*Cider-Mill.*—WILLIAM RICE, Fitchburg, Mass. Application filed April 19, 1873.

A wooden wheel with metallic blades or mashers, and a guard pin or bolt so placed that the apple-parings will turn roundit, forming a cushion which clears the blades of pomace and forces it out through aperture beneath; also a concave scroll spring-presser, having a correspondingly-curved bed formed to receive it when pressed back by the material to be crushed.

Claim.—In combination with the wheel D, provided with blades or mashers 1 2 3 4, and the guard-pin E, the concave scroll spring-presser C, extending partly around said wheel and secured at its lower end to the end piece A in front of a correspondingly-curved bed formed in said end piece for its reception, as shown and described.

139,616.—*Machine for Cutting Webbing.*—WILLIAM A. RICE, Bristol, N. H. Application filed September 28, 1872.

The lower blade has serrations to prevent movement of the material being cut, and the edges of the blades are kept pressed together by the elastic washer on the bolt holding the blades.

Claim.—1. The blade E, the nicked blade A D, and the bolt and elastic washer when connected with and operated by the treadle and spring, substantially as and for the purpose specified.

2. Shears for cutting webbing and other substances, with one of the blades provided with nicks D to prevent the substance being cut from slipping, substantially as specified.

139,617.—*Corn-Planter.*—ANDREAS RÖHMER, Newport, Ky. Application filed January 27, 1873.

The share is made with a lance-shaped nose, ridged center, vertical sides, from the bottom of which horizontal flanges are turned inward, and with covering-wings extending obliquely backward from the vertical sides.

Claim.—The share C e D D' E E' *e e'* F F', formed as and for the purpose set forth.

139,618.—*Heating-Stove.*—THOMAS H. SALMON, Brooklyn, N. Y. Application filed January 6, 1873.

A stove having a down-draft through the fuel. A plate forms that side of the hanging grate which is opposite the smoke-pipe.

Claim.—The combination, with an apertured cover, I K, and a combustion-chamber, C, having outlet G, of the hanging grate E having the plate H, arranged as and for the purpose described.

139,619.—*Furniture-Caster.*—CEVEDRA B. SHELDON, New York, N. Y. Application filed May 19, 1873.

The horn of the caster, instead of being cast, is swaged up with its collar or journal from a single piece of sheet metal. The caster-socket which enters the leg of the furniture is also swaged or struck up from a single piece. These two parts of the caster are secured together by an independent wrought-iron pintle, which may be headed down at both ends.

Claim.—1. The socket D and flange G made in one piece of struck-up sheet metal, as and for the purpose specified.

2. The horn A and collar E made in one piece of struck-up sheet metal, as and for the purpose specified.

3. The struck-up sheet-metal socket and flange D G combined with the struck-up sheet-metal horn A with collar E, by means of the wrought-iron pin C, substantially as described.

139,620.—*Corn and Cotton Planter.*—ZACHARIAH B. SIMS, Bonham, Tex. Application filed November 21, 1872.

Claim.—In a seed-planter, the axle J, carrying an adjustable driving-wheel, K, and provided with the cranks M M, in combination with the rods N N, rock-shafts P P', stirrups S S', feeders *z z*, and distributers *d*, all arranged and operating substantially as described, for the purpose set forth.

139,621.—*Sled-Brake.*—JOSEPH SLATER, Sandy Lake, Pa. Application filed April 19, 1873.

The brake-bar is pivoted to a rock-shaft, and so hung to the beams of the sled that when not in use it is supported in a horizontal position beneath the beams.

Claim.—The combination of sliding rod D provided with claw F, and pivoted to arm C of rock-shaft B, the lever G, and keeper E, all constructed and arranged as specified.

139,622.—*Wrench.*—THOMAS J. SMITH and JOHN LEE, St. Louis, Mo., assignors of part interest to JOHN J. RICH and JOHN GALLAGHER, same place. Application filed December 19, 1872.

A lever having cog-teeth is pivoted to the movable jaw; the teeth mesh into corresponding ones on a wedge, which secures the jaw in position.

Claim.—The combination of a rack-wedge and cog-lever with a wrench having a movable jaw, substantially as described and shown.

139,623.—*Corn-Harvester.*—JAMES H. SPEARS, KENNEDY WELLS, and ROBERT WELLS, Piper City, Ill. Application filed April 19, 1873.

A pair of inclined screw-rollers for gathering, two endless aprons for conveying, and a pair of horizontal rollers for husking, are so arranged that the corn is automatically severed from the standing stalks, conveyed to the husking-rollers, and thence delivered into a wagon.

Claim.—The combination of the carrier V, inclined spout W, toothed rollers X, elevator Y, and spout A', with each other and with the guides L and threaded or corrugated rollers J, for removing the husks from the ears and depositing the husked ears in a wagon, substantially as herein shown and described.

139,624.—*Hydraulic Elevator.*—TIMOTHY STEMMS, San Francisco, Cal. Application filed December 4, 1872.

The cylinder lies horizontally in the cellar. Its piston has a flexible piston-rod, which passes through a stuffing-box and then around pulleys to the platform or cage. Water is admitted to the cylinder between the piston and the stuffing-box and forces the piston to the other end of the cylinder to elevate the cage. The weight of the cage causes it to descend by drawing the piston to the front end of the cylinder, if the water is allowed to escape by a waste-pipe.

Claim.—The horizontal cylinder A, in combination with the flexible piston-rod C, attached directly to the piston B, and the large pulleys E and platform, arranged and operated as shown and described.

139,625.—*Evaporating-Pan.*—GEORGE W. STORER, Philadelphia, Pa. Application filed March 10, 1873.

The bottom and sides of the steam-chamber of the pan are surrounded by an air-space and non-conducting material to prevent loss of heat by radiation.

Claim.—The evaporating-vat described, provided with an inner corrugated bottom, B, which is separated from the outer bottom A by means of a steam-space, C, and the whole protected upon its sides and bottom by means of the wooden vat D, non-conducting covering *d*, and air-space E, substantially as and for the purpose specified.

139,626.—*Clasp for Securing the Ends of Leather Straps.*—OLE O. STORLE, Milwaukee, Wisconsin, assignor to himself and WILLIAM JOHNSON, same place. Application filed December 9, 1872.

A metallic loop is constructed with a hook, which forms a bushing for the strap. Both ends of the strap pass into the loop, one end under and the other over the hook or bushing, which has a pin on its outer surface to prevent the strap from being drawn through the loop.

Claim.—The combination of clasp A, pin B, and bushing C; pin B placed on the bushing C outside of the clasp to facilitate the fastening and unfastening the strap.

139,627.—*Spring-Bed.*—STEPHEN STOUT, Tremont, Ill. Application filed May 10, 1873.

The lateral cross-pieces have recesses and grooves for the springs and slats. The springs are continuous with alternating extensions, and are held to the slat by a cord or strap.

Claim.—1. The lateral cross-piece B having alternating recesses *b* and grooves *a* for slats C and springs *c*, substantially as described.

2. The continuous double-acting spring D, with alternating extensions *d* and spiral springs *c*, substantially as specified.

3. The combination of the subject-matter of the foregoing clauses, with cord or strap E, slats C, and frame A, substantially as and for the purposes described.

139,628.—*Skate.*—WENDELL STRASSER, Taylorsville, Ohio, assignor to himself and SAMUEL S. BAUGHMAN. Application filed October 17, 1872.

To fasten the skate quickly and firmly to the sole.

Claim.—The fixed lug G and screw F, in combination with the bar E, a toe-piece or rest, and heel-cap, as set forth.

139,629.—*Drilling-Machine.*—WILLIAM H. THORNE, Philadelphia, Pa. Application filed February 24, 1873.

A horizontally-swinging arm carries a sliding saddle, upon which is the vertical drilling-spindle. The spindle is held up against its feeding-screw by means of a weighted lever. The vertically-sliding table is supported by the adjusting-screw.

Claim.—1. A table, B, having vertical adjustment on the standard, in combination with the horizontally-swinging arm D, the sliding saddle and drill, and the mechanism for rotating said drill, substantially as shown and described.

2. In combination with a radially-swinging arm and adjustable drilling-head and spindle, the weighted lever R, or its equivalent device, when arranged to operate substantially as specified.

3. The combination and arrangement, as herein described and shown, with the base *c* and post A, of the pulleys Y H located on said base, the pulleys F on the post, the swinging arm D, gears K L M, grooved shaft N, saddle I, drill-spindle P, and the gears that communicate power from the shaft to the spindle.

4. The combination, with the spindle P, yoke T, lock-nut W, and feeding-screw, of the collar V, weighted lever R, and fulcrum S, substantially as and for the purposes set forth.

139,630.—*Lamp-Post Attachment for Supporting Electrical Wires.*—JACOB P. TIBBELL, Charlestown, Mass. Application filed January 22, 1873.

A wire frame ascends from the lamp, or from the post below the lamp, converging at top into a sleeve; through this sleeve short rods pass transversely, bearing upon their ends grooved insulating-rollers for the reception of wires intended primarily for lighting the gas by electrical currents.

Claim.—An attachment for lamp-posts, consisting of the frame C, constructed as described, and provided with the tube *b* carrying the studs *d*, substantially as and for the purpose specified.

139,631.—*Governor.*—ELSON TOWNS, Clare, Ill. Application filed March 8, 1873.

To the upper end of the ball-spindle is attached a flat friction-wheel, which, as the ball-arms rise, is moved against another supported by an adjustable forked spring, secured to a curved bar and forming part of the supporting-frame, and counteracts the speed by frictional contact. The bevel-gearing is arranged in a pivoted yoke, connected to a vertical shaft and pitman. The shaft has a forked arm, supporting a weighted lever, fulcrumed in a stand and connected at its outer end to the governor-valve, and regulates the admission of steam.

Claim.—1. The yoke P, pitman S, shaft R, fork T, and lever U, in combination with a governor, substantially as and for the purposes described.

2. The gear-wheels N, Q, and Y, in combination with the yoke P, as and for the purposes described.

3. The improved governor, consisting of the shaft M, gears N Q Y, yoke P, shaft R, pitman S, fork T, lever U, spindle D, ball H, arms G G, friction-wheels E I, spring J, box C, and bed and frame A B B', substantially as and for the purposes described.

139,632.—*Hose-Coupling.*—THOMAS J. TRAPP, Williamsport, Pa. Application filed April 5, 1873.

The tapering ends of the coupling terminate in square shoulders. Equidistant from each is a circumferential rib which acts as a stop to the ends of the hose and provides a surface to be grasped by the hand in applying the coupling.

Claim.—1. In couplings for elastic hydraulic hose, the tube A provided with a tapered or conical end terminating in a right-angled shoulder, as shown and described.

2. The circumferential rib *d*, in combination with the tube A, and a projection, *e*, for engaging with the elastic hose, as specified.

139,633.—*Instrument for Cleaning Gun-Barrels.*—WILL E. TURNER, Fort Snelling, Minn. Application filed March 15, 1873.

An instrument formed of a tube and movable central rod, and an expansible cluster of wire or similar material, the latter being expanded and adjusted to fit barrels of different caliber, or to give more or less friction to barrels of the same caliber, by means of a screw-thread and nut on the rod.

Claim.—An instrument for cleaning and burnishing gun-barrels, consisting of the tube A, wire-cluster C, rod D, head E, screw-nut F, and handle G, when arranged to operate as shown and described.

139,634.—*Steam-Condensing and Water-Heating Tank.*—CHARLES N. TYLER, Buffalo, N. Y. Application filed February 25, 1873.

A vessel with a false bottom, upon which is secured an inner annular water-chamber, through the center of which passes a small cold-water pipe provided at its upper end with an inverted spray-cup for turning the water into the inner chamber. A jet-condenser, partly above and partly below the false bottom, is provided with suitable pipes and cocks for regulating the water, and it condenses the exhaust steam, and any not condensed passes up between the upper chambers, and is there condensed. At the same time the water is heated.

Claim.—1. The combination of the water-chambers F, G', and I, as arranged and constructed for operation in the manner set forth.

2. The combination of the condensing-surfaces E, G, and H, as arranged for the purpose set forth.

3. The combination of the pipes L and S, and their respective stop-cocks, with the chambers F and G, for the purpose set forth.

4. The combination of pipe *d* for the supply of cold water and its overflow *e* with chamber G' and steam-chamber H, the whole being arranged in the manner and for the purposes set forth.

5. The combination of cold-water pipes *d*, *f*, and *g*, and stop-cocks *h*, *i*, and *k*, with chamber F, for the purpose set forth.

6. The spray-condenser J and steam-pipe *o*, in combination with the subject-matter of the fifth claim, for the purpose set forth.

7. The combination of hot-water pipe M and its branches *t*, *u*, and *v*, and their respective stop-cocks, with chambers F, G', and I, for the purposes set forth.

8. The combination of the goose-necks *q* and *w* with the chambers F and I and cold-water-supply pipe *d*, for the purpose set forth.

139,635.—*Railway Switch.*—WILLIAM H. VAN GIESON, Whitewater, Wis. Application filed May 16, 1873.

The switch is shifted to the siding by means of a toggle-lever, which is lifted by a hand-lever and returned to place by a spring. It is retained when shifted by a catch on the end of oscillating lever, which engages with a notch on the slide-bar. This is tripped by the train whenever it approaches on the main line through the cams and rods, which connect with the oscillating lever and disengage the catch. The spring restores the spring to place. The cams are so formed that only the motion of the train toward the switch operates them. A foot-lever is provided which elevates two pins on either side of the slide-bar, one of which engages the notch *b* and retains the switch from replacement, and the other, of wedge-shaped form, prevents the engagement of the catch, which is provided for use only when the switch is to be self-operating.

Claim.—1. The levers or cams *k k* having slots *k' k'*, springs or weights *m m*, and the rods L L^1 or other equivalent connections, the same being combined and arranged in connection with the main rails of the track and a suitable locking device for the switch-rails, substantially as described, as and for the purpose specified.

2. The rails A A, levers or cams *k k* having slots *k' k'*, rods L L^1, lever I having a dog or catch, I', spring or weight M, the same being combined and arranged to operate in connection with the sliding bar of a switch-rail, substantially as described.

3. In combination with the sliding bar D, the toggle-arms or levers E E^2, arranged and connected to operate in the manner described, and which, when the arms are extended to lock the switch-rails in connection with the main rails, leaves the toggle-joint connection E^1 below the pivot-centers *d' e'* of the arms, substantially as set forth and shown, as and for the purpose specified.

4. The sliding plate D of the switch-rails, toggle-arms E E^2, and spring or weight F', the whole being combined and arranged to operate substantially as described, as and for the purpose specified.

5. The lever H, having arms or pins *h h'*, arranged as shown, and secured to operate in connection with the sliding bar D and its automatic locking mechanism, substantially as described.

6. The lever H, having arms or pins *h h'*, arranged as shown, and spring H^2, the whole being combined and arranged to operate in connection with the sliding bar D, substantially as described.

139,636.—*Heel-Burnishing Machine.*—CAROLINE VROOMAN, Boston, Mass., administratrix of HENRY S. VROOMAN, deceased. Application filed March 8, 1873.

The spindle upon which the boot or shoe is supported slides in a screw-threaded tube, and is adjusted by means of a wheel-nut which turns upon the tube. A cam-lever and spring arranged to elevate or depress the beam to which the burnisher is attached.

Claim.—1. The threaded tube E and wheel-nut I combined with the sliding spindle, as and for the purpose described.

2. The cam-lever *t* and spring *g*, arranged to operate in connection with the beam T and burnisher U, as and for the purposes described.

139,637.—*Sole-Channeling Machine.*—CAROLINE VROOMAN, Boston, Mass., administratrix of HENRY S. VROOMAN, deceased. Application filed March 8, 1873.

A pattern-plate, of configuration similar to a shoe-sole, is supported upon the bed of the machine, on the edge of which is a cogged rack which gears with small spur-wheels. The lever, to one end of which the channeling-tool is attached, is pivoted to a movable arm, and has vertical movement independent of, and horizontal movement with, the arm.

Claim.—The combination, in a sole-channeling machine, of the swinging arm M, lever Q, roll U, pattern D, and bed A, as and for the purpose described.

139,638.—*Berth for Vessels.*—BERNHARD WEISKER, New York, N. Y. Application filed March 28, 1873.

A pendulum-frame, guided in a channel or groove to confine its oscillations in one plane, forms the bearings for suspended berths, pivoted so as to swing in a plane at right angles to that of the main frame.

Claim.—The pendulum B combined with a guide-groove, *b*, and forming the bearings for pivots *c*, from which are suspended the berths D, (one or more,) substantially in the manner and for the purpose herein shown and described.

139,639.—*Tipping-Chair.*—HENRY K. WHITE, Chelsea, assignor to PARKER, WHITE & CO., Boston, Mass. Application filed May 6, 1873.

The outer ends of two of the spider-arms are pivoted in bearings fixed to the under side of the seat, and in one side of each ear or plate from which the bearing extends a notch is formed, while from the spider-arm, adjacent to the pivot, extends a shoulder. The pivot is encircled by a coiled spring, with one end held in said notch and the other by said shoulder.

Claim.—The spider-arm pivot *b*, having the shoulder *h*, and the bearing-cylinder *d* encompassed by the spring *k*, and having the notch *i*, the respective ends of the springs being arranged with relation to the shoulder *h* and notch *i*, substantially as shown and described.

139,640.—*Type.*—EDWIN R. WHITNEY, Magog, Canada. Application filed April 3, 1873.

Type cut or molded from glass are mounted upon a backing of wood.

Claim.—A type for printing, made of glass, as herein set forth.

139,641.—*Drip-Conductor.*—JOHN G. WIDMANN, Yonkers, N. Y. Application filed February 19, 1873.

Two matched sections, which are provided, respectively, with an inclined floor, a side guard, and an end guard.

Claim.—A longitudinally-adjustable drip-conductor composed of two matched sections, which are provided, respectively, with an inclined floor, a side guard, and an end guard, substantially as described.

139,642.—*Hanging Millstones.*—ALEXANDER W. WIHALL, Cincinnati, Ohio. Application filed April 9, 1873.

Spindle and running-stone securely connected together by the devices claimed.

Claim.—1. The combination of the bushing A provided with the groove *a'*, and the spindle C provided with the radial key D, substantially as and for the purpose shown.

2. In combination with the bushing A, spindle C, and key D, the key E, substantially as and for the purpose set forth.

3. In combination with the stone B, the bushing A provided with the flanges *a* and groove *a'*, the spindle C, and the key D, the lead filling F, substantially as and for the purpose shown and described.

139,643.—*Railroad Crossing.*—JOSEPH WOOD, Red Bank, N. J. Application filed November 11, 1872.

The rails are laterally notched and fitted together, and are braced by angular splice-bars, one leg of which passes through the web of the intersecting rail. A conical pin takes the wear of the flange at the intersection and eases it over the point where continuity is interrupted.

Claim.—1. A railroad intersection in which some of the rails are laterally notched at and near their ends, to receive the ends of other and intersecting rails, as and for the purpose set forth.

2. A detachable pin, G, inserted at the intersection of the rails, as and for the purpose specified.

3. The combination of the said pin with the angular splicing-bar H.

4. The combination of the within-described angular splicing-bars H, I, J, and K with the main rails of the intersection.

139,644.—*Band-Saw.*—CHARLES A. YOUNG, Providence, assignor of one-half his right to PARDON F. BROWN, Manton, R. I. Application filed May 14, 1873.

A band sawing-machine has its parts so arranged as to be readily changed into a reciprocating scroll-saw when desired.

Claim.—1. In a complex scroll-sawing machine the combination, substantially as described, of the table, the overhanging frame, the saw-driving pulley provided with a link connection, and the carrying-pulleys provided with gig-saw clamps or studs, and with a link connection whereby the same organization of mechanism may be made to operate a band-saw or a reciprocating saw, in the manner substantially as set forth.

2. The combination of the band-saw, the driving-pulley, and the guiding-pulleys, herein described, and their arrangement with relation to the table, as specified, whereby great depth of table can be attained in the direction of the driving-pulley, as set forth.

REISSUE PATENTS.

5,430.—*Fur-Set Box.*—JAMES W. AIKIN, Philadelphia, Pa., and JOHN H. STONE, Hamilton, Canada, assignors, by mesne assignments, to FREDERICK CRANE, Bloomfield, N. J.—Patent No. 70,676, dated November 12, 1867. Application filed May 27, 1873.

A fur-box has within it, attached to its bottom, a tube for containing a muff and sufficient space for cape and collar outside of the tube. Within the muff-tube is a perforated tube for containing camphor. The lid of the box is held air-tight by an elastic band.

Claim.—1. A fur-set box in which is combined a circular muff-case and exterior thereto a receptacle for retaining the cape, collar, or other article of fur, substantially as described.

2. A fur-set box in which is combined a circular muff-case, having an interior perforated central cylinder for holding camphor or other moth-preventive substance, and a receptacle exterior to the muff-case for retaining the cape, collar, or other accompanying article of fur, substantially as described.

3. A fur-set box in which is combined a circular muff-case, having an interior perforated central cylinder for holding camphor or other moth-preventive substance, a receptacle exterior to the muff-case for retaining the cape, collar, or other accompanying article of fur, and an elastic rubber ring applied at the cover, as set forth.

5,431.—*Flexible Lip-Formed Valve.*—EDWARD FIELD, Middlesex, county, England.—Patent No. 127,036, dated May 21, 1872. Application filed April 19, 1873.

Claim.—1. A valve for pumps, consisting of a flexible ring or disk, *a*, retained in the position described, so that its outer edge shall have an annular bearing upon the seat, as set forth.

2. The combination of a holder, constructed substantially as described, and a series of annular lips of flexible material, arranged one above the other in pairs, each pair being in contact at their outer edges, as described.

5,432.—*Grain-Drill.*—BENJAMIN KUHNS, Dayton, Ohio.—Patent No. 116,719, dated July 4, 1871. Application filed January 21, 1873.

Half the drag-bars are hinged to a stationary beam and half to an oscillating beam, which is capable of occupying two positions, in one of which the teeth are in single rank, and in the other they are in double rank, and are held so by a pin.

Claim.—1. In a grain-drill, the combination of an oscillating bar, to which a portion of the drag-bars are attached, and locking bolts or pins, arranged substantially as described, for the purpose of holding the oscillating bars in position, as set forth.

2. In combination with the oscillating bar D, to which the changeable drag-bars are attached, and its arms D^1 D^1, the studs *e e'*, which play through the side beam of the frame, and are retracted and projected by means such as described, or equivalent means, all operating in the manner set forth.

5,433.—*Breech-Loading Fire-Arm.*—JOE V. MEIGS, Lowell, Mass. Patent No. 81,100, dated August 18, 1868; antedated August 5, 1868.—Division A. Application filed March 31, 1873.

Claim.—1. A breech-block moving loosely in a slot transverse to the bore of the gun, and constituting the firing-pin, substantially as set forth.

2. The combination of a breech-block, slotted horizontally and moving transversely to the line of the bore, with a lever vibrating on a pin movable in the slot of the breech-block, to hold the breech securely closed without strain on the lever, substantially as set forth.

3. The combination, substantially as set forth, of an extractor, a guide pin, and a guide-slot in which the pin moves.

4. A cartridge inserting and extracting lever, working on three pivots, all movable, substantially as set forth.

5. The combination of a reciprocating trigger-guard, a slotted breech-block reciprocating transversely to the bore of the gun, and a vibrating lever pivoted to the guard, controlled by a guide-slot on the frame and actuating the breech-block by means of a sliding connection, these instrumentalities being constructed to operate in combination substantially as set forth.

6. An extractor vibrating on a movable fulcrum parallel to the line of the bore to push in the loaded cartridge as the breech closes, and hooking over the flange of the cartridge on one side of its axis to remove the exploded shell as the breech opens, substantially as set forth.

5,434.—*Method of and Means for increasing the Capacity of Oil-Wells.*—EDWARD A. L. ROBERTS, Titusville, Pa.—Patent No. 59,936, dated November 20, 1866; antedated May 30, 1866. Application filed May 24, 1873.

Claim.—1. The method or process of increasing or restoring the productiveness of oil-wells by causing an explosion therein, at or near the oil-bearing point.

2. The method or process of increasing or restoring the productiveness of oil-wells by causing an explosion at or near the oil-bearing point, in connection with superincumbent fluid tamping, substantially as set forth.

3. In combination with a torpedo adapted to deep wells, the employment of a weight and guiding-cord for the purpose of exploding the charge, substantially as described.

4. The means herein described for suspending, adjusting, and exploding torpedoes in oil-wells at any desired or predetermined point, consisting of a wire or cord attached to such torpedo, and through which, as a medium of communicating ignition, the torpedo is exploded.

5,435.—*Reservoir Cooking-Stove.*—EBEN BUSSEY, Troy, N. Y., assignor of three-fourths interest to CHARLES A. MCLEOD, same place.—Patent No. 51,202, dated December 5, 1865; reissue No. 2,319, dated July 24, 1866. Application filed April 24, 1873.

The top plate of the stove is extended beyond the flues and exit-pipe, and in and upon it the water-reservoir is sustained against the back of the stove. A portion of this back is cut away to allow the products of combustion to impinge against the boiler so placed against the stove. The exit-pipe is placed at the rear of the stove, on the prolongation of a line passing between the oven and the reservoir.

Claim.—1. The top plate of a cooking-stove extended beyond the rear flues thereof, and provided with an opening for the reception of a reservoir or boiler, as and for the purposes described.

2. The arrangement of an unceased reservoir at the rear of the stove, with the upper part thereof resting in the opening in the extended top plate, as and for the purposes described.

3. The arrangement of a reservoir at the rear of a stove, with its bottom resting on the back plate thereof, and its upper part above the opening in the extended top plate.

4. The arrangement of a reservoir at the rear of a stove, a portion of the back plate of which has been removed, so that the front plate of the reservoir will form a part of the back plate or outer casing of the vertical flues of the stove, as and for the purposes described.

5. The arrangement, in a cooking-stove, of a culinary boiler and an exit-passage for the gases of combustion, both at one end of the stove, and so that the said boiler forms a part of the lateral casing on the outer side of a fire-flue or fire-flues in the end of the stove below the said exit-passage, in the manner substantially as and for the purposes set forth.

6. The employment and arrangement of the boiler or reservoir A within and upon the rear end of a cooking-stove, and wholly or partly below the top plate thereof, so that one side of such boiler shall form and complete the lateral casing of the rear end vertical flue or flues below the top plate thereof and the bottom of said boiler, in the manner and for the purpose substantially as herein described and set forth.

7. The construction of the rear end and vertical flue or flues of a cooking-stove by means of the boiler or reservoir A and the lower vertical end or boiler-supporting plate *c*, so that the hot air or escaping products of combustion shall come into direct contact with that part or portion of such boiler next adjoining such flue or flues, so as to warm or heat the water or other material in said boiler, in the manner substantially as herein described and set forth.

8. In a stove having a portion of the rear casing of the vertical flues removed and a reservoir placed contiguous thereto, the arrangement of the exit-passage or smoke-pipe upon a vertical line or prolongation of a vertical line passing between the reservoir and the oven, as and for the purposes described.

9. In a cooking-stove having three flues and a portion of the casing of the vertical flues removed and a reservoir placed in the rear thereof, the arrangement of the exit-passage or smoke-pipe over the center ascending vertical flue.

10. In a cooking-stove having ascending and descending flues and a portion of the casing of the vertical flues removed and a reservoir placed in the rear thereof, the arrangement of the exit-passage or smoke-pipe over the vertical ascending flue and between the reservoir and oven.

11. The extension of the flue division-plates under the reservoir, as and for the purposes described.

12. A cooking-stove in which a portion of the casing of the vertical flue or flues has been removed, as and for the purposes described.

5,436.—*Shuttle for Sewing-Machines.*—GEORGE A. EDWARDS and GEORGE SCHNEIDER, Syracuse, N. Y.—Patent No. 136,311, dated February 25, 1873; reissue No. 5,342, dated April 1, 1873. Application filed May 26, 1873.

The bobbin-supporting spindle is hinged to the shuttle-case, and the spring, the pressure of which is governed by the nut, presses the head of the bobbin into the annular depression and thereby regulates the tension of the thread carried by the shuttle.

Claim.—The shuttle provided with the pivoted screw-threaded spindle, thumb-nut, and spring, and with the depression *c*, into which the head of the bobbin may be pressed by the spring and nut, as described.

5,437.—*Smoothing and Fluting Iron.*—JOHN HEWITT, Pittsburg, Pa.—Patent No. 135,335, dated January 28, 1873; reissue No. 5,357, dated April 15, 1873. Application filed May 27, 1873.

The iron is in two sections. When attached it is used as a smoothing-iron; when detached the upper section is used as a fluting-iron, having ribs on the lower surface.

Claim.—An iron with a coniform point, having two ironing-surfaces, one finished as a sad and the other as a fluting iron, the ribs or ridges of the latter, throughout their entire length, projecting below the highest surface of the plane of its plate, substantially as described.

5,438.—*Re-Winnowing Attachment for Thrashers.*—JOHN B. PADON, Troy, Ill.—Patent No. 136,175, dated February 25, 1873. Application filed May 17, 1873.

Attached to rear of thrashing-machine, so that straw may be delivered thereon by straw-carriers and re-winnowed.

Claim.—1. The frame A, perforated bed B, plates *x* and *w*, belts *h h'*, bars *k k'*, &c., fan D, and operating-pulleys, all combined and constructed and arranged as and for the purpose shown and specified.

2. The frame A, perforated bed D, plates *x* and *w*, belts *h h'*, bars *k k'*, &c., fan D, worm E, and operating-pulleys, the several parts being combined, constructed, and arranged as and for the purpose shown and specified.

5,439.—*Curtain-Fixture.*—THE SALEM SHADE-ROLLER MANUFACTURING COMPANY, Salem, Mass., assignee, by mesne assignments, of L. A. TRIPP, deceased.—Patent No. 67,465, dated August 6, 1867. Application filed April 25, 1873.

Within the roller is a spiral spring for automatically winding the shade, and at the end is provided a sliding bolt and ratchet or notched periphery for retaining and holding the spring.

Claim.—The arrangement of the roller B, detent F, and ratchet G, so that the detent shall revolve with the roller and be held from engaging with the ratchet by such revolution, all substantially as described.

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TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

The following abbreviated form of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

Aërated liquor apparatus 1
Air and gas engines 2
Amalgamators, ore-mills 3
Architecture 4
Artificial limbs, &c 5
Baking 6
Baling-presses 7
Baths, closets, &c 8
Bee-hives 9
Bell and brass founding 10
Bleaching, dyeing, &c 11
Blowers 12
Boats 13
Bolts, nuts, rivets 14
Bookbinding 15
Boots and shoes 16
Braid, thread, &c 17
Breech-loaders 18
Brewing, cider, &c 19
Bricks 20
Bridges 21
Brushes and brooms 22
Buckles, buttons, &c 23
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Candles, soap, &c 26
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Furniture, &c 62
Garden and orchard tools 63
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Gas, manufacture of 66
Gearing 67
Glass 68
Governors 69
Grinding and polishing 70
Gunpowder 71
Harness and saddlery 72
Harrows, rollers, &c 73
Harvesters, A 74
Harvesters, B 75
Hats and felting 76
Hay-tedders, &c 77
Hemp and flax 78
Hoisting machinery 79
Hoop-skirts and corsets 80
Hose and belting 81
Hydraulic engineering 82
Ice-making 83
India rubber 84
Iron and steel 85
Jewelry 86
Journals, bearings, &c 87
Kitchen and table utensils 88
Knitting, netting, &c 89
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Laundry apparatus 91
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Ordnance 105
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Punching and shearing 119
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Railroads, (rolling stock,) B 122
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Rolling metals 125
Roofing 126
Rope and cordage 127
Safes and vaults 128
Salt 129
Saw-mills 130
Saws 131
Scales and weights 132
Seeders and planters 133
Sewing-machines 134
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Surgical instruments 156
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Telegraphs 158
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Trunks and satchels 162
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COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)..... 6,500
SEWING-MACHINES and attachments..... 2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes..... 4,000
PRINTING; including presses, type, and printers' furniture. 2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles 1,200
FELTING and HATS; including caps, bonnets, flock, &c..... 1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)..... 1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs..... 1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)

The specifications of patents have been reprinted back to November 26, 1866; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

BOUND VOLUMES OF PATENTS.

The Office is now prepared to furnish to subscribers the monthly volumes of patents at $125.00 per annum, bound in half-sheep.

In these volumes the specifications are in full, the type of the same size as the printed patents and records; the drawings are in full, but are one-half the size (linear) of those attached to the patents and bound up for record; the illustrations are four on a page, but *fac-similes* of the originals, with the headings and signatures.

The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 260 of drawings; total of each volume about 1,060 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorised by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,060 pages per month: 9,600 pages of specifications, 3,120 pages of drawings—12,720 pages.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

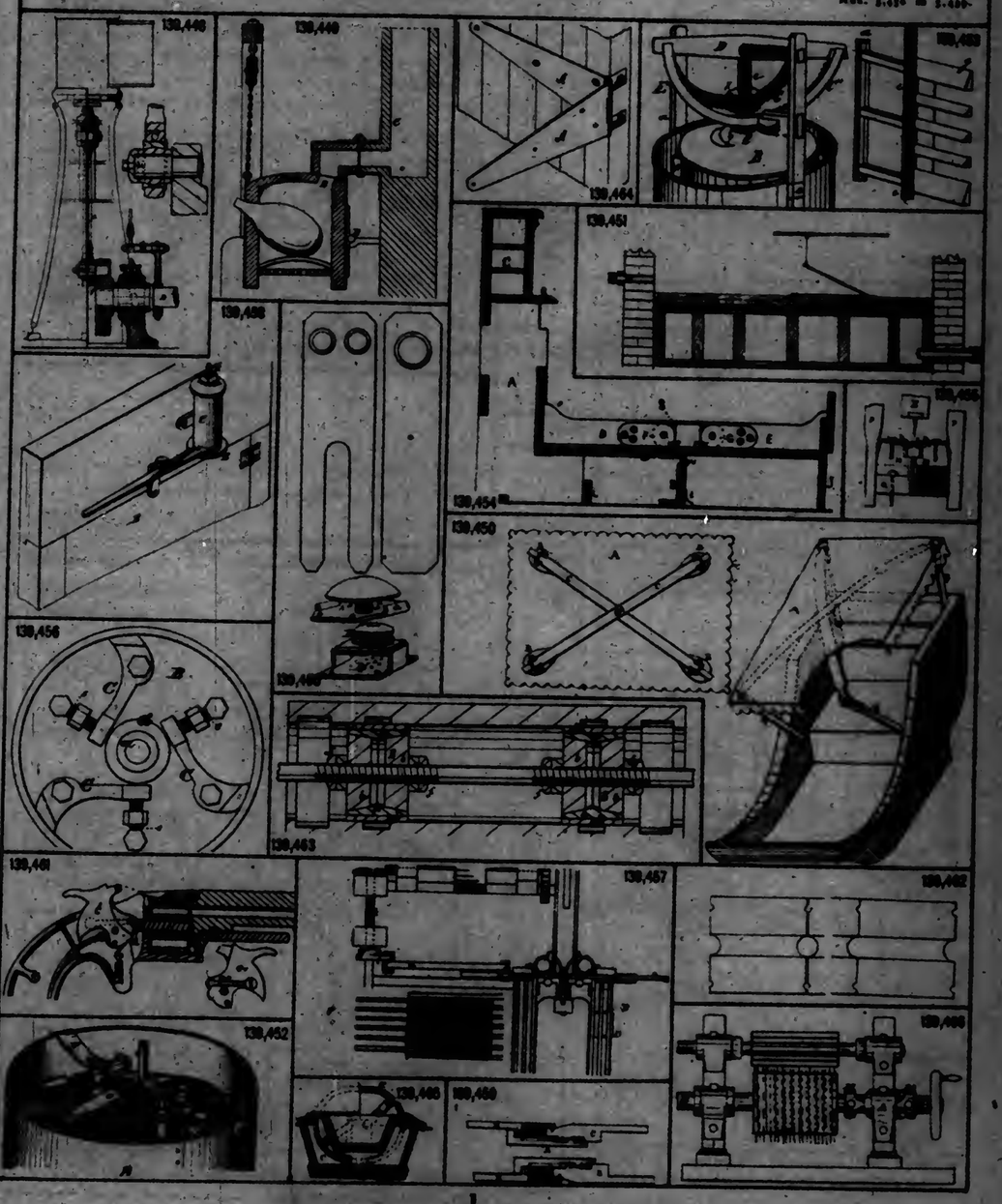
ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 139,443 to 139,644. JUNE 3, 1873. REISSUED PATENTS Nos. 5,450 to 5,499.



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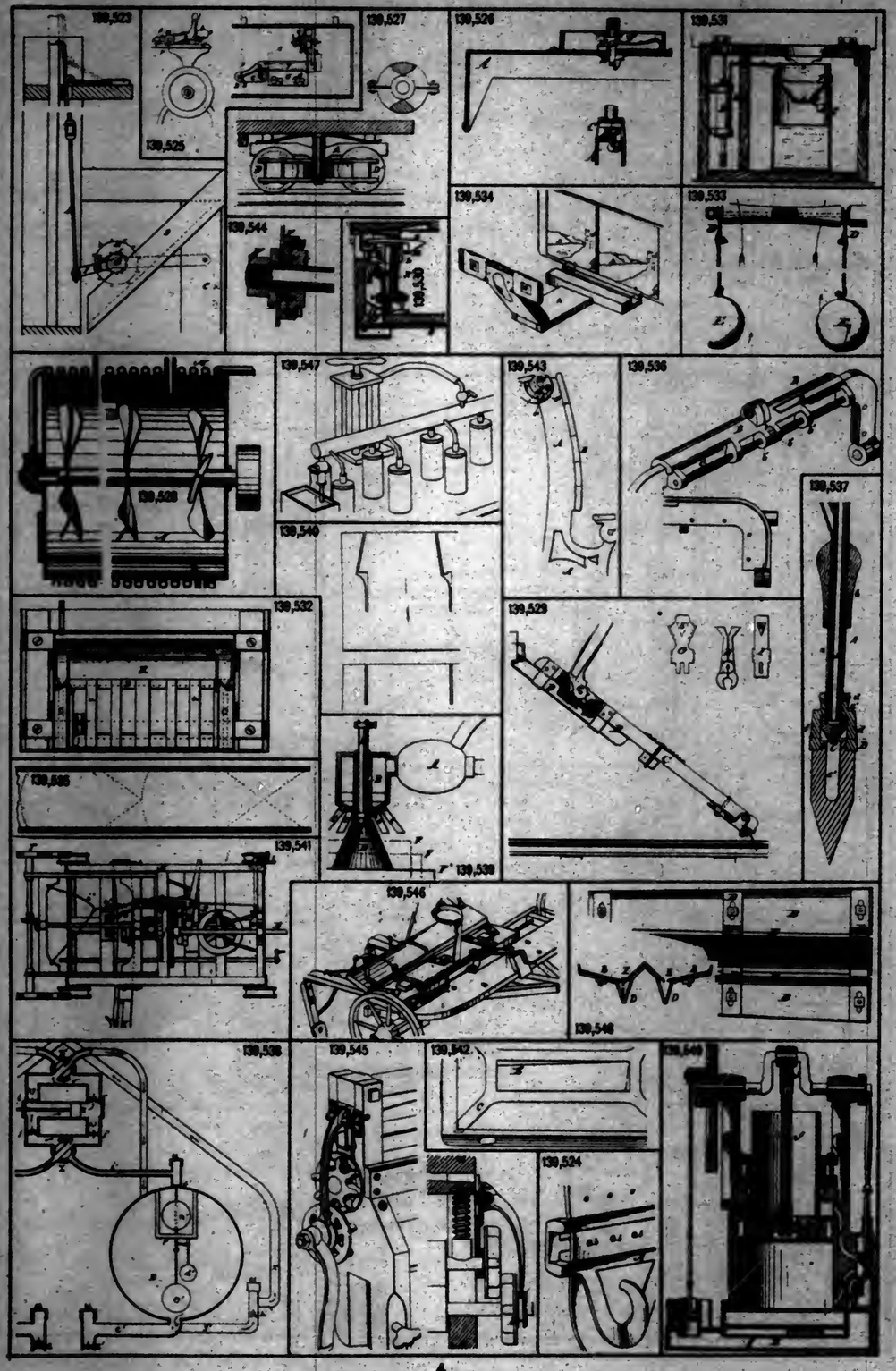
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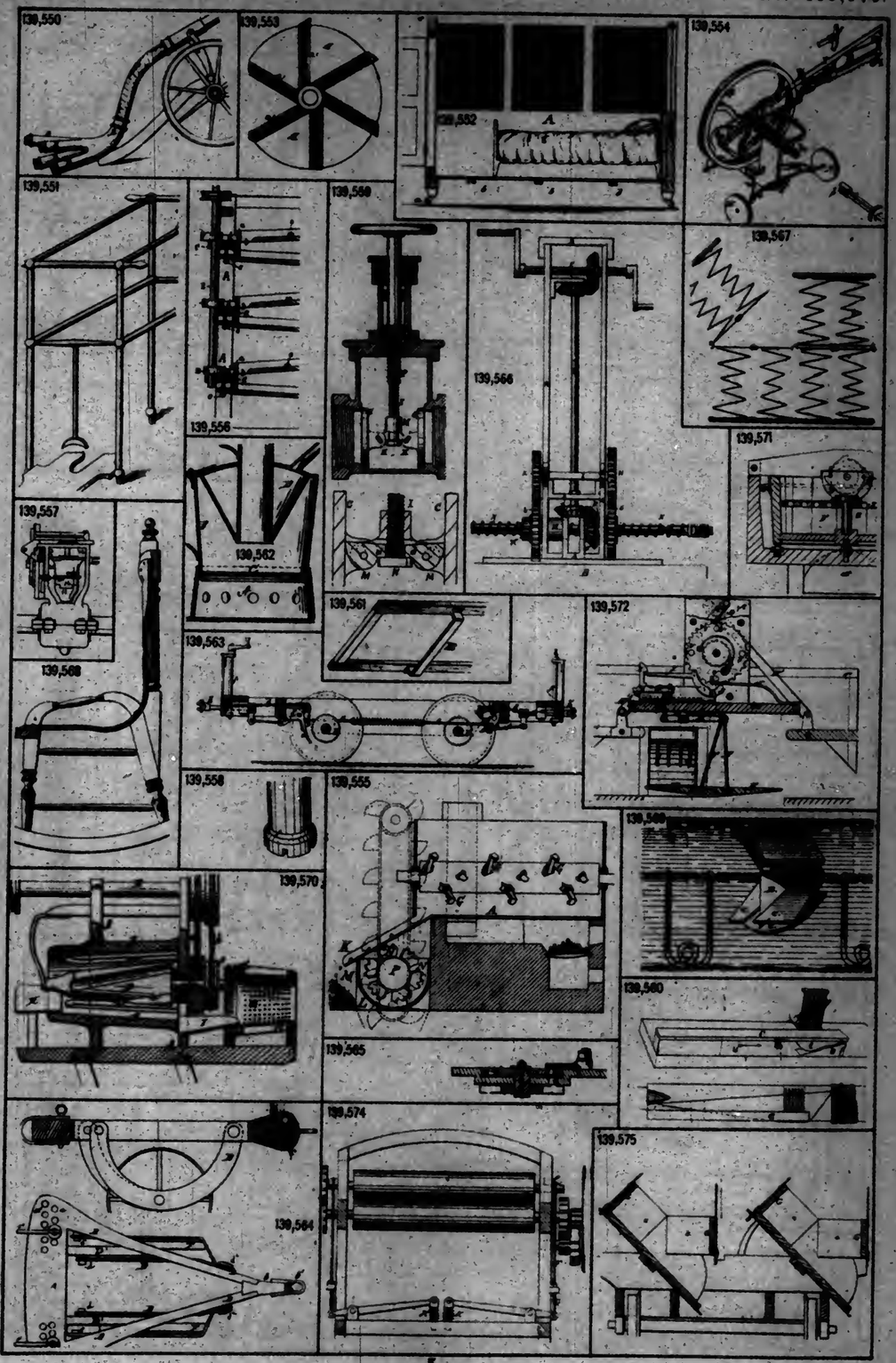
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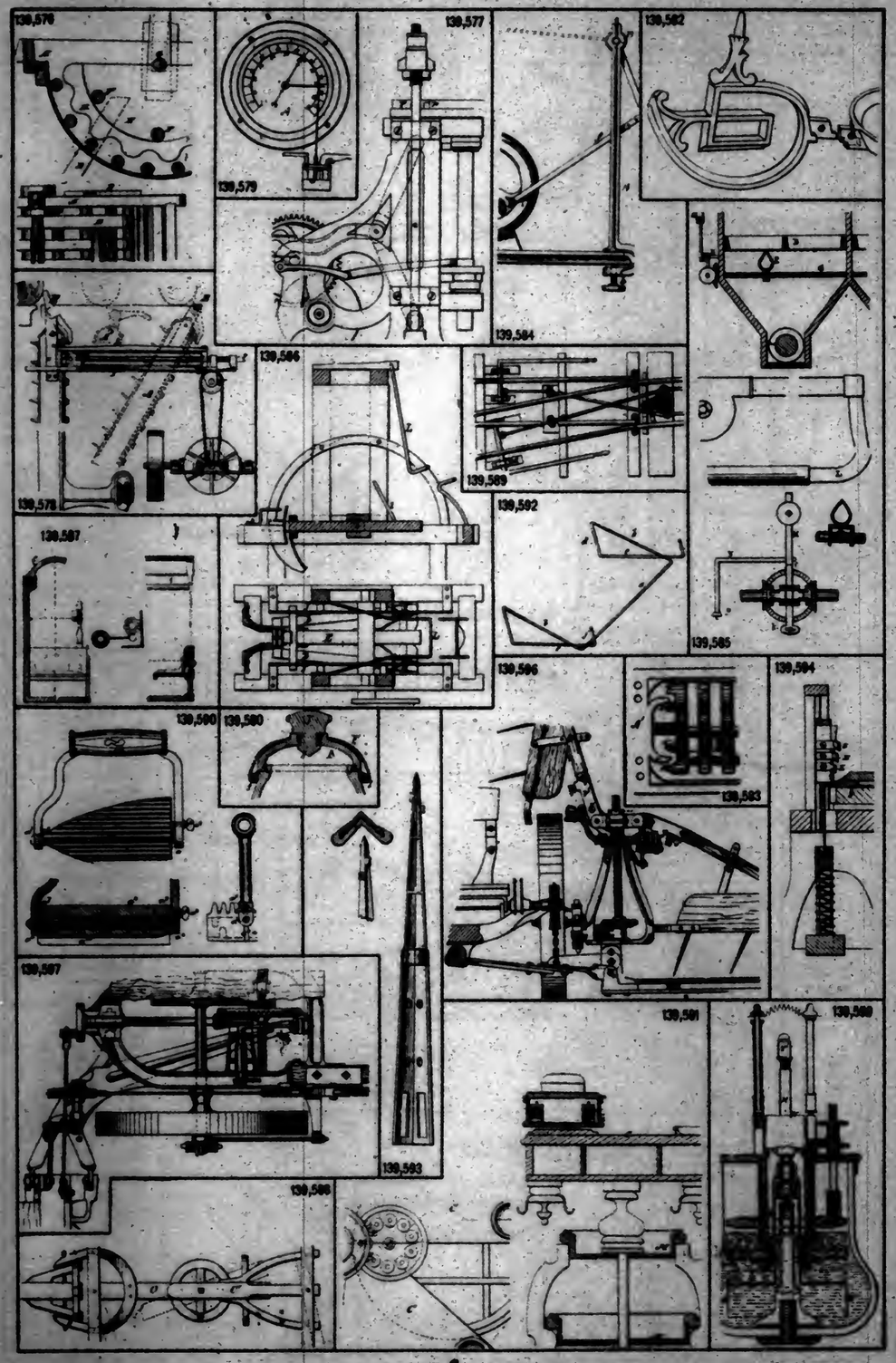
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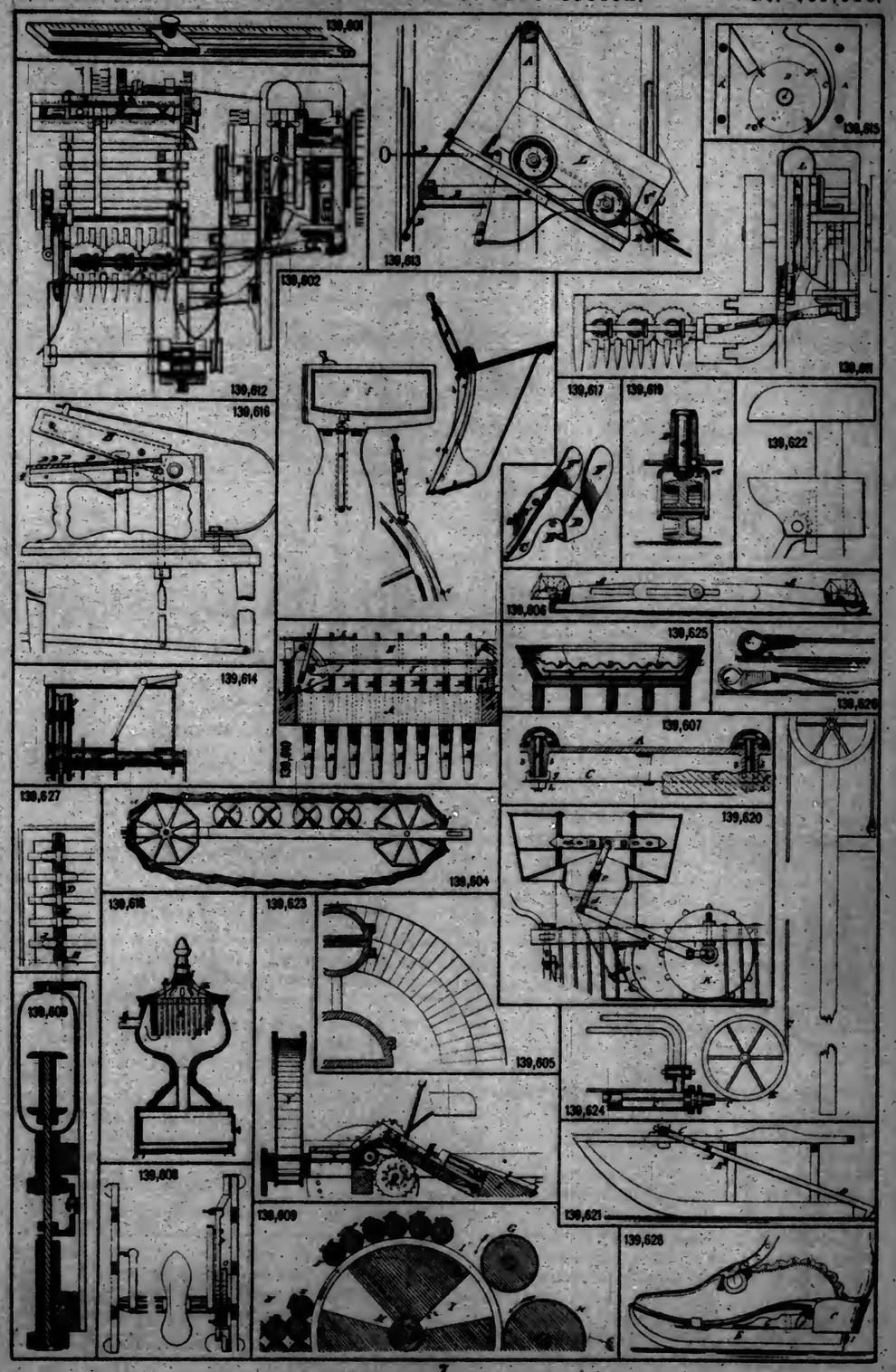
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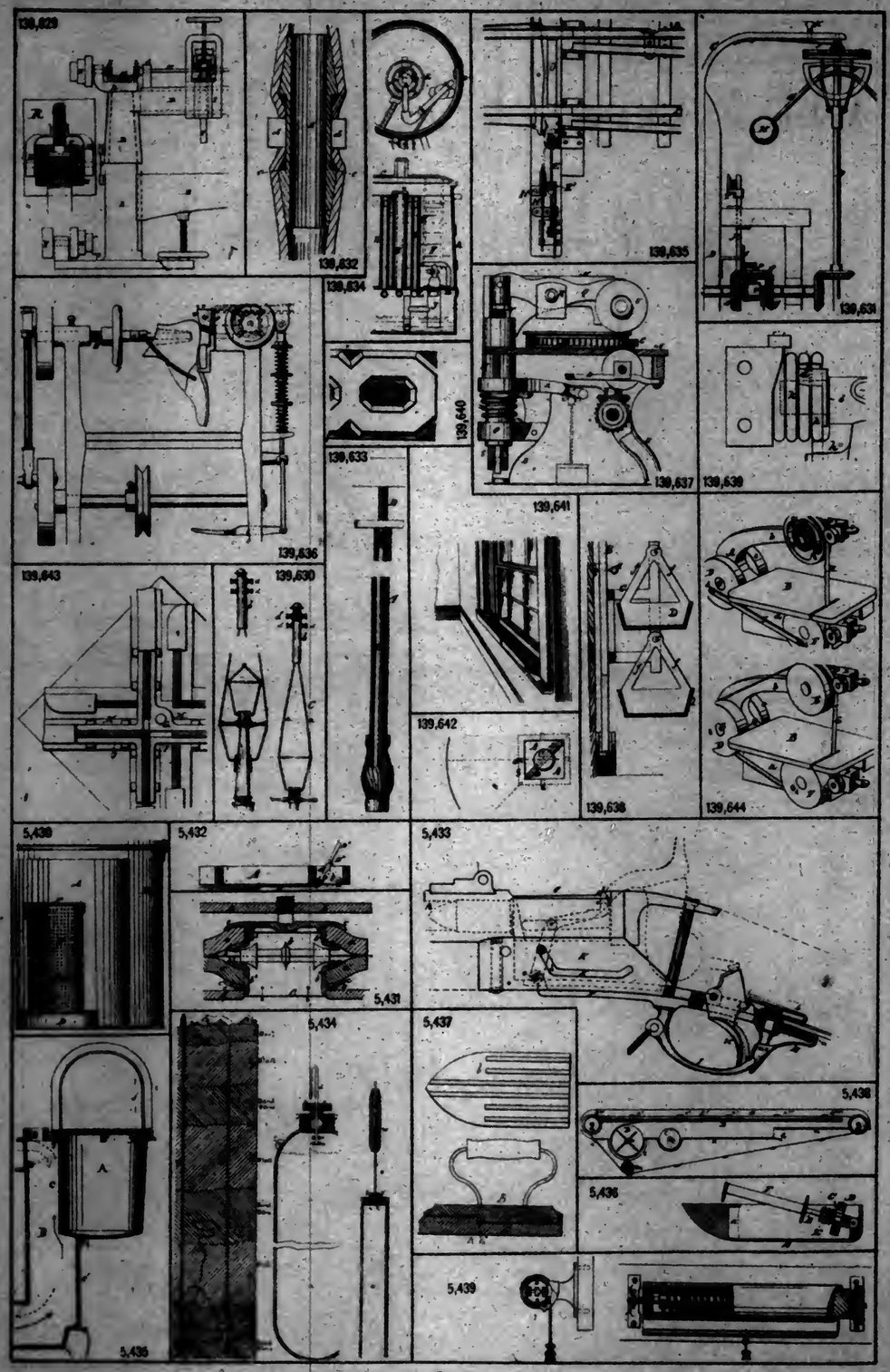
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OFFICIAL GAZETTE

OF THE

United States Patent Office.

VOL. 3.—NO. 23. TUESDAY, JUNE 10, 1873. PRICE { $6,00 per year—single. $5,00 per year in clubs.

The OFFICIAL GAZETTE is published on Tuesday of each week, from the United States Patent Office. The subscription price for 1873 is six dollars per year for single subscribers; five dollars per year to clubs of not less than five sent at one time, and which will be mailed free of postage to separate addresses if desired. Subscriptions will commence and terminate with the year. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

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COMMISSIONER'S DECISIONS.

VINTON *vs.* PIERCE.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of interference between the application of John J. Vinton and the patent of Jonas J. Pierce, granted June 7, 1870, for* IMPROVEMENT IN HOT-BLAST APPARATUS.—*Decided May 26, 1873.*]

Priority will be awarded to the party who originated the invention before his competitor suggested it to him, and who reduced it to actual practice and took out a patent for it, of all which his competitor had full knowledge, but interposed no claim to it, and did not apply for a patent for nearly two years after the other patent was granted, although he originated the invention before the patentee, but did nothing toward perfecting it.

THACHER, *Acting Commissioner:*

This is an interference between a patent issued in 1870 and an application for a patent for the same invention filed nearly two years subsequent to the former grant. The burden of proof, therefore, rests entirely on the applicant, and a second patent ought not to be issued to him except upon conclusive evidence of his right to the same—such, in fact, as would defeat the existing patent in court; for without a strict adherence to this rule the Commissioner will be placed in the awkward position of granting a patent which the courts will not sustain—a result always to be avoided, if possible.

The Examiner of Interferences found in favor of the patentee.

The Examiners-in-Chief reverse this decision, but remark "that, if it be granted that Pierce was an *independent* inventor, priority must be declared in his favor." From an examination of the testimony this appears to be the only question of any importance in the case; for, if both parties were original and independent inventors, Vinton has not the shadow of a right to a patent. It will therefore receive consideration first.

Vinton conceived the idea of the invention in 1868, and made a fugitive sketch of it on a drawing-board the latter part of that year.

He entered the employment of Geddes, Pierce & Co., at Sharpsville, Pennsylvania, in November, 1869, where he also made the acquaintance of Jonas J. Pierce, to whom he claims to have communicated the invention within the first month he was there. This was in connection with a chalk-drawing made on the office-floor at an interview with Geddes, Eagan, and J. J. Pierce. The only affirmative evidence that the invention was described to Pierce at this time is the testimony of Vinton himself. Pierce denies it, and Geddes, called as a witness by Vinton, says the conversation was about another matter. Eagan, the only other person present, was not examined on this point. The weight of evidence is, therefore, against the claim of Vinton in this, the most important, point in his case, so that, if there was no evidence touching the prior invention by Pierce, I should be unwilling to convict him of fraudulently appropriating the invention of another on this testimony alone.

But there is affirmative evidence that Pierce had made the invention some time before this interview, and that, too, without taking into consideration certain testimony going to prove the date of invention as somewhat earlier than sworn to by Pierce in his "preliminary statement," which has been excluded, very properly, both by the examiner and Board. Parties must be held strictly to their "preliminary statements," except on unmistakable evidence to the contrary, such, for instance, as a date of record incorrectly stated from memory.

In this instance, although the new date sought to be established does not antedate the inception of the invention previously fixed by Vinton, which gives the appearance of truthfulness to the testimony, still I do not find good reason for admitting it as evidence in this

case. Pierce gives the time in his "statement" when the idea of the invention first occurred to him—a date which could be known to him alone. The evidence submitted is not conclusive that he was mistaken in this, and there is, therefore, no reason for changing the ruling made in *Allen & Moody* vs. *Gilman*, 2 Official Gazette, 293, and *Hovey* vs. *Hufeland*, 2 Official Gazette, 493.

In his preliminary statement Pierce says the invention originated with him in August or September, 1869. With his testimony he files two exhibits, 1 and 2, which he swears were made about that time, and which illustrate the invention in pencil-sketches. He also states that this improvement was the subject of general conversation during the summer of 1869, which testimony is corroborated by James Pierce and Mr. Kelly. None of this evidence is contradicted, and, standing as it does unimpeached, it proves conclusively that Pierce originated the invention in dispute before he had even seen his competitor, Vinton. I cannot leave this part of the case without remarking that Vinton's conduct appears to me utterly inconsistent with his present claims. From letters filed as exhibits it appears that, as early as February, 1870, he was aware of the fact that Pierce had filed a caveat for the invention in this Office, and was fully advised of the course necessary for him to pursue if he wished to protect rights claimed by him. Yet he stood by while the invention was put into practice by his rival before his very eyes; was himself foreman of the shop where the castings were made; probably also had knowledge of the fact that Pierce obtained a patent in June, 1870, and disposed of rights to others in the vicinity of Sharpsville, and not a protest was made—not even an application for a patent filed, although he was abundantly able, until nearly two years after the issue of the patent to Pierce.

This is not the course of an inventor who sees another stealing and appropriating to his own use a valuable invention, to which he alone has the right. I cannot believe that, upon the evidence now before the Office, any court in the country would annul the patent for fraud in its procurement.

Admitting both Vinton and Pierce to be original inventors, but little remains to be said. Vinton was the first to originate the invention in 1868, but, up to the time of filing his application, April 10, 1872, produced nothing more than fugitive sketches in different places, unless drawings made by Geddes, late in 1869, can be appropriated by him, which is a disputed matter. In the mean time Pierce also originates the invention in 1869, files a caveat in February, 1870, and an application for a patent in May following, and about the same time adopts measures to put the improvement into actual use by contracting, in June, for a new furnace, the castings for which were delivered in October, and which was in full blast in March, 1871. For the delay on the part of Vinton no excuse is offered—not even the poor one of poverty so frequently urged. Under the most liberal construction of Vinton's testimony his conduct does not show reasonable diligence in adapting and perfecting the invention. His *laches* are fatal to the claim he now makes, and, although second in the conception of the improvement, Pierce is the first inventor in the legal sense of the term.

The decision of the Examiners-in-Chief is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—MAINE DISTRICT.

JOHN W. JONES *et al. vs.* R. K. SEWALL, Administrator.

[*In Equity.—Before Clifford, Judge.—Decision May* 17, 1873.]

Although an inventor has obtained a patent for a process, he may have another for the product.

There cannot be more than one valid patent for an invention, nor can the grantee of a patent sustain an action upon another patent for the same invention issued afterward.

Separate patents for separate and distinct parts of the same invention are nevertheless valid.

A patent is *prima facie* evidence of the patentee's having made the invention when the specification was filed.

If a patentee wishes to show that he made the invention previous to filing his application, he must prove, as against another patent for it, that he had reduced it to practice as an operative machine.

Previous use or knowledge of an invention abroad is no defense against a patent, unless it was described in some printed publication so clearly as to enable others to put it in practice.

The use of an invention by the author for the purposes of experiment, though continued for more than two years, will not prejudice his right to a patent.

Neither will the sale or use of it for two years by others without his consent.

Where an invention has, through the acts of the inventor, gone into public use beyond his control, his right to it is forfeited beyond recall.

The defense that the patentee had allowed his invention to be in public use or on sale for two years before he applied for a patent, is distinct from the defense that he had abandoned it to the public, and should not be blended with it in the same pleading.

Unavoidable delay while an application for a patent is pending is no ground for imputing abandonment.

Mere forbearance to apply for a patent while the inventor is experimenting upon his invention, and perfecting it and testing its value, affords no ground for presuming that he has abandoned it.

A patent for preserving green corn by severing the kernels from the cob so that the juices will be liberated, and then boiling the kernels and juices together in sealed cans, is valid, although a patent has been previously granted abroad for preserving corn by boiling it in vessels, without specifying whether the kernels are to be separated from the cob or whether they are to be broken or whole.

[Wm. Henry Clifford, *Counsel for Complainants.*
R. K. Sewall, Bradbury & Bradbury, A. A. Strout, *Counsel for Respondent.*]

CLIFFORD, *J.:*

Inventions lawfully secured by letters patent are the property of the inventors, and as such the franchise and the patented product are as much entitled to legal protection as any other species of property, real or personal. They are, indeed, property, even before they are patented, and continue to be such, even without that protection, until the inventor abandons the same to the public, unless he suffers the patented product to be in public use or on sale, with his consent and allowance, for more than two years before he files his application for a patent. (5 Stat. at Large, 123; 5 Ibid., 354.)

On the 8th of March, 1853, Isaac Winslow, of Philadelphia, filed in the Patent Office an application for a patent for "a new and improved mode of preserving green corn," in which he stated that he had invented a new and useful improvement for accomplishing that object, and prayed that letters patent might be granted to him for that invention. Certain portions of the invention were not illustrated either by drawing or models, and in consequence of that omission the application, on the 1st of August following, was returned to the inventor, leaving it to his option to supply the omission or to modify his claim. He elected to supply the deficiency, and, on the 26th of October succeeding, he filed in the Patent Office additional drawings and a model of the invention, and samples of the patented product. Information from the Patent Office was communicated to the inventor on the 2d of November, in the same year, that the Office did not regard the operation of cutting the corn from the cob as any part of the process of preserving the product, and requesting him to decide whether the Office should examine the process of preserving or that of removing the corn from the cob, under the fee already paid, evidently showing that the Office required another fee if both were to be examined. Compelled to elect a second time, the applicant decided to strike out his second claim, and consented to take a patent for the process of preserving the patented product. Nothing further was done until the 19th of the same month, when the Patent Office informed the applicant that the Office was of the opinion that his process was substantially the same as that in common use for preserving both vegetable and animal substances. On the 18th of February, 1862, the inventor filed in the Patent Office a new application for a patent, referring to the fact that his prior application, as modified, was rejected, and renewing the prayer that letters patent might be granted to him for the entire improvement. In the meantime the inventor assigned the business over to his brother and the complainant, with the stipulation that he would give the assignees the benefit of any improvement he should make, and of his knowledge of the new process. Before the second application for a patent was made the entire inventions were duly assigned to the complainant, and it is proper to remark that the title of the complainant is admitted.

Four several letters patent were granted for the inventions, and they were all issued in the name of the inventor, but each contains the recital that he had assigned all his right, title, and interest in the invention to the complainant. They are as follows: 1. No. 34,928, dated April 8, 1862, for a new and useful improvement in preserving Indian corn in the green state. 2. No. 35,274, dated May 13, 1862, for a new and useful improvement in preserving green corn. 3. No. 35,346, dated May 20, 1862, for a new and useful improved process of preserving green corn. 4. No. 36,326, dated August 26, 1862, for a new and useful improvement in the process of preserving green corn. Possessed, as he is, of the absolute title to those improvements, the complainant claims the full and exclusive right and liberty of making and using the said improvements, and vending the same to others to be used, and he charges that the respondent named in the bill of complaint, then in full life, from the 13th of September, 1867, to the 19th of November, in the same year, unlawfully and wrongfully used and practiced the described improvements claimed and patented by the complainant. Service was made, and the respondent appeared and filed an answer. Amendments were made to the bill, by consent, admitting new complainants, and also to the answer allowing the respondent to set up new defenses. Reference will only be made to such of the defenses set up in the answer as were pressed in argument at the hearing. Argument to show that the title of the complainant is valid is unnecessary, as that is admitted by the respondent, and the complainant having introduced in evidence the several letters patent described in the bill of complaint, it is conceded that they afford a *prima facie* presumption that the patentee is the original and first inventor of the several improvements therein described and secured to the supposed inventor. Much consideration need not be given to the question of infringement, as the respondent admits that his foreman, though as he alleges without his consent, put up certain parcels of green corn preserved substantially by the same process as that described in the specification of the patentee, and substantially the same as covered by his patents, amounting to seven hundred cans, which have been sold, and the proceeds and profits have been received by the respondent, as stated in the account annexed to the answer. Unless the patent is sustained, the question of infringement is an immaterial issue, and where it is admitted, and the case shows that profits have been received by the respondent to a substantial amount, the question of the extent of the infringement is usually left to be determined by the master. Viewed in the light of these suggestions, it is quite clear that the case depends upon the defenses set up in the answer, as, if no one of them is sustained, the complainants are clearly entitled to a decree.

They are as follows:

1. That the patentee was not the original and first inventor of the improvements, or either of them, as alleged in the bill of complaint.

2. That the several supposed improvements are merely old methods applied to a new use, and that the several improvements, and each of them, were well known and in public use prior to the alleged discovery and invention of the patentee.

3. That the several improvements were in public use and on sale more than two years before the patentee made his application for a patent.

4. That the patentee abandoned his invention to the public before he filed his application for a patent.

Application was made by the inventor, in the first place, for one patent to embrace all the several subject-matters described in the four patents subsequently granted by the Commissioner of Patents. Novelty and utility are both required to constitute a patentable invention within the meaning of the patent law, but where both of those qualities are combined, it is settled law that the right to a patent does not depend upon the "quantity of thought," ingenuity, skill, labor, or experiment, or the amount of money which the inventor may have bestowed or expended upon his production. (Curt. on Pat., sec. 31.)

Defenses involving the validity of a patent cannot be satisfactorily examined, or their sufficiency or insufficiency determined, without first ascertaining what the invention is which is embodied in the patent constituting the subject-matter of the controversy.

I. Undoubtedly the first patent is for the product of the invention, or for the new article of manufacture, to wit, Indian corn preserved green, or Indian corn preserved in the green state. In his first attempt to preserve the corn in the green state, without drying the same, the patentee states that he did not remove the

kernels from the cob, which was not satisfactory, as the article obtained was very bulky, and when used the peculiar sweetness of the corn was lost, the same being absorbed, as the patentee supposes, by the cob. Experiments of various kinds were subsequently made to overcome the difficulties attending the effort to preserve the corn without drying the same, which were also unsuccessful, as the kernels, when preserved, did not retain the milk and other juices of the corn, leaving the product hard, insipid, and unpalatable, and without the full flavor of fresh green corn. All such experiments were abandoned, but he finally succeeded in producing an entirely satisfactory article of manufacture, which is the one described in the specification and claim of his first patent. His description of the method of manufacturing the product is substantially as follows: Select a superior quality of sweet corn, in the green state; remove the kernels from the cob by means of a curved and gaged knife, or other suitable means; pack the kernels in cans, and hermetically seal the latter so as to prevent evaporation under heat or the escape of the aroma of the corn. When packed the cans of corn are to be exposed to steam or boiling heat for an hour and a half, then puncture the cans, and immediately seal the same while hot, and continue the heat for two hours and a half longer. Afterward the cans may be slowly cooled in a room at the temperature of seventy to a hundred degrees Fahrenheit. Indian corn thus packed and treated, the patentee states, may be warranted to keep in any climate. Being preserved in its natural state, as near as possible, it retains the peculiar sweetness and flavor of fresh green corn right from the growing field, and it is only necessary to heat the corn in order to prepare it for the table, as it is fully cooked in the process of preserving. What the patentee claims in that case is—

> The described new article of manufacture, to wit, Indian corn, when preserved in the green state, without drying the same, the kernels being removed from the cob and packed in cans hermetically sealed and treated substantially in the manner and for the purpose set forth in the specification.

II. Attention will next be called to the second patent, which purports to embody an invention for a new and useful improvement in preserving green corn, or, in other words, the patented invention is for the process of manufacturing the new product described and patented in the first-mentioned letters patent. Necessarily the details of the process are somewhat fully given in the specification describing the patented product, but the claim of the first patent does not extend to the process, which shows that the Patent Office committed no error in granting the second patent, as it does not include anything patented in the first patent. (*Goodyear* vs. *Providence Rubber Co.*, 2 Cliff., 371; same case, 9 Wall, 788; *Seymour* vs. *Osborne*, 11 Wall., 559.)

Both parties agree that it is competent for the Commissioner to grant a patent for the product and one for the process, and it is obvious that the patent under consideration is for the process, which is not included in the prior patent. It has long been common, says the patentee, to boil green or unripened corn, and then to dry the same for winter use, but corn thus dried must be boiled again when prepared for the table, and is more or less hard and insipid, as it loses the fine flavor of fresh green corn. Ears of corn, also, are sometimes boiled and then hermetically sealed in cans, but the cob seems to absorb the sweetness of the kernels, or if the kernels are removed from the cob after boiling, and then preserved, still the fine flavor of the natural corn is lost. Many and varied attempts were made by the patentee to preserve green corn on the cob without drying the same, but all those efforts were unsuccessful, as the article was bulky, and the sweetness of the corn was absorbed by the cob. Subsequently he conceived the idea of first removing the corn from the cob, and then boiling or cooking the kernels and preserving them as thus separated from the cob. Some benefit doubtless resulted from that new conception, but a new difficulty arose, as the kernels of corn were broken in being removed from the cob, and the milk and other juices of the corn were dissolved and diluted in the process of boiling, leaving the product insipid and unpalatable. Unable to overcome that difficulty in that mode, he next attempted to cook the corn, without permitting it to come in contact with the water, by exposing the cans containing the corn to boiling water, but he soon found that mode of preserving the corn was unsatisfactory, as a long time was requisite to cook the corn sufficiently for preservation, and it appears that the milk of the corn evaporated and the corn became more or less dried.

Two other patents are set forth in the bill of complaint, but it is clear that the patents are each for the new and useful improvement in the process of preserving green corn, and that they severally embody substantially the same invention as that described in the second patent. Improvements, consisting of separate and distinct parts, may in certain cases be secured by separate and distinct patents, but no more than one patent can legally be granted for the same invention. (5 Stat. at Large, 192; *Sickles* vs. *Falls Co.*, 4 Blatch., 508.)

Inoperative patents, or such as are invalid by reason of a defective or insufficient description or specification, may also in certain cases be surrendered, and the Commissioner, in such cases, is authorized to cause a new patent to be issued to the inventor for the same invention, but the Commissioner does not possess the power to grant a second patent for the same invention, in any case nor under any circumstances, without the surrender of the first one granted to the patentee. (*Suffolk Co.* vs. *Hayden*, 3 Wall., 319; 5 Stat. at Large, 122.)

Apply those principles to the case, and it is certain that the third and fourth patents described in the bill of complaint are void. More than one patent for the same invention cannot be legally issued by the Commissioner, but the irregular issuing of the second patent cannot impair the right of the patentee under the first patent, if it was valid at the time it was granted. Tested by these rules of decision, it is quite clear that the bill of complaint as to the third and fourth patents must be dismissed, but that the complainants are entitled to a decree for an account and for an injunction for the infringement of the first and second patents, unless the defenses, or some one of them set up by the respondent, are sustained.

I. First defense is that the patentee is not the original and first inventor of the respective improvements. Both patents may be considered together, as all the proofs applicable to one apply equally to the other, and the positions taken in argument are the same in both,

without an exception. Before examining that defense, it becomes necessary to refer somewhat more fully to the nature and peculiar characteristics of the respective improvements in question, in order that the evidence adduced may be fully understood and properly applied. Ears of corn may be boiled and hermetically sealed in cans without infringing the inventions of the patentee, but the difficulty with that product and the process which produces it is that the cob absorbs the sweetness of the kernels, and the article becomes insipid and unpalatable, and consequently it is not salable to much extent. So the kernels may be removed from the cob after boiling, and then be preserved in cans hermetically sealed, without any conflict with the improvements embodied in the patents described in the bill of complaint, but the process and the product which it produces are comparatively valueless, as the fine flavor of the green corn cooked in the usual way is lost in the process of manufacture.

Corn may also be preserved, when in a green state, by removing the kernels from the cob and boiling or cooking the same, before the kernels are packed in cans hermetically sealed, without subjecting the manufacturer to the charge of infringing these patents; but the difficulty with that process is that the kernels, in being removed from the cob, are broken, and consequently the milk and other juices of the corn in that state are dissolved out in the process of boiling or cooking, and the natural aroma of the green corn cooked in the usual way for the table is lost, and the product becomes of little or no value as an article of commerce. Attempts were made by the patentee in this case to remedy that difficulty by packing the kernels in cans not sealed, and exposing the cans containing the kernels to boiling water, but the process was unsatisfactory in other respects, as it required a long time to cook the corn, during which the milk and other juices evaporated and the corn became more or less dried. All experiments of such kinds having failed to produce the desired result, the inventor adopted the process of removing the corn from the cob, packing the kernels in cans, hermetically sealing the same, and then boiling the cans until the corn therein became completely cooked; but he states that the cans must be very strong or they may burst; and to prevent that he practiced puncturing them, after they became well heated, to allow the air to escape, immediately re-sealing the same to prevent the evaporation of the juices of the corn or the loss of the natural aroma. Cans, if sufficiently strong, it would seem, may be used to complete the process without the necessity of their being punctured after the boiling is commenced, but, unless the cans are very strong, it is better to puncture them, in order to relieve the internal pressure and to prevent them from bursting. Even if the cans when not punctured, as described, do not burst, the air contained in the cans and the vapor become more or less expanded by the heat, so as to press the heads of the can outward and give the same the appearance of cans which contain the gaseous products of decomposition. Such appearances, even when the corn is perfectly preserved, diminish its value as an article of commerce, which shows that it is better to puncture and re-seal the cans during the process of boiling, unless the cans are very strong.

Taken as a whole, the description in the specification of the respective patents constitutes a full compliance with the requirement of the act of Congress in that behalf, showing that the claim of the patentee in the first patent is the described new article of manufacture, to wit, Indian corn, when preserved in the green state, without drying the same, the kernels being removed from the cob, hermetically sealed, and heated, substantially in the manner and for the purpose set forth, which is well justified by the description of the invention given in the specification.

His claim in the second patent is for the described process of first removing the corn from the cob and then preserving the kernels, substantially in the manner and for the purposes set forth, which is also well supported by the antecedent description contained in the specification, to which it is appended. Viewed in any proper light, it is clear that the purpose of the invention, as evidenced by the language of the description throughout, is to preserve not only the farinaceous elements of the kernels, but also the milk and juices of the same, which give the peculiar aroma or flavor to green corn when cooked for the table in the usual way during the season when the kernel is full grown, or nearly so, but before the milk and juices of the kernel become concrete, as in ripe corn. Beyond all doubt, the patented process, if the directions are properly followed, will accomplish the purpose for which it was invented, and will enable the manufacturer to preserve the kernels of green corn with all the milk and other juices of the same, without any chemical or other change, except what is produced by the cooking, which is effected by putting the sealed cans containing the kernels, with their milk and other juices, just as the same were removed from the cob, into boiling water, and keeping the cans with their contents in the boiling water for the period or periods specified in the descriptive part of the specification. Proof to that effect, of the most satisfactory character, is exhibited in the record, and the patented product, as seen everywhere in daily use, fully attests its accuracy and truth. Sufficient has been remarked to show what the improvements are which give rise to the present controversy, and, having accomplished that purpose, the next inquiry is whether the patentee is the original and first inventor of the respective improvements.

Tested merely by the pleadings, the affirmative of that issue is upon the complainants, but the complainants having introduced the original letters patent under which they claim, the rule is well settled that the burden of proof is changed, and that it is incumbent upon the respondent to show, by satisfactory proof, that the patentee is not the original and first inventor of the respective improvements, as he, the respondent, has alleged in his answer. Evidence was introduced by the complainants, of the most satisfactory character, showing that the patentee, Isaac Winslow, of Philadelphia, discovered the patented process of preserving green corn early in the year 1842, and that he made successful experiments in reducing his invention to practice at Westbrook, in the State of Maine, during the latter part of the summer or in the early part of autumn of that year, leaving no doubt that the process discovered was the same as that described in the second patent, on which the suit is founded, and that the results were satisfactory to a limited extent. All doubt

as to the date of those experiments is removed by the statements of the witnesses as to the attending circumstances, which could hardly fail to impress the memory so as to prevent unintentional mistake, and there is no reason disclosed in the proofs to create any distrust as to the integrity of the deponents. Though a resident of Philadelphia, the patentee sometimes went abroad for temporary periods, and in the spring prior to making these experiments he wrote from France to his brother-in-law, living at Westbrook, in the State of Maine, requesting him to plant a piece of ground with sweet corn, evidently for the purpose of securing the means of making such experiments and testing the utility of the new process which he had invented, and it appears that his brother-in-law complied with his request. Pursuant to that arrangement, he visited his brother-in-law, at Westbrook, toward the close of the summer or early in the fall of that year, and commenced to make experiments to preserve green corn, occupying for that purpose a building situated on the same farm which had previously been used as a cord factory. He worked less than a week that season, and the experiments, to a large extent, were unsatisfactory, as the cans in which the corn was packed were not strong enough to resist the pressure within, occasioned by the boiling. Attempts were made to preserve the corn by cooking it before it was packed in the cans, both by cooking it on the cob and then removing the kernels, and also by first removing the kernels and then boiling the same, but all of those experiments proved to be wholly unsatisfactory, as all or nearly all of the corn in the cans spoiled, and all such as was not spoiled was found to be insipid and comparatively tasteless, and of little or no commercial value. Experiments were also made by cutting the kernels of the freshly-gathered green corn from the cob with a gaged knife, and packing the same, with their milk and other juices, in cans hermetically sealed, just as the kernels came from the cob, and cooking the same by placing the cans with their contents in a large vessel containing boiling water, and most of those experiments, when the cans proved to be strong enough to resist the inward pressure during the process of boiling, without bursting, were generally satisfactory. Few or none of the cans were properly constructed, and many of them burst during the process of boiling, and in consequence of that tendency the patentee found it necessary to take the cans out of the bath before the process of cooking the corn was completed, and to puncture or vent the cans, as described in the specification, immediately resealing and replacing the same in the receptacle of boiling water until the contents of the cans were cooked sufficiently for table use; and the proofs show that when the cans were temporarily vented in that way the experiments were generally successful. Such experiments were repeated the next year for a few days, during the proper season, and from year to year, to the autumn preceding the time when the patentee made his application for letters patent.

Practical experience showed that the process subsequently patented was much the most successful in accomplishing the desired object, but the process required strong cans to prevent them from bursting during the boiling, even when the cans were temporarily vented, as described; and it was a long time before the manufacturer was able to furnish the inventor with an article properly constructed for the purpose, as fully appears from the testimony of the manufacturer of the cans, who was examined as a witness. Application for a patent was filed in the Patent Office by the inventor on the 8th of March, 1853; but the first claim was neither illustrated by drawings nor by a model, nor did the applicant forward to the Patent Office any specimens of green corn preserved by his process, and the specification, on account of those omissions, was returned to the applicant, leaving it at his option to supply the deficiencies or to modify his claim. He elected to supply what had been omitted when the application was filed, and on the 26th of October, in the same year, filed in the Patent Office additional drawings, together with a model of the invention and samples of the preserved green corn, and requested an early examination of the application and claims. Doubtless the proper officers of the Patent Office complied with his request, as they returned the specification on the 2d of November following, informing him that the Office did not regard the operation of cutting the corn from the cob as any part of the process of preserving the same, and requested him to decide which part of the alleged invention the Office should examine, whether the process of preserving the product or that of removing the corn from the cob. Obliged to waive one for a time, he struck out the second claim, which covered the process for removing the corn from the cob, and on the 4th of the same month returned the specification, as amended, expressing the hope that the Office would be enabled to decide favorably on the remaining claim without delay. His hopes, however, were not realized, as the Office, on the 19th of the same month, rejected the amended application, expressing the opinion that the alleged invention was substantially the same as that in common use for preserving meats and vegetable substances. Except an occasional visit of the patentee to the Patent Office for the purpose of consultation with the Commissioner or Examiners, nothing further was done by him to procure a patent until the 18th of February, 1862, when he filed in the Patent Office a second application for a patent, which in substance and effect is the same as the one previously filed by the same party, and which, like the other, seeks to procure letters patent for the entire invention. Before the rejection took place the claim for the product had been stricken out, so that the claim for that part of the invention had never been the subject of decision by the Patent Office. In view of the circumstances, the Commissioner decided to review the whole case, and came to the conclusion that the proofs before him entitled the applicant to letters patent, both for the product and for the process, as shown in the two patents under consideration.

Two other patents were also issued to the same party, but the court is of the opinion that they are invalid, as having been issued for the same invention as that described in the specification of the second patent. Repeated decisions have established the rule that a patent duly issued, when introduced in evidence by the complainant in a suit for infringement, is *prima facie* evidence that the patentee is the original and first inventor of what is therein described as his invention, and when taken in connection with his original application is *prima facie* evidence that the invention was made at the time the application was filed; but when the patentee proposes to show that his invention is of a date prior to the time when he filed his original application, he takes upon himself the burden of proof, and to maintain that theory as against another patented improvement of the same construction and mode of operation he must prove not only that he made his invention at the period claimed, but that he reduced the same to practice as an operative machine. (*Johnson* vs. *Root*, 2 Cliff., 116.)

Suppose that is so, still the respondent cannot invoke that principle with much effect in this case, as he does not preserve green corn under a patent, and the proofs are entirely satisfactory that the patentee made the invention more than ten years before the application for a patent was filed in the Patent Office. Great difficulty was experienced by the patentee throughout the whole period in procuring cans properly constructed for the purpose, and the proofs show that it was that imperfection and difficulty more than any other which prevented him from making an earlier application for a patent. Much examination, in detail, of the parol proofs introduced by the respondent, to show that the patented process was known or used in the United States before the early experiments made by the patentee, may well be omitted, as it is not pretended, nor can it be, that any other person, resident in this country either before or since that time, ever invented such a process; and a careful scrutiny of the evidence given by those witnesses as to what was in fact done by the several deponents will show that no one of them ever preserved any green corn, in the mode of operation circumstantially described in the specifications of the patents, until the witness, in some way and to some extent, became acquainted with the process of the patentee, either from rumor or from some one who had assisted the patentee in making those experiments, and in most cases not until years after the invention was made, and in some cases long after the patentee had filed his application for letters patent in the Patent Office. Careful analysis of the testimony of those witnesses shows that many of them never practiced the patented mode of operation at all, as they cooked the corn before the kernels were packed in the cans, and that all those who ever did practice it in any degree, or ever made any near approximation to it, never commenced to preserve green corn in that way until they had learned something, by rumor or otherwise, concerning the mode of operation which was practiced by the patentee. They do not pretend that they *invented anything of the kind*, but all they claim is that they were successful in learning what the process was which was practiced by the assignor of the complainants. Beyond all doubt, the patentee was the original and first inventor of the process in the United States, and sufficient appears, even in the proofs introduced by the respondent, to convince the court that the first knowledge which those witnesses ever had of the patented process was procured, directly or indirectly—as by report or rumor—from persons residing near the place where the experiments of the patentee were made, or who had at some time been the employees of the inventor and had assisted in his experiments. Suppose it to be true that the patentee was the first person in the United States who had practiced the patented process and preserved green corn in that mode of operation, still it is contended by the respondent that he is not the original and first inventor of the improvement within the meaning of the patent law, as the process had been previously known and used in some foreign country; but the decisive answer to that suggestion is that the mere previous knowledge or use of the thing patented in a foreign country will not defeat a patent issued here to an original inventor, unless it appears that the same invention had been patented in such foreign country or had been described in some public work anterior to the supposed discovery thereof by the patentee, and it is well settled law that patented inventions cannot be superseded by the mere introduction in evidence of a foreign publication, though of a prior date, unless the description or drawings contain or exhibit a substantial representation of the patented improvement in such full, clear, and exact terms as to enable any person skilled in the art or science to which the improvement appertains to make, construct, and practice the invention to the same practical extent as he would be enabled to do if the information was derived from a prior patent. (*Seymour* vs. *Osborne*, 11 Wall., 555.)

Next the respondent insists that the process described in the English patent to Peter Durand supersedes the invention of the assignor of the complainant as a prior discovery and for the same improvement. Vegetable substances intended to be subjected to that process, the specification states, are to be put into the vessels selected for the purpose, in the raw or crude state; but the patentee, in enumerating the articles to be preserved, does not mention green corn, nor does he state whether the kernels are or are not to be removed from the cob, or, if to be removed, whether the removal is to be effected in a manner to leave the kernels *unbroken* or by means of a gaged knife, as in the mode of operation described in the complainant's patent, nor is any mention made of preserving green corn or any other vegetable substance *in the natural juices of the article*, as in the mode of operation set forth in the patent mentioned in the bill of complaint. Instead of packing the kernels in the vessels selected for the purpose, in their crude state, as suggested in the English patent, the process patented by the assignor of the complainant directs that the kernels should be cut from the cob in a way which leaves a large part of the hull on the cob and breaks open the kernels, liberating the juices, to use the language of the patentee, and causing the milk and other juices of the corn to flow out and surround the kernels, as they are packed in the cans in such a mode that the juices form the liquid in which the whole is cooked when the cans are subjected to the bath of boiling water.

Evidently much is due to this feature of the patented mode of operation in preserving the product, and causing it to retain the sweetness, peculiar flavor, and natural aroma of green corn as when fresh gathered in the season and boiled for the table in the ordinary way for family use. Nothing of the kind is suggested in the other specification, and it is quite clear that a careful comparison of the descriptions given of the inventions, in the respective specifications, fully justifies the opinion of the learned expert examined by the complainant, that the two patents are essentially and substantially

unlike, to which it may be added that persons having no other knowledge of the complainant's process than what they derive from perusing the specification of the other patent, would never be able to preserve green corn by that mode of operation. Palpable as these differences in the mode of operation are, they cannot properly be overlooked in determining the issue under consideration, nor are they merely formal, as the proofs are full to the point that the product manufactured by the process of the complainant is far superior to that preserved in any other known mode. Other vegetables, such as beets and carrots, or peas and beans, may be packed in the cans in a crude state, as they retain their juices, and may be well preserved if entirely secluded from the atmosphere, as by packing them in vessels hermetically sealed, but their chemical composition is very different from green corn, which is much more difficult to preserve in its natural freshness without loss of its peculiar flavor and aroma, as accomplished by the complainant's process. When the kernels are cut from the cob they are opened, and the milk and other juices of the same flow out and become a constituent part of the vegetable substance to be preserved, and if exposed to air in that state for any considerable time their chemical relations to each other will soon change, and the whole substance will become sour. Exposure to heat, if seasonable, will remove that tendency, as the relations of the elements of which the substance is composed will become fixed, and the danger of putrefaction or souring will be greatly lessened or entirely averted.

Throughout his experiments the aim of the patentee was to perfect the process of preserving green corn without losing any of the natural juices of the cereal, and to discover the method or means of fixing the elements of the corn in the milky state, so that when packed in vessels to be preserved their chemical relations to each other would never change unless the vessels containing the corn were opened. Obviously he could not accomplish that purpose by putting the corn into cans in the crude state or before it was removed from the cob, as the juices of the kernels would be absorbed by the cob in the cooking, nor could he accomplish his object by cutting the kernels from the cob and boiling them in water before they were packed, or by cooking them in open vessels without water, as in the one case the milk would be washed out of the kernels, and with it all the peculiar flavor of green corn, and in the other case the aroma and juices of the cereal in the green state would be lost by evaporation. Suggestion is made that the kernels may be removed from the cob without cutting, and if packed in cans in that state before being cooked they may be regarded as having been packed in the crude state, which may perhaps be conceded; but two answers are made to that suggestion, either of which is sufficient to show that the suggestion cannot serve to benefit the respondent.

1. Because that process is substantially different from the complainant's process.

2. Because the proofs on both sides show that the product, when the green corn is preserved in that mode of operation, is of a very inferior quality, not much better than the product when the corn is boiled before it is packed.

Viewed in the light of these suggestions and of the expert testimony in the case, which corresponds with the same, I am of the opinion that the patents of the complainants are not superseded by the aforesaid foreign patent introduced by the respondent.

II. Enough has already been remarked to show that the second defense cannot be sustained, as the evidence introduced to show that the patentee is the original and first inventor of the improvements is equally persuasive and convincing to disprove the theory that the inventions are old ones applied to a new use, which is all that need be said upon the subject. Nor is any argument necessary to show that the other defense embraced in the same proposition must be overruled, as there is no evidence in the record to support the theory that the improvements, or either of them, were well known or in public use prior to the alleged discovery and invention of the patentee. Attempts were doubtless made by various persons to preserve green corn prior to the date of the invention in controversy, but it is so manifest to every impartial inquirer that they were of a character substantially different from the process and product patented by the assignor of the complainant, that it would be a work of supererogation to repeat the explanations which demonstrate the truth of that proposition. Such an issue cannot be properly investigated and determined without first ascertaining what the patented invention is, but the moment that preliminary inquiry is solved the whole difficulty disappears, as it at once becomes self-evident that none of the methods previously practiced embraced the mode of operation invented by the patentee.

III. Patents otherwise valid may be avoided in a suit for infringement by proof that the invention was in public use and on sale more than two years, with the consent and allowance of the patentee, before he filed his application for a patent, which is the next defense presented by the respondent. Inventions ceased to be patentable, at one time, if permitted to pass into public use or to be on sale for any time, with the consent and allowance of the patentee, before his application for a patent, but the more recent act of Congress provides that such public use or sale shall not have any such effect, unless it was continued for more than two years prior to such application. (5 Stat. at Large, 123; 5 Ibid., 354.)

Full proof that an invention had been in public use or on sale, *with the consent and allowance* of the inventor, for more than two years before the application for a patent was filed in the Patent Office, is a good defense to such an action if the same is properly alleged in the answer. (*Agawam Co.* vs. *Jordan*, 7 Wall., 607; *McClurg* vs. *Kingsland*, 1 How., 209; *Stimpson* vs. *Railroad*, 4 How., 380; *Shaw* vs. *Cooper*, 7 Pet., 318.)

Nothing short of proof that the invention was on sale or in public use, with the consent and allowance of the inventor, for a period exceeding two years, will support such a defense, as the party charged with infringing the rights of an inventor must bring himself fairly within the words of the act of Congress, which justify the acts charged as an infringement. (*Ryan* vs. *Goodwin*, 3 Sum., 518.)

Such acts, if done without the consent and allowance of the inventor, are plain violations of his rights, and of course will not afford any justification to a subsequent wrong doer. (*Wyeth* vs. *Stone*, 1 Story, 282.)

If the sale or use is without the consent or allowance of the inventor, or if the use is merely experimental, to ascertain the value, utility, or success of the invention by putting it in practice, that is not such a sale or use as will deprive the inventor of his title. (*Ryan* vs. *Goodwin*, 3 Sum., 518; *Pitts* vs. *Hall*, 2 Blatch., 229; *McCormick* vs. *Seymour*, 2 Blatch., 240.)

Such acts of an inventor, it is well held by Judge Story, are to be liberally construed as acts of an experimental character, nor is the inventor to be estopped by allowing a few persons to use his invention to ascertain its utility, or by any such acts of use or indulgence to others to use the same, as are not inconsistent with the clear intention to hold the exclusive privilege, and to secure the same by letters patent. (*Mellus* vs. *Silsbee*, 4 Mason, 111.)

Where the party has subsequently taken out a patent, the court is not authorized to give effect to such a defense to a charge of infringement, except in cases where the proof is clear and cogent. (*Wyeth* vs. *Stone*, 1 Story, 281.)

Tested by those rules, as the case must be, it is quite clear that the defense under consideration must be overruled, as there is no evidence in the record to show that the inventions, or either of them, were in public use or on sale more than two years before the inventor applied for a patent, or for any shorter period, with the consent and allowance of the patentee, or that he had any knowledge of any such sale or public use at the time it was made. On the contrary, the evidence shows that the inventor never gave his consent to any such sales, and that he constantly asserted that he intended to apply for a patent. Sales in some cases were made by his brother, but the evidence shows that the inventor disapproved of the acts, as calculated to produce embarrassment when he presented his application for a patent at the Patent Office. Public use of an invention, unless by the patentee himself, for profit, or by his consent and allowance, will not work a forfeiture of his title, as such forfeiture is not favored unless it clearly appear that the use was solely for profit, and not with a view of further improvements or of ascertaining its defects, or for any other purpose of experiment in reducing the invention to practice. (*Pitts* vs. *Hall*, 2 Blatch., 236.)

Inventors have a right to employ all means necessary and proper to enable them to perfect their inventions and to reduce the same to practice, and it is clear that no such experimental act can justly be viewed as legitimate evidence to support the defense of a prior unauthorized public sale or use of the invention, or a use inconsistent with the right to apply for a patent to secure the exclusive authority to make and use the invention, and to vend it to others to be used, as provided in the patent act. Persons charged with the infringement of letters patent may set up as a defense that the inventor suffered the invention to be in public use and on sale more than two years before he applied for a patent, and they may also set up as a distinct defense, even in the same answer, that the inventor, before he applied for a patent, abandoned the invention to the public, but those two defenses ought not to be blended in the same allegation, as they depend in many respects upon very different principles. Some of the amendments to the answer, however, were filed by consent, and inasmuch as no exception was taken to this part of the answer, the question of abandonment, as pleaded, may be considered as open.

As pleaded, the defense is that the inventor abandoned the invention to the public before he filed his application for a patent. His first application was filed on the 8th of March, 1853, and he filed the second application on the 18th of February, 1862, which it is conceded is substantially the same as the first one, which is still on file in the Patent Office. Evidence of an affirmative character to show that the inventor ever uttered a word or did an act signifying an intention to abandon his invention to the public before he filed his first application for a patent is entirely wanting, nor is is there any circumstance introduced in evidence to support that theory, except the mere lapse of time from the discovery of the invention to the filing of the application, and it is settled law that the mere forbearance to apply for a patent during the progress of experiments, and until the party has perfected his invention and tested its value by actual practice, affords no just grounds for any such presumption. (*Kendall* vs. *Winsor*, 21 How., 328; *Agawam Co.* vs. *Jordan*, 7 Wall., 607.)

Apply that rule to the present case, and it is clear that the proofs furnish no ground for such a presumption before his first application was improperly rejected by the Patent Office. Such an adverse decision operates as a great discouragement to an indigent inventor, as was strikingly illustrated in the case of the inventor of the improved mode of manufacturing wool, who, in consequence of such a decision, was kept out of the enjoyment of the fruits of his genius for forty years. (*Agawam Co.* vs. *Jordan*, 7; Ibid. 604.)

Abandonment or dedication of an invention to the public, being in the nature of a forfeiture of a right, is not favored in law, and Mr. Justice Nelson decided that such a defense could not be sustained, unless the acts of the party invoked for the purpose were corroborated by some declarations manifesting such an intention; but it is not necessary to apply that rule in this case, as the evidence fails to disclose either any act or declaration to support the theory. Argument to show that the inventor was entitled to a patent at the time his first application was rejected is unnecessary, as the proposition stands confessed by the Patent Office. Nothing beyond the decision of the Office reversing their former action would seem to be required to establish that proposition; but if more be needed, it will be found in the reasons which the Office assigned at the time for refusing to issue the patent. Those reasons, it will be recollected, were that the alleged invention was substantially the same as that in common use for preserving meats and vegetable substances, which shows beyond all doubt that the Office never gave the subject a proper examination, or utterly failed to understand the nature of the improvement or to comprehend the mode of operation, as scientifically described in the specification. Truth was crushed for the moment, but, happily for the cause of justice, the reasons given for the erroneous decision remained on file, which enabled the Office, at a later period, to correct the error and to do justice to a meritorious inventor. Construed strictly, the defense of abandonment, as pleaded, has respect only to the period of time which elapsed between the

discovery of the invention and the filing of the first application, which was rejected; but the respondent insists, in argument, that the inquiry under that issue extends also to the facts and circumstances which occurred between the times when the first application was rejected and the filing of the second, which, with some hesitation, is admitted, as it is by no means certain that a second application was necessary. (*Suffolk Co.* vs. *Hayden*, 3 Wall., 319; *Godfrey* vs. *Eames*, 1 Wall., 325.)

Delays in the Patent Office, which an inventor cannot prevent, will not impair his title to his invention, nor can any use of the invention during such delays, if without his consent and allowance, afford any evidence to support the issue that the inventor abandoned the invention to the public. (*Howe* vs. *Williams*, 2 Cliff., 262; *Simpson* vs. *Railroad*, 4 How., 402; *Goodyear* vs. *Day*, Law's Digest, 363; *Morris* vs. *Huntingdon*, 1 Paine, 348.)

Suppose, however, the period between the rejection of the first application and the filing of the second is as much within the issue presented by the answer as the period between the discovery of the invention and the filing of the first application, still I am of the opinion that the defense that the inventor abandoned his invention to the public is not sustained by the evidence exhibited in the record. No one but the inventor is competent to abandon his invention to the public. His acts and declarations, if explicit, are sufficient for the purpose, or he may accomplish the same end by continued acquiescence in the acts of others, of which it appears that he had knowledge; but the proof of knowledge and acquiescence must be beyond all reasonable doubt, as every presumption is the other way. (*McCormick* vs. *Seymour*, 2 Blatch., 255.)

Testimony is introduced by the respondent showing that the brother of the inventor made sale of small quantities of the preserved corn on several occasions, but the record does not contain any evidence that the *inventor* ever sold any of the patented product, or that he ever gave his consent that the product should be sold by his brother or any other person before he filed his application for a patent. Prior to the application for a patent, the better opinion from the evidence is that none of the product of the new process was put upon the market, as the evidence is satisfactory that he knew that sales or public use more than two years before he applied for a patent would defeat his right. Immediately upon filing his application for a patent he gave a license to his brother and the first-named complainant, and received a royalty from them for their manufacture. Small amounts only were manufactured, and few sales only were made subsequent to the rejection of the first application.

When a party practices his invention merely for the purposes of experiment or completion, before he takes out a patent, the inference that he intends to surrender the invention to the public does not arise, and consequently a dedication to the public cannot be proved by evidence that shows only experimental practice by the inventor or his employees, whether in public or private. Such an inference is never favored, nor will it in general be sufficient to prove such a defense, unless it appears that the use, exercise, or practice of the invention was somewhat extensive and for the purpose of gain, evincing an intent on the part of the inventor to secure the exclusive benefits of his invention without applying for the protection of letters patent. (Curtis on P., 3d ed., sec. 389.)

Exceptional cases arise, as where the invention, by acts of the inventor, has gone into general public use and got beyond his control, without any effort on his part to restrain its general use, as in such a case it is held that he cannot resume the ownership dedicated to the public, and that his right to a patent is forfeited. Speaking of such a case, however, Judge Story said in *Mellus* vs. *Silsbee*, (4 Mason, 111,) that the inventor "is not to be estopped by licensing a few persons to use his invention to ascertain its utility, or by any such acts of peculiar indulgence and use as may fairly consist with the clear intention to hold the exclusive privilege." Tested by that rule, it is quite clear that the single license referred to, which was not granted until after the application for a patent was filed, and which was never exercised, except to a very limited extent, is wholly insufficient to support the defense that the inventor abandoned the invention to the public. All must agree that he did not intend to dedicate it to the public, as his application for a patent was then pending in the Patent Office, and the evidence shows that he continued to press it, with confident hopes of success, until the adverse decision was announced. Nor does the record exhibit any evidence to show that the invention got into public use with the consent and allowance of the inventor, or through any negligence or improvidence on his part, as it appears that he visited the Patent Office as often as it was necessary, to ascertain whether the opinion of the Commissioner had undergone any change, and that he presented his second application for a patent as soon as he could obtain any hope of receiving a decision in his favor. No persons, except the two before mentioned, ever had authority from him to practice the invention, and the proofs show that all others who did practice it before the date of the letters patent obtained their information, whether from rumor or otherwise, without the consent and allowance of the patentee.

Separate examination of the other foreign patents introduced by the respondent does not appear to be necessary, as the stress of the argument to show that the patentee in the patent of the complainant was not the original and first inventor of the improvement seems to rest upon the Durand patent, which the principal expert of the complainant says would not succeed with green corn, and he supports that conclusion with reasons which are both persuasive and convincing. Due attention to the nature of the invention in question and to its described mode of operation is all that is necessary to render the reasons given by the witness conclusive, as it is clear that the patent in the other case does not contain a word to indicate that the patentee ever thought of removing the kernels from the cob by means of a gaged knife, for the purpose of liberating the juices of the same, so that the kernels, as packed in the cans, would be cooked in their own juices when the cans are placed in the bath of boiling water. Sweet corn in the green state, as the witness testifies, is a peculiar substance, differing materially from any other cereal, seed fruit, or vegetable used as food. Its composition and structure are such that it is singularly susceptible to fermentative decompositions and changes, more so than any fruit or vegetable that has been successfully preserved in hermetically-closed packages for any considerable length of time. Such liability to rapid change is not due to any one particular constituent, but to the presence together of several substances, such as gluten, sugar, fat, and starch, in such proportions as are best adapted for fermentation and action upon each other. Its peculiar flavor, other than its sweetness, is contained in and associated with the fat or oil present, so that very slight fermentations of the other constituents are sufficient to destroy that peculiar aroma.

Green corn, of the kind mentioned, in common with other cereals, contains more phosphorus or phosphoric acid than fruits or other vegetables. As compared with sweet peas, for instance, the kernels of sweet corn are much more delicate and liable to change, as they contain a much larger proportion of milk, juice, or sap, which itself contains more sugar, starch, and oil than the juice of sweet peas, and the glutinous or nitrogenous constituent, which acts as the ferment or primary cause of change, is much more active in the juice of sweet corn than in that of sweet peas. Equally instructive support to the same view is derived by comparing sweet corn with such fruits as peaches, as the juice of the peach contains no oil, and the kernels of sweet corn contain only one-eighth as much water as the peach, besides other differences of an equally important character, showing that such fruits as peaches are much less liable to ferment than sweet corn, and that they are much more easily packed and preserved. Examined in the light of these suggestions, as the case should be, it is quite clear that the mode of operation described in the specification of the complainants' patent differed widely from anything which preceded it, and that it effects a new and highly useful result, and for these reasons the complainants are entitled to a decree for an account, and for an injunction.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,734.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, July 12, 1859. Hearing June 25, 1873.

24,748.—*Paint-Cans, &c.*—Granted to JOHN W. MASURY, July 12, 1859. Hearing June 25, 1873.

24,755.—*Method of Operating Windlasses.*—Granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873. Hearing June 25, 1873.

24,772.—*Powder-Kegs.*—Granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, and December 7, 1869. Hearing June 25, 1873.

24,773.—*Hollow Augers.*—Granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866. Hearing June 25, 1873.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY, August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OLIS TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brake.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JENKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 30, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,343.—*Stoves.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL R. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,473.—*Scales*, granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars*, granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,367.—*Improved Ore-Separator*, granted to WILLIAM OLAND BOURNE, June 14, 1859.

Claim.—1. A sieve-bed in which the openings or perforations for the passage of the air or water through it are so contracted as to enforce a uniform action of the air or water through the entire surface of the sieve-bed, which may be made of sheet metal, or of any textile material, either separately or in combination, or of their equivalent, as above set forth.

2. The application of a vibrating and shaking motion to a sieve-bed, in combination with a blast or current of air or water, in the manner and for the purpose above described.

3. The above-described adjustable blades for agitating the substance on the sieve-bed, and for regulating the discharge of the refuse substances over the front edge of the table, as above described.

4. The separation of metals or other heavy substances from ores or other materials, when fed upon a sieve-bed, by the gravitation of the lighter substances toward and over the front or waste edge, when acted upon by a current of air or water through a sieve-bed, in the manner and for the purpose above set forth.

24,402.—*Improved Steam-Pressure Regulators*, granted to ALBERT P. PITKIN, June 14, 1859.

Claim.—1. The forming a connection with the reduced pressure pipe or chamber A and diaphragm spring or piston B, (or their equivalents,) for the purpose of opening and closing a passage, C, between the high and reduced pressure pipes or chambers A and D, as and for the purpose described.

2. The combination of passage C, piston or valve E, rod I, lever F, diaphragm spring or piston B, and safety-valve H, arranged to operate in relation to each other, as and for the purpose described.

24,428.—*Improvement in Trip-Hammers*, granted to BENNET HOTCHKISS, June 14, 1859.

Claim.—1. The improved means of operating the hammer—that is, by an air-spring cylinder, substantially as described, (or its equivalent,) applied to the piston, and combined with mechanism by which a rapid reciprocating rectilinear motion may be imparted to such cylinder, essentially in manner and so as to operate the piston and hammer, as specified.

2. In combination with the piston trip-hammer, the air-spring cylinder and the mechanism for imparting to the latter reciprocating rectilinear motions, as described, mechanism, substantially as specified, for varying the altitude of the path of movement of the cylinder under circumstances as explained, such mechanism, as above described, consisting of an eccentric bearing-shaft, H, applied in boxes I I and to the crank-shaft G of the cylinder B, substantially as specified.

24,432.—*Improvement in Rolling Metal for Jewelry*, granted to JOHN S. PALMER, June 14, 1859.

Claim.—The employment of a tapering die, A, in combination with the pressing-roller, substantially as and for the purpose specified.

24,436.—*Improvement in Railroad Bars*, granted to HENRY WEBB, June 14, 1859.

Claim.—The angular rail hereinabove described, when constructed so as to be convertible and present a new surface after the first surface has been worn out, in the manner and for the purposes above specified.

DISCLAIMERS FILED.

24,367.—WILLIAM OLAND BOURNE, New York, N. Y.—*Improved Ore-Separator*, dated June 14, 1859. Disclaims:

"That part of the claims in said specification which is in the following words, to wit:

'*Claim.*—1. A sieve-bed in which the openings or perforations for the passage of the air or water through it are so contracted as to enforce a uniform action of the air or water through the entire surface of the sieve-bed, which may be made of sheet metal or of any textile material, either separately or in combination, or of their equivalent, as above set forth.

'4. The separation of metals or other heavy substances from ores or other materials, when fed upon a sieve-bed, by the gravitation of the lighter substances toward and over the front or waste edge, when acted upon by a current of air or water through a sieve-bed, in the manner and for the purposes above set forth.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 10, 1873.]

6,699.—*Ale-Pump.*—STEPHEN LANE, Jr., Englewood, N. J.—Case A. Application filed May 16, 1873.

6,700.—*Ale-Pump.*—STEPHEN LANE, Jr., Englewood, N. J.—Case B. Application filed May 16, 1873.

6,701.—*Cooking-Stove.*—GARRETTSON SMITH and HENRY BROWN, Philadelphia, assignors to ENOS S. SHANTZ and OLIVER B. KEELEY, Spring City, Pa. Application filed May 17, 1873.

6,702.—*Cape.*—MARTIN LANDENBERGER, Philadelphia, Pa. Application filed May 8, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date June 10, 1873.]

1,299.—*Druggists' Goods.*—ARNOLD & MCNARY, New York, N. Y. Application filed June 2, 1873.

1,300.—*Whisky.*—J. BUMGARDNER & SONS, Staunton, Va. Application filed April 3, 1873.

1,301.—*Hog Products.*—G. CASSARD & SON, Baltimore, Md. Application filed May 27, 1873.

1,302.—*Medicines.*—SARAH DE GRATH, Jersey City, N. J. Application filed May 24, 1873.

1,303.—*Stoves, Heaters, and Ranges.*—HICKS & WOLFE, Troy, N. Y. Application filed May 19, 1873.

1,304.—*Silicias, and Goods of Like Character.*—LESHER, WHITMAN & CO., New York, N. Y. Application filed May 24, 1873.

1,305.—*Cured or Smoked Fish.*—HENRY MAYO & CO., Boston, Mass. Application filed May 31, 1873.

1,306.—*Flavoring Extracts, &c.*—STEELE & PRICE, Chicago, Ill. Application filed April 8, 1873.

1,307.—*Fruit-Jars.*—THE CONSOLIDATED FRUIT-JAR COMPANY, New York, N. Y., and New Brunswick, N. J. Application filed May 31, 1873.

1,308.—*Fruit-Jars.*—THE CONSOLIDATED FRUIT-JAR COMPANY, New York, N. Y., and New Brunswick, N. J. Application filed May 31, 1873.

1,309.—*Books.*—DWIGHT C. CUTLER, Carthage, Ill. Application filed May 24, 1873.

1,310.—*Raisins.*—FREDERICK C. LEWIS, Trenton, N. J. Application filed May 31, 1873.

1,311.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed May 13, 1873.

1,312.—*Cod-Liver Oil.*—HERBERT M. ROGERS & Co., New York. N. Y. Application filed May 31, 1873.

1,313.—*Medical Compound.*—E. M. TUBBS & Co., Manchester, N. H. Application filed May 31, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date June 10, 1873.]

ORIGINAL PATENTS.

139,645.—*Coffee-Steeper.*—JOSEPH D. ADNEY, Chicago, Ill. Application filed March 26, 1873.

Near the the top of the vessel, on the inside, is a detachable annulus or annular diaphragm depressed toward the center, and in the central openings are downwardly-bent demilunes cut from and of the size of said openings.

Claim.—The construction and arrangement of the vessel A provided with a perforated bottom, and an inclined diaphragm, B, provided with the two pendent demilunes *b*, substantially as and for the purpose set forth.

139,646.—*Process of Reducing Wood-Fiber to Pulp.*—THOMAS B. ARMITAGE, New York, N. Y. Application filed March 16, 1872.

Claim.—The above process of disintegrating woody fiber, wherein the woody matter in a revolving vessel is subjected to heat in the form of free steam without pressure, substantially as described.

139,647.—*Flush-Bolt for Doors.*—STEPHEN D. ARNOLD, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed May 2, 1873.

The thumb-piece of a flush-bolt is hinged to the bolt proper, and a spring applied within the shank near the joint, between the thumb-piece and the bolt. There is also a hook at the end of the thumb-piece, which catches either at one side or the other of a lug or block formed on the back of the bolt. By this construction the hinged thumb-piece must be pressed back before it can be moved vertically, and the hook engaging on either side of the lug holds the bolt either in projected or retracted position.

Claim.—The thumb-piece *f*, with the hook *s* at the end thereof, in combination with the spring *u* within the bolt-shank *e*, and the block *r* at the back of the plate *a*, in which plate *a* is an opening for the rib *o* of the thumb-piece *f*, as set forth.

139,648.—*Spring-Clip for Carriages.*—DAVID W. BAIRD, Geneva, N. Y. Application filed January 9, 1872.

A spring-clip having a socket for the reception of the front end of the reach.

Claim.—The clip A having a socket for the perch, substantially as shown.

139,649.—*Manufacture of Spiegeleisen.*—EDWARD BAKER, Millstone, N. J. Application filed April 30, 1873.

Seven parts of the residuum (left from manufacture of oxide zinc from Sussex county, New Jersey, ore) are added to one part iron ore, (magnetite,) and the whole worked in a blast-furnace. Former processes have yielded spiegeleisen in proportion of twenty-seven per cent. of the residuum treated. By the present process thirty-five per cent. is obtained.

Claim.—The process for obtaining spiegeleisen by smelting the residuum of the zinc or like ores which contain Franklinite iron in admixture with ordinary iron ore, substantially as described.

139,650.—*Double-Acting Pump.*—PHILANDER M. BARKER, Grand Haven, Mich. Application filed March 8, 1873.

Above the piston is placed a stationary diaphragm, through a central opening in which passes the hollow piston-rod. The diaphragm consists of two parts, having an annular space between them, divided into two chambers. The chamber on one side connects with numerous perforations in the cylinder, and communicates with the space between the diaphragm and piston through a segmental valve opening downward. The other chamber controls the communication between the space just referred to and the upper part of the cylinder by means of a segmental valve opening upward.

Claim.—The construction and arrangement, with relation to the cylinder A and check-valve B, of the piston C provided with the valve D and hollow piston-rod E, and the diaphragm-plug G G', provided with the partitions *c c*, passages *d d' d''*, and valves H H', arranged, with relation to the apertures *e* in the cylinder, as and for the purpose set forth.

139,651.—*Tap and Die.*—ALBRECHT E. BARTHEL, Detroit, Mich., assignor to himself and ALEXANDER B. BARY, same place. Application filed February 18, 1873.

A shallow groove is turned in the bottom of all the threads save those near the head, which are left for a distance equal to the thickness of the nut to be tapped. The fin that is left by these grooves in cutting a nut is finally removed by the ordinary threads near the head. Near the point of the tap every alternate projection or thread is reduced to lessen the friction when in use.

Claim.—1. A tap having the grooves *a* cut or turned in the bases of its threads, substantially as herein described and shown, and for the purpose set forth.

2. A tap having the alternating cutting-segments *b* near its points reduced in diameter, substantially as and for the purposes herein shown and specified.

3. A screw-cutting die having a groove, *a*, cut in the bases of its threads, substantially as and for the purpose set forth.

139,652.—*Quill-Bobbin for Spinning-Machines.*—DAVID RASS, Jr., Woonsocket, R. I. Application filed May 16, 1873.

The plugs, besides forming bushings against which the spindle bears, also prevents the ends of the bobbin being indented, roughened, or split from rough usage.

Claim.—A quill-bobbin provided with a thin tubular body, and at either or each end thereof with a protection crown-bushing, of horn or other proper hard material, so applied to the body as to extend into it and project over and upon and cover the end thereof, all substantially as described and represented.

139,653.—*Paper-File Box.*—JOHN H. BENTLEY, Cambridge, Mass. Application filed April 21, 1873.

One end is hinged to the bottom and provided with supplemental inner sides. Its outward motion is arrested by a wire that encircles it, the ends of which terminate in stops loosely incased in the sides of the box.

Claim.—In combination with the paper-file box A, with hinged end B, wing pieces D D', the bent wire E, its ends terminating in curved arms H H' with catches P P', and operating in conjunction with cases T T, when constructed, combined, and arranged to operate substantially in the manner described, as and for the purposes set forth.

139,654.—*Apparatus for Testing Hydrocarbon-Oils.*—JOHN B. BLAIR, Philadelphia, Pa. Application filed November 21, 1872.

Two reservoirs having vertical tubes are employed. One is filled with standard oil and the tube closed at 215° Fahrenheit, forming a thermometer. The other tube is left open and filled with the oil to be tested to the same height as the thermometer. The reservoirs are immersed in boiling water. Based on the theory that oils of different gravities expand unequally.

Claim.—The testing apparatus, consisting of the bottle A with closed tube E, as described, and the bottle B with open tube F, in connection with the graduated support B, all arranged, adapted, and operating as herein set forth.

139,655.—*Railroad-Car Axle-Box.*—RUSSELL BREWER, New York, N. Y. Application filed May 18, 1872.

The axle-box is provided with journals upon its sides; also a concave top, a concave seat being secured to the sill. Anti-friction rollers are arranged about the journal. The inner sides of the box are so formed that it will afford a large surface between the rollers and the box to retain oil to lubricate the journal. A roller, its journals revolving in spring-boxes, conveys oil from the lower part of the box to the journal.

Claim.—1. The axle-box C, provided with the journals *b b*, arranged at right angles with the car-wheel journal, and having the convex bearing-seats *c* and convex rib *e*, substantially as specified.

2. The journal bearing-block G, having concave bearing-faces *z*, recess *w*, and slot *v*, in combination with a journal-box, substantially as specified.

3. The combination of the upper section E, lower section or oil-reservoir B, and journal bearing-block G, arranged as specified.

4. The combination of the axle-box C, having the concave lubricating-faces *t*, rotating oil-cylinder D, anti-friction rollers *c*, all of the same diameter, and arranged and operating in the manner set forth.

139,656.—*Device for Steaming Oil-Wells.*—THOMAS B. CAROTHERS, Oil City, Pa. Application filed August 27, 1872.

The supplemental pipe through which steam is forced extends below the tubing, and is perforated from near the top of the sand-rock down to within about three feet of the bottom of the well.

Claim.—The steam-pipe D having perforations *a a a a*, in combination with the casing-head A, casing B, and tubing C, all constructed and arranged to operate substantially in the manner set forth.

139,657.—*Platter for Sewing-Machines.*—ORANGE M. CHAMBERLAIN, New York, N. Y., assignor to himself and WILLIAM B. CARRINGTON, same place. Application filed September 13, 1872.

Attachment is capable of forming plaits inclined or at right angles to the length of the material, and has its slide-bearings and screws so constructed that the position of the blade may be varied at will without detaching the parts from the sewing-machine.

Claim.—1. The slide-bearings *i* sustaining the plaiting-blade in an inclined position to the line of the sewing-machine feed, in combination with the mechanism, substantially as set forth, for reciprocating the said bearings and blade, as set forth.

2. The screws *5*, entering cavities in the bearings *i i*, in combination with the plaiting-blade, substantially as set forth, so as to vary the position of that plaiting-blade.

3. The presser-foot *w*, connected to the socket *s* by a slot and screw, in combination with the adjustable plaiting-blade, so as to vary the position of the presser-foot to suit that of the blade, as set forth.

4. The long roller *r*, having a roughened surface and sustained upon the presser-foot *w*, in combination with the plaiting-blade to compress the fold of the plaited goods and move the same along with uniformity, as set forth.

139,658.—*Reciprocating Churn.*—GEORGE P. COAN, Wyandotte, Mich. Application filed March 8, 1873.

Within the main churn-body, vertically arranged, is a hollow and perforated smaller cylinder, concentrically held by end flanges, the upper flange proceeding from a central descending collar sliding telescopically upon the smaller cylinder, thus adapting it to outer cylinders or churn-bodies of different lengths, a disk dasher working vertically in the inner cylinder, through the perforations of which the cream passes in and out.

Claim.—In churns, the perforated and adjustable cylinder B, provided with flange *a* and cap *d*, the latter being also provided with flange *h*, as described, and for the purposes set forth.

139,659.—*Spark-Arrester.*—ALONZO W. CRAM, Litchfield, Ill. Application filed October 30, 1872.

Claim.—1. In combination with the smoke-stack A, the air-funnel F and central air-flue H *h*, arranged substantially as and for the purpose set forth.

2. The combination of the smoke-stack A, chambers A^2 and G, air-funnel F, and central air-flue H *h*, substantially as and for the purpose set forth.

3. The combination of the smoke-stack A, dust-receiver B, deflector C, gauze diaphragm D, funnel F, chambers A^2 and G, and central air-pipe H *h*, all arranged substantially as set forth.

4. The combination, in a locomotive smoke-stack, of the pivoted deflecting-plates I, connected by the rod *i'* and arms *i*, and arranged to operate automatically by means of a vane, J, substantially as set forth.

139,660.—*Railroad-Rail Joint.*—WILLIAM CRANDELL, Westfield, N. Y. Application filed December 19, 1872.

Claim.—The sides of a web of a railroad rail provided at each end with the series of V-shaped threads or serrations *b b b*, in combination with fish-plates having corresponding threads or serrations *a a a*, as herein shown, for the purpose specified.

139,661.—*Wheel for Vehicles.*—GEORGE J. CROSS, Greenwich, England. Application filed April 8, 1873.

The segments are cast with screw-bolts projecting therefrom, by which they are secured to the rim or felly.

Claim.—The segments *s* of metal, bolted to the felly or rim *n* of the metallic wheel *l m n*, as and for the purposes specified.

139,662.—*Wood Block for Flooring.*—FRANK DOUBRAVA and JOHN STAIB, Hartford, Conn. Application filed April 18, 1872.

Claim.—As a new article of manufacture, a flooring-block composed of the two cross-pieces *a a* mortised together, and the

four V-shaped pieces *b b b b*, the whole tongued and grooved together, substantially as described.

139,663.—*Carriage-Curtain Fastener.*—HOWARD DRAKE, Attleborough, Mass. Application filed October 26, 1872.

A pivoted button having a catch-lug is used in connection with a pair of connected disks, slotted to receive said button.

Claim.—1. The pivoted carriage-button A having the lug B, in combination with a metallic disk or disks, C, having the eye *d* and slot *d'*, substantially as specified.

2. The carriage-button A with the flat base *a*, and provided with the lug B projecting at the outer end, as described.

139,664.—*Apparatus for Treating Ores, Sulphurets, Animal Matter, Paints, &c.*—HENRY H. EAMES and CHARLES J. EAMES, New York, N. Y. Application filed May 31, 1873.

By subjecting a continuous stream of the material to be treated in thin stratums upon descending alternate diaphragms, with an ascending current of heated air or superheated steam, condensing the material eliminated in any suitable manner.

Claim.—1. The apparatus herein described for treating ores, animal matter, white lead, and other precipitated pigments, the same consisting of an outward vertical case, having within it a series of shelves and rakes or stirrers, so as to agitate the material and move it from the upper to the lower shelves, as and for the purpose set forth.

2. The combination of the vertical case, having alternate shelves and stirrers, with the exhaust-fan and condensing apparatus.

3. The combination of the furnace arranged so as to inclose the treating-case, and transmit the products of combustion through it, with the draft or blast apparatus, and the condensing apparatus, all substantially as specified.

139,665.—*Feed-Water Heater.*—CHARLES E. FRAZIER, Baltimore, Md. Application filed February 6, 1873.

The exhaust steam passes through a branch pipe which enters the bottom of the heater, and up a central pipe perforated at its upper end. The condensing-water enters through the top of the case and passes through perforated or grated plates and condenses the steam, at the same time heating the feed-water, which is withdrawn at the bottom. Any uncondensed steam passes through a branch pipe at the top connecting with the main pipe.

Claim.—The heater A, having the plates E E', surrounding the perforated pipe D, in combination with the main exhaust pipe B, branch exhaust-pipes C and F, deflectors H, and feed-pipes G and G', substantially as and for the purpose herein set forth and described.

139,666.—*Reed-Organ.*—LEVI K. FULLER, Brattleborough, Vt., assignor to J. ESTEY & COMPANY, same place. Application filed March 3, 1873.

A single movement of the lever throws the bellows-pedals out of action when the auxiliary bellows-handle is to be operated. There is also special construction of the pedal and manual coupler connections.

Claim.—1. In a reed-organ provided with blow-pedals *b b*, the lever A, applied to the blowing apparatus, in combination with stop mechanism by which it may be thrown into or out of action, substantially as set forth.

2. The bar F, links C C, and block B, in combination with the lever A, substantially as and for the purpose herein set forth.

3. The levers E E', in combination with the rods *t u* and keys *h i*, substantially as described.

4. The reeds J, arranged below the foundation-board, in combination with the projecting valves *v* and rods *u*, substantially as herein set forth.

5. The combination of the levers *m*, tracker-pins *s s'*, and pivoted bar D, arranged and operating substantially as described.

139,667.—*Bit-Stock.*—ALBERT D. GOODELL, Miller's Falls, Mass., assignor to MILLER'S FALLS COMPANY, same place. Application filed April 30, 1873.

The bit holder is swiveled on a square notched ratchet. The pawl is correspondingly square, with one side beveled, and is made to rotate, and by its position will carry the stock in either direction, or it may be permanent therewith to operate the tool, as in ordinary holders.

Claim.—The combination, with a tool-holder, of a series of ratchets or recesses, *a c*, and a pawl or latch, *b*, so constructed that the tool can be rotated in either direction and locked stationary to the handle by the same pawl or latch, substantially in the manner and for the purposes described.

139,668.—*Riding-Saddle.*—ROBERT C. HAMIL, Harrisville, Tex. Application filed October 8, 1872.

Claim.—A saddle-tree constructed with a longitudinal arched handle, B, in the center and on top of the front tree, and the vertically-arched handles C C in the front of the front tree, either worked out of the solid wood of the tree or made separately and afterward attached to the saddle-tree, as and for the purpose described.

139,669.—*Road-Scraper.*—DANIEL S. HAMILTON, Elmira, N. Y. Application filed February 10, 1873.

The scraper is suspended by chains directly from the axle, and is elevated by clutching the wheels to the axle so that both turn together. A ratchet and pawl retain the load in a raised position, and when it is desired to lower the scraper the detent is released.

Claim.—1. A road-scraper suspended directly from the axle of a two-wheel carriage, and elevated or lowered by winding or unwinding chains or ropes, that are attached directly to the carriage-axle.

2. A road-scraper constructed with two half-bottoms, each hinged a little off its center, so that the contents thereof may be emptied without overturning the scraper, substantially as herein described.

3. The combination of the spring-lever D with the clutch *a*, ratchet *b*, and the axle C, for elevating the scraper by winding the chains by which it is suspended directly upon the axle of the carriage, substantially as described.

4. The releasing mechanism herein described, consisting of the combination of a spring-lever catch with a fixed ratchet-wheel upon the axle of the carriage, so that when the catch is lifted out of the wheel the scraper may descend by its gravity to the ground.

139,670.—*Composition for Filling the Grains of Wood.*—WILLIAM HARDING, Brooklyn, N. Y. Application filed January 8, 1873.

Whiting, twenty-one ounces; turpentine, six fluid-ounces; linseed-oil, one fluid-ounce; Japan goldsize, two fluid-ounces.

Claim.—The composition herein described for filling the grains of wood preparatory to applying color to the same.

139,671.—*Boot-Stretcher.*—DAVID HARRIS, Litchfield, Ill., assignor to himself and JOHN TREMLETT, St. Louis, Mo. Application filed February 12, 1873.

The stretcher is provided with a pivoted bottom plate for stretching the instep, a "hump" projecting up through the body of the stretcher, operated by a wedge-shaped lever for stretching any part from instep to toe. Also, a heel-plate adjusted by means of screw and lever. All of which may act jointly or separately.

Claim.—1. The bottom plate B, follower C, and hand-screw C', arranged and constructed to operate, in combination with body A of stretcher, substantially as and for the purpose set forth.

2. The bottom plate B, hump D, wedge-acting lever E, follower F, and hand-screw F', arranged and constructed to operate, in combination with body A of stretcher, as and for the purpose set forth.

3. The heel-plate G, hand-screw G', follower H, lever I, and side links I', in combination with bottom plate B and body A of stretcher, as and for the purpose set forth.

4. The combination and arrangement of bottom plate B, follower C, hand-screw C', hump D, wedge-shaped lever E, follower F, hand-screw F', heel-plate G, hand-screw G', follower H, connecting-lever I, side links I', and body A, all constructed to operate as and for the purpose set forth.

139,672.—*Corn-Planter.*—GEORGE HAYES, Lawrenceburg, Ind. Application filed December 5, 1872.

A single wheel is mounted in a frame like a wheelbarrow, and the seed-box is mounted upon the frame to which it is hinged, a lever extending backward to the handles so that the feed-wheel in the bottom of the box can be thrown out of gear.

Claim.—The combination of the seed-box C, provided with a conical dropping-plate, *k*, with the tilting-lever *e*, standard F, and clamp *c*, substantially as and for the purpose specified.

139,673.—*Folding Table.*—FREDERICK W. HEUBLEIN, Hartford, Conn. Application filed September 16, 1872.

The two side rails and the two end rails are hinged to the four corner-posts. The table top is provided with cleats at each end, and these cleats have notches in them to receive the outer parts of the top of the corner-posts.

Claim.—The combination of the four corner-posts *a a¹ a² a³*, the two side pieces *b b'*, the two end pieces *c c'*, and the top *f*, having the cleats *f¹*, notched at *f²*, the whole constructed, arranged, and designed for use substantially as described, for the purpose set forth.

139,674.—*Cap Setting and Extracting Device.*—EZRA S. HOLMES, Grand Rapids, Mich. Application filed March 24, 1873.

Claim.—The bent handle or lever I I I and the movable guide-plug W, in combination with the hinged handle or lever I' and the extracting-point S, forming a portable cap-setting and cap-extracting pinchers, for the purpose and substantially in the manner described.

139,675.—*Bale-Tie.*—EDWARD P. JONES, Shell Mound, Miss. Application filed May 24, 1873.

Claim.—1. The bale-tie A, having a continuous and uncut wall, slots or openings B B', and the tongue C, having its outer section turned down so as to leave a shoulder or flange bearing, *c*, and an opening, *c'*, either with or without the wall A^4 being bulged, the whole being so constructed and relatively arranged that the tongue shall extend on such a plane with the side walls A^3 A^5 of the tie that the lateral slipping of the band off the tongue shall be prevented by said walls, and without any sections of the same being cut away so as to provide bearing-flanges for that purpose, substantially as described.

2. The bale-tie A having slots or openings B B', and the tongue C having shoulders or projections *c b*, either with or without the wall A^4 being bulged, the whole being so constructed, combined, and arranged as to permit of the fastening and retention of the band, substantially as described.

3. The bale-tie A, having a projection, *a'*, on its wall, as shown, slots or openings B B', and the tongue C, having shoulders or projections *c b*, either with or without the wall A^4 being bulged, the whole being so constructed, combined, and arranged as to operate substantially as described, as and for the purpose specified.

139,676.—*Curtain-Hook.*—HUBERT L. JUDD, Brooklyn, N. Y. Application filed May 14, 1873.

The lower end of the hook is constructed with a lip to set below the offset upon the plate, and with a teat to enter a recess in the plate; the parts are then united by a rivet. The ornament at the upper end of the hook is inclosed in a metallic frame having on its back a cylindrical teat, which passes through a hole in the hook and is spread out as an open rivet.

Claim.—1. The lip *e* and teat *i* upon the arm *d* in combination with the plate *a*, offset *c*, and rivet *l*, as and for the purposes set forth.

2. The curtain arm, hook, or band, made with an ornamental head attached by the sheet-metal back *r* and cylinder or tent *s*, as and for the purposes set forth.

139,677.—*Lady's Dress.*—HARRIET JUDSON and EMILY S. JUDSON, Brooklyn, N. Y. Application filed April 10, 1873.

The skirt is shortened or lengthened by tightening or loosening the draw-string around the edge of the yoke.

Claim.—A dress formed with the yoke A and gathering-strings *d d*, in combination with the skirt C C, substantially as and for the purposes set forth.

139,678.—*Manufacture of Springs for Watches and other Time-Pieces of Aluminium Compounds.*—FRED. ADOLPH LANGE, Glashutte, Saxony. Application filed October 25, 1872.

After the wire has been handled in the usual way by drawing and rolling, I submit it to the action of a peculiar kind of plane, and then, by stoning it, reduce it to any required size. The wire thus reduced is wound and pressed and heated until the steel is of a light blue color.

Claim.—1. The alloys of aluminium herein described, forming hair-springs for watches and other time-pieces.

2. The new manufacture herein described—that is to say, springs suitable for watches and other time-pieces made of compounds of aluminium tempered, annealed, and treated substantially as described.

139,679.—*Milking-Pail.*—GEORGE T. LINCOLN, Leominster, Mass. Application filed April 11, 1873.

The pail has a dishing cover, with a concave recess to receive the milk and an inlet for cleansing purposes; also, a strainer leading into the spout beneath another strainer located within the spout, so that the milk is strained twice. The pail is perfectly protected against dust, and the milk is not liable to spill when the pail is upset.

Claim.—1. In the milking-pail, the two strainers *s f*, the discharging-spout, and the dished cover B, combined and arranged as specified.

2. The dished cover B, made with the inlet or opening *h* and the milk-receiving recess or concavity *g*, arranged together, and with the strainer *e*, as set forth.

3. The milk-pail provided with the stationary cap B, the two strainers *s f*, the inlet *h*, and the milk-receiving cavity *g*, all arranged, with the pail body and spout, substantially as explained and represented.

139,680.—*Railroad Car.*—ISAIAH G. MACFARLANE, Wilkinsburg, Pa. Application filed April 12, 1873.

Improvement on patents of ISAIAH G. MACFARLANE, granted April 23, 1872, and September 17, 1872. An improved construction of the center brace and end passage of the car.

Claim.—1. The braces *z*, extending from the side rails *e* to the opposite bottom rail *a*, and mortised or let into each other, substantially as and for the purposes described.

2. The upper end rails *s*, extending from the sides of the car to and terminating at the sides of the through passage-way A^3, substantially as and for the purposes set forth.

3. The longitudinal truss-rods *k*, fastened to and in combination with the cross-rods *l*, substantially as and for the purposes described.

139,681.—*Machine for Beading Sheet-Metal Ware.*—CHARLES E. MARCHAND, Alliance, Ohio, assignor of one-half his right to THOMAS R. MORGAN, same place. Application filed April 11, 1872.

The cutters are adjusted for operating by the eccentric post which supports the plate to which they are attached.

Claim.—1. The combination of the eccentric post *h q* with the plate *m*.

2. The combination of the levers *a* and *c*, the rollers *e*, *d*, *v*, and *s*, the parts *o* and *w*, and the parts *i* and *e'*, for the purpose herein set forth.

139,682.—*Horse-Power.*—HENRY I. MARNETTE, Chicago, Ill. Application filed April 10, 1873.

Upon the bed-plate is bolted the hollow metallic column having enlarged base, within which is stepped a vertical spindle carrying a pinion at its lower end within the enlarged base, and a pulley at its top. The short vertical shaft is stepped in the bed-plate and carries a triple-cone gear. The spur-wheel, with a long sleeve slipped over the column with sweeps attached to its upper end.

Claim.—The construction and arrangement of the bed-plate A, column B, spindle C, pinion D, pulley E, shaft F, geared cone G, spur-wheel H, sweep I, spider J, platform K, internal gear L, and supporting-rollers *a*, substantially as and for the purpose set forth.

139,683.—*Reverberatory Furnace.*—HUGH MCDONALD, Pittsburg, Pa. Application filed February 27, 1873.

A series of coking-chambers are placed in front of the combustion-chamber. At the upper part of the coking-chamber jets of steam or water are admitted into the line of draft through perforated pipes, and pass with the gases evolved by a flue to a storage-chamber, and from thence to a perforated bridge, from whence they enter the combustion-chamber, mingling with cross-jets of air from a separate chamber in the bridge. Air is admitted into the storage-chamber to mingle with the gas, and air and steam into the rear and sides of the combustion-chamber to facilitate combustion.

Claim.—1. In combination with the coking-chamber or furnace, a steam or water pipe suitably arranged therein for supplying moisture to the smoke and gases evolved in the operation of coking, substantially as set forth.

2. In combination with a series of chambers, B^1 B^2, two or more in number, a pipe, *r'*, arranged transversely across the chamber B^2 at a suitable point for supplying air or steam to the smoke and gases of combustion at or near the point of their entrance into the said chamber, substantially as set forth.

3. In combination with a fuel-coking chamber, B, of a furnace of the class indicated, a smoke-flue or smoke-flues, *f'*, suitably arranged for conveying any desired portion of the smoke and gases from the coking-chamber out of the line of the draft, and causing them to re-enter again the line of the draft in a separate combustion-chamber, B^2, and at or near the fire-bridge, either directly or through an intermediate gas-holder, *g*, substantially as set forth.

4. The combination of case *k*, pipe or pipes k^1, and chambered fire-bridge, with openings thence into the combustion-chamber B^2, substantially as and for the purposes set forth.

5. The combination of the air-openings from the pipe *n'*, and the smoke-openings from the fire-bridge, arranged to discharge in close contiguity into the path of the flame from the combustion-chamber to the working-chamber, substantially as set forth.

6. The steam-pipe *i* and smoke-flues *f'* uniting and leading to the chambered fire-bridge, so as to discharge the smoke and gases of combustion intermingled with steam into the combustion-chamber, the combination being substantially as set forth.

7. The openings c^1 in the upper part of the chamber B^2, and registers c^2 for supplying air laterally to the fire in the chamber, substantially as set forth.

139,684.—*Stationary Wash-Tub.*—BERNARD MORAHAN, Brooklyn, assignor to himself, FRANK TEFFT, and GEORGE G. KELLOGG, New York, N. Y. Application filed November 8, 1870.

A tub is made of cast-iron of the ordinary form of stationary tubs. Within the front inclined side of the tub is placed a metallic corrugated wash-board, which is detachable and can be held in place by cleats.

Claim.—The removable wash-board B in combination with a stationary wash-tub, and with cleats *a* or their equivalents for sustaining the same firmly and allowing it to be introduced and replaced, as herein specified.

139,685.—*Stationary Wash-Tub.*—BERNARD MORAHAN, Brooklyn, assignor to himself, FRANK TEFFT, and GEORGE G. KELLOGG, New York, N. Y. Application filed January 16, 1873.

The tubs are made of earthenware, and set and held in frames of wood and metal with cement between them.

Claim.—1. In combination with the tubs A, the wooden or elastic top framing E, matched upon the edges of said tubs, as herein specified.

2. In combination with the tubs A with suitable top edgings, the supporting-frames B B', applied at or near the base of the tubs, and extending to or near the top edge of the tubs and to the floor at front and back, for the purpose herein specified.

3. In combination with the tubs A and supporting-frames B B, the longitudinal bolts or braces G, and the up and down bolts H and I, binding the parts firmly together, as specified.

139,686.—*Electric Fuse.*—GEORGE M. MOWBRAY, North Adams, Mass. Application filed March 19, 1873.

A copper thimble surrounded with a gutta-percha covering has a chambered gutta-percha plug or cap, which carries the terminals of the insulated wires, and the explosive compound to be ignited by the spark, the whole being securely cemented together.

Claim.—1. The plug D with its priming-chamber and flange, substantially as described.

2. The insulated copper shell A B, substantially as described.

3. The combination of insulated wires C with the molded plug D, substantially as described.

4. The combination of the insulated wires C, the plug D, and the insulated copper shell, substantially as described.

139,687.—*Bell-Pull.*—WALLACE T. MUNGER, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed April 12, 1873.

The bell-pull, by acting on an intermediate swinging segment-lever, at a point near its pivot or fulcrum, increases the range or throw of the bell-cord.

Claim.—1. The segmental pulley *m*, connected by the link *l* with the pull-lever *f*, and acting upon the chain *n* with an accelerated motion, substantially as and for the purposes set forth.

2. The side plates *b b*, with the gudgeons *a i* introduced within the mortise in the plate *a*, and receiving between them the pull-lever *f* and segmental chain-pulley, substantially as set forth.

139,688.—*Box for Spices, &c.*—EDWIN NORTON, Chicago, Ill. Application filed July 23, 1872.

The body of the box is a tube consisting of two or more thicknesses, formed by winding and cementing a continuous strip of paper or wood, and the ends are made of sheet metal pressed into the proper shape.

Claim.—The box herein described, consisting of a tube, A, of two or more thicknesses, formed by winding and cementing a continuous strip of paper or wood, in combination with the ends B, substantially as and for the purposes specified.

139,689.—*Extension-Ladder.*—JOSEPH PINE, Brooklyn, N. Y., assignor to EDWARD B. LEVERICH, same place. Application filed April 4, 1873.

The elevating-rope passes over a pulley, which is adjustable by means of nuts and a screw in order to keep the rope always taut under varying atmospheric conditions. The winding-barrel

is made with grooved fusees, and one barrel tapers slightly so that the slack of the wire rope may be fully taken up as the ladder is elevated. The cranks are mounted in hollow axles so as to push in and be concealed in recesses in the sides of the ladder and be out of the way when the ladder is handled.

Claim.—1. In combination with the wire-rope and extension-ladder, as described, the adjustable extension-rod G, cross-head H, and carrying-pulley F, substantially as described.

2. In combination with the wire-rope of an extension-ladder, the right-and-left-grooved barrel or fusee J and K, when made as described, and for the purposes hereinbefore set forth.

3. The method of securing the cranks N to the right-and-left-grooved barrel or fusee, by means of a slotted hollow axis and detent-pin, all made and operating substantially as described.

4. The recesses and holes S in the lower ends of the main ladder, in combination with the cranks N and slotted hollow axis, all arranged and operating for the purposes hereinbefore set forth.

139,690.—*Printing and Dial Telegraph and Circuit Therefor.*—HIRAM D. ROGERS, Cincinnati, Ohio. Application filed May 24, 1873.

Places Morse sounder and a printing or dial telegraph in same circuit and on same line. Printing-circuit thrown on automatically when in use, cut out when instrument not in use. Combines Morse key and letter-transmitter in one circuit-breaker.

Claim.—1. The arrangement, in one main-line circuit and upon one base, of the dial or printing telegraph instrument, a Morse receiving-instrument, and a circuit-breaking device, substantially as herein set forth.

2. The combination, with the flexible arm of the transmitter, of an anvil, so arranged that the transmitter serves either as a dial or printing transmitter, or as a Morse key, substantially as set forth.

3. In combination with a printing-telegraph, a circuit-breaker, operating the printing-circuit, arranged to keep such circuit broken at a designated point, substantially as set forth.

4. The combination, with the printing-magnet of a telegraph instrument, of the posts *q r*, spring *s*, and wheel *p*, substantially as set forth.

5. The circuit-breaking wheel *p*, having the point *x*, substantially as and for the purposes set forth.

6. The type-wheel having the numerals arranged upon its face below and in the relation to the letters thereon, substantially as set forth.

7. The method of constructing the type-wheel, substantially as set forth, by first forming the characters upon a flexible strip, which is then affixed to the type-wheel frame, as herein described.

8. A type-wheel formed by the union of a lettered strip of metal or other material and a frame, substantially as set forth.

139,691.—*Hub for Vehicles.*—GEORGE L. ROUSE, Cincinnati, Ohio. Application filed January 24, 1873.

The outer rim can be driven far enough under the flange to present an even surface on the end of the hub.

Claim.—The combination of the rim D and flange C, or their equivalents, when the latter overlaps the former, substantially as and for the purpose set forth.

139,692.—*Electrical Gas-Lighting Apparatus.*—JOHN VANSANT, San Francisco, Cal. Application filed February 3, 1873.

The gas-valve at the burner is operated directly by an electro-magnet whose helix is also employed in exciting a secondary induction-coil for igniting the gas by a spark. A permanent magnet is employed with the electro-magnet, so as to obtain both attraction and repulsion; and to preserve the permanent magnet from deterioration it is surrounded by a coil whose direction of current is never reversed. The apparatus, including the gas-burner, is insulated from the gas-pipe by an interposed tubular section of non-conducting material. By the use of a peculiar circuit-breaker and switch the battery-power is successively transferred to several series or districts of street-lamps.

Claim.—1. An electro-magnetic displacing-weight, g^8, combined with a catch for sustaining the raised weight, and an electro-magnet, g^{12}, for releasing it when desired, substantially as specified.

2. In combination with the helix surrounding an electro-magnet that opens by its immediate attraction, a mercury-valve or a slide-valve, substantially as shown, for admitting gas to a burner, a secondary induction-coil, arranged substantially as specified, for lighting the escaping gas.

3. The slide-valve f^5 with its armatures, combined with the poses f^9 f^{10}, constructed and operated substantially as specified.

4. The combination of an electric helix around a permanent steel magnet to prevent its demagnetization with an electro-magnet to produce motion by repulsion.

5. The combination of a gas-valve with an electro-magnet and a helix surrounding a permanent magnet, in such a manner that an electric current sent in a constant direction through the helix around the permanent magnet, and another current sent simultaneously through the coil of the electro-magnet, shall produce motion that will open or close the valve, according to the direction of the latter current.

6. In combination with an electric machine placed near a gas-burner to admit or exclude the gas, the use of an electrical insulator to prevent metallic connection between said machine and the gas-supply pipe, or any other non-insulated support.

7. In combination with an insulated electro gas-lamp, the use of an independent metallic connector to bring the said lamp into electric communication with the ground when required, substantially as specified.

8. In combination with one or more induction-coils, an electrotome having a permanent or electro-magnetic core, movable automatically within a fixed or adjustable electric coil, substantially as specified.

9. The headed pin e^4, attached to the axial bar e^3 and moving in the slot of the connecting-spring e^5, for rupturing the circuit, in the manner specified.

10. The combination of a source of dynamic electricity with an electrotome, an electrical switch, C, and two or more series of connected electric machines at street-lamps, for lighting or extinguishing the gas.

139,693.—*Valve or Cut-Off for Cupola and other Furnaces.*—WILLIAM H. WARD, Auburn, N. Y. Application filed November 7, 1872.

A cut-off valve of fire-clay in an iron frame is attached by bolts and screws to the outside of cupola and melting furnaces, so as to draw the metal in the same manner that molasses or other liquid is drawn from a cask.

Claim.—1. The combination, with the discharge-orifice of a melting-furnace or separate receiver, of a sliding cut-off gate, consisting of a composition or burned fire-clay valve or plug, L, and a metallic holding and operating frame, H, therefor, as herein set forth.

2. The adjustable fire-clay plug or valve L and receiving-frame H, combined with a spring, K, as and for the purpose set forth.

3. The independent or detachable receiving-frame A B, adapted for the reception of a composition or burned fire-clay bed-piece or discharge-tube, F G, and an adjustable fire-clay valve L, as described.

4. The bed-piece F G G′, secured within the openings in the plates A B by means of the beveled seats of the latter, constituting a clamping device, as set forth.

5. In a cut-off device for melting-furnaces, a removable fire-clay plug, valve, or stopper having a constant pressing adjustment upon its bed at right angles to its opening and closing movement upon the latter.

6. In such a cut-off device, the combination of a removable fire-brick clay plug or valve with a removable fire-brick clay bed, to effect the replacement of one or both when required.

7. An attachable cut-off device or gate for furnaces or furnace-ladles, as a new article of manufacture and trade.

139,694.—*Throttle-Valve for Locomotive and other Engines.*—HENRY WATKEYS, Syracuse, N. Y. Application filed March 28, 1873.

A throttle-valve, consisting of a main and adjustable supplemental valve, is arranged in a vertical branch of the dry-pipe, and is operated by a toggle-jointed lever connecting by a bell-crank lever with the valve, and by a rod projecting through the front of the boiler with the starting-lever.

Claim.—1. The combination of a throttle-valve, consisting of a main valve and an adjustable auxiliary or supplemental valve, with the dry-pipe of a boiler, constructed substantantially as specified.

2. The combination of a toggle-jointed lever with the main and auxiliary valves of a throttle-valve, when constructed and operating substantially as herein described.

139,695.—*Harvester-Cutter.*—SAMUEL H. WELLINGS and SIMON SOULES, Bridgeville, Mich., assignors to themselves and EDWARD Y. KELLEY, same place. Application filed July 15, 1872.

An endless chain cutter, composed of irregular triangular-shaped cutter-sections riveted to links which clasp the base of the triangle and which meet between the extremities of the base, so that the joint between the links and the cutter-sections shall not coincide.

Claim.—The herein-described endless-chain harvester-sickle, composed of the sickles A, constructed specifically as described, and link-bars A′, pivoted together as shown and set forth.

139,696.—*Nut and Washer Machine.*—WILLIAM R. WILBUR, Cleveland, Ohio. Application filed March 8, 1873.

The punch and cutter are operated alternately by means of levers worked by cams that are provided with side stubs for returning the punch and cutter to their original positions at the proper time. A finger is reciprocated across the dies to clean them from chips after each operation.

Claim.—1. The shaft *b*, cam *u*, spring-bar *w*, and cleaning device *y*, substantially as shown and described.

2. The shaft *b*, levers *c d*, cams *g*, studs *h*, and arms *i*, when combined with the slides *l*, and punches *n o*, substantially as specified.

139,697.—*Wheel for Vehicles.*—JACOB WOODBURN, St. Louis, Mo., assignor to WOODBURN SARVEN WHEEL COMPANY, Indianapolis, Ind. Application filed December 14, 1872.

The wedges prevent the spokes from being withdrawn and permit the spokes to be made of smaller pieces of timber than otherwise.

Claim.—The combination of the spokes, the flanged rings, and the transverse wedges, constructed independently of the flanges, substantially as and for the purpose described.

139,698.—*Molasses-Pitcher.*—HOMER WRIGHT, Pittsburg, Pa., assignor of two-thirds of his right to HENRY H. COLLINS and BENJAMIN F. COLLINS, same place. Application filed March 3, 1873.

The lid is connected with the top of the pitcher by a double hinge, so as to have a forward and backward, as well as well as an up and down, motion, and has a scraper attached to its front edge so as to draw the liquid left on the lip back into the vessel.

Claim.—1. A jug-top having a lid capable of a forward and backward, as well as an up and down, motion, substantially as and for the purpose described.

2. The compound hinge D and stop S, in combination with the lid and scraper, as and for the purpose described.

139,699.—*Water-Wheel.*—THOMAS J. ALCOTT, Mount Holly, N. J. Application filed February 19, 1873.

The walls of the casing are adjustable. The hub is made sectional and its lower portion forms the supporting-foot. The gate-ring has issues of differential series to admit of full-packed issues of water, whether using partial or entire capacity of the wheel.

Claim.—1. The walls, consisting of the shells F and adjustable plates F′, substantially as and for the purpose set forth.

2. The cast metallic hub, the lugs or rim P, rim L, and shaft S, combined and operating as herein set forth.

3. The concave rim, buckets, and encircling rim cast in one, in combination with the sectional hub, substantially as and for the purpose set forth.

4. The inner gate-ring E formed with issues H, constructed of differential series, respectively, H′ H″ H‴, in connection with the walls with chutes D′, equal to one issue of the series of the ring E, substantially as and for the purpose set forth.

139,700.—*Presser-Foot for Sewing-Machines.*—GEORGE W. ALLERTON and ZENAS M. POWERS, Robinson, Ill. Application filed May 5, 1873.

This presser allows the material to be turned easily in any direction about the needle.

Claim.—A rotating presser, whether of glass or other substance, connected with its supporting-arm by a hollow pivot, through which the needle works, substantially as specified.

139,701.—*Manufacture of Zinc-White.*—NATHAN BARTLETT, Bayonne city, assignor to himself and SAMUEL C. WEST, Elizabeth, N. J. Application filed April 19, 1873.

The batches being successively moved toward the chimney renders the working of the furnace continuous, and prevents the loss of heat which occurs when the furnace is stopped or the whole batch of spent ore removed at once. The shape of the furnace concentrates the heat the nearer it approaches the chimney.

Claim.—1. The chamber H, made widest at the mouth and tapering to the escape, as and for the purpose described.

2. The mode of working zinc-oxide furnaces by supplying the ore at the front from time to time, and shifting that contained in the furnace along toward the rear and removing the residuum thereat, as described.

139,702.—*Gas-Purifier Tray or Grating.*—JOHN L. CHEESMAN, New York, N. Y. Application filed May 23, 1873.

Insert transverse pieces of hard wood through the body of the tray.

Claim.—The improved tray described, composed of the grated board A *a*, with the transverse pieces B inserted through holes in the body of the same, and with the incorrodible pegs or nails C, arranged as herein set forth.

139,703.—*Glove-Fastening.*—DUNCAN A. COOPER, Worcester, England. Application filed April 22, 1873.

The clasp consists of a hollow body or shell having on the back part a stud at one end and a slot at the other. Two articles or two parts of one article may be united by passing the stud through a button-hole in one of them and engaging the slot with a hook or projection on the other.

Claim.—The improved solitaire glove clasp or fastening, comprising the back plate and front plate, formed, as described, with the hole *a b* in the back plate for engaging the button on one side of the slit, and the stud *d* for attaching it to the glove on the other side of the slit, substantially as specified.

139,704.—*Friction Attachment for Securing Pulleys to Shafts, &c.*—HENRY COX, Peterborough, Canada. Application filed April 5, 1873.

Claim.—The eccentrics D, applied in connection with the pulley B, to secure the pulley on the shaft or prevent its retrograde motion, substantially in the manner described.

139,705.—*Printing and Dyeing Fabrics.*—THOMAS CROSSLEY, Bridgeport, Conn. Application filed February 4, 1873.

Makes a solution of the gum and boiling alone, adding a cold solution of pipe-clay, and uses the mixture without further boiling, as specified.

Claim.—The process for preparing and compounding the base and colors used in printing woven and felted fabrics by mixing a cold solution of pipe-clay with solutions of gum and colors without boiling the compound before using, substantially as set forth.

139,706.—*Printed Pile Carpet.*—THOMAS CROSSLEY, Bridgeport, Conn. Application filed February 4, 1873.

The carpet is printed with colors having a friable base, made by boiling the gum solution and afterward adding cold pipe-clay solution in the proportion of twenty per cent. gum solution to eighty per cent pipe-clay, steamed in the ordinary way, and finally cleaned by whipping and brushing.

Claim.—The mode of manufacturing printed carpets by first applying the colors with a friable base, and then, after steaming, cleaning mechanically, substantially as set forth, so as to dispense with the necessity of washing.

139,707.—*Medical Compound for Liver Diseases.*—JOSEPH M. CUNNINGHAM, Mount Morris, Ill. Application filed May 17, 1873.

Socatrine aloes, five ounces; gentian, one-half ounce; quassia, one-half ounce; golden seal, one-half ounce; saffron, one-half ounce; capsicum, one-half ounce; gamboge, one dram; rhubarb, one-half ounce; alcohol, one quart; water, one quart; oil of sassafras, one dram; sugar, two pounds.

Claim.—The compound for the cure of liver and kindred diseases, consisting of the parts and in the quantities stated, and prepared substantially as specified.

139,708.—*Die for Pressing Hats.*—JASON DEMPER, Barre, Mass. Application filed April 25, 1873.

The hollow die is heated by steam passing through a pipe, around which the die is cast.

Claim.—A hat-die formed by casting the metal around a steam-pipe arranged in the mold, substantially as shown and described.

139,709.—*Potato-Digger.*—HENRY M. DOWD, Saratoga Springs, and WILLIS W. DOWD, Jr., North Granville, N. Y. Application filed April 19, 1873.

Claim.—The scraper combined with an evener and draft-bar suspended from the tongue, as and for the purpose described.

139,710.—*Match-Plane.*—JAMES EDWARDS, New York, N. Y. Application filed March 15, 1873.

The plane-stock has two adjustable fences and an adjustable plane-bit for varying tongues.

Claim.—The adjustable guide H, in combination with the piece E and iron C, as and for the purposes described.

139,711.—*Traction-Wheel.*—JOHN G. GALLET, St. Augustine, Ill. Application filed March 8, 1873.

The bolts by which the tread-plates are secured upon the elastic tire are hinged to the under side of the plates to allow of lateral movement.

Claim.—The combination, on a solid plate, A, of two rims, *a b*, the plates C, hinged bolts *d*, elastic washers *e*, and pins *f*, to hold the sectional rubber blocks of a wheel-tire, in the manner described.

139,712.—*Automatic Gate.*—CYRUS E. GILLESPIE, Edwardsville, Ill. Application filed March 22, 1873.

To the hinge-post, near the ground, is attached a plate having near its front end a stud, to the upper end of which is pivoted a short arm, through the middle of which passes a pin having a small pivoted wheel at its lower end. The upper end of this pin receives the eye of the lower hinge-strap. To the inner end of the pivoted short arm is a pin to receive the eyes on the inner ends of the operating-rods. A lever is hinged to the latch-lever and parallel thereto, and has a projecting pin, which, when inserted to the rear of a stop in the gate, prevents the latter from being opened by stock.

Claim.—1. The plate E, stud F, pivoted arm G, pin H, roller I, and pin K, in combination with the strap or bolt J of the gate, and with the post C and rods L, substantially as and for the purpose described.

2. The combination of the hinged lever S, pin T, and stop-piece V, with the pivoted levers P Q, weighted arm R, latches M N, and gate A, substantially as herein shown and described, and for the purpose specified.

139,713.—*Shoe-Lacing.*—JONES HARDING, Galesburg, Ill. Application filed October 15, 1872.

A wire is continuously curved and formed into alternate hooks and bases. The hooks are used for lacings, and the bases are secured to both sides of the slit of a shoe by means of elastic cords or bands.

Claim.—The continuous wire D when formed into a series of hooks, as described, and secured to the shoe by means of the elastic cords or bands I, in the manner and for the purpose specified.

139,714.—*Peach-Cutter.*—WILLIAM J. HILL, Fayetteville, Tenn. Application filed April 19, 1873.

The invention consists in the construction of a block on legs or uprights, to which is attached a sliding loop with a cap, and connected to a lever at its lower end pivoted to one upright, by which motion is given to force the peach upon tapering semi-tubes, which divide it, and the pit is forced through the tube and the peach, in parts, into the spout.

Claim.—The combination of the block G, sliding loop F, lever H, cutters C *c′*, spout E, and table A B, with each other, substantially as herein shown and described.

139,715.—*Relisher and Wedge-Cutter.*—WESLEY J. HOSKINS and AMOS D. ROWE, Essex, N. Y. Application filed May 17, 1873.

Two sets of circular saws are arranged in connection with a vibrating table in such manner that a forward movement of the table causes one set of the saws to cut the inner sides of the tenon, after which a vertical motion brings the other set of saws into operation, cuts the wedges, and, by bringing the material into contact with a stationary cutter, removes them, leaving the double-tenon complete.

Claim.—1. The combination of the gangs of saws D I, oscillating table F, and stationary cutters L, substantially in the manner described.

2. The swinging saw-frame E and oscillating table F, connected by arm H and rod G, substantially as specified.

3. The combination of rod O, treadle N, spring U, and pawl Z′, substantially as herein described.

139,716.—*Railroad Crossing.*—ROBERT J. HUGHES, Rynear, Ind. Application filed April 5, 1873.

In this class of crossings the crossing-rails are placed on a higher level than the main rails to avoid cutting the latter. A bearing-plate supports the wheel, which runs upon its flange in making the crossing. In this device the rail B⁹ is held against the main rail by a spring, except when pressed out by the flanges of a train upon the main line, said spring-rail being held in place by a pin attached to a support, which enters a horizontal perforation in the rail. The ties are notched to accommodate the main rails to a lower level than that of the crossing.

Claim.—1. The raised crossing-rails B, allowing the car-wheels to pass above main rails, in connection with the spring-rails B^2, flange-plate D, and guide-rail E, substantially as described.

2. The spring-rail B^2, having perforations, in connection with the pin *a*, and support *d*, as set forth.

3. The cross-ties C, formed with notches for keeping the main rails on the level of the track, as set forth.

139,717.—*Machine for Crimping Leather for Boots and Shoes.*—SAMUEL W. JAMESON, Newark, N. J., assignor to himself and WILLIAM J. DUDLEY, same place. Application filed May 20, 1873.

The crimping-jaws are formed with projecting beaks or points at their lower extremity, which are inwardly beveled, each jaw being provided with upwardly-curved corrugations upon their inner faces. A set of smoothing-jaws are arranged immediately above the crimping-jaws so as to receive the stock and remove the wrinkles which remain after the crimping process.

Claim.—1. The crimping-jaws, each formed with a projecting beak or point, and inwardly beveled on each side thereof, substantially as shown and described, so that when the jaws descend the material when first acted on shall hug the beaks or points only of the jaws without clinging to the beveled sides.

2. In a machine or apparatus for crimping leather for boot and shoe fronts, a crimping-jaw the acting face of which is provided between the toe and leg portions, and at the point where it crimps the leather over the bend in the tree or form, with upwardly-curved corrugations, arranged substantially as described, to concentrate or crowd the leather toward the heel or lower rear point of the boot-front during the descent of the jaw, substantially as herein shown and set forth.

3. A crimping-jaw for crimping boot and shoe fronts, formed with a projecting beak or point, and inwardly beveled on each side thereof, and provided with central upwardly-curved corrugations, with or without toe and leg corrugations, substantially as herein shown and described.

4. A crimping-jaw constructed with toe and leg portions, and with a central part provided with upwardly-curved corrugations, substantially as described, the said central part being of such relative dimensions to the toe and leg portions that, during the descent of the jaw, it will have traversed only about one-half the boot or shoe front when the toe and leg portions of the jaw are about to release or quit the same.

5. In a crimping-jaw for crimping boot and shoe fronts, the combination of the central upwardly-curved corrugations with toe and leg corrugations, formed substantially as shown and described, so as to divert from the heel or lower point of the front the material on each side of said central corrugations, for the purposes set forth.

6. In a crimping-machine, the combination, with the crimping-jaws, of finishing-jaws following said crimping-jaws and acting on the crimped front as it leaves the latter set of jaws, substantially as shown and described.

7. The finishing-jaws having such a contour as to fit or come in contact simultaneously at all points of their lower edges with the tree, or the crimped front thereon, and arranged immediately above the crimping-jaws to take hold of the crimped front before it is entirely released by the crimping-jaws, substantially as shown and set forth.

8. The finishing-jaws formed substantially as described, with toe and leg portions, which may be adjusted or set out more or less to conform to irregularities in the thickness of the crimped front.

9. In combination with the crimping-jaws and finishing-jaws, the hinged independent ways upon which said sets of jaws respectively slide, and the independent and separate systems of levers, connecting-rods, and weights, for drawing together said ways, substantially as shown and described.

10. The combination, with the finishing-jaws, of mechanism, substantially as described, for setting them at different distances apart, to accommodate different thicknesses of leather, and for maintaining their parallelism when thus adjusted.

11. The combination, with the crimping-jaws and their hinged ways, of independent hinged ways and finishing-jaws sliding thereon, the said crimping-jaws and finishing-jaws being so connected that while moving together up and down the jaws of either set may move laterally apart, independently of and without interference with the other set.

12. In combination with the finishing-jaws, jointed at their lower ends to their supporting brackets, the devices herein described for connecting the upper ends of said jaws to their brackets, and the levers whereby said devices may be operated to tilt the said jaws toward or away from each other as desired, substantially as and for the purposes shown and set forth.

139,718.—*Tobacco-Hanger.*—ELEAZER KENYSHALL, New Britain, Conn. Application filed March 24, 1873.

A strip or lath is provided with a series of clasps alternating on each side, by which the stalks of tobacco are held firmly without piercing the stem.

Claim.—The improved tobacco-hanger herein described, consisting of the strip C, in combination with a series of clasps, A, each of which is provided with arms *a a*, which pass each side of the stalk to hold it, and the tang or staple B, by which said clasps are secured to the strip C, all substantially as specified.

139,719.—*Curtain-Fixture.*—ALMON E. LAZELL, West Meriden, Conn. Application filed May 13, 1873.

The frame has an inclined plane or inclined slots, with which is combined a roller; between said roller and the frame the cord is held. A spring is also attached to the frame and presses the cord against the roller.

Claim.—1. In a curtain-holder, the roller 3 working in the inclined planes or slots of a suitable holding-frame, when arranged to operate substantially as shown and described.

2. The spring 5, arranged in a suitable frame, and combined with a roller working in an inclined plane or slot, substantially as set forth.

3. The frame 1, having the inclined slots 2 and legs 4, when constructed as specified, in combination with the roller 3, substantially as shown.

139,720.—*Reservoir Cooking-Stove.*—DENNIS G. LITTLEFIELD, Albany, N. Y. Application filed February 19, 1873.

The products of combustion can be directed into the upper part of the chamber containing the water-reservoir, whence they escape into the stove-flues about the oven, or they can be diverted entirely away from said reservoir-chamber.

Claim.—The auxiliary chamber A containing the reservoir B, when combined with the descending flue or flues G of a cooking-stove, in such a manner as to discharge the heated gases from the base of said chamber into the said flue or flues, and controlling the admission or exclusion of such gases to and from said chamber while operating the oven, by the dampers E E, substantially in the manner herein described.

139,721.—*Car-Starter.*—GEORGE LOWDEN, Brooklyn, N. Y. Application filed December 9, 1871.

The self-acting pawl, which is in combination with the loaded drum, engages with a ratchet secured to the car-axle.

Claim.—A car-starter capable of being used as a brake, by means of a draft bar or rod, E, provided with a hook, H, and controlled by the flexible band or rope C', pin *d*, lever *n*, when operated by the handle or crank F, in combination with the chain C, forming a part of the rod E, operating through loops S'' S''' loaded drum D, self-adjusting pawl P, and ratchet R, all located and operated below the bottom frame-work of the car for the double purpose, substantially in the manner as above set forth.

139,722.—*Box for Holding and Transporting Bottles.*—JOHN MATTHEWS, New York, N. Y. Application filed May 16, 1873.

Between the upper and lower side pieces spaces are left so as to expose the bottles to view and to give the transverse pieces, which receive the necks of the bottles and support the fluted bottle-receptacles, a firm support; these transverse pieces are in turn supported by a center-piece, which serves also to protect the necks of the bottles.

Claim.—1. The two series of partitions *e* and *d d*, arranged at right angles within the box, and bored or fluted, as described, so as to form receptacles for the bottles, as set forth.

2. The box-frame, composed of end pieces, four side pieces, B B and C C, with space *x* between, and the transverse stripe *f f*, all combined and arranged substantially as described.

3. The center-bar *p*, secured to the ends of the box and arranged so as to support the cross-pieces *f f* and protect the necks of the bottles, substantially as set forth.

139,723.—*Butter-Worker.*—JAMES MCBRIDE, Ithaca, N. Y. Application filed March 11, 1873.

A circular dish upon the table inclines to one end of said table for the escape of the water which passes from openings near the base of the dish. A rack on the periphery of said dish is operated to revolve the dish by a clutch, which is operated by connecting-arms from a rock-shaft, which is itself the pivot upon which is moved the arm, upon the center of which the peculiar presser is fixed, said presser having a divided and a solid end to be used alternately by reversing the arm in its socket end.

Claim.—1. The double-headed presser *a*, with divisions *s*, in combination with the lever *p* socketed in and oscillating the shaft *c*, substantially as set forth.

2. The double-headed presser *a*, with one head, *a'*, solid, and the other head, *a''*, with a longitudinal division, *s*, and two transverse apertures, *s'*, one through each division of the head *a''*, as set forth.

3. The lever *b*, shaft *c*, arm *f*, rod *g*, lever *h*, and click *i*, in combination with the pan *p*, pivoted and attached to the slope *o*, and secured to the bed-piece or table *a*, substantially as set forth.

139,724.—*Sectional Steam-Boiler.*—THOMAS E. MCNEILL, New York, N. Y. Application filed March 30, 1872.

The tubes are large near the fire in order to prevent too rapid formation of steam, and burning. The water first enters the smaller tubes in the upper part. Provision is made for circulation of water and for unequal expansion and contraction of parts.

Claim.—1. A sectional boiler consisting of two sets of communicating tubes, one above the other, and the lower being of larger diameter than the other, all substantially as specified.

2. The combination, substantially as described, of the partitioned drums L and M with the upper tubes B of the boiler.

3. The combination, substantially as described, of the upper tubes B, and their connecting-drums, forming a feed-water heater, with the distributing-drum F.

4. The combination, with the tubes A, of feed-pipes E, communicating with the upper ends of the said tubes, and of supplemental feed-pipes J, of smaller diameter than the pipes E, communicating with the lower ends of the said tubes, all substantially as and for the purpose specified.

5. The combination, with the said tubes A, of yielding or elastic feed-pipes J, substantially as described.

6. The combination, with the tubes A and pipes J, of caps D, cast in two sections, adapted to each other and to the said tubes and pipes, substantially as described.

7. The combination of the tubes A, connecting-pipes J, and drum H communicating with the pipes J, substantially as described.

8. The pipes E, each cast in one piece, with a return-pipe, E', of smaller diameter.

9. The combination of the drum-section F with the pipe E and return-pipe E', substantially as and for the purpose described.

139,725.—*Horse-Power.*—JOSEPH MILDOURN, Millport, Ohio. Application filed April 12, 1873.

Adjustable extension-levers attached to ordinary levers by means of bands and a screw or bolt, there being a series of holes on the ordinary levers by which the extension-levers may be adjusted at any required length. Also, outside stay-rods attached to holes in the ends of the extension-levers, and draft-rods attached to eyes in the stay-rods and to staples at the ends of the ordinary levers.

Claim.—1. In combination with the levers B, the extension-levers D, stay-rods E, and draft-rods F, arranged substantially as and for the purposes described.

2. The eye J, staple K, bands G G, and bolt H, in combination with the lever B, the extension-lever D, and draft-rods F, as and for the purposes described.

139,726.—*Scaffold.*—DANIEL Y. MILLER, Huntsville, Ill. Application filed March 29, 1873.

The short legs of the standards are made readily detachable by having their upper ends beveled to form a wedge-shaped socket, in connection with the iron band which surrounds them. They co-operate with the beveled end of the standard-piece and its band *c*. The rising platform is supported by iron bails attached to transverse pieces having fender-rollers K, and a slotted plate *l*, which passes over a pin in the wall to keep the platform steady and level.

Claim.—1. In combination with the standard A, formed of the short bars *a a* beveled at their upper ends and pivoted to the band D, the bars or pieces B, and band *c*, as described, whereby said parts A B are adapted to be connected, as set forth.

2. The platform F, having lateral pieces *h* with guide-rollers K, and plate *l* for guard-pin, as described.

139,727.—*Propelling Canal-Boats.*—WILLIAM F. MILLER, East Walpole, Mass. Application filed April 12, 1873.

Frame carrying traction-wheel slides freely up and down in a well in the boat, and is raised at will by spur-pinions, which are thrown into and out of gear with the frame by a rock-shaft; said pinions being operated by a worm and a wheel having a ratchet-and-pawl connection with their shaft—the object being to allow the frame to be forced upward whether the pinions are in or out of gear.

Claim.—1. The combination of a fixed gear, H', and vertical sliding shaft E, the same having a spline connection, with the gears G' E', and a propelling-wheel mounted in a vertically-sliding frame, substantially as shown and described.

2. In combination with the vertically-sliding frame C and the propelling-wheel, the pinions L' L, movable shaft D, crank rock-shaft Q, worm F, spur-gear G, ratchet-wheel H, and pawl I, all as shown and described.

139,728.—*Cooking-Range.*—JAMES H. MITCHELL, San Francisco, Cal. Application filed February 24, 1873.

The ovens are removable with the front plate. The upper inside edges of the plate at the back and those at ends of the range are beveled so as to afford a space under the top plate for the water-pipe, which connects the coil in the fire-chamber with the reservoir.

Claim.—1. The range-front A with its attached ovens B B, in combination with a range having the supporting-ledge C, substantially as and for the purpose above described.

2. The beveled edges *d* of the back and side plates, in combination with the water-pipe *f* and rim-plates or frame E, substantially as and for the purpose above described.

139,729.—*Paint-Compound.*—HORATIO NELSON, New York, N. Y. Application filed April 26, 1873.

Adhesiveness is enhanced by the use of clay.

Claim.—A paint composed of plumbago, clay, silicate of potash or soda, and oil, in about the proportions specified.

139,730.—*Steel or Chair.*—HENRY OCORR, Milwaukee, Wis. Application filed May 31, 1873.

The rim is made of metal cast in one piece, and has sockets to receive the legs, and a perforated flange or ledge for the attachment of the cane or upholstered seat.

Claim.—A cast-metal rim for a stool or chair, formed in one piece, as herein described, with sockets to receive the legs, and a perforated flange or ledge for attachment of the upholstered or cane seat, as shown and described.

139,731.—*Knapsack.*—GEORGE H. PALMER, Monmouth, Ill. Application filed January 6, 1873.

Claim.—1. The knapsack-frame of flexible wood sticks X, canvas corner-pieces *b*, leather stiffeners *a a*, connecting-straps Z, and ties a^3, combined substantially as specified.

2. The combination, with a knapsack-frame constructed as described, of cover A' B' detachably attached to said frame, substantially as specified.

3. The coat-straps *a*, blanket-straps *d*, suspending-straps *b*, and loops *c' c'*, combined and arranged in detachable and adjustable connection with the knapsack, substantially as specified.

4. The combination of the back-pad, double shoulder-straps and waist-brace *m*, substantially as represented in Fig. 3.

5. The combination of the waist-belt *p* with the waist-brace *m* and shoulder-straps, substantially as specified.

6. The combination of the saber and carbine slings, substantially as specified.

7. The combination of the saber and carbine slings with the back-pad and shoulder-braces, substantially as specified.

8. The detachable fastening-loop D' and toggle-piece E, in combination with the knapsack and the straps attached thereto, substantially as specified.

139,732.—*Cotton-Planter.*—GEORGE PATERSON, Waynesborough, Ga. Application filed February 21, 1873.

A narrow rectangular frame is mounted on one wheel therein, the axle-tree of which is extended beyond the frame for the support of a rolling seed-drum on each side, having on their peripheries conducting-spouts, each of which, on reaching the ground, becomes filled and discharges its contents. In front of the drums are guano-hoppers with spring-valves at their outlets, which are struck by projections on the spouts. There is a partially-rotating lateral shaft in front of the machine and another in the rear, each with downward arms, the one having openers, the other coverers.

Claim.—The vertical pocket-slide N, arranged to reciprocate up and down in a guano-dropper, as and for the purpose described.

139,733.—*Sad-Iron Holder and Lid-Lifter.*—CHARLES B. PETTENGILL, Hebron, Me. Application filed May 23, 1873.

Has two arms, the ends of which are constructed with projections over which are forked openings to receive the bail of a kettle, &c., and when brought together furnish a hook for lifting stove-covers. The two arms are connected with two half-circular frames, hinged at their center by a rod, on which there is a spiral spring. The half-circular frames are constructed with supporting-bars running through their length to form a round handle, which is covered with material to protect the hand, to be used as a sad-iron holder.

Claim.—The combination of the arms *b c*, frames *e f*, rod *i*, prongs *o p*, spiral spring *j*, and the leather or cloth covering *n*, substantially in the manner herein set forth.

139,734.—*Soda-Water Fountain.*—ALVIN D. PUFFER, Boston, Mass. Application filed April 8, 1873.

The heads are chamfered off to prevent the lining from being injured at the corners, and are secured to the jacket by a tubular rod attached to each end of the cylinder. Plaster of Paris is applied to the interior of the lining to prevent fusing while soldering.

Claim.—1. The employment of plaster of Paris, or an equivalent substance, applied to the interior of the lining or shell A to retain it in proper shape should fusion take place, substantially as and for purposes stated.

2. The combination, with the lining or shell A, of external metallic jacket B, and heads *b c*, the latter being provided with chamfered edges inserted within the part B, substantially as shown and set forth.

3. In combination with the lining or shell A, metallic jacket B, and heads *b c*, the tubular rod or stay D, (with or without pipe *j*,) plug *g*, and thimble *d*, said parts being arranged together, substantially in the manner and for the purposes shown and set forth.

139,735.—*Stem Winding and Setting Watch.*—GEORGE P. REED, Malden, Mass. Application filed March 14, 1873.

An oscillating plate, carrying two engaged wheels in constant gear with the crown-wheel of the pendent stem, is so arranged that when not latched by a detent in engagement with the center or hand wheel it is held entirely free from the movement by a delicate spring, while the act of turning the stem in the proper direction automatically throws the gear into connection with the winding-barrel.

Claim.—1. In stem-winding and hand-setting mechanism for watches, a swinging plate carrying two gears or toothed wheels, meshing permanently into each other and pivoted to it, one at times meshing into and driving a toothed wheel fixed upon the winding-arbor, to wind up the mainspring, and the other at times taking into a toothed wheel fixed upon the hands-arbor, to set the hands, the plate being swung toward the winding-arbor and the latter wheels engaged by the rotation of a crown-pinion pivoted to the main plate of the watch and rotated by the pendant-knob, substantially as and for purposes stated.

2. In combination with the swinging carrier-plate and its two wheels, arranged with relation to the hands-arbor and the winding-arbor, and operated to move toward the latter by the crown-pinion *c*, as described, the spring *t*, arranged and operating substantially as shown and set forth.

3. In combination with the swinging carrier-plate and its two wheels, arranged relatively to the hands-arbor and the winding-arbor, and operated to move toward the latter by the crown-pinion *c*, as described, the spring *t*, shipper *l*, slider *q*, and spring-latch *s*, said parts being arranged together for joint operation, as shown and set forth.

139,736.—*Washing-Machine.*—NATHAN F. REED, North Wolcott, Vt. Application filed May 5, 1873.

The box in ordinary form, with a rubbing-surface of rolls extending its entire length, with a rubber over it of diminished length to allow motion, over which is a platform to which, by staples, the levers are connected to give it motion, and its tension regulated by a roll connected to levers, the tension of which is regulated by a hook-and-ratchet connection from the extreme end of it and the bottom of the box.

Claim.—1. The arrangement of the staples H, hook connecting-bars I, and levers K, in connection with the roller-platform E F G, roller-bottom C D, and box A, substantially as herein shown and described.

2. The combination of the levers L, cross-bar M, arms N, roller O, and hook ratchet-bar Q, with the movable roller-platform E F G, roller-bottom C D, and box A, substantially as herein shown and described.

139,737.—*Spinning-Mule.*—THOMAS H. RUSHTON and ROBERT TOUGH, Bolton, England. Application filed February 27, 1873.

For giving reduced speed to the carriage during the after-stretch; for starting the rolls quickly or slowly, as desired, when spinning fine or coarse yarn; and for unlocking the long lever to disengage the running-out mechanism at the end of the stretch.

Claim.—1. The combination of the bevel-gears b^1 b^2 a^1 *l* with the spur-gears a^4 l^2 m^1 m^2, the clutches a^2 a^3 a^5, the ratchet *P*, and the plate l^3 having the sliding catches l^4, as and for the purpose described.

2. The combination of the roller-shaft *a* with the disk a^6, having snugs placed at unequal distances apart, and the sliding clutch a^5 having a pin for engaging said snugs, as and for the purpose set forth.

3. The combination of the faller-leg *o*, having the shoulder *o'*, with the tumbler-lever *p* and the adjustable finger p^1, as and for the purpose specified.

139,738.—*Explosive Compound.*—TALIAFERRO P. SHAFFNER, Louisville, Ky. Application filed May 28, 1873.

Claim.—The combination of gun-cotton or other nitrated fibrous substances, as described herein, with nitrated water, or liquids, or paraffine, or bees-wax, or its equivalent, substantially as herein described.

139,739.—*Waste-Trap.*—WILLIAM A. SHAW and CHRISTOPHER C. TRACY, New York, N. Y., assignors to themselves and CHARLES F. HERVÉ, same place. Application filed May 6, 1873.

In an S-shaped trap, the part forming the bend is made perpendicular, and provided with ribs which guide the ball-valve and prevent it from jamming in the outlet-orifice.

Claim.—A plumbers' waste-trap, provided, in the bend between the two branches, with a ball-valve held and guided between vertical ribs formed on the interior surface of the bend between the valve-seat and the top of the bend, said parts being constructed and arranged for operation substantially as and for the purposes herein shown and set forth.

139,740.—*Mode of Attaching Stove-Doors to their Frames.*—SAMUEL SMITH, Philadelphia, Pa. Application filed April 14, 1873.

The door is attached to the frame by the pivot in the lower edge, so that it will swing downward when the catch is opened. The openings for the pivot and the catch are cast in the same frame. By this means the operation of molding is facilitated, and less iron is required for the bosses of the hinges and the catches.

Claim.—The swinging door A and frame B, when the same are constructed and secured together substantially in the manner and for the purpose hereinbefore described and set forth.

139,741.—*Lawn-Mower.*—THEODOR SOETBEER, Irvington, N. Y. Application filed April 12, 1873.

A frame having a supporting (which is also the driving) wheel extends from the operator's hand to the ground, where is affixed, at a proper angle, a stationary blade, against which is operated a shearing-blade, which clips the grass as the machine is propelled.

Claim.—The combination of the slotted standard A, stationary blade B, movable blade C, pivoted connecting-rod D, crank E, shaft F, frame G, pulley H, band I, pulley J, wheel K, and bolt L with each other, substantially as herein shown and described.

139,742.—*Tobacco-Finisher.*—ALLEN P. SOUTHARD, St. Louis, Mo. Application filed March 22, 1873.

A hollow cylinder, made in longitudinal sections hinged together, is provided with several doors, which may be closed successively as the tobacco is packed upward from the bottom, after which pressure may be applied. After the pressing is completed the doors are opened, the sections separated, and the tobacco removed in mass.

Claim.—The series of independently-hinged doors D and their fastenings E G, in combination with the sections B and C, as shown and described, to operate as specified.

139,743.—*Process of Preparing Corn for Grinding.*—WILLIAM STANDING, Du Quoin, Ill. Application filed February 8, 1873.

Expels oil from and dries corn, preparatory to grinding it, by subjecting it to action of steam under pressure.

Claim.—The process of drying Indian maize, preparatory to grinding the same, by steam applied under pressure, in the manner and for the purpose described.

139,744.—*Leather-Splitting Machine.*—AARON F. STOWE, Worcester, Mass. Application filed April 12, 1873.

Claim.—1. The movable lever S, as applied to support the springs of the lower roll of a leather-splitting machine, to allow them to be relieved of tension when the machine is not at work.

2. The combination, with a knife having an oblong recess and shelf therein, of bolts X having oblong heads, and bed C vertically and horizontally slotted, to enable the knife to be readily taken out without removing the bolts, and the latter to be loosened from the front of bed instead of from the bottom thereof.

139,745.—*Sewing-Machine.*—JOSEPH T. TOBEY, Haverhill, Mass. Application filed May 7, 1873.

Designed for "overstitching." The material is held by the presser about a ridge-like piece on the bed-plate provided with a notch for the passage of the needle. The thread is in short pieces; is fastened at one end to the material. The needle enters and its point leaves the material at the same side; the hooked finger lays the thread in the hook of the needle; the latter retreats, draws the thread with it, the loop-seizer catches the loop so drawn, draws the free end of the thread entirely through the material and leaves it held between the jaws of the lazy-tongs ready for a new stitch.

Claim.—The combination of the curved and hooked needle I, the hooked finger N, the furcated presser L, the loop-seizer P, and the lazy-tongs T, all arranged and operated substantially as specified.

139,746.—*Explosive Compound.*—THOMAS VARNEY, San Francisco, Cal., assignor to THE GIANT POWDER COMPANY and THE ATLANTIC GIANT POWDER COMPANY, same place. Application filed June 4, 1873.

Claim.—The process of granulating or pulverizing dynamite and similar compounds of nitro-glycerine with absorbent matter, by treating them while freezing in the manner substantially as hereinbefore set forth, whereby such compounds are rendered more easy of explosion and more efficient in use.

139,747.—*Box for Packing and Preserving Tobacco.*—LEOPOLD WERTHEIMER, New York, N. Y. Application filed May 6, 1873.

One side of the box is hinged so as to open and fold outward and downward, thus exposing only the top of the tobacco. The cover, at first secured in position by cleats on the inner side of the top of the box, descends as the tobacco is drawn from beneath it, and thus affords constant protection.

Claim.—1. A packing-box for tobacco and other articles, provided with a sliding top capable of moving up and down within the box, and arranged for operation substantially as and for the purposes set forth.

2. In a packing-box of otherwise ordinary or suitable construction for tobacco and other articles, a sectional side, composed of two or more sections hinged together and arranged so that the sections may be successively opened or dropped, to expose only so much of the tobacco or other article as may be needed for the time, keeping the remainder tightly sealed and covered, substantially as shown and set forth.

3. In a packing-box, the combination of a sliding top capable of moving up and down in the box, and a sectional front composed of two or more sections hinged together, under the arrangement and for operation as shown and set forth.

139,748.—*Implement.*—HENRY B. WHITEHEAD, Holly Springs, Miss. Application filed February 1, 1873.

This implement may be used as pliers, wrench, wire-cutter, calipers, and compasses.

Claim.—The combination, with the casing A, of the jaws D D, toothed shanks or bars C C perpendicular thereto, the handles B toothed at *b* and provided with the slots *s s*, and the bolt E, substantially as shown and described.

139,749.—*Apparatus for Treating Grain for Distillation.*—ADOLPH WOOLNER, Louisville, Ky. Application filed May 24, 1873.

Boils the grain in an air-tight vessel under an increased pressure, so as to expose the starch-globules more to a greater degree of heat.

Claim.—In an apparatus for treating grain for distillation, the boiler, perforated steam-pipe *i*, discharge-pipe *o*, and stirrer *l*, when combined for operation, substantially as shown and described.

139,750.—*Cotton-Cultivator.*—CHARLES ZOCHER, Augusta, Ga. Application filed March 29, 1873.

A series of notches or offsets, inclined backward and upward, are formed upon the sweep so that it may clear itself of trash.

Claim.—The sweep B, having its cutting-edge notched and the portion of said edge between the offsets b^1 inclined, as specified, for the purpose of enabling the sweep to clear itself of obstructions, as set forth.

139,751.—*Manufacture of Steel.*—JOHN ABSTERDAM, New York, N. Y. Application filed May 31, 1873.

Claim.—1. A bar, plate, sheet, or slab of semi-steel of cementation, produced by subjecting the crude unrefined iron to a process of cementation, and then refining the converted crude iron by heating and welding the same under the hammer or by the action of rolls, substantially as herein described.

2. A railway bar, made of wrought-iron and semi-steel of cementation, produced by subjecting the crude unrefined iron to a process of cementation, and finishing the metal after cementation, substantially as set forth.

139,752.—*Draft-Hook for Cultivators.*—AUGUSTUS ADAMS, Sandwich, Ill. Application filed January 4, 1873.

The hook is cast with a ring to fit upon the end of the double-tree, with one or more hooks above and below.

Claim.—A draft-hook for cultivators adapted for attachment directly to the end of the evener or double-tree, and cast with a number of draft-hooks, one or more above and one or more below the evener, substantially as described, for the purposes specified.

139,753.—*Coach or Carriage.*—JOHN ALLGAIER, Philadelphia, Pa. Application filed December 17, 1872.

The front portion of the bed of the carriage is hollowed out for the reception of the side lights when not in use.

Claim.—The front bed portion B, constructed with a pocket, G, for the reception of the removable side lights or sashes E E of the front top part C, essentially as described.

139,754.—*Cotton-Bale Tie.*—AUGUSTUS S. ARMSTRONG, New Orleans, La. Application filed May 13, 1873.

A cutting of the metallic band confining the bale, about a foot in length, folded as shown in the drawings.

Claim—The buckle or bale-tie herein shown and described, for the purposes specified.

139,755.—*Spinning-Machine.*—HENRY ASHWORTH, Walsden, England. Application filed October 26, 1872.

For regulating the "drag" on the bobbin in accordance with the velocity of its rotation.

Claim.—The combination, with a rotating spindle and bobbin, of a flange, *g*, and a dished washer higher at the center than at the outer edge, on which the bobbin bears, and arranged so that by the action of centrifugal force it may approach a horizontal position, raising the bobbin, all as specified.

139,756.—*Saw-Handle.*—ELIAS C. ATKINS, Indianapolis, Ind. Application filed September 16, 1871.

A conical bearing-plate rests upon the saw and is provided with a groove upon its upper surface in which the lower end of the ferrule is inserted.

Claim.—The open-ended ferrule *b* projecting beyond the end of the handle, the notched frustum-shaped washer C fitted to the end of the ferrule, entering its projecting end and thus forming a support for the shank, in combination with the handle *a*, slotted bolt *n*, and nut *f*, substantially as and for the purpose set forth.

139,757.—*Manufacture of Wine.*—JOHN C. BAXTER, Washington, D. C. Application filed February 3, 1873.

The fruit is boiled or steamed in a kettle surrounded by water placed in an outer vessel and heated by a furnace. Instead of the kettle a closed vertical cylinder having a perforated coil for the admission of steam may be used.

Claim.—A wine made from oranges, limes, or lemons, or fruits of that class of which they are the representatives, in the manner described, to wit, by first boiling or otherwise digesting the fruit with steam and then adding saccharine matter to the liquid obtained therefrom, and afterward subjecting the must thus prepared to vinous fermentation, as specified.

139,758.—*Hulling-Machine.*—ANDREW BENTELSON, West Salem, Wis. Application filed April 24, 1873.

The vertical edges of the grooves in the bottom side of the stone are lined with metallic plates to prevent wearing away of the stone along these edges.

Claim.—1. A hulling-stone, A, of the character described, having in its bottom side grooves C, the vertical edges *e* of which are lined with detachable metal bars D, substantially as specified.

2. The combination of the hulling-stone A, having grooves C *e* in its bottom side, metal bars D, and eye-bolts E *e*, substantially as and for the purpose specified.

139,759.—*Apparatus for Treating Offal.*—JOSEPH N. B. BOND, New York, N. Y. Application filed May 24, 1873.

Claim.—1. The combination of a drum, A, containing an agitator, E, with a heating-chamber, B, and furnace D communicating with said heating-chamber by means of a pipe, C, containing a cold-air gate, *b*, substantially as shown and described.

2. The combination of a drum, A, containing an agitator, E, with a steam-boiler, F, communicating with the drum by a superheated steam-pipe, *c*, and a wet-steam pipe, *c*, substantially as set forth.

3. The combination of a drum, A, containing an agitator, E, with a furnace, D, and with a cold-water pipe, *f*, substantially as and for the purpose described.

4. The combination of a drum, A, containing an agitator, E, with a heating-chamber, B, a steam-boiler, F, and a cold-water pipe, *f*, substantially as set forth.

139,760.—*Portable Cooking-Stove.*—NATHAN O. BOND, Fairfax Court-House, Va. Application filed April 8, 1873.

The stove is close-bottomed and sets upon the top of the main stove. It is supported at the rear by its exit-pipe connection. The damper-rod, passing through the sleeve sustaining and holding the exit-pipe, unites the sleeve and the collar projecting from the main pipe.

Claim.—1. The summer furnace, constructed substantially as herein described, with a close bottom, independent draft, and horizontal discharge-flue, for the purposes set forth.

2. The removable pipe-collar, consisting of the flanged tubes J K, combined as described, and secured together by means of a damper-rod, M.

139,761.—*Earth-Boring Machine.*—WILLIAM H. BOUSER, Paris, Ill. Application filed April 5, 1873.

The auger-shaft is kept in a vertical position by means of guide-bearings at the top and bottom of the frame, the lower bearing being secured to a hinged portion of the frame, so that it can be thrown back out of the way of the auger when it is raised to be emptied. The hoisting-rope passes over a guide-pulley to a windlass operated by a crank-shaft having changeable gears of different sizes to regulate the speed of the windlass. The auger is provided with the usual serrated cutting-lips and valves, and with reamers having inwardly-projecting flanges to guide the earth into the bucket.

Claim.—1. The ground-frame, consisting of the bed-blocks and the hinged platform having the journal-seat secured to its front edge, substantially as specified.

2. The combination, with well-boring mechanism, of the windlass, crank-shaft, and the adjustable gearing arranged at each end of said crank-shaft to increase the power or speed at will, substantially as specified.

3. The combination, with the well-boring mechanism, of the windlass, the forked supporting arms, the removable transverse bar, and the traveling-pulley, substantially as specified.

4. The reamers, having their cutting-edges serrated and inclined outward and downward, and having the extensions bent rearward and inward to guide the soil to the center, substantially as specified.

5. The auger, consisting of the stem, the L-shaped arms, the upper reamers, the lower blades, and the loose bucket, substantially as specified.

139,762.—*Automatic Boiler-Feed Regulator.*—BURT BRETT, Geneva, Ohio. Application filed June 17, 1872.

Through the rising and falling of the float in the chamber the peculiarly-shaped valve is operated to control the flow of steam to supplying-pump.

Claim.—1. The construction and combination of the valve C with the float A, substantially as and for the purposes hereinbefore set forth.

2. The combination of the valve C, float A, chamber B, and the upper transverse section of Weston and Brett's safety-boiler, above mentioned, substantially as and for the purposes hereinbefore set forth.

139,763.—*Soldering-Machine.*—WILLIAM D. BROOKS, Baltimore, Md., assignor to MARY C. BROOKS and GEORGE D. BROOKS, same place. Application filed May 20, 1873.

The burners are arranged in a circle just above the soldering-tool for the purpose of melting the solder in the gutter at the top, which, when melted flows down through perforations in the tool to the groove in the top of the can. The lower face of the tool is made to slant obliquely upward, so that the solder will not follow its surface and be wasted on the side of the can.

Claim.—1. A soldering-tool having the pin *d* and loosely surrounding the revolving tube *b*, combined, as described, with a feet collar, E, having the slot *e*, to enable the said tool to have end play and yet to revolve with the tube.

2. The combination, with one or more blow-pipe burners, C, of a rotary soldering-tool having trough d^1 and perforations d^2, as and for the purpose set forth.

3. The flange d^4, applied to the bottom edge of a soldering-tool to prevent the ingress of too much air before the melted solder has been properly distributed.

4. A soldering-tool having the oblique face d^3 in connection with the perforations d^2, as and for the purposes set forth.

5. The bolt J, having a disk, J', with flanges *j j* that enable the sections to be coupled together in the manner described.

6. A soldering-tool, C c c^1, having the inner flange c^2, and applicable in the manner and for the purpose described.

7. The gas and air chambers G H, formed in two parts, I I' and K K', as and for the purpose set forth.

139,764.—*Combined Label and Seal for Locks.*—EDWARD J. BROOKS, New York, N. Y. Application filed December 27, 1872.

Claim.—The label-seal herein described, formed with an aperture for applying it to a lock or other object to be secured and printed, or otherwise marked with numbers or other characters to indicate, by the use of a punch, the date of application and the destination or direction of transit of the property protected.

139,765.—*Ditching-Machine.*—CHARLES M. BROWN, Baltimore, Md. Application filed April 11, 1873.

The earth included between the projecting parts of the lower portion of the casing is dug by the scraper-blade and divided by spring cutter-blades projected radially from the periphery of the rotating wheel by a fixed cam, E, as they pass it. Said blades also carry up the earth in the passage formed by the sides and circumference of the casing, and discharge it by the transverse chute.

Claim.—1. The combination of the series of spring-cutters *b* with the rolling-wheel A and cam E, the wheel being loose and the cam fixed upon the axle *a*, substantially as and for the purpose specified.

2. The combination of the rolling-wheel A, spring-cutters *b*, and cam E with the casing C, ditching-blade D, and spout *d*, substantially as and for the purposes specified.

139,766.—*End-Gate for Wagons.*—JESSE D. CAREY, Monica, Ill. Application filed February 17, 1873.

The end-gate is hung to the wagon-body so as to swing out therefrom, in the operation of dumping, without being separated at its pivotal point.

Claim.—The end-gate C having straps *n n*, with eyes *o o* to receive the hooks *r r* of the straps attached to the sides of the wagon-body, upon which the gate swings, substantially in the manner and for the purpose set forth.

139,767.—*Bolt.*—JAMES F. CARLIN, Alexandria, Va. Application filed May 24, 1873.

The tail-piece of a sliding bolt is turned back at right angles, and perforated, or formed into a ring. There is also, on one of the guide-staples, or as an attachment to the bed-plate, a corresponding arm, with the like eye or ring, and these two parallel arms are so arranged in relation to each other that when the bolt is projected a padlock may be conveniently attached through the two eyes or rings, thus securely locking it in position.

Claim.—The slide-bolt B, when provided with a hasp or arm, *d*, having an opening or eye, *e*, and used in connection with a hasp or arm, *f*, having an opening or eye, *g*, formed on or otherwise secured to one of the guide-staples *a*, *b*, or *r*, or to the bed-plate A of the bolt, as described and shown, for the purpose set forth.

139,768.—*Stop-Mechanism for Twisting and Doubling Machines.*—JAMES A. H. CARROLL, Baltimore, Md. Application filed April 29, 1873.

When a strand breaks its weighted cord falls upon and turns the platform so that its near end is elevated and engaged by a pin in the reciprocating bar which in its movement oscillates the platform horizontally which turns the T-bar on its pivot, thereby raising the hook piece, removing the belt from the whorl, and raising the front top roll, thus stopping the further delivery of the strands. The back top roll is loose, and turns only when the front top roll turns.

Claim.—1. The combination, with band C and the shaft of the roll E, of the hook piece D d d^1, the slotted T-bar G *g*, the platform-bar H *h h'*, the bar I *i*, the reciprocating bar J *j j*, and the weighted cords K hung to the threads, as and for the purpose described.

2. The rolls L L', the top one of which is loose to hold the threads, applied in connection with the separable feed-rolls E F, as and for the purpose specified.

139,769.—*Ice Auger.*—WILLIAM A. CLARK, New Haven, Conn. Application filed April 17, 1873.

Claim.—A bit or tool for boring in ice, provided with a point, C, having cutting-lips *c* on its end, and a screw-thread on its sides, with the cutting-lips B, or their equivalents, substantially as described.

139,770.—*Button-Hole Sewing-Machines.*—SHERMAN CLEMINSHAW, Troy, N. Y. Application filed December 7, 1872.

Improvement on patent No. 128,363. The tip or cylindrical arm, and levers which hold the cloth are rotated so as to present the material to the needle which projects from a shuttle-like block supplied with thread by means of the devices enumerated in the fourth and fifth clauses. When a button-hole is completed, the holder is drawn toward the operator, the stirrup enters the fork of the curved arm, the geared dog engages the teeth of a rack on the under side of such arm, and the jaws or levers are opened to permit the removal of the cloth. The beater forces the thread or stitch over the edge. The devices of the last clause elevate the shuttle-like block at the proper time from its bearing in order to allow the loop formed by its attached needle to pass over it.

Claim.—1. The curved arm C, having its outer end forked or cut open, and provided on the concave side with a rack, *a*, substantially as and for the purposes herein set forth.

2. In combination with the cloth-holder, the loose stirrup E, with pin *f*, and the cogged or geared dog D, constructed and operating substantially as and for the purposes herein set forth.

3. In combination with the geared dog D, arranged and operating as described, the catch J, and spring *i*, substantially as and for the purposes herein set forth.

4. The combination, with the swinging cloth-holder, of the rotating worm L, and the gear-wheel K for the purpose of rotating the same, substantially as herein set forth.

5. The combination of the feed-bar M, slotted driver N, adjustable pin *m*, slotted bar O, spring-pawl *n*, and the ratchet-wheel *p*, upon the shaft *k*, for rotating the worm L, substantially as and for the purposes herein set forth.

6. The beater-bar R, connected with the sliding plate S and provided with the wedge *s*, in combination with the adjustable roller *t*, all constructed and arranged substantially as and for the purposes herein set farth.

7. The pivoted gage T, provided with slots *a'*, and operating in combination with the spring *x* and pins *y* and *z*, substantially as and for the purposes herein set forth.

8. The combination of the pivoted lever *v* with pin *b'*, spring *c'* and cam A', all constructed as described, and arranged on the head V of the machine, substantially as and for the purposes herein set forth.

139,771.—*Indicator for Railroad Cars.*—CHARLES H. COFFIN, Boston, Mass., assignor of one-third his right to JAMES W. MORRISON, same place. Application filed April 23, 1873.

A box contains two drums, to which are attached the ends of an indicating-apron, said drums being alternately rotated when geared with the movable pulley-shaft, which is actuated by a belt, receiving motion from the axle.

Claim.—The combination of the worm-gear N M, shaft L, and pulley H with the belt K, shifting-gear E, drums B and B', and show or display belt C, substantially as described, and for the purpose set forth.

139,772.—*Process of Grinding Journal Boxes or Bearings.*—J. WENDELL COLE, Brooklyn, N. Y., assignor to "THE TANITE COMPANY," Stroudsburg, Pa. Application filed December 7, 1872.

Claim.—The process, substantially as herein described, of manufacturing journal boxes or brasses by grinding them longitudinally in relation with their axis, substantially as specified.

139,773.—*Machine for Forming, Shaping, and Dressing Journal-Boxes.*—J. WENDELL COLE, Brooklyn, N. Y., assignor to "THE TANITE COMPANY," Stroudsburg, Pa. Application filed December 7, 1872.

Claim.—The combination of the revolving emery or grinding wheel B, of transverse curvature on its periphery, with the journal-box clamping-carriage E, arranged for operation and adjustable in relation with each other, substantially as and for the purpose herein set forth.

139,774.—*Machine for Dressing Wheels, &c.*—J. WENDELL COLE, Brooklyn, N. Y., assignor to "THE TANITE COMPANY," Stroudsburg, Pa. Application filed December 7, 1872.

A revolving shaft or carrier of the wheel or body to be dressed is combined with a diamond or other cutter, carried by a swinging ball-like holder, arranged over or outside of the periphery of the wheel, and with its axis of motion in a plane which corresponds with that of the wheel's rotation, whereby a wheel or other circular body of transverse curvature on its periphery may be ground or dressed true and of any desired curvature.

Claim.—1. The combination, with the revolving shaft or carrier B by which the wheel or body to be dressed is rotated, of the cutter E and its swinging ball-like holder F, arranged in relation with the shaft or carrier B and with the wheel or body to be dressed, substantially as and for the purpose specified.

2. The diamond or other cutter E, adjustable in a radial direction within its ball-like holder F, in combination with the adjustable bed D and revolving shaft or carrier B, having its axis in a plane which intersects the axial line of the cutter-holder, essentially as described.

139,775.—*Machine for Shaping or Dressing Wheels, &c.*—J. WENDELL COLE, Brooklyn, N. Y., assignor to "THE TANITE COMPANY," Stroudsburg, Pa. Application filed December 7, 1872.

A revolving shaft or carrier of the wheel or body to be dressed is combined with a diamond or other cutter made capable of motion in a transverse relation to the rim or periphery of the wheel, the cutter being directed by a curvilinear guide or pattern corresponding with the shape of the body to be turned.

Claim.—In combination with the emery or other grinding wheel C, the curved guide or pattern D adjustable up or down and about the axis of the swivel-pin *c*, the sliding block F, and the diamond or other cutter E, adjustable through said block, substantially as specified.

139,776.—*Folding-Chair.*—ADAM COLLIGNON, CLAUDIUS O. COLLIGNON, and NICHOLAS COLLIGNON, Closter, N. J. Application filed April 14, 1873.

The back is pivoted to the front legs, just above the junction of the front and rear legs, and rests on the rear legs.

Claim.—In a folding-chair, the back thereof pivoted to the front legs and bearing upon the rear legs, substantially in the manner described.

139,777.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed November 5, 1872.

Claim.—1. The buckle having a single mortise and open slot, when surrounded by an outer rim, E, for the purpose specified, forming therewith a new and improved buckle.

2. The buckle having, in combination, the fingers D D split off and pressed out from its body, with the single central mortise A, the open slot C, the stops or lips G, and the outer rim-plate E with the looped ends of metallic bands, substantially as described.

139,778.—*Manufacture of Steel.*—WILLIAM DOUGHERTY, Philadelphia, Pa. Application filed March 18, 1873.

Claim.—The method of casting steel in wrought-iron or other metallic cases when the latter is of such thickness as to admit of the heat of the melted steel completely welding the case to it, substantially as and for the purpose above set forth.

139,779.—*Watch-Case.*—JOHN C. DUEBER, Cincinnati, Ohio. Application filed November 23, 1872.

The bezel is formed by soldering into the dished portion of a struck-up flat back, and flush with its edge, a ring triangular in section (forming the "snap-ring" for either side) and also by soldering at the angle of the dish, when used for the front or crystal side, another ring square, or rhombold in section, which forms when the flat portion is cut out, the support for the crystal.

Claim.—The bezel, consisting of the three distinct members, to wit, the snap-ring A, the square ring B, and flange *c*, when constructed and adapted to be employed in the manner herein explained.

139,780.—*Conductor's Check-Box.*—JAMES F. GAUNT, Newark, N. J., assignor of one half his right to EDWIN B. KNOTT, same place. Application filed December 5, 1872.

Upon moving the lever, a check is carried by a slide having a slot in one end corresponding in size to a check, from the reservoir to and over the entrance to the drawer. The lever is carried back by a spring and at the same time a hammer, attached to the slide, strikes the bell. A vertical tube forms the reservoir. A bolt is placed upon the checks and follows them down. When the last check has been deposited, the bolt drops into the slot in the slide and prevents further action. A horizontal plate through which an eyelet protrudes, covers the top of the reservoir. A vertical extension from this plate fastens the drawer in place. A padlock fastened in the eyelet locks up reservoir and drawer.

Claim.—1. The combination of case A, knob and lever H and F, spring J, check-distributing slide E, hammer C, bell B, reservoir K, receptacle N, lock R and R', as and for the purposes substantially as herein set forth.

2. The combination of case A, lever F, spring J, slide E, reservoir K, drawer N, lock-bolt R and R', substantially as herein described and for the purpose set forth.

3. The combination of case A, lever F, spring J, check-depositing slide E, hammer C, bell B, reservoir K, follower-bolt W, drawer N, substantially as herein described and for the purposes set forth.

4. The combination and arrangement of all the above-named parts together, as and for the purposes herein described and shown.

5. In combination with a reservoir and check-depositor E, with its actuating devices and receptacle N, the checks, as and for the purpose hereinbefore described.

139,781.—*Stucco Ornament.*—A. DÉSIRÉ GODARD, Chicago, Ill. Application filed April 2, 1873.

Claim.—1. Fire-proof stucco ornaments, composed of a compound of plaster of Paris and glue in layers, and an interposed textile webbing, substantially as specified.

2. Fire-proof stucco ornaments, composed of a textile webbing embedded in layers of a compound prepared by mixing in water plaster of Paris, glue, phosphate of soda, borax, alum, and rock-salt, substantially as and for the purpose specified.

139,782.—*Separator for Iron and other Ores.*—ALEXANDER GOODHART, Newville, Pa. Application filed November 14, 1872.

The freshly-dug ore is fed into an oven, from whence, after being properly dried, it is discharged into a hopper, falls upon rotating disks and is thrown against the sides of a crib, is disintegrated, falling upon a shaking-screen, where the dirt and ore are separated.

Claim.—1. A supply feed-hopper, C, rotary heads H H', cribs I I', and screen L, combined and arranged as and for the purpose described.

2. The combination, with feed-hopper, of oven having pan B discharging thereinto, as and for the purpose described.

3. The described method of cleaning ore by drying it as it comes from the earth and then separating the soil therefrom, thereby dispensing altogether with the washing operation.

139,783.—*Toy.*—MICHAEL GREBNER, New York, N. Y. Application filed November 29, 1872.

The traveling-platform on the top surface has carriers for engaging with and holding toys, and the bottom surface of the toy turn-table has a rack, into which a gear-wheel meshes for the purpose of propelling said platform; it, the platform, being arranged and supported in a guide-way formed in the rigid platform, in the center of which is formed a socket for receiving a Christmas-tree.

Claim.—The stationary platform A provided with the socket C to receive a Christmas-tree, and with the guide-way *a* to receive the traveling-ring *b*, carrying carriers *g* and the rack *e*, into which meshes the spur-wheel *d* driven by the shaft *c*, the whole constructed and arranged as herein shown and set forth.

139,784.—*Wire-Cage.*—MICHAEL GREBNER, New York, N. Y. Application filed January 31, 1873.

Claim.—A cage, the cross-bands of which are provided with eyes for the reception of loops formed on the filling-wires said cross-bands and filling-wires being held together by a locking-bar passing through the loops of the filling-wires, substantially in the manner herein shown and described.

139,785.—*Hand Seed-Sower.*—GEORGE HALL, Morgantown, W. Va. Application filed April 26, 1873.

Claim.—The seed-bar D, beveled at each end and formed with a longitudinal rib, *b*, in its center, and with recesses *d d*, and grooves *i i*, in combination with the seed-box, and the lever for operating said bar, as and for the purpose set forth.

139,786.—*Seal-Lock.*—FRED. C. HAMILTON, New York, N. Y., assignor to EDWARD J. BROOKS, same place. Application filed December 27, 1872.

A hasp is pivoted within a mortise in the shank of the lock, so that its upper or bent arm extends across the bow of the hook. The said hasp is prevented from being retracted by means of a spring-catch, and is held from a forward movement by a seal, which must be broken before the hasp can be released and the lock unlocked.

Claim.—The seal-lock herein described, constructed with a hooked body, A B, and a hinged or pivoted hasp, C, passing through a mortise or opening therein and extending across the bow of the hook B, the said hasp being adapted to be held from forward movement by a seal, S, of suitable form, and secured against retraction by a spring-catch, E.

139,787.—*Harvester.*—WILLIAM HARRISON, Linneus, Mo., assignor of one-half his right to HENRY C. PERWITT, same place. Application filed March 31, 1873.

Two sets of guard-fingers are attached to the same finger-bar, with cutter-sections projecting to the front and rear, and a pitman on each side of the finger-bar receiving motion from a cam in the supporting-wheel, so as to cut back and forth on the same side of the standing grain.

Claim.—The driving-wheel A provided with the cam-way B B^1 B^2, the frame C, the upright E, the rocking-levers N N' constructed as described, the pitmen N M', the scythe-bars L L', the movable knives K K^1 K^2 K^3, the finger-bar F, and slotted fingers G G', &c., and H H', &c., all in combination, as and for the purpose shown.

139,788.—*Puddling-Furnace.*—JOHN HEATLEY, Harrisburg, Pa. Application filed April 17, 1873.

Iron is charged into the raised central chamber, called the stove, and as it becomes melted flows out into the annular chamber, where it is worked by stirrers carried around by the rotating furnace-cover. The dependent fan-blades of the cover create an equable diffusion of the hot air and gas coming from the furnace. Over the rotary cover, and moving with it, is a bar having slotted ends to guide the stirrers. Motion across the annular chamber is imparted to the stirrers by vibrating regulators fixed on a shaft having a hand-crank.

Claim.—1. The stove E placed in the center of melting-chamber B and provided with inlet and outlet openings thereinto and therefrom, as and for the purpose described.

2. The cover I of a melting chamber, B, arranged to rotate thereover, and thus to carry around therewith the stirrers, as a new and convenient means of applying said stirrers.

3. The bar K vertically movable on shaft and provided with arc-slots at each end, in which the stirrers are moved as described, so as to give the double adjustment intended.

4. The combination, with the stirrer-bar K, of the collar M that surrounds shaft, the swiveled disk N, lift-levers O O, and slotted cross-bar P, as and for the purpose set forth.

5. The combination, with screw U, of cords, pulleys, and counter-balance weights, arranged as and for the purpose specified.

6. The bar K, made in two or more pieces, clamped together on shafts and journals of stirrer-blocks, as and for the purpose described.

7. The metallic facings *j j'* applied to the slots i^2 i^3 of the top I of melting-chamber, as and for the purpose described.

8. The combination, with rod *z*, of cams Y Y having the arms *y y*, and operated as and for the purpose described.

9. The revolving cover I having the series of pendent fan-blades I', as and for the purpose specified.

10. The vibratory regulators J' J' applied to the stirrers, as and for the purpose specified.

139,789.—*Iron Ship-Building.*—SAMUEL HOLMES and WILLIAM M. BOWRON, Philadelphia, Pa. Application filed March 27, 1873.

Claim.—As a new structure, a vessel having longitudinal ribs composed of the united flanges of plates which form the skin of the vessel.

139,790.—*Washing-Machine.*—JOSEPH HOOVER, Lancaster, Pa. Application filed May 6, 1873.

The washing-machine has a box or tub of ordinary form, with two beaters connected by levers, by which they are brought in contact by the aid of an upright lever or shaft, which is connected to a cross-bar or shaft attached by a pivot-block to the uprights of the frame, and from which extends downward a connecting lever or rod to the horizontal rod connecting with the beaters by cross-bar.

Claim.—The combination, in a washing-machine, of the lever L on its cross-bar D, rod E, pivot-bar *e*, rubbers F G and I K, all arranged and jointly operating in the manner and for the purpose set forth and shown.

139,791.—*Attachment to Car-Axle Boxes.*—DAVID A. HOPKINS, Jersey City, N. J. Application filed June 1, 1872.

A sleeve projects from the journal-box around the axle into an annular chamber in the hub, and a leather packing bears against the sleeve, the whole uniting to prevent the entrance of dust or dirt.

Claim.—The railroad car wheel and axle, having an intervening annular chamber for the reception of a projecting sleeve from the journal-box, as set forth.

139,792.—*Fire and Burglar Proof Safe.*—BENJAMIN HOWARD, St. Clair, Pa., assignor to himself and THOMAS WATKINS, same place. Application filed March 24, 1873.

The safe is moved into and out of the counting-room by hydraulic power, and it is held in the elevated position by means of a spring-catch that engages in the notch of a rod attached to the under side of the safe. A sliding door is arranged so as to close automatically when the safe is lowered into the receptacle below.

Claim.—1. The rod R, combined with the safe A, and hydraulic press, and with the spring-catch *c*, substantially as specified.

2. The combination of the shaft P, levers O O, and valve-stem N, with the projection *f*, and spring-catch *c*, for operation as described.

3. The door T connected with the beam S with the movable safe A, substantially as and for the purpose specified.

139,793.—*Slide-Valve for Steam-Engines.*—NELSON JOHNSON, Jasper, N. Y. Application filed February 5, 1873.

Provides the extreme ends of a slide-valve with small perforations, with plugs in them to allow enough steam to pass into the cylinder to cushion the piston.

Claim.—The holes *d d*, with the plugs *e e* or their equivalents, arranged in the ends of a slide-valve, B, substantially as and for the purposes herein set forth.

139,794.—*Window-Screen.*—DANIEL C. KELLAM, Detroit, Mich. Application filed May 16, 1873.

Claim.—In combination with a roller and screen of a window-frame, the plates I I with inward-projecting flanges *d d*, constructed and arranged as described, for the purpose of utilizing the expansion of the screen to balance the window-sash, as set forth.

139,795.—*Combined Furnace and Steam-Generator.*—OLIVER W. KETCHUM, Toronto, Canada. Application filed December 17, 1872.

The heated products of combustion are forced into the boiler through perforated pipes, above which deflectors are arranged to direct the water toward the center. Deflectors are also arranged in the steam-dome to prevent foaming.

Claim.—1. A vertically self-feeding furnace, a flame-chamber and a boiler, all made air-tight and combined with air-forcing apparatus, in the manner and for the purpose described.

2. The pipes *c c'* arranged and combined with the flame and water chambers, in the manner and for the purpose specified.

3. The deflectors *a' a'* arranged over the pipes *c'*, as and for the purpose described.

4. The steam-dome *a* provided with a series of superposed deflectors J, applied as and for the purpose set forth.

139,796.—*Refining Butter.*—GEORGE W. KIRCHHÖFFER, Chicago, Ill. Application filed December 20, 1870.

Claim.—1. The herein-described process of suddenly cooling or congealing melted butter, which has been cleaned by injecting the same into a vessel containing milk, buttermilk, or other suitable liquid, substantially as and for the purpose specified.

2. The apparatus, consisting of the reservoir A, congealer B, cooler C, pipe D with stop-cock and perforated end, supply-pipe E, outlet F, pressure-inlet G, filter-frame I, and pan K, substantially as and for the purpose described.

139,797.—*Shirt-Bosom Support.*—ISRAEL L. LANDIS, Lancaster, Pa. Application filed April 26, 1873.

A wire frame for supporting and expanding a shirt-bosom.

Claim.—The oval A, in combination with the ovals C C and B, which latter are provided with loops, the several parts being constructed as and for the purpose set forth.

139,798.—*Casting Chilled Rolls.*—GEORGE G. LONDELL, Wilmington, Del., assignor to himself and WILLIAM STUART, same place. Application filed January 21, 1873.

A sand-lined sleeve is adapted to the interior of the chill and made adjustable vertically so as to cast rolls of different lengths. The sleeve, being free to slide, descends with the roll when shrinking, and thereby prevents a separation of the same at the neck.

Claim.—1. The sand-lined sleeve D, applied to the mold so as to be movable and adjustable therein, as set forth.

2. The sand-lined sleeve, suspended in the chill by rods *m m*, or their equivalent, as specified.

3. The combination of the perforated sleeve D with the perforated box B and its prepared lining.

139,799.—*Ejector.*—WILLIAM B. MACK, Boston, Mass. Application filed March 11, 1873.

The solid spindle, by means of which is regulated the amount of steam issuing from the steam-cone, is formed with a concave tapering lower end. By reason of this peculiar shape the annular jet of steam is guided to the center of the delivery-pipe, forming a more perfect vacuum.

Claim.—In an injector or ejector, a solid stem or spindle, *n*, arranged to operate back and forth within a steam cone or tube, A, and formed with a concave curved tapering termination, n^1, substantially as and for the purposes specified.

139,800.—*Animal-Trap.*—ADONIRAM J. MATTHEWS, Hartwell, Ga. Application filed May 3, 1873.

A slightly-tilting platform connects with and operates two horizontally-vibrating half-gates, one before and the other behind said platform. The outer gate, or the one in the rear of the entering animal, closes as the inner one opens. There is also connected to the platform a locking device.

Claim.—1. The rising-and-falling platform H, counter-balance *g*, the swinging gates F and G, in combination with the stationary gates E E and passage-way D, all arranged substantially as described, and for the purpose set forth.

2. The combination of the rod or arm *i* on the platform H with the lever I, notched at one end, and the rod *r* on the post of the gate G, substantially as and for the purpose specified.

139,801.—*Spring for Vehicles.*—JACOB MAYER, Elmer, N. Y. Application filed April 21, 1873.

Combined torsional and elliptic spring.

Claim.—The combined elliptic and torsional spring C, composed of two halves, each consisting of two torsion-arms, *c c*, and elliptic arms *d d*, constructed to operate substantially as herein-before set forth.

139,802.—*Baker's Oven.*—DUNCAN MCKENZIE, Brooklyn, N. Y. Application filed April 9, 1873.

The products of combustion may pass either upwardly through the oven to the chimney D or laterally and downwardly to the chimney G.

Claim.—1. The combination, with the perforated oven-bottom C, the baking-chamber A, and smoke outlet or chimney D, of the flue or flues H, and chimney G in communication with the fire place or places from below, and an air-inlet, E, to the baking-chamber above the fire-places, substantially as and for the purposes herein set forth.

2. The closed bread-holders K of the revolving reel I, provided with the lids *f* for operation in concert with a stop to automatically open the same in relation with the opening E through which the bread is received and discharged, essentially as described.

139,803.—*Device for Detaching Horses from Vehicles.*—JOHN MCNEILL, Wells, Minn. Application filed April 23, 1873.

Working in a groove in the whiffletree is a rod forked at each end. The trace-hook is passed over one of the projections of each of the forks, and the draft holds the other projection against the cock-eye hook. A lever, E, is attached to the rod C at its center. This lever is bent around the whiffletree until its free end comes in front of it. At this point a strap is attached, which passes up to the driver. When the strap is pulled it turns the rods so that the trace-hooks slip off and the horse is released.

Claim.—1. The whiffletree B, rod C having forked arms or prongs *c c* and *c' c'*, ferrules D D having hook-guards *d d*, and lever E, the whole so combined and arranged as to operate substantially as described.

2. The ferrules F', having hold-backs F and flanges G, in combination with the springs H, substantially as described.

139,804.—*Machine for Granulating Cocoa-Nuts.*—THOMAS MILLS and GEORGE M. MILLS, Philadelphia, Pa. Application filed May 8, 1873.

The frame is made in two parts, the upper part bearing a grooved roller, and the lower part a toothed cylinder and an inclined grooved plate. A series of adjustable elastic wires are arranged at one end of the machine, the free ends thereof engaging in the notches of the toothed cylinder. The upper and lower portions are bolted together at one end by rigid bolts, and at the other end by a hinged bolt working in slots in both portions of the frame.

Claim.—1. The combination of the toothed cylinder H, the inclined grooved plate I, and the toothed roller E, the latter being arranged to revolve at a slower rate of speed than the said cylinder, and the whole being constructed and operating substantially in the manner described.

2. The combination, with the toothed cylinder H, of a series of elastic wires, arranged in respect to the axis of the roller substantially as set forth.

3. The elastic wires *p* clamped to blocks *m* and *n*, which are adjustable on the frame of the machine, as specified.

4. The beveled projections *y* of the upper portion of the frame, adapted to corresponding recesses in the lower portion, in combination with a bolt, K, hinged to the lower portion and having a nut bearing against the upper portion in the manner described.

139,805.—*Sewing-Machine Table.*—THOMAS W. MORRISON, New Brunswick, N. J. Application filed April 17, 1873.

A table constructed with a hollow standard and top with a hinged center, to which is attached the machine, and is hinged at one end to the table and secured by a spring-bolt, which, by withdrawing the center with the machine, may be reversed or turned within the table and the opening covered by a leaf or flap hinged to the edge of it. Within the hollow standard is journaled the fly-wheel to the sides of it, by which, with its crank and cord, motion is imparted to the machine.

Claim.—1. The combination of the sewing-machine, pivoted centrally within a hole in its table, as described, so as to be capable of revolving or swinging upside down below the table, and the bolts for retaining it in position, substantially as and for the purpose herein set forth.

2. The combination, with the bed-plate of the machine thus pivoted, of the flap or leaf E hinged thereto, as specified, essentially as and for the purpose described.

3. The combination, with the machine, pivoted at the middle, as described, of a stand having a central stem or column containing the fly-wheel, whereby the downward strain produced by the driving-belt is brought into a line parallel with the supporting-trunnions, substantially as specified.

139,806.—*Combination Mill-Pick.*—JAMES W. NANCE and DAVID LILLARD, Cornersville, Tenn. Application filed May 7, 1873.

Claim.—The combination of the socket or holder A, bits or points B B, set-screw *a*, plate *b*, handle C, and set-nut D, all substantially as and for the purposes herein set forth.

139,807.—*Rotary Engine.*—SAMUEL P. OCHILTREE, Orange, Ind., assignor of one-half of his right to GEORGE H. PUNTENNEY. Application filed April 23, 1873.

A double-cylinder engine with one central shaft, upon which are two side drums having cam-grooves in them for operating the valves which form the abutments when the revolving cylinder passes.

Claim.—The combination of the cylinders A A' with wheels D and pistons E E', the shaft G with central drum N, and side drums M M' having cam-grooves O O', the steam-chests E R, and the sliding abutments H H' with pins L L', all the parts constructed and arranged substantially as and for the purposes herein set forth.

139,808.—*Button-Fastening.*—MARCUS ORMSBEE, Brooklyn, N. Y. Application filed April 5, 1873.

Claim.—The button-fastener herein described, constructed with a flat head and an elastic tongue fitted to spring into the eye of the button, and having a shouldered loop to project through a hole in the shoe or other garment, as specified and shown.

139,809.—*Spring for Vehicles.*—PETER PENN, Cleveland, Ohio. Application filed October 8, 1872.

The clip embraces the leaves of the spring, and is held in place by a stud entering a recess in one of the leaves.

Claim.—The combination, with an elliptic spring, of a clip, B B', having a stud, *b*, for the purpose of holding the leaves of the spring in place without the usual beads and slots, all as set forth.

139,810.—*Knit Fringe or Border.*—JAMES PHIPPS, Philadelphia, Pa., assignor to MARTIN LANDENBERGER AND COMPANY, same place. Application filed April 4, 1873.

An imitation of the ordinary hand-made "peg-work," but produced on a knitting-machine, the crossings being secured by knitted loops.

Claim.—A knitted fringe or border consisting of body or surface threads *a* and *b*, crossing each other, one or both in zigzag lines, and bound together by chains of needle-thread *d*, extending longitudinally over the back of the fabric, substantially as herein described.

139,811.—*Lighting Gas by Electricity.*—WILLIAM A. PITT, New York, N. Y. Application filed February 5, 1873.

A pivoted conducting-wire, attached by an insulated support to a gas-burner and in electrical connection with one pole of a battery, (the burner being in connection with the other,) is so connected, by a silk cord, with a swinging crank on the gas-cock that, when the latter is turned to let the gas flow, the said pivoted wire is brought near enough to the gas-jet to transmit a spark and is immediately retracted by a spring.

Claim.—1. The method of lighting gas by means of an electric circuit closing and breaking device, arranged in proper relation to the burner, and combined with a stop-cock for enabling the circuit to be closed for igniting the gas by the opening movement of said cock, as herein shown and described.

2. The combination of the stop-cock attachment C^1, and the insulating-string I, with bent wire or igniting-finger F, spring H, and insulater E, for the purpose herein set forth.

3. The disk C^1 provided with crank-arms $C^2 C^3$, and with studs S S, combined with a stop-cock and circuit-closing device, for operation in the manner set forth.

139,812.—*Heating-Furnace.*—JOHN G. PORTER, New York, N. Y., and ELIJAH DAVIS, Jersey City, N. J. Application filed March 24, 1873.

Between the zigzag passages for the currents of incoming and outgoing air are zigzag passages for the products of combustion.

Claim.—The arrangement, substantially as herein described, of the fire-chamber A, the opening *c d* of different relative area, as specified, the upper and lower sets D D' of reverse or return flues *e f*, and the cold-air-circulating horizontal passages *i* with their inlets A, for operation in relation with each other, essentially as herein set forth.

139,813.—*Fire-Place.*—FREDERICK PROUDFOOT, Toronto, Canada. Application filed January 25, 1873.

The fire-basket is adjustable vertically upon the hollow post D. Through this post steam or vapor is supplied to the fire from the boiler. A hinged plate attached to a detachable fire-back may be used to deflect the heat. Doors may be opened to enlarge the fuel-space.

Claim.—1. The fire-basket or grate E, provided with a tubular shank, D', adjustable on the hollow post D, and combined with suitable fastening devices for retaining it at any desired elevation, as and for the purpose set forth.

2. The fire-basket or grate E suspended by chains carrying counter-balance weights, and combined with the tubular shank D' and post D, as and for the purpose specified.

3. In a fire-place constructed as described the water-tank or steam-boiler B, and the pipes C G, suitably arranged to convey the steam to the fire-basket and to the smoke-flue or chimney, as and for the purpose set forth.

4. In a double-front fire-place the detachable back or shield Y, provided with a hinged plate, Y', susceptible of being thrown at an angle to the fire for deflecting the heat into the room, as shown and described.

5. In a fire-place constructed as described the hinged door or doors N, arranged in relation to the fire chamber and lateral chambers of the fire-place in the manner shown, and for the purpose specified.

139,814.—*Rotary Harrow.*—ROLAND RAKESTRAW, Wyoming, Ill. Application filed April 1, 1873.

A harrow-hub made with radial arms and concentric flanges provided with vertical pins, over which V-shaped harrow sections are placed and passed into triangular recesses under the upper flange. The outer ends of the sections are adjustably secured by clevises and pins.

Claim.—The box or hub D made with radial arms *e* and concentric rims or flanges *f g*, concentric rim *f* being provided with vertical pins *b*, in combination with the harrow made in triangular sections A, hinged or hooked together, substantially as and for the purpose set forth.

139,815.—*Washing-Machine.*—LEMUEL REED, Allegheny, Pa. Application filed May 14, 1873.

The rubbing-cylinder is formed with triangular-formed rubbers of wood secured to rings at their ends by a flange upon the lower side and lugs upon the face, and with crossed arms, to the center of which the main shaft is secured and passes through it.

Claim.—The combination of the shaft A, heads B B with flanges *a* and lugs *b*, and the rubbers C C, all substantially as and for the purposes herein set forth.

139,816.—*Scraper.*—ALBAN H. REID, Brandywine Manor, Pa. Application filed March 27, 1873.

The scoop is drawn forward on the ways by the rope. When it reaches the cross-bar the handles are depressed by the attendant and the scoop elevated. After the scoop has passed the cross-bar the front edge of it may rest on the diagonal bars until it reaches the rear end of the cart, when it is tilted and contents emptied into the cart. The scoop is drawn back for another load by the return-rope.

Claim.—1. The combination of the handled scoop A, suitable hauling appliances, and the frame B adapted to the cart, all substantially as set forth.

2. The frame B composed of the parallel trussed bars *d d'*, cross-bars *e* and *f*, and diagonal bars *h h*, all constructed and arranged as and for the purpose set forth.

3. The handled scoop A, its wheels *x x*, the bail *m* connected to the axle of the scoop, and the within-described hauling appliances or their equivalents.

139,817.—*Harvester.*—BUSHROD W. S. RESSLER and CARTHON H. RESSLER, Tipton, assignors to themselves and RICHARD C. CREESMAN, Hagerstown, Indiana. Application filed February 27, 1873.

A hinged lever or secondary seat is connected by cords or chains and springs to clutch-pins, so that when the driver is thrown from his seat the supporting-wheels are locked and the cutting apparatus stopped.

Claim.—The combination of the seat-piece E, the bolts I connected therewith by cords or chains, the notches or recesses in the hubs of the running-wheels G, and the springs J, substantially as and for the purpose specified.

139,818.—*Speaking-Tube Annunciator.*—DAVID ROUSSEAU, New York, N. Y. Application filed October 8, 1872.

A folding tag or door is hinged at its lower edge so as to stand up against the mouth of a speaking-tube. By blowing through said tube the tag is thrown down, exposing a number on its outer fold, and simultaneously an arm attached to the tag releases a clock-work alarm. A device for resetting the tag, or a number of them, at the same time rewinds the clock-work alarm.

Claim.—1. The combination, with a drop-tag at or near the delivery-end of the speaking-tube, of a tag-setting device or mechanism for replacing the tag after it has been exposed, and a power-storing device operated by the tag-setting mechanism, and serving to actuate the call, substantially as specified.

2. The combination of the crank C, the spring *g*, the lifter *i*, the shaft D, the arms *h i*, and the weighted tag-lever *f*, essentially as described.

3. The combination, with the winding-lever K of the power-storing device used to sound the call, of a free lever, L, for operation by the crank C, substantially as specified.

4. The combination of an escapement, F, with the hand *q* of the swinging rod *m*, the stirrup *o*, and the weighted tag-lever *f*, essentially as described.

5. The folding drop-tag *c d*, constructed and arranged for operation in relation with the speaking-tube, substantially as specified.

139,819.—*Electro-Medical Bath-Tub.*—SAMUEL RUSSELL, Jr. New York, N. Y. Application filed March 17, 1873.

An inclined insulated diaphragm provided with a central opening, and a sliding gate is arranged in the bath-tub for the support of the back of the patient. A removable insulating foot-rest is also arranged to be used, if desired.

Claim.—1. In an electro-medical bath-tub the diaphragm D, provided with an opening, K, substantially as and for the purpose herein set forth.

2. In combination with the opening K, the cushion E or its equivalent, and gate F, substantially as set forth.

3. In combination with the diaphragm D, the packing-strips J J, substantially as shown and described.

4. In combination with the diaphragm D, the electrodes B C, arranged at opposite ends of the bath-tub, as set forth.

5. In an electro-medical bath-tub the hinged plate C', substantially as shown and described.

6. In combination with the diaphragm D the removable foot-rest G, substantially as set forth.

139,820.—*Cotton-Gin.*—PETER C. SAWYER, Macon, Ga. Application filed March 26, 1873.

The cotton-box is adjustably hinged at top to the front of the gin-frame and its inner surface is so formed that the revolving cotton will be compressed when presented to the saws, while the opposite side of the roll is expanded. The cotton-box is provided with a swinging front which is adjustable at top and bottom and which has ribs on its inner surface curving in opposite directions.

Claim.—1. The cotton-box G, having its end walls inclined inward from front to rear, as shown and described, whereby the cotton, after being fed through the top opening, will be acted upon by the saws, carried around, and be expanded in the front of the box, as and for the purposes set forth.

2. The cotton-box G, hinged at its top to the serrated bar E, which is slotted and secured by bolts for the forward and backward adjustment of the top of the box, said box being adjusted outward and inward at its bottom by the slotted block or blocks A A, all substantially as and for the purposes set forth.

3. The swinging front H, hinged at its upper end, and both the upper and lower ends made adjustable, substantially in the manner and for the purposes herein set forth.

4. The ribs *p p*, curved in opposite directions and attached to the swinging front H of the cotton-box, as and for the purposes set forth.

139,821.—*Adjustable Try-Square.*—CHARLES A. SCHAEFER, Chicago, Ill. Application filed April 12, 1873.

Two eccentric pins or screws, passing through the stock on a line with the inner edge of the blade, serve mutually to adjust the same, the blade being supported and secured by a permanent screw through the upper end of the stock.

Claim.—The blade B, hung upon the pin *b* as a permanent center, and adjusted by the two eccentric pins C C, as set forth.

139,822.—*Horse-Collar.*—JOHN N. SCHMITZ, Kilbourn City, Wis. Application filed March 1, 1873.

Claim.—1. In the construction of horse-collars the wooden blank A, having notch c^2 cut from its inner side near the lower end, and adapted to be closed when said blank is steamed and bent, in the manner shown and described.

2. The fastening device, consisting of the hooked bar H, having the loop *i* and socket-plates K provided with a series of holes, arranged and operating substantially as shown and described.

139,823.—*Wheelbarrow.*—JOHN B. SCHNEIDER, Kankakee, Ill. Application filed April 10, 1873.

The box or receptacle has pivoted bottoms, which, when not burdened, are held in place by springs; but, when the box is loaded, bars are inserted beneath the bottoms, and removed when the load is to be dumped.

Claim.—In combination with the side bars A and hopper B the doors B' B' hinged to the side bars, bolts D D, rod E, lever E' link *d*, and springs *b b c c*, substantially as and for the purpose set forth.

139,824.—*Coffee-Mill.*—LUI SCHULZ, Cincinnati, Ohio. Application filed April 5, 1873.

Receiving-vessel easily detached from the mill when required. Feather-edged ribs prevent the coffee-berries from clogging in the hopper.

Claim.—1. In a coffee-mill, the combination of the receiving-vessel C having a slot, *c*, enlarged at *c'*, frame A, and hopper B, connected together by pin a^1, substantially as set forth.

2. In a coffee-mill, the curved and feathered-edged ribs b^3 in combination with the hopper B and journal b^2, substantially as set forth.

139,825.—*Sash-Holder.*—WILLIAM SENK, Syracuse, N. Y. Application filed April 8, 1873.

An ornamental weighted lever, pivoted to a plate on the side of the sash, has its short arm expanded into a dovetailed recess, clasping a piece of rubber, and just below this rubber is formed a hook. The rubber serves as a frictional holder only until it drops into a recessed catch-plate. And below this first recess is a catch, with which, for greater security, the hook likewise engages as a positive fastener.

Claim.—The catch composed of the rubber *a* and the hook *b*, constructed as herein set forth, in combination with a catch-plate, E, having a recess, *d*, and catch *c*, as above specified.

139,826.—*Electric Annunciator.*—GEORGE W. SHAWK, Cleveland, Ohio, assignor of three-fourths his right to CHARLES F. UHL, ALBERT STORER, and J. GIBBEN, of same place. Application filed April 11, 1873.

Number is on an arm attached to armature, and is exposed by being lifted before an opening when armature is attracted.

Claim.—The armature C, bar D, yoke E, arm F, arm H, plate G, crank-shaft K with its arm L, and the electro-magnet B, combined, arranged, and operating substantially as shown and described, and for the purpose set forth.

139,827.—*Railroad Switch.*—CHRISTOPHER C. SHELBY, Spring Valley, N. Y. Application filed April 11, 1873.

The swing-rail D is pivoted at *d'*, and is connected by the links *a d e* to the switch-rails. When the switch is set for the siding, the short point rail A is brought into line with the main track, and, in connection with the guard-rail, guides a train approaching on the main track, in the direction of the arrow, safely to the main rail, the rail F' yielding sufficiently by its elasticity to allow the flange to pass.

Claim.—The combination, with a railway, of the switch-rails F F', connecting-rail A, supporting-rail D, and links *a d e*, substantially as and for the purpose specified.

139,828.—*Gas-Burner.*—ISAAC SIMMONS, Baltimore, Md. Application filed March 3, 1873.

This chimney is composed of a metallic base of small diameter, and a glass globe or supplemental chimney above. When placed on the burner the base affords a passage to supply air to the burner.

Claim.—The chimney herein described—that is to say, the metallic jacket E, combined with the glass F—constructed and adapted to operate as set forth.

139,829.—*Crib Attachment for Bedsteads.*—BENJAMIN SNYDER, Philadelphia, Pa., assignor to SARAH D. SNYDER and AUGUSTUS C. LEIDY, same place. Application filed April 18, 1873.

The bottom and side are hinged together, and the ends are hinged to the side. The side has legs to rest on the floor when the crib is drawn out. The bottom is connected by pins to two bell-crank levers, each of which has a roller resting and sliding on the flange of a rail, of which there are two, which extend across the bedstead, and are secured to the under side of the side rails of the bedstead. The front part of the bottom is also provided with two upright arms or links that have projecting pins that slide on the rails when the crib is in a folded position under the bedstead.

Claim.—1. The combination, with a bedstead, of guide-rails H, and a folding crib consisting of a bottom, B, and hinged side and ends, connected as described, so that the crib may be attached to the side rail of the bed and supported by the side A, or folded up and supported by the rails H beneath the bed.

2. The combination, with the rails H, side A, and bottom B, of the levers G, rods I, and links *y*, substantially as set forth.

139,830.—*Wheel for Vehicles.*—SYLVESTER T. F. STERICK, Georgetown, D. C. Application filed January 28, 1873.

The sockets are secured firmly by bands, and rest in a groove, and each may be detached without removing the others.

Claim.—1. A metallic spoke-confining and supporting-socket, B, applied to the spoke and hub of a carriage-wheel, in the manner herein shown and set forth, for the purpose specified.

2. The spoke-confining and supporting-socket B, formed with the flange D, and with internal walls corresponding to the external surface of the shoulder of the spoke, and applied to the spoke and hub in the manner herein described, for the object set forth.

3. A metallic rim for encircling a wooden hub, the rim being made of a series of separate metallic sockets and rigidly connected with the hub and spokes, in the manner and for the purpose specified.

139,831.—*Ear-Cover.*—MELVIN STONE, Vermillion, Ohio. Application filed March 22, 1873.

The spring forms a clamp for clasping the ear-muffs to the head.

Claim.—The spring-clamp ear-protector, constructed as described, consisting of the bent spring c, of suitable shape to be passed over the head, and having its looped ends *b* covered with cloth or fur, held full to form bags or ponches for the ears, as shown and described.

139,832.—*Fire-Tongs.*—CHARLES SWETT, Copiah county, Miss., assignor to CHARLES SWETT, and WILLIAM PALFEY, New Orleans, La. Application filed December 3, 1872.

Claim.—As a new article of manufacture, the tongs, consisting of the legs A A' and tube B, when the same are constructed, combined, and arranged so as to operate substantially as described.

139,833.—*Letter-Box Alarm.*—ALFRED TAYLOR, Brooklyn, N. Y. Application filed March 13, 1873.

A metallic arm rigidly attached to the door-plate, and passing through the door, carries a spring-lid for covering the letter-opening, a bell-trip operated by the lid, and a bell.

Claim.—The combination, in one apparatus, of a door-plate, a door, A', hinged to the plate, an arm, D, fixed to or forming part of the plate, a bell, H, secured to the arm, a hammer, *d*, and mechanism whereby the door, on being opened, is caused to operate the hammer, all as set forth.

139,834.—*Metallurgic Gas-Furnace.*—JOHN THOMAS, Middlesbrough, England. Application filed April 25, 1873.

Additional coal is fed upon the hot coke in or near the throat connecting the gas-generator with the dust-trap, through a suitably located hopper. Girder-shaped iron bars are laid upon the bottom of the gas-main, so as to leave a clear space through the length of the bottom opposite the end or clearing-door, through which dust or other foreign matter can be removed, said matter being eliminated from the gas by bricks with which the chamber above the bars is filled.

Claim.—1. The bricks *g*, in combination with the gas main or chamber O, substantially as and for the purpose herein set forth.

2. In combination with the gas-main O, provided with the bricks *g g*, the door-ways N and doors, arranged substantially as and for the purpose herein set forth.

3. The hopper L or equivalent, arranged over the throat of the gas-main for introducing coals or other carbonaceous material thereto, substantially as set forth.

139,835.—*Connecting and Disconnecting Car-Bodies and Trucks.*—CHARLES D. TISDALE, Boston, Mass., assignor to himself and SAMUEL SHACKELL, same place. Application filed March 15, 1873.

The car to which different-g⁹ged trucks are to be applied is run upon a transfer-truck which runs upon a supplementary track. A section of the main track is constructed with a sufficient incline to allow the trucks to be detached from the body as the car is carried over the inclined section when trucks of different gage are run under the body and secured thereto.

Claim.—1. The transfer-track *k* and the auxillary track, in combination with the main track, substantially as described.

2. In combination with the transfer-track *k*, the swinging jack-blocks *m*, substantially as shown and described.

139,836.—*Pigeon-Trap.*—NATHAN B. TYLER, Warren, Ohio. Application filed April 17, 1873.

Four triangular flaps hinged to the four edges of a square platform, when closed, form a hollow pyramid. Inside, and pivoted to the center of said platform, is a smaller one which, by an attached string, is partly and suddenly rotated at pleasure from a distance. The corners of the upper board press open the hinged flaps, and the bird thereupon escapes for the marksman.

Claim.—1. In combination with the main body of a trap, an auxillary movable bottom which partially revolves, as and for the purposes herein set forth.

2. In combination with the two bottoms A and C, the sides B, connected and operated as and for the purposes set forth.

3. The lever D and pin d for stationing the bottom C to the bottom A, as and for the purpose set forth.

139,837.—*Fruit-Parer.*—ANDREW TURNBULL and RODOLPHUS L. WEBB, New Britain, Conn., assignors to LANDERS, FRARY & CLARK, same place. Application filed June 6, 1873.

The shaft, bearing the holding-fork, is connected by two pinions with the driving-wheel. To the shaft of the driving-wheel is attached a pinion, which engages with cogs on the under side of the revolving table that carries the paring-knife. Above the frame of the forked shaft is a slide to throw off the apple when pared, which is operated by a projection on the revolving table working against a corresponding arm on a shaft, upon which shaft a pinion works in a corresponding rack in said slide.

Claim.—1. A paring-machine, composed of the forked shaft *a*, its operative-gears F P R, whereby the revolution of the said forked shaft is in the same direction as the driving-wheel, the frame A with its arm C supporting the table H, the said table caused to revolve by a pinion upon the driving-shaft and working in a gear beneath the table upon the side toward the driving-wheel, the said table carrying the knife-lever, all substantially as set forth.

2. The slide *t*, moving in a parallel line with the forked shaft *a* and actuated from the revolving table by the projection W thereon working against the corresponding arm *t* on the shaft *r*, upon which shaft a pinion works in a corresponding rack in said slide, substantially as and for the purpose specified.

139,838.—*Automatic Cradle.*—WILLIAM V. VAN DERVORT and ROBERT B. WALKER, New Antioch, Ohio. Application filed May 3, 1873.

The cradle is constructed with a circular toothed sector upon its rocker and a rack connected with the frame into which it works, and is held in place by arm having a guide-pin which slides in a cycloidal groove attached to the rack.

Claim.—The combination, with a cradle-rocker, of the rack *a*, arm C, pin *c*, toothed sector *b*, cycloidal groove *c'*, substantially as specified.

139,839.—*Illuminated Clock.*—EZEKIEL WADE, Elizabeth, N. J. Application filed January 30, 1873.

On the top of a common clock is mounted a globe or vase-dial in gear with the clock-movement so as to furnish an illuminated clock for night use, combined with the more precise time-dial for use by day.

Claim.—The combination, with an ordinary clock, having the dial B, the hour-hand C, and the minute-hand D, of the supplementary illuminated dial, vase, or shade E, the index G, and the spindle *b*, and gears *c d*, for operation by the mechanism which drives the hour-hand of the clock, and so that the illuminated dial revolves in unison with said hand, the whole being arranged essentially as and for the purposes herein set forth.

139,840.—*Pump and Fire-Engine.*—SAMUEL WETRICK and HENRY LATHROPE, Warsaw, Ind. Application filed March 30, 1872.

To a stationary circular chamber are secured radial pump-barrels, the pistons of which are operated by a ring and a cam on the driving-shaft.

Claim.—The fire-engine pump herein described, constructed with an immovable circular chamber, B, discharge-pipe C, radial pump-barrels E, rigidly attached, the valves D, together with the valved and pivoted pistons F operated by a ring, H, and a cam on the driving-shaft, as and for the purpose specified.

139,841.—*Coupling Tubular Lightning-Rods.*—JAMES H. WESTON, Cincinnati, Ohio. Application filed March 1, 1873.

The lower end of each section of tube is sufficiently enlarged to receive the upper end of the section below it, and it is provided with a small transverse slot, through which a split section or tongue of the entering portion protrudes, and this being bent outward serves to lock the sections together.

Claim.—The tubular lightning-rod herein described, having the lower portion A of each section sufficiently enlarged to admit the upper end B, of the next section, the sections being connected and secured together by means of the orifice C and tongue D, all as herein shown and described.

139,842.—*Driving-Rein Support and Protector.*—WILLIAM N. C. WILSON, Summit Point, W. Va. Application filed May 19, 1873.

The rein-support is adjustable in socket-stands, which are secured to the pole or shafts.

Claim.—A driving-rein support, consisting of the bent rod B *b*, socket-stand A *a'*, and clamp or set-screw *s*, all combined and applied to the pole or shafts, as set forth.

139,843.—*Middlings-Purifier.*—JOSEPH W. WILSON, Pawtucket, R. I., assignor of one-half his right to JOHN W. VOSE, same place. Application filed January 11, 1873.

Middlings fed from an adjustable feed-hopper into a reciprocating bolt having a cloth of such fineness that the middlings cannot pass therethrough, and subjected, while on such cloth, to currents of air from a blast and a suction fan.

Claim.—1. In a middlings-purifier, the combination, with a sieve placed in an air-tight chamber, and of such fineness as not to permit the middlings to pass through, of the fans I J, substantially as and for the purpose described.

2. The air-tight chambers A B, hopper C, spout D, fine screen-cloth E, and coarser cloth H, combined with the fans I J, arranged as and for the purpose described.

3. The combination, with hopper C, of the cut-off plate O, rod P, and cam-wheel Q, as and for the purpose described.

139,844.—*Bedstead-Fastening.*—CALMAN WOLF, Rochester, N. Y. Application filed May 9, 1873.

A cam is provided with cam-faces and shoulder-offsets, by which an end and a vertical movement is produced. The cam is turned by a key to engage or release the hooks from the fastening.

Claim.—The combination of the cam E with the fastening D, when said cam and the eye of the fastening are provided with the cam-faces *g d* for producing an end movement, and with the shoulders or offsets *h f* for producing a vertical movement, substantially as and for the purpose specified.

139,845.—*Cotton-Press.*—DAVID H. WOOLDRIDGE, Humboldt, Tenn. Application filed March 3, 1873.

Claim.—The bale-box A, provided with followers B and C C and door D, in combination with the levers E and G G, with their arms I and rollers *d*, and the guide-beam J, all constructed and arranged substantially as and for the purposes herein set forth.

139,846.—*Cartridge-Box.*—SAMUEL MCKENVER, United States Army, stationed at Mobile, Ala. Application filed May 17, 1873.

To open the box the outer section is raised until the cap clears the other, when it is free to fall outward and downward, exposing the cartridges for use.

Claim.—1. A cartridge-box made in two separate parts, connected by pivot-joints or hinges at the bottom, substantially as described.

2. A two-part cartridge-box, having a cover, b^2, and slotted at b^1 b^1 to slide as well as turn upon the pivot-bolts *b b*, as described, to allow the ordinary flap-cover to be dispensed with.

3. The pockets E attached by a pliable fabric, F, to the body of cartridge-box, as set forth, to allow the cartridges to be turned with their heads outward, and into an oblique position where they may be conveniently seized by the soldier.

139,847.—*Cartridge-Box.*—SAMUEL MCKENVER, United States Army, stationed at Mobile, Ala. Application filed June 2, 1873.

The cartridge-box is made in two parts hinged together, one part being longer than the other so as to fold over at the top, where it is fastened by a flap and button. When the flap is detached the outer half of the box opens downward and the contents of the box are exposed and ready for use.

Claim.—1. A cartridge-box formed of two parts hinged together, one made higher than the other so as to fold over it at top and allow it to be latched in the manner described.

2. The flexible connection *a* combined with the rod or pivot B arranged across the middle thereof, as and for the purpose set forth.

3. The flap C and button D applied at the top of a two-part cartridge-box, as and for the purpose specified.

REISSUE PATENTS.

5,440.—*Pump.*—ROBERT M. LAFFERTY, Toledo, Ohio, assignor to himself and E. P. SMITH.—Patent No. 104,604, dated June 21, 1870; reissue No. 4,678, dated December 19, 1871.—Division A. Application filed January 21, 1873.

The ends of the sheet of metal of which the lining is made are so secured that the lining may contract or expand with the pump-stock. The lining is secured to the stock by forcing the flanges of the former into the walls of the latter, or grooves may be previously made for their reception.

Claim.—A flexible or expansible metallic lining, B, in combination with a pump-cylinder, substantially as and for the purpose set forth.

5,441.—*Pump.*—ROBERT M. LAFFERTY, Toledo, Ohio, assignor to himself and E. P. SMITH.—Patent No. 104,604, dated June 21, 1870; reissue No. 4,678, dated December 19, 1871.—Division B. Application filed February 8, 1873.

The openings are curved from near the middle of the piston, leaving the lower part of the piston solid, thus lessening the liability to split. The upper part of the foot-plug is cup-shaped, and the disk-valves are radially and concentrically grooved.

Claim.—1. The piston C, provided with the curved opening *d* and with the cup-leather, or equivalent, and valve D, when each of the parts is constructed and arranged to operate substantially as and for the purposes specified.

2. The piston C and valve D, in combination with the plug E with concave upper face, as described, openings *f*, and cup-leathers or equivalents, all constructed and arranged to operate as and for the purpose set forth.

3. The arrangement of the barrel A, lining B, piston C, plug E, and valves D D', when the parts are constructed and combined substantially in the manner and for the purposes set forth.

5,442.—*Reservoir Cooking-Stove.*—GURDON G. WOLFE, Troy, N. Y.—Patent No. 76,292, dated March 31, 1868. Application filed July 24, 1871.

The water-tank fits into the rear end and forms part of the top plate of the stove, while a portion of this tank rests over the end flues of the stove and a portion extends downward and against the rear vertical end plate of the stove. Over the suitable openings in the said rear plate a damper is placed to regulate the flow of the products of combustion about the front of the tank. The exit-pipe may pass through the front part of the tank.

Claim.—1. The reservoir or water-tank A constructed with an upper bottom, F', and lower bottom A', and intermediate plate K, substantially as described.

2. The reservoir A constructed with an upper bottom, F', and lower bottom A', and intermediate plate K, in combination with the flue E, substantially as herein described.

3. The combination of the reservoir or water-tank A, constructed substantially as herein described, with a cooking-stove having a part or portion of the rear end of the top thereof removed, substantially as shown at Fig. 2 of accompanying drawings, so as to receive and contain the upper part or bottom F' of said reservoir, in the manner and for the purposes substantially as herein described and set forth.

4. The employment of the damper C', in the upper part of the rear and vertical end plate of the cooking-stove, in combination with the vertical flues in the rear end of the stove and with that part or portion of said reservoir extending below the top plate of said cooking-stove, as seen at Fig. 1 of accompanying drawings, and in the manner and for the purposes substantially as herein described and set forth.

5. The employment and arrangement of a reservoir or water-tank with a cooking-stove, so that a part of such reservoir shall be above the top of the stove and over the vertical flue or flues in the rear end thereof, and a part below such top plate, in the manner substantially as shown at Fig. 1 of the accompanying drawings.

5,443.—*Lining for Horse-Collar Caps and Harness.*—DEXTER CURTIS, Sun Prairie, Wis., assignor of one-half interest to GEORGE H. RICHARDS and HENRY GILMAN.—Patent No. 105,017, dated August 2, 1870; reissue No. 5,251, dated January 21, 1873. Application filed May 21, 1873.

The zinc is said to possess medicinal and healing qualities. The aperture for ventilation keeps the metal surface cool.

Claim.—The horse collar cap, consisting of the curved metal plates A B, secured together substantially as described, so as to leave an air-passage between them, for the purposes specified.

2. A horse-collar cap or pad constructed with an upper supporting-plate of iron or other suitable material, and an under surface or lining of zinc, said zinc surface or lining being adapted to the shape of the horse at the parts where it is to be applied, and being secured to the upper plate in any suitable manner.

3. A horse-collar cap having an upper supporting-plate of iron or other suitable material, and an under surface or lining of zinc, said zinc surface or lining not being in immediate contact with the upper plate, except at the places where it is necessary to secure the under plate to the upper one for support, for the purposes herein set forth.

4. In a harness a zinc bearing-surface shaped to the part of the horse with which it is to come in contact, substantially as and for the purposes specified.

5,444.—*Mold for Casting Knobs.*—CHRISTIAN REBSTOCK and JOSEPH OTTNER, Bridgeport, Conn., assignors, by mesne assignments, to THE BRIDGEPORT ELECTRO-CASTING COMPANY.—Patent No. 134,931, dated January 14, 1873.—Division A. Application filed March 22, 1873.

The mold is adapted for the reception of the outer shell of the knob and a spindle projecting from the inner shell. The inner shell forms the core and the fused metal is cast between them. A hard-metal tube is placed around the spindle, for bushing the spindle-hole and a hard-metal eyelet is inserted for bushing the shank screw-hole.

Claim.—1. A mold for casting knobs adapted for the reception of an outer shell, D, and of a spindle, K, projecting from the inner shell E, substantially as described.

2. A mold for casting knobs, so constructed that a bushing-tube around the spindle and an eyelet for bushing the fastening screw-hole may be set, substantially as shown and described.

3. In combination with a mold for casting knobs, the adjustable ring E, substantially as and for the purpose described.

5,445.—*Door-Knob.*—CHRISTIAN REBSTOCK and JOSEPH OTTNER, Bridgeport, Conn, assignors, by mesne assignments, to THE BRIDGEPORT ELECTRO-CASTING COMPANY.—Patent No. 134,-931, dated January 14, 1873.—Division B. Application filed March 22, 1873.

The knob is constructed of an interior and an exterior sheet-metal shell, the space between them being filled with metal.

Claim.—1. The metallic knob and shank, consisting of an exterior and interior shell, and the eyelet for the fastening-screw, the space between the shells being filled with metal, substantially as and for the purpose herein described.

2. The inner shell provided with projections or teats, substantially as and for the purpose described.

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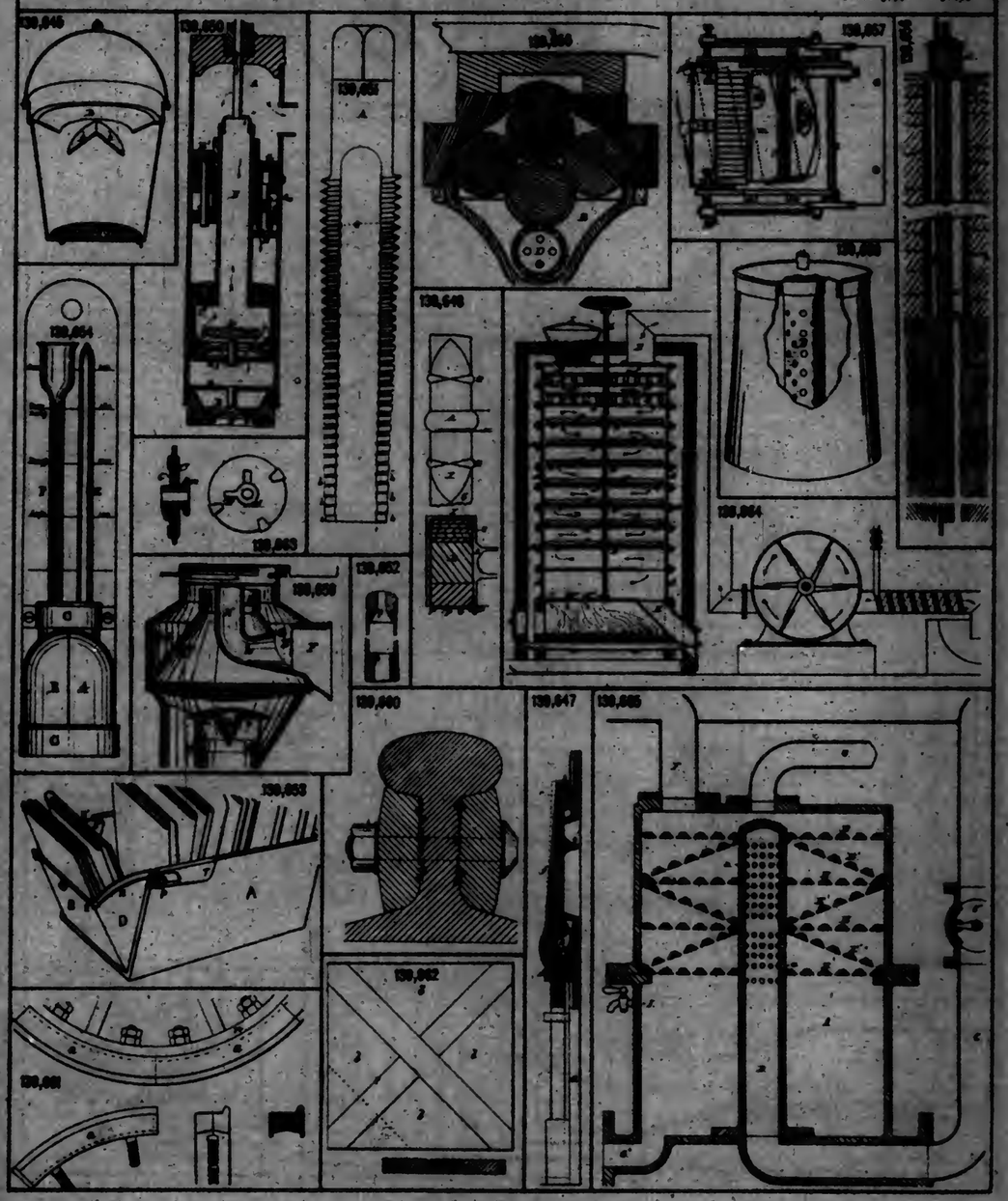
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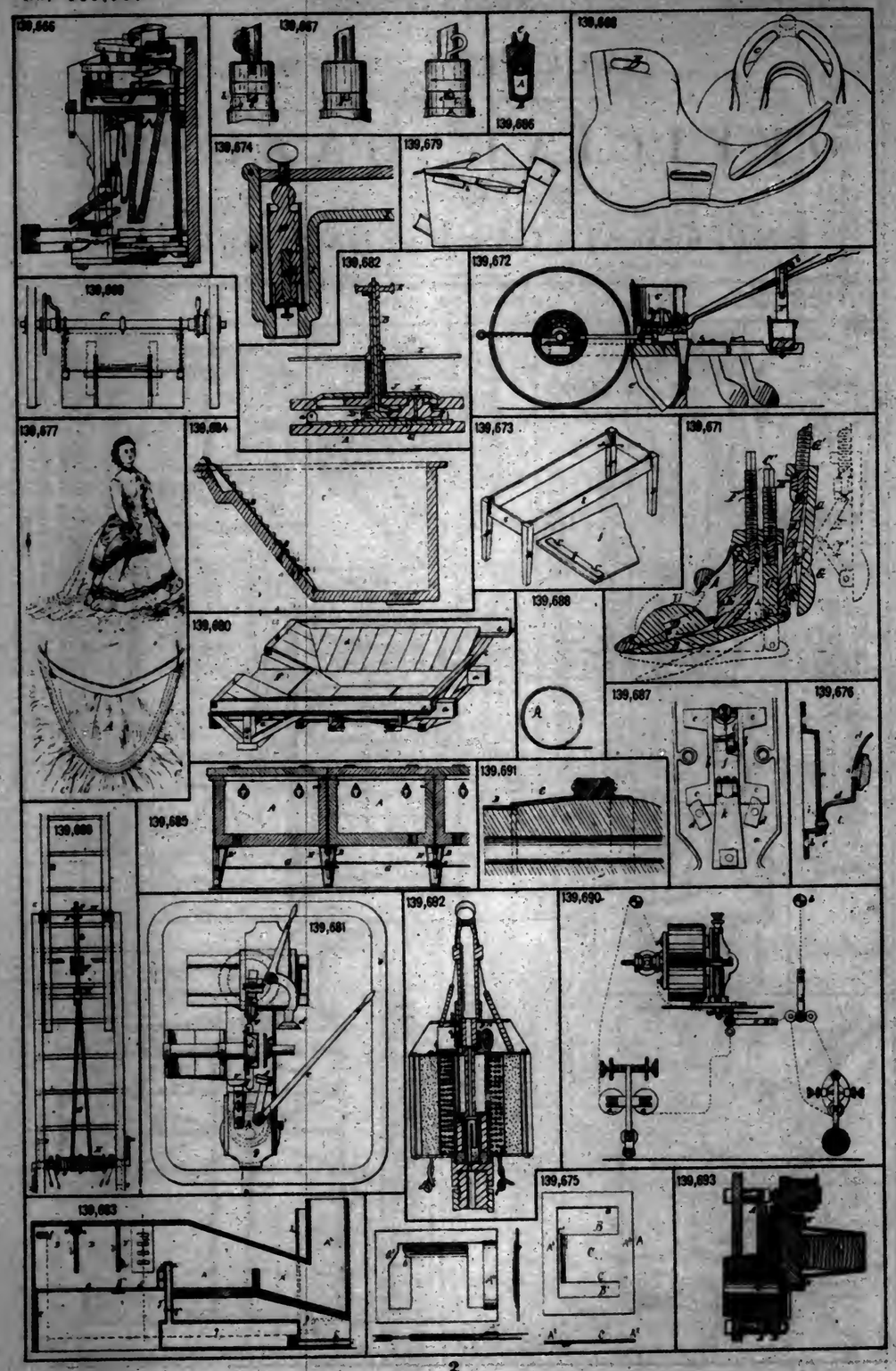
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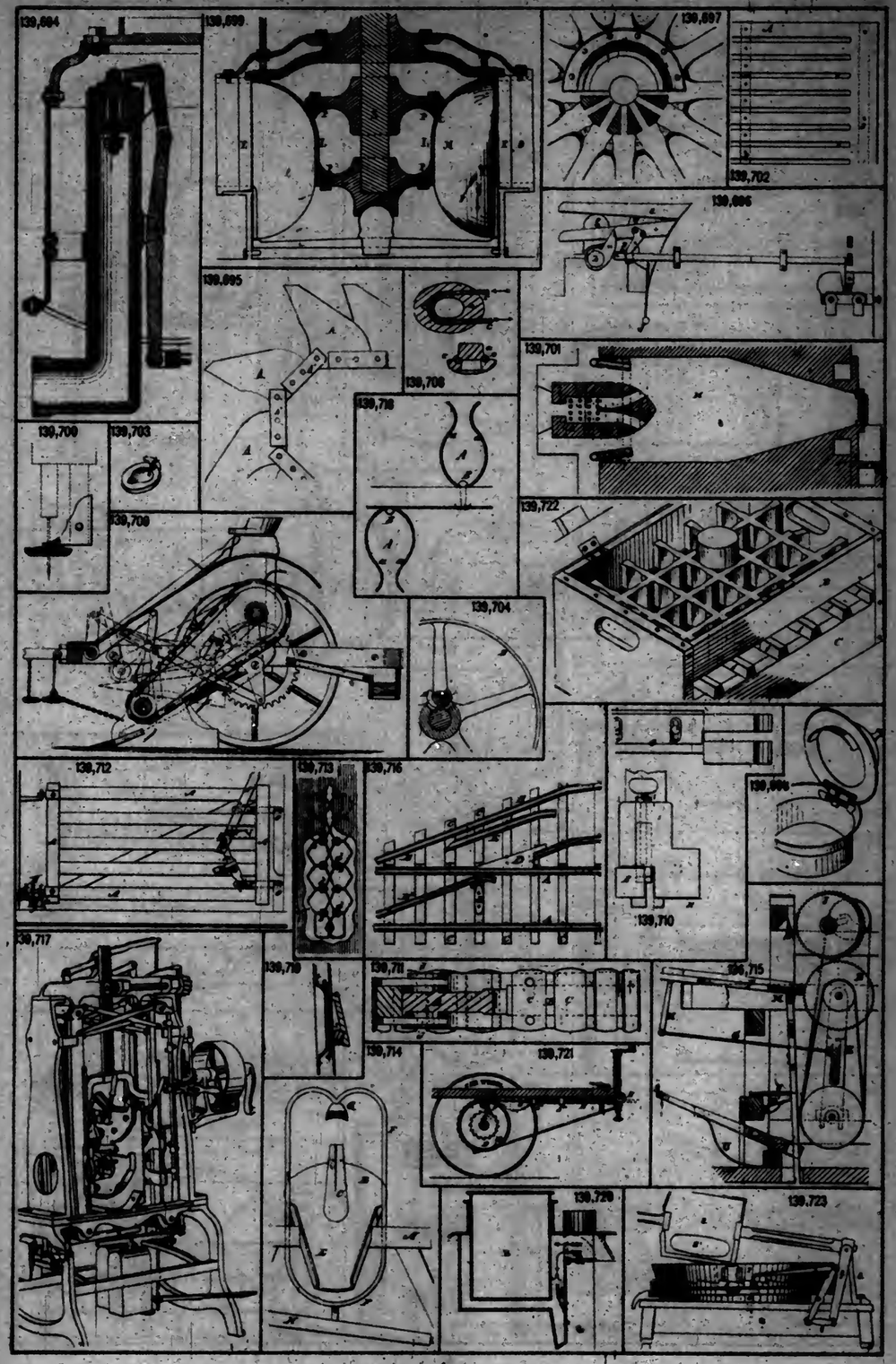


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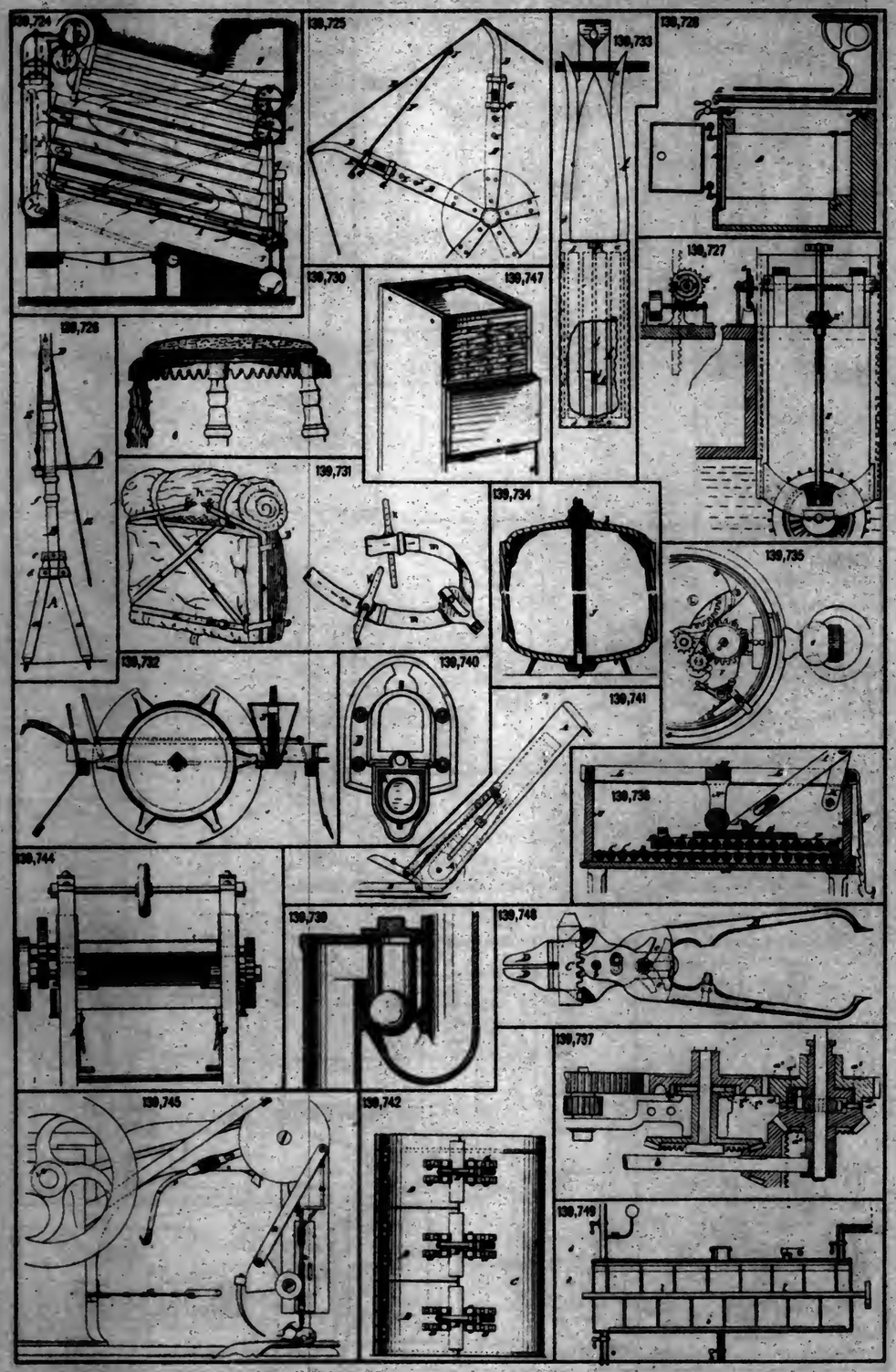
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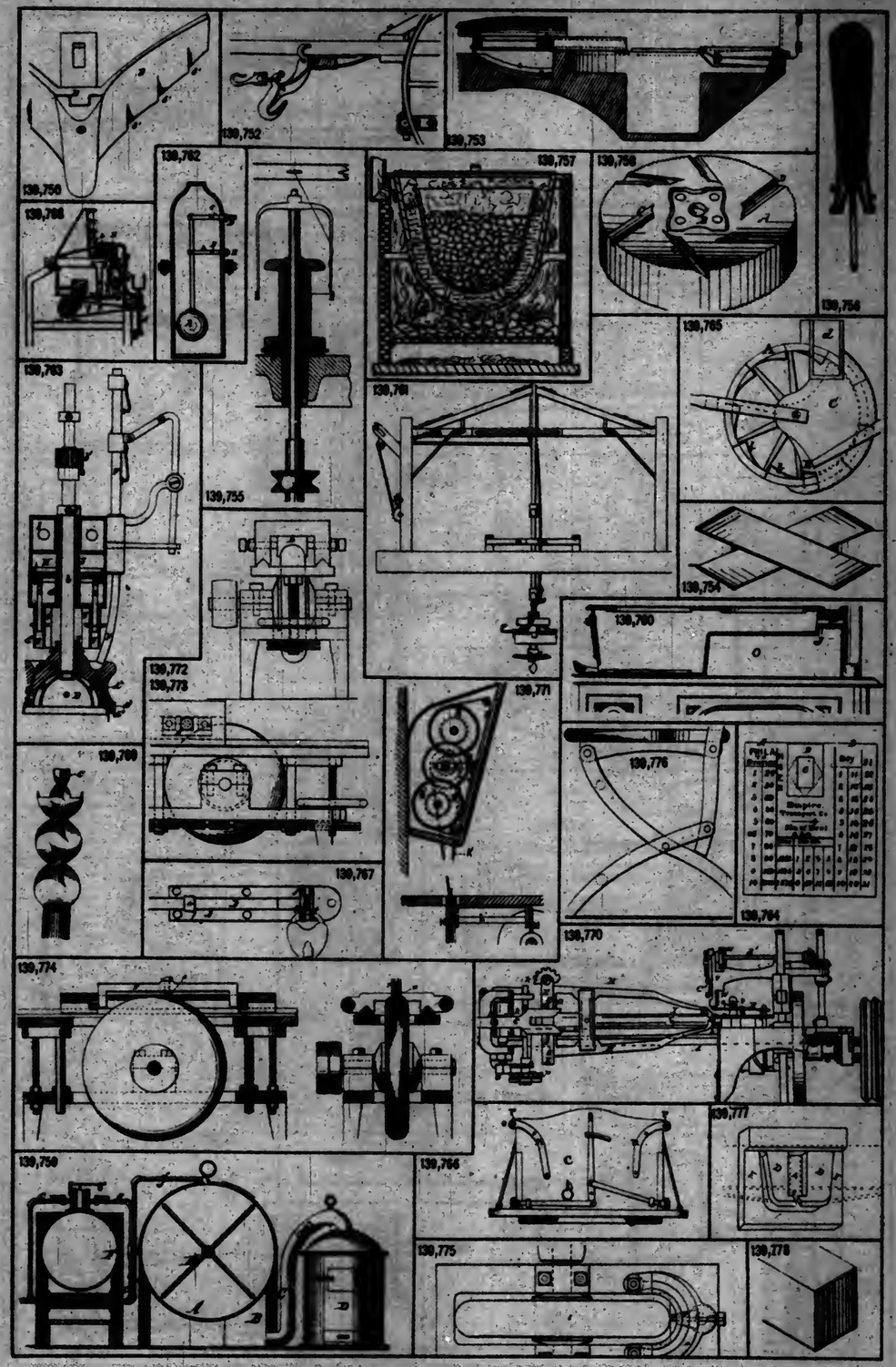
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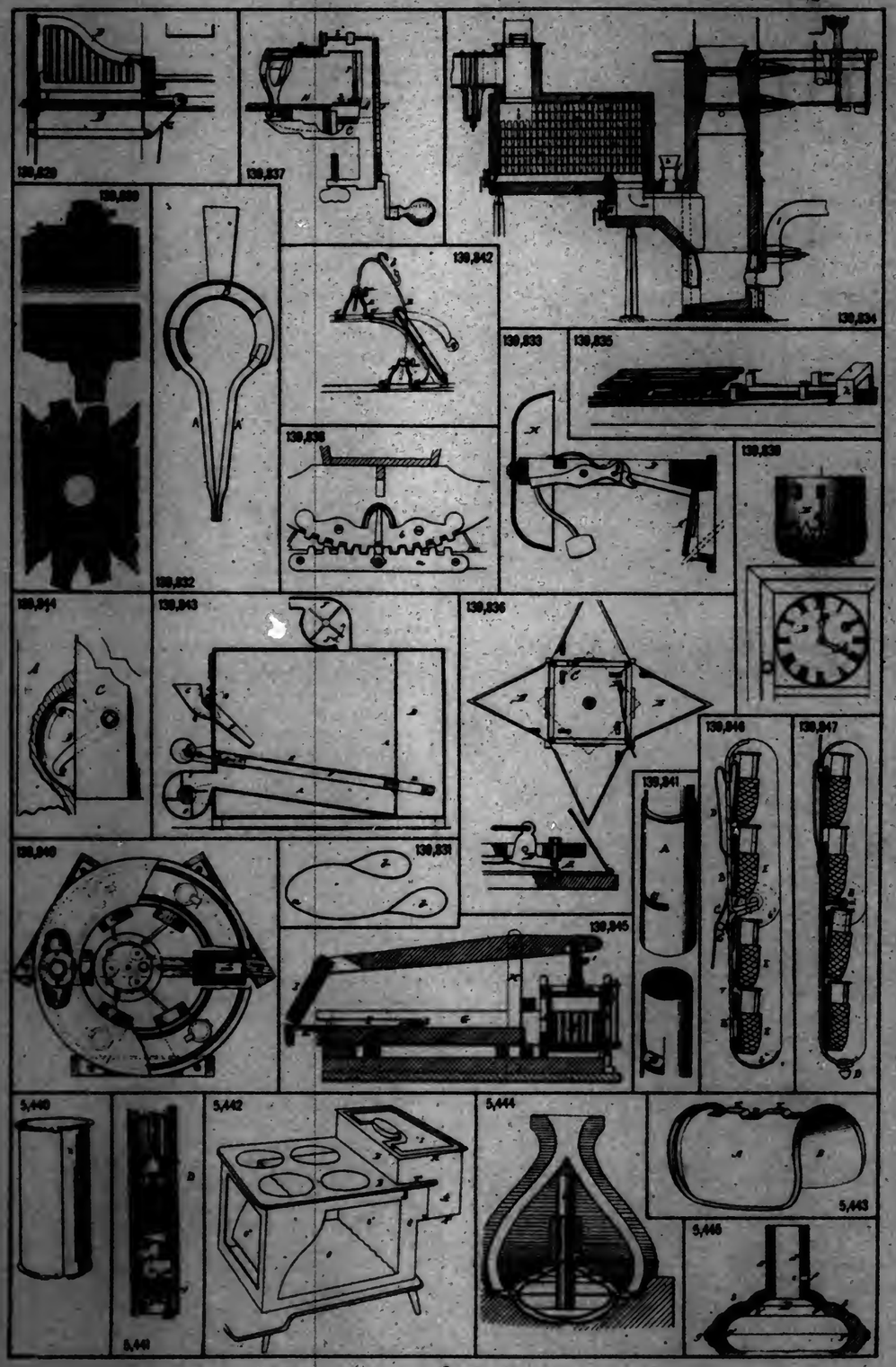
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COMMISSIONER'S DECISIONS.

MURRAY AND WUTERICH.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Murray and Wuterich for a patent for* MACHINE FOR MAKING BIAS BOX-PLAITED TRIMMING.—*Decided June 13, 1873.*]

A claim for a machine and a claim for the product of the machine will not be allowed in the same application. Each must be presented in a separate application for a distinct patent.

LEGGETT, *Commissioner:*

The question in this case is whether the machine and its product shall be permitted to be examined in the same application. The Examiner holds, upon reasons which are of weight, that they ought not to be. He asserts that such practice is not the rule, but the exception, in the Office; and argues that, if it were to be established as the rule, "apart from the question of revenue rightfully due the Government for the examination of each distinct subject of invention, it would lead to a subversion of the present system of classification, * * * greatly increase the labor of examination, * * and result, beyond doubt, in the multiplication of gross errors and the commission, inadvertently, of great injustice, both to inventors and the general public."

The practice has undoubtedly come into vogue, to some extent, of allowing a machine and its product to be claimed in the same application and go out in the same patent. I am not sure such a practice was ever wisely or, in strictness, legally admitted in any instance. Defects in the issue of a patent may be cured in court by force of the presumption that public officers have done their duty, and by the rule that a patent once granted is to be construed liberally in favor of its validity. An oath may have been omitted, and yet in such a case it has been held the patent would be sustained. (*Whittemore* vs. *Cutter*, 1 Gol., 433; *Crompton* vs. *Belknap Mills*, 3 Fish., 536.) However, as Commissioner Fisher remarked in *ex parte Linus Yale*, (Decisions, 1869, p. 110:) "It by no means follows because a patent has been sustained, notwithstanding certain informalities in the issue, that every succeeding patent is to exhibit the same informalities."

The division of inventions preliminary to the issue of patents, under the general rule that separate and distinct subjects of invention cannot be embraced in the same patent, is unquestionably a matter for the discretion of the Commissioner. (*Linus Yale*, ibid; Phil. on Pat., p. 218.) This fact was tacitly recognized, and the general rule and the "exception" to it were stated by the Supreme Court of the United States, in *Hogg* vs. *Emerson*, (6 How., 483,) which has often been referred to in connection with the subject of dividing applications. The Court said: "The public officers have generally declined to issue letters for more than one patent (invention) described in them. (Renouard, 293; Phillips on Pat., 218.) The courts have been disposed to acquiesce in the practice, as conducive to clearness and certainty; and if letters otherwise issue inadvertently, to hold them, as a general rule, null. *But it is a well-established exception* that patents (inventions) may be united, if two or more included in one set of letters relate to a like subject, or are in their nature or operation connected together. (Phillips on Pat., 218; *Barrett* vs. *Hall*, 1 Mason, C. C., 447; *Moody* vs. *Fiske*, 2 Mason, C. C., 112; *Wyeth* vs. *Stone*, 1 Story, 273.)" Under this "exception" the Court sustained the patent before them, the inventions "being all connected with the use of the improvements in the steam-engine, as applied to propel carriages or vessels." The claim covered only different parts of the same engine. In *Wyeth* vs. *Stone* Judge Story said: "A patent under the general patent act cannot embrace various distinct improvements or inventions, but in such case the party must take out separate patents." In *Goodyear* vs. *Providence Rubber Company* Judge Clifford said: "No doubt can be entertained that a new product or manufacture, and a new process or method of producing the new article, are the proper subjects of separate and distinct claims in an original patent." This dictum was uttered upon the consideration

of a patent reissued in divisions, covering, respectively, a process and article.

These and other authoritative cases establish the general rule, but they do not reach the precise question in hand, and, in the short time I have been able to devote to the subject, I have not found any authoritative ruling upon it. I have not even found a case in which the Commissioner has recorded his opinion in favor of joining a machine and its product in the same patent. All the cases of this character I have examined have been allowed by the Primary Examiners—possibly, however, upon sufficient authority, even if not upon sufficient reason. In general, applicants voluntarily make separate applications for their processes, machines, and products, to which no objection can be made. It is desirable that there should be as much uniformity as possible in the Office practice. If the applicant has a right to demand a patent for a machine and another for its product, where he is the inventor of both, as he unquestionably has, then it would be better that separate patents should be taken in all such cases. It is very doubtful whether the practice of granting both in one patent comes within the exception laid down by the Supreme Court in the case above quoted.

A machine is a distinct subject of invention, and its product, or the article which it is employed to make, is another distinct subject of invention, if new in itself. They are classified separately in the portfolios of the Office, and require separate examinations, and to grant both in the same patent complicates and increases the work of Examiners and greatly augments the danger of making mistakes and improperly duplicating patents. One chief object of claiming the article, when novel, is that it may perhaps be made by various machines or by hand. If it could not be, the patent for the machine would fully protect it in the hands of the inventor—except, possibly, against importations. The same is true of a process and the article produced by it. The two are entirely independent. The process may be new and the product old, or both may be new, and yet the product be capable of being produced by other processes.

It might be supposed, because the inception and perfection of a process and the product to be treated and improved by it, or of a machine and its product, are often conjoined in the mind of the inventor, that in this is to be found a reason why the two ought to be regarded as constituting one subject of invention to be embraced in a single patent. But this is not the proper criterion by which to judge of them. The inventions are to be contemplated when completed, and if they are then distinct, it is immaterial how intimately they may have been blended in their production.

Notwithstanding the precedents which exist, and admitting that such a practice as they indicate, if not strictly correct, is not fatal to the validity of patents, I think the time has come when—leaving out of consideration the perspicuity of the patents themselves, and the revenue to be derived under the law for examinations—a proper classification in the Office, so as to facilitate examinations and prevent mistakes in the issue of patents requires that processes, machines, and their products be presented for patent in separate applications.

The decision of the Examiner is sustained.

FREVERT *vs.* GAHR.—*Interference.*

[Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of H. F. A. Frevert and the patent of Conrad Gahr for the Manufacture of Harness-Pads.—Decided June 3, 1873.]

Where it is shown that a caveator failed to receive the notice sent him by the Office of a conflicting application, and he consequently filed no counter application, and a patent was granted to his competitor without an interference, he is not to be prejudiced thereby, but will be treated as if both parties were applicants.

The party who first reduced an invention to practice and forthwith obtained a patent for it, will be held the prior inventor, although his opponent had conceived it before, and had described it, but took no measures toward reducing it to practice, (except that he had assisted the other in doing so,) nor toward obtaining a patent till long afterward, and especially if he had made no claim to the invention meanwhile, but when challenged with claiming it had denied it.

THACHER, *Acting Commissioner:*

The invention in controversy is a machine or press for making harness-pads, by which the leather is stamped into form and the filling compressed within it. Gahr filed his application May 13, and obtained his patent November 28, 1871. Frevert filed his application for patent February 14, 1872. On May 10, 1871, however, he filed a caveat covering the invention. Although, as appears from the Office records, due notice was sent to Frevert, according to the usual practice in cases of interference of an application with a caveat, he and his attorney swear that such notice was not received. No response having come from Frevert, Gahr's patent was granted soon after the expiration of the three months for which his case had been suspended to await the filing of Frevert's application. Failing to receive notice, it may be questioned whether Frevert should be prejudiced by the grant of a patent to Gahr. The requirements of the law were all complied with, and in strictness it might seem that such advantage as results to Gahr from the possession of his patent ought to be recognized. The law, however, not only contemplates that notice shall be duly sent, but that it shall be received by the caveator; that he shall have the benefit of his caveat for which he has paid, which he cannot have if he does not receive notice of an interfering application. I do not mean to assert that the Office is bound to insure him notice, further than it does in ordinary cases, by duly mailing the notice and suspending the interfering application, as was done in this instance. But when it appears in proof as a matter of fact that the notice, through no fault of his, did not reach the caveator, then it follows that the patentee has obtained his patent without the proceedings in interference which the law contemplates shall be had in all cases of this nature. Whereas, if the notice had not failed to reach its destination, the parties would, in all probability, have come before the Office as applicants upon equal footing, as the law intends in such cases; now, by the fault of neither party nor the Office, the patentee, as such, has, upon the record, acquired an advantage. It cannot be ignored that his apparent advantage in this instance comes through a mere accident, and that if allowed its ordinary value the spirit of the law would obviously be subverted. Therefore I am not disposed to consider Gahr in any better position than he would have been had the interference been declared pending his application.

Frevert sets forth in his preliminary statement that he explained his invention to his brother July 4, 1870, and to others after that date, and that he filed his caveat May 10, 1871. Gahr, in his preliminary statement, dates the conception of his invention the "first part of the year 1871," and says that about the latter part of March or the first of April of that year he began work upon it, and by the middle of April he had completed an operative machine, which has been in use ever since. Soon after the completion of his machine he took steps to procure a patent. His application was forwarded to the Patent Office May 3, 1871. His testimony corresponds with this statement. Frevert, who was a workman in the shop of which Gahr was foreman, swears that he communicated the idea of the invention to Gahr. This is denied by Gahr, and it is proved that soon after Gahr finished his machine, upon being told that Frevert claimed to have made the invention, he questioned him about it in the presence of some of the men who had heard him claim it, when he denied ever having made the claim. No attempt is made to impeach the veracity of Gahr, while some of Frevert's associates swear that he likes "to talk," "to blow," and "to lie." Gahr appears to be the more credible witness, and, therefore, it must be held, as the Board have held, that he is an original inventor. This being established, there is nothing in Frevert's testimony to show that, in contemplation of law, he was the prior inventor. Admitting that he was the first to conceive the invention, (although there is some doubt as to whether it was precisely this invention that he conceived,) and that he explained it to his brother on the 4th of July, 1870, and to Spear, Bender, and Kunsendorf in February, 1871, who all corroborate him in these statements, he stood by and saw Gahr make and use the invention, and was hired and paid to assist him in doing it, knowing that Gahr claimed it as his own. He took no steps to reduce the invention to practice until long afterward, when it had been tested and patented by Gahr, and when accused of claiming it he denied it in the presence of several witnesses. His course under the circumstances, as has been held by the Examiner and the Board, does not show reasonable diligence in adapting and perfecting his invention, even admitting that he actually made it, so far as to originally conceive and explain it, which may be reasonably doubted. There is no evidence in his behalf that might not readily have been trumped up after the machine was made by Gahr. The only sketches he produces actually were made after the date of Gahr's invention. The entire support of his case is of a dubious character, as compared with that of Gahr, which is consistent, indubitable, and of the highest order. Gahr made his device, worked it, claimed it openly and uniformly, and sought a patent without delay.

I have no doubt, upon the proof, that the patentee should be held the prior inventor, and the decision of the Board is, therefore, affirmed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,819.—*Mode of Heating Drying-Cylinders by Steam.*—Granted to ALBERT P. PITKIN, July 19, 1859. Hearing July 2, 1873.

24,838.—*Pumping-Engines.*—Granted to HENRY R. WORTHINGTON, July 19, 1859. Hearing July 2, 1873.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODES and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to ORIN TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JENKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,342.—*Stoves.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL B. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,472.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 20, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,500.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors' Shears.*—Granted to ROCHUS HEINISCH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,662.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,493.—*Improved Door-Frame for Furnaces*, granted to PAUL A. SABBATON, June 21, 1859.

Claim.—The combination, with the mouth of the furnace, of the door-frame A and door B, when the said door-frame is provided with an opening larger than the door, into which the door shuts so as to close against the furnace or against a shield or false frame C, as and for the purposes herein set forth and described.

24,478.—*Improvement in Machines for Sawing Stone*, granted to ANDREWS T. MERRIMAN, June 21, 1859.

Claim.—The lowering the saw-frame by means of the long screws *s s*, acting on the sliding bars *f f*, and the stiff connecting-rods *r r*, hung with hinge-joints at the saw-frame, and the sliding bars *f f*, (instead of chains or rope,) for the purpose of holding the saw-frame steady and prevent any jumping motion, all in the manner described.

24,456.—*Improvement in Apparatus for Heating Buildings by Steam*, granted to SAMUEL F. GOLD, June 21, 1859; reissued February 6, 1872.

Claim.—1. A steam generator or boiler composed of a series of cast-metal sections each complete in itself, said internal sections being constructed substantially as described, to form the sides and top of the fire-chamber or combustion-chamber, and said end sections being constructed, substantially as described, to form the ends thereof, and the sections united substantially as hereinbefore set forth, by which construction the capacity of the generator and furnace is made capable of being increased or diminished by the addition or removal of internal sections.

2. Constructing the sections of the generator with raised rims *a* upon the edges thereof, by which construction the chambers E, rising above the water-line and out of the draft, are formed when the sections are united together.

3. The steam chamber or radiator P, made up of cast-metal sections, or sectional chambers G, substantially as hereinbefore set forth.

4. The combination of one or more of the radiators P, composed of cast-metal sections or sectional chambers G, with a steam-generator, substantially as hereinbefore set forth.

5. The flat steam-chamber G adapted to the radiation of heat, and cast in a single piece, substantially as hereinbefore set forth.

24,446.—*Improvement in Straw-Cutters*, granted to REUBEN DAVIS, June 21, 1859.

Claim.—1. The combination, with the roller D, of the convex teeth *d*, having the major diameter of their bases arranged parallel with the axis of the roller D, as and for the purpose herein shown and described.

2. The arrangement and combination of the roller D, cutter C, and cylinders E E', substantially as and for the purpose herein shown and described.

24,512.—*Improvement in Body-Bolsters for Railway Cars*, granted to AMBROSE WARD, June 21, 1859.

Claim.—1. The arrangement and combination of the trusses F, center plate D, sills G, and tension-rods I, substantially as and for the purposes herein shown and described.

2. Providing the center plate D with lugs K, protecting flange or cap *b*, lateral bearing-flange *e* at the center, fitting into cap in plate B, the vertical bearing-flange *d'*, fitting into the cap or groove in plate B, the whole combined and arranged as and for the purposes herein shown and described.

24,451.—*Improvement in Metallic Ears for Attaching Handles to Pails and like Vessels*, granted to THOMAS EVANS, June 21, 1859; reissued August 4, 1868.

Claim.—1. Metallic ears for attaching the handles to pails and other vessels formed with concentric annular corrugations surrounding the bail-orifice, subtantially as and for the purposes set forth.

2. I also claim so arranging the hooked ends of the bail as to give them an additional bearing against one or more of said corrugations, subtantially as set forth.

3. I further claim the drip opening or passage, formed by the downward continuation of the outer corrugation, for draining the interior cavity, as shown and described.

4. I also claim a bail-ear, formed with the portion surrounding the eye raised to receive the hooked end of the bail, when the marginal portion or portions thereof are formed on the plane of the part to which they are to be attached, subtantially as set forth.

24,484.—*Improvement in the Preparation of Straw for Paper-Pulp*, granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued July 3, 1860, numbered 997; and again reissued December 15, 1863, numbered 1,590.

Claim.—The process of subjecting straw or similar stalks to the simultaneous action of an alkaline liquid, agitation, and a high temperature such as is produced by contact with a surface heated by a fire-heat, whereby such a change is effected in the organization of the glutinous or resinous matters contained in the material that the fibrous material can be separated from them by washing.

24,484.—*Improvement in Apparatus for the Manufacture of Paper-Pulp*, granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued July 3, 1860, numbered 996; and again reissued August 13, 1867, numbered 2,730.

Claim.—1. The employment of two boilers in the reduction of paper "stock," so arranged in respect to each other that the steam-heat remaining in one after the boiling process has been completed may be transferred to the other boiler in which the boiling process is being commenced, in combination with the pipes or other means by which such steam-heat is thus transferred, substantially in the manner and for the purpose above described.

2. We claim the transferring of the steam-heat from a boiler in which paper stock has been boiled, immediately after such boiling has been completed, to another boiler charged with paper stock, for the purpose of utilizing the heat remaining in the first boiler after the completion of the boiling process therein, substantially in the manner and for the purpose above described.

3. We claim the arrangement and combination of the boilers, the furnace A, and the doors D D', E E', and F F', so as to apply the furnace-heat to either or both the boilers at pleasure, substantially in the manner and for the purpose above described.

24,484.—*Improvement in the Manufacture of Paper-Pulp*, granted to JOSEPH B. PALSER and GARDNER HOWLAND, June 21, 1859; reissued July 3, 1860, numbered 996; and again reissued August 13, 1867, numbered 2,731.

Claim.—1. We claim an internal division of the pipe *b*, which passes through the hollow journal of the rotary boilers by means of a partition, so that the steam from the upper portion of the boiler may find exit through one compartment of the pipe, and the liquid contents of the boiler may find an exit through the other compartment thereof, in the manner and for the purpose described.

2. We claim the employment of the perforated diaphragm *p p'*, when arranged substantially as described, to protect the pipes *A A' e e*, and to strain the liquid from the stock, as and for the purpose above described.

26,415.—*Improvement in Machines for Winding Thread on Spools*, granted to HEZEKIAH CONANT, December 13, 1859; antedated June 22, 1859.

Claim.—1. The combination, substantially in the manner hereinbefore set forth, of a traverse changer with right and left hand screws and with nuts which are alternately in gear with such screws, the combination operating as a whole substantially in the manner and for the purpose herein described.

2. A traverse changer provided with successive steps or teeth, substantially such as is before described, and acting upon lips, as hereinbefore set forth.

3. A stop-motion, substantially such as is described herein, for causing the machine to come to rest when a spool is filled, in combination with automatic apparatus, substantially such as set forth, for regulating the length of motion and change of direction of motion of a guide through which thread is delivered onto a bobbin or spool.

4. The adjustable lips, substantially such as set forth, in combination with a traverse changer, whereby spools of different lengths may be wound by the use of the same traverse changer.

5. Mounting the presser and thread-guide directly upon, or attaching it firmly to, the traverse-rod, as hereinbefore described, whereby the machine is cheapened, and performs its work more accurately.

6. In combination with apparatus, substantially such as described, for governing automatically the motions of a thread-guide, I claim a tension apparatus and stop-motion which arrests the motion of a machine when the thread breaks, substantially by the mode of operation set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 17, 1873.]

6,703.—*Lath-Machine Bed.*—WALTER F. BURTON, Chippewa Falls, Wis. Application filed June 5, 1873.

6,704.—*Heating-Stove.*—JOHN V. B. CARTER, Detroit, Mich., assignor to DETROIT STOVE WORKS, same place. Application filed May 17, 1873.

6,705.—*Carpet.*—JOHN FISHER, Philadelphia, Pa. Application filed June 5, 1873.

6,706.—*Carpet.*—JOHN FISHER, Philadelphia, Pa. Application filed June 5, 1873.

6,707.—*Carpet.*—JOHN FISHER, Philadelphia, Pa. Application filed June 5, 1873.

6,708.—*Carpet.*—JOHN FISHER, Philadelphia, Pa. Application filed June 5, 1873.

6,709.—*Flower-Vase.*—JACOB MERSEREAU, Port Chester, N. Y. Application filed May 24, 1873.

6,710.—*Nubia.*—JAMES PHIPPS, Philadelphia, Pa., assignor to MARTIN LANDENBERGER & Co., same place. Application filed May 17, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date June 17, 1873.]

1,314.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio. Application filed June 7, 1873.

1,315.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio. Application filed June 7, 1873.

1,316.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio. Application filed June 7, 1873.

1,317.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio, Application filed June 7, 1873.

1,318.—*Chewing-Tobacco.*—ALLEN & ELLIS, Cincinnati, Ohio. Application filed June 7, 1873.

1,319.—*Boots and Shoes.*—HORACE H. BIGELOW, Worcester, Mass. Application filed June 6, 1873.

1,320.—*Tobacco and Snuff.*—G. W. GAIL & AX, Baltimore, Md. Application filed April 21, 1873.

1,321.—*Whisky.*—HASTINGS & BERLIN, St. Louis, Mo. Application filed May 29, 1873.

1,322.—*Revolving Pistols.*—MERWIN, HULBERT & Co., New York, N. Y. Application filed May 24, 1873.

1,323.—*Revolving Pistols.*—MERWIN, HULBERT & Co., New York, N. Y. Application filed May 24, 1873.

1,324.—*Oils.*—MATTHEW, THOMAS D., and SAMUEL HODKINSON, Marietta, Ohio, and Louisville, Ky. Application filed May 20, 1873.

1,325.—*Blackberry Brandy.*—JAMES A. JACKSON & Co., St. Louis, Mo. Application filed May 28, 1873.

1,326.—*Insect-Powder.*—PETER REYNARD, St. Louis, Mo., and Louisville, Ky. Application filed June 9, 1873.

1,327.—*Lager Beer.*—THEODORE REMMENEY, Williamsburg, N. Y. Application filed May 31, 1873.

1,328.—*Axes and other Tools.*—THE COLLINS COMPANY, Collinsville, Conn. Application filed December 30, 1872.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date June 17, 1873.]

ORIGINAL PATENTS.

139,848.—*Composition Pavement.*—NATHAN B. ABBOTT, Brooklyn, N. Y. Application filed September 24, 1872.

The bituminous material of the surface is heated and spread evenly, and the quarts-gravel, which forms the wearing-surface, is spread upon this and rolled in, being first heated. The bituminous material forms the matrix or setting, and is not liable to come to the surface and form dust.

Claim.—The surface for composition pavements, composed of the bituminous material and grit, prepared and laid substantially as specified.

139,849.—*Baling-Press.*—JAMES M. ALBERTSON, New London, Conn. Application filed May 5, 1873.

Bolts connecting the cap-plate and base-plate of the pedestal inclosed in hollow columns, the whole passing within the revolving nut, and also serving to transfer the strain of pressing below this nut.

Claim.—1. The base-plate C and cap-plate D of the pedestal surrounding the screw A, connected together by means of two or more bolts passing from one to the other through the inside of the revolving nut B, substantially as described.

2. The bolts E E provided with the collar F; the portion below the collar connecting the parts of the pedestal together; the portion above the collar serving to connect the press-box to the pedestal; and the whole bolt as a means of transferring the strain of pressing below the nut B, substantially as described.

3. The columns H H within the nut B, when made with bolt-holes suited to the reception and passage through them of the bolts E E, connecting together the plates C and D, substantially as described.

139,850.—*Car-Coupling.*—OTTO ALBRECHT, Philadelphia, Pa. Application filed September 10, 1870.

Claim.—The socket-tube having an internal opening expanding toward each end, in combination with the bar C having a washer or nut adapted to the rounded face of the rear end of the tube, as specified.

139,851.—*Dinner-Can.*—ALBERT A. ARNOLD, Clyde, Ohio. Application filed March 10, 1873.

An outer covering composed of four pans or plates pivoted at their edges and held in position by springs. This outer covering serves to inclose within it vessels for coffee, pastry, salt, sugar, and other necessary dishes required to hold and protect a dinner, &c.

Claim.—1. The plates A with hinges, constructed so as to form a can when folded, or a table when spread out, as specified.

2. The combination of the plates A and coffee-can B, pastry-can C, vegetable and meat can E E, sauce-cup F, drinking-cup G, the bail and ears H H, as and for the purpose hereinbefore described.

139,852.—*Cooper's Croze.*—JAMES BAILEY, Springport, Ind. Application filed September 7, 1872.

Two cutting and one clearing tool are held in the stock by a single clamp.

Claim.—The bits D E F, in combination with the blocks O C and loop B, said loop having its edges chamfered and turned slightly downward to press upon the front and rear ends of the bits and hold them fastly upon the block and prevent clogging, substantially as described.

139,853.—*Pile-Driver.*—STEPHEN E. BAKER, Chicago, Ill. Application filed December 16, 1872.

The slip-lock can be adjusted at any height, so as to discharge the hammer when desirable, for light or heavy blows. The arms are hinged to enable them to be pressed outward against the frame, and thus hold themselves in place by friction when the lock-levers press against them.

Claim.—1. The adjustable slip-lock D C B E arranged and combined with the guides and hoisting-lock of a pile-driver, as described and shown.

2. The adjustable slip-lock D C B, in combination with pivoted arms E for holding the parts in place to unlock the levers I, as set forth.

139,854.—*Means for Creating Artificial Currents.*—EDWARD BANTZ, Baltimore, Md. Application filed October 31, 1872.

The apparatus is designed to create an artificial current in outlets of basins, docks, &c., where the water inclines to stagnate.

Claim.—The tunnel or sewer A with the branches B B, in combination with the shaft D with wheels E E, substantially as and for the purposes herein set forth.

139,855.—*Clip King-Bolt and Plate.*—HENRY M. BEECHER, Plantsville, assignor to BEECHER MANUFACTURING COMPANY, West Meriden, Conn. Application filed March 8, 1873.

The king-bolt and its clip are so combined that the latter can not work out of place.

Claim.—1. The concave metal king-bolt clip B, provided with the projection *c*, or its equivalent, to prevent the clip from working longitudinally out of place, substantially as shown and described.

2. The combination of the plate B, having the projections *c*, with the king-bolt A, having the recess *a*, substantially as and for the purpose described.

139,856.—*Instrument for Administering Balls to Animals.*—THOMAS H. BEX, Syracuse, N. Y. Application filed February 5, 1873.

A chambered rod is furnished with a spring-plunger, which is held retracted by an angular slot. The end of the rod where it passes between the teeth of the animal is provided with a rubber ring. The ball of medicine is shot down the throat of the animal.

Claim.—The combination of the rod chambered at C, furnished with rubber at B, and with the spring plunger-rod, and securing-slot, all arranged as shown and described, and for the purposes set forth.

139,857.—*Thrashing-Machine.*—LEWIS C. BICKINGS, Norristown, Pa. Application filed May 3, 1873.

Toothless flexible concave, permitting the projecting portion to be bent to retain the grain in closer proximity to the cylinder.

Claim.—The flexible concave A in combination with the thrashing-cylinder D, arranged and operating substantially in the manner and for the purpose herein shown and described.

139,858.—*Mold for Making Suppositories.*—LYMAN R. BLACKMAN, Newport, R. I. Application filed June 4, 1873.

The lower disk has a flange within which the upper disk fits, the openings in the two disks being caused to register by means of pins in the lower disk and grooves in the upper. The conical chambers are filled with the melted suppository mass, and as soon as the suppositories have chilled, the upper plate is lifted, freeing the tips, after which the plate is reversed and tapped to discharge the suppositories.

Claim.—1. A suppository-mold, consisting of an upper perforated plate, and a detachable base-plate having depressions to form the tips of the suppositories, substantially as set forth.

2. The combination of the plates A and B, provided with devices whereby the openings *a b* are caused to register, substantially as and for the purpose specified.

139,859.—*Apparatus for Manufacturing Boot and Shoe Heels.*—JOHN BLAKEY, Leeds, England. Application filed May 6, 1871.

Waste scraps are cut into proper shape by the machine designed for that purpose, built up with cement in a matrix with a retreating bottom, and under a plunger subjected, while still in the tube or matrix, to powerful pressure until the mass becomes set; then from the roll or body so formed suitable lifts are cut, and pierced with nail-holes in a machine which is provided with means for automatically ejecting the lifts when the awls are withdrawn.

Claim.—1. The described method or process of forming heels or heel-lifts for boots and shoes, by first cutting from waste scraps of leather small pieces, of appropriate size and shape; next, compacting and solidifying such pieces into a solid bar, with or without a wooden core, by means of adhesive material and pressure; next, drying the same; and then cutting or sawing the same into heel-lifts of the desired thickness.

2. The combination, with an endless traveling lattice-sheet or table, of a series of simultaneously operating cutting-dies of different sizes and shapes, adapted each for acting on separate bits of leather placed therein according to size and an appropriate stationary bed beneath the lattice or table to sustain the thrust of the series of cutting-dies, substantially as and for the purpose set forth.

3. The described combination of the hinged mold or box A, rammer B operating as described, and a friction-plug within the mold, or their mechanical equivalents.

4. The described apparatus for squeezing and solidifying the cemented rolls while in the mold A, the same consisting in the rams I and J, entering the opposite sides of the mold, and operated by the screw-spindle M', to force both rams toward each other, to compress the roll in the manner described.

5. In combination with an apparatus for pricking holes into the lifts, the described devices for automatically throwing the lifts, when pricked, out of the recess in the bed, the same consisting of the catch W', lever W, spring Z, and eccentric Y, or their equivalents.

139,860.—*Grain-Drill.*—GEORGE G. BLUNT, Bath, Ill., assignor to himself and J. L. ASHURST, same place. Application filed November 29, 1872.

A rectangular frame is mounted upon two wheels. The forward end of this frame carries a pair of opening runners, and upon the openers is mounted a box for containing the seed. Upon one end of the box is an adjustable slotted stop, which rests upon the main frame, and by the adjustment of this stop the depth of the openers are regulated.

Claim.—The combination of the adjusting standards or slides P with the seed-box B, draft-frame C, and main frame A, the standards being adapted to regulate the position of the draft-frame and seed-box relative to the main frame, as described.

139,861.—*Machine for Swaging Screw-Threads on Bolts and Screw-Blanks.*—REINHOLD BORKLEN, New York, N. Y. Application filed October 2, 1872.

A cylindrical blank-carrier and die, located between two concave dies, and a yielding guide having two pockets on its opposite sides, into which blanks are alternately fed with their points resting between the screw-threading dies. The oscillating mate-die carries with it the yielding-guide which supports the screw while the thread is being made.

Claim.—1. The stationary die or dies C C, and vibrating die D, provided with the guide L, the die D being operated by a crank movement directly from the rod G, substantially as and for the purpose herein specified.

2. The guide L and annular flanges *c e*, in combination with the springs J, hopper H, and dies D C C, substantially as and for the purpose set forth.

3. The annular guide L, with pockets *a*, in combination with the hopper H, when constructed as described and for the purpose specified.

139,862.—*Car-Spring.*—ALBERT BRIDGES, Westfield, N. J. Application filed March 24, 1873.

The rubber springs are incased by flat metal springs, which restore the rubber springs to their normal shape after pressure.

Claim.—A rubber spring, at the sides of which are flat metallic plates that are supported at their ends and bent by the action of the rubber as it presses against such plates, substantially as set forth.

139,863.—*Machine for Seaming Sheet Metal.*—CHARLES BROMBACHER, Tarrytown, N. Y. Application filed November 19, 1872.

In bringing the clamping-jaws together the flanges are not only grasped, but the metal is at the same time pressed down to its position on the roof.

Claim.—The standard *h*, joint *k*, arm *l*, jaws *a m*, toggle *n*, and handle *o*, in combination with the turning and folding jaw *c*, as and for the purposes set forth.

139,864.—*Composition Dressing for Roofs.*—HIRAM O. BROWN, Castleton, Vt. Application filed September 30, 1872.

Composition: Powered slate, fifty parts; sand, fifty parts; magnesian cement, fifteen parts.

Claim.—The non-conducting composition dressing for surfaces of wood, composed of the above-named ingredients, mixed and proportioned and applied in the manner substantially as set forth, for the purposes specified.

139,865.—*Magic-Lantern.*—ALBERT G. BUZBY, Philadelphia, Pa. Application filed February 21, 1873.

The outer wooden case of the instrument is separated by an air-space from the inner sheet-metal lantern-chamber. The top of the lamp fits against the base-plate of the inner chamber, which is provided with a suitable elongated opening for the blaze, air being admitted on either side of the wick or wicks. Transparent tinting-plates are hinged to a collar fitted to slip on the object-tube.

Claim.—1. A magic-lantern apparatus in which a combustion-chamber, A, of metal is surrounded, or partially surrounded, by an outer casing, D, of wood or other non-conducting material, substantially as herein described.

2. A magic-lantern apparatus in which the combustion-chamber A is covered at the top by a roof, D^1, lined with polished metal, or other reflecting material, for the purpose specified.

3. The combination, substantially as described, with the base-plate of the combustion-chamber, of a lamp having a dome arranged to fit snugly against the under side of the said base-plate.

4. The combination, substantially as described, with the outer lens-tube P of the lantern, of tinting-plates hinged to a detachable band M.

139,866.—*Thrashing-Machine.*—MONROE G. CARLETON, Indianola, Iowa. Application filed April 14, 1873.

Two revolving shafts carrying knives for cutting the straw into short lengths, the operative device being inclosed in a hopper or casing.

Claim.—1. In combination with a thrashing-machine, I claim the employment of one or more revolving shafts armed with cutters or knives for cutting the straw into short lengths, as and for the purpose specified.

2. The combination, with a thrashing-machine feeding-hopper, of a reciprocating band-cutter and revolving cutter-shafts, as and for the purpose specified.

139,867.—*Miter-Box.*—CHARLES CATON, Coshocton, Ohio. Application filed April 7, 1873.

An adjustable removable index-ring, *d*, with a graduated plate, E, is employed to give the proper angle of the miter. The graduated arc C is used for the beveled angle when the miter is to be in two planes.

Claim.—1. The combination of the saw-guide and a removable clamping index-ring, substantially as described.

2. The combination of the saw-guides having the clamping-ring with index-finger, and the socket-iron having the marked surfaces, and the arc C, as described.

139,868.—*Metal Can for Paint, &c.*—GEORGE H. CHINNOCK, Brooklyn, N. Y.—Case A. Application filed January 30, 1873.

The end of strip C, constituting loop *g*, is made tapering so as to be out of the way in soldering the remainder of the strip to the can, and is attached at its tip end to the can by a drop of solder.

Claim.—1. The slant or bevel *a* at the top of the body A, arranged to receive the flange *a'* of the cover B, while the strip C attached to the said cover is extended downward to the rib *f*, substantially as and for the purpose specified.

2. The loop *g* of the strip C, fastened at its overlapping extremity, and arranged with reference to the cover B and body A, substantially as and for the purpose specified.

3. The loop *g*, tapered as described, in combination with the strip C, arranged with reference to the cover B and body A substantially as and for the purpose specified.

139,869.—*Metal Can for Paint, &c.*—GEORGE H. CHINNOCK, Brooklyn, N. Y.—Case B. Application filed January 30, 1873.

The pocket F attached to the side of the can is for holding water and the paint-brush, when not in use, so as to keep it moist and pliable.

Claim.—1. The combination, with the flat inwardly-turned fold *a* at the top of the body A, of the external rib *b*, formed in the said body below the fold, substantially as and for the purpose specified.

2. The combination, with the body A, of the rigid transverse brace *d*, the said brace being arranged nearly or quite in line with the points of attachment of the bale B, whereby the inward strain upon the body A, when suspended by or from the bale, is counteracted, substantially as and for the purpose specified.

3. The combination, with a tubular transverse brace arranged in the upper part of the body A, of the inwardly-turned ends of the bale B, substantially as and for the purpose specified.

4. The combination, with the cover C attached to the body A by the soldered strip D, of an orifice *m*, provided either in the cover of the body, and, when the can is filled, closed by the soldered cap or disk *g*, substantially as and for the purpose specified.

5. The combination, with the body A, of the pocket F, substantially as and for the purpose specified.

139,870.—*Paper Bag.*—GEORGE H. CHINNOCK, Brooklyn, N. Y. Case A. Application filed April 2, 1873.

A strip of paper wide enough to form the front and back and an overlap, is perforated with oblong holes, a bag length apart, through which the sheet or tube is severed. When folded and pasted at the side and bottom, the portion cut out provides an opening lip.

Claim.—As a new article of manufacture, the paper bag formed from the blank represented in Fig. 1, and folded and pasted at one edge and at bottom, specifically as herein set forth.

139,871.—*Shoe-Lacing Fastening.*—BENJAMIN B. CHOAT, Springfield, Vt. Application filed April 16, 1873.

The device is made of a continuous piece of wire bent in serpentine form first in one direction and then in the other, and having shanks with eyes at their extremities to secure it to the shoe.

Claim.—The new manufacture or shoe-lacing fastener, substantially as described, constructed of wire bent, as set forth, so as to have the arched recess *a*, the elastic wings or jaws A, A, and the shanks *e e* provided with eyes *f f*, all arranged essentially as represented.

139,872.—*Windlass and Capstan.*—DAVID N. B. COFFIN, Jr., Boston, Mass. Application filed December 8, 1871.

Claim.—1. In a windlass, the combination, with a single shaft, of two or more fast friction-wheels, a corresponding number of correlative loose chain-wheels, and suitable means for locking the chain-wheels severally to their respective friction-wheels or to the shaft, substantially as and for the purposes specified.

2. The combination of the fast friction-wheel *a*, loose heaving-gear *f*, loose chain-wheel *g*, and lock-bolts *h*, or their equivalents, operating substantially in the manner and for the purpose specified.

3. The heaving-gear, friction-wheel, and chain-wheel, as arranged with relation to one another, when the flanges of the gear-wheel and the chain-wheel are constructed as described so as to form local openings or annular openings for a partial exposure of the lock-bolts *h* in the friction-wheel upon both sides thereof, substantially as and for the purpose specified.

4. In a windlass, the combination of two or more loose chain-wheels, *g*, and a corresponding number of independent riding-pawls 17 acting upon the chain-lugs 21, substantially as and for the purposes specified.

5. The independent riding-pawl 17, constructed at its free end, as shown at *x y*, to set upon the loose chain-wheel in the manner and for the purpose specified.

6. The combination of the friction-wheel *a*, friction-strap *l*, and spring *z*, substantially as and for the purposes specified.

7. The gear-wheel *v* upon the capstan-shaft, in combination with the shiftable gear-wheel 10, having a flange, 14', and the clasp 13, substantially as and for the purpose specified.

8. The capstan-pawls having lateral lugs, or their equivalents, formed upon them, in combination with the fixed catches upon the capstan-barrel, all substantially as shown in Fig. 9, and for the purpose specified.

9. The spindle, barrel, and head of the capstan, in combination with the inclined and inverted taper-gears 13 14 15, gear-carrier *m*, and lock-bolts *p* and *n*, or their equivalents, all arranged and operating substantially as and for the purpose specified.

10. The inclined and inverted taper-gears 13 14 15, and gear-carrier *m*, in combination with the sliding lock-bolts *n*, substantially as and for the purpose specified.

11. The center-bearing, constructed substantially as shown and described, whereby it is made to support the main shaft *b*, and at the same time hold the end of the capstan-shaft in position, and prevent it from being carried upward by the action of the wheels into which its gear-wheel meshes.

139,873.—*Manufacture of Funnel.*—LEVI R. COMSTOCK, Baltimore, Md. Application filed January 18, 1873.

Claim.—The perforated nozzle-blank for funnels, provided with the extension B in the same piece of metal to cover in the air-channel, as specified.

139,874.—*Reed-Organ.*—SAMUEL J. CROCKETT, Boston, Mass. Application filed March 29, 1873.

Involves swell-valve connections to draw-stop.

Claim.—1. The arm C or C', the bent lever E or E', the radial arm G, the inclined plane *d*, the cam *e*, and the slide-rod K for depressing each of the valves A or A', combined and arranged as explained, the radial arm being provided with a spring for moving it upward.

2. The slide-rod K, the inclined plane *d*, and the radial arm G, applied to the cap so as to be movable therewith, as described in combination with the lever E and the arm C, arranged together, and applied to the key-frame and the valve A, as set forth.

139,875.—*Heddle-Eye Opener.*—JOHN H. CROWELL, Providence, R. I., assignor, by mesne assignment, to JOHN KENDRICK, JOSEPH H. KENDRICK, and JOHN H. CROWELL, same place. Application filed May 5, 1873.

Two vibrating arms with their free ends bent toward each other and rigidly attached to the opposite sides of a common axis carry each a transverse bar, on which are set, in a straight line, pointed spurs or eye-openers. These arms vibrate within the slots of two fixed plates between which the heddle is slowly carried, and at each vibration one plate serves as a support for the heddle as one series of spurs enters the eyes, while the other plate serves as a stripper to clear the eyes from the opposite series of spurs. To allow the spurs to have a slight lateral movement in case their points strike upon a knot, they are attached to a small blade-spring, and the shank is set in a short transverse slot in the supporting-plate.

Claim.—1. The combination of one or more vibrating eye-openers, L, a holder or support, J', while the eyes are being opened, and a stripper, J, to remove the eyes from the openers, substantially as described.

2. A machine for picking open the eyes of weavers' harnesses, composed of the dual vibrating arms G G^1, armed with spur-points or eye-openers L L', and the devices J J', acting alternately as supports and strippers, all in combination, substantially as described.

3. The combination of the eye-openers L L^1 with their supporting-plates K K', and springs N N', or other yielding device, substantially as described.

139,876.—*Bit-Stock.*—AUSTIN P. DABOLL, New London, Conn. Application filed March 29, 1873.

The head C is retained upon the neck A by a ring D, confined by the screw-sleeve B.

Claim.—In the bit brace or stock, the split-ring D, arranged in the circular groove *a*, and with the lower end of the head C and within the screw-cap B applied to such head C, as set forth.

139,877.—*Flange-Union.*—AUGUST A. DAHL, Titusville, Pa. Application filed April 18, 1873.

The hollow half of the union is cast with an annular seat around its tapped eye, the seat being of suitable depth to receive an annular gasket. The entering half is made with an annular washer around the tapped eye, which, when the two parts are put together and secured by bolts and nuts, will bear against the gasket and make a tight joint. To prevent the two parts of the coupling from turning on each other, they are bound by dowel pins.

Claim.—1. An improved flange-union, consisting of the female and male blocks, *d g*, each having a tapped eye, *f*, and exterior bolt-holes *h'*, the female part *d* being provided with a depressed gasket-seat *d'*, and the male part *g* with a raised washer, *g'*, substantially as set forth.

2. The arrangement of interlocking uneven surfaces outside the recess-gasket and washer in a flange-union, substantially as set forth.

139,878.—*Combined Stop and Check Valve.*—AUGUSTUS A. DAHL, Titusville, Pa. Application filed March 13, 1873.

A side opening in the plug leads to the center and top where it is closed by a flap-valve held down by a spring. The plug may be locked open or shut by a bolt and key.

Claim.—1. The combination of the hollow plug or stop-cock *a*, a check-valve opening outward seated on its open end, and the chamber *b'*, arranged for the through flow of fluids, substantially as set forth.

2. The arrangement, in a line of pipe, of a stop-cock with its head projecting downward, and its open discharging end upward, in combination with a check-vale seated on such open upper end, substantially as set forth.

3. The combination of a hollow plug or stop-cock, a check valve opening outward seated on its outer open end, and a spring for pressing it to its seat, either wholly or in connection with the back pressure of the fluid, substantially as set forth.

4. The arrangement of a locking-bolt relatively to the stop-cock and its case, substantially as set forth, whereby the stop-cock is locked either open or shut.

139,879.—*Stove-Polish.*—JACOB I. DANFORTH, Newburyport, Mass. Application filed April 9, 1873.

One pound of powdered copperas is dissolved in one gallon of cold water. Two ounces of ground logwood and one quart of water are boiled down to one pint. It is then strained and mixed with the dissolved copperas. The mixture is then used as a dissolvent for the ordinary stove-blacking.

Claim.—As a dissolvent for stove-polishes, the within-described liquid composition, formed of the ingredients herein specified, in about the proportions and for the purpose set forth.

139,880.—*Pipe-Stem.*—JONATHAN DAVIS, St. Paul, Minn. Application filed October 16, 1872.

The outer shell of the stem incloses a tube having an ascending and a descending spiral groove on its periphery. The smoke rising in one groove returns in the other and enters the interior of the tube, through which it is conveyed to the mouth.

Claim.—The outer stem A, in combination with the tube B having ascending spiral groove *a* and descending spiral groove *b*, on its periphery, substantially as and for the purpose described.

139,881.—*Fumigator Bee-Hive.*—ABRAHAM R. DENLINGER, Gordonville, Pa. Application filed May 9, 1873.

A tube of sufficient size to hold the burning substance has a perforate plate at each end, beyond which a conic extension at its small end receives a tube. At one end this tube expands to form a mouth-piece; at the other it narrows to a point for the emission of smoke. The diaphragm on the mouth-piece side is removable with that of the conoid piece for the introduction of the fire.

Claim.—The cylinder A and top C, each provided with a perforated diaphragm, *a b*, and tube or tubes D E F, with the mouth piece *c*, and conic end *f*, substantially as shown and described, for the purpose specified.

139,882.—*Apparatus for Forcing Beer and other Liquids from Barrels.*—JOHN DEVLIN, Brooklyn, N. Y. Application filed March 27, 1873.

Mounted on a reservoir is an air-pump, the piston-rod of which is hollow and is provided with a check-valve. The air is conducted to the reservoir through a pipe provided near the pump with a check-valve, and near the reservoir with a two-way cock, by means of which the air may be either admitted to the reser-

veir or transferred to the air-pipe connected to the two-way supply-cock. The supply-cock is so arranged that it opens the passages for supplying air to and liquid from the barrel, or closes the passages simultaneously.

Claim.—1. The combined air force-pump and reservoir A A', provided with the hollow piston-rod *a*, screw-plug *c*, check-valves a^2 a^3, intermediate pipe a^4, two-way cock a^5, and lever B, arranged substantially in the manner described, in combination with the system of air and liquid supply-pipes, arranged substantially as described, for the purpose specified.

2. The two-way liquid-supply cock D, constructing and operating as described, in combination with the air-pipes *d* d^1, and d^2, and liquid-supply pipe *e*, for the purpose herein specified.

139,883.—*Ruffler for Sewing-Machines.*—GEORGE E. DOLTON, Monee, Ill. Application filed October 16, 1872.

The ruffle-former, consisting of a ruffled notched plate, which receives the strip to be ruffled, is reciprocated between the upper and lower plates projecting from the presser-frame. The ruffle may be formed and attached above or below a plain strip, or between two strips.

Claim.—The frame A, having the upper plate *c* and lower arm or plate a^1, the guide-finger P, guide *s*, opening a^2, and bearing B, in combination with the ruffle-former E, sliding between the upper and lower plate, the lever C, and the spring J, substantially as and for the purpose described.

139,884.—*Loom-Temple.*—WARREN W. DUTCHER, Hopedale, Mass. Application filed May 9, 1873.

Claim.—1. In the loom-temple, the roller-cap D, provided with the lip E and the abutment-receiving recess *e*, arranged as set forth.

2. The cap D provided with the lip E, and held in place on the abutment F by the roller-spindle C going through the said lip and being screwed into the trough or its abutment, as explained.

139,885.—*Cartridge-Box.*—WILLIAM H. ELLIOTT, Ilion, N. Y. Application filed May 1, 1873.

Claim.—The combination, with the frame or outer case, of a circular revolving cartridge-holder formed of two radially-corrugated plates, whereby radial receptacles are provided for the cartridges and great strength is imparted thereto, substantially as described.

2. A rotatory cartridge-box in which the radial cartridge-receptacles are inclined to the plane of their revolution, substantially as described and for the purposes specified.

3. A frame or outer case of a revolving-cartridge receptacle, in which the mouth is constructed substantially as shown and described, and having combined with it a stop-pawl and guard, whereby the successive cartridges are covered and secured within the case, while ready means of withdrawal is afforded by a rotary and radial movement as described.

4. The adjustable guard *d*, in combination with the outer case or frame A, having a mouth as described, so that the successive cartridges may be covered and secured in the case and ready means of charging the receptacle is provided, as set forth.

5. The stop-pawl *s*, combined with an adjustable guard *d*, by which it is drawn out of the way of the cartridges when the guard is drawn back for the purpose of charging the cartridge-box, substantially as specified.

6. The connecting-strap T, in combination with hook B, neck or shoulder strap S, and belt N, whereby the cartridge-box is allowed to move back and forth between its two points of attachment without being detached from the person of the soldier, substantially as and for the purpose specified.

139,886.—*Attaching Cork-Retaining Balls to Bottles.*—LUCIEN B. FLANDERS, Philadelphia, Pa. Application filed October 29, 1872.

A cork-retaining ball having enlarged ends, and connected to the neck of the bottle by being embedded therein during the formation of the bottle.

Claim.—The combination, with a bottle, of a cork-retaining ball having enlarged ends embeded in the glass, as specified.

139,887.—*Paint-Brush.*—JAMES J. GORMAN, Cincinnati, Ohio. Application filed November 4, 1872.

A bread brush is constructed in parts, so that they may be separated into smaller ones and used singly when desired.

Claim.—1. Handle S, constructed of two or more pieces, substantially as and for the purposes specified.

2. A brush composed of smaller brushes combined and attached together by the bread hooks *a a* and additional head or cap H, or its equivalent, substantially as and for the purposes specified.

3. As a new article of manufacture, a convertible brush, constructed of smaller brushes so secured together that they may be separated and used singly, when desired.

139,888.—*Bracelet.*—SANFORD W. GRANT, Providence, R. I., assignor to ALBERT O. BAKER, same place. Application filed February 19, 1873.

Provides supports struck up from sheet metal, so that the abutting ends of the face-plates at the spring-hinge joint shall be firm and kept in close contact at all times.

Claim.—In a spring-joint bracelet, the field-piece *b*, substantially as and for the purposes specified.

139,889.—*Washing-Machine.*—ALLEN GREGG, Springborough, Ohio. Application filed March 19, 1873.

A wash-board and rubber pivoted at one end of the lever to an adjustable-detent or holder, with a coiled spring to govern its tension. The lever attached to the rubber by screw and working in a V-shaped slot to limit its action. To the rubber-board is attached projecting-arms, and to the block to which the lever is attached is a pointed screw to support and hold the device in position in the tub when in use.

Claim.—The combination of short arms *c* and thumb-screw I with the table A for centering and retaining the machine within a wash-tub, in the manner and for the purpose described.

2. The arrangement of the socketed balls *f* in the face of table A to operate in combination with the corrugated rubber D and table A, in the manner and for the purpose described.

139,890.—*Hydrant and Fire-Plug.*—JAMES L. HEALEY, Brooklyn, N. Y. Application filed April 25, 1873.

The stand-pipe is divided into two chambers, each provided with its own valve and valve-rod, the pipe and partition being cast in one piece.

Claim.—The stand-pipe *a*, divided by the partition *e* into two chambers, the pipe and partition being cast in one solid piece, substantially as shown and described.

139,891.—*Blast and Cupola Furnace.*—DAVID W. HENDRICKSON, Red Bank, N. J. Application filed April 2, 1873.

An inverted funnel, which can be lowered by means of weights and pulleys to deposit the charge, forms the bottom of the feed-hopper and a chimney for the furnace. A steam-jet, located centrally of the funnel, causes an upward draft. The coils passing through the superheating-stoves terminate in the tuyeres, forming injectors, which carry the gas generated in the stoves to the hearth of the furnace.

Claim.—1. The combination of the furnace A, adjustable and combined stack Q and bell C, as a feeder, with hopper F, steam-pipes H H, nozzle L, tuyeres F F' F'' F''' F'''', stoves D D' D'' D''', cocks I I' I'', pipes E E', coil N, chimney G' G, damper K, and boiler or tank B, substantially as and for the purpose hereinbefore set forth.

2. The stack Q and perforated bell C, combined for the feeding of furnaces, substantially as and for the purpose hereinbefore set forth.

3. The combination of tuyeres F F' F'' F''' F'''' and injector-pipe E with stove D, substantially as and for the purposes hereinbefore set forth.

139,892.—*Tanning Apparatus.*—CONSTANT HERVEUX, Liverpool Road, Islington, England. Application filed January 16, 1873.

Two rectangular frames of wood are constructed to lie one upon the other. Upon the inner face of the one, and near the outer surface, a thin strip of metal is inserted, its edge projecting a little above the surface of the frame. Upon the corresponding inner face of the other frame a groove is formed that the projecting surface of the metal may fit into. The raw-hide is doubled, placed between the frames, and, as they are screwed together, its edges are tightly compressed by means of the metal and groove. The tanning-liquor is then forced into the bag of hide, and by means of hydrostatic pressure the liquor is slowly filtered through the pores.

Claim.—1. The apparatus, shown and described, adapted to clamp the sides of a double hide for the purpose of forming a bag, as set forth.

2. The combination of the frames A A' with the movable pieces B, substantially as and for the purpose set forth.

139,893.—*Animal-Poke.*—CURTIS HINMAN, Akron, Ohio. Application filed March 8, 1873.

Claim.—The above-described poke, consisting of the fork A, provided with the cross-bar D and the spikes F, and pivoted to the spear B, in combination with the guard G, plate-spring I, and yoke E, all arranged substantially as set forth.

139,894.—*Brick-Machine.*—GEORGE O. HOUCK and CHARLES E. SAWYER, Springfield, Ohio. Application filed September 11, 1872.

The raw clay is dumped into hoppers on the opposite sides of the machine, where it is subjected to the operation of horizontal reciprocating plungers, whereby the clay is forced through a set of knives into tempering-chambers, from which the clay is again forced by other plungers into the molds, held closely thereto by supporting-racks, from whence the bricks are removed.

Claim.—1. The combination of the hoppers A A, stationary vertical grates or sets of knives C C, and tempering-chamber D, substantially as and for the purpose herein specified.

2. The combination of the reciprocating trough or receptacle C, hoppers A A, and tempering-chamber D, substantially as and for the purpose herein specified.

3. The eccentric-wheels M O, provided respectively with friction-rings *b b* around their peripheries, substantially as and for the purpose herein specified.

4. The covered oil-cups or cavities *c c*, located respectively in the eccentric-wheels M O for lubricating the peripheries thereof, substantially as herein specified.

5. The frames S S of wires arranged so as to have the curved vibratory movement endwise, and upward and downward, substantially as herein specified.

6. The combination of the spring-catch *m* attached to each bow or projection *n* of the frame, the rock-shaft *o*, and projection *p*, the wire-frame S, and projection *r* thereon, or its equivalent, substantially as herein specified.

7. The counter-weights T T located in the posts *s s* of the frame, in combination with the racks or shelves L L, substantially as and for the purpose herein specified.

8. The molds K K enlarged at the bottom, constructed in two parts, with beveled or notched adjacent edges, and provided with handles U U on cam-shafts *v v*, and cam-bearings V V, all substantially as and for the purpose herein specified.

9. The combination, in a brick-machine, of substantially the following devices: A hopper or hoppers A A to receive the clay, a reciprocating trough or receptacle, B, to transfer the clay between the knives or grates C C into a tempering-chamber, D, chambers I I to receive the tempered clay from the tempering-chamber ready to fill into the molds, a reciprocating plunger, J, to force the clay into movable molds K K, all substantially as herein specified.

139,895.—*Fastening for the Meeting-Rails of Sashes.*—MORTON JUDD, Wallingford, Conn. Application filed May 2, 1873.

A swinging lever with curved end that carries the knob and turns at side into a box, clear of the meeting-rail, has a projection and notch to guard against moving by knife or thin instrument inserted between the sashes. The box containing the fulcrum of the lever is cast upon a bottom plate and combined with a separate cap-plate, the whole being secured together by a single rivet or screw, which otherwise constitutes the pivot of the lever.

Claim.—1. The sash-fastening lever *a*, made with the projection *b* at one side, in combination with the spring *h*, and bearing at the eye of the lever to hold the same in a position diagonal to the meeting-rails of the sash, for the purposes set forth.

2. The box *f* cast upon the plate *c*, in combination with the cap-plate *d* and rivet or screw *b* that secures said cap-plate and forms a pivot for the lever *a*, as set forth.

139,896.—*Elevator for Buildings, &c.*—EPHRAIM KRECH, Poughkeepsie, N. Y. Application filed March 6, 1872.

Claim.—A flat band or strap passing over a pulley, and connecting the elevator car or platform to a piston moving in a cylinder, in combination with a packing-gland through which such flat band passes so as to allow the liquid or fluid under pressure to act between the piston and gland, as set forth.

139,897.—*Platform-Scale.*—JOHN F. KEELER, Pittsburg, Pa. Application filed September 7, 1871.

The longitudinal timbers of the platform are secured above the transverse beams, and are protected by a cover extending along the sides of the platform and over the lateral weighing-levers. A weighted or pendulum lever is also used for automatic indication.

Claim.—1. The longitudinal stringers *t' t'*, when placed chiefly or wholly above the cross-beams *t t*, and firmly fastened thereto, in combination with the main weighing-levers *c* arranged along the side of the platform and above the level thereof, thereby reducing the depth of the pit, when the levers are covered by protecting-boxes *t*, t^1, t^2, and *k*, substantially as described and set forth.

2. The improved weighted lever *f*, constructed and used substantially as described.

3. The swinging platform *t' t' t'* suspended from one or more intermediate platforms, substantially as described.

139,898.—*Hanger for Pulleys.*—JOHN KENT, New York, N. Y. Application filed March 18, 1873.

The hangers can be adjusted both vertically and horizontally, so that the pulleys can be set at any angle that may be desired.

Claim.—An adjustable hanger for pulleys, constructed as herein shown and described, for the purposes set forth.

139,899.—*Inside Blind.*—DAMON Y. KILGORE, Philadelphia, Pa. Application filed May 14, 1873.

Metallic bands are hinged to the connecting-web on each side. Through these bands are passed the slats that form the blinds. The slats and the bands are both slotted for the passage of the elevating-cords.

Claim.—The bands B and hinges C, in combination with the web A and slats D, the webs being hinged to the bands, substantially in the manner and for the purpose set forth.

139,900.—*Harvester.*—GEORGE W. LEISHER, New Wilmington, assignor of one-half his right to BARTON A. LEISHER, Renovo, Pa. Application filed June 24, 1871.

The frame of a reciprocating toothed elevator is hinged to the frame of an endless-apron platform so as to be folded thereon for transportation.

Claim.—1. The elevating apparatus, hinged on the axis of the double crank C C, consisting of the frame H H, the pronged elevators E E, the cranks C C and C_1 C_2, the pulleys P_2 and P_3, with their bands B_2, and the clearer, with its prongs attached to the receiving-trough T_2, constructed substantially as herein described, for the purpose of elevating grain from the bands B B running across the platform of a harvester to the receiving-trough T_1.

2. The combination of bands B B, double cranks C C and C_1 C_2, pulleys R R and P P, pronged elevators E E, receiving-trough T_1, and tables T_2 and T_3, in connection with the cutting apparatus and gearing-frame of a harvester, constructed substantially as described, and used for the purpose of allowing grain, as it is cut, to be bound on the machine, and of preventing all loss of grain.

139,901.—*Boring-Machine.*—HARLIN LONGWELL, Mansfield, Pa. Application filed May 10, 1873.

The device which carries the boring and tenoning tool is made vertically-adjustable, as is also the rest for steadying the spoke.

Claim.—1. The combination of the mortised bar D, ratchet-bar E, with tube H for holding the working parts, the pawl G and spring *e*, all substantially as and for the purposes herein set forth.

2. The socket P with adjustable slide O, and adjustable felly-holder N, for the purposes herein set forth.

139,902.—*Composite Beam.*—WILLIAM W. LUMMUS, Lynn, Mass. Application filed January 23, 1873.

Claim.—A beam composed of metal plates C C, curved widthwise and provided with flanges F F at their edges, and locked together by the plates A and B, and strengthened by vertical plates D, of wood or iron, and the remaining space filled with mortar or incombustible material, substantially as described.

139,903.—*Beam for Floors.*—WILLIAM W. LUMMUS, Lynn, Mass. Application filed November 18, 1872.

Claim.—A wooden beam having its vertical sides slightly hollowed or concave, and strengthened and protected by metal plates arched or curved to correspond with the sides of the beam, and connected by bolts or rivets through the beam, substantially as described.

139,904.—*Beam for Floors.*—WILLIAM W. LUMMUS, Lynn, Mass. Application filed November 19, 1872.

The beam is constructed of a single plate of iron, having its edges slit at intervals, and bent alternately in opposite directions to afford a lodgment for the wooden strengthening pieces B', which also serve to nail to.

Claim.—1. An iron beam, consisting of a single plate of iron, with its edges slit or cut, and bent to hold nailing-strips for floors, ceiling, furring, or lathe.

2. The slits in the edges of the iron beam cut or made on either edge opposite the middle of the spaces on the opposite edge, substantially as described.

139,905.—*Bottle.*—VIRGIL H. LYON, Indianapolis, Ind. Application filed February 7, 1873.

The neck of the bottle forms a receptacle for a compound, which, by means of a stopper, may be kept separate from the contents in the body of the bottle until required to be mixed for use.

Claim.—The corks C D and string E, in combination with the neck or upper portion of the bottle, constructed as and for the purpose set forth.

139,906.—*Fire-Extinguisher.*—HUGH L. MCAVOY, Baltimore, Md. Application filed May 21, 1873.

The acid-chamber is arranged outside of the tank, connecting with it by means of a tube passing through a sleeve, said tube having perforations on one side near the end. The acid-chamber serves as a handle by which it is inverted and the acid discharged.

Claim.—1. An acid-chamber placed at the outside of the extinguisher, and adapted to be moved as a handle upon a hollow stem extending within the generator, the said stem being perforated to admit of the flow of the acid from the chamber into the generator when the said chamber is inverted, as set forth.

2. The equalizing-pipe *e*, in combination with the acid-chamber B, stem *b'*, and opening b''', as and for the purpose specified.

139,907.—*Safe-Vault.*—MORTIMER MCCALL and ROSTO O. WOOD, Buffalo, N. Y. Application filed June 17, 1872.

A vault for protecting safes from fire, &c. The casing is provided with spring-catches for securely fastening the cover to the casing, the spring-catches being automatically released from the cover by the safe while being raised. A screw is used for raising and lowering the safe.

Claim.—1. The cap provided with sockets, in combination with spring-catches attached to the casing, to be automatically operated by the safe while being raised, as shown and described.

2. The combination of the safe B, screw *p*, operated by proper mechanism, vertical casing A provided with spring-catches *z*, and cap C, all operating together as and for the purposes described.

139,908.—*Feed-Water Heater and Condenser.*—THOMAS E. MCNEILL and RUFUS N. PRATT, New York, N. Y. Application filed September 21, 1872.

Claim.—The heater, comprising the water-chamber A, steam-conduit chamber B provided with the outlet *d*, bent tubes C, and steam-inlet chamber D, the whole constructed and arranged for operation substantially as and for the purpose specified.

139,909.—*Temple for Spectacles.*—GEORGE W. MEIGS, Hartford, Conn. Application filed January 24, 1873.

The side bows or temples of a spectacle-frame, made of steel wire, are secured to a separate hinge-piece and have a ball or knob attached to the outer ends.

Claim.—A temple made in parts, and having the half-joint and the ball, either or both, fastened to the body, substantially as described, and for the purposes set forth.

139,910.—*Manufacture of Illuminating-Gas.*—THOMAS N. MILLER, Pittsburg, Pa. Application filed January 25, 1872.

Take the slack as thrown from the mines and agitate in a fine screen or sieve, and wash in water; after which spread upon a platform for the purpose of drying. It is then charged into a retort and the process of distillation conducted in the usual manner.

Claim.—The three specified successive processes, as a preparatory step in the manufacture of illuminating-gas from bituminous coal-slack.

139,911.—*Machine for Grinding Hay.*—WARREN P. MILLER, New York, N. Y. Application filed April 29, 1873.

Spirally-grooved rollers engage with, and impart motion to, each other, the grooves being formed also to grind the hay. A hopper returns the ground hay through the second set of rollers. A pair of screw-bolts and spring-collars serve to produce adjustability in the rollers.

Claim.—The grooved rollers *c d*, and C, working together in the manner described, in combination with the boxes *f*, screw-bolts G, spring-collars *k*, and hoppers P and Q, all substantially as and for the purpose set forth.

139,912.—*Organ-Reed.*—MILES C. MORGAN, Boston, Mass. Application filed April 23, 1873.

Instead of a sliding clamp to move up and down the reed, the reed-block itself is moved between two clamp-jaws which hold the reed fast, and are adjustable to different points thereon.

Claim.—In combination with the plate *c*, having a projecting lip, *h*, attached thereto, the stationary clamp *i*, screw *k*, or its equivalent, and the movable reed-block *d*, for the purpose as herein shown and described.

139,913.—*Reed-Organ.*—CHARLES W. PALMER, Cleveland, Ohio. Application filed April 23, 1873.

The valves are without springs, being closed by the suction of the air. All the reed-sets are vertical, and the reed-valves are operated by the long arm of the lever connecting them with the keys.

Claim.—1. The combination, in reed-organs, of the reed-boards B B, connected by partitions D D, forming valve-chambers, as shown, and the swell-box J provided with openings K and lid M, with the sounding-board A, substantially as described, and for the purpose set forth.

2. The valves E, beveled openings F, rod G, and lever H, in combination with the keys I and board A, and tube-boards B B, substantially as and for the purpose set forth.

139,914.—*Type-Writing Machine.*—JAY READ PEMBER, Randolph, Vt. Application filed January 31, 1873.

Upon depressing the treadle the arms are raised to present the types at their outer extremities. The arms may be held in position, to present any given letter, by pins in the standing frame.

Claim.—1. The combination of two or more sets of type-presenting means, B C, with controlling keys M N, and connecting mechanism, so that the two or more types shall be presented simultaneously in proper order to the paper at the will of the operator, substantially as herein specified.

2. The key-boards A^3 A^2, pins M N, and levers B C, with means D for moving the same in one direction at will, combined and arranged for joint operation, as and for the purposes herein set forth.

3. In combination with the type-presenting means B C, operating-keys M N, and the connecting mechanism, the duplicate sets of keys X Y, and corresponding type-presenting means R S, and their connecting mechanism, arranged as shown and adapted to be operated simultaneously therewith, as herein specified.

4. In combination with the lever B, its segment end, and series of keys M for arresting its motion at different points in its sweep, the type-segment I *i*, operated by the lever as and for the purposes herein specified.

5. In combination with the series of movable keys M, and lever B sweeping across the motion thereof, and suitable printing devices carried by the said lever, the hinged flap *b*, with its spring b^1 serving therewith, as herein specified.

6. In a type-printing machine having a lever, B, arrested in different positions by keys or pins M, the collar *m* on the said arresting means adapted to engage with and to hold the lever, substantially as and for the purposes herein specified.

139,915.—*Cooler for Wine, &c.*—FRANCIS M. PIPER, Chicago, Ill. Application filed April 12, 1873.

Perforated tray suitable for receiving broken ice, with inverted cups open at the bottom, and, preferably, approximating the form of inverted wine-bottles.

Claim.—The perforated tray A, provided with the inverted cups B B, open at the bottom and arranged tightly in or around the perforations in the tray, in combination with a suitable support or case, substantially as and for the purposes specified.

139,916.—*Fire-Proof Vault.*—GRANVILLE W. PITTMAN, Keokuk, Iowa. Application filed March 18, 1872.

The safe is arranged in a vault with an arched top, an air space being left all around it, and a flue for cold air opening into the bottom. A chimney carries off the air as heated, and maintains a constant circulation to cool the contents of the vault.

Claim.—1. The combination of the fire-proof vault A, the receptacle B in a permanent position, the air-passages C C′ around the contents, and the passages F G for introducing cool air and forcibly carrying off hot air, all substantially as set forth.

2. The combination of the fire-proof vault A, the air-passages F G for introducing cool air and carrying off hot air, and the arched top having the circular holder H, substantially as set forth.

3. The combination of the spherical arched top with its circular holder H, made smaller at its bottom part, as set forth.

139,917.—*Truss.*—DANIEL POMEROY and WILLIAM POMEROY, New York, N. Y., assignors to JULIUS R. POMEROY, DANL. POMEROY, and MARY E. POMEROY, same place. Application filed May 9, 1873.

An India-rubber spring is secured across a recess in the back of the pad. Upon this rubber spring a standard and adjustable slide are secured, the latter held at various points on the circular truss-band by a set-screw.

Claim.—1. The flanged slide F, standard D, and set-screw *k*, in combination with the truss band or spring, substantially in the manner and for the purpose specified.

2. In combination with the elements of the preceding claim, the rubber spring C, attached to the pad and standard in such a manner to allow of both direct and rotary elasticity of the pad, substantially as shown.

139,918.—*Wash-Boiler Attachment.*—WILLIAM E. RICE and JOSHUA BARNES, Brooklyn, N. Y. Application filed September 7, 1872.

An attachment to be placed in an ordinary wash-boiler; has a supporting-flange, a slotted top with valves resting on wires, and two vertical tubes connected by a showering-tube.

Claim.—In combination with the open-bottom vessel A adapted to sit down in an ordinary boiler, as described, the valves E and F, the vertical conduits D D, and the shower-tube C, all constructed and arranged to operate substantially as described.

139,919.—*Gas-Burner.*—JAMES RIGBY, Cincinnati, Ohio, assignor of two-thirds of his right to JOHN F. JOHNSON and GEORGE RHOREK, same place. Application filed March 14, 1873.

A pillar, adapted to receive the ordinary burner, has attached to it a smaller burner which carries a jet of gas a little above the top of the former, and is so inclined that the flames shall unite at an acute angle.

Claim.—A branch-burner, C B, constructed to be attached to an ordinary vertical gas-burner used in connection therewith, substantially as and for the purpose specified.

139,920.—*Cracker-Machine.*—LUCIUS A. ROCKWELL, Tremont, N. Y., assignor to himself and JOHN A. CURRIER. Application filed May 19, 1873.

The dough passes between grooved rollers, which divide it into skin-surfaced ropes, and these ropes are passed between pairs of reciprocating curved or notched knives, which cut off nearly cylindrical pieces of dough, each one of the amount necessary for one cracker. These pieces of dough are guided down into a channel formed between two moving dies, and, when sufficiently rolled and kneaded, they are discharged on an endless apron and moved forward to be brought under a flattener. As the flattener rises the apron moves forward, and the now flattened crackers are brought under the docking-pins, and then, after the docker rises, the apron delivers them on a plate of metal below the apron. The lumps of dough are guided to the flattener by a notched pusher that engages with them as soon as they are dropped on the apron from the kneading-plates or dies.

Claim.—1. The knives C C, formed as represented, and arranged and operating relative to each other and to the moving ropes of dough, as and for the purposes herein specified.

2. The molding-plates E F, chambered or grooved as shown, and operated relatively to each other, as shown, so as to receive, roll, and knead masses of dough, and discharge them in the form of skin-covered flattened spheroids, as herein specified.

3. The mechanism represented for communicating oppositely-reciprocating motions to the molding-plates E F—that is to say, the connecting-rods P leading from the crank-pins *p* to one of the molding-plates, E, the racks *e f*, and gear-wheels R, combined with the rolls A A and knives C C, and arranged to operate therewith, as herein specified.

4. In combination with the mechanism for forming skin-covered lumps of dough, as specified, the notched or tooth-edged pusher-plate I reciprocated over the surface on which the masses of dough are dropped, so as to place the dough upon the apron K in determined positions, as herein specified.

5. The reciprocating flattener J, with its attachments operated as specified, relatively to the intermittent carrier K, in combination with the mechanism for producing skin-covered spheroids of dough, and for placing them in exactly determined positions under the flattener, as herein specified.

139,921.—*Cleaning Cotton Waste.*—GEORGE SAGAR, Chicago, Ill., assignor to CHICAGO WASTE-CLEANSING COMPANY, same place. Application filed April 28, 1873.

The fabric is treated with a solution of spirits of salt and nitric acid combined with water, and then with a solution of soda ash.

Claim.—The ingredients herein set forth for cleansing fabrics, when combined and used substantially as described.

139,922.—*Filter.*—CHARLES C. SAVERY, Philadelphia, Pa. Application filed December 12, 1872.

A straining-plate having a flange resting on the bottom of the vessel and secured thereto by a tubular perforated bolt protected by a shield of wire-gauze, the water passing laterally through the meshes of the shield and through the perforations in the tubular bolt into the cooler.

Claim.—1. The straining-plate A, having a flange, *b*, and adapted to the vessel D, in combination with the body of filtering material retained between the plate and bottom of the vessel, as set forth.

2. The combination of the horizontal straining-plate A, adapted to the vessel, as set forth, and a central delivery-tube, as and for the purpose specified.

3. The combination, with the vessel D and straining-plate A, of a perforated tabular bolt G, securing the plate and serving as an outlet for the filtered water, as specified.

139,923.—*Reflector.*—FAUNT LE ROY SENOUR, Newport, assignor of one-half his right to JOHN A. SIMPSON, Covington, Ky. Application filed December 17, 1872.

The reflector is secured in the case by a backing of cement or plaster Paris, which serves also to protect the silver coating.

Claim.—The reflector of a locomotive head-light anchored within the case A by the cement backing H and flanged plate D, or its equivalent device, substantially as shown and described.

139,924.—*Exercising-Machine.*—REUBEN SHALER, Madison, Conn., assignor to HENRY L. SHALER, same place. Application filed April 4, 1873.

The frame supporting the passenger-tray has rollers, which are flanged to keep them on the curved way. The tray is unattached to the roller-frame, but slides thereon between fixed handlines or guys.

Claim.—1. In combination with the guide-frame *a*, the frame *c* having rollers *g* provided with the flanges *i i*, substantially as shown and described.

2. In combination with the roller-frame *c*, the carriage *l*, constructed to move freely back and forth upon the said frame, substantially as set forth.

3. The rollers *g*, guide-frame *a*, stanchions, cords, and carriage *l*, when these different parts are combined and arranged to operate substantially as shown and described.

139,925.—*Support for Wash-Tubs.*—EDGAR F. SHAW, Boston, Mass. Application filed May 26, 1873.

Four legs are pivoted to a central plate or bracket, with legs. The tops of the legs are provided with projections for the chime of the tub.

Claim.—The within-described support, consisting of a series of legs A pivoted at their tops to a central plate, B, and provided with grooves or projections *b c*, substantially as and for the purpose set forth.

139,926.—*Truss.*—JACOB A. SHERMAN, New York, N. Y. Application filed November 5, 1872.

The end of the thigh-strap is furnished with two flat springs extending forward in the same plane with it. The outer end of one of these springs is attached to the spring-bar of the waist-strap, and that of the other carries the pad. The pad is thus pressed to place by the yielding action of a spring, while it is also left free to accommodate itself to the hernia.

Claim.—The truss-pad *c*, connected to a bar or spring at the end of the strap passing between the legs, in combination with a spring or bar also connected with said strap and the bar *f* and waist-belt *e*, as and for the purposes set forth.

139,927.—*Can for Oil.*—HORATIO M. SMITH, Chicago, Ill. Application filed November 16, 1872.

Claim.—1. A shipping-can provided with the hinged or pivoted elbow-shaped vent-tube D, arranged in the can substantially as and for the purposes specified.

2. A shipping-can provided with a yielding elbow-shaped vent-tube, arranged in the can in the manner specified.

3. A shipping-can provided with the elbow-shaped vent-tube D, arranged in the can in the manner described, and attached thereto by means of the spring E, substantially as and for the purposes specified.

139,928.—*Dominoes.*—WILLIAM X. STEVENS, East Brookfield, Mass. Application filed March 15, 1873.

Dominoes usually match at their two ends only. These may be matched at three or more points.

Claim.—1. Dominoes or cards polygonal in form, having their faces marked near their side edges with character or figures matchable, one with another, at three or more of the sides so marked, substantially as and for the purpose specified.

2. The method of marking dominoes by means of sheet material stamped upon and into their faces, substantially in the manner described and set forth.

139,929.—*Loom-Temple.*—EDWARD S. STIMPSON, Hopedale, Mass., assignor to DUTCHER TEMPLE COMPANY, same place. Application filed May 9, 1873.

To hold the temple when drawn back, the shank is provided with an auxilliary shoulder, arranged on its inner side to act with the stand-shoulder, the strain of the cloth being sufficient to move the shank laterally and thereby latch it.

Claim.—The loom-temple provided with the auxiliary stop or shoulder *c* arranged on the inner side of its shank, substantially in manner, and to operate with the stand-shoulder *b* by means of the cloth, and for the purpose set forth.

139,930.—*Spooling-Machine.*—JOSEPH F. STONE, North Andover, Mass., assignor to himself, GEO. L. DAVIS, JOHN A. WILEY, GEO. G. DAVIS, J. H. STONE, and J. H. DAVIS, same place. Application filed January 21, 1873.

The plates are for closing the spiral slots to prevent the loose skewer, when used, from working endwise out of the spool. The weighted handles bear the frames down, so that the spools may be turned by the drum or pulley, and are convenient for raising them when the spools are full. The bush is slit, and being driven in between the pulley and shaft secures the two together.

Claim.—1. The spiral slots and bearings, closed upon the outside by the plates G′, in combination with the loose skewer to form an axis for the bobbin, substantially as described.

2. The weighted handle, in combination with the swinging-frame, substantially as described.

3. The conical bush I, in combination with the shaft and the pulley having a conical bore, substantially as described.

139,931.—*Clamping-Device.*—CHARLES STOUT, Waverly Heights, Pa., assignor to himself and CLINTON ROBER, same place. Application filed March 12, 1873.

Fence-rails and other irregular stock can be firmly held while being dressed.

Claim.—The combination with the lever B of a frame, A, between which and the lever a rail or other object may be clamped, as set forth.

139,932.—*Stove-Pipe Joint.*—ALBERT C. SWEETLAND, North Attleborough, Mass. Application filed October 21, 1871.

Claim.—The slip-joint connection B, consisting of the conical collars *b b*, cut with slits *c*, and united at their bases so as to form a fillet *a*, substantially as and for the purpose specified.

139,933.—*Shirt.*—GEORGE C. THOMAS, Chicago, Ill. Application filed April 17, 1873.

Claim.—The shirt-body A made open at the front, in combination with the bosom B, one side of which is attached to the body in the manner described, so that when the opposite side of the bosom is buttoned to the body, the lower portion of the bosom will be disconnected from the shirt-front, as specified.

139,934.—*Stove-Grate.*—JOHN S. VAN BUREN, Troy, N. Y. Application filed March 20, 1873.

Claim.—1. A grate having two sets of bars diverging from or near the center at different angles, so as to form side openings at the edge for the discharge of clinkers, substantially as specified.

2. The serrated edge, in combination with the bars *f e*, when arranged substantially as shown and described.

3. A grate having two sets of bars, which diverge from the center or near the center, one set being placed on a horizontal line and the other depressed below it, so that the edge which binds them together shall be serrated, substantially as shown and described.

139,935.—*Machine for Turning Spools.*—EZRA C. WALKER and WILLIAM M. GOODING, Newark, N. J. Application filed July 6, 1872.

The spool-blanks are thrown into a hopper, where they are arranged and deposited on an endless belt by revolving-agitators. This belt carries them forward and deposits them in a holder, which in turn transfers them to the lathe-centers.

Claim.—1. The combination and arrangement of the hopper C, agitators *b b*, endless belt 2, trough *r*, and stop 4, in the manner and for the purpose described.

2. The combination of the trough *r*, guide *p*, spider *f*, and curved lever *g*, with the slide Z, for the purpose of receiving the blank and carrying it into the lathe, as set forth.

3. The combination and arrangement of the sliding rod *y*, blocks *n* and K, cutters *o*, and lathe-mandrel 14, in the manner and for the purpose specified.

4. In a machine for turning spools, the combination of the carrying mechanism *f g* and the cutting-tools *u*, supported as described, with the slide Z, all operating as described.

139,936.—*Book-Mark.*—HENRY M. WARD and GEORGE E. DOLTON, Monee, Ill. Application filed August 7, 1871.

The clasps are provided with projecting tongues, which fit between the leaves of the book, and with barbed ends, by which the band over which the pointer slides, is held.

Claim.—An elastic band, A, in combination with the clasps B, and pointers C, for the purpose described.

139,937.—*Shirt.*—JOSEPH WIESER, Williamsport, Pa. Application filed May 9, 1873.

An additional plait is placed down the center of the bosom over the ordinary buttons or fastenings.

Claim.—In combination with a shirt-bosom opening in the center, the separate strip A attachable to either of the inner edges of said bosom lengthwise over the center thereof, substantially as and for the purpose described.

139,938.—*Vault-Cover.*—WILLIAM R. WILLIAMS, Indiana Township, Allegheny County, Pa. Application filed March 20, 1873.

Claim.—A sidewalk-grating frame, consisting of the outer shell or ring *a* having a flat flange, *b*, and a vertical flange, *c*, and a basket, *d*, for containing a filling having a roughened non-metallic surface, resting in the ring *a* upon a suitable seat, *e*, substantially as and for the purposes described.

139,939.—*Till-Alarm.*—JOHN F. BALDWIN, Nashua, N. H. Application filed October 26, 1872.

A series of spring-bolts within the rear of the drawer, connected with a swing-bar and operated by rods secured beneath the drawer, when thrown up, engage with a hinged-spring catch-plate and effectually lock the drawer. When either of the said bolts is depressed by the finger-rods acting on its appropriate bent lever or "key," the drawer on being pulled open is caused to sound an alarm-bell.

Claim.—1. The spring-supported bolts E having foot-piece G, combined with a spring-retracted key, D, having the toe *m* and angle *n*, operated by rod and finger-piece, as and for the purpose set forth.

2. A swing-bar, F, having the lugs *h*, combined with corresponding shouldered bolts E, as and for the purpose set forth.

3. The apron O, key E, and spring-bolt S, combined with drawer, to hold it firmly and closely locked.

4. The application to the lever T of the spring *z*, as and for the purpose specified.

139,940.—*Washing-Machine.*—EDWIN S. BLISS, Richburg, N. Y. Application filed May 17, 1873.

Springs are attached to cross-pieces which rest upon the journal-boxes of the upper roll and are held in position in the slots of the frame, and by metal loops attached to the uprights. Near the bottom of the frame is a cross-bar connected to the frame by tenons at one end, and passes over an inclined block, on which a button is pivoted to secure the machine to the tub, in connection with the cleat and block attached to the tub and frame.

Claim.—1. The spring F G, constructed as herein shown and described, in combination with the standards A, rollers D C, and loops H, substantially as and for the purpose set forth.

2. The slotted cross-bar K, block L, button M, cleat N, and notched-block O, constructed and arranged, in connection with the washing-machine, as herein shown and described, for securing said machine in a wash-tub, as set forth.

139,941.—*Turn-Table.*—WILLIAM H. BURCH, Port Gibson, Miss. Application filed May 5, 1873.

The turn-table has a pair of central parallel stringers strongly braced by adjustable stays in the several directions named, truck and end wheels, and a central screw-bearing, furnished with a de-

tachable point in a conical seat. The locking-bar is attached to a horizontal operating-shaft and lever by a V-shaped double brace.

Claim.—1. The stringers H, rails I, cross-beams L M, trucks N O, wheels F, center-screw D, and plates C P Q, constructed and arranged to operate in combination with each other substantially as herein shown and described.

2. The detachable point or toe *d'*, constructed and applied to the screw D substantially as herein shown and described.

3. The V-shaped locking-bar R in combination with the shaft S, by which it is operated, and with the notched blocks U attached to the ends of the turn-table, substantially as herein shown and described.

4. The arrangement of the stays V X Z, constructed as described, the posts W and braces Y, in connection with the stringers H and cross-beams L and M, substantially as and for the purposes herein set forth.

139,942.—*Muff-Lining.*—CHARLES F. BUTTERWORTH, Troy, N. Y. Application filed April 12, 1873.

The funnel-shaped end pieces of the lining are each shaped from one piece of fur upon a block. The central lining is of kid or other elastic leather.

Claim.—1. A muff-lining composed of the blocked end pieces A and the elastic kid middle piece D, constructed and arranged as and for the purposes described.

2. A muff-lining composed entirely of part fur and part elastic leather or kid, as shown and described.

139,943.—*Seed-Planter.*—WILLIAM CALL, Jr., Haverstraw, N. Y. Application filed March 15, 1873.

The handles of the machine constitute the side bars of the frame, and these are held in place by three cross-bars and mounted upon two wheels having a straight axletree, upon which is a five-pointed cam. The seed-box is mounted upon the frame, and the seed-slide is moved by the revolution of the cam.

Claim.—The main frame, consisting of two bars, C C, and three cross-bars, D D D', the sliding frame I I', and the sliding hoppers, combined and relatively arranged, in connection with a cammed axle on wheels, substantially as and for the purpose described.

139,944.—*Medicine-Spoon.*—JAMES L. COLBY and LE ROY B. THOMSON, Saxonville, Mass. Application filed February 15, 1873.

This spoon is made up of a hinged cover with crescent-shaped opening; a leg-support, (which also serves with its upper ends as springs to hold the cover down,) and a hinged leg to support the handle while the spoon rests on the table.

Claim.—The medicine-spoon body A, having hinged cover B, with crescent-shaped opening on top, a leg support, C, beneath, and a hinged leg, D, supporting handle end, as described.

139,945.—*Fire-Proof Roof.*—JOHN B. CORNELL, New York, N. Y. Application filed May 24, 1873.

The corrugated sheet-metal is secured to iron rafters by metallic brackets, the lower ends of which hook under the rafters, and the dovetailed ribs and grooves of the corrugated metal furnish a secure means of attachment for the fire-proof top coating, as well as the inner layer of mortar, without the use of lath.

Claim.—The combination of the iron rafters or beams, dovetail corrugated sheet-iron cover, fire-and-water-proof top cover and an inner coat of plaster, for a roof, substantially as specified.

139,946.—*Water-Trap.*—ROBERT CUNNINGHAM, Chicago, Ill. Application filed March 10, 1873.

The movable diaphragm A is for increasing on one side and diminishing on the other the space through which the metal is forced, the effect being the outflow of a greater mass at one side than the other, and all finding exit from the die through an annular space of uniform breadth. The further effect will be to cause the resultant tube to leave the die in a curved path.

Claim.—The combination of the diaphragm A A, or its equivalent, with the die B B and mandrel C, constructed and operated substantially as set forth.

139,947.—*Well.*—ADAHEL CURTIS, Bastrop, La. Application filed March 1, 1873.

A temporary guide-tube B is used in connection with the ordinary well-sinking tube upon which the wall is built, thereby economizing skilled labor as well as time and material.

Claim.—The casing-tube B, applied about the earth-box A so as to enable the bricks to be laid evenly, perpendicularly, and more economically, in the manner and for the purpose described.

139,948.—*Chair.*—WILLIAM T. DOREMUS, New York, N. Y. Application filed May 31, 1873.

The pedestal has tapering arms or uprights on each side of which are arranged tapering rubber blocks, held in place by arms or extensions of the seat frame, which are provided on their lower ends with flanges, and at their upper ends with blocks to hold the rubber blocks in place.

Claim.—The combination of the tapering arms B, the rubber blocks E, the arms D provided with flanges *d* at their lower ends, and blocks F or equivalents at their upper ends, with each other, and with the pedestal A and the seat-frame C of a chair, substantially as herein shown and described.

139,949.—*Gage for Horse-Collars.*—JOHN M. EVERITT, Hackettstown, N. J. Application filed May 8, 1873.

A graduated bar or rule is provided at its upper end with a rectangular arm, which is placed upon the horse's neck. A sliding transverse scale is brought into contact with the lower part of the neck, where it is held by a set-screw, and a swinging arm from the top cross-piece is allowed to fall on the opposite side, so as to mark on the lower scale the width of the animal's neck.

Claim.—The pivoted bar C operating upon the movable scale-bar D, in combination with the bar A, substantially as herein shown and described, and for the purposes set forth.

139,950.—*Hunting-Jacket.*—JEAN GARAUD, New York, N. Y. Application filed April 19, 1873.

A hunting jacket, having a pocket or receptacle in the back for game, is adapted to have a cartridge-pouch attached to its inside by means of loops for receiving the strap of the pouch, and a flap on which to button it.

Claim.—1. A hunting dress or jacket, A, with inner backlining B having side openings *a*, loops *b*, and buttons *c*, in connection with lapel *f*, substantially as described.

2. The combination of pouch C, constructed as described, with the subject-matter of the foregoing clauses, substantially as and for the purpose set forth.

139,951.—*Medical Compound or Catarrh Remedy.*—WILLIAM V. GREEN and JOHN M. KINTZEL, Wellsville, Ohio. Application filed May 19, 1873.

Cubebs, licorice, alum, ammonia.

Claim.—The herein-described compound composed of the ingredients, and in about the proportions herein named, for the purpose set forth.

139,952.—*Sofa-Bedstead.*—CHARLES F. GRUNDIN, Boston, Mass. Application filed May 5, 1873.

The frame is made in four parts, hinged together. The foot-frame and outer bottom frame, when closed up, form the inner seat and back-frame. The arm-braces are pivoted to the back or head frame, and connect, when the frames are folded, with arm-braces on the outer bottom frame. When the lounge is extended said arm-braces act as legs to the outer bottom frame.

Claim.—1. The head part A having two arms, *e e*, on a common connecting-rod, *f*, and the section C having braces A, each hinged to an opposite side of the section B, as and for the purpose described.

2. The part D having hooks R hinged to a section, C, having buttons *i*, and folding back against head A, as and for the purpose set forth.

139,953.—*Electrical Thermostat.*—JOHN H. GUEST, Brooklyn, N. Y., assignor to AUGUSTA GUEST, same place. Application filed March 29, 1873.

Around the point at which the conducting-wire enters the bulb of the thermometer a glass chamber is formed, to be filled with soluble glass or other fluid, for preventing access of air in case the wire should become loose.

Claim.—The sealed tube or vessel C connected with the bulb A, filled with a suitable liquid, and closed to exclude the air from the point of entrance of the wire in the bulb A, substantially as and for the purpose specified.

139,954.—*Medical Compound or Salve.*—GILES HALL, Joliet, Ill., assignor of one-half his right to GEORGE CLUBB, same place. Application filed May 26, 1873.

Mutton tallow, one pound; golden seal, two ounces; slippery-elm bark, one-half ounce; common chalk, one-half ounce; ground flax-seed, one-fourth ounce; oil of origanum, four ounces.

Claim.—1. The combination of the ingredients described, as and for the uses and purposes set forth.

2. The compound set forth, as a new article of manufacture.

139,955.—*Package for Caustic Soda or Alkali.*—HENRY B. HALL, New York, N. Y. Application filed May 17, 1873.

Metallic cup of soft iron, lead-foil, or lead and tin, &c. Pour caustic alkali in a liquid state, and seal by a cover of melted resin after the alkali has solidified.

Claim.—A package for caustic soda or alkali, consisting of a spun or stamped metallic cup and a cover of resin or other gummy substance poured in on the solidified contents in a liquid state, substantially as specified.

139,956.—*Self-Acting Switch.*—LEWIS W. HARRIS, Oriskany, N. Y. Application filed April 18, 1873.

The switch-rails are moved by the advancing train, the wheel-flanges of which encounter the long pivoted diagonal levers G G attached to the movable rails. The long levers are locked in position by spring-knees *d d'*, which are depressed so as to release the levers by the flange of the wheel operating upon the spring E, the depression of which depresses the locking-knees. The movable rails are joined by metallic ties of bow-shaped form.

Claim.—1. The movable tracks *e e* pivoted to one of the fixed ties and held relatively together by metal ties D D D H, combined with the peculiar-shaped levers G G, which are sheared or moved laterally by the wheels of a car, as and for the purpose set forth.

2. The locking device, composed of the spring F having knees *d d'*, combined with the lever-arms G G and U-shaped springs E E, as described, for the purpose set forth.

3. The metallic tie D, as shown in Fig. 4, adapted by its peculiar form to be securely attached to the flanges of the shifting-switch rails, substantially as described.

139,957.—*Lounge and Bedstead Combined.*—STEPHEN HIGGINS, Portland, Me., assignor of one-half his right to CHARLES H. BUCKNAM, same place. Application filed November 23, 1872.

The extension-frame slides out from the main frame, and is provided with two supplementary pivoted frames—one for the head-rest and the other for the bed part of the extension-frame. These supplementary frames are revolved when the extension is drawn out, and thus form a level support for the mattress.

Claim.—The combination, in a sofa-bedstead, of the back *a*, bars *c* and *b*, rest *m*, slides *n*, *q*, and *q'*, pivoted supplementary frames *e* and *j*, offset-hinges *k' k* and *p p*, and the stops *g g'* and *r* and *r'*, all in the manner and for the purposes as set forth.

139,958.—*Nursing-Bottle.*—WILLIAM HOBSON, Sandwich, Mass. Application filed June 2, 1873.

The draft-tube has a large flange, which rests upon the top of the cork. The rubber nipple is drawn over the edges of this flange, and, resting upon the under side, prevents the glass flange from striking the neck of the bottle. The device lessens the liability of breaking or manipulating the bottle.

Claim.—The flanged draft-tube A, the elastic nipple B, and the cork C, arranged together and in or applied to the neck of a bottle, in manner substantially as represented in the drawings, and herein-before explained.

139,959.—*Combined Collar and Cravat.*—FREDERICK D. JAMES, Tamworth, N. H. Application filed April 12, 1873.

A collar has tabs formed on it so as to be folded up to make a neck-tie bow.

Claim.—The collar A provided with the flaps *d d* and with the T-flap B, substantially as and for the purpose herein shown and described.

139,960.—*Coffee-Mill.*—SIMON C. JANTZEN, Philadelphia, Pa. Application filed November 19, 1872.

Canister of sufficient capacity to hold coffee for several days' use, and so constructed and arranged that the material to be ground is fed directly from the same to the grinding device.

Claim.—The combination of the canister I, constructed substantially as described, with the grinding devices C and D, as and for the purpose shown and described.

139,961.—*Attaching Metal Caps to Glass, Porcelain, &c.*—CECIL B. JENKINS, New York, N. Y. Application filed March 29, 1873.

A metallic disk having elastic projections, which impinges the glass forcibly by having the hole in the disk made slightly smaller than the object to which the cap is secured, is employed for attaching caps to bottles, lamps, &c.

Claim.—The disk C slotted to form elastic projections E, and applied to the bottom of cap A and about the neck D, as and for the purpose described.

139,962.—*Sewing-Machine.*—THOMAS K. KEITH, Haverhill, Mass. Application filed May 23, 1873.

The thread from the spool passes over the grooved tension-wheel, the axis of which has a gear that moves the gearing of the indicating mechanism, registering on the dials the number of yards of thread consumed.

Claim.—In combination with a sewing-machine mechanism, a mechanism, substantially as described, for registering the length of thread.

139,963.—*Ash-Leach.*—JOHN W. KERKODLE and ADAM H. HAUN, Lebanon, Ind. Application filed January 6, 1873.

A metallic ash-cylinder, having its under edge scalloped, is set on an inclined trough provided with a flange and spout.

Claim.—The ash-leacher, consisting of cylinder E, scalloped at H, cover F G, and trough A B D, all arranged as described.

139,964.—*Lamp.*—RIVERIUS MARSH, Flushing, N. Y. Application filed April 12, 1873.

A sheet-metal plate covers the upper surface of the lamp-fount. It is provided with a flange at the edge, raising it slightly above the surface of the fount, a collar for attachment to the lamp-wick, a drip-cup, a safety-tube depending within the lamp, and a screw-thread for attaching the burner.

Claim.—The combination, with a glass oil-reservoir, A, of a metal lamp top, provided with an annular extension covering the top of the lamp, so constructed as to form an oil-receiver, E, and a collar, G, and having the safety-tube I attached to said collar, substantially as specified.

139,965.—*Sawing-Machine.*—GEORGE MARSHALL, New York, N. Y. Application filed April 12, 1873.

The saw is made to reciprocate lengthwise of the table by means of friction-pulleys acting upon two bands stretched between carriers at opposite ends of the saw-frame.

Claim.—1. The foot-lever G having double roller F, combined with friction-rollers *e e'* to impart forward and reverse motion to carriage C, as set forth.

2. The saw-carriage C having projecting pieces *g* for stretching belts E E', with rollers a^1 and a^1 of the mandrel b^1, for adjustment of driving-belt D, as described.

3. The hinged guide K and cap L arranged, as shown and described, to operate as specified.

139,966.—*Steam-Plow.*—PETER J. MCDONALD, San Francisco, Cal. Application filed March 15, 1873.

The plows slide on transverse ways and meet at the center, when, by the action of a trip-lever, the drum is reversed, the plows moving back while the machine moves forward a sufficient distance for a fresh furrow.

Claim.—1. The slotted boxes E' in combination with the cords or chains *g*, pins *i*, and axle F, having holes for the reception of said pins, substantially as and for the purpose set forth.

2. The frame I, with its casting J, having the parallel flanges *j j*, and arranged to support one or more ways or pairs of ways, K K, substantially as set forth.

3. The slides Q, having, with their plows P P, a reciprocating motion, in combination with the horizontal ways K K, ropes or chains *u u'*, and reversible drum L, substantially as described, and for the purpose set forth.

4. The sliding rod *z*, with its operating-arms *y y'* kept in place by the spring *z'*, in combination with the spring-lever *b*, latch *c*, with its catch *n'* and trip-lever *l'*, the whole operated by the slide Q, substantially as set forth.

5. The reversing-gear, consisting of the bevel-wheels R R' R'', in combination with the clutches *p p'*, when operated by the weight of the triangular frames K *l m* by means of the latch *c* and spring-lever *b*, as and for the purpose set forth.

6. The ratchet-wheel 4, in combination with the lever 5 with its pawl 6, when operated by the rope 7 and drum 8, for the purpose described.

139,967.—*Animal-Trap.*—JACOB MERCHEN, Brookville, Ind. Application filed April 12, 1873.

For moles more particularly. The trap is placed in the path of the animal with the jaws distended by the loose chained piece, which, being removed by the victim, the jaws spring together.

Claim.—The mole-trap having legs A, with collars B and spring C, combined with wedge piece D, substantially as and for the purpose described.

139,968.—*Covering for Steam and other Pipes.*—CHARLES M. O'HARA, Fall River, Mass. Application filed December 12, 1872.

Claim.—The belt E with straps *h* for covering the joints and forming the connection between the casings of two adjoining sections of pipe, substantially as herein set forth.

139,969.—*Binder for Loaded Wagons and Sleighs.*—JACOB PAFF, Lawrenceburg, Pa. Application filed May 10, 1873.

The base-plate is provided at one end with a slotted hook and at the other with projecting ears, which serve as fulcrums for the binding-lever. This lever is also provided with a hooked arm for engaging with the chain when it is desired to draw the ends of the chain together in the act of binding. A suitable tripping device is also arranged to release the chain when it is desired to remove the load.

Claim.—A binder composed of the bed-piece A, lever B, pivoted hook C, arm D, slotted hook F, fulcrum-pin G G, and chain E, the same connected and arranged to operate substantially as and for the purpose specified.

139,970.—*Cotton-Press.*—WILLIAM W. PATRICK, Midway, S. C. Application filed April 5, 1873.

Power is applied by means of two levers supported by shafts between uprights worked by pulleys, ropes, and windlass, one lever having cam-shaped head and pendent arm and follower-block, and the other grooved to correspond with this head.

Claim.—1. The lever H having head *e*, in combination with pendent arm *f*, and follower-block L, to be adjusted substantially as described.

2. Lever I, having groove *e'* for head *e* of lever H, as set forth.

3. The combination of levers H and I by means of pulleys, ropes, and windlass to elevate and depress them, substantially as set forth.

4. The combination, with the shafts *a*, uprights D, box-frame F, and packing box E, of the lever H *e*, arm *f*, follower-block L, lever I *e'*, and pulleys, ropes, and windlass, substantially as described.

139,971.—*Beer-Strainer.*—CHARLES M. POWERS, Ridgewood, N. J. Application filed March 8, 1873.

A beer-strainer constructed with a sliding partition attached near its center, held in position by grooves or slides, by which it may be moved up and down, with a perforated bottom to separate the beer from the foam.

Claim.—A beer-strainer having a removable partition, with a removable strainer attached thereto, as shown and described.

139,972.—*Spike.*—SAVILL REDFERN, Churchville, N. Y. Application filed May 21, 1873.

A two-pronged spike, with the prongs at right angles to the body, to be driven into the side of the tie, and a notch in the shank or body to fit over the flange of the rail.

Claim.—The spike composed of the body *a*, shanks *f f*, and prongs *b b*, when said prongs are made of unequal length and are arranged to drive sidewise into the ties, substantially as and for the purpose specified.

139,973.—*Hopper for Grinding-Mills.*—MARTIN REPLOGLE, Moulton, Iowa. Application filed April 19, 1873.

Valve so arranged under two-part hopper that the pressure of the grain in either part will revolve the valve and close the other part when emptied of its contents.

Claim.—The combination, with a two-part hopper or spout, A B, of an automatic cut-off valve, D E G, substantially as specified.

139,974.—*End-Gate for Wagons.*—STEPHEN F. ROBERTSON, Rockford, Ill. Application filed October 19, 1872.

Metallic stirips are secured to the ends of the end-gate, which engage within a metallic flange upon the side board. The same is further secured by bolts passing down through the floor and secured by hand nuts.

Claim.—The combination of the bolt F and its hand-nut with the end board B, cleat E, hook e^1, plate D_6 eye d^1, and side board A, as described.

139,975.—*Cider Mill.*—LORING O. ROCKWOOD, Ottawa, Ill. Application filed April 11, 1873.

The shaft of one wheel passes through the hub of the other wheel when both revolve in the same direction, and are not concentric with each other. A flange at the bottom of the first wheel, acting as a moving floor, carries pomace to scraper at place of exit, and also small stray pieces of fruit to the point of contact with the pressing surfaces.

Claim.—1. Passing the shaft E of the wheel D through the hub of the wheel C, when both wheels revolve in the same direction, and are not concentric with each other, substantially as described.

2. The combination of the hollow axle B with the slide-boxes H H, bolsters J J, nut K, double wedge I, and shaft E, substantially as and for the purpose described.

3. The inclined feed-floor L, constructed and applied substantially as and for the purpose described.

4. The flange O at the bottom of the wheel D, for the purpose described.

139,976.—*Apparatus for Pitching Barrels.*—GEORGE SICHLER, New York, N. Y. Application filed May 24, 1873.

The horizontal bars of the upper skid are connected by rods and rest upon tongued cross-bars which slide in vertically-grooved posts, and are supported by movable pins. The bars of a tilting-skid, placed at the rear of the former skid, and having a weight at one end, are pivoted to a rod whose axles turn in an adjustable block.

Claim.—The cross-bars B C D, the posts E grooved upon their inner sides, the adjustable cross-bars F G, the skids I J, the adjustable blocks K, the round L, and the tilting and weighted skid M N O, constructed and arranged to operate in connection with each other, substantially as herein shown and described.

139,977.—*Tobacco-Drier.*—JAMES MORGAN SMITH, Milton, N. C. Application filed November 21, 1872.

Claim.—The process of curing tobacco yellow, so that it will keep well in bulk by thoroughly smoking and then drying it, by means of detachable heating-pipes, substantially as herein described.

139,978.—*Child's Carriage.*—FRANCIS SNYDER, New York, N. Y. Application filed May 5, 1873.

While the central portion of the bar D acts as a perch, the two ends are bent into a form similar to the letter C, and serve as springs for the carriage-body.

Claim.—The combined perch and springs D D D made in one piece of metal of the form shown, in combination with the toe-irons E attached to the front and rear of the body of a child's carriage, as and for the purpose set forth.

139,979.—*Clothes-Washer.*—GEORGE J. TERREL, North Blanford, Mass. Application filed May 5, 1873.

The wash-boiler attachment is constructed with two conical-shaped bottoms, the upper one being perforated, having a center pipe or conductor for water and steam, to which the lower or plain one is fitted, by a flange or projecting band, to the inside of the conductor.

Claim.—1. An apparatus for washing clothes in an ordinary boiler, consisting of the conical perforated false bottom A, vertical tube B, T-discharge-pipe C, and imperforate lining D, when the same are constructed and arranged as shown and described.

2. The removable lining D, in combination with the false bottom of a wash-boiler, as and for the purposes described.

139,980.—*Carving-Machine.*—HENRI THOMAS, Brooklyn, E. D., N. Y. Application filed April 19, 1873.

The carving tool and indicator are arranged to move coincidently by means of pantograph arms, sliding bars, beveled gear, and screw-threads, so that the pattern being rotated in one set of centers, the work is correspondingly carved in the other.

Claim.—1. The combination of the sliding work and pattern-carrying centers, and the vertically-adjustable and horizontally-swinging tool-carrying arms, all constructed and arranged and operating substantially as specified.

2. The center holder-plates D F, radius-bars H, links J, toggle-jointed bars K, sliding nut L, and screw M, combined and arranged substantially as specified.

3. The arms O P, block Q, bar X, slide W, bars V, and link U, combined and arranged substantially as specified.

4. The sliding-block Q, standard Y, arms O P, and their actuating devices, and the adjusting-screw Z, and crank-shaft Z', combined with the work and pattern centers, substantially as specified.

139,981.—*Loom for Weaving Hair-Cloth.*—JOHN TUBPIE, New York, N. Y., assignor to EDWARD H. FAULKNER, same place. Application filed December 9, 1872.

The hair-seizing device is carried by a strap attached to two pulleys on a rock-shaft, to which the required rapid movement and dwell are given through a geared sector operated by a reciprocating grooved cam, multiplying-gearing, and a second rock-shaft actuated by an eccentric. One of the pulleys is adjustable about its shaft, so as to allow of taking up the slack of the strap. Between the crank and the batten there is a yielding connection consisting of two parts, one sliding upon the other, and the parts are held in working position by two springs, one of which is regulated in its action by an adjustable collar. The Jacquard operates the take-up, but the parts can be disconnected by a treadle under the control of the attendant, when it is necessary to stop the take-up without stopping the Jacquard.

Claim.—1. In combination with the pulleys L^1 L^2, strap P, and hair-seizing device, the rock-shaft H, the multiplying-gearing, the shaft I carrying the cam I^1, connection J, and geared sector K, all arranged for joint operation, as and for the purpose specified.

2. In combination with the hair-seizing device the pulleys L^1 L^2, one being adjustable on its shaft so as to take up the slack of the strap P, substantially as herein specified.

3. In combination with the batten and the crank b, the yielding connection consisting of the adjustable spring *f*, the sliding connection C', the adjustable collar *c'*, the connection C, and the spring F, substantially as shown.

4. The tilting treadle R, rigid connection S, lever T, pawl *t*, connection V, and loose connection U, all arranged relatively to the lever W of the Jacquard and to the take-up mechanism of the loom, substantially as and for the purposes specified.

139,982.—*Butt-Hinge.*—SOMERS VAN GILDER, Knoxville, Tenn. Application filed May 17, 1873.

One leaf carries a fixed pintle-pin and central projecting hub, and the other leaf is diagonally divided, each part carrying a pintle-socket. The butt can be used for either a right or left hand slip-hinge.

Claim.—The leaf A', provided with the central socket C having the pintle B secured therein, in combination with the leaf D divided, as shown, into two parts, one having a socket, E, and the other a socket, F, for receiving the respective ends of the pintle, all as shown and described.

139,983.—*Button-Hole Cutter.*—CASPER VAN HOOSEN, New York, N. Y. Application filed March 29, 1873.

In each blade near the inner end is a curved slot, into which the margin of the cloth passes, and is gaged by a sliding stop in the lower one of the two blades. In the upper blade is a set-screw, which works through a nut and serves to limit the action of the blade, and thus determines the length of the button-hole. By these buttons the margin and length of button-hole are both made of varying lengths. A scale with fractional parts of inches is marked upon the lower blade.

Claim.—The notated scissor-blade A B, having each a corresponding curved slot at the inner ends of its cutting edge, a shoulder, a stop, F, and an adjustable cloth-gage, G, as and for the purpose described.

139,984.—*Coffee-Roaster.*—WILLIAM H. WELCH, Bloomington, Ill. Application filed March 5, 1873.

The rim is adapted for pot-holes of different sizes, and has notched standards, upon which the roaster may be sustained at any desired height.

Claim.—1. The rim *a* having the notched standards *b*, substantially as set forth.

2. The rim *a* provided with standards *b* and cover *u*, in combination with globe *b'*, all arranged and operated for the purpose of retaining the aroma of coffee during the process of roasting.

139,985.—*Cultivator.*—PHILIP F. WELLS, Milford, Mich., assignor to himself and D. WEBSTER WELLS, same place. Application filed April 12, 1873.

Claim.—1. A plow-standard, G, pivoted to the upper end to bar C, and held rigidly in a vertical plane between the bifurcations of a stud, J, on the cross-bar, as and for the purpose described.

2. The front plate F upwardly flanged and constructed to receive and retain the tongue and longitudinal bars, in the manner shown and described.

139,986.—*Harvester.*—JOHN WERNER, Jr., Prairie du Sac, Wis. Application filed March 15, 1873.

An endless apron-rake, composed of front and rear belts and connecting slats, slides over a fixed receiving-platform, so that grain falling obliquely is made to assume a position at right angles to the platform preparatory to its ascent up the elevator.

Claim.—The belts E F connected by cross-bars G H, and combined with a continuously-close platform, C, level with the tops of and extending to each of the rolls B B, as and for the purpose described.

139,987.—*Harrow.*—PARMENAS N. WOODWORTH, Stony Point, Cal. Application filed April 7, 1873.

A harrow, constructed in two triangular sections, and hinged together in V-shape form, and provided with teeth on the outside timbers, which slant outward and backward, while the teeth on the middle longitudinal timbers slant backward. Across the frames are two timbers in each section provided with teeth slanting in opposite directions.

Claim.—A harrow in which the teeth on the outside timbers of the frames A A slant outward and backward, while those on the middle longitudinal timbers slant backward only, in combination with the obliquely and backward slanting teeth on the cross timbers C C', slanting in opposite directions, substantially as and for the purpose above described.

139,988.—*Gyroscopic Toy.*—ARCHIBALD C. WÜRTELE, New York, N. Y. Application filed April 26, 1873.

Claim.—1. The improved gyroscopic toy formed by the combination with each other of the base A, pivot B, ring C, arm and ring D *d'*, inner ring E, screw-pivots F, wheel G, axle H, and screw-pivots I, substantially as herein shown and described.

2. The combination of the suspended weight J with the parts A B C D E F G H I, substantially as herein shown and described.

139,989.—*Whip-Socket.*—JAMES H. YOUNG, Newburg, N. Y. Application filed May 24, 1873.

The whip is held secure within the socket by means of the bristles, which are secured to the barrel of the socket.

Claim.—The whip-socket A, having bristles B extending inward and arranged to hold the whip in place, substantially as and for the purpose described.

139,990.—*Needle Setter and Threader for Sewing-Machines.*—CHARLES F. ALBERT, Philadelphia, Pa. Application filed May 9, 1873.

The notches at the top and bottom of the flanged plate and the spring, the point of which enters the groove, hold the needle firmly. The hooked pin in the eye, besides regulating the longitudinal position of the needle on the plate, also serves to draw the thread through the eye. The needle should be set a little lower for sewing thick material, and the pivoted arm is to be turned over the flanged portion of the plate.

Claim.—1. The combined needle holder and threader, consisting of a flanged plate, A, notched at *b*, spring *c*, and hooked pin *d*, arranged as set forth.

2. The combination, with the said holder, of a pivoted arm, *e'*, for the purpose specified.

139,991.—*Button.*—JAMES N. ALLEN, Providence, R. I. Application filed May 24, 1873.

Improvement upon patent No. 90,631. The improvement consists in making the shank with a rectangular recessed arm, and arranging coincident engaging points on the arm, and a bar which is pivoted to it, so that the two can be interlocked.

Claim.—The combination of the shank B, having a rectangular arm which is provided with a spring-slot, and a holding-bar pivoted to the end of the arm, and arranged to enter the spring-slot and be retained therein by the coincident engaging surfaces, substantially as described.

139,992.—*Washing-Machine.*—JOHN E. ANDERSON, Boiling Springs, Pa. Application filed March 12, 1873.

A washing-machine, constructed with a double sliding shoe or rubber connected at its center, having between them a water-feeding device, and pitmen on either side connected with upright levers, and the center cross-board by which motion is given it. At each end of the box is a suspended rubber located to operate in connection with sliding rubber.

Claim.—1. In combination with the rubber or shoe B, with one or more rubbing-surfaces, the water-feeding device C C, composed of inclined boards or strips, preferably hinged to vertical bars secured to the inner sides of the rubber, substantially as shown and set forth.

2. The combination of the elements of the above claim, with the pivoted or yielding rubber or rubbers E E, substantially as and for the purpose set forth.

139,993.—*Method and Mold for Manufacturing Glass-Ware.*—JAMES S. ATTERBURY and THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed March 27, 1873.

Mold having movable bottom and a plunger provided with air-tube and valves; bottom elevated and molten glass poured in mold; plunger brought down forming part of article; bottom then dropped, and article finished in same mold by blowing through air-tube of plunger.

Claim.—1. The process of pressing and blowing glass-ware in the same mold, and thereby making a pressed and blown article of glass-ware from the same piece of glass, substantially as herein described.

2. The plunger D, provided with an air-passage and a valve, *e*, substantially as and for the purpose described.

3. The movable base B, and air-injecting plunger D, combined with a glass-mold, substantially as and for the purpose described.

4. The new manufacture of glass-ware, consisting of blown and pressed glass, either the blown or pressed parts being a continuation simply of the other, substantially as described.

139,994.—*Propelling Device for Vessels.*—BENJAMIN T. BABBITT, New York, N. Y. Application filed February 5, 1873.

A propelling-wheel is arranged in a shell or case, which is divided into two compartments, each of said compartments being connected to a channel, one of which leads to the bow and the other to the stern. The wheel is shifted laterally upon its axis or shaft, so as to occupy at pleasure either of the shell compartments, and the water being drawn through one channel is forced by the wheel through the other one, accordingly as the vessel is to be propelled ahead or astern.

Claim.—The combination of the wheel A, arranged as described, its case or shell divided to form two compartments, B and C, and the channels D F leading from said compartments, one to the bow and the other to the stern of the vessel, essentially as and for the purpose herein specified.

139,995.—*Bath-Tub.*—LOUIS BAGGER, Washington, D. C. Application filed December 6, 1872.

A bath-tub having an overturned edge to prevent water from splashing over the sides.

Claim.—The overturned, convex, or angular top edge of the bath-tub *c c*, continued either all the way round or only upon and along a portion of a bath-tub, substantially as and for the purpose hereinbefore set forth.

139,996.—*Propelling Canal-Boats.*—HALSEY H. BAKER, New Market, N. J. Application filed March 10, 1873.

A propelling-wheel, composed of a toothed surface or pinion, side treads or rollers corresponding with the pitched line of the pinion, and one or more flanges, travels over a track on the canal bank, composed of an open rack and side rails, and has attached at its center a universal joint connected to the end of a shaft, which shaft is operated by power on the boat, by which means the propelling-wheel is revolved on the rack, and motion imparted to the boat.

Claim.—1. The arrangement, substantially as herein described, of the universal joint E, which connects the shaft D with the propelling-wheel B, within said wheel and at the center of the latter.

2. The propelling-wheel composed of a toothed surface or pinion *k*, side treads *l l*, corresponding with the pitch-line of the pinion, and one or more flanges, *m m'*, substantially as specified.

3. The track G, composed of an open rack, *n*, and side rail or rails *o o'* arranged with their upper surfaces in the same line or plane as the pitch-line of the rack, essentially as described.

4. The rack *q* of the track and perforated web *r*, in combination with the rail *o*, and open rack *n*, substantially as shown and described.

139,997.—*Traction-Engine.*—DAVID H. BALL, Sinnamahoning, Pa. Application filed March 31, 1873.

Oscillating engines are connected by means of intermediate mechanism with the front and rear axles, allowing them to have lateral movement independent of each other. The wheels are so combined with their axles that they may have nearly a whole revolution before they become locked to the axle.

Claim.—1. In a steam road-wagon or traction-engine, the combination of one or more oscillating engines, with the connect-U U, and shaft V, for operating both the front and rear axles of the traction-wheels, substantially as set forth.

2. The wheels of a steam road-wagon loosely mounted upon the axles, and adapted to have a movement independent of one another by means of the key O, the reduced portion O', and projection O^3, substantially as set forth.

139,998.—*Temporary Binder.*—WILLIAM H. BARNARD, Washington, D. C. Application filed May 8, 1873.

The top is composed of one fixed piece and a central and end pieces adjustable by racks and spring-jaws. One of the latter binds the papers, while the other is raised to admit inspection from the beveled corner *a*.

Claim.—1. A bill or letter file, constructed with a bottom, beveled side B, straight side C, one end piece, and a three-part top operated by catches and racks, substantially as described.

2. The three part cover or lid provided with catches, which engage with racks on the box in such manner as to allow the vertical adjustment of a part of said lid in the box, for the purpose of permitting an inspection of its contents without their displacement, as set forth.

3. The combination of the racks H, with catches G, and strips E and F, substantially as and for the purpose described.

139,999.—*Fire-Damper for Windows.*—MOSES J. BARWICK, New York, N. Y. Application filed January 24, 1873.

Iron damper-plates, to be applied by the firemen to the outside of a window of a burning building, to check the circulation of air and the escape of flame. The shutters slide laterally, and are controlled by a rack and pinion. There is a sliding-plate also at the bottom to more effectually close the opening when necessary.

Claim.—The adjustable damper-plate applied to the upper portions of windows or openings in burning buildings, substantially as described, for the purpose set forth.

2. The combination of the adjustable plates A A', with a rack and pinion, or their equivalent, and pins to hold the plates in position, as described, for the purpose set forth.

3. The adjustable damper-plates, in combination with a valve or slide at the bottom thereof, as described, and for the purpose set forth.

140,000.—*Shirt Bosom Stretcher.*—EZRA BASSETT, Topeka, Kans., assignor of one-half his right to A. P. CHAPIN, same place. Application filed March 1, 1873.

The table is constructed in form of the bosom of a shirt, with a frame fitted to its outer edge, with a spring by which the shirt is held for ironing by a cross-bar on which it rests.

Claim.—The ironing-stretcher for shirt-bosoms, consisting of a board A, in connection with a clamping-frame C, having the spring pressing-bar D E, substantially as shown and described.

140,001.—*Photography.*—EDWIN L. BERGSTRESSER, Hublersburgh, Pa. Application filed March 25, 1873.

A negative plate is provided with rims or flanges on its surface so as to be held in any suitable frame or back, and make as it were its own printing-frame. It is also provided with a groove or gutter near its edges, and running wholly or partially around such plate to catch the surplus silver or other solution as it flows off toward the edges.

Claim.—1. A negative plate or glass having rims, flanges, or their equivalents, upon its surface, substantially as and for the purpose set forth.

2. A negative plate, provided with a groove in its face for catching the drain of silver or other solution, substantially as shown and described.

3. In combination with the negative plate, provided with rims or flanges, the hinged back and holding-springs, substantially as specified.

140,002.—*Circular Saw-Mill.*—MONROE BLACKBURN, Sullivan, Ind. Application filed April 15, 1873.

The automatic setting-lever I is made adjustable upon the bar H.

Claim.—The levers H I, arranged so that the point of connection can be changed to regulate the set, and used in connection with the wheel E, foot-block G, pawl *d*, wheel D, carriage B, and head-block C, the several parts being constructed and arranged as and for the purpose set forth.

140,003.—*Sliding Chandelier.*—GEORGE F. BLAISER, Philadelphia, Pa. Application filed April 12, 1873.

The lower cap has a slot through which the notched bar attached to the sliding pipe moves. A spring bears upon the bar to bring the flanges against the cap. By turning the pipe contrary to the action of the spring it may be readily lowered.

Claim.—1. The rack *d* secured to the sliding pipe D, as and for the purpose set forth.

2. In combination with the rack *d* and notched cap E, the spring *e*, as shown and described.

140,004.—*Plow.*—THOMAS E. C. BRINLY, Louisville, Ky. Application filed April 7, 1873.

Both the standard and mold-board are constructed with lugs and dovetailed recesses in such a manner that when the share is introduced, a single bolt will secure the whole firmly together.

Claim.—The mold-board C b b' g g' d, in combination with the standard A e e^1 e^2 s f^1, and the share B f f' f^2, and bolt b^2, all constructed and arranged substantially as specified.

140,005.—*Bed-Bottom.*—EDWIN L. BROCKETT, Nelson, Ohio. Application filed May 9, 1873.

Upon the head and foot pieces are grooved blocks, and upon the blocks is a continuous wire having cranks. A bottom slat, having oblique slots that hook over the cranks, sustain an upper slat having lever-braces.

Claim.—1. The continuous wire D having cranks *d*, combined with grooved blocks C *c'* having staples *c*, and arranged at intervals on head and foot pieces B B', to support the slats, in the manner described.

2. The cranked wire D journaled in frame A so as to be movable inwardly, in combination with slats having an oblique slot c^3, in each end, as and for the purpose set forth.

140,006.—*Globe-Valve.*—AUGUSTUS P. BROWN, New York, N. Y. Application filed July 25, 1872.

The valve has a spherical bearing and a chamber cast on its back, into which a spring is placed, upon which the valve-stem bears when closing the valve. When undue pressure arises from any reason, the valve compresses the spring and prevents the threads from jamming.

Claim.—1. In a globe-valve, constructed as herein shown and described, the valve B, provided with the chamber C, and with the resting-spring F, in combination with the guide D, the valve-stem G, and its fastening-nut E, substantially as herein shown and described.

2. The valve B, having the spherical bearing-face, and the chamber C, spring F, and guide D', in combination with the valve-stem, the fastening D, shoulder G, and shell A, all constructed and arranged, substantially as herein described.

140,007.—*Shipping and Show Case for Boots and Shoes.*—MATTHEW BUHLER, Lamoille, Ill. Application filed December 17, 1872.

The shipping-case is made in the usual oblong form, and is provided with a series of transverse shelves or partitions, and still further subdivided by an inclined partition extending the whole of the interior length of the case, thereby making separate divisions for each size of boots. When the top is taken off and the case set up on one end, it becomes a show-case.

Claim.—A shipping and show case, A, for boots and shoes, provided with a series of transverse partitions, *a*, and an inclined partition C, arranged as and for the purpose specified.

140,008.—*Button-Fastening.*—DOMENICO CANNATA, Jersey City, N. J. Application filed April 9, 1873.

A button is secured by the use of a loop or staple, which is notched so as to lock into a notched or slotted disk or washer on the under side of the fabric.

Claim.—The combination of the notched metal loop, applied to the eye of a button, and the annular plate, notched as specified, essentially as and for the purpose herein set forth.

140,009.—*Apparatus for Burning Hydrocarbons.*—MANUEL CARBONEL, Havana, Cuba, assignor of one-half his right to JOSÉ BENITO PEREZ, same place. Application filed March 27, 1873.

The liquid falls through the perforated supply-plate upon the inclined platform, where it is burned, the perforated plate preventing the backflow of the ignited gases, and the perforated fire bridges retarding its escape to the flue, and from its heated condition facilitating combustion.

Claim.—1. An inclined platform, D, arranged in conjunction with a perforated supply-plate, E, in a furnace for burning liquid fuel, when such plate E is arranged beneath, and at some distance from the supply-pipes F, substantially as set forth.

2. The combination of the perforated fire-bridges G with the inclined platform D, perforated supply-plate E, and channels I, as described.

140,010.—*Bridle-Bit.*—DANIEL H. CARPENTER, Hartford, Conn. Application filed April 25, 1873.

Claim.—1. The face-piece or nose-band D, constructed of any suitable elastic material, and attached to the upper sections of the lever-arms of a bit, in such manner as to operate substantially as described.

2. In combination with the elastic face-piece or nose-band D, arranged as stated, the strap D' connected with the nose-band and head-stall in such manner as to permit of its being adjusted substantially as described, as and for the purpose specified.

3. The flat rectangular mouth-piece A, when the same is so connected with the lever-arms of a bridle-bit as to operate substantially as described.

4. The lever-arms B B of a bridle-bit so formed and arranged that the bearings or eyes to which the reins are attached shall be above the mouth-piece and those of the curb below, substantially as described, as and for the purpose specified.

5. The metal plate curb C having hooks C' C', all formed out of the same piece of metal, the whole being so constructed and arranged as to permit of its being attached and used in connection with an ordinary bridle-bit, substantially as and for the purpose specified.

140,011.—*Fire-Alarm Telegraph.*—ROBERT CARTER, New York, N. Y. Application filed October 24, 1872.

By means of an earth-connection at each box and an earth from center of battery, an earth-circuit can be made to central office whenever metallic circuit is broken, an alarm apparatus being upon each side of battery.

Claim.—1. The combination of the earth-wire 6, 7, and the earth-wire 5, with a telegraphic fire-alarm circuit, substantially in the manner and for the purpose herein specified.

2. The combination of a spring or circuit-closer A, electrically connected with the earth, with the springs or circuit-closers B and B' connected with the line, substantially in the manner and for the purpose specified.

3. The combination of the insulating-space F, with the circuit-wheel C, substantially as and for the purpose specified.

4. The arrangement of the electro-magnets M and M' for giving an alarm, one on each side of the battery, substantially as and for the purpose specified.

140,012.—*Braider for Sewing-Machines.*—JAMES P. CHAFFEE, Washington, D. C. Application filed February 14, 1873.

The figure shows the under side of the attachment. The guides are adjustable on the plate for braids of different widths, and from the passage formed between the guides the braid passes over the cross-bar and into the slot where it is sewed to the cloth by the needle; may be secured to the cloth-plate by a screw through the slotted arm, and is adapted for machines having a "needle-feed."

Claim.—The plate A, provided with the slotted arm, the adjustable guides C C, the opening *f*, the cross-bar *e*, and the slot E, substantially as and for the purposes herein set forth.

140,013.—*Loom-Temple.*—NATHAN CHAPMAN, Hopedale, Mass. Application filed June 6, 1873.

Claim.—1. The toothed temple-roller provided with a fixed stop or pivot of hard metal, conical or hemispherical in shape, to turn against the end piece or lug of the case, which holds the roller on its shaft.

2. In combination with the toothed roller, the conical hard-metal pivot, as described, and constructed with a recess to serve as a bushing for the end of the roller-shaft.

3. The sheet-metal plate c^3 under the stock D fastened on the stud *c*, to cover the spring under the slot in the stock, and keep out the waste, dust, and dirt.

140,014.—*Oscillating Berth for Ships.*—ISAAC A CHOMEL, New York, N. Y. Application filed April 23, 1873.

Claim.—1. The single bolt a^1, with its lower end a^2, forming a universal point of suspension lower than the ceiling, and as low and as near the center of gravity as is practicable, in combination with a berth constructed and operating substantially as and for the purpose herein described.

2. The berth D, provided with a stiff suspension frame d^1, and adapted to be suspended from a universal joint, substantially as herein described.

3. The spring G, in combination with the suspension frame and berth, substantially as and for the purpose set forth.

4. A ship's berth suspended by a universal joint as near the center of gravity as is practicable, within a rigid frame, and guided in its oscillations by an articulated frame, substantially as described.

140,015.—*Signal-Lantern.*—SAMUEL W. CLARK and WILLIAM R. SYKES, London, Eng.; said SYKES assignor to said CLARK. Application filed February 19, 1873.

The colored glasses are attached to pivoted slotted arms, moving vertically before the lamp. A bent lever, (extending upward into a handle across the top of the lantern,) by moving in the slotted arms, causes either of the colored screens to be depressed in front of the lamp, accordingly as the handle is turned to the right or the left.

Claim.—In a hand signal-lamp, the vibratory bent lever *e*, in combination with the slotted arms *c c*, or their equivalents, on the shade-frames *b b*, arranged to operate the colored shades *a* a^1 in such a manner that both are removed from before the light when said bent lever is placed in its central or normal position, and one or other of the colored shades placed before the light by moving the lever in one direction or the other, substantially as shown and described.

140,016.—*Pump.*—HIRAM T. COLEMAN, Williamsburg, N. Y. Application filed May 15, 1873.

Rubber cushions lined with metal are placed beneath the beam to prevent injurious concussions, and to permit, when desired, extra motion of the beam.

Claim.—The cushions *d* placed on the pump stock or frame beneath the beam E, that connects with the plungers for the purpose of preventing concussion and allowing an extra degree of motion to the beam, substantially as specified.

140,017.—*Elevator.*—ALONZO W. CRAM, Litchfield, Ill. Application filed May 8, 1873.

The ejector is for elevating grain, coal, sand, dirt, &c. The steam-jets are arranged concentrically, forming a hollow cone-shaped vacuum-passage. On the end of the discharge pipe a hood is so arranged as to form a vent for the steam, thus breaking the force of the discharge.

Claim.—1. The inlet or suction tube A, the discharge-tube E, steam-chamber *c*, formed as shown, and having a series of annular jets *a a*, and an opening, *d*, for the supply of steam, the whole being constructed, combined, and arranged to operate substantially as described.

2. In combination with the inlet-tube A, steam-chamber having a series of jets, *a a*, arranged as shown, the discharge-tube E end-tube F and hood F', and vent-passage *f'*, the whole being constructed and connected so as to operate substantially as described.

3. The chamber *c* and jets *a a*, the tube A, having a funnel-shaped mouth, B, with strainer-bars *b b*, tube E, having end tube F, provided with a hood, F', so secured as to leave a vent-passage, *f'*, the whole being combined and arranged to operate substantially as described.

140,018.—*Registering Steam-Gage.*—GEORGE H. CROSBY, East Somerville, Mass. Application filed February 11, 1873.

A transmitting-lever linked to the opposite extremities of a double Bourdon pressure-tube, and operating the usual gage index, is connected by an adjustable link to a registering-lever which by acting on a ratchet-wheel indicates the number of excesses over a prescribed limit of pressure. The dial-cover of the gage and the handle of the steam-cock are secured together by a padlock passing through an eye in each.

Claim.—1. In a steam-gage, substantially such as described, the combination, with the transmitting-lever, which communicates motion to the pressure-indicating mechanism, of a registering-lever, operating in conjunction with the ratchet-wheel of the registering-index, as set forth, and connected with the transmitting-lever by a divided connecting-rod jointed to said levers, and having its two parts united by a screw-threaded coupling-sleeve, by means of which the working-length of the said rod can be increased and lessened at pleasure, substantially as and for the purposes specified.

2. The herein-described mode of locking together the steam-cock and body and removable top of a steam-gage by means of an eye-bolt, *p*, or its equivalent, passing through and binding together the top and body of the case, and arranged so that its eye will be opposite to and in coincidence with a corresponding eye or hole in the handle of the steam-cock, to permit the passage through both bolt and handle of the tongue or loop of the lock, by which they are bound together, as set forth.

140,019.—*Ice-Crusher.*—MICHAEL J. DIXON, New York, and WILLIAM TUNSTILL, Brooklyn, E. D., N. Y. Application filed May 20, 1873.

As ice falls from an inclined chute supported on a jaw bolted to horizontal bars and made adjustable by projections on its lower end fitting into a rack-bar, it strikes a cutter on the swinging jaw and falls into the hopper. The swinging jaw is operated by rods connected with a crank, and rods leading from this crank push forward a plunger, which moves the crushed ice from under the hopper.

Claim.—1. The jaw *a* supported at its lower edges by the rack-bars *d*, and connected to the sides *b* by bolts, as set forth.

2. The arrangement of the connecting-rods *g g*, cranks *h h*, shaft *f*, and swinging jaw *e*, in combination with the stationary jaw *a*, between the plates *b b*, as and for the purposes set forth.

3. The delivery-plunger *r* moving horizontally, or nearly so, beneath and in combination with the ice-crushing jaws *a e*, substantially as set forth.

4. The splitting-blades or projections *t'*, in combination with the supply-chute *t*, and ice-crushing jaws *a* and *e*, substantially as and for the purposes set forth.

140,020.—*Plug and Bunch Tobacco.*—ISAAC EPPINGER, New York, N. Y. Application filed May 2^3, 1873.

The filler is treated with licorice or other sweetening substance, in the usual manner, then formed into a rope or strand enveloped in a binder, after which a bright wrapper, leaf, in its natural condition, is wrapped around the whole; then the end is made a central core around which a coil is made; and the whole is finally subjected to pressure.

Claim.—Plug or bunch tobacco made as herein described, the same consisting of a rope or strand composed of a sweetened or prepared filler inclosed in a binder, in turn enveloped in a wrapper, the said rope being coiled around a central core forming a continuous part of the rope, and the bunch thus made being subjected to a pressure, as and for the purposes set forth.

140,021.—*Dynamic-Machine.*—LOUIS CHARLES ERRANI and RICHARD ANDERS, Liege, Belgium. Application filed August 1, 1872.

Oil is sprayed into the cylinder behind the piston, and being mixed with air, is ignited at the proper point by an electric device; the consequent expansion drives the piston forward, the momentum of the fly-wheel returning it to its first position. An ejector supplies the oil from the tank to the sprayer, the ejector being connected to a piston-blower driven by a crank attached to the main shaft.

Claim.—1. The combination, with the cylinder A and piston B, of the spraying device M, for producing motive power by or from any suitable hydrocarbon liquid, sprayed within the cylinder, and mixed with air, and subsequently ignited within the cylinder.

2. The combination of the electric igniter P, with the spraying device M, the piston B, and cylinder A of the motor, substantially as specified.

3. The blower K, in combination with the spraying device M, the tank N, the piston B, and the cylinder A, essentially as described.

4. The tank N, in combination with the wind-chamber *s*, and fluid-tube *f*, of the spraying device M, the piston B, the cylinder A, and the blower K, substantially as specified.

140,022.—*Apparatus for Drawing Oil from Casks.*—JOHN G. EVENDEN, Chicago, Ill., assignor to himself and F. CORTEZ WILSON, same place. Application filed May 22, 1873.

An air-tight jacket is placed around the pump-cylinder, which has an opening between the plunger and valve to admit oil into the air-chamber. An escape-pipe in the upper part of the pump-cylinder connects with a tube, (open at the top,) for carrying the oil that gets above the plunger back into the tank.

Claim.—1. In a hand-pump for liquid-vessels, the combination of a pump-cylinder with an air-chamber surrounding the cylinder, substantially as and for the purpose described.

2. In a hand-pump for liquid-vessels, the combination of a pump-cylinder, an air-chamber, and a drip-tube extending from the upper end of the cylinder down below the point where the pump passes through the head of the tank or vessel, substantially as described, for the purpose specified.

3. In a hand-pump for liquid-vessels, a combined air-vent and drip-tube, substantially as described, for the purpose specified.

4. The combination of a tapering jacket, C, with a pump-cylinder, A, extending longitudinally through the jacket, substantially as and for the purpose specified.

5. The combination of the pump-cylinder A, the tapering jacket C surrounding the cylinder, the discharge-spout D, the drip-tube and air-vent *m n*, and the plunger, valve, and opening from the cylinder into the air-chamber, substantially as described, for the purpose specified.

140,023.—*Bridle-Bit.*—JULES M. FABRE, Bordeaux, France. Application filed April 4, 1873.

The oscillation of the mouth-piece allows it to lie flat upon the tongue of the animal when the rein is strained, thus avoiding the infliction of unnecessary pain.

Claim.—A bridle-bit, the mouth-piece of which has an oscillating motion, independent of and within the side bars, which have stops confining said oscillating motion of the mouth-piece within certain limits, substantially as shown and described.

140,024.—*Cotton-Bale Tie.*—WILLIAM D. FIELD, Providence, R. I. Application filed May 14, 1873.

Claim.—1. A bale-tie composed of two hook-pieces, A A, pivoted together and arranged relatively to each other, substantially as described.

2. A bale-tie composed of the hook-piece A pivoted to a slotted link-piece, E, substantially as described.

140,025.—*Dumping-Cart.*—BENJAMIN G. FITZHUGH, Frederick, Md., assignor to JACOB BYERS, same place. Application filed October 5, 1872.

A lever is attached to the forward part of the body, the forward part of the lever extending forward parallel with the shafts; the lever being raised materially assists in dumping the cart, when the body assumes a horizontal position; the weight of the lever locks the body to the shafts; the end-board, either alone or combined with a section of the bottom of the body, is so hinged that it completes dumping as the body is being turned back to place.

Claim.—1. A lever at the front end of the cart extending forward therefrom, and arranged to operate upon a stop thereon, to dump the body by raising and pushing it back upon its hinges, and to bring it again in position by pulling upon said lever, substantially as herein described.

2. The lever A and its catch, H, operated by the weight of said lever, to automatically lock itself with the shafts, as described.

3. The combination, with the body and shafts of a cart, of the pivoted lever A, the stop F, and the catch H, arranged to operate as described.

4. The tail-board J pivoted to open when the body is about returning to its proper position upon the shaft, as set forth.

5. The tail-board constructed in one piece, or with a section of the bottom, and hinged or pivoted to swing or tilt independent of the body, to dump the load, substantially as described.

140,026.—*Fastener for Sashes and Doors.*—JOSIAH B. FROST, Jackson, Mich. Application filed April 5, 1873.

A two-part circular case is formed with projecting points upon the under side to mark the centers of the circles, and a strengthening flange or rim. A bolt and a spiral spring are placed within the case, being held in position by a face-plate, this construction making a simple form of spring-bolt or fastener, which is very readily attached to a sash or door.

Claim.—The sash and door fastener herein described, consisting of the two-part circular case A A with the flange N and points P P on the under side, and the face-plate F inclosing the bolt B and spiral spring, all substantially as and for the purpose shown and described.

140,027.—*Spittoon.*—FREDERICK GAISBERG, New York, N. Y. Application filed May 14, 1873.

The receptacle is inclosed in a low box with a hinged lid, which is lifted by pressing on a knob at the upper extremity of a rod inclosed in a tubular standard of the case. This rod is connected to the lid through a link and bent lever-arm, and these parts are inclosed in a hollow bracket that supports the tubular standard.

Claim.—A spittoon, consisting of, first, a box or hollow base, A, with lid B, a tubular standard, C, and a hollow bracket or console, D, constituting an ornamental case; second, a removable pan, E; and, third, a rod, F, with knob *w*, a link, G, and a bent lever-arm, H, attached to the hinge-edge of the lid, constituting means for operating the same, constructed and arranged substantially as herein described, for the purposes set forth.

140,028.—*Frame and Stock for Revolving Fire-Arms.*—CHARLES FRANCOIS GALAND, Paris, France. Application filed January 9, 1873.

Claim.—1. The plate G hinged to the frame forward of the trigger and covering the mechanism of the lock, combined with the stock L covering the spring, the said stock attached to the frame so as to secure the plate G, all substantially as set forth.

2. The screws T U, combined with their respective springs F S, for the purpose of securing and adjusting the said springs, substantially as set forth.

140,029.—*Vapor-Burner.*—MOSES F. GALE, New York, N. Y. Application filed March 10, 1873.

The retort, containing fragments of carbon, is surrounded by the flame-ring. Oil enters at top, and the resulting gases are forced down through tubes to the regulating-chamber, and thence to the jet-aperture.

Claim.—The combination of the retort A, tubes B B', regulating-valve G, reservoir C, all co-operating as described, and for the purposes set forth.

140,030.—*Vapor-Burner.*—MOSES F. GALE, New York, N. Y. Application filed July 24, 1872.

The inlet tube enters the vaporizing-chamber above the flame-openings. An interior tube conveys the gas to the regulating-chamber. The several chambers are separated by metallic disks or diaphragms.

Claim.—The tube A provided with the tube G, vaporizing-chamber E, perforated diaphragm F, chamber H, valve K, and inlet-pipe C, all constructed and arranged substantially as and for the purpose described.

140,031.—*Corn-Planter.*—THOMAS A. GALT and GEORGE S. TRACY, Sterling, Ill. Application filed September 23, 1872.

The frame of the machine is rectangular. The after part is supported upon a covering-wheel, while the forward end is supported upon a pair of wheels having a crank-axletree with provisions for adjustment. The seed-box is mounted upon the forward end of the frame, and the seed-valve is worked by a cam upon the axletree of the covering-wheel.

Claim.—The combination of the slide E', slotted rod H, cam-wheel I, upright lever i, and bracket h, pivoted to the middle portion of the rod H, substantially as and for the purpose set forth.

140,032.—*Head-Block for Saw-Mills.*—GEORGE B. GETTY, Bloomsburg, Pa., assignor to himself, ELIAS MENDENHALL, and ELI BARTON, same place. Application filed February 7, 1873.

The log is moved upon the head-blocks by knees, which are operated by pawls attached to a hanging lever, and this lever, by an inclined plane, secured to the floor of the mill.

Claim.—1. The stirrup G provided with the arm d and carrying the pawls f, which latter are adjustable in said stirrup to enable the board to be sawed any desired thickness, in combination with the inclined floor-irons h and rack-bar D, substantially as and for the purposes herein set forth.

2. In combination with the stirrup G and pawls f, the springs a, e, and i, substantially as and for the purposes herein set forth.

3. The combination of the rack-bar D with standard C, stirrup G with flanges b, and arm d, pawls f, springs a, e, and i, crank-shaft J, and irons h, all constructed and arranged to operate automatically, substantially as and for the purposes herein set forth.

140,033.—*Press.*—JOSHUA B. GODWIN, Washington, N. C. Application filed September 16, 1872.

Claim.—The double toggle-levers G G G G pivoted, respectively, to the platen E and the end frame A, and to an intermediate draft-block, b, for operation by the vibrating-lever I through chains or ropes H K, all arranged and combined substantially as shown and described.

140,034.—*Gas-Purifier.*—JAMES T. GOODFELLOW and FREDERICK A. SABBATON, Troy, N. Y. Application filed May 1, 1873.

The lime or other purifying material is placed on a series of endless aprons in a closed case, which is provided with devices for transferring the material in at the top and out at the bottom.

Claim.—1. A gas-purifier, having therein an endless screen, or two or more such screens, upon which the purifying material is supported in the form of a sheet-like layer or layers through which the gas is compelled to pass, and from which endless screen or screens the spent material is discharged by turning said screen or screens substantially as herein described.

2. The combination of a gas-purifier having therein one or more endless screen or screens, and a hopper or magazine from which the purifying material is delivered in a layer or layers upon the said screen or screens by turning the latter, substantially as described.

3. The combination of a gas-purifier having therein one or more endless screen or screens, a magazine or hopper for the fresh purifying material, and the gage J, or its equivalent, as herein described.

4. In combination with one or more rotary endless screen or screens in a gas purifier, the gas-intercepting guard or guards K arranged on the casing of the purifier and against the sheet-like layer or layers of purifying material on said endless screen or screens, as herein described.

5. In combination with two or more endless purifying-screens, mounted one over another, and simultaneously turned in opposite directions, in a gas-purifier, substantially as described, the deflecting gas-guard or guards L, arranged on the casing of the purifier, and between the discharging and receiving ends of adjacent screens, as herein set forth.

6. In combination with two or more simultaneously-turning screens, which deliver the purifying material from one screen to the other, in a gas-purifier, substantially as described, the gage or gages M arranged over and adjacent to the receiving place or places of said endless screen or screens, as set forth.

7. The combination of the clearing lag or lags N with the endless purifying screen or screens F, in a gas-purifier having a bottom, b, or guard or guards K, arranged, in respect to said endless screen or screens, as herein described.

8. A gas-purifier, in which the lime or other purifying material is supported on one or more endless screen or screens, in which the apertures are automatically enlarged and contracted in or by turning of said endless screen or screens, substantially as herein set forth.

9. A rotary endless gas-purifying screen having transverse rods e secured together by links f and intermediate rods g held loosely in and by said links f, and intermediate rods g held loosely in and by said links, substantially as herein described.

10. The combination of a gas-purifier, through which the purifying material is passed upon one or more turning endless screen or screens, a closed receptacle, R, which receives the spent material discharged from said screen or screens, and a closed hopper or magazine, I, which delivers the fresh material to the said screen or screens, substantially as described.

11. In combination with a gas-purifier having therein one or more endless turning purifying screen or screens, a hopper or magazine, I, furnished with a removable cover made gas-tight by a hydraulic seal, and with or without a cut-off valve, U, at the lower part of the magazine or hopper, as described.

12. In combination with a gas-purifier, from which the spent purifying material is discharged automatically, substantially as described, the valve V and discharge passage or receptacle R, having an opening in the bottom, with or without a valve therein, and furnished with a removable vessel or cover, S or S', connected with said passage or receptacle by a hydraulic seal, substantially as described

13. In combination with a gas-purifier having an elevated downward-discharge passage, surrounded by a dip-flange, k, a removable vessel, S, with or without carrying-wheels thereon, and having a surrounding water-trough, T, arranged so as to receive and seal the said dip-flange k, and the flange of a removable cup-like cover, which will fit over the said vessel upon removing the latter from the said discharge-passage, substantially as set forth.

14. A gas-purifier, in which the purifying material is supported in the form of sheet-like layers on screens with an intervening space or spaces, through which succession of alternate layers and spaces the gas is passed, and in which purifier the purifying material is introduced, changed in the layers therein, and discharged from the purifier, without either stopping the flow of gas through the purifier or interrupting the purifying action of the latter, or material loss of gas therefrom, by means substantially as herein described, or any equivalent therefor.

140,035.—*Machinery for Bending the Edges of Boot and Shoe Soles.*—BENJAMIN H. HADLY, Brooklyn, N. Y. Application filed June 7, 1873.

The upper or feed roll has a vertical flange, between which and the lower roll the edge of the sole is bent. The lower edge-bending roll immediately beneath the upper roll is beveled off from the center and fixed to a shaft, which revolves in bearings in an auxiliary frame. The main frame is forked or recessed to receive the auxiliary frame, its rear portion being pivoted to the main frame, while the front is supported by spring-power, thus providing a yielding bearing to accommodate for varying thicknesses of stock.

Claim.—1. A machine for bending or molding the edges of boots and shoe soles preparatory to the welt or upper being sewed onto them, consisting essentially of the following elements combined: First, a feed-roll, flanged or otherwise formed so as to present two faces at an angle with each other, against which the sole is bent, substantially as shown and set forth; and, secondly, a bending-roll, shaped, located, and actuated so as to press with equal, but yielding, pressure against both faces or angles of the feed-rolls, substantially as set forth.

2. The combination of the flanged feed-roll revolving in fixed or stationary bearings, with the bending-roll having its bearings in a frame or support pressed toward said flanged roll with spring pressure, and capable of an up and down vibratory movement upon a pivot or axis, to allow the said roll to move toward or away from both the body and the flange of the other roll, in order to automatically adjust itself to varying thicknesses of leather, substantially as shown and described.

3. The combination, with the vibratory auxiliary frame, and the bending-roll carried by the same, of the inclined roll-shaft, having its bearings in said frame, and the horizontal driving-shaft for said roll-shaft supported at one end by the said vibratory frame, and at the other end in a rocking bearing in the main frame, in which it can slide, as and for the purposes shown and set forth.

4. The combination, with the flanged feed-roll and bending-roll, of the adjustable edge-guide, arranged to operate in connection with said rolls, substantially as shown and set forth.

5. The combination, with the vibratory auxiliary frame, of the linked screw-rod, adjusting-nut, and spring held between said nut and the base of the frame, substantially as herein shown and set forth.

6. In combination with the vibratory auxiliary frame and linked screw-rod, the adjusting nut, spring, and sleeve intermediate between said spring and screw, substantially as shown and described.

140,036.—*Animal-Trap.*—JOSEPH H. HAIR, Galesburg, Ill. Application filed April 23, 1873.

A cage-trap reset by the prisoner, and the outer falling door of which is armed at the lower edge with inwardly-projecting points.

Claim.—1. The sliding gate C, when provided with inwardly-inclined points c, substantially as and for the purpose set forth.

2. The combination of the gate C with the lug c', platform D, bait pin or hook F, and lever D' with spring d', substantially as set forth.

3. The combination and arrangement of the gate C, bait-lever E, rod e, and spring-lever D' d', substantially as set forth.

4. The sliding gate C, platform D, spring-lever D' d', bait-pin F, swinging gate G, chain H, lever I, and link i', all combined and arranged substantially as and for the purpose set forth.

5. The sliding gate C, bait-lever E, connecting-rod e, lever D d', gate G, chain H, lever I, and link i', combined and arranged substantially as and for the purpose set forth.

140,037.—*Washing-Machine.*—SAMUEL HAWKINS, Chillicothe, Mo. Application filed April 7, 1873.

Is constructed with its box or tub in ordinary form with a metallic bottom, and an elastic concave rubber secured to the box by flexible straps, one end of which is attached to a windlass having a crank to give it tension. At its center is a corrugated cylinder, its shaft extending through the sides, and having a bearing in two uprights secured by buttons, with openings for the journals out of their center, which may be reversed to increase or diminish its distance from the flexible rubber. On the journals of the rubber are loose disks, by which the clothes are kept within the length of the rubber.

Claim.—1. The combination of the suds-box, rubbing-cylinder, loose disks or washers D D', flexible concave E, and windlass E' E² E³, all arranged and operating substantially as specified.

2. The rubbing-cylinder B B¹, suds-box A having elongated vertical slots b', and reversible supporting-bars C, the bearings in which are nearer to one end than to the other, substantially as and for the purpose specified.

3. The suds-box and rubbing-cylinder, in combination with the loose disks or washers D D', substantially as and for the purpose specified.

140,038.—*Last-Block Fastening.*—JOHN A. HECKENBACH and ANTON HAERTLE, Mayville, Wis. Application filed March 28, 1873.

A hook is attached to the bolt instead of making a hole through it. The plate D and socket d are one piece.

Claim.—The plate D having socket d, the bolt C having hook e, and the loose spring combined and applied in the upper section of a last, as shown and described.

140,039.—*Hand-Car.*—JAMES D. HINCKLEY, Adrian, Mich. Application filed April 8, 1873.

Peculiarity of construction affording great strength.

Claim.—1. A hand-car gallows-frame, constructed of two bent wooden arches, B, connected together by girts a, substantially as described and shown.

2. The combination, with the bent wooden arches B B, of the plummer-beams C C, secured thereto and to the sills of the car by the rods D, substantially as and for the purpose set forth.

140,040.—*Tanning Compound.*—JOHN B. HITZ, Guyandotte, W. Va. Application filed March 7, 1873.

The two compounds are added to the bark-liquor in given quantities during the tanning process. No. 1, japonica gum, salt, saltpeter, Epsom salts, alum, and sulphuric acid. No. 2, flour of sulphur, borax. Each dissolved in a given quantity of hot water.

Claim.—1. The compound No. 1 formed of the ingredients specified, and in about the proportions set forth.

2. The compound No. 2 formed of the ingredients specified, and in about the definite proportion set forth.

140,041.—*Shuttle for Sewing-Machines.*—WILLIAM HOCKENSMITH, Bridgeport, Conn. Application filed May 28, 1873.

When the screw is turned, the auxiliary lever is caused to bear with more or less force against the tension-bar, and a more equal tension is obtained than when the tension-lever is adjusted by a screw only at its end.

Claim.—In combination, with the tension-bar a within the shuttle-case, and extending into the recess C, the auxiliary lever D and adjusting-screw b, whereby the adjustment of the bar a is made through the said auxiliary lever D.

140,042.—*Soldering-Tool.*—ROBERT J. HOLLINGSWORTH, deceased, Baltimore, Md., assignor through himself and his administratrix, to LOUIS MCMURRAY, of same place. Application filed May 2, 1872.

Claim.—1. The formation in the soldering-block of one or more lateral openings for the escape of the steam or gas that may accumulate within the block during the soldering operation, substantially as shown and set forth.

2. In combination with a soldering-block formed with one or more lateral openings, as described, a cap-presser arranged to play up and down within the block, and provided with one or more holes for the passage of the steam or gas, during the soldering operation, from below the presser into the chamber above, substantially as shown and set forth.

140,043.—*Combined Roller and Irrigator.*—DEAN S. HOWARD, Drury's Bluff, Va. Application filed April 30, 1873.

A tight hollow roller is mounted upon hollow journals through which water or liquid manure is introduced at one end. A pump receives motion from the rotation of roller upon the ground.

Claim.—A roller irrigator, constructed and operated substantially as recited.

140,044.—*Cooking-Stove.*—JAMES R. HYDE, Troy, N. Y. Application filed April 3, 1873.

Improvement on his patent of March 11, 1873, in that the air-chamber entirely surrounds the fire-pot.

Claim.—1. The combination, in a reservoir cooking-stove, of an air-chamber surrounding the fire-box, a cold-air duct leading into the same, and a flue or flues leading from the chamber and conveying heated air directly under the reservoir.

2. The flue f, in the bottom plate G, extended in width at the front end, and contracted toward the rear, as and for the purposes specified.

3. The flue h, in the back plate H, made in elliptical shape, as and for the purposes specified.

140,045.—*Suspender.*—THOMAS J. IRVING, Baltimore, Md. Application filed February 27, 1873.

Claim.—The suspender herein described, constructed with non-elastic removable body A, elastic straps B B', slide C, and fastening-button a, or the equivalent of said button, substantially as and for the purposes specified.

140,046.—*Seed-Planter and Fertilizer Distributer.*—EZEKIEL P. JONES, Greensborough, N. C. Application filed March 22, 1873.

Two bearing-wheels support a disk-like seed-receptacle, the central portion of the wheels forming the ends of the disk. A diaphragm divides the receptacle into two parts, and circumferential band has suitable openings for the discharge of seed. Segmental brushes in front and rear of the wheel prevent the seed from falling at the wrong time. A hinged harrow covers the seed.

Claim.—1. A revolving seed-holder or distributing-drum, composed of two sections or shells attached to annular supporting rims and spokes, as and for the purpose specified.

2. A revolving seed-holder provided with a detachable partition, V', dividing the drum into two compartments, substantially as described, for the purpose set forth.

3. The segmental brushes B' B' arranged on the shields A' A', and brackets C' C', for operating in connection with a belt interposed between the two sections of the cone-cylinder I, substantially as and for the purpose specified.

4. The seed-drum, provided with solid heads, combined with the spokes and fellies of the traction-wheels, as and for the purpose specified.

140,047.—*Chair Fan Attachment.*—BENJAMIN L. JORDAN, Mercersburg, Pa. Application filed April 12, 1873.

A fan attachment to be applied to any ordinary chair, and operated by a treadle under the feet of the occupant of the chair.

Claim.—1. In combination with an ordinary chair, the removable base-board A, bearing a treadle, E', and operative mechanism to convey motion from said treadle to a vibrating arm, M, which bears a brush or fan, substantially as set forth.

2. The combination and arrangement of the base-board A, arms B B, slot a, and screw-hook D, as set forth, for convenient attachment of said board to the front and back rungs of a chair.

3. The treadle E', bell-crank F, and rock-shaft H, with their connecting-rods, combined with shaft J and arm M, as and for the purpose set forth.

140,048.—*Loose Pulley.*—LUTHER KNIGHT, Salem, N. Y., assignor of one-half his right to JOHN H. THOMAS and ARTHUR WHITLOCK, of same place. Application filed April 12, 1873.

The oil-chamber is in the center of the hub, and wholly surrounds the bushing. The oil is communicated to the shaft forming the bearing of the pulley through a tube filled with cotton-waste, by the revolutions of the said shaft.

Claim.—In a self-oiling loose pulley, the combination of oil chamber or reservoir, bushing, and tube, constructed as and for the purposes aforesaid, substantially as described herein.

140,049.—*Neck-Tie Supporter.*—ALBERT KOMP, New York, N. Y. Application filed May 15, 1873.

The hook for attaching the shield to the collar-band slides in a friction-guide upon the shield, making the shield adjustable in different positions.

Claim.—In combination with a neck-tie shield, the metal guide a and sliding hook b, substantially as and for the purpose described.

140,050.—*Fiber-Cleaning Machine.*—SALEM T. LAMB, Boston, Mass. Application filed March 24, 1873.

An improvement on the patent to W. B. Shedd, April 30, 1872, No. 126,337, consisting of, first, a transverse perforated water-tube in advance of the crushing-rollers, sprinkling the material as it is fed in; secondly, a hollow perforated cylinder parallel with the upper crushing-roller having projecting wings to act as scrapers upon a concave and yielding bed-plate beneath, upon which the material is carried to a pair of drawing-rollers, which deliver it upon the table; and, thirdly, a sprinkling-cylinder revolving in rear of the pressing-rollers having projecting wings, which act upon the upper pressing roller, and which are in turn acted upon by a stationary doctor.

Claim.—1. In machinery for cleaning fibers, a rotary scraper drum or hollow cylinder, having reticulated or foraminous walls to permit the escape of water introduced into said drum from a suitable source and under suitable pressure, substantially as and for the purposes shown and set forth.

2. In combination with the crushing-rollers and draft-rollers, the intermediate foraminous rotary scraper-drum for discharging water upon the material passing through the machine, and for operating upon the material passing between it and the bed below, substantially as set forth.

3. The combination with the draft-rolls H H' and bed *a* of the rotary cylinder N with blades *i*, under the arrangement as shown and set forth.

4. The combination, with the crushing-rollers, the intermediate foraminous rotary scraper-drum, and the draft-rollers, of the perforated drum N with arms or blades *i*, the said drums being designed to discharge water upon the material, and to operate substantially as shown and set forth.

5. The combination, with draft-rollers H H', bed *a*, and perforated drum N having arms or blades *i*, of the doctor or scraper O, substantially as herein shown and described.

6. In machinery for cleaning fibers, the combination, with the crushing-rolls and draft-rolls, of an intermediate perforated rotary scraper-drum discharging water upon the material between the two sets of rolls and operating upon the said material, as described, and a water-pipe placed in advance of the crushing-rolls to discharge water upon the material as it enters the machine, substantially as shown and set forth.

140,051.—*Manufacturing Crystalline Acid Phosphate of Lime for Yeast-Powder.*—JOHN E. LAUER, New York, N. Y. Application filed February 13, 1872.

The manufacture of crystalline acid phosphate of lime, by treating bone black first with sulphuric acid and afterward with muriatic acid.

Claim.—The manufacture of crystalline acid phosphate of lime, substantially as herein described—that is to say, by treating bone black first with sulphuric acid and afterward with muriatic acid—in the manner and for the purpose set forth.

140,052.—*Street-Railway Car.*—SAMUEL H. LITTLE, Rosemond, Ill. Application filed January 29, 1872.

The rear door is supported upon rollers, which travel upon a track arranged beneath the floor of the car. The door is operated from the front of the car by means of cord and pulleys.

Claim.—1. In a street-railway car, the combination of the sliding door F, bracket *f*, roller-frame G, rollers H, and rail *i* beneath the floor, all substantially as and for the purposes set forth.

2. The combination of the door F with the track *i* beneath the floor; the cord M, pulleys N N', drum O, and pulleys P P', all arranged substantially as described.

140,053.—*Plow.*—PETER LOEB, Dayton, Ohio, assignor of one-half his right to DAYTON MALLEABLE-IRON COMPANY, same place. Application filed May 10, 1873.

The standard is hollow, elliptical in cross-section, and provided with one or more internal strengthening plates. Upon its external lower portion there are formed seats for the land-side, share, and mold-board.

Claim.—1. The plow-standard constructed of the elliptical tube, as shown, and having opening B; boss b^1, and swell a^1, said standard changing gradually in its lower portion to an angular shape, and forming the mold-board wing A', and the recess a^2 for the land-side, substantially as specified.

2. The tubular plow-standard having one or more interior vertical cross-braces, B, substantially as set forth.

140,054.—*Pedestal for Stools and Tables.*—JOHN R. LOMAS, New Haven, Conn., assignor to BERNARD SHONINGER, same place. Application filed May 23, 1873.

The several parts of the pedestal are united each to the other by means of ribs on one part and a corresponding groove on the other part.

Claim.—A pedestal for stools, tables, and like articles formed from several parts united each to the other, by means of ribs on one part and a corresponding groove on the other part, substantially as set forth.

140,055.—*Spirit-Level.*—FRANK W. MARSTON, Philadelphia, Pa., assignor to JOAB MOSES, same place. Application filed March 5, 1873.

Two bubble-vials are permanently secured together at right angles, and attached to the frame or stock by a pivot at the angle. A screw at the extremity of the longer tube-case serves for the adjustment of both in the stock.

Claim.—1. A spirit-level in which the two tubes are adjusted at right angles to each other in the same frame, separable from the block, as and for the purpose set forth.

2. The tubes D D', secured at right angles to each other to a frame, B, and simultaneously adjustable by a screw, A, as set forth.

140,056.—*Device for Regulating the Twist in Spinning-Frames.*—CELESTIN MARTIN, Verviers, Belgium. Application filed April 4, 1873.

Under each arm is a swinging weighted regulator which keeps the yarn clear of a friction or holding surface or device when the proper twist is being given. When the yarn is twisted too hard it assumes a straight line, swinging the regulator on its pivot and coming in contact with the friction device, so that the twist is thereby stopped or moderated between such surface or device and the back rolls. When the proper twist is restored the regulator returns to place of itself ready to repeat the operation when necessary.

Claim.—The arrangement, on a spinning-machine, of a self-acting regulator, acting on each individual thread, substantially as and for the purpose herein shown and described.

140,057.—*Brake Reaction Movement.*—HORACE B. MARTIN, San Francisco, Cal. Application filed October 1, 1872.

Within the main driving-pulley are arranged two small beveled wheels which mesh into the two large beveled disks, arranged on the main shaft upon opposite sides of the main driving-pulley in such a manner that when the speed of one of the disks is retarded the speed of the other will be correspondingly increased.

Claim.—The brake reaction movement, substantially as described, consisting of wheel *b* with the contained transverse wheels *c c*, disks *d* d^2, wheels *e* and *f*, and brake *h*, as and for the purposes specified.

140,058.—*Nose-Bag for Horses.*—HUGH D. MCGOVERN, Brooklyn, N. Y. Application filed January 16, 1873.

The bottom of the bag is adjusted in height by the weight of the oats acting against a spiral spring within the bag.

Claim.—A nose-bag for horses having a spring, D, arranged within it, substantially as shown, for operating upon the bottom by crimping the lower end of the bag, as herein set forth, for the purpose specified.

140,059.—*Sewer-Cleaning Truck.*—WILLIAM S. MCHARG and ALBERT B. HILL, New Haven, Conn. Application filed May 28, 1873.

The sides of the frame are connected by bars and support buckets having flanges on their sides. The truck is supported on two or on three wheels—one at each end, or two at one end and one at the other. When but two wheels are used an adjustable roll is placed on each side of the frame to support it laterally.

Claim.—1. The truck herein described for transporting sediment in sewers, consisting of the frame A, cross-bars B, and supporting-wheel G, and with or without the lateral rolls E.

2. The buckets P provided with side flanges *a* to support the bucket in the truck, substantially as set forth.

140,060.—*Machine for Making Boot and Shoe Heels.*—ALEXANDER C. MCKNIGHT, Philadelphia, Pa. Application filed November 13, 1872.

From the periphery of a wheel cutting-dies of different sizes project, which, by the revolution of the wheel, are, in regular succession, forced down upon the stock, cutting the lifts, and then conveying them to a receiver, where they are temporarily secured together by nail-driving mechanism.

Claim.—1. A wheel or cylinder provided on the circumference with a series of lift-cutting dies, as arranged, and operating so as to have imparted to it a vertical, reciprocating, and intermittent rotary motion, substantially as and for the purpose herein shown and described.

2. The combination, with the die-wheel or cylinder C, of the plates or bars B and B^1, eccentric D, shaft E, ratchet-wheel S, with its arms N, N^1, N^2, and N^3, pawl P, stop P^2, pulleys J and K, and belt L, all arranged and operating substantially as and for the purpose herein shown and described.

3. In combination with the cutting-dies F, F^1, F^2, and F^3 of the die-wheel or cylinder, the radially-moving plungers G, and springs H, or their equivalents, for forcing the lifts out of the dies, as herein shown and described.

4. The combination, with each die, of a pointed rod or awl *j*, arranged and operating to punch a nail-hole simultaneous with the cutting of the lift, as herein shown and described.

5. The combination, with the plungers G, pins *l*, and springs H, of the disk I, provided with a cam-guide, *k*, for compressing the spring and producing a backward radial movement of the plungers, previous to discharging the lifts into the receiver, substantially as herein shown and described.

6. In combination with the mechanism for cutting the lifts of a receiver, Q, arranged to admit the lifts for the purpose of stacking or piling them together, substantially as herein shown and described.

7. The combination, in the receiver Q, of the adjustable blocks *o*, o^1, and o^2, operating to adapt it for various sizes of heel-blanks, substantially as herein shown and described.

8. The combination of the curved arm M and sliding plate R with the receiver Q, arranged and operating in the manner and for the purpose substantially as herein shown and described.

9. The combination of the nail carrying-plate V, provided with a lever, W, and spring r^1, with the nail-driving slide T, provided with the rods *p* and *q*, and spring *r*, arranged and operating substantially as herein shown and described.

10. The combination of the nail-driving slide T, rods *p* and *q*, spring *r*, studs X and *s*, cam *t*, disk U, upright shaft *y*, gear-wheel Y, sliding plates B^2 and B^3, eccentric D', and driving-shaft E, all arranged and operating substantially in the manner and for the purpose described.

11. In combination with the driving-slide T, the nail-carrying plate V, lever W, with its flexible finger or projection *w*, stud *v*, and spring *r*, all arranged and operating substantially in the manner and for the purpose described.

12. The combination of the vertical plate or bar B^3, presser-foot *p'*, eccentric D, and plate or bar B^2, arranged and operating in the manner and for the purpose herein shown and described.

13. The combination, in a machine for forming heels for boots and shoes, of a die-wheel cylinder, or its equivalent, having a vertical reciprocating and intermittent rotary movement imparted to it, a receiver in which the lifts are projected from the wheel and assembled, and a nail-driving mechanism for securing the lifts temporarily together.

140,061.—*Shoulder-Strap.*—JAMES C. MERRITT, West Point, N. Y., assignor to himself and JOSEPH J. WALTON, Newark, N. J. Application filed October 22, 1872.

A flat thumb-screw engages with the epaulet through an interposed washer which clamps the cloth of the coat against slight points projecting from the under side of the epaulet-plate.

Claim.—The nut *b* and pins *c* upon the plate or frame of a shoulder-strap or shoulder-knot, in combination with the washer *i* and screw *e*, as and for the purposes set forth.

140,062.—*Street-Lamp.*—JACOB G. MINER, Morrisania, N. Y. Application filed July 30, 1872.

Claim.—The flanged cylinder or globe E *e*, supported in the ring or frame C by means of the movable segments G^1 G^2 G^3, all combined and arranged for joint operation substantially as herein set forth.

140,063.—*Lifting-Jack.*—DANIEL L. H. MITCHELL, Forest, Miss. Application filed May 14, 1873.

The bed-plate having an arm for securing it to standard; spring which forces a pawl into a toothed bar; and a slot to receive a pin on the head which incloses the whole. Through this head passes an arbor having two ratchet-wheels—one meshing with a rack-bar, the other with an operating-lever.

Claim.—1. The bar or bed plate A, constructed as and for the purpose set forth.

2. The head E, with its gearing and ratchet-bars hinged to the bed-plate A, as and for the purpose set forth.

3. The combination of the bed-plate and its arm with standard C, as and for the purpose set forth.

140,064.—*Fastener for Shutters and Doors.*—DAVID J. MOFFITT, Thornton, Ind. Application filed May 17, 1873.

One or more sliding bolts, attached to a door or shutter, have one end bent into a peculiarly-shaped handle, while the other or free end is bent into a right angle to enable it to enter and engage with a peculiar staple, which is recessed by providing it with inwardly-projecting lips, this staple being attached to the door-frame or wall. By this construction the bolt serves to hold the door or shutter wide open, or, when closed, to bolt it securely.

Claim.—The door-holder, composed of one or more bolts, A A, having the hooks *a a* and handles *a' a'*, in combination with one or more recessed staples, B B *b*, substantially as shown and described.

140,065.—*Clock-Work Globe.*—LOUIS JEROME NAPOLEON MOURET, Paris, France. Application filed August 31, 1871.

The design of the invention is to make the globe represent the astronomical life of the earth, and to reproduce its various phenomena, positions, and phases; this is sought to be accomplished by a special construction and arrangement of mechanism for connecting and disconnecting the globe and its operative clock-work at will, and for accelerating and retarding the motions of the former. Means are also provided for poising the said globe so as to make its geometrical center coincide with its center of gravity.

Claim.—1. The mechanism employed for regulating the poise of the globe, consisting of the weights E E' E'' and screws *e f*, *e' f*, and *e'' f*, operating together as and for the purpose described.

2. The mechanism for rendering at will the movement of the globe dependent or independent of the movement of the pendulum, by means of the eccentric piece *c c' c''*.

140,066.—*Hound for Vehicles.*—ANDREW MÜHLEISEN, Ottawa, Ohio. Application filed May 19, 1873.

Perforation of the hound is avoided and firmness secured.

Claim.—The rear hounds for vehicles, bent from a single piece of timber, in combination with the metallic plate F having the socket G to receive the coupling-pin, substantially as herein shown and described, for the purpose specified.

140,067.—*Egg-Beater.*—DAVID MUNSON, Indianapolis, Ind. Application filed July 25, 1872.

A spoon beater with a series of upper and lower strips alternating with each other, the strips being perforated.

Claim.—1. The hand egg-beater, constructed of a series of upper and lower strips, alternating with each other to form a beater, essentially as described.

2. The strips of a hand egg-beater, perforated in the manner and for the purpose described.

140,068.—*Pressing Hosiery.*—OWEN OSBORNE, Philadelphia, Pa., assignor to THOMAS DOLAN & CO., same place. Application filed April 4, 1873.

A stocking of plain knitted fabric is made to have the appearance of a ribbed stocking by being pressed upon a grooved block.

Claim.—1. The within-described process of producing ribs upon hosiery of plain knitted fabric, by subjecting the same to pressure between heated dies when stretched upon a grooved and ribbed pressing-board.

2. The grooved and ribbed pressing-board, constructed as herein described for the purpose set forth.

140,069.—*Musical Wind Instrument.*—GEORGE E. PARKER, Newark, N. J., assignor to MOSES SLATER, New York, N. Y. Application filed April 9, 1873.

The head or cap of the valve-cylinder has a set-screw in its side, and, when the cap is in place, the neck of the screw fits into a slot in the edge of the cylinder. Tightening the screw then clamps cap and cylinder together.

Claim.—The combination, with the notched edge of the cylinder A, of the cover C, constructed as described, and the screw *s*, substantially as and for the purpose herein set forth.

140,070.—*Steam-Generator.*—HORACE PEASE, Dayton, Ohio. Application filed August 11, 1871.

By rotating the wrench-ring the crank-screws are turned so as to release the safety vent-plate, which may have been ruptured by over pressure of steam in boiler, and allow another to be replaced while the boiler is hot.

Claim.—In combination with a safety vent-plate, B, the crank-screws D and the wrench-ring E, substantially for the purpose set forth.

140,071.—*Adjustable Templet for Ships' Frames.*—ABRAM PERRIN, Marine City, Mich. Application filed January 21, 1873.

A bar-link chain, every second link of which carries a tapering metallic loop, disposed on alternate sides, through which loops are passed, two strips of sheet-metal, which are intended to conform to the contour of the vessel, said strip being held in relative position to the bar-links by wedges driven into the tapering loops.

Claim.—The adjustable templet for ships' frames, composed of the links A A' loops B, flexible strips C C', and wedges D, substantially as shown and set forth.

140,072.—*Can-Opener.*—CHARLES J. C. PETERSEN, Port Chester, N. Y. Application filed May 19, 1873.

A circular frame fits over the top of a can, and is held there by two projections upon one side, and by a sliding-bolt worked by a double handle upon the other. The lever carrying the cutting-blade is pivoted near a central point and rotated upon the head of the can. When the knife is not in use the lever is turned back and rested upon a projection formed upon the circular plate for that purpose. This may be operated without placing the hands upon the can.

Claim.—1. The body *a* having projections *b* constituting the clamping-ring, in combination with the sliding bolt *c* and compound handle *d g*, constructed and operated substantially as recited.

2. The combination of the projection *a* and lever *k* for protecting the knife when pressing for clamping the can.

140,073.—*Beer-Cooler.*—ANTHONY PFUND, New York, N. Y. Application filed June 6, 1873.

A metallic tank provided with man-holes, and having groups of tubes in a vertical, horizontal, or inclined position running through it, and a chamber below it, is placed in a vat. Water is conducted from a reservoir through pipes into the chamber and vat, and after circulating through the tubes and around the tank, is drawn off through pipes. A pipe is inserted in the bottom of the tank to draw the beer.

Claim.—1. The arrangement of a tank, A, in a vat, B, which is provided with a cold-water chamber, C, from which extend pipes *c* through the tank A, said tank being surrounded by an annular water-space *d*, substantially as herein shown and described.

2. The arrangement of the cooling-pipes *c*, which pass through the closed tank A in groups so situated that access can be had to all parts of the interior of the tank, substantially as set forth.

140,074.—*Lap-Board.*—GEORGE K. PROCTOR, Salem, Mass. Application filed March 26, 1873.

A lap-board having hinged and adjustable legs.

Claim.—1. The supporting-legs B, hinged to the lap-board and provided with adjusting devices, constructed substantially as described, for the adjustment of the lap-board, as set forth.

2. A lap-board having a drawer or box, I, substantially as and for the purpose specified.

140,075.—*Globe and Holder for Gas-Burners.*—GEORGE M. RAMSAY, New York, N. Y. Application filed May 2, 1873.

The globe has an expanded flame-chamber, a contracted throat at top, and contracted neck and expanded base at bottom. The supporters are formed of wires and attached to the gas-tube or lamp-post by a ferrule. The neck of the globe rests upon a coil of the wires, and the upper ends of the wires extend into the flame-chamber.

Claim.—1. The globe, constructed substantially as described, having expanded flame-chamber and base, and contracted throat and neck, as and for the purposes set forth.

2. The holder, consisting of the springs *b* and ferrule, or equivalent devices, arranged and adapted to operate substantially as and for the purposes set forth.

140,076.—*Elevator.*—WILLIAM R. RIGHTOR, Helena, Ark. Application filed April 30, 1873.

Two or more pairs or sets of vertical endless chains, to one pair or set of which platforms are rigidly attached by one edge, the opposite edge of the platforms being supported, when in horizontal position, by cleats carried by one or more of the other pairs or sets of chains.

Claim.—The combination of the endless chains A bearing the platforms I, and one or more endless chains B, moving simultaneously with chains A, and carrying supports K for the free edges of the platforms, substantially as set forth.

140,077.—*Coal Screen and Chute.*—MARTIN R. ROBERTS, San Francisco, Cal. Application filed April 26, 1873.

The screens, having different sized meshes, are arranged one above the other, and direct the coal to separate places. A metallic blank is placed upon the upper screen when it is desired to pass the coal without separating it.

Claim.—1. The receiving-hopper B B', in combination with the hopper C, with its screen or grating side D, chute F, with its toothed gate A, and one or more independent screens I, all combined and arranged substantially as and for the purpose above described.

2. The metal blank or false bottom K, in combination with the receiving-hopper B B', hopper C, chute F, and gate A, substantially as and for the purpose above described.

140,078.—*Form-Plate for Bottom of Shoe-Lasts.*—JOHN G. ROSS, Philadelphia, Pa., assignor to JUSTUS W. FRENCH, VIVIAN K. SPEAR, BENJAMIN DORE, and WILLIAM F. MORGAN, Lynn, Mass. Application filed May 1, 1873.

A rabbeted plate, which may be attached or detachable, extends beyond the vertical line of the last to receive the pressure-foot of the machine in sewing turned shoes.

Claim.—The form-plate B in combination with the last A and sole C, the said plate having its edge projecting over the vertical surface of the last to receive the pressure of the oblique presser-foot, and a cove in the outer corner of its edge to receive the edge of the sole C, the said plate being either detachable from or permanently secured to the bottom of the last, substantially as described.

140,079.—*Insect-Destroying Compound.*—WILLIAM B. ROYALL, Brenham, Texas. Application filed May 22, 1873.

Claim.—An insect compound composed of Paris green, cobalt, flour, and tragacanth, and licorice, mixed and applicable substantially in the manner set forth.

140,080.—*Metallic Corner-Shield for Boxes.*—JAMES F. SARGENT, Manchester, N. H. Application filed May 26, 1873.

The piece of metal is bent to fit over the corner, and the side edges are flanged to engage in grooves cut in the box. The ends of the shield are cut in V-shape, so that they shall fit respectively over the bottom and top edge of the box.

Claim.—The shield or corner-piece for boxes, &c., composed of the piece or plate A, adapted to fit the corner of the box, supplied with flanges a^2 a^2, and supplied with V-shaped slits or openings, substantially as shown and described.

140,081.—*Pencil Attachment for Dividers.*—WILLIAM SCHOLLHORN, New Haven, Conn. Application filed January 29, 1873.

A sleeve for holding the pencil has a concave bearing at each end, adapting it to the leg of a pair of compasses, to which it is clamped by a band carrying a set-screw.

Claim.—A lead-holder for compasses, consisting of the tube T, formed with its bearings *b b*, and combined with the loop L and set-screw S, substantially in the manner described.

140,082.—*Elevator for Buildings.*—ISAAC S. SCHUYLER and SAMUEL L. THURSBY, Brooklyn, E. D., N. Y. Application filed November 9, 1872.

A tube runs up from the height to which the platform is to be raised, and contains a piston and rod passing through packing, and attached to a car or platform. Liquid is forced into the tube below the piston by a pump to raise the platform, and is allowed to run back into a tank to lower it.

Claim.—An elevator for buildings, composed of a tube extending above the elevator containing a piston and rod, in combination with the car or platform running in guides, a tank for liquid and a separate actuating-pump, substantially as set forth.

140,083.—*Grain-Binder.*—QUINCY A. SCOTT, Pittsburg, Pa. Application filed May 9, 1873.

The cut grain is gathered from the swath by a rake which is attached to the main frame, and is carried to the cradle by rotating arms, thence to the binding-box by said cradle, where it is bound and dropped into the receiver.

Claim.—1. The central twister-pinion provided with journals and twister-heads on its opposite sides or faces, of a diameter equal to or greater than the diameter of the pinion, for the purposes substantially as described.

2. The twister or tying head and pinion, adapted to unite the two bands *n n'*, in combination with the cradle H and compresser-arm L', whereby one band is carried into the twister by the movement of the gavel in the cradle against the tension of said band, and the other by the return-arm L', which compresses the gavel in the binding-box, substantially as described.

3. The employment, in a grain-binder, of the removable spool-spindles O, provided with the arms or spurs for centering the band-spools, substantially as and for the purposes set forth.

4. The semi-cylindrical basket or cradle X, arranged to receive the bundles as they are automatically discharged from the binding-box, in combination with mechanism substantially as described, whereby a positive movement is imparted to said basket, for dumping it, as described.

140,084.—*Railroad Car-Spring.*—CHARLES H. SLICER, Baltimore, Md., administrator of WILLIAM SLICER, deceased. Application filed January 4, 1871.

The spring is tapered flatwise and edgewise from a point at about one-third of its length to each end.

Claim.—1. A coiled spring, the plate whereof has its outer face lengthened by a double taper, A D E, to prevent the straining or fracturing of the metal in forming the coils, essentially as described.

2. A coiled spring, the plate whereof has a double-edge taper, A B C, to form an active spring and an inactive base A *B*, and a double-face taper, A D E, in conjunction therewith, substantially such as is herein described.

140,085.—*Stone-Crusher.*—AUSTIN H. SMITH, Brooklyn, N. Y. Application filed January 15, 1873.

The form of the delivery end of the hopper accommodates the lateral spread of the descending stone and prevents clogging. The size of the crushed stone is regulated by moving the adjustable boxes, so as to change the axis on which the crushing-jaw swings.

Claim.—1. The hopper for a stone-crushing machine made with the delivery-mouth wider than the upper end of the hopper, and the crushing-jaws wider at the bottom than the top, for the purposes set forth.

2. The boxes *i*, adjusted by the screws *l*, in combination with the shaft or trunnions of the swinging jaw *d*, as and for the purposes set forth.

140,086.—*Knitting-Machine.*—JOHN SMITH and JOSEPH SMITH, Philadelphia, Pa., assignors to CONTERS BUTTON, same place. Application filed November 29, 1872.

Such of the levers as are engaged by the projections on the pattern-wheels are moved, and raise corresponding needles, so that they shall be elevated and depressed by the cams, for the purpose of knitting any desired pattern.

Claim.—A rotary knitting-machine, having vertical needles with projections *a* and fixed cams D, in combination with the radial levers B extending beneath but independent of the needles, and pattern-wheels A operating upon the levers, so as to throw the needles into or out of action with the cams, as set forth.

140,087.—*Process of Welding Steel to Cast-Iron.*—JOHN H. SMITH, Madison Run Station, Va., assignor of one-half his right to THOS. W. BOND and JOS. M. HANDERSON, same place. Application filed May 21, 1873.

Heat the parts to a welding heat and apply borax to the surfaces to be united, and re-heat the metal and bring together by strong pressure.

Claim.—The process of welding steel to cast-iron, substantially as described.

140,088.—*Can-Opener.*—LUCIUS B. SMITH, West Meriden, Conn., assignor to himself and NORMAN C. HALL, same place. Application filed May 28, 1873.

Two cutters are arranged at the end of a handle and in line with same. The two cutters are flat, sharpened at the point, and parallel, except at the ends, when one is turned outward.

Claim.—The combination of the two cutters *a b*, one of which is straight and the other curved outwardly, the two united at their upper end and attached to or made part of the shank B, and provided with a suitable handle, substantially as described.

140,089.—*Show-Case.*—WILLIAM C. SPELLMAN, Hartford, Conn. Application filed June 4, 1873.

A double folding case having flanged shelves and inclined partitions.

Claim.—1. In a show-case having horizontal shelves, the beveled upright partitions *e e*, in combination with the shelves C, having the flanges c c^1 c^1, as and for the purposes set forth.

2. The double frame A, hinged as shown, and combined with the horizontal shelves C having flanges c c^1 c^1, and with the vertical partitions *e e*, substantially as and for the purposes set forth.

140,090.—*Watch-Regulator.*—NICOLAS STAFLIN, Chicago, Ill. Application filed October 12, 1872.

A plate sliding in a curved slot of the graduated regulating-plate, carries a double worm-gear, one screw-wheel of which engages with a corresponding concave thread, ont in the watch-plate within the said curved slot, and also confines and carries the regulating-index by rising between the separated branches of the said index.

Claim.—1. The sliding plate I, constructed as described, and carrying the pinion *m* and worm-wheels *n p*, for adjusting the regulator C, substantially as described, for the purpose specified.

2. The sliding plate I, having the upturned flange *j*, in combination with the watch-plate A, and the index-plate G having the groove *k* to receive the flange *j*, and a rabbet to receive the narrow end of the plate I, substantially as described, and for the purpose specified.

3. The combination of the graduated operating-wheel R with the sliding plate and its operating mechanism, the regulator C, the index-plate G, and the threaded segmental recess *h*, substantially as described, for the purpose specified.

140,091.—*Loom-Picking Mechanism.*—JEREMIAH STEVER, Bristol, assignor to THOMAS C. MORTON, Waterbury, Conn. Application filed May 13, 1873.

The picker-staff is operated by a horizontal lever, which is forced back into working position by a face-cam, and is actuated by a second lever connected with a spiral spring working on a vertical axis supported on a bracket on the loom-frame. One end of the spring is attached to a ratchet, by means of which the tension can be adjusted.

Claim.—The levers L L' attached to their respective picker-staffs, combined with the respective springs N N', adjusting mechanism for said springs, and levers P P', and cams to actuate the said levers and springs, substantially as set forth.

140,092.—*Post-Office Box.*—EMORY STOCKWELL and WARREN H. TAYLOR, Stamford, Conn. Application filed March 26, 1873.

The metallic fronts or door frames are recessed so as to inclose sheet-metal plates composing the pigeon-holes. A single wire-pin projects through the horizontal rib so as to form the hinge for two doors.

Claim.—1. As a new article of manufacture, a series of metallic post-office letter-boxes, in combination with a metallic front, as described.

2. A post-office letter-box, so constructed that two of the doors thereof swing on one pivot.

140,093.—*Tobacco-Case.*—JOHN W. STONE, Lynchburg, Va. Application filed May 21, 1873.

A trunk-shaped box is provided with a fixed diaphragm in the lid for pressing upon the upper surface of the tobacco, an air-chamber being also thus provided in the top of the case for the preservation of the flavor.

Claim.—As a new article of manufacture, a tobacco-case, constructed as described, having the body A and the top B constructed with the fixed diaphragm C, and having the air-chamber *c*, substantially as and for the purpose set forth.

140,094.—*Wheelwright-Machine.*—GEORGE SWEET, Dansville, N. Y. Application filed May 21, 1872.

The felly is secured to the periphery of a revolving table, and is then brought into the proper position for boring the holes for the spokes and cutting the joints.

Claim.—1. The sliding bar *a*, with teeth *i i*, sliding in the guides *b b* on the arm *c*, and operated by means of the cam-lever E, substantially as and for the purposes herein set forth.

2. The elbow-lever J, with point *y* and spring *f*, operating in combination with the notched dial *h*, substantially as and for the purposes herein set forth.

3. The combination, with the dial B, its arms C, and circle D, and its toothed sliding bars *a* operated by the cam-levers E of the sliding saw and auger-carriages G G', all mounted upon the t-shaped frame A, and operated substantially as set forth.

140,095.—*Barrel-Head.*—JAMES W. TAYLOR, Ashland, Va. Application filed February 24, 1873.

The two parts of the head are expanded by means of an eccentric lever.

Claim.—The spring-bar *m*, in combination with the parts *a* a^1, the flange a^2, and the lever or eccentric E, substantially as and for the purpose set forth.

140,096.—*Guide for Circular Saws.*—SAMUEL TAYLOR, Olamon, Me., assignor to himself and JOSIAH C. TOWLE, Bangor, Me. Application filed May 24, 1873.

The roll is adjustable laterally, and held in position by means of a spring-pawl, which enters the teeth of a vertically-adjustable rack.

Claim.—The combination of the roll *g*, sliding bar *e*, spring-pawl and handle *h i*, and rack *j*, substantially as and for the within-described purposes.

140,097.—*Caster Attachment for Furniture.*—JOSEPH H. TRAVIS, Charlestown, Mass. Application filed May 26, 1873.

The casters are attached to a spring-frame, which latter is connected by levers to the chair. The weight of the person sitting in the chair brings the rockers to the floor, so that no weight is held by the casters. When the person rises from the chair the levers and springs lift it again, so that it rests entirely on the casters.

Claim.—The combination, with a caster, of a spring which automatically lifts the article from the floor, so that it may rest on the caster, except when forced down by the weight of the person, or otherwise, substantially as described.

140,098.—*Loom-Shuttle.*—WILLIAM TUCKER, Fiskedale, Mass., assignor to himself and CHARLES F. GROSVENOR, same place. Application filed April 9, 1873,

To prevent "floats" a disk is pivoted in the delivery end of the shuttle provided with notches in its periphery, and with a perforation to coincide in one position with the delivery-tube. A retaining-spring engages with one of the notches, and holds the disk in position so that another notch is presented above the shuttle for catching any obstructing thread. When a thread is so caught the disk is turned, by which the thread is held and broken and the weft-stop mechanism operated.

Claim.—The pivoted disk *d*, provided with the perforation 4 and notches 3 5, in combination with the tube *a* and spring *f*, applied to a loom-shuttle, and operating, substantially as described, to break the filling thread when defects occur in the fiber being woven, as herein set forth.

140,099.—*Earth-Closet.*—CHARLES A. WAKEFIELD, Pittsfield, Mass. Application filed March 24, 1873.

The closet is divided transversely by a vertical partition into an excrement and earth receptacle. The main seat and child's seat are arranged side by side. The child's seat is hinged over the earth-receptacle, and capable of adjustment into position either over the main seat or earth-receptacle, and is provided with a lid to admit of being opened when needed.

Claim.—1. The combination, with the main seat C and earth-receptacle D, arranged side by side, of the hinged child's seat E, made capable of swinging into position over the main seat or earth-receptacle, as required, substantially as specified.

2. The combination of a shutter or lid, F, with the hinged child's seat E, and the earth-receptacle D and main seat C, arranged side by side, essentially as described.

140,100.—*Metallic Roofing.*—PATRICK WALL, Allegheny, Pa., assignor to himself and JOHN S. HALL, same place. Application filed January 9, 1873.

Claim.—As an article of manufacture, a roofing sheet having a smooth surface in the space A along the edges, and corrugations in the space B, as and for the purpose described.

140,101.—*Stave-Machine.*—BENJAMIN W. WARNER, Rome, assignor to himself and ALBERT E. SMITH, Utica, N. Y. Application filed March 22, 1873.

The jointing-cutters are arranged upon two levers in such a manner as to receive a vertical movement through the agency of two cams secured to a partially-rotating vertical shaft, thus jointing the stave at the same time it is cut from the block by the saw.

Claim.—1. The combination of the oscillating supports N O, cams R, rock-shaft S, slotted arm U, and stud-bolt V, with a carriage, A, and the beveling and tapering cutters M, substantially as described.

2. The arrangement of bars Q and slotted ends T of the supports N and O with the rock-shaft S and the cams R, as described.

140,102.—*Table-Leaf Support.*—CHARLES H. WHEELER, St. Louis, Mo. Application filed March 18, 1873.

To the under side of the leaf is attached a slotted guide, having near one end an angular notch, in which the T-head of the hinged rod engages. To one side of the guide a latch is pivoted to the leaf, which engages with the T-head and holds it in the notch. On the other edge of the latch-plate is a cam, that when swung under the headed rod releases it from the notch, and allows it to slide on the slotted guide.

Claim.—1. The slotted guide, provided near one end with an angular notch, and rigidly attached to or upon the hinged leaf, in combination with the T-headed swing-rod or brace, substantially as and for the purpose specified.

2. In combination with the slotted and notched guide, and with the T-headed swing or brace-rod, the latch *c*, pivoted at one end upon the hinged leaf, and at its opposite end engaging with and locking in place the head of said rod, substantially as and for the purpose shown.

3. In combination with the slotted notched guide, and with the T-headed brace-rod, the cam pivoted upon the hinged leaf and operating to disengage the head of said rod from the notch of said guide, substantially as and for the purpose set forth.

140,103.—*Bolt-Machine.*—SYLVESTER B. WILKINS and AARON MARCELLUS, Rockford, Ill. Application filed September 21, 1872.

Upon the upper surface of the forming-die is an annular edge for removing the fin thrown out around the head of the bolt. The form of the die is such that the bolt will be pointed by means of the blow given to make the head.

Claim.—1. The combination of the drop-hammer C, having tooth *c''*, with the hook-lever D, lever D', rod *f* having collar *f'*, die B', and slotted anvil B, substantially as described.

2. The annular raised cutting-edge *b'* on the face of the forming-die B', Figs. 5 and 6', in the manner and for the purpose described.

3. The forming-die B', Figs. 5 and 5', having the bottom of the cavity formed to point the bolt-blank, and hole *c* below such cavity, and through the bottom of said forming-die, substantially as described.

140,104.—*Manufacturing Illuminating-Gas.*—ASA W. WILKINSON, New York, N. Y. Application filed December 11, 1872.

Claim.—A process of manufacturing a rich and superior illuminating-gas by first producing ordinary illuminating-gas from bituminous coal, or taking the natural light carbureted-hydrogen gas escaping in some places from the earth, then purifying the same by the usual process, and finally passing the purified gas through a retort or retorts kept at or near a cherry-red heat, into which a rich hydrocarbon, such as petroleum, naphtha, oils, resin, &c., is introduced, substantially in the manner herein set forth.

140,105.—*Carbureter.*—ASA W. WILKINSON, New York, N. Y. Application filed February 21, 1873.

Combination of a heating-chamber with an air-holder, an air-heater, and a spiral carbureter, the air-holder being constructed on the principle of a gas-holder, while the spiral passage of the carbureter is lined with some absorbent material.

Claim.—The combination of the heating-chamber F with the air-holder A and carbureter H, substantially as described, for the purpose specified.

140,106.—*Fire-Alarm Signal-Box.*—GEORGE WRIGHT, MINARD Y. HOLLEY, and HENRY R. MILES, Washington, D. C., assignors, by mesne assignments, to GAMEWELL & COMPANY, New York, N. Y. Application filed December 18, 1872.

Key inserted in key-hole and turned operates dogs D D, forcing plate A and detents C C to allow catch B to drop, thus releasing circuit-breaking mechanism without opening door of box.

Claim.—1. An automatic signal-box, operated by means of a key in the manner described, said key being applied from the outside to the outer door without opening the same.

2. The plate A, constructed, substantially as described, with detents C C, lever B, pin P, dog D D, and spring H, combined substantially as and for the purposes set forth in the foregoing specification.

REISSUE PATENTS.

5,446.—*Vehicle-Seat.*—JOHN BURT, Sturgis, Mich., assignor, by mesne assignments, to ALONZO F. HUNDELL and EDWIN R. WILLIAMS.—Patent No. 70,517, dated November 5, 1867. Application filed October 26, 1872.

One continuous piece, bent to form the back and sides of the seat, and to be directly attached to the seat-bottom.

Claim.—1. The back and sides of a vehicle-seat, composed of a single continuous piece of material without joint, substantially as set forth.

2. The bent and reclining seat back and sides formed in a continuous length from a single piece of material, substantially as set forth.

3. A vehicle-seat, in which the back and sides are formed from a continuous single piece of material without joint, substantially as set forth.

5,447.—*Bedstead-Fastening.*—LEVI W. BUXTON, Nashua, N. H.—Patent No. 23,525, dated April 5, 1859; extended seven years. Application filed June 12, 1873.

The rail and post have circular grooves. In the rail is placed an iron with serrated ends, and a hook that takes hold of a rod in

the groove in the post. The iron is held in the rail by a conically-formed pin.

Claim.—1. A rail-iron for fastening or securing the ends of the rails to the posts of bedsteads, having two curved ends, *m m*, to fit the curved parts *n n* of the groove in the end of the rail, while its rear part is provided with a hole to receive a fastening-pin, and its front part with a projecting hook device to enter the post and retain the rail and post securely together.

2. The combination, with the rail-iron *e*, of the serrations or teeth *l l* and re-enforced parts *j j*, substantially as and for the purposes set forth.

3. The combination, with the end of a bedstead-rail provided with curved grooved parts *n n*, and a rail-iron having curved ends *m m*, of a slightly conical or tapering fastening-pin, substantially as and for the purposes set forth.

5,448.—*Machine for Producing Folded Trimmings.*—CHAUNCEY O. CROSBY and HENRY KELLOGG, Milford, assignors to ELM CITY COMPANY, New Haven, Conn.—Patent No. 36,074, dated August 5, 1862. Application filed April 10, 1873.

Movable blades, in connection with sewing mechanism, fold and stitch a strip of material or tape carried on a spool and led through the tube *d'*, so as to form what is known as tape-trimming.

Claim.—1. In combination with a stitching mechanism and a work-plate, a blade or blades, substantially as described, having a reciprocating movement above the work-plate, and substantially toward the stitching device, to lay the fabric in successive and regularly defined folds, the stitching mechanism securing the folds by a continuous line of stitches.

2. In combination with a stitching mechanism and a work-plate, a blade or blades, substantially as described, having a reciprocating movement above the work-plate and substantially toward the stitching device, when the said blade or blades have a combined up and down forward and back movement in each full or complete operation.

3. In combination with a stitching mechanism and a work-plate, a blade or blades, substantially as described, having a reciprocating movement abovement above the work-plate and substantially toward the stitching device, when the said blade or blades in the extreme forward position lie within and define or form the edge of the fold or plait.

4. The combination of delivering apparatus, substantially such as described, with apparatus for folding, substantially such as described.

5. In combination, a delivering apparatus, an assistant folder, and a folding apparatus, all substantially such as specified.

6. In combination, a folding apparatus and an assistant folding contrivance, and a mechanism for stitching folds together, the combination being substantially such as described, and operating substantially as specified.

7. In combination, a blade or blades for making a fold, and apparatus for stitching, and apparatus for discharging, all substantially such as described, and operating substantially as set forth.

8. In combination, a delivering apparatus, a folding apparatus, a stitching mechanism, and discharging apparatus, all substantially such as described, and this either with or without an assistant folder, substantially such as described.

9. In a folding apparatus, the projections on and at right angles to the folders, or their equivalents, so that the moving folding edge shall nip tape, braid, &c., between itself and such projections, so as to make a sharp fold, as described.

10. An assistant folder, substantially as described, having an interrupted motion, in combination with a delivering apparatus having a continuous motion, as specified.

11. Folding-blades, substantially as described, grasping folded material, and moving at the same time and in the same direction with discharging apparatus grasping the same material, substantially as specified.

12. In combination with each other, elastic or yielding folding-blades, moving each over the other to form folds, so that they may change their relative level and press upon goods when folding them, substantially as specified.

5,449.—*Inhaler.*—WILLIAM H. CUTLER, Buffalo, N. Y.—Patent No. 135,411, dated February 4, 1873. Application filed May 13, 1873.

Paper substituted for sponge in the inhaling-tube.

Claim.—1. A core for inhaling instruments formed of paper.

2. A core for inhaling instruments formed of a tube or tubes of bibulous paper or analogous material, as specified.

5,450.—*Hand-Punch.*—ANDREW L. ECKERT, Newark, N. J., assignor to WILLIAM F. EBSE.—Patent No. 53,282, dated March 20, 1866. Application filed April 19, 1873.

Claim.—1. A ticket-punch, one jaw of which forms three prongs, substantially as shown and described, wherein the punch or male die is held and guided, substantially as and for the purposes set forth.

2. A ticket-punch, one jaw of which is slotted, substantially as shown, to receive the ticket to be punched, as hereinbefore set forth.

3. A ticket-punch, the spring-jaw of which is located within and pivoted to the other, substantially in the manner and for the purposes set forth.

4. The combination of a spring-lever with an independent reciprocating die, substantially as and for the purposes set forth.

5. The spring for keeping apart the handles, arranged to serve also the purposes of a suspension-ring, as set forth.

5,451.—*Step-Ladder.*—CARSON HATE, Waukesha, Wis., assignor to the KIP MANUFACTURING COMPANY.—Patent No. 46,105, dated January 31, 1865. Application filed May 21, 1873.

The platform is connected to the stile by a metallic bracket, to which the brace is hinged. The brace is formed in two parts which converge to a single point of support. Side braces are also used, attached by swivel-joints. The steps are strengthened by angle-irons placed underneath. Hooks and buttons are provided for securing the side-braces to the stile when not in use.

Claim.—1. The combination in a step-ladder of a stile, A, or its equivalent, a platform or top step, and a bracket, when said bracket connects the stile to the platform as herein set forth.

2. In combination with a stile, or its equivalent, a platform and a back-brace of a step-ladder, a bracket, when said bracket connects said parts together for the purpose specified.

3. The combination in a step-ladder of the braces E E, hinged to the platform C, inclined inward and connected together at their lower ends, forming a single bearing-point, substantially as herein set forth.

4. The adjustable side-braces G G and swivel-joints *b b*, in combination with the back-brace E, as and for the purposes herein set forth.

5. The angle-irons *a a*, connecting the steps and side pieces of a step-ladder, substantially as and for the purposes herein set forth.

6. In combination with the side-braces G G, the hooks *f* and and buttons *h*, for the purposes herein set forth.

5,452.—*Car-Truck.*—AARON HIGLEY, Cleveland, Ohio, assignor to HIGLEY CAR-JOURNAL COMPANY.—Patent No. 99,774, dated February 15, 1870. Application filed December 16, 1872.

Two cylindrical rubber springs divided by means of a flanged cap, are secured to the axle-box and car-sills by the posts which connect the stay-rod and sill. By this arrangement the axle-box is allowed a longitudinal and transverse freedom of movement.

Claim.—1. The combination of the springs D G and collar F with the arms C', stay-brace H, and post E, the several parts constructed and arranged substantially to operate in the manner and for the purpose specified.

2. The cap or collar F, in combination with the springs D and G, as and for the purpose substantially set forth.

3. The combination of the post E, cap F, and spring D, the post being connected rigidly with the brace H and frame A'', substantially as and for the purpose set forth.

5,453.—*Car-Axle Box.*—AARON HIGLEY, Cleveland, Ohio, assignor to HIGLEY CAR-JOURNAL COMPANY.—Patent No. 86,543, dated February 2, 1869. Application filed December 18, 1872.

The journal has its bearing upon interlapping friction-rollers, which have conical journals, to prevent the rollers grinding as the cars are turning curves.

Claim.—1. The interlapping friction rolls or rollers D D', case B, arms B', and springs C, all arranged to operate in the manner as and for the purpose substantially described.

2. The interlapping friction-rollers D D' having two points of bearing for the axle upon one roller, and one point of bearing upon the other, or the equivalent of the same, the object being to throw an equal bearing upon the journals of the friction-rollers, substantially as and for the purpose specified.

5,454.—*Bag-Machine.*—J. M. HURD, Auburn, N. Y.—Patent No. 43,773, dated August 9, 1864. Application filed March 25, 1873.

The end of a tube is spread flat by two hinged wings, so that it may receive suitable folds in that position, to form a square bottom.

Claim.—A machine or apparatus having a suitable supporting and former surface, which may be folded or closed up to flatten the finished bag, substantially as and for the purposes set forth.

5,455.—*Machine for forming Auger-Bits.*—WILLIAM A. IVES, New Haven, Conn. Patent No. 134,653, dated March 19, 1872. Application filed January 23, 1873.

The dies for grasping the auger are, at the end, of a shape the counterpart of that of the under side of the bit to be formed, and used in conjunction with these dies is a revolving-former for spinning the end of the auger blank down upon the bit-dies; and surrounding the former is a sleeve that is thrust forward at the proper time to bend the margin of the bit outward to form the floor-lips.

Claim.—1. In the process of forming the cutting end of boring instruments, the arrangement of two dies, the one within the other, the central or inner die operating to form the point and floor lip or lips, the outer passing over the other or inner die to turn up and size the lip or lips, substantially as specified.

2. In combination with dies or other suitable means for holding the auger, a revolving die or device, which forms the floor lip or lips and point, and turns up or sizes the head, substantially as described.

3. In combination with the dies I, for holding the auger and the forming-dies, the treadle I², attached to the slide or slides carrying the dies I, and so as to operate the said dies, substantially as set forth.

4. In combination with the dies *c* and *d*, the holding-dies I, substantially as and for the purpose specified.

5. In combination with mandrel F, and spindle G, and dies *c* and *d*, the cams *a* and *b*, so as to operate the said dies, as and for the purpose specified.

5,456.—*Sun-Shield for Horses.*—HUGH D. MCGOVERN, Brooklyn, N. Y.—Patent No. 120,208, dated October 24, 1871. Application filed May 24, 1873.

Claim.—1. A sun-shield for horses, constructed with an opening in the top thereof, for the purpose specified.

2. In combination with a sun-shield for horses, a rotating fan suspended within the shield for acting upon currents of air or heated air, substantially as described.

3. A sun-shield for horses, provided with a projecting front end having an inclined top surface for deflecting and conducting currents of air into the space between the shield and the upper portion of the horse's head, substantially as and for the purpose described.

4. A shield or horse-bonnet, A, provided with an elevated part or cap, B, having an aperture D, on the front, in combination with a fan, F, placed in the cap B, substantially as and for the purpose described.

5. A sun shield for horses provided with a raised portion for the purpose of facilitating the entry of a current of air, substantially as specified.

5,457.—*Cotton-Bale Tie.*—JOHN MCMURTRY, Fayette County, Ky., assignor by mesne assignments, to FREDERIC COOK, New Orleans, La.—Patent No. 27,866, dated April 10, 1860. Application filed June 2, 1873.

Claim.—1. The attachment of the ends of metallic bands by locking the same together, and bending the surplus ends beneath the body of the bands, as shown.

2. Uniting the ends of iron bands for bailing purposes by attaching the same together by hooks formed on one or both of said bands without the interposition of a link or buckle.

3. A tie, formed by hooking or looping the ends of metallic bands into each other without the interposition of a link.

5,458.—*Engraving and Carving Machine.*—THOMAS W. MINTER, New York, N. Y.—Patent No. 132,594, dated October 29, 1872. Application filed April 25, 1873.

By a special construction and arrangement of parts, sufficiently indicated in the claim, the machine is rendered capable of employing, automatically, the various cutting-tools usually employed in lathes or hand cutting, executing work on stone, steel, or other material, producing imitations of suitable designs.

Claim.—1. In an engraving or carving machine the arrangement of a spindle carrying a cutter-wheel, substantially as described, and having a swinging or traversing motion over the work upon a plane parallel to the same, or nearly so, essentially in the manner and for the purpose specified.

2. The combination of a tracing-pin and pattern-supporting platform, with a tool-carrying spindle extending over the surface of the work, and having a traversing motion over said surface in a plane parallel to the same, or nearly so, substantially as set forth.

3. The vibrating beam J, carrying the tracing-pin and the bracket *w*, which forms the bearings of the tool-carrying spindle, substantially as herein shown and described.

4. The rotary disks G G, applied to the platforms E E, and combined with the transverse screws H H², to be turned simultaneously by means of a single screw, I, as set forth.

5. The tilting platform E, applied to an engraving-machine, substantially as and for the purpose herein shown and described.

6. The worm-segment A, applied to the pivoted platform E, for connecting the same with the tilting-screw F, substantially as specified.

8. The screw I for moving the transverse screws H and H², when made vertically self-adjusting to adapt itself to the varying positions of said transverse screws, while the platforms are being tilted, substantially as specified.

9. The combination of the three longitudinal screws C, F, and I with the carriages B B², platforms E E, disks G G, and transverse screws H H², substantially as herein shown and described.

10. An engraving-machine employing a rotary cutter on a vibrating beam above a platform, adjustable substantially in the manner specified.

5,459.—*Base-Burning Stove.*—JAMES SPEAR, Philadelphia, Pa.—Patent No. 100 335, dated March 1, 1870.—Division A. Application filed March 18, 1873.

The fire-pot projects down toward the ash-pit between its lower end and the grate, which is of larger diameter than said lower end of the fire-pot, is an annular space or opening for raking out clinkers, &c. The burning coals in this space can be seen through the mica windows in the doors and apertures in the stove body. The grate is easily raked through said doors.

Claim.—1. A horizontally-vibrating grate with a surface for the coal to rest on larger than the lower or discharge end of the fire pot, supported at a distance from the lower end of the fire-pot sufficient to form the opening R for the removal of slate and clinkers over the periphery of the said grate.

2. The arrangement of a fire-pot with its lower or discharge end suspended or projecting downward within the air-chamber S, in combination with a vibrating grate of larger diameter than the lower end of said fire-pot, suspended at a distance below the said discharge-end sufficient for the removal of slate and clinkers over its periphery, as herein described.

3. The grate and fire-pot, combined and arranged as described, to form the opening R, in combination with mica lights, or mica lights in doors arranged around the said opening, as and for the purpose set forth.

4. The fire-pot E, suspended or projecting downward within the air-chamber S, in combination with a vibrating grate of larger diameter than the discharge-end of the said fire-pot, arranged at a distance therefrom sufficient for the removal of slate and clinkers over its periphery between it and the wall of the stove, and the mica lights around the opening R, all combined and arranged substantially as herein set forth.

5,460.—*Base-Burning Stove.*—JAMES SPEAR, Philadelphia, Pa.—Patent No. 100.335, dated March 1, 1870.—Division B. Application filed March 10, 1873.

Below the fire-pot a grate of larger diameter than the lower end of said fire-pot is suspended, so that an annular space or opening is made for the removal of clinkers, &c.

Claim.—A vibrating grate supported at a distance below, the discharge-end of the fire-pot sufficient for the removal of slate and clinkers over its periphery, as herein described, by means of arms C projecting downward from the fire-pot or cylinder, substantially as herein described.

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After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,000 pages per month: 9,600 pages of specifications, 3,120 pages of drawings—12,720 pages.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

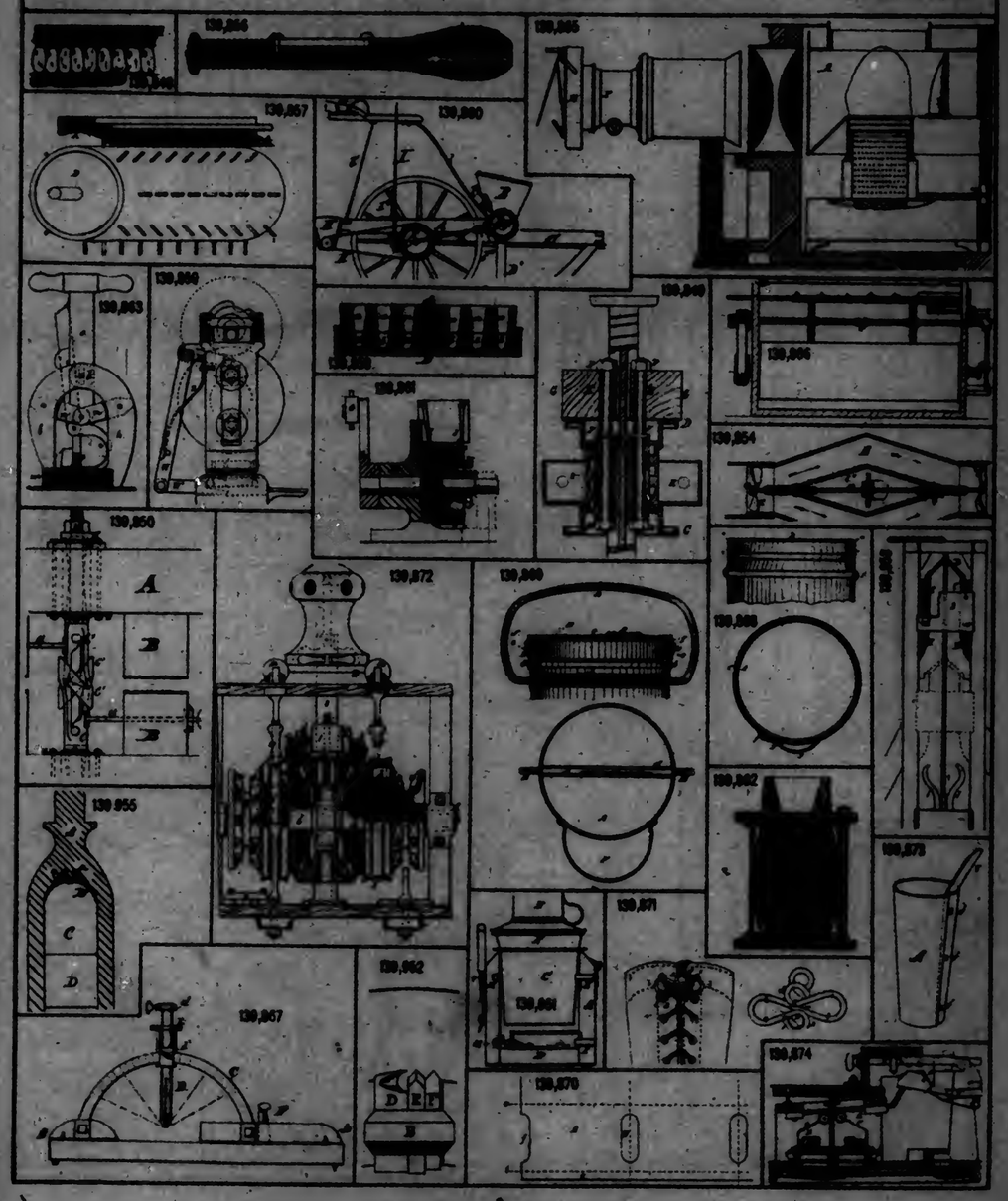
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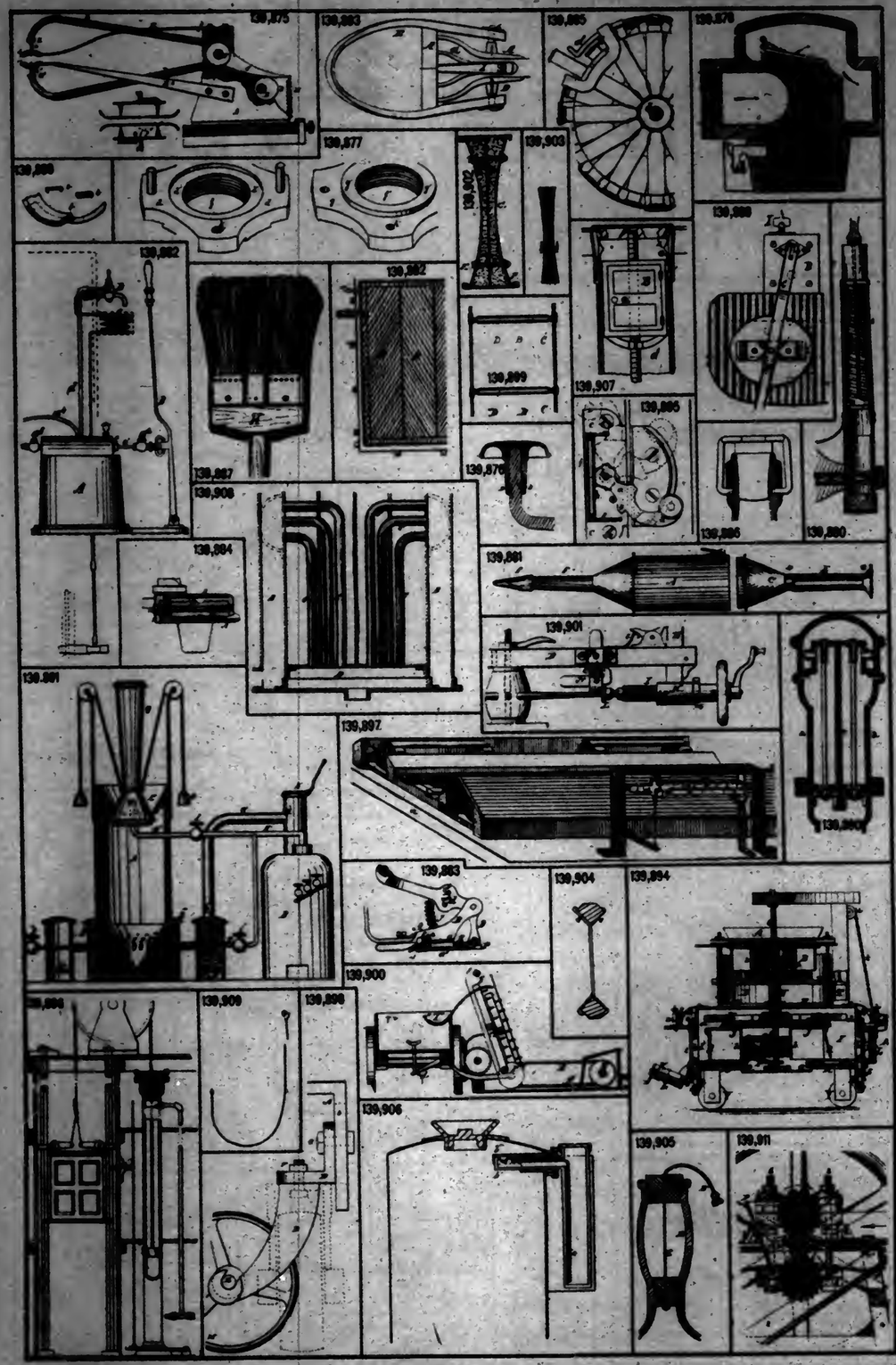
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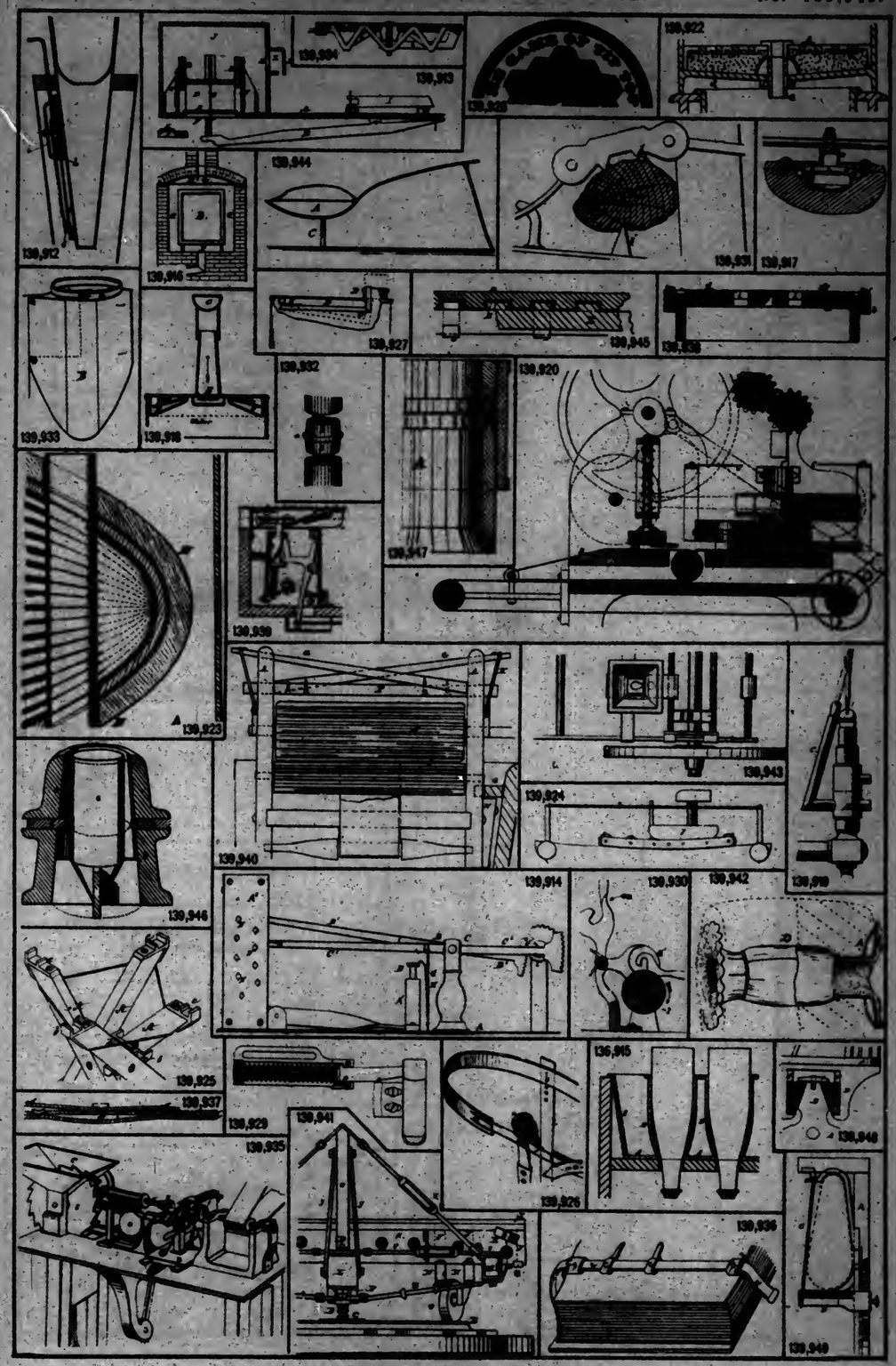
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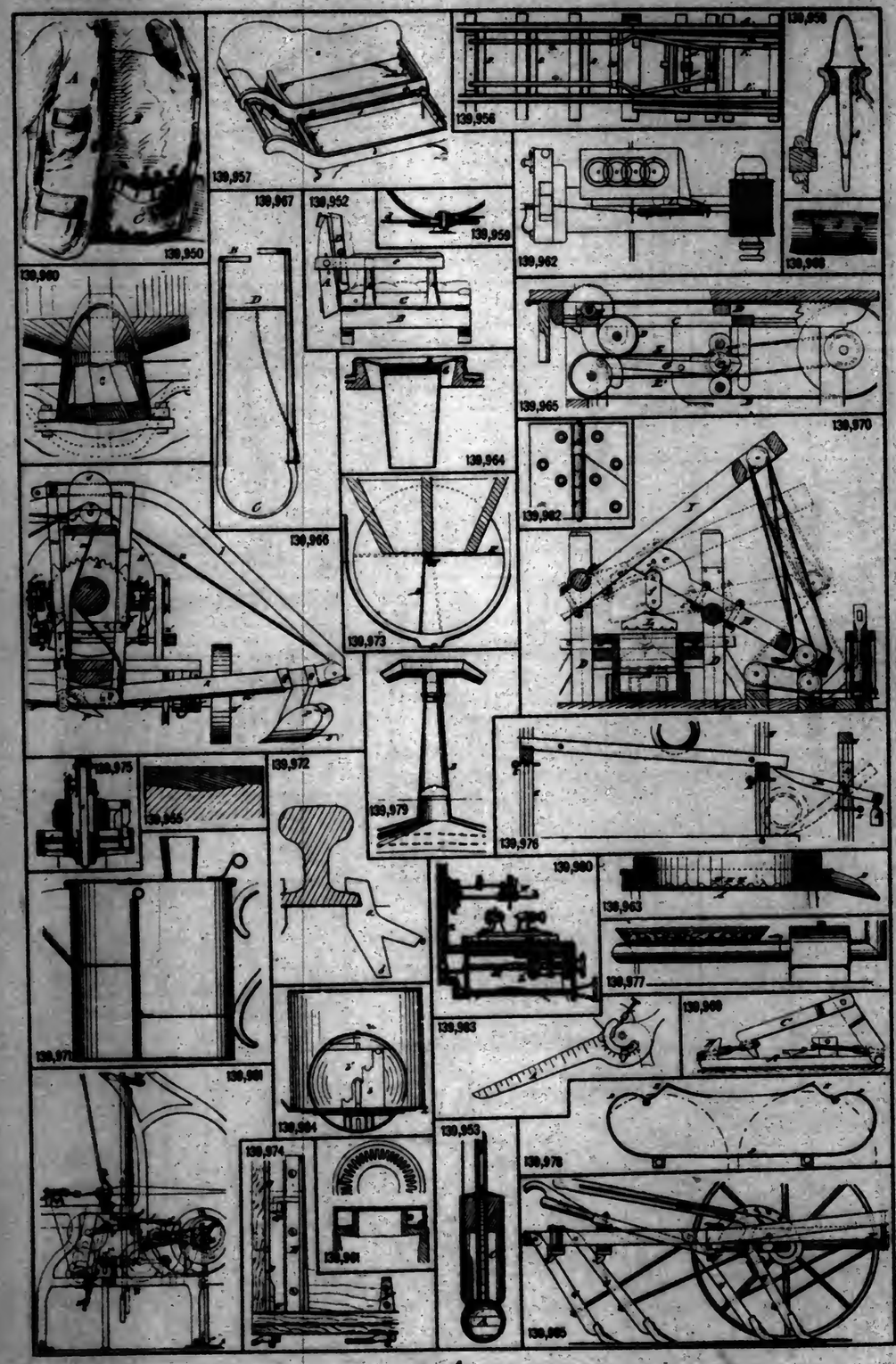
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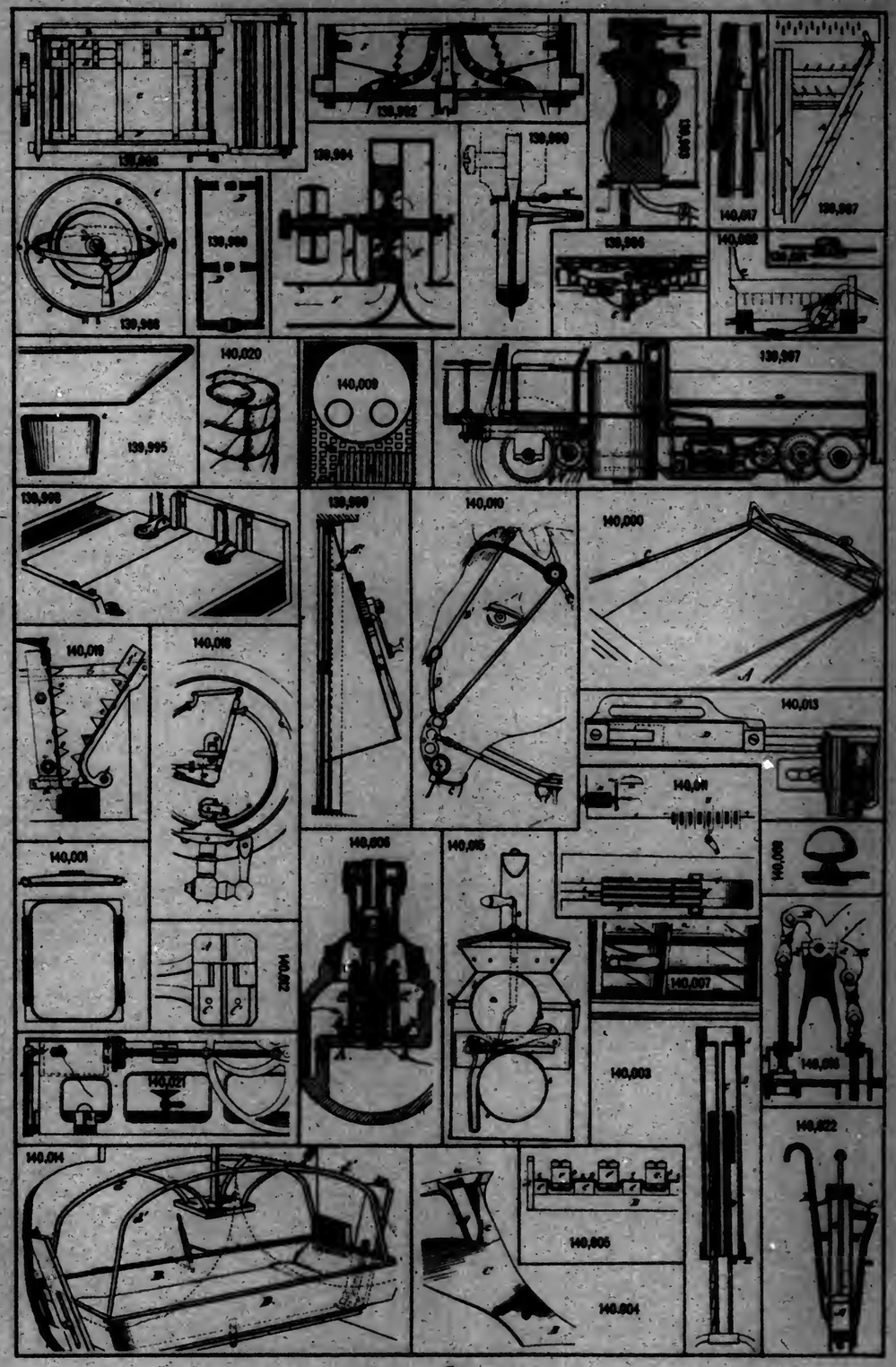
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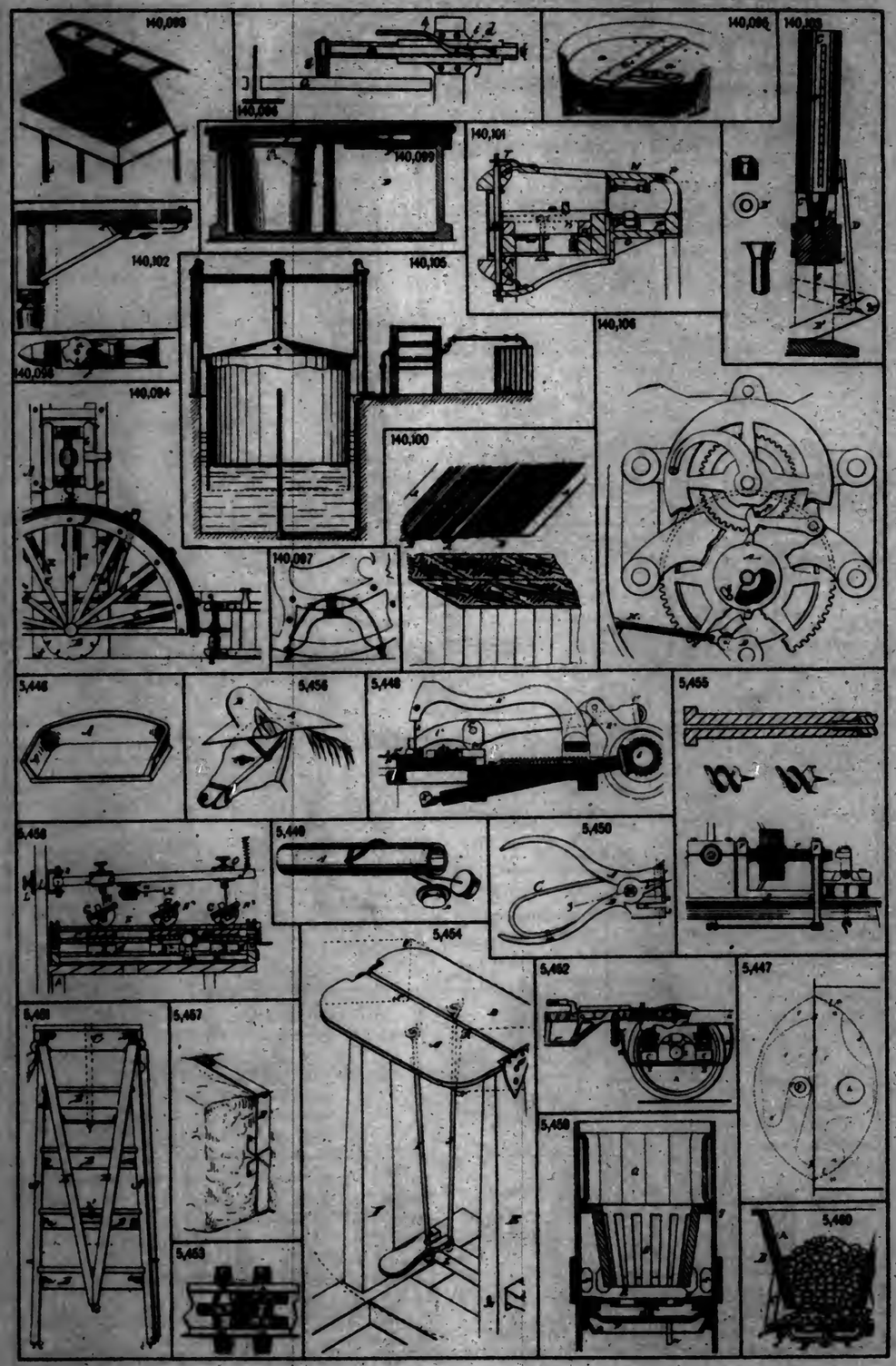
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COMMISSIONER'S DECISIONS.

JOHN L. LAY *vs.* J. A. BALLARD.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of John L. Lay and the patent of John A. Ballard, for* GUIDING TORPEDO-BOATS BY ELECTRICITY.—*Decided June* 13, 1873.]

Where the inventor of a warlike machine which he could reduce to practice only by the aid of a national power, and which was of no service except to one engaged in actual hostilities, after endeavoring to induce our Government to take it up, procured a foreign potentate to do so, and reduced it to practice under contract with him, and with the means thus obtained reduced it to practice in this country, using diligence throughout, he was held entitled to date his invention back to the time when he made the drawings for the foreign machine, and he was awarded priority over one who invented afterward.

LEGGETT, *Commissioner:*

The invention in question "relates to a method of steering boats by means of electric currents transmitted from a shore battery through an insulated telegraphic cable, acting, through the medium of a battery carried upon the boat, upon a steering mechanism, so as to bring the control of the direction of the battery under the influence of an operator on shore or at some fixed point of departure." It "consists in combining with an electro-magnetic apparatus on board the boat, and operated from the shore, mechanism for shifting the steering apparatus as the electric currents are reversed."

Ballard has taken no testimony, and the date of his invention is therefore August 9, 1870, the date of filing his application for patent.

The decision of the Board, except upon one or two points, embodies my views of the case. They say: "There is little opportunity for controversy about the facts. Lay conceived the idea in 1866. In 1867 he made a full and clear drawing (Exhibit D) of the invention in detail, and described it as fully and clearly to Hubbe, a naval architect. From this time onward he appears to have been endeavoring, with reasonable diligence, to bring the matter before the Government and into actual embodiment. * * * * He was induced to enter into negotiations with the agent of the Viceroy of Egypt, and, visiting that country, completed preliminary arrangements early in 1870, and received, in advance, funds sufficient to enable him to commence building the boat on which to apply his invention. On the 19th day of July, 1870, Lay sent for Hubbe, who had been employed by the Government, in connection with Lay, in building torpedo-boats, and requested him to make working drawings of a torpedo-boat with the electric devices by which it could be steered by persons at a distance from it, such as he had described to him in 1867.

"Hubbe says that he went to work immediately, without any further instructions than those which were given him by Lay in 1867, and within two weeks had completed the working drawings. No change was made in the plan, with the single exception of the substitution of one old form of valve for another, made on account of a change of motor. The boat was completed in January of 1871, was taken to Egypt, tested, and proved satisfactory to the Egyptian Government. Lay received the balance of the sum originally agreed upon, returned to the United States, commenced negotiations with this Government, and, under some arrangement with it, built another boat on the same plan.

"Throughout the whole history of the invention there appears to have been on the part of Lay no lack of reasonable diligence. The invention is one of a peculiar nature and concerns only governments. No private individuals or company would be interested or permitted to blow up their own or others' vessels, or in time of peace would need such steering devices. Nor in fact could the invention be submitted to actual use except

in time of war. The intention in such weapons of defense is that they shall be so formidable as not to need to be used. Of the two ways, then, by which an invention may be made of public benefit—the publication of letters patent or the actual embodiment, and, as far as practicable, trial of the thing invented—Lay appears in this case to have chosen the better. By interesting the Government he had secured the necessary means for submitting the invention to such practical test as was possible in time of peace, and before the earliest date which Ballard can now claim had accomplished all that an inventor, as such, could do—the production of working drawings. These were followed up at once, and the boat made in all respects according to the invention, without delay. There were in this no uncertain sketches, nothing of mere experiment not followed up until the patent of another party was brought to notice, (for Lay was not advised of the patent of Ballard until late in 1871,) but intelligent, persistent, continued effort was followed in reasonable time by reduction to practice.'

"We see no good reason why, having finally, unaided, reduced the invention to practice and use, so far as use was possible, he should not be permitted to go back to the beginning of this reduction to practice, if not to the drawing, 'Exhibit D,' made in December, 1867, at least to the working drawings of July, 1870. * * *

"Lay's extraordinary diligence in reducing his invention to practice, and in bringing it to the notice of the only parties who could use it, goes far to justify him in neglecting to apply for a patent.

"And still further, as the invention concerned governments alone, a patent was not only of no use to him whatever, but might be positively disadvantageous, the common publication of the thing giving foreign governments better opportunity to appropriate it without profit to the inventor. * * * * He applied for a patent not long after learning that one had been granted to another party, and in our opinion there was no unreasonable delay."

The decision of the Board awarding priority to Lay is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—NORTHERN DISTRICT OF NEW YORK.

THE BERDAN FIRE-ARMS MANUFACTURING COMPANY *vs.* E. REMINGTON & SONS.

An improvement which becomes necessary in the manufacture of a patented implement in order to overcome a difficulty growing out of a departure from the form of the model, and which is introduced into it by the workmen without the knowledge of the patentee, cannot be appropriated by him as his invention.

If such an improvement is embodied by the assignees of the patentee in a reissue, they cannot recover upon it against others who use it.

When in the manufacture of Berdan's fire-arm the hinge of the breech-piece was raised so high as to bring its upper surface above the line of the bore, and thus interfere with the insertion of the cartridge, it is questionable whether it is a patentable invention to cut away the obstructing portion of the hinge, and thus give that part of it a curved surface.

[*H. M. Ruggles*, for complainant.
Geo. Gifford, for defendant.]

WOODRUFF, *J.*:

I have very grave doubts whether the so-called device described in and covered by the reissued patent upon which this suit is brought is patentable. The manner of constructing and securing the breech-piece for a breech-loading gun, which formed the subject of the original patent to Hiram Berdan, was, so far as appears in this case, an original invention. In procuring reissues of that patent the plaintiff, his assignees, have sought to secure to themselves a monopoly of a curved surface on the hinge of the breech-piece, which was no feature of the invention in what were its distinguishing features, but which was an obvious mechanical necessity incidental to the application of Berdan's device, or to the application of any similar device, whenever the hinge-pin is placed so high as to raise the surface of the hinge above the line of the barrel. Cutting away an obstruction to the introduction of the cartridge did not require invention—it was inevitable.

But my conclusion in this case does not rest upon the doubt so expressed. I find as a fact established by the evidence that Berdan was not the inventor of the curve in the hinge, which is the subject of the patent sued upon.

His invention neither contained nor contemplated this feature in the breech-piece. He did not contemplate placing the hinge-pin so high as to render the curve necessary, nor did he give to the mechanics who, under his partial supervision, constructed the model of his actual invention, or the drawings from which his first gun was made, any instruction or suggestion embracing such a curve. The making of the curve in the hinge, when that gun was in fact constructed, resulted from a departure from Berdan's model by the workmen themselves, not by design, but through inadvertence. When the parts of the gun were completed and put together the workmen found that either by a departure in the working drawings (made by one of them) from the model, or by a departure in the gun from the working drawings, the hinge-pin was raised so high as to interfere with the insertion of the gun-barrel, and also to interfere with the insertion of the cartridge, and they, therefore, and as a matter of judgment, cut it away. They did it not to obviate a difficulty necessarily incident to the use of Berdan's invention, but a difficulty created by the workmen themselves through an inadvertent error and departure from Berdan's contemplated position of the hinge-pin. In short, he contemplated raising the hinge-pin as high as, with the hinge in the ordinary or straight-surface form, was conveniently practicable, and they made under his direction both model and drawing of his invention in that form; but when they made a gun they placed the pin so high as to create the obstruction above referred to, and they cut it away to cure the apparent defect.

In this Berdan was not consulted. He was not present when its necessity in that gun was discovered, nor was he present when it was done. Berdan did not invent it. If anything in the nature of invention pertains to it, that was done or made by the workmen without his knowledge.

The bill herein must be dismissed with costs.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

HUGH W. COLLENDER *vs.* WILLIAM H. GRIFFITH.

THE SAME *vs.* THE SAME.

The defendant will not be permitted on the hearing to read depositions showing prior knowledge and use of the thing patented by persons whose names are not given in his answer.

It being shown that tables with the sides beveled inward from the top have been known before, a patent is void which claims the design of a billiard-table thus constructed, in order that the player may advance his foot farther under it.

It is a mere question of judgment, not invention, how far the bevel shall be carried, and a patent for the design of a billiard-table is not rendered valid because a much deeper bevel is shown in it than has been used in other tables.

If a patent for a design covers the ornamentation shown in it, it is no infringement to use the principal figure without the ornamentation.

A person who publishes by way of advertisement an engraving of an article he has on sale, cannot by copyrighting it prevent others who have an equal right to sell the article from using a similar engraving in advertising it.

WOODRUFF, *J.*:

These two suits were submitted together upon the same proofs. The only question argued by counsel was whether the testimony of certain witnesses called to prove the want of novelty in the alleged invention or new design, and who mention the knowledge and use thereof by persons not named in the defendant's answer, is competent. On that question I must hold that the evidence of the knowledge and use by persons not so named is incompetent, and must be rejected. The court has no discretion on the subject. Such knowledge and use is not a defense, under the statute, available to the defendant. It is therefore rejected. The counsel, on the argument of the question above stated, submitted the cases on the merits on briefs then or afterward submitted. The one suit is founded upon a patent for a design for a billiard-table; the other upon a copyright of an engraving exhibiting a view of the same billiard-table, with its ornamentation by carving, &c.

As to the first, I am of opinion that, in view of the state of the art and the proof of the prior existence and use of billiard-tables similar in form, there was no ground for such a patent. In truth, as a form of construction or configuration, it was not novel in any such sense that its adoption constituted invention. This is proved without the testimony which I have above rejected as inadmissible under the pleadings. It is to be remembered this is not a patent for the billiard-table itself, or for anything new in its actual construction, but only for a design embracing its shape or configuration, by whatever means it is effected. The principal, if not the sole, feature claimed is, the form of beveled sides and ends. Tables and designs for tables having such beveled sides and ends, both straight or in the form technically called "ogee," are shown to be old and in public use long before the complainant's alleged invention. This is so clearly established that the argument in behalf of the complainant proceeds mainly upon the ground that the inclination or bevel is greater in the complainant's design than in the others. It is at least doubtful whether that is true as to some of such prior designs; but, in any view of that point, the subject was one of degree of inclination and bevel, to be determined as matter of judgment, in view of the purpose such bevel is adapted to serve, and not matter of new discovery or invention. It embraced no new idea. In either the inward inclination of the lower part of the sides of the table, receding from the outer edge of the top or cushion bar, enabled the player to stand with one knee partially under the table, for convenience in some part of his playing. The extent of such recess was more matter of judgment in the manufacture, looking to the purpose for which it was desirable. Had the complainant invented something new in the mode of construction of the sides of the table—some new device by the use of which a table could be constructed with a greater bevel or inward inclination than was before practicable, or a new device by which a new result was produced in making any beveled side—that might perhaps have been secured to him; but I think it clear that a mere design which is practically a suggestion that a greater degree of inclination of the sides will make the table more convenient, when other tables already existed which, with a view to the same useful result in kind, were constructed with a similar bevel, is not invention, nor the proper subject of a patent. If it be possible, however, to include in the complainant's patent not merely the form or configuration of a billiard-table, but its peculiar ornamentation, then the complainant must fail, because the defendant does not use the complainant's ornamentation. I state this hypothetically, because, unless the complainant be confined to the specific ornamentation which his design exhibits, then there is nothing in that feature.

As to the copyright, these views are in a large degree applicable to that, also; and, besides, the engraving claimed to be the subject of copyright is not a work of art, print, lithograph, or engraving having any value or use as such. It is a mere copy of what the complainant has patented as a design, and constitutes the mode in which complainant advertises his tables. The defendant, having the right to make his own tables as he does make them, has an equal right to advertise them by showing the public their appearance by engraving, lithograph, or photograph.

The bills of complaint must be dismissed with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,863.—*Sewing-Machines.*—Granted to E. A. GOODNS and E. L. MILLER, July 26, 1859; reissued February 9, 1864. Hearing July 9, 1873.

24,905.—*Piano-Fortes.*—Granted to JOHN U. FISCHER, July 26, 1859. Hearing July 9, 1873.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2, 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OBIE TUPTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brake.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JENKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 30, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARMON KALBACH, August 30, 1859. Application filed May 26, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,269.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,342.—*Stoves.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,449.—*Boilers and Steamers.*—Granted to DANIEL R. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,463.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors' Shears.*—Granted to ROCHUS HUBISCH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—*Rolling-Mills.*—Granted to JOHN and GEORGE FRITZ, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—*Bedstead-Slats.*—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,572.—*Molding Water-Troughs.*—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—*Burglar-Alarms.*—Granted to ABBOTT O. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—*Steam Punching-Machines.*—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,640.—*Steam-Boilers.*—Granted to JOSEPH HARRISON, Jr., October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,683.—*Hydrants.*—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,796.—*Jacquard Machines.*—Granted to AVERY BABBETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,539.—*Manufacture of Gun-Barrels.*—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 10, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,531.—*Improvement in Gas-Retorts*, granted to WILLIAM BEAUMONT, June 28, 1859.

Claim.—Making all that part of a retort which is most subject to expansion and contraction corrugated, to prevent fracture, as herein described.

24,563.—*Improvement in Arranging Couches in Railroad Cars*, granted to EDWARD C. KNIGHT, June 28, 1859.

Claim.—1. The mode of arranging berths or couches over backs of railroad-car seats, substantially as set forth.

2. The manner of supporting the backs of the seats by slides E and rod F, for the purpose herein shown and described.

24,588.—*Improvement in Hay-Spreaders*, granted to J. C. STODDARD, June 28, 1859; reissued June 1, 1869, numbered 3,481.

Claim.—1. The combination, in a hay-making machine, of a frame, connected with the axle of the supporting-wheels, and a frame carrying rotating rakes, and vibratable about said axle, the combination being and operating substantially as set forth.

2. The combination, in a hay-making machine, of two wheels, a draft-frame carrying a driver's seat, a vibratable frame carrying rotating rakes, and a catch on the draft-frame to hold up the rakes.

3. The combination, in a hay-making machine, of a draft-frame, carrying the driver, with a vibratable rake-frame, raised or lowered by the driver.

4. The combination, substantially as set forth, in a hay-making machine, of two wheels, a frame arranged between the wheels and carrying the driver, and a vibratable frame, also arranged between the wheels and carrying rotating rakes.

5. The combination, in a hay-making machine, of a frame vibratable on the axle of the supporting-wheels, with rotary rakes mounted on the frame outside the periphery of the driving-wheels, and raking a swath wider than the distance between the wheels.

6. The combination, in a hay-making machine, of a frame vibratable about the axle of the supporting-wheels, with rakes rotated from the outer side of the driving-wheels.

7. The combination, in a hay-making machine, of a frame vibratable about the axle of the supporting-wheels, and a main frame with a driving-belt traversing pulleys on the axle and rake-shaft, substantially as set forth.

8. The combination, in a hay-making machine, of a perforated rotating shield, with rake-teeth adjustable radially, relatively to their axis of rotation.

9. The combination, with a hay-making machine, of rotating rake-teeth, adjustable relatively to their axis of rotation.

10. The combination, with a hay-making machine having rotating teeth, of a stop to cause the teeth to cast as rakes.

11. Making one set of the adjustable rotating rake-teeth longer than the others, for use as a hay-rake, as set forth.

12. The combination, in a hay-making machine, of rake-teeth adjustable radially relatively to their axis of rotation, with a frame vibratable about the main axle.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date June 24, 1873.]

6,711.—*Center-Piece for Ceilings.*—BERNHARD DREYER, Philadelphia, Pa., assignor to WILLIAM H. FRENCH, same place. Application filed May 31, 1873.

6,712.—*Center-Piece for Ceilings.*—BERNHARD DREYER, Philadelphia, Pa., assignor to WILLIAM H. FRENCH, same place. Application filed May 31, 1873.

6,713.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,714.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,715.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,716.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,717.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,718.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,719.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,720.—*Carpet.*—ALFRED HEALD, Philadelphia, Pa., assignor to MCCALLUM, CREASE & SLOAN, same place. Application filed June 6, 1873.

6,721.—*Jewelry-Boxes.*—EDWARD C. MOORE, Yonkers, assignor to TIFFANY & CO., New York, N. Y. Application filed June 14, 1873.

6,722.—*Furniture.*—THOMAS W. MOORE and FREDERICK M. MOORE, New York, N. Y. Application filed June 14, 1873.

6,723.—*Lock-Front.*—ELBRIDGE J. STEELE, New Haven, Conn., assignor to SARGENT & CO., same place. Application filed May 13, 1873.

6,724.—*Drawer-Pulls.*—LOUIS WIDMAYER, New Britain, Conn., assignor to P. & F. CORBIN, same place. Application filed June 10, 1873.

6,725.—*Footstool for Barbers' Chairs.*—FRANCIS J. COATES, Cincinnati, Ohio. Application filed June 14, 1873.

6,726.—*Plates of a Cooking-Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,727.—*Plates of a Cooking-Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,728.—*Plates of a Cooking-Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,729.—*Plates of a Cooking-Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,730.—*Plates of a Cooking-Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,731.—*Plates of a Cooking-Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,732.—*Plates of a Parlor or Heating Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,733.—*Plates of a Parlor or Heating Stove.*—SAMUEL H. RANSOM, Albany, N. Y. Application filed April 18, 1873.

6,734.—*Coffin-Handle Socket.*—JAMES S. RAY, East Haddam, Conn. Application filed June 16, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date June 24, 1873.]

1,329.—*Medicinal Preparation.*—F. W. BARNUM & CO., Danbury, Conn. Application filed June 9, 1873.

1,330.—*Varnish-Brush.*—E. CLINTON & CO., Philadelphia, Pa. Application filed February 27, 1873.

1,331.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed June 16, 1873.

1,332.—*Plug Chewing-Tobacco.*—LIGGETT & MYERS, St. Louis, Mo. Application filed June 16, 1873.

1,333.—*Wines and Liquors.*—MOREOW, CHAMBERLAIN & CO., New York, N. Y. Application filed June 12, 1873.

1,334.—*Cosmetic.*—WILLIAM T. WENZELL, San Francisco, Cal. Application filed May 9, 1873.

1,335.—*Stocking-Supporter Clasps and Suspenders.*—CHARLES A. SHAW, Boston, Mass. Application filed June 13, 1873.

1,336.—*Paint.*—HENRY P. WEBB, New York, N. Y. Application filed June 7, 1873.

1,337.—*Illuminating-Oil.*—THE DEVOE MANUFACTURING COMPANY, New York, N. Y. Application filed June 16, 1873.

1,338.—*Illuminating-Oil.*—THE DEVOE MANUFACTURING COMPANY, New York, N. Y. Application filed June 16, 1873.

1,339.—*Fountain-Pump.*—JOSIAH A. WHITMAN, Cranston, R. I. Application filed July 8, 1872.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date June 24, 1873.]

ORIGINAL PATENTS.

140,107.—*Book-Stand.*—JAMES B. ANNIN, Rochester, N. Y. Application filed May 9, 1873.

Two leaves or plates are hung by pivots to the ends of two levers, which in turn are centrally pivoted to a support which allows the swinging of the levers. To the bottom of each leaf is attached a stiff pendent arm, and the lower ends of these arms are pivoted to a single central lever, which is parallel with the upper levers and pivoted at its center so as to turn with them.

Claim.—The levers B B, connected together by the rods a a, in combination with the levers A A, levers C C, rods b b, and pivots f d, the whole constructed, arranged, and operating substantially as set forth.

140,108.—*Argand Burner.*—CHARLES E. BALL, Philadelphia, Pa. Application filed June 3, 1873.

A hollow shell, vertically adjustable within the outer case, is beveled outwardly at top so that the rim shall, together with the inwardly-projecting flange of outer case, form a valve and its seat. The rim and milled button of the inner case limit its motion.

Claim.—The inner shell B extending above the top of the outer shell A, and beveled outwardly at its upper edge, forming a valve having its seat on the edge of the outer shell in combination with said outer shell, arranged to operate as described.

140,109.—*Wardrobe-Bedstead.*—CHARLES L. BARRITT, Brooklyn, N. Y. Application filed May 23, 1873.

The mattress-frame is pivoted at one end to the head-board or sliding front, and the other end is connected by a spring with the top of the wardrobe-case. To the middle of the frame are pivoted levers, which in turn are pivoted to the sides of the wardrobe-frame. To the top of the extensible head-board two folding leaves are hinged, which serve to hold in a closed position the wardrobe-doors when the bed is folded up.

Claim.—1. The combination of the mattress-frame E and elevating-levers G with the frame A and cheek-pieces C of the extensible head-board B, arranged and operating substantially as described.

2. The combination of the spring K with the mattress-frame E and elevating-levers G, substantially as described, and for the purpose set forth.

3. The folding-leaves P and Q, made of different widths, and hinged to the head-board B, in combination with the wardrobe-doors R, all arranged and operating as and for the purpose set forth.

140,110.—*Wagon-Spring.*—WILLIAM H. BRACE, Nunda, N. Y., assignor to himself and J. R. WOODWORTH, same place. Application filed May 27, 1873.

To the side bars are secured short leaf-springs, which are coupled to the forward half-elliptic spring.

Claim.—In combination with the axles and front head-block of a wagon, the side-reaches D D, springs I I, couplings e e, and spring J, secured on the head-block for supporting the seat-arms and seat, substantially as herein set forth.

140,111.—*Wrench.*—BYRON C. BRADLEY, Chicago, Ill. Application filed July 15, 1872.

The jaws are so connected as to form a handle, and are hinged upon a rivet passing through a slot or mortise. They are adjusted by means of a projection and rack on the tail end of the wrench, which forms the handle.

Claim.—The combination of the extended jaws A B, provided with an ear and pivot H and slot C, with the notches F and point E located at the ends, so that a slight pressure of the hand will hold them in their adjustment, substantially as specified.

140,112.—*Rotary Churn.*—WILLIAM BRAND and GOTTLIEB PUDER, Evansville, Ind. Application filed April 10, 1873.

A revolving perforated barrel, provided with opening and lid on its side, has longitudinal beaters attached to opposite sides of its inner surface, on the outer edges of which beaters are secured blades having beveled edges, which incline to the sides of the churn. Two more strips, of triangular form, are situated beneath and between the perforated beaters, and running parallel thereto.

Claim.—The barrel-churn A, provided with perforated wings C C, inclined beveled edged blades D D below, and triangular strips G G between said wings, all substantially as and for the purpose herein specified.

140,113.—*Mandrel for Holding Tapered Cast Rings.*—GEORGE E. BERTELL, Rochester, N. Y. Application filed October 5, 1872.

The mandrel is grooved longitudinally, and has a shoulder on one end. The ring on which a screw is to be cut has a lug or internal projection, which fits into the groove and prevents the ring slipping on the mandrel. A collar or washer holds the ring against the shoulder, and also serves as a shoulder or seat for the next ring. In this way several rings are placed on the mandrel, and are held in place by a key driven in a slot in the end of the mandrel.

Claim.—The method of holding a number of castings together, while the threads are being cut, by means of the mandrel A, collars or sleeves B B and D, and the key K, or its equivalent, substantially as shown and described.

140,114.—*Corn-Planter.*—GEORGE J. CARPENTER, Adrian, Mich. Application filed February 18, 1873.

There are two rectangular frames jointed together at the middle. The forward section is supported upon bearing-wheels, and the after section is supported upon the forward end of the after section, and this is so connected to a lever upon the forward section by a rope or chain that the after section can be lifted from the ground at pleasure.

Claim.—1. The combination of the standards F carrying the shovels G, the bars *e*, and the radius-rods *b*, with relation to the frame C, rock-shaft *d*, arms *e*, cords *f*, and lever *g*, as and for the purpose set forth.

2. The combination of lever *g*, rock-shaft *d*, and cords *o o* and *f f* with the standards of the furrow-openers of the main frame C' carrying the shovels K K, as and for the purpose set forth.

140,115.—*Safety-Valve.*—WILLIAM CHURCHILL, St. Louis, Mo. Application filed March 25, 1873.

A chamber above the safety-valve communicates with the boiler, allowing the steam to hold the valve down. A small valve, held down by a weighted lever, when raised by the pressure, cuts off the steam from the safety-valve chamber and allows the steam in it to escape, the valve to raise, and the boiler steam to escape. A third valve is opened by a float; it sounds an alarm, and opens the safety-valve.

Claim.—1. The arrangement of the additional safety-valve D having ports *d*, valve-seat C' having steam-space *c*, exhaust-ports *c'*, and steam-pipe C, to operate as and for the purposes set forth.

2. An auxiliary valve, E, arranged to operate in combination with valve D, to prevent the reseating of the main safety-valve B, in the manner and for the purposes set forth.

3. The combination of the safety-valves D E B, to effect the discharge of the surplus steam from boiler and relieve same, in the manner and for the purpose set forth.

4. The combination of cylinder A, main valve B, steam-pipe C, valve-seat C', steam-space *c*, exhaust-ports *c'*, valve D, its ports *d*, valve E, seat *e*, socket-guide F, its ports *f*, valve-stem G, lever G', float g^3, and top lever H^1, to operate as and for the purposes set forth.

140,116.—*Device for Elevating Building Materials.*—JACOB H. COE, Brighton, Mich. Application filed May 8, 1873.

Two drums of varying diameters, one connected by tension-rope to carriage or conveyer and the other by another rope to a counter-weight; the drums governed by pawl, ratchet, lever, and spring.

Claim.—1. The drums I I' of varying diameters, in connection with the tension-rope N attached to the carriage C, and rope P attached to a counter-weight, R, as described.

2. The combination of the drums I I', tension-rope N, and rope P having counter-weight R with the pawling devices, as described.

140,117.—*Cigar-Trimmer.*—ANTHONY CRAMER, Detroit, Mich., assignor to himself and FRANK HUETTEMANN, same place. Application filed April 8, 1873.

The lever-knife works against a plate, recessed to hold the cigar, the straight knife having a shear-cut. A spring-gage works upon a guide-rod attached to the grooved bed-plate, by means of which the length of the cigar is determined.

Claim.—1. The plate B of a cigar-trimmer having stop *d*, and a recess ribbed for the cigar, combined with the laterally-bent lever-knife C having a straight shear-cutting edge, and held closely to the rib and plate, all as herein described.

2. The guide-rod F and spring-gage G, constructed as described, in combination with the bed-plate A of a cigar trimmer, as shown and set forth.

140,118.—*Mill-Pick.*—JOTHAM CUMMINGS, West Charleston, Vt. Application filed April 24, 1873.

Claim.—1. A mill-pick head consisting of the stationary part A and movable part C constructed and fitted together to hold the blade between them, substantially as described, the one being provided with the lips *b*, and the other with loop E, arranged and operating to clamp the two firmly together, as set forth.

2. The combination of the head A and plate C with an interposed blade, the head being formed with the flaring channels or recesses *c b* and wedge A', and the plate with the lips *k k*, loop E, and teeth *e e*, &c., substantially as and for the purposes stated.

140,119.—*Nut-Lock.*—EDWARD CZARNIECKI, Allegheny, Pa. Application filed September 11, 1872.

A circular washer, having a series of radial slots extending inward from its periphery, is provided with a tongue in the central opening that projects into a longitudinal groove in the bolt. When the nut is screwed up tight one of the pieces of the washer is turned up against the side, thus preventing any movement of the nut.

Claim.—The circular washer D, with a series of cuts, *c*, extending inward from its periphery on lines radiating from its center, and the opening *d* of the said washer provided with a tongue, as herein described, and for the purpose set forth.

140,120.—*Corner-Support for Blinds.*—GEORGE W. DAY, Haverhill, Mass. Application filed April 26, 1873.

A metallic plate to be applied to the joint of a wooden window-blind, to strengthen the parts and prevent change of figure by sagging.

Claim.—As an improved article of manufacture, the above-described improved blind-supporter, composed of the parts A and A', (respectively provided with flanges or abutments *e f*,) and the part A with the supplemental arm *g*, the whole being formed of a single piece of metal, and for application to a blind, in manner and for the purpose stated.

140,121.—*Machine for Slotting Links for Locomotives.*—WILLIAM H. DENNEY, Philadelphia, Pa., assignor of one-third of his right to JOHN F. KING, same place. Application filed February 15, 1873.

The blank is fastened to the index or face plate, to which a partial rotary motion is given, and the milling-tool, journaled on a slide-rest, is brought up and entered into a hole previously bored in the blank, and the slot cut as the work is revolved.

Claim.—The combination of bed A, head B, mandrel C, index-plate D, carriage . . d K, head M, mandrel N, and cutter P, substantially as and for the purpose hereinbefore set forth.

140,122.—*Building-Block.*—GASHERIE DE WITT, Belleville, N. J., and JAMES FAIRMAN, New York, N. Y. Application filed March 31, 1873.

Claim.—A building-block, column, or post, formed of a plastic material, inclosed in a permanent casing or basket of metallic open-work, which forms an integral part of the block when solidified, and strengthens and protects it from disintegration, substantially as specified.

140,123.—*Mode of Attaching Sleigh-Bells to Harness.*—BELA E. DEXTER, Gowanda, N. Y. Application filed March 17, 1873.

The bell-bow is pivoted to the saddle so as to be thrown down when the horse is to be blanketed.

Claim.—1. The bell-bow B, pivoted to the harness, substantially as and for the purposes set forth.

2. In combination with the bell-bow B and irons *b* the spring-latches *d*, or their equivalents, substantially as and for the purposes described.

140,124.—*Car-Coupling.*—MORDECAI DISNEY, Oakland, Cal., assignor to himself, HENRY C. KIBBE, and JOHN D. HILDRETH. Application filed January 9, 1873.

The link entering throws the pin D up, and, through the medium of the plate I, forces the pin K down so as to throw the upper arm of the bell-crank from under the frame which supports the coupling-pin, and the coupling is effected.

Claim.—1. The pin K, with its beveled lower end constructed to operate upon the arm E of the lever, substantially as and for the purpose set forth.

2. The oscillating plate I and the pin K, in combination with the pin D, constructed to operate substantially as and for the purpose described.

140,125.—*Ruler.*—JOHN G. ERNST, Baltimore, Md., assignor of two-thirds his right to THOMAS H. DENISON, same place, and A. J. FISHER, New York, N. Y. Application filed October 17, 1872.

A "scholar's companion," consisting of a box with a detachable top, which may be used as a ruler, the box itself to be constructed within so as to form a convenient receptacle for pencils, pen-holders, pencil-sharpener, sponge, and such like conveniences.

Claim.—The ruler A, secured to the box B by means of a fixed holding-stop, *a*, at one end and a hinged clasp, *b*, at the other, the said ruler having slots for the purpose, and the clasp arranged to prevent vertical or lateral displacement of the top, substantially as shown and described.

140,126.—*Medical Compound or Lotion for the Skin.*—ANNA FIELD, Springfield, Mass. Application filed June 7, 1873.

Benzoin, two ounces; citric acid, one-half ounce; borax, one dram; alcohol, one pint.

Claim.—The solution of the above-mentioned ingredients in substantially the same proportions.

140,127.—*Portable Rick-Cover.*—JOSEPH W. FITZGERALD, Jerseyville, Ill. Application filed May 14, 1873.

A portable rick-cover, composed of overlapping boards flexibly connected together by wires or rods and staples.

Claim.—The flexible rods *b b*, and the manner of attaching the boards thereto when used for the purpose described.

140,128.—*Screw-Tap.*—JAMES FLOWER, Detroit, Mich. Application filed April 8, 1873.

The reaming-cutters are fixed in slots in the shell, and the tapping-cutters are operated by cams on the end of a mandrel, which extends up into the shell, and is operated by a lever working in a transverse slot in the shell.

Claim.—1. The construction and arrangement with relation to the shell A A', of the spindle B, cams *b b*, lever B', and cutters C C, substantially as and for the purpose set forth.

2. The combination, with the adjustable shell-tap constructed as described, of the reamers D D, as and for the purpose set forth.

140,129.—*Electric Hotel-Annunciator.*—WILLIAM W. FOOTE, Saybrook, Ohio. Application filed November 30, 1872.

Slides concealing numbers held up by pin on armature and released when armature is attracted. Restored to position by devices of first claim, all the slides being operated on by frame K.

Claim.—1. The combination of the frame K B' B provided with pins *c c*, lever M, and crank-shaft C', for restoring the screens N N, all constructed and arranged to operate substantially as and for the purpose herein specified.

2. The frame K B' B provided with pins *c c*, lever M, and crank-shaft C', for restoring the screens N N, in combination with the electro-magnets I I, and armatures J provided with pins *a a*, substantially as and for the purpose described.

140,130.—*Portable Wardrobe.*—JOHN N. FOWLER, Green Point, N. Y. Application filed April 16, 1873.

The sides of the wardrobe have grooves near the edges of the inner faces, in which slide flexibly-connected slat-work; the two sides are connected by T-headed cross bars fitting in grooves or mortises in said sides. The back-grooved cross-bar is provided with hooks that slide transversely, and the wardrobe is attached to the walls of a room by locking-grooves that engage with pins fixed in the walls.

Claim.—1. The T-headed cross-bars H I J K fitting in corresponding grooves or mortises in the rigid sides, in combination with movable slat-work, as specified.

2. The rigid side pieces A B of the bent stripe A, doubly grooved, as indicated by *a a'*, in combination with the panel B and sliding slat-work, to close the front, as specified.

3. The exterior strapping *d* on the slat-work D, adapted to maintain the tightness of the joints on the curved upper portion of the wardrobe, in combination with rigid sides, having curved grooves at the top, and connecting cross-bars, as specified.

4. The transverse sliding hooks M, in combination with the grooved cross-bar H, and suitable rigid sides and movable slat-work, as specified.

5. The shelves L, and supports *l*, in combination with movable slat-work, detachable rigid sides, and rigid cross-connections H I J K, as herein specified.

6. A wardrobe or cupboard formed of detachable parts, with slat-work moving in grooves, as specified, and provided at the back with the locking-grooves *g*, adapted to receive headed-pins P fixed on the walls, and thereby to suspend the structure at will, and allow it to be firmly secured by the aid of a screw, T, inserted from the interior of the structure, all substantially as herein specified.

140,131.—*Car-Coupling.*—JAMES A. GALE, West Medway, Mass. Application filed October 16, 1872.

To each draw-head is pivoted a half-link, and to one arm of each link is pivoted a coupling-hook, so that when coupled the half-links form one continuous link.

Claim.—The plate or half-link *e* having the aperture *d*, channel *g*, concave upper side *h*, and hook *e*, arranged to operate as described.

140,132.—*Railroad-Tank Feeder.*—RICHARD JOHNSON GIDDONS, St. Louis, Mo. Application filed November 22, 1872.

The combination of elements claimed enables a moving locomotive to raise a weight, which, in falling, elevates feed-water by means of a pump.

Claim.—The rack-beams A A, shafts C and *c*, the former provided with the wheels B and E and cog *e*, and the latter with wheel B and cog *e*, in combination with the wheel *f*, weight-shaft *h*, and weight G guided in the frame K, when operated by a passing locomotive, substantially as and for the purpose herein before set forth.

140,133.—*Die for Cutting Screw-Threads.*—JOHN J. GRANT, Greenfield, Mass. Application filed April 16, 1873.

The divided dies are adjusted in an annular recess in the stock by means of the conical screws A and set-screws pressing against the sides of the dies, and are held firmly in place by the screws *s* working in screws A.

Claim.—1. The combination of the conical frustums upon which are formed screws working in internal screws cut in the stock, the outer screws working in internal threads cut in the said conical frustums, and the dies provided with recesses, all operating together as and for the purposes described.

2. The combination of the interposed conical frustums, and outer screws working therein, with the stock and dies and set-screws, when operating together as and for the purposes described.

140,134.—*Burglar-Alarm.*—EZEKIEL M. HENDRICKSON, Brooklyn, N. Y. Application filed December 26, 1872.

A series of fire-arm barrels, provided with suitable gun-locks, are discharged by clock-work, the detent of which is connected by cords to the doors or windows to be guarded, so that the opening of either releases the clock-work, causing the fire-arms to be successively discharged.

Claim.—The escapement M N and adjustable pendulum O P or their equivalents, the motive power *f* or its equivalent, in combination with the series of discharging means *b*, *c*, D, and G, arranged relatively to a corresponding series of barrels, H, and connection I K to a door, window, or the like, so that a series of reports may be induced at long or short intervals of time, as preferred, when the whole is set in operation by the act of opening the door or window, all constructed and arranged substantially as specified.

140,135.—*Reading-Gage.*—ROYALL S. HILDRETH, Laurens, N. Y. Application filed September 14, 1872.

A thin plate with a long narrow slot through which to see the line to be read, the plate being placed on the page to cover or hide the lines above and below, and thus assist the eyes in retaining the sight of the letters in cars or carriages, the shaking and jarring of which prevents holding the paper with that steadiness necessary for keeping the lines distinctly in view.

Claim.—As an article of manufacture, the adjustable reading-gage, consisting of plates A B, having grooved guides C C constructed and adapted to be used substantially as and for the purpose described.

140,136.—*Clamp.*—NICHOLAS J. HOLT, Howell, and JOHN LEACH, Detroit, Mich. Application filed April 24, 1873.

The jaws of the clamping-bars are operated by the toggle-levers C and D.

Claim.—The clamp-bar A having the pivoted lever C with bar D attached thereto, in combination with the sliding clamp-bar A', as described.

140,137.—*Quilting-Frame.*—WILLIAM HUDSON, Clyde Mills, Mich. Application filed March 17, 1873.

The quilting is adjusted upon the frame by the roller-bars and the ratchets and pawls. The frame is set at different angles by the pins in the circular plates. When not used for quilting, the frame is placed horizontally and used for a clothes-horse.

Claim.—The combination of the frame C, plates B, with the frame A, bars E, and ratchets and pawls D, when the said parts are constructed and arranged to operate substantially as and for the purposes described.

140,138.—*Base-Burning Cooking-Stove.*—HANFORD INGRAHAM, Naples, N. Y. Application filed April 5, 1873.

In order that the products of combustion may, on escaping from the fire, be directed at once upon the bottoms of the vessels, the escape-passages are arranged between the pot-holes, and consist of supplemental or detachable flues.

Claim.—1. The extra movable flues D D D or their equivalent, for the purpose and in the manner substantially as and for the purpose hereinbefore set forth.

2. The combination of the extra movable flues D D D, the boiler-holes F F F, the magazine-case E, the oven I, substantially as and for the purpose hereinbefore set forth.

140,139.—*Door-Check.*—JOSEPH P. ISRAEL and DANIEL W. MC LANE, Oil City, Pa. Application filed August 10, 1872.

A drop-latch is pivoted between two lugs upon the shank of the bumper, and catches over the edge of an escutcheon upon the base-board. The latch is furnished with a short arm which extends upward, and may be operated to release it by the foot or hand. This device serves the double purpose of a bumper and fastening to prevent the door from accidentally shutting.

Claim.—The combination of the bumper with a weighted latch-lever pivoted in lugs thereon, and furnished with an upwardly-projecting short arm and the escutcheon on the door, all substantially as described.

140,140.—*Puddling-Furnace.*—CHARLES JONES, St. Louis, Mo. Application filed February 12, 1873.

The bottom consists of an upper and lower plate, forming an intermediate cooling-chamber. From the lower plate, two pipes, bent at right angles and in reverse directions, depend into a water-bosh or receiver located beneath the puddling-bottom. The bottom is rocked by means of a pitman, and in moving back and forward the bent pipes or cups lift water into the space of the bottom, where it evaporates, cooling and preserving the bottom.

Claim.—1. The water-cups *d d'*, acting as receivers and exhausters, in combination with chamber D, as and for the purpose set forth.

2. In combination with smelting-chamber of furnace, the bottom C having water-cups *d d'*, and, arranged relatively therewith, the water-boshes B B', substantially as specified.

3. The combination of the bottom C, rollers c^4, arms c^5, side pitmen E, and crank statchment E', as and for the purpose set forth.

140,141.—*Apparatus for the Manufacture of Starch.*—THOMSON KINGSFORD, Oswego, N. Y. Application filed June 9, 1873.

Put the starch liquor into the tank, where it is allowed to remain at rest for a length of time for the starch and bran or fiber to settle to the bottom of the tank. The liquor which does not contain starch is drawn off by means of the plugs and spout.

Claim.—The combination and arrangement, in a siphoning cistern or tank, of the plugs B and spout E, all constructed and operated in the manner and for the purpose specified.

140,142.—*Clutch.*—WILLARD KNIGHT and NATHANIEL W. LEWIS, Bridgeport, Conn. Application filed December 20, 1872.

The head of the clutch is adjustable, and combined with the operating-sleeve, link, and dog of the pulley, whereby any wear or inaccuracy in the hold of the dog upon the inner circumference

of the flange or rim of the pulley may be easily and quickly compensated.

Claim.—1. The combination of the adjustable heads F and propelling-screws *f* (two or more) with the sleeve D and links or rods G, substantially as and for the purpose herein specified.

2. The combination of the pulley A or B, links or rods G, sleeve D, adjustable head F, propelling-screw *f*, and operating-lever E, substantially as and for the purposes herein specified.

140,143.—*Printing-Telegraph.*—ADOLPHUS A. KNUDSON, Brooklyn, N. Y. Application filed May 15, 1873.

The operation of printing throws in an extra pair of magnets the spring of whose armature furnishes, in drawing up the armature, the motive power to revolve type-wheel.

Claim.—1. In a printing-telegraph, as described, the use of an independent pair of magnets in the same circuit with the press-magnets, or in a separate circuit, if desired, for supplying the power to revolve the type-wheel, as described, and for the purposes set forth.

2. The combination of the magnets K, armature M, lever N, spring O or its equivalent, and clutch on the axis of the master-wheel P, to rotate the type-wheel, as described, and for the purposes set forth.

3. In combination with the type-wheel of a printing-telegraph, as described, the signal-bell and its striking mechanism when operated by the press-magnets, as described, and for the purposes set forth.

4. The combination of the arm T with the armature S of the press-magnets J, the bell-hammer W with its bracket Z, and the bracket Z', all combined and arranged substantially as described, and for the purposes set forth.

140,144.—*Cartridge for Fire-Arms.*—THEODORE T. S. LAIDLEY, Watertown, Mass. Application filed June 13, 1872.

Claim.—A tapered or bottle-necked cartridge for breech-loading fire-arms, in which the powder charge is compacted more densely at the rear than at the front end, and is throughout its length in contact with the sides of the cartridge-case.

140,145.—*Stench-Trap.*—THOMAS LEDBETER, Detroit, Mich. Application filed May 17, 1873.

The trap is so constructed that if the basin-outlet becomes clogged the water can be let off through the lateral sewer through the door in the top of the trap, thus avoiding the necessity of pumping out or bailing the basin.

Claim.—The trap A provided with the flanged openings *c*, and the door A' provided with the lugs *a* and eye-bolt *b*, arranged in a receiving-basin, B, substantially in the manner and for the purpose set forth.

140,146.—*Adding-Machine.*—GUSTAVUS LINDEROOS, Point Arena, Cal. Application filed August 11, 1871.

A series of registering-wheels, successively tripped, is arranged with the lower and larger one divided into one hundred spaces, with holes in each space for moving the wheel, a corresponding notation being marked around it, on the face-plate.

Claim.—The device shown, consisting of the main and secondary wheels and disks, marked as shown, and provided with arms, when inclosed between the plates, the upper having the openings, and the bar *a* and the wheels being held adjustably in place by the spring, the whole constructed and arranged as described.

140,147.—*Wire Fence.*—JAMES A. LITTLE, Cartersburg, Ind. Application filed October 12, 1872.

A portable bracket for supporting the wires of a fence. The braces are crossed and pivoted at the top, forming a bearing for the top wire. The bottom wire is steadied by an adjustable notched cross-bar secured to the braces.

Claim.—The portable bracket K', composed of the crossed pivoted braces L having the pin *a* and holes *a'*, and the pivoted connecting notch-bar L', used in connection with the fence as described, and for the purpose specified.

140,148.—*Vessel for Paints, Oils, Varnishes, &c.*—ROBERT MANSUER, Jr., Philadelphia, Pa., assignor of one-half his right to GEORGE BATES, same place. Application filed December 5, 1872.

Coils of thick paper or pasteboard cemented together are used for forming the cylindrical portion or sides of the case, and wood for inclosing the ends of the same, with a lining of tin-foil throughout, to prevent the materials saturating the paper or wood.

Claim.—A case for holding paints, oils, varnishes, &c., the sides of which are composed of coils of light pasteboard or heavy paper, B and C, cemented together and lined with tin-foil A, in combination with the wooden lid or cover F, and bottom piece H, lined with paper D and tin-foil A', the whole being held securely together by means of hoops or bands G and G', through which nails are driven, substantially as herein shown and described.

140,149.—*Street-Lamp.*—JOSIAH F. MARSH, Dubuque, Iowa. Application filed March 6, 1873.

The oil-reservoir surrounding the top of the lamp is separated therefrom by an air-passage, and is divided into two compartments, which are connected by a plug-valve. The lower compartment is calculated to receive a quantity of oil just sufficient for one night's burning.

Claim.—A fount or reservoir for street-lamps, when the same is composed of two or more compartments, and placed above the burner, substantially as described.

140,150.—*Manufacture of Latch-Needles.*—THOMAS T. MAYNE, Philadelphia, Pa. Application filed November 12, 1872.

A piece of flattened wire, bent up at each end, is of such a length that the blanks for two knitting-needles can be made from it. A punch descends and cuts the wire to the form of the finished article, when the wire is reversed and its end placed against a gage, and the operation repeated. The wire is then severed at the center, the points turned up, and a latch pivoted at the bulb left by the punch.

Claim.—1. Punching the recesses in the blank, in the manner described.

2. The punch *m* and its die, conforming to the shape of the desired recesses, in combination with the gage *y*.

140,151.—*Sword-Hanger.*—SAMUEL MCKEEVER, United States Army. Application filed April 21, 1873.

A stud, affixed to the upper sling-ring of the scabbard transversely to the length of the latter, is passed into a vertical slot in the rigid hanger depending from the belt while the sword is in about a horizontal position; then the sword being dropped to a vertical line is securely fastened.

Claim.—1. The rigid hanger A, slotted parallel with the axis of its length, substantially as described.

2. A sword-hanger, provided with an offset to raise the sword from contact with the body, as set forth.

3. The oblong stud *f*, attached to the upper sling-ring of the scabbard at about right angles to the length of the latter, substantially as and for the purpose described.

4. The combination of the disk *h*, attached to the scabbard, with the circular bearing-surface upon the hanger.

5. The combination of the slotted hanger, disk *h*, and stud *f*, substantially as and for the purpose described.

140,152.—*Pitman-Lubricator for Saw-Mills.*—JOHN MCKENZIE, St. Clair, Mich. Application filed March 8, 1873.

A loose spindle in oil-box, which changes position when the pitman changes the direction of its movement, opening and closing at regular intervals a valve in bottom of box, and thus regulating the flow of oil.

Claim.—The loose spindle F, having a valve, *c*, in combination with the oil-box E, constructed substantially as described, the spindle being adapted to change position when the pitman changes the direction of its movement, substantially as and for the purpose described.

140,153.—*Cigar.*—EDWARD B. MEAD, Pittsfield, Mass. Application filed May 21, 1873.

The mouth-piece is compressed at one end into a concave form on both sides, so as to be conveniently and firmly held in the mouth, and is formed into the cigar, the end portions being wrapped around it.

Claim.—1. The cigar mouth-piece, made of a glass tube flattened concavely on its opposite sides, and otherwise constructed as described and represented.

2. As an improved manufacture, a cigar provided with a glass mouth-piece made and arranged with and in it, as specified.

140,154.—*Running-Gear for Wagons.*—ISAAC O. MEDDOWS, Bonham, Tex. Application filed May 10, 1873.

The body of the vehicle rests upon friction-wheels, which are journaled in laterally-moving boxes. The friction-wheels travel in a groove formed upon the axle-bearing. The king-bolt is formed in sections, and through the center of the same the axle is received.

Claim.—1. In a carriage running-gear, the king-bolt formed of the parts O O', having shoulders *s s* and flanges P, in combination with the bolster H, bolt Q, and socket-plate R, substantially as described.

2. The wheels M' journaled upon the loose blocks M, in combination with the friction-blocks N N, and axle having grooves *d*, substantially as described.

3. In combination with the sectional king-bolt, the truss-rods S, as and for the purpose set forth.

140,155.—*Heating-Stove.*—GEORGE R. MOORE, Philadelphia, Pa. Application filed March 28, 1873.

The hanger is adjustable vertically and supports one side of the grate. The nib projecting from this plate engages with the notches and locks the grate in position.

Claim.—1. The guard-plate obtained by the hanger B closing the aperture for the grate-journal through the outside casing of the stove.

2. The pawl *a a*, in combination with the grate-hanging B, substantially as shown.

3. The nib *b*, or its equivalent, upon the hanging B.

4. The notched ring C, or its equivalent, upon the journal of the grate, for locking or latching the same upon the hanger B, by the nib *b*, and holding the grate at any desired angle upon which it may be placed.

5. The arm D and rod E, in combination with the grate A suspended upon adjustable hangings B B', substantially as and for the purpose described.

140,156.—*Governor for Steam-Heating Apparatus.*—SVEN J. OLSSON, Chicago, Ill. Application filed February 14, 1873.

A piston, operated by the pressure in the pipe, is connected to the valve by a weighted lever and valve-stem, and opens and closes said valve.

Claim.—A steam-governor, consisting of the combination and arrangement of the chambers C, C', and C'', canopy D provided with ports *a a*, cap D', piston E, and pivoted lever G attached to the cap and piston, all substantially as and for the purposes specified.

140,157.—*Adjustable Saw-Guide.*—FRANCIS H. PALMER, Whitefield, N. H. Application filed April 3, 1873.

The guide-pins are individually adjustable, and the operating parts protected by a shield.

Claim.—1. In combination with the arms G G and their adjusting-screws H H, the long nut *x* and clamping-screw J', as and for the purposes set forth.

2. In combination with the adjusting-screws, the removable shield L, for the purposes set forth.

140,158.—*Apparatus for Treating Ore and Manufacturing Iron and Steel.*—EDGAR PECKHAM, Antwerp, N. Y. Application filed May 9, 1873.

The ore, reduced to the size of small walnuts and mixed with an equal bulk of fine charcoal or coke, is charged into the upper chamber, where it is exposed to the direct action of heat and products of combustion, and is stirred or rabbled. After about twenty-four hours the ore is transferred to the retorts, its place being supplied with a fresh charge. From the retorts the sponge is let down into the cooling-vats, where it cools without exposure to the air. Each of the retorts forming the series being supplied with a cooling-vat, they can be worked separately or collectively and continuously.

Claim.—1. The combination of the chambers D, D^1, and D^2, one or more, the retorts F, F^1, and F^2, and the cooling vats or chambers L, L^1, and L^2, each chamber, retort, and cooling-chamber forming one section, constructed substantially as and for the purposes hereinbefore set forth.

2. The combination of two or more sections of chambers and retorts lengthwise, each chamber and retort forming one section, constructed substantially as and for the purposes hereinbefore set forth.

3. The combination of two or more sections of chambers, retorts, and cooling-chambers lengthwise, each chamber, retort, and cooling-chamber forming one section, constructed substantially as and for the purposes hereinbefore set forth.

140,159.—*Cutting Attachment for Sewing-Machines.*—ALFRED T. PERRINE, Charlestown, assignor to JOHN HITCHCOCK, trustee, Boston, Mass. Application filed June 7, 1873.

The cutter is pivoted to the needle-bar so that it may be turned out of action when the needle is to be changed or threaded, or when it is not desired to cut the fabric. The tapering pin acts as a wedge to retain the cutter more or less securely.

Claim.—1. A cutter attached to the needle-bar of a sewing-machine by means of a hinged joint, and arranged to be swung to one side, substantially as described, for the purposes specified.

2. The cutter *e*, constructed as herein set forth, and pivoted to the needle-bar of a sewing-machine, with its cutting-edge in a plane between said pivotal point and the needle, substantially as described.

3. In combination with the cutter *e* and the needle-bar of a sewing-machine, the taper pin *d* for securing said knife to the needle-bar, substantially as described, for the purpose specified.

140,160.—*Woven-Wire Fabric.*—J. WILLIAM C. PETERS, Chicago, Ill. Application filed November 11, 1872.

The spirals of one fabric are woven into those of the other, either at right angles or diagonally.

Claim.—The woven-wire fabric A, made of parallel spiral springs woven or looped together in the manner shown, and forming a continuous fabric, in connection with the fabric B, made in like manner and woven into the fabric A, as specified.

140,161.—*Screw-Cutting Machine.*—ALFRED PHILLIPS and ALBERT PHILLIPS, Cleveland, Ohio. Application filed October 25, 1872.

The blank-bolt is fixed to a sliding carriage which is drawn forward by the threads as they are cut. When the desired length is threaded an arm on the carriage pushes a sliding bar forward, and a projecting arm throws open the dies, when a spring, situated in the rear of the carriage, withdraws the bolt and closes the dies.

Claim.—1. The disk G, hollow mandrel H, sleeve J, arms *l l*, levers *o o*, dies I I, ring G', pieces *p p*, set-screws *q q*, the arm U, bar R, adjustable arms T T, arm V, and the carriage C, all constructed, combined, and arranged, and operating substantially as shown and described, and for the purpose set forth.

2. The rod D and spring E, in combination with the carriage C, as shown and described, and for the purpose set forth.

140,162.—*Billiard-Table.*—L. CORYDON PRINDLE, Chicago, Ill. Application filed March 5, 1873.

Intended more particularly for a portable billiard-table. Reversed it serves for an ordinary table-top.

Claim.—A portable billiard-table consisting of the marble or other bed A, formed of a single piece, in combination with the rail B and cushion *c*, when said parts are constructed and arranged substantially as described.

140,163.—*Medical Compound for Diphtheria.*—HIRAM PRUDEN, Erie, Pa. Application filed November 22, 1872.

Petroleum-oil, spirits turpentine, and camphor.

Claim.—A compound composed of refined petroleum-oil, spirits turpentine, and camphor, substantially in the proportions and for the purposes set forth.

140,164.—*Gas-Burner.*—JOHN RICHARDSON and THOMAS D. RICHARDSON, New York, N. Y. Application filed October 8, 1872.

Claim.—1. A compound gas-burner, consisting of an inner and an outer tube arranged to convey the gases separately to the point of combustion, and having their opposite ends arranged concentrically, so that said burner can be screwed on the compound pipe in the same manner that ordinary burners are attached to single pipes, substantially as herein shown and described.

2. A compound gas-burner consisting merely of two concentric tubes, secured together and arranged at their upper ends, as shown and described, but left uncovered at their lower ends, in order that they may be attached to concentric supply-pipes, as shown and set forth.

3. The compound flat-flame burner, consisting of the concentric tubes having their upper ends connected, and provided with the partitions *c* and slits or openings *c*, as shown and described.

140,165.—*Gas Pipe and Fixture.*—JOHN RICHARDSON and THOMAS D. RICHARDSON, New York, N. Y. Application filed November 16, 1872.

Claim.—1. The herein-described pipe for conducting two gases separately between distant points, consisting of two pipes secured one within the other, substantially as herein described, slot in their ends arranged concentrically, as set forth, so that different lengths or sections of the compound pipe may be screwed together and used in the same manner as ordinary single pipe.

2. The combination of the pipes A and B with the spiders C, or their equivalents, as and for the purpose described.

3. In combination with the compound pipe A B, the swivel D provided with the two passages or openings, substantially as described.

140,166.—*Apparatus for Repairing Knotter, Strainer, or Screen Plates of Paper-Machines.*—JAMES ROBERTSON, Lanswade, Great Britain, assignor, by mesne assignments, to L. ASHMUN & CO., Paterson, N. J. Application filed November 9, 1872.

The widened slots of the worn plate are contracted by means of a tool having a gag tongue and inclined faces, whereby the metal is swaged together to reduce the size of the opening.

Claim.—1. The mode of lessening or reducing the slots in a strainer-plate, substantially as herein shown and described, and for the purpose set forth.

2. The tool H I, constructed substantially as herein shown and described, to adapt it for use in reducing the slots in a strainer-plate, as set forth.

140,167.—*Wire-Way.*—JAMES H. ROGERS and JOHN W. ROGERS, Peekskill, N. Y. Application filed May 29, 1872.

The frame carrying the bucket descends along the inclined wire-way until the bar *k* is reached, when the rod E is released at upper end, allowing the bucket to descend vertically at that point to be filled. When filled, the rope is drawn upon and the bucket rises vertically until it reaches rod E, the frame being meanwhile held from advancing by the hook at the other end of E. On reaching the rod the bucket and rod rise together until pulley D is reached, when the hook is released and the bucket traverses back upon the rod to its former position. Both frame and bucket are then drawn up the incline together. For passing supports, the block B is provided with three wheels, the two outer ones of slightly larger diameter than the middle one, which outer pulleys, by means of short tracks N N, temporarily sustain the load and permit the block to pass the support by means of the notch M.

Claim.—1. The combination of pulleys B C D with the rods E and F and the cross-bar K, all to be used by means of the rope I and the wires, substantially as and for the purposes herein set forth.

2. The combination of track N N with block B and opening M, substantially as and for the purposes herein described and set forth.

140,168.—*Truss.*—ALEXANDER T. C. SCHORVERS, Hague, Holland. Application filed June 6, 1873.

From a single thin plate of steel is cut out the back and arms for the sides of the pad. The pad is inclosed in a case of vulcanized rubber, and connected by a ball-and-socket joint to the ordinary band, which passes around the body.

Claim.—1. A truss pad or cushion composed of a dome-shaped spring back, in combination with a central conical spring-cushion within the same, the whole being arranged and enveloped in a case of vulcanized India rubber or its equivalent, substantially as shown and described.

2. In combination with the dome-shaped spring back and the spring-cushion within the same, the arm or stem for connecting said parts to the spring-band of the truss, said arm being united with the pad by a ball-and-socket joint, substantially as shown and set forth.

140,169.—*Potato Masher and Strainer.*—RÉNÉ SEBILLE, Baltimore, Md. Application filed May 5, 1873.

The plunger is made with a double-beveled end, and combined with a cylindrical strainer.

Claim.—The double-beveled-faced plunger or potato-masher C, constructed substantially as described, in combination with the strainer A, as and for the purposes set forth.

140,170.—*Whiffletree.*—ALBERT J. SPRAGUE, Binghamton, N. Y. Application filed March 10, 1873.

The whiffletree is attached by moving back the hook B for the reception of the ring, when it is moved to its position in front of the guard, which prevents its detachment.

Claim.—1. In combination with the evener having its end rounded, the hook B pivoted eccentrically to the rounded end so that when the parts are in a working position the point of the hook shall be nearer the edge of the evener than when the hook is swung outward to receive the whiffletrees, substantially as set forth.

2. In combination with the evener and the pivoted hook B the guard *c*, arranged to operate substantially as set forth.

140,171.—*Mixing-Machine.*—JOHN W. STOCKWELL, Portland, Me. Application filed March 15, 1873.

An inclined horizontal mixer, revolved by a vertical shaft;

mixing-blade on one side, some distance from the bottom, and stationary cleaner reciprocating vertically on shaft.

Claim—1. The scraper and mixer *n*, made as described, and arranged to operate in the receptacle *a*, as herein set forth.

2. The combination of the cleaner *p* with the scraper and mixer *n*, arranged to operate in the receptacle *a*, as herein set forth.

140,172.—*Pantaloon-Tree.*—MICHAEL TAISE, South Boston, Mass. Application filed May 8, 1873.

A press-board upon which to iron and shape pantaloons, having its lower front portion roughened to prevent the garment from slipping up when being pressed.

Claim.—The piece A having the lower or projecting portion of its front roughened or provided with points or projections, substantially as and for the purpose set forth.

140,173.—*Rock-Drill Carriage*—ALEXANDER P. THOMAS and WILLIAM J. EVANS, Copper Falls Mine, Mich. Application filed October 28, 1872.

A four-wheeled truck, the sides of which are connected to the axles by screws so arranged that the sills may be lowered to rest on the bottom of the tunnel, (or on the rails of track, if any;) also, a rest carrying the drill-post, dovetailed in ways transversely placed across the carriage, with rack and pinion (or equivalent device) for moving the drill-post laterally across the face of the work, and also a clamp securing the drill-cylinder to it at any inclination and to the drill-post.

Claim.—1. The axles A A, sills B B B' B', screws C C C C and bed-plate D of a rock-drill carriage, constructed substantially as herein shown, for the purpose set forth.

2. The dovetail-ways E on the bed-plate D carrying the slide-rest F, and the drill-post G with a rack, *e*, and pinion *b*, for moving said slide-rest, as shown and set forth.

3. The clamp-gib *c* and set-screws *d* for clamping the rest F to the ways E, as described and shown.

4. The sectional clamp I, and bolts *e e' f f'* for securing the drill-cylinder J to the drill-post, substantially as described.

140,174.—*Trimming.*—JOSEPH THOMAS, Hoboken, N. J. Application filed March 19, 1873.

Braid is applied around the raw edge of fabric by a zigzag stitch, which holds the braid firmly and prevents the edge from fraying.

Claim.—The edging formed and produced by the combination and arrangement of the braiding, the single cloth, and the over-hand zigzag stitch or seam substantially in the manner described, and for the purposes and uses set forth.

140,175.—*Road-Scraper.*—WILLIAM P. WARREN, Serena, Ill. Application filed April 7, 1873.

The scraper is raised or lowered by depressing or elevating the wheels, and the front of the scraper is closed by the folding-board *u*, which holds the earth in. The scraper is dumped by raising the rear end by the lever O, the front end turning on the pivots at the ends of the links *m*.

Claim.—1. The wheels *b*, secured to the bars *c d*, and operated by means of the lever A, for the purpose of lowering and raising the body, substantially as set forth.

2. The folding-board *u*, in combination with the arms *v* and lever *a'*, substantially as shown.

3. The scraper *l*, links *m*, levers *o*, and cross-piece *n*, substantially as specified.

4. The combination of the folding-board *u* and scraper *l*, when the two parts are combined to operate as described.

140,176.—*Fly-Trap.*—THOMAS H. WHITING, Grand Haven, Mich. Application filed May 8, 1873.

The fly-trap is constructed with a base on which rests the cylinder, with opening for the flies to pass into it, and is connected to the wire-gauze cover by pivots. Within and above the base is a trough for water, and from it a cone-shaped cover to direct the flies. The top is constructed of perforated tin, closely fitted to the inside of the cylinder, and may be forced down, carrying with it the flies to the water-trough to be drowned.

Claim.—1. The chamber D^2 provided with the sliding or piston-top D^1, as and for the purpose set forth.

2. The construction and arrangement of the base-plate A, standard *a*, cylinder B, having secured within it the trough *b*, and cone C C' provided with the aperture *d*, the detachable wire-cloth cylinder D, and the top D^1 D^2, substantially as and for the purpose set forth.

140,177.—*Bill and Paper File.*—GEORGE T. WOLCOTT, Detroit, Mich., assignor to himself and HENRY P. GRAVES, same place. Application filed April 8, 1873.

A bottomless box with a series of grooves upon the inner surface of its sides, into which partitions are inserted, their lower ends provided with a projecting base, to which is attached an arch-shaped spring to clamp the papers.

Claim.—The described rack consisting of the case A, with ascending sides and open bottom partitions B, arranged in an ascending series, strips *b*, and springs C, combined and arranged as described, for the purpose set forth.

140,178.—*Potato-Planter.*—FREDERICK W. WORSTELL, St. Louis, Mo. Application filed November 15, 1873.

A potato-box on a pair of wheels has laterally placed in front an oblong box, supported by a caster-wheel. In this box are chopping-knives, actuated by gearing on the traction-wheels. The chopped potatoes are dropped automatically onto the endless belts beneath, also operated from the traction-wheels, and carried to a spout at each end, where they are dropped into a furrow.

Claim.—1. The combination of the boxes K, compartments *k k'*, hoppers L L', apertures l^2 l^3, boxes M M', arranged as herein shown and described, for the purpose set forth.

2. The combination of the boxes M M', bottom plates m^3 m^5, cutters m^3 m^4, top shaft N, rod *n*, crank-disk n^1, self-acting hand-shaft m^2, arranged to operate as herein shown and described, and for the purpose set forth.

140,179.—*Boot-Jack.*—HORACE ARNOT, Barclay, Pa., assignor to himself and G. W. DICKEY, same place. Application filed May 3, 1873.

Two jaws with slotted inclined parts grasp the heel, by the action of the foot, on a pivoted U-shaped rod-frame guided therein and attached to a foot-board.

Claim.—1. The boot-jack, consisting of foot-rest A, with jaws B, pivoted and secured thereto by washer-plate *a*, and face-plate C, in combination with rod-frame D, substantially as and for the purpose described.

2. The jaws B, having inclined link *d* at curved front end, and rectangular rear end *b* pivoted to the foot-rest A, as set forth.

140,180.—*Broom.*—JOHN D. BELL, Watteborough, Va. Application filed April 12, 1873.

The broom is constructed by passing the butts of the corn into a cylinder having another of smaller dimensions connected by a flange at its upper end, through which the handle is fitted, having a point, which, by forcing it through the broom-corn in the lower cylinder, wedges and firmly holds it, and the handle is pivoted to the upper cylinder, and can be removed for its repair.

Claim.—The tube or socket A, extension C, and handle E having a tapered and pointed end, all arranged and combined substantially as and for the purposes described.

140,181.—*Truss-Bridge.*—DANIEL C. BOWER, Troy, Ohio. Application filed May 24, 1873.

A rearrangement of the parts of an ordinary truss-bridge, dispensing with counter-braces, and making use of the dovetail-shaped blocks C in the spaces between the strands of the chords, through which and the triangular brace-shoes the vertical tension-rods are passed.

Claim.—An improved bridge, formed of the lower chord A, the top chord B, the dovetailed blocks C, the binding-rods D, the triangular blocks E, and the braces F, constructed and arranged in connection with each other, substantially as herein shown and described, and for the purposes set forth.

140,182.—*Combined Wheel-Harrow and Seeder.*—FRANK BRAMER, Little Falls, N. Y. Application filed April 9, 1873.

Concave disk-harrows have their adjustable frames made self-bracing to the main frame that carries the seed-box. The seed-slide is operated by a crank on one of the disks.

Claim.—1. The main frame, composed of the longitudinal bars A and oblique transverse bars A^1, in combination with the adjustable gang-bars C C^1, arranged to brace the frame, substantially as and for the purpose set forth.

2. The seed-distributer or agitator of a combined seeding-machine and wheel-harrow, connected with and operated by a crank on the shaft of one of the wheel-gangs through an adjustable pitman arranged at right angles to said shaft, substantially as and for the purposes set forth.

3. The construction of the pitman-connection, of the seed-distributer and harrow-wheel shaft, and of the parts I I^1 I^2 to permit the adjustment of its length and angle, as described.

4. The spools or thimbles L provided with notched or perforated hubs, or bosses, or pins for securing the harrow-wheels and causing their uniform rotation, substantially as described.

140,183.—*Self-Closing Faucet.*—ALEXANDER BRINCKMANN, New York, N. Y. Application filed November 9, 1872.

A rotating tube, with swivel discharge-tube, is arranged in a suitable case having an enlarged bowl with a branch, in which slides a water-pressed piston, the rod of which connects with a cam on the revolving stem and closes the exit-opening. In order to prevent the tube, while swinging to a dead point, from meeting a rigid resistance, a coiled spring is applied to a projecting tooth on the revolving tube.

Claim.—The combination of the tube C, the water-pressed piston H, rod *b*, and cam *d*, arranged and applied for the purpose of rotating said tube, as set forth.

140,184.—*Wadding, and Machine for its Manufacture.*—ANDREW CHAMBERS, Providence, R. I. Application filed March 29, 1873.

The wadding is made of old delaines or other mixed fabrics picked into fine particles, passed through a vat containing rolls running in a gummy solution, and then between boxes containing a surfacing material, which is thrown upon it by revolving brushes.

Claim.—1. As a new article of manufacture, waddings made of short fiber stock, such as herein described, and saturated with a gummy solution, and also coated or glazed on the surfaces, substantially as specified.

2. The combination of a vat, G, and carry-rollers H, with mechanism for forming waddings, substantially as specified.

3. The combination of boxes K, and brushes N, with the bath G, carrying-rollers H, and the lap mechanism, substantially as specified.

140,185.—*Sap-Protector.*—HENRY C. COLE and EDGAR D. SABIN, Wallingford, Vt. Application filed May 17, 1873.

The sap-protectors are attached to bands, which are fastened above and below the bucket to prevent rain and dirt from falling into the sap-bucket.

Claim.—A sap-protector attached to the tree and the bucket, substantially as shown and described.

140,186.—*Hand Corn-Planter.*—JOHNSON W. COLEMAN, Bridgeville, Mich. Application filed February 27, 1873.

The handle, with a plunger at bottom, reciprocates vertically on a front slide, on the top of which is the hopper. The back is hinged to ears at the bottom of the front piece, which ears, with a spring-jaw behind them, complete the box at bottom, the sides above being canvas. Fixed to the handle, at an upward angle, is a slotted plate, which, by working on a pin on the back-piece, makes the latter reciprocate the seed-cup slide in the hopper.

Claim.—The combination of the body A with hopper B, foot G, and spring-plate J, the seed-slide D, bar E, canvas H, and plunger K with angular arm E, all constructed and arranged substantially as and for the purposes herein set forth.

140,187.—*Ice-Elevator.*—EDWARD L. CONKLIN, New York, N. Y. Application filed June 5, 1873.

A series of friction-wheels are secured at intervals on a horizontally-placed shaft revolved by a steam-engine or other power, and a series of rope-drums, each provided with a friction-wheel faced to correspond with the friction-wheels on the shaft, each drum being pivoted in such a manner that, by a hand-lever, it may be put in motion by being thrown against the revolving friction-wheel on the shaft, when hoisting is required, and stopped by throwing it out of contact with the friction-wheel and against a stationary brake, when the ice-block has been raised to the height desired; or the ice may be lowered by its own gravity by moving the lever in a position between and out of contact with both friction-wheel and brake, the whole being so arranged that a number of drums may be operated independently of each other, and thus an equal number of boats may be simultaneously loaded or unloaded.

Claim.—1. For the purpose of handling ice, a series of rope-drums, F, provided with the friction-wheels J, alternately reversible from contact with one to the other of a series of revolving friction-wheels, E, and a series of stationary brakes, K, to alternately start and stop the motion of the drums F in such a manner that each drum may be operated separately, or all simultaneously, substantially as specified.

2. The combination of the drum F, pivoted with one end to the oscillating arm G, and provided with the V-grooved friction-wheel J, and operated by the lever H and rod I, with the revolving friction-wheel E, stationary brake K, and the sliding pulley L, all constructed substantially as and for the purpose specified.

140,188.—*Furniture-Spring.*—WILLIAM T. DOREMUS, New York, N. Y. Application filed June 7, 1873.

An improved spring for connecting the seat-frame of a chair to the pedestal, for connecting the parts of a jointed back, and for application to other parts of a chair, spring-bed, or other piece of furniture when a yielding connection is required.

Claim.—The combination of the plate A provided with a flange, *a'*, the plate B provided with a flange, *b'*, the rod or bar C, the pin D, and the rubber block E, with each other, substantially as herein shown and described.

140,189.—*Furniture-Spring.*—WILLIAM T. DOREMUS, New York, N. Y. Application filed June 7, 1873.

The lower plate has on one side an upright lug, and on the other side an upright flange bearing a lug. The upper plate is made with a depression to receive the bolt that connects the opposite lugs of the lower plate. Between the two plates a rubber block, recessed to conform to the upper plate, is interposed.

Claim.—The combination of the plate A provided with the flanges a^1 a^2, and the lugs a^3, the plate C provided with flanges c^2 c^3, and the depression c^4, the bolt B, and the rubber block D, with each other, substantially as herein shown and described.

140,190.—*Safety-Platform for Elevators.*—ROBERT DUNBAR, Buffalo, N. Y. Application filed May 16, 1873.

Elevator-platform having the forked lever pivoted to the cross-beam and their inner ends loosely arranged in the draw-head, and said levers having on their outer ends vertical pins on each fork for operating the toothed eccentric cams within the metal caps secured to the upright post and cross-beam.

Claim.—1. The forked levers E E pivoted to the hangers *d*, and their ends loosely arranged in the draw-head *e*, said levers being provided with vertical pins *f* on each fork for operating the cams *c c*, substantially as herein described.

2. The caps D D having within two eccentric pivoted cams, *c c*, in combination with the forked levers E E and with the T-shaped rail located in the standards *c c*, the whole constructed and operated as herein described.

140,191.—*Gas-Lighting Torch.*—ELLIOT P. GLEASON, Brooklyn, N. Y. Application filed January 4, 1873.

The spring-clamp E is held compressed by the button *e*, which secures the taper in the clamp.

Claim.—The combination, with the taper-holder E, of the clasp *e*, when the same shall be constructed and operate substantially as described.

140,192.—*Railroad-Car Spring.*—GEORGE F. GODLEY, New York, N. Y. Application filed January 21, 1873.

The spiral springs are so arranged within a follower that extra springs will be brought into use when the weight of the car is materially increased.

Claim.—1. A car-spring, having in combination spiral springs of different lengths and different sizes of spiral, the shorter and smaller ones being within the longer and larger ones, and the free ends of the shorter ones entering hollow thimbles or nipples in a follower, while the longer and larger ones surround such nipples, and the inner spring being coiled in a direction opposite that of its outer one, all substantially as described.

2. In combination, the partitioned case and the top and bottom followers, the partition and the followers having hollow nipples or thimbles *f*, adapted to receive and sustain within them the smaller and shorter springs, and to be surrounded by and to sustain the larger and longer springs, all substantially as described and shown.

140,193.—*Clothes-Drier.*—ALMERON GRAVES, Roscoe, Ill. Application filed September 28, 1872.

The cords pass over pulleys at the top of the standard and are connected with the arms, which are pivoted to a sliding collar, while the brace-bars are pivoted to the arms and to a fixed collar. To the end of the lower bars and braces, which serve as legs to the frame, metallic loops are attached so that the frame may be fastened by stakes to the ground.

Claim.—1. The metal loops I, pivoted to the ends of the bars G and F, as and for the purpose described.

2. The combination of cords L passing over pulleys K at the top of the standard, the arms B pivoted to the sliding collar D', the brace-bars E pivoted to the fixed collar D', and arms B, all as shown and described, whereby, when the cord L is pulled, the arms will fold upward and inward and the brace-bars fold alongside thereof against the standard H.

140,194.—*Circulating-Valve for Fire-Engines.*—CHARLES A. HAGUE, Hudson, N. Y. Application filed April 26, 1873.

The main valve has an opening through it, which is closed by a small valve held down by a spring. Pressure keeps the large valve closed until it is great enough to open the small one, which allows water to enter a chamber above the large valve and, by the greater area, force it down so as to allow the water to escape into the suction-chamber.

Claim.—1. The combination of the valves S *m* and *f* in a case, O, attached to the discharge and suction chambers of a pump, substantially as specified.

2. The arrangement of the valves S *f m*, tube J, spring A, case K, the spring C and its adjusting mechanism, substantially as specified.

3. The arrangement of spring C, adjusting cap-nut *b*, hand-wheel *a*, tube J, the valve *m*, and spring *h*, substantially as specified.

140,195.—*Elevator for Hods, &c.*—EDWIN HARLOW, New York, N. Y. Application filed February 18, 1873.

The cross-beam is supplied with racks arranged alternately on either side to hold hods, in combination with movable bars below, securing, with pins, the handles of the hods; also, flaps hinged to the platform and raised by weights, or their equivalents, in combination with the hod-elevating frame.

Claim.—1. The removable bars *l*, in combination with the platform *a* and racks *h* for the hods, substantially as set forth.

2. The racks *h* at the opposite sides of the cross-beam *b*, and arranged as shown, to allow the hods to be applied alternately at the opposite sides of said beam, as set forth.

3. The elevator-platform *a* and frame *b c*, provided with the rollers *c c* and guide-pins *g g* for the ways *f f*, as set forth.

4. The flaps *e*, hinged to the platform *p*, and raised by weights or their equivalents, in combination with the hod-elevating frame, substantially as and for the purposes set forth.

140,196.—*Electrical Protection for Boilers.*—ABRAHAM T. HAY, Burlington, Iowa. Application filed February 14, 1873.

A coil connected with a galvanic battery is arranged around the steam-drum or smoke-stack of a boiler in order to magnetize the said steam-boiler, with a view to prevent the formation of incrustation therein.

Claim.—1. For the removal of crustation, scale, or solid deposit, the magnetization of a boiler or other receptacle by means of a coil upon a core removed from contact with the fluid, applied in the manner and for the purposes substantially as described.

2. In combination with the coil, the direct circuit through the boiler or other receptacle, as and for the purposes substantially as described.

140,197.—*Pantaloon.*—FREDERICK T. HOYT, Brooklyn, N. Y. Application filed March 15, 1873.

Claim.—In a pair of pantaloons the elastic strap-pieces B B, provided with the slits D and permanently secured to the inner side of such garment, as shown, for the purpose of attachment to a jacket, as set forth.

140,198.—*Reversible Harrow-Tooth.*—GEORGE W. HURST, Avon, Ohio. Application filed April 12, 1873.

Constructing harrow-teeth in V-shape form, with the ends fastened on opposite sides of beams, provided with double cutting-edges.

Claim.—A harrow-tooth having two shanks slightly bent in opposite directions from each other, to enable them to be securely fastened on opposite sides of bar B, and thus brace each other, in the manner set forth.

140,199.—*Metallic Fabric for Smut-Mill Cases.*—HERBERT S. JEWELL, Brooklyn, N. Y. Application filed November 26, 1872.

Corrugated slips of sheet metal supported in grooved rings. Ribs formed by corrugations touch each other so as to form the interstices. Plain slips of sheet metal may be placed between the corrugated slips.

Claim.—1. The metal plate *c*, corrugated transversely, and sustained by rings to form the case of a grain-cleaner, substantially as set forth.

2. The corrugated-metal plates applied between and combined with straight plates to form the case of a grain-cleaner, substantially as set forth.

140,200.—*Railroad Signal.*—JOHN H. JOHNSON and JOHN E. LAYTON, Springfield, Ohio. Application filed January 4, 1873.

Two flags on upright arms springing from two horizontal rock-shafts at right angles to each other are so connected, by suitable connecting-links and crank-arms, with a spring-lever at the side of a railroad track as to be operated by each of the wheels of a passing train, and thus caused to wave simultaneously in different directions at a crossing or other suitable locality.

Claim.—The combination of the crank E^1 E^2 and flag-staff e^2 actuated by crank C, substantially as described, with the bent lever F, arranged to vibrate the flag-staff F at right angles to the plane of flag-staff e^2, substantially as described.

140,201.—*Reciprocating Winnower.*—HENRY KELLER, Sauk Center, Minn. Application filed April 5, 1873.

Upper and lower grading-screens made in two parts, the upper section above the plane of the lower one, so that the wind from the fan can act with better effect.

Claim.—The sieves A B and A′ B′, arranged with respect to each other and to the grain-box E F G H, as and for the purpose described.

140,202.—*Cable-Stopper.*—JAMES M. KILNER, Chester, England. Application filed July 24, 1872.

Claim.—The casting provided with two holes and a niche or slot in which any link of a chain may be partially embedded, so that the end of said link abuts against the projecting shelf, and the horseshoe-lever, constructed as described, and provided with a fastening-line, when combined together for operation as and for the purposes described.

140,203.—*Machine for Cutting Tobacco.*—FRANCIS S. KINNEY, New York, N. Y. Application filed April 26, 1873.

A single knife works upon inclined bearings, giving a shear cut, the knife being inclined to the plane of the bearings and its edge parallel to the bottom of the box.

Claim.—In combination with the box A, having vertical sides and bottom at right angles thereto, the inclined parallel guide-bars B, holder C, horizontal knife D, connecting-rod E, and crank F, operating as shown.

140,204.—*Envelope.*—SOL. KUH, Jefferson, Iowa. Application filed April 26, 1873.

The end is perforated to form a severing-line, the detached part forming a cover. The back is coated with sand to prevent its adhering to others when packed for shipment.

Claim.—1. An envelope constructed wider at one end than at the other, and the wide end provided with a series of slits or perforations, *a*, constituting a defined severing-line to provide a cover as and for the purposes set forth.

2. An envelope whose back is provided with a sanded or other gritty coating, as and for the purposes set forth.

140,205.—*Heating-Range.*—JOHN LAWLOR, New York, N. Y. Application filed December 9, 1872.

The dampers are so arranged that the products of combustion can be made to impinge against the casings of the passages of the air used for heating, or diverted direct toward the ovens and exit-pipe.

Claim.—The independently-operating dampers O and P, the vertical deflecting-plate Q, the side compartments S closed at the bottom, and the flues M, all constructed and arranged as shown and described, whereby the products of combustion may be caused to pass downward and then upward in said compartments on their way to the flues, as set forth.

140,206.—*Toy.*—HARVEY T. LEE, Chicago, Ill. Application filed April 14, 1873.

A cylinder, slotted upon its side, has its lower end closed by a whistle.

Claim.—The toy, consisting of the hollow slotted cylinder, constructed as described, and provided with the whistle, as and for the purpose set forth.

140,207.—*Metallic Clasp.*—CHARLES MARSHALL, Lockport, N. Y. Application filed March 8, 1873.

A piece of sheet metal is bent at one end to form a hook, which is reduced in width, and the other end is turned up at a right angle and has one or more teeth thereon. A second piece of metal, concave on the outside and convex on the inside, is riveted to it, and arranged to slide over the cloth or other fabric and hold it by pressure against the teeth.

Claim.—A clothes-hook composed of two parts, A F, the former having a hook, B, and curved point or points D, the latter pivoted to the former and shaped as described.

140,208.—*Rubber and Plumbago Compound for Bearings and other Purposes.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 14, 1873.

Washed or prepared rubber, 100 pounds; sulphur 50 pounds; plumbago or black lead, 200 to 250 pounds. These ingredients, in the proportions specified, are ground and thoroughly mixed together in a heater in the manner ordinarily practiced in preparing vulcanizable rubber compounds. The mass thus obtained is run into sheets or made up into tubes, or molded into any desirable form, and vulcanized.

Claim.—1. The process of making the herein-described rubber and plumbago compound for anti-friction bearings, and for other purposes, the same consisting in first mixing together plumbago, rubber, and sulphur as the main ingredients, in the proportions herein stated, then molding the same; or forming it into sheets or sticks or tubes, and then subjecting the same to a heat ranging between the temperatures stated for the time specified.

2. The rubber and plumbago compound produced in the manner and by the process herein described.

140,209.—*Manufacture of Artificial Leather and Similar Fabrics.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 16, 1873.

The prepared leather pulp is deposited on a feed-apron, and is first partly smoothed out and spread by guides to a pressure-roller. Thence it passes under an upper apron, and is spread and condensed into sheet-form by reciprocating pounders placed above the upper apron. It is then finished by a smoother and run into a heated drying-apron, traveling at the same rate of speed with the conveying-apron.

Claim.—1. In machinery for the manufacture of artificial leather or other material to be formed into sheets from a pulped mass, the combination, with a conveying or feed apron running over a suitable bed, and a series of reciprocating pounders located above said apron, to act upon the sheet of pulp carried by the same, as set forth, of an upper apron arranged to run in contact with the upper surface of the pulp-sheet, and intermediate between said conveying-apron and pounders, substantially as and for the purposes described.

2. In combination with the feed or conveying apron and upper apron intermediate between the same and the pounders, as set forth, the pressure roll or guides, or both, arranged in front of the upper apron and above the feed or conveying apron, to operate upon the pulp deposited upon the latter, before it enters between the two aprons, substantially as shown and described.

3. The combination, with the feed or conveying apron and upper apron intermediate between the same and the pounders, of the smoother located in rear of said aprons, and arranged to reciprocate back and forth over a table or platform upon which the sheet of pulp passing from between the two aprons is delivered, substantially as shown and described.

4. In machinery for the manufacture of artificial leather, the combination, substantially as herein described, with the sheet forming and condensing devices, of an endless apron of wire-gauze, or its equivalent, for receiving the sheet as it passes from said devices, traveling at the same rate of speed as that at which the sheet is fed to it, and provided with means, substantially such as shown and set forth, for heating and drying said sheet during its passage over the apron.

140,210.—*Cooking-Stove.*—GEORGE MCADAMS, Vevay, Ind. Application filed March 15, 1873.

The sides and bottom are made of one piece of sheet metal, the top and bottom of cast metal, and are suitably united and fastened together.

Claim.—1. The arrangement of cast-iron plates A, B, and C with sheet-metal side and bottom pieces D, substantially as described.

2. The connection of plates A B C having ribs *a*, by wedge-strips E and bolts *b*, with sheet-iron sides D, as set forth.

140,211.—*Cuff-Button.*—FLORENCE MCCARTHY, Chicago, Ill. Application filed April 13, 1873.

The shank is made of sheet metal, first bent at a right angle to the face of the button, then at an obtuse angle in the direction of its periphery, and afterward parallel with its face. It is attached by a single motion.

Claim.—The combination, with the button A, the angular tongue B having the straight portions *a*, *b*, and *c*, the part *c* acting to compress the cloth against the parallel surface of the button, substantially as described.

140,212.—*Machine for Cutting Screws.*—DAVID MCGUIRE, Northampton, Mass. Application filed March 26, 1873.

The mandrel has upon its end a hollow enlargement in which the collet of the die-stock is inserted, and the two are made to revolve together by means of projections and depressions upon their meeting ends. A set-screw holds the collet and die-stock in place.

1. A die-stock provided with a collet, D, having one or more clutch projections, *b*, in combination with a mandrel provided with a corresponding socket, C, and one or more clutch depressions, *a*, the whole being constructed and operated in the manner substantially as and for the purposes set forth.

2. In combination with a die-stock having a collet, D, provided with clutch projections *b*, and a mandrel having a socket, C, and clutch depressions *a*, the thumb-screw F and depression *c*, as arranged for the purpose set forth.

140,213.—*Agricultural Boiler.*—HORACE A. MEARS, Rockford, assignor to himself, SMITH SALISBURY, and BENJAMIN SANBORN, Pecatonica, Ill. Application filed March 29, 1873.

Designed for cooking food for cattle, boiling water, &c., and is set directly into the tub or barrel containing the food or water.

Claim.—The combination, within the case A, of the fire-chamber A′, draft-flue B, and smoke-flues B^1 B^2, all constructed, arranged, and operating as described.

140,214.—*Lamp-Chimney Supporter.*—WILLIAM MEARS and HENRY DAVIES, Newport, Ky. Application filed March 22, 1873.

The metallic chimney is vertically adjustable in a guide-tube, and may be clamped at any point. The guide-tube is slitted to form a spring. A set-screw, working through the bracket, bears against a projection upon one of the sections; or a pivoted block is pressed against the chimney-tube through the medium of a wedge and the set-screw; or the screw may operate directly upon the block.

Claim.—The guide-tube, bracket, and wedge-clamp combined with the chimney B, as and for the purpose described.

140,215.—*Reener for Thread.*—JOHN B. MELDRUM, Paterson, N. J., assignor to THE BARBOUR FLAX-SPINNING COMPANY, same place. Application filed March 29, 1873.

One jaw is adjustable on the other to adapt the vertical opening between them to the size of the thread being treated, and both jaws are adjustable on the plate by the horizontal screw, so as to bring the opening in the line of the thread's movement.

Claim.—The jaw C, provided with the extended base B, the supplementary jaw E adapted to slide on said base and be secured thereto by a slot and set-screw, when combined with the plate A by lug and screw, as shown and described, and for the purpose specified.

140,216.—*Mop-Wringer.*—JAMES H. NEWTON, Paxton, Ill. Application filed May 24, 1873.

Suspended from a block connected to the handle are side pieces having slots to receive the journals of the two rolls, having spiral or coiled springs inside of them to give them opposite action, the upper one having projecting angle-plates over it, on which rests a curved spring. To the slide on the handle cords are attached, which are passed over the rolls, by which a reversed action is given them. The mop is passed through the rolls, after which they assume their former position by the aid of the springs.

Claim.—1. The mop-wringer, consisting of mop A, rollers B B′ hung to arms C of lateral frame-piece D, handle E, and slide F with strings *b* *b*′, substantially as set forth and described.

2. The mop A having wire rod *d* attached to strings *b* *b*′, which connect slide F with rollers B B′, as set forth.

3. The hollow rollers B B′, having springs *c* *c*′ coiled around shafts *a* *a*′ in opposite directions to strings *a* *c*′, for the purpose described.

4. The frame-piece D with arms C having slots A, in combination with lugs *f*, bolts *g*, band-spring *i*, and shaft *a* of roller B, to press the same against roller B′, as set forth.

140,217.—*Shutter-Worker.*—HERVEY S. PHILLIPS, Wilmington, Del., assignor to himself and ROBERT BLAIR, same place. Application filed May 17, 1873.

A notched bar of peculiar shape, formed with angles or offsets, is attached to the inside of the shutter. A lever of suitable form engages with this bar, and is, in turn, connected with and operated by a curved or semicircular bar, which passes through the casing, and has a projecting handle inside the room. There are also projecting lugs on one end of the lever, by which it may, alternately, be moved from the outside, and which also serve as fasteners, sliding open the notches for intermediate points, the construction of the entire device allowing the opening or closing the shutter from inside the room, or permitting it to be conveniently held in intermediate positions.

Claim.—1. The combination of the bar E, lever G, and circular bar M, arranged to operate substantially as and for the purposed described.

2. The lugs I, J, and Q, in combination with the lever G, as and for the purposes described.

3. The combination of the circular bar M with the lever G, substantially as shown and described, and for the purposes set forth.

4. The lever G, in combination with angles, offsets, notches, or recesses, by means of which a blind or shutter may be held open or closed, or in any intermediate position, substantially as shown and described.

140,218.—*Cotton-Gin Knife-Roller.*—THOMAS H. RUSHTON and WILLIAM DOWSON, Bolton, England. Application filed February 27, 1873.

The knives around the roller are in zigzag form.

Claim.—A cotton-gin knife-roller provided with blades having two or more angles arranged in line with each other in the direction of the shaft, their inclined parts being parallel to each other, as and for the purpose described.

140,219.—*Rotary Stamp-Canceler.*—WILLIAM SCHACHT, Brooklyn, N. Y. Application filed March 29, 1873.

In apparatus for canceling internal revenue and other stamps, a mode of inserting and holding the type.

Claim.—The printing-roller D having shoulders *e*, recess O′, and pivoted lid H, with conical recess O and pins *g*, for the purpose of inserting and holding the types, as described.

140,220.—*Apparatus for Burning Liquid Fuel and Generating Steam.*—WILLIAM T. SCHEIDE, Tidioute, Pa. Application filed April 26, 1873.

The outer shell has a central pendent combustion-chamber, filled at its lower end with incombustible material, through which the liquid fuel passes from an inner shorter tube secured above and surrounded by an air-tube. The products of combustion pass through the water and thereby generate the steam.

Claim.—The improved apparatus herein described, formed of the cylinder A provided with a perforated head or cover, the central pendent combustion-tube B, the shorter air-tube E, and fuel-tube D, arranged to leave an annular space between them and concentric with the tube B, all combined as shown and described.

140,221.—*Rotary Vegetable-Cutter.*—NICHOLAS SCHLESSER, Chicago, Ill. Application filed November 11, 1872.

The operating-disk has radial slots in front of which the cutting-blades are adjustably held, and the sliced vegetable passes through, having been pressed into a hopper on the opposite side. The front bearing of the disk is hinged to an oblique brace in front of the shell, and provision is made to uncover with facility all the operating parts.

Claim.—The slotted rotary disk B, provided with the adjustable cutters C C, and having bearings in the hinged parts G and G′, in combination with the case or frame A, provided with the hopper D and the hinged wings H H, in connection with mechanism for operating the same, all substantially as specified.

140,222.—*Windmill.*—SAMUEL SHANNON, Shellsburg, Iowa. Application filed May 5, 1873.

A double-crank shaft and a reciprocating sleeve on the post on which the wheel-frame is pivoted, and around which it swings, is so contrived that a connection is made with a pump-rod or rods, if desired.

Claim.—The double-crank shaft A, two connecting-rods, N, reciprocating flanged sleeve O, and one or more pump-rods, Q, combined with the revolving frame B and standard C, substantially in the manner described.

140,223.—*Fastening for Safety-Valve Cases.*—GEORGE B. SIMON, Buffalo, N. Y. Application filed February 27, 1873.

A gib projects downward from the case through a slot in the seat, and is forced into position to hold by an inclined slot on the other side, in which the lock-bar is placed.

Claim.—The gib-hook *j* and locking-hasp *n*, in combination with the case F, and chamber A having the slotted flange A, substantially as described, for the purpose specified.

140,224.—*Stove-Grate.*—SAMUEL SMITH, East Bridgewater, Pa. Application filed April 12, 1873.

The grate is composed of straight horizontal bars with segmental bars at the ends projecting an equal distance above and below the straight bars. It turns upon trunnions and may be revolved in either direction. In the revolution the side bars pass between the ashes and coal, and the ashes and refuse fall below while the body of the fire or burning coal is held up.

Claim.—The horizontal bars *d* upon the shaft *f*, and provided with the segmental end bars *e*, in combination with the fire-pot contracted near the upper ends of the bars *e*, substantially as and for the purposes set forth.

140,225.—*Kindling-Wood Cutter.*—NICOLAS SONNICHSEN, San Francisco, Cal. Application filed March 1, 1873.

A splitting-knife is attached by a pivot to a vertical support, which is provided with a series of steps upon which the lower end of the block rests while being split.

Claim.—The frame A having step-projections B, and the knife D pivoted thereabove, at its front end, as and for the purpose described.

140,226.—*Earth-Auger.*—ANDREW SORG and SAMUEL C. BOLLMAN, Decatur, Ind. Application filed May 10, 1873.

The auger is a cylindrical shell divided into two parts, the smaller part being hinged to the larger one and secured in proper position for boring by a spring-bolt, which, when the auger is full, is released by a rope pulled from above. By continuing the pull the pivoted portion is turned on its hinges so as to compress and sustain the earth while the auger is raised.

Claim.—1. The earth-borer, consisting of main part A and pivoted part D D, of cylindrical shape, applied to shaft B, substantially as and for the purpose described.

2. The main part A, having ears or bands *d*, perforation *n*, teeth *a*, curved side extension *b*, and cutter C, as described.

3. The pivoted part D, having inclined top D′ strengthened by plate E, ears *f*, and teeth *a*, as set forth.

4. The top part D′, having spring *l* with shoulder *l*′, staple *m*, link *g*, in connection with rope *h* to disconnect spring *l* from hole *n*, and operate part D to lift earth, substantially as described.

140,227.—*Combined Scissors and Tape-Line.*—MARGARET J. STUBBINGS, Youngstown, Ohio. Application filed April 26, 1873.

A small tape-line case is attached to the side of a pair of scissors by means of an extended screw-pivot.

Claim.—1. The tape-measure B, provided with a convex inner side and threaded eye, *b*, and adapted for attachment to the extended screw-threaded pivot *d* of the scissors A, as shown and described.

2. The combination of scissors A with the tape-measure B, substantially as and for the purpose described.

140,228.—*Marking-Brush.*—FRANK W. WENTWORTH, Boston, Mass., assignor of one-half his right to GREENLEAF W. STACKPOLE, same place. Application filed April 11, 1873.

An elastic bulb, to which are attached tubes and a brush. The bulb is filled with ink that, with slight pressure of the hand, flows through the tube and brush.

Claim.—In a marking-brush, the combination of the fountain-handle C with the brush A and interior supply-tube D, all arranged substantially as described, and for the purpose set forth.

140,229.—*Car-Starter.*—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed October 17, 1872.

Eccentric wheels are arranged beneath the car-bed, and when brought into contact with the rail lift the end of the car and serve as brakes. Being released, the car of its own weight moves forward with a force proportionate to its weight.

Claim.—1. The lifting roller eccentrics G, arranged beneath a car-bed so as to operate substantially as set forth.

2. The combination, with lifting-segments G, of a shifting device, I, arranged to be operated substantially as described.

3. The locking-rods E E^2, in combination with the eccentrics G, substantially as described.

140,230.—*Railway Frog.*—JOHN WOODVILLE, Washington, Ind. Application filed April 26, 1873.

The point of the rail at the entrance of the frog is slightly inclined to the general direction of the rails, so as to increase the gage of the track at that point enough to allow for the lateral play of the wheels. The movable point is supported by projections on its under side so as to clear small obstructions.

Claim.—1. The fixed points G and H, constructed and arranged slightly inclined, or at such an angle to the rails, that the gage of the track is increased on the radial lines *a* and *b*, as and for the purpose specified.

2. The arrangement of the tongue on rests, supporting it on the bottom of plate A, in the manner described.

140,231.—*Hair-Spring Stud for Watches.*—JOHN P. ADAMS, Ipswich, Mass. Application filed April 28, 1873.

The stud is formed at its top with tapering sides, and is fitted into a corresponding recess made in the side of the bridge or cock of the balance-staff, to which it is secured by a screw.

Claim.—The combination and arrangement, with the bridge in a watch-movement, of the hair-spring stud *c*, constructed of the shape hereinbefore described, and its upper surface being quadrangular in shape, and said stud *c* being attached to the side of the bridge by a screw, *g*, passing through the stud into the bridge.

140,232.—*Steam-Condenser.*—JOHN L. ALBERGER, Buffalo, N. Y. Application filed January 28, 1873.

A hydraulic engine, arranged on the same piston-rod with the steam-engine and air-pump, assists in actuating the same by the injection-water. The condenser-tubes are bent and left open, and secured to the bottom tube-sheet and left free at their upper ends to expand radially and vertically. Combines with the tubes and the vertical discharge-pipe a sleeve or tube surrounding the latter, to project above the same, and provided with openings at the lower end, through which the hottest water ascends to the mouth of the latter before it escapes.

Claim.—1. The combination, with the air-pump and injection-condenser of a steam-engine vacuum-pan, of the hydraulic engine A operated by the inflowing injection-water and connected with the air-pump, so as to actuate or assist in actuating the same, substantially as hereinbefore set forth.

2. The combination, with an injection-condenser, of the hydraulic engine A, steam-engine B, and air-pump C, arranged in line, and connected by a single piston-rod, *d*, substantially as hereinbefore set forth.

3. The combination, with the condenser K, provided with the diaphragm k^1, of the steam-pipes *l* rigidly secured to said diaphragm at their lower ends, and left free at their upper ends, to allow each pipe to expand radially and vertically and contract independent of the others, when said pipes are curved and left open at their upper ends, substantially as hereinbefore set forth.

4. The combination and arrangement, in a condenser provided with an injection-pipe, I', of the steam-pipes *l* and discharge-pipe M, substantially as and for the purpose hereinbefore set forth.

5. The combination and arrangement, in an injection-condenser provided with steam-pipes *l* and the discharge-pipe M, of the sleeve N surrounding the latter, substantially as and for the purpose hereinbefore set forth.

6. The combination, in a condenser, and with the injection-pipe I' and discharge-pipe M, of the steam-pipes *l*, bent down at their upper ends, with discharge-openings l^1, substantially as and for the purpose hereinbefore set forth.

140,233.—*Attachment for Sewing-Machines.*—ELIZA H. ALEXANDER, New York, N. Y. Application filed June 18, 1873.

Adapted to guide the material and lay a cord in a fold therein so that when stitched and straightened the stitching cannot be seen. The cord is passed through the tube, and the material is passed from the right under the guide, between it and the tube, and then back to the right over the guide. The needle passes through four thicknesses of material.

Claim.—The combination of the elevated guide D with the cord-tube C, when placed relatively to each other and to the needle of a sewing-machine, to operate as and for the purpose set forth.

140,234.—*Clothes-Line Fastener.*—JOHN C. AMES and PRESTON A. AMES, Baltimore, Md. Application filed June 5, 1873.

A rectangular metallic grapple, one end extending below the other, with projecting ears having slots or openings to receive the journals of the hook which pass through a slot in the grapple, with a cam on its inner end, which rests against the fence or post to sustain the weight upon the hook.

Claim.—An automatic hook and fastening for clothes-lines, consisting of the fence-grapple A, having slots and bearings *b b'*, and the line-hook C having journals *c c*, and rear projection *c'*, together applicable in the manner described.

140,235.—*Planing-Machine.*—JAMES ATKINS, Augusta, Me. Application filed June 15, 1872.

The presser-bar E moves in the inclined slots K, thus being adjusted near the curved line of the cutter-head with any thickness of plank to be dressed, and acting as a chip-breaker.

Claim.—The combination of the obliquely-slotted guide-stands or plates L with the presser-bar E, constructed as described.

140,236.—*Molasses-Pitcher.*—THOMAS R. ATTERBURY, Pittsburg, Pa., assignor to himself and JAMES S. ATTERBURY, same place. Application filed March 3, 1873.

The pitcher, pouring-spout, and drip-shoulder are made of glass, and have a metallic cap.

Claim.—A glass molasses-pitcher made with the lip C and the drip-shoulder *c*, the lip and shoulder both being continuations of the cup or body of the pitcher, in combination with a metallic cap, as shown and described.

140,237.—*Exercising Device.*—JAMES E. AUSTIN, Philadelphia, Pa. Application filed March 18, 1873.

The foot-strap secures one handle to the foot for room or office exercise.

Claim.—The exercising device, consisting of the handles A A', connected by the movable endless band B, held in place by the keepers *a a*, the handle A being provided with the foot-strap C, substantially as and for the purpose described.

140,238.—*Wash-Boiler.*—SIDNEY W. BARTHOLOMEW, Louisburg, N. C. Application filed April 28, 1873.

Is constructed with flanges on the under side of the false bottom, by which a labyrinthine passage is formed on each side of the center with valves for the control of the water and steam. In connection with the conducting side-pipes is a tank or opening through which the water and steam is passed to the perforated cross-pipe for distribution.

Claim.—1. The combination, with the false bottom D, of flanges disposed on the under side of the same so as to form passages, having each an ingress, M, and an egress, G, and a valve, R, arranged substantially as described.

2. The false bottom D, in combination with the valves R, flanges E F', forming labyrinthine passages, trunks I, pipes J K, and connecting-tube L, substantially as and for the purpose specified.

3. The false bottom D, in combination with orifices G M, cover N, valves R, trunks I, pipes J K, tube L, and boiler A, substantially as and for the purpose explained.

140,239.—*Artificial Stone.*—JOSEPH J. BARTLETT, New York, N. Y. Application filed April 9, 1873.

Asbestus is mixed with alkaline silicates (silicate of soda or potash) and then treated with muriatic acid.

Claim.—A compound obtained by mixing asbestus with alkaline silicates, and then treating the mixture with muriatic acid, substantially in the manner herein set forth.

140,240.—*Potato-Plow.*—HEDGEMON T. BASYE, Dyersburg, Tenn. Application filed July 11, 1872.

Claim.—The V-shaped draft-frame K, in combination with the side runners C B, handles H I, shovel A, and pivoted fingered cross-head L, all as shown and set forth.

140,241.—*Mode of Finishing Shoe-Soles.*—BRADLEY S. BRYANT, Hanson, Mass. Application filed May 14, 1873.

Claim.—1. A shoe-sole having its treading-surface covered with a layer or sheet of paper, the exposed surface of which is flocked, or covered with a coating of flock, as and for the purpose specified.

2. As an article of trade, forms for covering the treading-surface of shoe-soles, having upon one side an adhesive cement, and flocked upon the other side to represent buffed leather, substantially as described.

140,242.—*Chromatic Printing-Press.*—THOMAS H. BURRIDGE and JAMES M. KERSHAW, St. Louis, Mo. Application filed March 29, 1873.

The bed series of fountain-rollers ink in different colors, respectively, the F and G series of distributers, which are so arranged as to bring the rollers in either series opposite the intervals between the rollers of the other. The intervals are shorter than the rollers, so that the edges overlap to blend the colors. The H and J series of inking-rollers, in a traverse frame, get their ink from the F and G series of distributers, respectively, and are arranged to correspond with them, but their overlapping edges are slightly rounded. As the inking-rollers in their traveling frame are on the same plane as the distributers, provision must be made for the H series of inking-rollers to clear the G series of distributers, so the carriage is hinged by a double joint and an ear on the carriage strikes an elevation opposite ends of the G rollers.

Claim.—1. The combination of the frame A, the carriage I, the inking-rollers H, &c., and J, &c., the elevations P P', the distributing-rollers F, &c., and G, &c., the fountain-rollers B, &c., and D, &c., and the fountains C, &c., and E, &c., the separate series of inking-rollers being arranged relatively to each other as and for the purpose specified and shown.

2. The combination of the frame A, the carriage I, the inking-rollers H, &c., and J, &c., the elevations P P', the distributing-rollers F, &c., and G, &c., the fountain-rollers B, &c., and D, &c., the fountains C, &c., and E, &c., the platen K and cylinder L, the various parts being arranged and operating in relation to each other, substantially as and for the purpose shown and specified.

140,243.—*Refrigerator for Restaurants, &c.*—WILLIAM FRANK BYRNE, Vicksburg, Miss. Application filed May 17, 1873.

The refrigerator is detachable, is made into two compartments, and has a rotating cylindrical cover. The upper compartment has an ice-box with a leaden bottom. The space around this box is partitioned off into divisions for the reception of bottles and double dishes for mint, &c. The lower compartment is divided by a vertical perforated partition, and has perforated shelves and a perforated raised bottom, and is cooled by the ice-drippings, which pass from the ice-box through holes onto its bottom and then through it into a sewer.

Claim.—1. The arrangement of the two cooling-boxes A and G, revolving door F, doors I, rear cover E, and the open box C, with the partitions *c* and *c'*, the leaden ice-plate *d* with the holes *d'*, the drain-pipes D, D', and M, the shelves K, substantially as specified.

2. The detachable cooling-boxes A G, constructed and arranged substantially as specified.

3. The arrangement of the box A and the removable box C, with the divisions *c* closed at the bottom, and with space between for inserting the leaden ice-bearer *d*, as specified.

4. The combination of the lower box G with the drain-pipes D D', which effect the cooling of the said box by spreading the drained ice-water over the bottom, substantially as described.

140,244.—*Piston-Packing.*—JOHN W. CAREY, Baltimore, Md. Application filed May 13, 1873.

A screw-threaded cap is placed over the piston-hub. It draws up a conical nut, which is prevented from turning by a lug, and which forces loose pins out against the packing.

Claim.—The combination of the hollow screw G *g* fitting over hub a^1 of a piston-body with a nut, F, conical upon its outer surface, having side studs *f*, and working against loose pins, as and for the purpose described.

140,245.—*Scrap-Book.*—SAMUEL L. CLEMENS, Hartford, Conn. Application filed May 7, 1873.

Claim.—As an article of manufacture, a scrap-book, the surfaces of the leaves whereof are coated with a suitable adhesive substance covering the whole or parts of the entire surface, all as set forth.

140,246.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed November 19, 1872.

Claim.—A cotton-tie buckle with one mortise and two reversed tongues split off from the outer bars D.

140,247.—*Apparatus for Exhausting the Air from Fruit-Cans and other Vessels.*—LE ROY C. COOLEY, Albany, N. Y. Application filed June 10, 1873.

Steam is admitted to or generated in the condenser, and expels the air, after which the stop-cocks are closed and condensation induced, creating a vacuum. The pipe leading to the fruit-can is located at such a height above the bottom of the vessel that the water of condensation cannot overflow into the fruit-can.

Claim.—1. The air-exhausting apparatus consisting of a condensing-chamber having a bent blow-off tube, and provided with a pipe, E, for direct connection with the jar, said pipe being located at a point above the bottom of the condensing-chamber, as and for the purposes specified.

2. A series of condensing-chambers having the blow-off tubes D, the pipes E located as specified, and stop-cocks *d* and *c*, in combination with the steam-pipes B C and stop-cocks *c*, substantially as and for the purposes specified.

140,248.—*Stop-Cock.*—WILLIAM S. COOPER, Philadelphia, Pa. Application filed March 8, 1873.

A recessed cap or cover to prevent leakage around the screw-spindle.

Claim.—The combination, with a valve-casing, of a detachable plate, *f*, and a cap, A, recessed to receive the valve *b*, upper and lower packings *g h*, and spring *d*, substantially as specified.

140,249.—*Clothes-Wringer.*—ELBERT A. CORBIN and HERMANN ALBRECHT, Philadelphia, Pa. Application filed March 11, 1873.

Is constructed with suspended plates loosely held by a pivot in the extension or legs, which move to connect with the tube by the screws. Between the uprights or roller-frame is firmly attached a cross-bar, which serves to support the machine and prevent side motion.

Claim.—1. A clothes-wringer in which a plate, *d*, to be acted on by a screw, is hung loosely to and arranged to slide freely on each frame, and is combined with the jaws of the same, as and for the purpose set forth.

2. The combination, with the opposite frames and levers of a cross-bar, H, confined at the ends, substantially in the manner described.

140,250.—*Ore-Stamp Feeder.*—JAMES D. CUSENBARY and JAMES A. MARS, San Francisco, Cal. Application filed April 21, 1873.

At each fall of the stamp the tappet strikes and carries down one of the fixed arms partially rotating a shaft, which elevates a second fixed arm and pawl-bar, thereby turning a pocketed cylinder which feeds the ore from a hopper automatically to the stamp.

Claim.—1. The feeding-cylinder I mounted upon the movable timbers H H, substantially as and for the purpose above described.

2. The rock-shaft *p* with its fixed arms *q r*, in combination with the pawl-bar *o*, ratchet-wheel N, and feeding-cylinder I, when arranged to be operated by the tappet D, substantially as and for the purpose described.

140,251.—*Locomotive Fire-Box Crown.*—HENRY C. DARBY, WYANDOTTE, Kans. Application filed April 4, 1873.

An arch-plate is arranged over the crown-sheet of the furnace and secured thereto by screw stud-bolts, which are also riveted above and below the plates. The object is to dispense with the ordinary crown-bars and still secure the same amount of strength with less metal, and also to increase the radiation of heat.

Claim.—The fire-box crown herein described, constructed with an arch, A, placed above the crown-plate C, substantially as explained.

140,252.—*Supplemental Attachment for Cooking-Stoves.*—JUSTUS DAY, Holley, N. Y. Application filed April 8, 1873.

This supplemental cooking apparatus is provided with a central diaphragm, which descends into the flue of the cook-stove to force the products of combustion, in their circuitous passage, against the bottoms of the vessels placed in the top of the device.

Claim.—1. The attachment B, constructed of the top and bottom plates *b c* and drum *a*, when said top and bottom plates have vertical flanges *f f'* for the riveting of the drum in place, and the bottom-plate has an additional vertical flange, *h*, set in from the others, for holding the attachment in the griddle-holes, as herein shown and described.

2. In combination with the attachment B, the longitudinal diaphragm C, provided with the ports *k k*, when said diaphragm is fitted loosely in place, and is held by pins or equivalent, passed from the outside of the drum into sockets of the diaphragm, as herein shown and described.

3. In combination with the attachment B and diaphragm C, provided with the ports *k k*, the hinged damper *l*, arranged to cover one port and force the draft through the other port, and directly beneath the griddle, as herein shown and described.

4. In combination with the attachment B and diaphragm C, the damper-plate D, when made to fit said diaphragm, and to be removable therefrom, and closing the flue-space between the oven-plate and top-plate of the stove, as and for the purpose specified.

5. In combination with the attachment B, the diaphragm C, damper *l*, and damper-plate D, when arranged to operate in the manner and for the purpose specified.

140,253.—*Cooking Apparatus.*—MARY JONES DE LEON, Baltimore, Md. Application filed January 2, 1873.

Over the lamp is an annular boiler with a perforated lid. The heat, &c., passing through this boiler, is led by separate pipes to the several cups containing food to be warmed or cooked. Thus steam and hot air are used as heating agents. The lamp may be placed in the top of the annular opening in the boiler.

Claim.—1. In an apparatus for heating and cooking food, the combination of a lamp and the annular water-reservoir, having a perforated cover, with the plate or plates containing the articles to be heated, whereby said articles are subjected to the combined action of steam and dry heat, while the latter may be used for cooking purposes, by placing the lamp on its seat on the water reservoir, substantially in the manner herein set forth.

2. The combination of the vessel A, lamp B, reservoir C, plates D and E, conical cap G, and tubes I I, all constructed and arranged substantially as and for the purposes herein set forth.

140,254.—*Combined Corn-Planter and Cultivator.*—GEORGE DE VANY, Darbyville, Ohio. Application filed January 10, 1873.

There are two diverging beams, which carry the teeth and seed-box. The rear share-standards rise above the beams to receive the handles, which are secured by a bifurcated rod, which embraces both the standard and handle. The implement can be changed into a double-shovel plow by removing the seed-box and shifting the left-hand beam backward.

Claim.—1. In a walking seed-planter, the combination of the lever *e*, fulcrum-bolt *s*, projecting arm *t*, elbow-lever *p*, link *r'*, and spring *r*, used either with or without the secondary lever *u*, to constitute a mechanism for operating the seed-distributing slide, when all the parts are constructed and relatively arranged, in the manner herein shown and described.

2. The seed receiver or box F adapted for the reception of hopper H, and provided with a central bridge or partition, G, and brushes or cut-offs *i i*, as and for the purpose set forth.

3. The rear shovel-standards B^1 B^2, and handles C C', connected by means of a transverse rod, *a*, provided with bifurcated ends a^1, and clamp-plates a^2, as shown and described.

140,255.—*Telegraph-Pole.*—HIRAM DODGE, Beaver Dam, Wis., assignor of one-half his right to COLUMBUS GERMAIN, same place. Application filed May 24, 1873.

The cylindrical or conical metallic pole is slotted at the base and secured to a foot-post by a ring; it carries collars near the top, having extended arms for supporting the wires in wooden plugs for holding the glass insulators, the rests being further insulated from the pole by rubber bands. The top of the pole is covered by a cap.

Claim.—The combination of the base A, pole B, band *a*, cap C, collars D D, with perforated arms *d d*, and rubber collars, as described, all constructed and arranged substantially as and for the purposes herein set forth.

140,256.—*Sash-Fastener.*—DANIEL M. DENEHOO, Beaver, Pa. Application filed June 19, 1873.

As an improvement on the sash-fastener patented to the same party, No. 63,855, April 13, 1869, the concentric pivoted catch is formed into a weighted eccentric, having a wedge-shaped cam-surface, and hooks on the downwardly-projecting arm, the device being operated either by its own weight or by means of a spring, this construction giving a wedging movement, which, in combination with a peculiarly-shaped recess in the rack-bar, serves to hold the upper sash of the window firmly and prevent sagging.

Claim.—The latch D constructed as described, with arm *d* having hooks *f f* and a wedge-shaped cam-surface, *x y*, and operating with or without a spring, *h*, in connection with a rack-bar, B, and recess *a* or *a'*, substantially as and for the purposes herein set forth.

140,257.—*Mortising-Machine.*—JOHN DRIVER, Marysville, Cal. Application filed April 10, 1873.

A chain-saw, mounted on an ordinary frame of a mortising-machine, is supported and adjusted by a system of sliding plates and set-screws.

Claim.—The endless toothed chain *s*, in combination with the chain-wheel K, and grooved guiding-plate J with its grooved roller *r*, the grooved block *y*, and the adjusting-screw *i*, all constructed and arranged substantially as and for the purpose set forth.

140,258.—*Turned Shoe.*—WILLIAM DUCHEMIN, Boston, Mass., assignor to WILLIAM DUCHEMIN, trustee, same place. Application filed May 10, 1873.

The channel is cut on the grain side of the leather with the lip or opening in the direction of the center of the sole, throwing the deepest portion of the cut toward the sole edge. It is sewed elastingly through the welt sole and upper, and afterward turned.

Claim.—1. A turned shoe having its sole channeled on the lower or grain side, the overlapping surface of its lip being directed toward the center of the sole, substantially as and for the purpose set forth.

2. The mode of sewing turned shoes, consisting in uniting the sole, upper, and welt together by stitches, passing through angularly to the surface of the sole, substantially as and for the purpose set forth.

3. As a new article of manufacture, a turned shoe having its sole channeled on the lower or grain side and sewed angularly, and composed of the sole A, upper B, and welt C, substantially as and for the purpose specified.

140,259.—*Toy Automatic Swimmer.*—ISAAC F. EATON, New York, N. Y., assignor to ALBERT D. DAVIS, same place. Application filed November 21, 1872.

Scissor-levers pivoted in region of the loins have returning cross-bill points closed by springs to work the arms and legs. Clock-work mechanism located in the thoracic cavity operates a vertically-cogged disk which intermittingly opens said levers.

Claim.—As a new and improved article of manufacture, an automatic swimming human figure, constructed and operating substantially in the manner described.

140,260.—*Car-Brake.*—WILLIAM EBBITT, New York, N. Y. Application filed April 30, 1873.

The piston being moved by the vacuum created in the cylinder, communicates its motion, through multiplying levers, to main lever, in which is journaled a friction windlass-pulley made in two parts, one of which is moved into contact with the axle, the other moved by frictional contact therewith, winding up a chain connecting with the brake-bars. A windlass is provided to operate the brakes separately from the devices just described.

Claim.—1. The combination of a piston, *m*, a friction windlass-pulley, A, axle C, and brake-bar, substantially as described, for the purpose described.

2. The friction windlass-pulley A and lever B, in combination with the multiplying-levers *i j*, and the piston *m* with axle C and brake-bar, substantially as described.

3. The windlass D, lever B, and friction-pulley A, in combination with the multiplying-levers *i j* and piston *m*, axle C, and brake-bar.

140,261.—*Wash-Pounder.*—LEVI S. ENOS, Almond, N. Y., assignor of one-half his right to SYLVESTER B. ESTABROOK, same place. Application filed May 24, 1873.

Is constructed with an outer shell and an inner flange or projecting ring attached to a partition or dividing-plate by which it is secured to the cap, between which is a cylindrical connection through which the handle passes, having on its end a spiral spring. The handle extends below the shell, and when in use the air passes freely through the cylinder, the handle being raised by the concussion to permit it.

Claim.—In combination with the pounder A, the handle D and spring *b*, constructed and arranged as and for the purposes set forth.

140,262.—*Needle Retter and Threader for Sewing-Machines.*—GEORGE P. FARMER, Brooklyn, N. Y. Application filed March 22, 1873.

Claim.—A needle-threader, constructed as set forth—that is, of a single strip of metal indented to form open channels or grooves *a b*, and provided with a bent lip, *c*, which sustains the point of the needle and holds the latter in the groove *b*.

140,263.—*Means for Preventing Incrustation in Steam-Boilers.*—ROBERT A. FISHER, San Francisco, Cal. Application filed February 19, 1873.

Claim.—The application of a body of quicksilver, or an easily-fused metal or alloy, in the bottom of steam-generating vessels, which, becoming mobile at a temperature of about 212° Fahrenheit, will, by its agitation, prevent incrustation, substantially as set forth.

140,264.—*Manufacture of Illuminating-Gas.*—CHARLES GEARING, Pittsburg, assignor of four-eighths his right to GEORGE M. IRWIN, CHAS. WALTERS, and NANCY MILLIGAN, same place, and SIMON B. ROW, Clearfield, Pa. Application filed June 20, 1873.

Claim.—1. In a gas-machine where steam and air are carbonized by coming in contact with hydrocarbon liquids, drying and superheating said steam and air by passing it through a series of pipes and retorts before the hydrocarbon liquid is admitted, as and for the purposes herein set forth.

2. In a gas-machine, one or more retorts filled with pebbles, for the purposes herein set forth.

3. In a gas-machine passing the gas through a retort filled with pebbles and placed within an exterior retort, the space between the two retorts being filled with steam and air, as and for the purposes herein set forth.

4. The combination, in the furnace A, of the retorts B B' with interior retorts C C' filled with pebbles, the retorts D D' also filled with pebbles, and the retort E with transverse perforated partitions *a a*, all substantially as and for the purposes herein set forth.

5. The outside carbonizing-retorts G G', filled with pebbles, as and for the purposes herein set forth.

6. The injector J provided with the cup or bowl *u*, and used in combination with the steam-pipe H and air-pipes I I, each having a stop-cock, as and for the purposes herein set forth.

140,265.—*Lasting-Machine.*—CHARLES W. GLIDDEN, Lynn, Mass. Application filed May 6, 1873.

The matrix or box which receives the last and upper is provided with a flange with a groove formed upon its upper face, into which a guide-roll or pin projects, guiding it as it revolves, so that the entire circumference of the last is presented for the action of the crimper-slide. In the front end of the crimper-slide is a nail-tube, which is brought directly beneath a vertical rod or driver when the slide is moved forward to press the upper over onto the inner sole. The slide receives its reciprocal movement from a vertical bar with inclines upon its opposite sides which work in a slot in the rear end of the slide.

Claim.—1. In combination with mechanism for receiving the upper and last, a crimper-slide, *t*, operated by the inclines *z* on the bar *w*, substantially as shown and described.

2. In combination with the crimper-slide *t*, the nail-tube a^3 and nail-driver c^3, arranged and operating substantially as shown and described.

3. In combination with the crimper-slide *t*, nail-tube a^3, and driver c^3, the supply-tube b^3.

4. In combination with the crimper-slide, the box *f*, supported and pivoted substantially as shown, and made with the groove x^2 and flange *k*, the guide pin or roll *l* entering the groove, the pins or rolls *p p* pressing against the roll *l*, and the button *q* pressing the flange *k* up to the pin, all substantially as shown and described.

5. In combination with the crimper-slide *t*, and with the driver c^3, the bar *w* for imparting the forward and back movements to the slide and the downward movement to the driver, substantially as described.

140,266.—*Telegraph-Sounder.*—MILES W. GOODYEAR, New York, N. Y. Application filed May 10, 1873.

Claim.—The two electro-magnetic helices B B', the core of one of which forms the fulcrum for the armature-lever C, in combination with the armature-lever C, studs D D', and adjusting-screws *d d'*, which receive the blows of the armature-lever, all constructed and operating substantially as and for the purpose shown and described.

140,267.—*Mitering-Machine.*—FRANCIS D. GREEN, Williamsport, Pa. Application filed February 8, 1873.

The gage-bars C are pivoted near the middle line of the table and fastened thereto by a set-screw at any angle required on the arc of the graduated circles.

Claim.—The bars *c c*, pivoted at their inner ends to the slotted table A A, as shown, and provided with ears *a a* and thumb-nuts *d d*, all as and for the purposes set forth.

140,268.—*Three-Horse Equalizer.*—WILLIAM HASTINGS, Sr., Fowler, Ill. Application filed April 10, 1873.

A triangular frame is attached to the pole and hounds, to which is secured the equalizer.

Claim.—The diagonal sustaining-bar A, in combination with the transverse bar C, for the purpose of attaching and sustaining the equalizing-bar E, substantially as shown and described.

140,269.—*Vise.*—THOMAS HALL, Florence, Mass. Application filed March 24, 1873.

The handle of the vise is connected to the movable jaw by metallic straps bearing on the periphery of a circular disk forming part of the handle. The frictional contact of the straps retain the handle in any of its working positions. A projection on the side of the circular disk acts upon a lever that engages and disengages the clutch for holding the movable jaw in position. The circular bed-plate is formed in sections and the vise connected to it by a dovetailed groove in a circular disk that forms a portion of the body of the vise.

Claim.—1. In combination with the movable jaw A of the vise, the handle *c*, attached thereto by frictional bearings or straps T, for the purpose of holding said handle in any of its working positions, substantially as and for the purpose described.

2. The combination of handle C, movable jaw A, and clutch G with wedge D and toggle E F, or their equivalents, and rack H stationary jaw B, substantially as described, for purposes named.

3. The combination of the projection K on lever C, lever J or its equivalent, with clutch G and rack H, substantially as described.

4. The combination of the dovetailed ring or flange B on the vise with the sectional dovetailed bed-plate P, as and for the purpose described and represented.

5. The combination of the ring or flange B, bed-plate P, and notched bar H, as and for the purpose described and represented.

140,270.—*Steam-Lubricator.*—WILLIAM HAMILTON, Erie, Pa. Application filed June 2, 1873.

The lubricating-cup and the tubular bolt, cast together in one piece, extending horizontally through the cup, having at its extremity a conical valve-seat, through which passes the pointed valve-spindle, which regulates the flow of oil and keeps the valve-seat open.

Claim.—1. The chamber or cup A, and the hollow or tubular bolt B, each constructed as shown, and cast in one piece, in combination with the spindle D, formed as stated, the whole being arranged to operate substantially as described, as and for the purpose specified.

2. In combination with the chamber A and hollow bolt B, the supply-cock, consisting of the cup F and tube F', supply-channels *f f*, air-passages *g g*, and the valve-plug H, the whole being constructed and arranged to operate substantially as described.

3. The sediment-cock, consisting of the tube K, having a channel, k^3, with a flaring mouth or valve-seat, and the valve-plug L having a cone-shaped point, L', and the central T-shaped *l*, the whole being combined and arranged to operate substantially as described.

140,271.—*Self-Loading Wagon.*—THOMAS HANDY, Springfield, Ill. Application filed May 2, 1873.

The earth-box is constructed with two sides, connected by upper and lower transverse bars; a bottom composed of pivoted tilting sections, operated by levers and connecting-links, and a swinging door at the rear end, which is kept closed to hold the earth in the box by a hook on the rear edge of the bottom, the top and front end of the box being open. The box is raised and lowered by ropes or chains wound on grooved wheels located on a hoisting-shaft placed in a central longitudinal position on the frame of the machine, and it is guided in its vertical motion by guide-bars and loops. The box is emptied by tilting the pivoted sections of the bottom.

Claim.—1. The box M, constructed as shown, and connected with the rear axle C' and the plate A by means of the guide-rods Y Y' and brace rods Z Z', substantially as and for the purpose specified.

2. In combination with the pivoted traps U of the box M, the shafts V, the arms *u* and *v*, the connection W, and the levers X, substantially as and for the purpose shown.

3. In combination with the box M, and with the supporting-frame, the shaft H, grooved wheels I, cords or chains K, pulleys L, lever N, ratchet-wheels O and R, and pawl S, substantially as and for the purpose set forth.

4. The pivoted end piece T, and traps U, when constructed as shown, and combined with each other by means of the locking-stud *u'*, substantially as and for the purpose shown and described.

140,272.—*Ruling-Pen.*—WILLIAM O. HICKOK, Harrisburg, Pa. Application filed April 29, 1873.

Claim.—The within-described ruling-pen, consisting of the part A, composed of the plate and the short fingers, made of one piece of thick metal, and the points B B, made of thin metal, provided with sockets at their inner ends, which slip over and are soldered to the ends of the fingers of the part A, all substantially as and for the purposes herein set forth.

140,273.—*Portable Fence.*—ORLANDO HUFFMAN, Lucieville, Neb. Application filed October 18, 1872.

Upon the lower end of three posts are first nailed two bars or panels on one side, and one on the other side, alternating; next two bars are attached, one on each side of the upper ends of two of said posts, the bars extending, to which an additional post is secured; then another section is formed in a similar manner, after which the two-panel portion of one section is interlaced with the three-panel portion of the other, the projecting ends of the panels or bars serving as further security to the fence after sliding the end posts between the alternating bars.

Claim.—In portable fences, the sections herein described, constructed and adapted for connection in the manner substantially as specified—that is to say, the end of each section is left incomplete, as described, but when interlaced with its neighbor the two form a perfected and continuous fence, as shown.

140,274.—*Machine for Cutting Tape, &c.*—JAMES S. JEWETT, Gloucester, Mass. Application filed March 22, 1873.

Designed to cut tape into suitable lengths for boot-straps, &c. The movable blade is carried by a wheel and works in connection with a stationary blade. The speed of the feed-rollers may be varied to correspond to the required length of material by changing the size of the gears.

Claim.—In a tape-cutting machine, the rotating blade *b*, stationary blade *a*, the feed-rollers having gears *h h*, bevel-wheel A, double gear *z*, and gear *c*, when arranged and operating as described.

140,275.—*Book-Cover.*—ALBERT H. JOCELYN, New York, N. Y. Application filed May 6, 1873.

A sheet of paper, creased and indented centrally to form a line for doubling for strength, and for tearing to form the interlocking tongues, has adhesive corners, whereby its corners may be stuck when it is folded around a book as a cover.

Claim.—A book-cover having its back and sides in one piece and folded to give increased thickness and strength at or near the junction of such parts and provided with adhesive portions adapting it to be fitted to the sides and back of the book, essentially as described.

140,276.—*Whiffletree.*—DANIEL A. JOHNSON, Boston, Mass. Application filed February 20, 1873.

Between the upper and lower plates is interposed a friction-plate, which is allowed only a vertical movement, the plate being cushioned upon a rubber pad.

Claim.—1. In combination with the whiffletree and cross-bar the metallic casings F and D, the casing or friction piece D fitting into the lower case F, substantially as described, and for the purpose set forth.

2. In combination with the casings D and F the elastic material E, substantially as described, and for the purpose set forth.

140,277.—*Chicken-Coop.*—WILLIAM J. H. KAPPE, Quincy, Ill. Application filed April 28, 1873.

A folding-coop in which the sides fold down, leaving a space for feed-boxes attached to the folding end pieces, the top being secured by projecting cleats.

Claim.—The chicken-coop constructed with a bottom having the end cleats *a*, the sides *e* having notches *v* and hinged to the bottom boards, the ends B hinged to the end cleats *a*, and the top D having the projecting cleats *l*, substantially as specified.

140,278.—*Machine for Distributing Type.*—CHARLES KASTENBEIN, Clapham Road, England, assignor to EDWARD L. FORD, Brooklyn, N. Y. Application filed January 8, 1873.

The front line of dead matter held in galley A is fed up into the distributing-channel by a hand-lever and plate, and constantly fed forward by a weighted plunger. Upon depressing the keys corresponding to the forward letter a sliding gage, *a'*, adjusts (by cams *z*, crank *b'*, and bar *d*,) the delivery-orifice, turns the proper gate in the conduit-plate to form a continuous channel to the receiving-tube, and vibrates the pusher-plate *p*, which thrusts the forward type over the channel, down which it descends until it rests upon the plunger *s*, which was carried forward—to force the type into the receiving-tube against the pressure of a retiring spring-head—by the movement of the key and locked by the notch at *a'*, and retracted as the next key is struck.

Claim.—1. The combination of the finger-keys A, pitmen *r*, bell-cranks *w*, and slides S, constructed and arranged to operate as set forth.

2. The pusher *p*, operated from the key A through the medium of the bar *k*, rock-shaft G, arms *l m n*, and rod *o*, substantially as described.

3. The eccentrics *z*, gage-plate *a'*, rod *x*, keys A, and the described or equivalent connections for regulating the size of aperture for the passage of the type.

4. The spring-bar X, operating in connection with the pitmen *r*, in manner substantially as and for the purposes set forth.

5. The pitmen *r*, bell-cranks *w*, pushers S, springs *f*, and compartments K, operating in combination with the conduits and keys, substantially as described.

140,279.—*Type Composing Machine.*—CHARLES KASTENBEIN, Clapham Road, England, assignor to EDWARD L. FORD, Brooklyn, N. Y. Application filed January 8, 1873.

The type, supported on reglets at the base of their vertical channels over their respective conduits, which converge to a single delivery point, are ejected one at a time by pusher-bars, operated by the keys, which force their heads onto a shelf, *n*, so that they may, when released from the reglets, descend heel foremost, guided by the conduit, to the setting-tube, into which they are guided properly by a balanced arm, *f*, and along which they are successively pushed by a bar reciprocated by a cam-wheel until they are moved in proper lengths into the galley and justified by hand. The galley has adjustable side and end sticks, and the justified line is forced down by a plunger operated by a lever.

Claim.—1. In a type-composing machine, two parallel ranges of close boxes A and B for containing the type, said boxes being formed of the plates *a a* and partitions *b c*, substantially as hereinbefore described.

2. The relative arrangement of the vertically-moving keys L, and horizontally-moving keys R, operating in combination with the pushers C and D, respectively, substantially as and for the purposes set forth.

3. The reglets *d* and ledges *n*, when arranged as herein described, below the vertical parts of boxes A B, of the construction specified, and above the inclined or converging bottoms of said boxes, by which the different types are conducted to a common plane for delivery into the shield.

4. The pusher C or D, constructed with a bifurcated end with the lower portion prolonged, as shown in Fig. 4, to adapt it to catch the heel of the type as it is discharged from the reglet *d*, and operating in combination with the ledges *n* to drop the said type in proper position as the pusher recedes.

5. The pivoted guides *f* and *g*, placed in the throat F, and adapted to operate substantially as herein described, for the purposes set forth.

6. The twisted conductor G, extending laterally from the throat F of the vertical shield E, and arranged as described, to take the type in vertical position from the said shield and deliver it in inclined position, face forward, to the justification-desk.

7. The combination of two ranges of boxes A and B, connected by a hinge, Q, to admit of their ready separation, as explained, when required.

8. The justification-desk provided with a removable galley, M, and a slide-bar, T, the latter operated by pedal O, through the medium of rod S and lever *s*, substantially as described.

140,280.—*Reciprocating Churn.*—LUCIUS B. KEELER, Westerville, Ohio. Application filed April 16, 1873.

A box-churn, with stationary dashers, has journals on its two opposite sides, which rest in the upper forked ends of two tilts pivoted to the frame-work at opposite sides. The churn is reciprocated by a crank-shaft, to which it is connected by a bar.

Claim.—1. The forked tilts *b* and cross-bar *d*, the said tilts being pivoted to the frame A, and the forked ends of the tilts forming a bearing for the journals *a*, which are secured to the cream-box B, as and for the purpose herein specified.

2. The cream-box B, provided with the journals *a* for connection with the tilts *b*, in combination with the bar G, shaft H crank I, and frame A, substantially as and for the purpose set forth.

140,281.—*Production of Water-Proof Gum.*—DANIEL M. LAMB, Strathroy, Canada. Application filed May 3, 1873.

Vulcanizable water-proof gum possessing the properties of caoutchouc is produced by inspissating the juice of milk-weed and other plants capable of producing such gum.

Claim.—As a new article of manufacture, water-proof gum, made from the inspissated juice of plants of the asclepias or milk-weed family, or of any analogous plants possessing like properties.

140,283.—*Production of Water-Proof Gum.*—DANIEL M. LAMB, Strathroy, Canada. Application filed May 3, 1873.

Vulcanizable water-proof gum is produced from milk-weed or other plants by separating the juice from the fiber and inspissating the said juice.

Claim.—The art of extracting a water-proof gum from plants of the asclepias or milk-weed family, or other plants possessing similar properties, by subjecting the plants to fermentation, and inspissating the resulting liquid by evaporation.

140,283.—*Preparing Water-Proof Gums from Flax-Seed, &c.*—DANIEL M. LAMB, Strathroy, Canada. Application filed January 28, 1873.

A vulcanizable water-proof gum is produced by the maceration of flax or other analogous seed, straining off the viscid liquid thus obtained, and inspissating said liquid.

Claim.—The art or process of producing water-proof gum from flax-seed or other seeds possessing similar properties, by maceration, straining, and subsequent inspissation.

140,284.—*Bed-Bottom.*—SIMEON L. LEACH, Corry, Pa., assignor to HENRY R. ELLIS, same place. Application filed November 9, 1872.

Double slats, glued together, are attached to head and foot rollers and hung to elastic straps.

Claim.—In a bed-bottom, the wooden slats constructed of double strips united together with glue, as described, in combination with the rollers C and straps D, substantially as specified.

140,285.—*Ruffler for Sewing-Machines.*—WILLIAM H. LEWITT, St. Louis, Mo., assignor of one-half his right to THOMAS M. COCHRANE, same place. Application filed October 5, 1872.

The gathering-blade is adapted to move on the shuttle-covering slide, and is operated from the shuttle-driver by means of the pivoted lever and spring. The lever is pivoted at the back side of the shuttle-race, and its upper forked end embraces a pin on the sliding plate.

Claim.—1. The gatherer E, sliding plate C, lever H, and shuttle-driver slide G, arranged and operating as and for the purpose specified.

2. The gatherer E, sliding plate C, lever H, and spring K, when arranged and operated by the shuttle-driver slide G, as described.

3. The combination of the spring-catch L attached to the presser-foot and the gatherer E, when secured to the cloth-plate and operated from beneath, as and for the purposes set forth.

4. The combination of the spring-catch L, gatherer E, sliding plate C, lever H, driver-slide G, spring K, and cover-plate B, all arranged substantially as and for the purposes described.

140,286.—*Fruit-Ladder.*—ALVA LONGCOR and JAMES B. LONGCOR, Paw Paw, Mich. Application filed April 26, 1873.

Claim.—The bench A B C provided with hooks *a a* and *d d* and notches *b b*, and used in combination with the double ladder D E, all constructed and arranged substantially as and for the purposes herein set forth.

140,287.—*Electrical Stop-Motion for Machinery.*—EMILE MAERTENS, Philadelphia, Pa. Application filed November 27, 1872.

A spring-lever held by a detent is so arranged as to cut off the steam-power from machinery when released, and the said detent is tripped by the armature of an electro-magnet whenever its closed circuit is broken.

Claim.—The combination, with an engine or other motor, of the levers J G or equivalent stop device, a weight or spring operating said device, a trigger for securing said weight, and an electro-magnet arranged to actuate the trigger, as set forth.

140,288.—*Combined Table, Stool, and Stand.*—JOSEPH A. MARKLE, Philadelphia, Pa. Application filed April 21, 1873.

The two pairs of legs are made of such dimensions that one pair will fit within the other, both turning on a central pivot. To the outer pair of legs is fastened a central bar, to which is attached a pair of spring-bolts, each having double catches. The inner pair of catches lock the hinged table-top, and the outer pair lock the hinged elevated platform. A locking-arm rises from one of the legs and engages with and supports the table-top.

Claim.—1. The hinged platform J combined with the central bar B, substantially as and for the purpose set forth.

2. The doubly-constructed bolts G, in combination with the leaf E and platform J, substantially as and for the purpose set forth.

3. The arm L rising from one of the hinged legs, and combined with the leaf E, substantially as and for the purpose set forth.

4. The folding legs A C, central bar B, folding leaf E, and folding platform J, combined and operating as set forth.

140,289.—*Hemp-Brake.*—JAMES C. MATHERLY, Irvine, Ky. Application filed October 15, 1872.

A vertical shaft, at the center of a frame having radial arms above and below and connecting-columns at their extremities, carries a cam which operates a brake in each of these extensions by pressing down the inner end of the sword, when the outer weighted end falls. An adjustable spring-catch is made to detain the weighted end at the option of the operator.

Claim.—1. In a hemp-brake having a series of vibrating swords, I, the pivoted spring-stops or detents N, in combination with the cords R and screw-pin S, as shown, and for the purpose described.

2. The hemp-brake with its frame B C D, revolving cam M, fixed and vibrating swords, pivoted stops or detents for the latter, the hemp-holding arms, and the driving-shaft W, the several parts being constructed and arranged upon the frame to operate as shown and described.

140,290.—*Velocipede.*—LEWIS T. MCGILVRAY, Staunton, Va. Application filed November 27, 1872.

The velocipede is propelled by levers connecting, through intermediate gearing, with a crank on the rear axle.

Claim.—A vehicle having hand-levers, connecting-rods, crank-axles, and intermediate gear-wheels, combined and operated substantially as shown and described, and for the purpose set forth.

140,291.—*Hoe.*—ELIJAH W. MCLENDON, Griffin, Ga. Application filed December 12, 1872.

There are two curved head-plates between which the hoe-blades are secured by means of a screw-bolt that passes through them, and secured by a nut upon the inner plate. The screw is prolonged for a shank that enters the wooden handle.

Claim.—The combination of the jaws A B, screw-bolt C, and nut *d*, for clamping the implement blade, with the handle E and thimble G, all the parts being constructed substantially as set forth.

140,292.—*Sheep-Shears.*—ANDREW S. MCWILLIAMS, Colusa, Cal. Application filed April 21, 1873.

A spring-rest for the thumb is attached near the base of the blade, which is hollowed out to receive it when depressed. A rest is also placed upon the other blade, with semicircular rests for the fingers. These rests relieve the operator's hand from severe strain and abrasion.

Claim.—1. The thumb-rest *d*, when attached as described, in combination with the recess *i* in the back of the blade, substantially as described, and for the purpose set forth.

2. The blade B of a pair of sheep-shears, having the finger-rests or saddles *f*, substantially as and for the purpose above described.

140,293.—*Carpet-Sweeper.*—WILLIAM MILLER, Boston, assignor to himself and J. J. HATLINGER, Hyde Park, Mass. Application filed February 8, 1873.

At each end of the axle of the brush a rod extends upward above the top of the box, having screw-threads formed thereon to engage with a thumb-screw. The sides of the box are slotted for a short distance to allow the adjustment of the axle. Connected with the ends of the axle, so as to turn on them, are the ends of lever-arms that extend forward on each side and around the front of the box, where they connect at the center with the lower end of a handle, which is provided at its upper and lower ends with sliding axles, each formed with a screw-collar to engage with thumb-screws, so as to adjust the axles on the handle. Each axle is provided with a pulley, and the lower axle and pulley are connected by a shaft with a larger pulley that connects by a belt with a pulley attached to the main axle or brush-shaft.

Claim.—1. The screw-rods A, provided with thumb-screws *k k'*, and held in bearings *i i'*, in combination with the axle *c* of the brush *b*, substantially as described, for the purpose specified.

2. The adjustable axles *m m'*, provided with pulleys *n o o''*, in combination with the handle *l* and axles *c*, having the pulley *p'*, substantially as and for the purposes set forth.

140,294.—*Self-Feeding Tank for Railways.*—BENJAMIN D. MOODY, Darksville, Mo., assignor of one-half his right to JAMES M. FULLERTON and GEORGE W. SNYDER, Memphis, Tenn. Application filed April 16, 1873.

The weight of the locomotive upon the piston causes a supply of water to be forced up through the feed-pipe. After the passage of the locomotive the weighted levers replace the parts, an additional supply of water being drawn in through the valve and supply-pipe B.

Claim.—The herein-described apparatus for supplying water to locomotive-tenders, consisting of the tank A connected with the supply-reservoir by the pipe B provided with the check-valve *b*, the plunger C connected to the sides of the tank by the flexible diaphragm and supporting the frame D carrying the rail-bars E, the hinged bars F connecting the beams E with the fixed track, the weighted levers H, and the pipe L M, all constructed, arranged, and operating substantially as shown and described.

140,295.—*Tassel-Clip for Curtains.*—FREDERICK MÜLLER, Boston, Mass. Application filed October 15, 1872.

A screw passes through the bow-spring that unites the two side pieces of the clip and presses against the lower edge of the curtain-stick, and said screw is provided with a ring on the outer end that acts as a cam, and by pressing the lower arms of the clip apart causes the clip to engage the stick more closely.

Claim.—1. A tassel-clip composed of side pieces A, adapted to open from and to close upon each other, and connected by a spring or hinge, in combination with a screw, *g*, arranged between the pieces A and applied so as to act upon the curtain-stick in the direction of its width, substantially as and for the purpose described.

2. A tassel-clip composed of side pieces A, adapted to open from and to close upon each other by means of a spring or hinge, in combination with a flat or cam headed screw, *g*, constructed and arranged between the plates A, to force them apart at one end, substantially as and for the purpose described.

3. A tassel-clip composed of side pieces A and a screw, *g*, arranged and adapted together for the screw to secure the clip to the curtain-stick, by a clamping action in both directions of its thickness and width, substantially as described.

140,296.—*Brick-Machine.*—CHARLES HENRY MURRAY, Southwark, England. Application filed June 20, 1872.

The clay forced from the pug-mill is cut into proper sectional lengths by a vertical wire mounted on a laterally-reciprocating frame moving in guides; then pushed against and past a series of wires fixed in a stationary frame by a pusher actuated by means of a toothed segment and rack.

Claim.—1. The combination of the delivery-table *a'* with the lubricating-roller *a²* revolving in the vat *x*, for lubricating the under surface of the clay.

2. The combination, with the plain-surface receiving-table *a*, of the reciprocating pusher-board *f* and frame *f'*, for forcing the clay past the vertical cutting-wires *e*, arranged and adapted, as described, onto a movable board, *a²*, so that a convenient number of bricks may, without handling, be removed from the machine at the same time, as herein set forth.

140,297.—*Die or Mouth for Brick-Machines.*—CHARLES HENRY MURRAY, Southwark, England. Application filed June 20, 1872.

The clay, as it passes the delivery-aperture, is lubricated by fluid contained in boxes, the perforated faces of which are covered with cloth.

Claim.—A mold or aperture in brick-making machines through which the plastic material is delivered, with movable hollow boxes provided with perforated sides, forming the sides of the mold or aperture, substantially as and for the purpose set forth.

140,298.—*Skipping-Rod.*—JOHN MURPHY, Philadelphia, Pa., assignor to himself and GEORGE W. CARE, same place. Application filed April 11, 1873.

Claim.—The within-described skipping-rod, composed of a strip of rattan with the skin removed, and having at each end a collar, *x*, adapted to a recess in the handle B, in which the strip can turn, all as set forth.

140,299.—*Belt Shifter and Tightener.*—BERNARD O'BRYAN, Marietta, Pa. Application filed May 6, 1873.

A sliding frame, provided with bearings for sliding bar, having attached shifting-box, through which the belt passes. The sliding rod has slotted head moving upon oblique guide, which motion transfers the belt from the loose pulley to the runner, and thus tightens and shifts the belt at one operation.

Claim.—The sliding frame T T R S with its arms or bearings F for the sliding bar I with the guide-head *i*, the oblique guide H, in combination with the shifting box G and belt-tightening pulley E, all arranged and operated substantially in the manner and for the purpose described.

140,300.—*Calendar-Catch.*—ROBERT C. OGDEN, New York, N. Y. Application filed January 25, 1873.

Claim.—The crucial latch for calendars, consisting of a wire bent in the middle to form the pivot, and having one end transversely bent, first in one direction and then in the opposite direction, to form a brace, and the other end bent at right angles to said brace, first in one direction and then in the other direction, across the brace, to form the spring-latch portion *c*, substantially as specified.

140,301.—*Heater and Feeder for Steam-Boilers.*—JOSEPH PILKINGTON, Philadelphia, Pa., assignor of three-fourths his right to J. H. BILLINGTON & COMPANY, same place. Application filed March 27, 1873.

The supply-pipe to the heater, and the pipe from it to the boiler, are provided with check-valves. An exhaust-steam coil passes through the heater-cylinder. A steam-pipe, opened by a cock admits steam to the heater and causes water to flow from it to the boiler.

Claim.—The combination of the water-supply B, tank C, heating-pipe M, conducting-pipes D E F, and check-valves G H, all constructed and arranged to operate in connection with the generator A in the manner and for the purposes herein set forth.

140,302.—*Plow.*—JOHN C. POTTER, St. Helena, Cal. Application filed March 29, 1873.

The plow has a hinged handle which can be folded over to one side in order to pass obstructions.

Claim.—1. The rigid handle *h*, in combination with the hinged movable handle *l*, substantially as and for the purpose above described.

2. In combination with a rigid and a movable handle, the bracing-rod O provided with a rule-joint in the middle, substantially as and for the purpose above described.

140,303.—*Device for Connecting Car-Axles with Axle-Boxes.*—THOMAS PRITCHARD, Philadelphia, Pa., assignor of two-thirds his right to JOHN LOUGHLIN and CHARLES DARRAGH, same place. Application filed May 16, 1873.

Screw-bolts having a center bore are secured through the axle-box. The conical ends of the screw-bolts have their bearings in the conical steps which are secured to the ends of the axle.

Claim.—1. In combination with the journal-boxes of railroad cars and the hubs of the wheels, the adjustable screw-bolts D, and conical bearings F, substantially as and for the purpose set forth.

2. The bolts D having the central bore *b* and an outward extension, *b'*, in combination with the oil-chamber G and conical step F, substantially in the manner and for the purpose above described.

140,304.—*Mechanism for Operating the Doffer-Combs of Carding-Machines.*—JOSIAH K. PROCTOR, Philadelphia, Pa. Application filed March 7, 1873.

The main operating-shaft has upon it a conical eccentric which is prevented from turning independently of the shaft by means of a feather, but which can be moved endwise to take up wear between it and its sleeve by turning one of the nut-bearings which constitute the end walls of an oil-tank in which the shaft, conical eccentric, and sleeve work. A stem connects the sleeve with the comb-shaft. The nut-bearings have channels communicating with oil-cups outside the end walls of the tank. Springs in the eccentric bear against a collar on the main shaft and prevent the former being forced too tightly into the sleeve.

Claim.—1. The combination of the removable nut-bearings with the center-shaft, provided with a sliding conical eccentric and sleeve, for the purpose specified.

2. The combination of the center-shaft and sliding eccentric cone with the eccentric sleeve, as set forth.

3. In combination with the eccentric cone and the shaft collar and sleeve, the springs in the former, substantially as specified.

4. The oil-tank and drip cup or cups in combination with the center-shaft, said cup or cups being arranged to receive the drip from the shaft-bearing at a point outside the wall of the tank, as specified.

5. In combination with the oil-tank, drip cup or cups, and center-shaft, the nut-bearings and bosses, having oil-channels, as specified.

140,305.—*Corn-Harvester.*—EDMUND W. QUINCY, Peoria, Ill., assignor of one-half his right to JOHN H. HALL, same place. Application filed March 22, 1873.

Two endless chains, each having two sets of arms projecting at right angles from the upper edge of each chain, are used, one for severing and the other for elevating the ears to the husking and husk-hatcheling rollers.

Claim.—1. The combination of endless chains F F, husking-rollers H H, and toothed cylinder or roller I, substantially as and for the purpose set forth.

2. The combination of the inclined platform B, provided with the endless chains F F, with the body of a wagon by means of the bar or brace C and clamps *a*, substantially as set forth.

3. The combination of the troughs G G with inclined platform B and endless chains F F having pushers *m*, substantially as set forth.

4. The combination of the fixed vertical knives *o o* with the platform B and the endless chains F F, substantially as set forth.

5. The inclined platform B, carrying the endless chains F F, having knives, knockers, or pushers, and provided with slot *b*, troughs G G, fixed knives *o o*, slots or holes *d d*, husking-rollers H H, toothed cylinder I, and spout *q*, in combination with a brace, C, and clamp for attaching the whole to the body of a wagon, substantially as set forth.

140,306.—*Sofa.*—JONATHAN Q. RAND and JOSEPH F. MCSHERRY, Baltimore, Md. Application filed June 3, 1873.

Two drawers are arranged under the seat so as to be drawn out in front; one of the drawers has a hinged detachable lid with recesses on one of the parts for the blacking-box; the other drawer has a detachable lid with a hole therein and a cover for the same, so that said drawer can be used as a commode. To the under side of said drawers legs are hinged near to the center, so that when the legs are folded the free ends come nearly to the front of the drawer. When the drawer is pushed in the upper part of each leg engages with the cross-strip of the sofa and folds the leg up.

Claim.—1. A lounge provided with drawer A, having removable plate *a*, with hinged portion *b*, foot-rest *c*, and recesses *e e*, drawer B, having removable plate D, with cover *m*, all constructed and combined substantially in the manner and for the purposes as shown and set forth.

2. The combination of hinged legs *n* with the drawers A B and slots *s* of the bottom rail of the lounge, substantially as set forth.

140,307.—*Door-Latch.*—ORIN B. RAND, Kalamazoo, Mich. Application filed November 29, 1872.

The inner end of the operating-spindle passes through a plate with two arms of unequal length, which arms are connected by rods to two spring latches or bolts at the top and bottom of the door. A spring upon the spindle forces its squared end into a corresponding recess in a plate in the rear when the hand is removed from the knob. This securely locks the bolts in place. To operate the bolts the spindle is pulled outward against the force of the spring and the square end released from its fastening.

Claim.—The spindle L, spiral spring S, cylinder P, knob G, and plate I, all arranged so that the knob is locked from turning, in combination with the lever-flange B, operating the rods and spring-latches, when constructed, arranged, and operated as described and shown, for the purpose set forth.

140,308.—*Trunk-Lock.*—THOMAS L. RIVERS, Newark, N. J. Application filed March 27, 1873.

Claim.—1. The recessed plate A provided with a guide and guard, *a*, and the latch, which vibrates in a line at right angles to the face-line of the plate, in combination with the body-plate B, which is provided with the recess *b* and the keeper *g*, arranged so that an eye in the latch may engage therewith and be disengaged therefrom by means of a key, substantially as shown and described.

2. The longitudinally-curved latch, composed of spring metal, in combination with the lock-case, and arranged so that its free end will engage with the coincident bearing-surfaces on the plate when subjected to undue strain, substantially as described.

140,309.—*Steam-Engine Valve-Gear.*—CHARLES ROGERS, Allegheny, assignor to himself and JAMES A. HUTCHISON, Pittsburg, Pa. Application filed January 6, 1873.

The inflexible tappet-arm of a direct-acting engine is provided with a spring secured on each side thereof, which, striking against the tappets on the valve-stem, completes the throw of the valve. An adjustable balancing device, consisting of a top plate and adjustable side plates with inclined joints, is arranged over the slide-valve. The top plate is arranged in regard to the valve so that

the steam enters inside of the chest and outside of the valve at the same time.

Claim.—1. The inflexible tappet-arm *g* having the springs *g'* attached thereto, in combination with the tappet-nuts, piston-stem, and valve-stem of a direct-acting engine, arranged substantially as set forth.

2. The valve-stem b^1 carrying and operating a piston, *f*, in the box or case D, each piston having one or more double inclines, *e*, in combination with the wedge-shaped end or ends *d* of one or more blocks, D', and a spring or springs for pressing the block or blocks to their work, the parts being relatively arranged substantially as and for the purposes set forth.

3. The arrangement, inside the steam-chest and outside the valve, of the top plate *a* and adjustable side plates *c*, making, with each other, an inclined joint, *c'*, substantially as set forth.

4. The arrangement, inside the steam-chest and outside the valve, of the top plate *a*, whereby, in connection with ports *s s'*, the valve will take steam past the end of the top plate, substantially as set forth.

140,310.—*Wheel for Furniture-Casters.*—CEVEDRA B. SHELDON, New York, N. Y. Application filed May 23, 1873.

The two halves of the wheel are struck up of sheet metal, and each piece has a half-hub, a cup-shaped central, and a half rim for the portion which travels the floor. A central ring of cast metal is used as a brace under the inner edges of the rim of the wheel. The two parts are held together by a tubular rivet.

Claim.—A four-part caster-wheel, formed of two sections, B B, each struck up of a single piece of metal, having flanges b^1 b^1, the detachable brace-ring D and the end-upset tube C, all constructed and put together substantially in the manner set forth.

140,311.—*Wheel for Furniture-Casters.*—CEVEDRA B. SHELDON, New York, N. Y. Application filed March 22, 1873.

The body of the wheel is struck up from two disks of sheet metal. Each piece is formed into a back plate, a half-hub, and a double rim, formed by turning the edge back upon itself. A tubular rivet screws the two parts to each other.

Claim.—A pulley or caster wheel made up of two sections, divided on a plane passing through the rim or axis, said sections being each made with the cup *a*, half-hub a^1, inside face a^2, and double rim or edge formed from a single piece of sheet metal.

140,312.—*Pitman Connection.*—JOSEPH A. SHEPHARD, Portsmouth, Ohio. Application filed December 30, 1872.

An expansible split wrist to be inserted in the heel of the knife, and receiving a pin with a split shank and a tapering head, the shank screw-threaded; the outer end expanding after the nut is screwed on.

Claim.—The split harvester-pitman C D E, having the described orifice *e e'*, in the described combination, with the split, threaded, and flaring pin F F', and nut H, the whole being formed and arranged in the manner and for the purpose set forth.

140,313.—*Lap-Board.*—EDWIN J. SPRAGUE, Youngstown, Ohio. Application filed March 22, 1873.

A bar is held against the end of the board by elastic bands, forming a spring-clamp for holding the cloth.

Claim.—1. The combination of a lap-board, provided on its under side with cleat-pins or bars, with removable socket bracket-pieces, substantially as described, whereby said lap-board is supported for use without the intervention of the operative, as described.

2. The combination of a lap-board and spring-clamp cloth-holder, substantially as hereinbefore described.

140,314.—*Paint-Brush.*—STRANUS STANDISH, Eureka, Nev. Application filed May 26, 1873.

Is constructed with its handle secured to it by a screw and nut formed in the metallic cap, which passes through the cap, and is held securely, by a button and pivot on its end, within the brush, and by a conical compressor.

Claim.—A brush-handle, having the screw *a* and round smooth end a^1; the compressor B, conical on the outside, perforated cylindrically, and held on the part a^1 of handle, and the shell D having nut *d* and shoulder *d'*, constructed and applied together to hold the bristles C, in the manner described.

140,315.—*Apple Paring, Coring, and Slicing Machine.*—JOHN STEWART and WILL CAMPBELL, Fowler, Ill. Application filed May 13, 1873.

The arched paring-knife is combined with a convex anti-friction roller. The knife is mounted on a platform having on one side a segment of cogged wheel so flattened as to have the shape of the fruit to be pared. The cogged guide engages with a yielding ratchet attached to the frame of the machine. The coring and slicing knives are combined in one blade, so that as the apple is cored it is also sliced spirally. The holding-fork is made of two swivel rods, so as to hold the fruit against the action of the slicing-knife.

Claim.—1. The guide M of a paring-knife, formed according to the contour of the fruit to be operated upon, substantially as set forth.

2. The double-spiral fork E, as and for the purpose shown and described.

3. The convex friction-roller W, in combination with the knife Z, substantially as shown and described.

4. The cogged guide M, supporting a paring-knife, rotated by means of a yielding ratchet, F', substantially as shown and described.

5. The combination of the yielding ratchet F', cogged guide M, standard R, spring S, and knife Z, substantially as shown and described.

6. The combination of the yielding ratchet F', cogged guide M, standard R, spring S, knife Z, spring *w*, stud *y*, and shoulder *v*, substantially as shown and described.

7. The combination of the yielding ratchet F', cogged guide M, standard R, spring S, knife Z, spring *w*, stud *y*, shoulder *v*, traveling-screw F, and rod *o*, substantially as shown and described.

8. The combination of the hook K, guide C', and slot D', substantially as shown and described.

9. The combination of the platform *q*, rod *o*, and traveling screw F, substantially as shown and described.

10. The combination of the arched coring-knife I and slicing-knife H, substantially as shown and described.

11. The combination of the coring-knife I, slicing-knife H, hook K, and guide C', substantially as shown and described.

12. The combination of the adjustable rest U, cogged guide M, and arm T, substantially as shown and described.

140,316.—*Machine for Polishing Malt.*—CHARLES STOLL, Brooklyn, N. Y. Application filed April 16, 1873.

The malt is polished by passing down between a drum having cone-shaped projections on its outer surface and a shell with like projections on its inner surface. The intervening space between the drum and shell, increasing from top to bottom, allows the malt to spread, and all danger of packing and crushing the same is avoided.

Claim.—In a machine for polishing malt, the drum A having conical projections *a*, in combination with the shell C having projections *b*, the intervening space increasing gradually from the top toward the bottom, with the bottom E and its discharge-opening, with or without the radiating ribs *c*, substantially as and for the purpose described.

140,317.—*Plaster-Sower.*—GEORGE SWEET, Dansville, N. Y. Application filed May 14, 1873.

A skeleton beater, constructed of longitudinal rods secured at intervals and at the ends by circular plates. The beater is journaled in a hopper constructed to receive it, and provided with partitions cut away beneath, under which it revolves.

Claim.—The skeleton beater, composed of the shaft D, straight longitudinal rods A A, and disks C C, in combination with the hopper, having partitions B placed over the disks to form divisions in the hopper, all substantially as set forth.

140,318.—*Sectional Cam for Ore-Stamps.*—JAMES M. THOMPSON, San Francisco, Cal. Application filed May 13, 1873.

The cam is made in two sections, each having about one-half of the collar or hub attached, and provided with a projecting arm or flange, which is received into a corresponding recess on the other section. The cam is secured to the shaft by a key passing through the collar and through a transverse recess in the shaft. It may also be secured by a key entering a parallel groove in the shaft and a transverse groove of the collar.

Claim.—1. The two parts or sections *a b* of a cam, formed as shown in the drawings, substantially as described, and secured to each other in the manner and for the purpose set forth.

2. The dowel or pin A, fitted into corresponding holes *p* in the shaft, and on one of the cam-sections, substantially as and for the purpose described.

3. The bolts or keys *k k* used in combination with and passing through the bolt-holes in the hub or collar of the cam, and the key-ways formed in the shaft, substantially as and for the purpose set forth.

4. The cam-shaft, provided with the key-seats *p p* in the different places corresponding to the different portions of the cams on it, substantially as described.

140,319.—*Draw-Bridge Safety Switch and Signal.*—ELISHA H. TOBEY, St. Louis, Mo., assignor to himself and ST. LOUIS RAILWAY SUPPLIES MANUFACTURING COMPANY, same place. Application filed January 10, 1872.

Claim.—A switch to a siding-track, placed at some distance from a draw-bridge, is so connected with the locking-bolt for securing the latter that the main track over the draw-bridge will be open only when the bolt is properly in place. Suitable signals, both at the switch and at the draw-bridge, indicate to the engineer the condition of the road.

Claim.—The draw-bridge bolt D and switch-arm *k* for operating the switch, located at a considerable distance apart, in combination with the connections *e* E F I *i* J K, for operating one from the other, as explained.

140,320.—*Machine for Napping, Brushing, &c., Tubular Knitted Fabrics.*—CLARK TOMPKINS and IRA TOMPKINS, Troy, N. Y. Application filed February 7, 1872.

The tubular fabric, after it has been washed and dried, is carried up from its supporting-roller about the loosely-supported conical-shaped spreader, which stretches the fabric, and from the spreader the fabric is led to the take-up rollers. The revolving ring-disk is provided with napping and brushing apparatus, which operates on the web as the disk rotates, and the napping and brushing devices are rotated through the stationary toothed disk by means of small pinions carried by the revolving disk on the shaft of the napping or brushing devices.

Claim.—1. The gravitating or weighted spreader E, arranged below the cloth-supporting roller and the take-up rollers, and over which the tubular-knitted fabric is straightened, as described.

2. The combination of a rotating and traveling brush or brushes with a conical spreader having a cylindrical base, as described, and for the purposes set forth.

3. The conical gravitating or weighted spreader E, arranged between the cloth-supporting and take-up rollers, and combined with a recessed ring for stretching the knitted fabric and holding it tant during the process of brushing, as described.

4. The guide-rod 10 in combination with the conical spreader, as described, and for the purposes set forth.

5. The combination of the brush-frame with the ring-disk L, whereby the brush is carried around the tubular web, as described, and for the purposes set forth.

6. The combination of the brush-frame pinions U' and U with the stationary disk G and revolving disk L, whereby the brush receives a rotary motion, as described, and for the purposes set forth.

7. The combination, with the brush-frame, of the adjustable guide-wheel V and spring W, whereby the action of the brush upon the fabric is controlled, as described, and for the purposes set forth.

8. The combination of a shipping-bar, Y, spring W, and stop 11, with the brush-frame, as described, and for the purposes set forth.

9. The combination of the guiding-rail Z, rods 1 and 2, and weight 3, when it may be desired, with the conical spreader E, for resisting the friction of the fabric, as described, and for the purposes set forth.

140,321.—*Refrigerating Apparatus.*—JACOB L. TRIPLER, Merchantville, N. J. Application filed May 13, 1873.

The cooler is supported upon legs resting on a frame, and the refrigerating compartments sit upon tubes and surround a cylinder, in which are placed gratings for supporting the ice and freezing mixture. Water passes from the tubes and cylinders through pipes into a pan formed in the frame. The room is cooled by the cold radiating from the tubes and cylinder.

Claim.—1. The non-inclosed freezing-tubes E E surrounding the ice-receiving chamber B, so that cold air is produced by direct radiation from the freezing-tubes and ice-chamber, at their sides and bottom, substantially as set forth.

2. An ice-receiving receptacle, B, surrounded by freezing-chambers, substantially as and for the purpose set forth.

3. The ice-receiving chamber B and freezing-tubes E formed with gratings H H, elevated above the bottoms of said chamber and tubes, so as to leave cold-air spaces below said gratings, substantially as and for the purpose set forth.

4. The compartments F applied to a refrigerating apparatus, which refrigerates the room in which the apparatus is located, substantially as and for the purpose set forth.

5. The collars *e* on the tubes E for directing condensed matters to a place of collection, substantially as set forth.

140,322.—*Flier for Covering Bonnet-Wire.*—ERASTUS H. TYLER, Rockville, Mass. Application filed April 11, 1873.

For winding two binding-threads about the longitudinal threads covering a bonnet-wire or the like. The gage has two notches in it, through each of which a binding-thread passes, and, by moving the gage toward or away from the end of the auxiliary arm, the distance apart of the binding-threads will be increased or diminished.

Claim.—The combination of the adjustable gage D and the auxiliary arm E, substantially as described, with the flier B, to operate as explained.

140,323.—*Spittoon.*—WILLIAM H. TERRELL, Philadelphia, Pa. Application filed May 14, 1873.

The cover is made in two parts, the front part hinged to the back or stationary part; the stationary part has a spring that impinges on a lug on the under side of the hinged or movable part; and the hinged part is connected by a rod with the hinged bottom, so that when the cover is raised the bottom is closed.

Claim.—The two-part cover B B', the former stationary and provided with a spring, D, while the latter is movable and provided with a lug, C, combined with the rod E, hinged bottom D', and body F, as and for the purpose set forth.

140,324.—*Lady's Toilet-Cabinet.*—JOHN C. VETTER, Indianapolis, Ind. Application filed May 10, 1873.

The lower cabinet-case is provided with a top recessed to receive a sewing-machine and curved sliding doors in front to permit the withdrawal of a folding chair that slides on guides or ways. The upper cabinet-case has drawers on each side of the sewing-machine, to which are hinged sector-shaped sides that swing out at right angles and are covered by a folding curved cover that, when not required, folds to the back of the case. One tier of drawers is hinged so as to swing outward and expose a rear set of drawers. Above the curved cover is a drawer that has a folding shelf and folding legs; said legs rest on a curved cover when opened for use.

Claim.—1. The circular or segment-shaped cabinet-case, having the table-top C slotted at *d* and recessed at *e*, for the reception of a sewing-machine, and the chamber K with guides *b''* for the reception of a folding and adjustable chair, Z'', having the sliding base *a''*, substantially as specified.

2. The combination, with the cabinet-chamber K having guides *b''*, of the chair Z'' having the folding back *f'''*, spring *g''*, adjustable pivoted seat *e''*, hinged legs *l'*, sliding base *a''*, and folding rear leg *l''*, substantially as specified.

3. The combination and arrangement, in the segment-shaped casing, of the curved sliding doors I, weights *a*, pulleys *b*, cords *c*, spring-catches *w''*, hooks or shoulders *w''*, and spring-release *v''*, substantially as specified.

4. The cabinet having the hinged case Q turning outward, and bearing the folding sector-shaped side S, in connection with the sewing-machine table *e*, the folding cover having the curved hinged wall A, and the opposite hinged sector-shaped side S, substantially as specified.

5. The drawer P', and the folding-desk Z hinged to the front wall of said drawers, and provided with the folding legs *n'*, adapted to rest when unfolded on the cover P, substantially as specified.

6. In connection with the cabinet-table top *c*, and the side supports D D' extending upward therefrom, the hinged sector-shaped sides S', beaded at *m*, and the folding cover P, curved at A, said curved portion being grooved at *o* to fit the beads of the sector-shaped sides, substantially as specified.

140,325.—*Reflector.*—HENRY B. WALBRIDGE, Brooklyn, N. Y. Application filed June 10, 1873.

A truncated conical reflector is located beneath another, similarly truncated, but more flaring. A third reflector, conical and inverted, is located within the first, its base lying in the plane of the top of first. A ring of burners is placed between the first and third reflectors.

Claim.—The improved reflector herein described, consisting of the reflecting hollow truncated cones A and B, the central reflector E, and the gas burners or jets, one or more, located as described, for the purpose specified.

140,326.—*Crimping and Fluting Machine.*—ROBERT WERNER, Hoboken, N. J. Application filed April 17, 1873.

The tongue is placed before a crimping-machine to gather the fabric and hold it in the grooves in the rollers. It gathers more or less material down, according to its depression by an adjusting-screw.

Claim.—In combination with the rollers B and C, frame F, and an adjusting device, H, the movable tongue G, when arranged to operate substantially as and for the purposes described.

140,327.—*Whiffletree.*—BAILEY S. WESCOTT, Corning, N. Y., assignor of one-half his right to LORAINE DODGE, same place. Application filed April 26, 1873.

The staple, by which the whiffletree is connected to the cross-bar, is so attached to the whiffletree that it may yield when draft is applied.

Claim.—In a whiffletree, the combination of the staple *e* having the loop *g* and threaded arms *k* with the adjustable nuts *m*, the springs *s*, and the removable stop-plate *d'*, substantially as specified.

140,328.—*Nut for Securing Piston-Heads to Piston-Rods.*—JEROME WHEELOCK, Worcester, Mass. Application filed March 27, 1873.

The nut is slotted radially through one side, and, at right angles to the plane of the slot, has two set-screws, which, after the nut has been screwed upon the rod and down into a recess in the piston-head, are, to prevent expansion of the nut, driven outward until their heads bear against the walls of the recess. To remove the nut the screws are driven inward, and a wedge is forced into the slot.

Claim.—A slotted piston-head nut, in combination with a device or devices for preventing the expansion of said nut when upon the rod, and for permitting expansion when it is desirable to remove it from the rod, substantially as herein described.

140,329.—*Medical Compound for the Cure of Consumption, &c.*—WILLIAM H. H. WHITE, San Francisco, Cal. Application filed December 11, 1872.

Wild mountain peach leaves are dried, ground into powder, and then steeped in whisky. The sediment is then removed and pressed, after which it is mixed with black cohosh, and is ready for use.

Claim.—1. A medical extract, for the treatment and cure of consumption and other diseases arising from a cold, made from the leaves of the wild mountain peach.

2. The process above described for obtaining the extract of the wild mountain peach, for the purpose specified.

140,330.—*Combined Baker's Oven and Range.*—JOSEPH WILLIAMS, Topeka, Kans. Application filed November 18, 1872.

Over the baker's oven is a plate having the usual pot-holes of a range. The oven is heated by the main furnace outside of it, and also by the supplemental furnace inside. Below the oven is a chamber filled with sand for purpose of retaining heat.

Claim.—1. The oven F and small furnace E, when used for the purpose hereinbefore described and set forth.

2. The oven F constructed with double floor *b b'*, and the space *c* between filled with sand, as and for the purposes set forth.

3. The combination of the range-top A, heated by the furnace H in the manner described, with the oven F, heated in the manner described, as and for the purpose hereinbefore described and set forth.

140,331.—*Fluting and Plaiting Machine.*—MARTHA E. WILSON and ALBERT J. PERRY, Galesburg, Ill.; said PERRY assignor to said WILSON. Application filed April 4, 1873.

The fluting-bars rest upon a bed-plate under clamping-bars having their inner edges rabbeted to receive and hold in place the ends of the fluting-bars. The clamping-bars are adjustable for different-sized fluting-bars by spacing-slats. By moving one of the clamping-bars laterally the fluting-bars can be removed.

Claim.—1. The clamping-bars B B', having rabbeted edges *b b'*, in combination with the screws C C' C'', base A, and fluting-rods *e*, substantially as and for the purpose specified.

2. The clamping-bar B', provided with the slot *c*, in combination with the screw-bolts C' C'', base A, and fluting-rods *e*, substantially as and for the purpose specified.

3. The clamping-jaw I, adjustably arranged to hold the fluting-rods *e*, in combination with the jaws H, base A, and bars B B', substantially as and for the purpose specified.

140,332.—*Railway Frog.*—JOSEPH WOOD, Red Bank, N. J. Application filed May 14, 1873.

The main rail of the frog-point is strengthened by plates of iron or steel placed on each side of it so as to fill up the cavity of the web and form a solid bearing, against which the second rail is

applied and secured by bolts. The space between the webs is entirely filled, forming practically a solid point.

Claim.—A railroad frog having the main rail of the point or tongue strengthened by the use of plates of iron or steel placed on each side of it, and riveted to the web thereof at the part where its crown and flange are cut away for the purpose of splicing on the other point-rail, substantially as shown and described.

140,333.—*Process of Separating Vegetable Fibers.*—WILLIAM E. WOODBRIDGE, Little Falls, N. Y. Application filed August 14, 1872.

The "rotary" is provided with a series of cocks around its center, the uppermost of which is automatically opened and closed as the vessel revolves. This operation allows the steam generated from the chemical solution to escape until its strength has been reduced and the proper quantity absorbed by the material, when the steam is shut in to be used as a vehicle for heating.

Claim.—1. The method herein described of securing the escape of steam from the space above the rotating contents of the drum or treating-vessel, by the employment of any suitable number of escape-cocks inserted within the drum, and operated substantially in the manner hereinbefore set forth.

2. The modification of my previously-patented process herein described as being adapted to the use of the boilers commonly found in paper-mills—that is to say, the employment of an alkaline solution and desiccative heat in connection with the retention of so much of the steam produced during the heating and desiccation of the saturated fibrous material as may be desirable to serve as a distributing vehicle for the heat applied, whether the heating-vessel be rotary or stationary.

140,334.—*Manufacture of Shovels.*—EDWARD A. YERKES, Philadelphia, Pa. Application filed March 29, 1873.

A series of pairs of dies, that swage a neck on the middle portion of a rectangular bar, flatten the neck, and stamp recesses in the rectangular portions contiguous to the neck, all so that when the blank is folded on itself by bending at the middle of the neck the then parallel neck portions will constitute the straps, the two recesses, the socket, and the two rectangular portions—the blades.

Claim.—1. The improvement in the manufacture of shovels involved in the successive squeezing operations stated, and the results of which are illustrated in Figs. 1 to 9, inclusive, for the purpose described.

2. The dies F F, with the concavities G G', substantially as and for the purpose set forth.

3. The die K, with the guide L, and die M, constructed and operating substantially as and for the purpose set forth.

4. The series of squeezing-dies, as set forth and illustrated in Figs. 10 to 23, inclusive, for the purpose described.

140,335.—*Hat-Press.*—RUDOLPH EICKEMEYER, Yonkers, N. Y. Application filed May 20, 1871.

In the stationary jaws of the press is a flexible diaphragm bag-presser containing water or other suitable matter having similar essential characteristics. The movable jaw carries the hat-mold. A plunger renders the interior capacity of the bag variable. A spring is so combined with the bag as to prevent injury to tender hats from sudden action of the press. The bag is provided with a safety-valve to guard against undue pressure. A clamping-ring confines the diaphragm to the press-head in such a manner that the former is preserved intact and is not weakened by bolt-holes, &c. The brim portion of the mold is so formed that the brim of a hat will be carried without stretching it, and said brim portions are made in two pieces and are separable from the crown-mold. An apparatus is arranged to superheat steam in its passage to the press. The machine is operated automatically and can be arranged to rest at certain steps in the operation, or continuously operate.

Claim.—1. In combination with the jaws of a press operated by a toggle or other suitable mechanical device, a flexible diaphragm bag-presser and a mold, substantially as described, the combination being such that the pressure to press the hat is caused by the movement of the movable jaw of the press toward the fixed jaw, in contradistinction to locking the press-head and mold together, and then applying the pressure directly to the diaphragm or bag-presser, as in former bag-presses.

2. In combination with a flexible diaphragm or bag-press, and a mold in the jaws of a press operated by a toggle or other suitable mechanical device, a confined body of incompressible matter possessing the requisite fluid-like character within the flexible diaphragm or presser, which acts as an inelastic but mobile cushion to support the flexible diaphragm or bag-presser against the pressure of the press, and to cause it to conform to the mold, substantially as described.

3. In combination with a diaphragm or flexible bag-presser and a mold, in the jaws of a press operated by mechanical means, the adjustable regulating-plunger, whereby the determined pressure of the press is regulated by increasing or diminishing the size of the chamber occupied by the confined body of water, substantially as hereinbefore described.

4. In combination with the diaphragm or flexible bag-presser and the confined body of water, a spring for protecting tender hats from the sudden action of the whole force of the press, substantially as hereinbefore described.

5. The safety-valve, in combination with the press-head and diaphragm, whereby the excess of water under a regulated determined pressure may escape, substantially as described.

6. In combination with the press-head and diaphragm or flexible bag-presser, the clamping-ring, when the clamping-surfaces are free from the clamping-bolts, substantially as described, so that the rubber diaphragm or flexible bag-presser is not weakened by cutting holes for the bolts, as in former presses.

7. The shaping-weight, in combination with the diaphragm or flexible bag-presser and the mold, substantially as and for the purposes described.

8. The lower jaw of the press fitted to the clamping-ring of the press-head, substantially as described, whereby the flexible diaphragm-presser is always supported at the proper point by the fixed jaw when pressing a hat, independently of the molds, substantially as hereinbefore set forth.

9. The peculiar construction of the brim part of the diaphragm or flexible rubber bag-presser, which enables it to surround the brim of the mold and extend below the same to permit of being pressed under the curl of the brim without stretching, substantially as described and shown.

10. In combination with a diaphragm or flexible bag-presser, a mold made with the brim part separable from the crown part, substantially as and for the purposes described.

11. In combination with a diaphragm or flexible bag-presser, a mold in which the brim part is made in two pieces, separable from the crown part, substantially as and for the purposes described.

12. In combination with a bag-press for pressing hats, heated by steam, a superheating apparatus for superheating the steam on its way to the press, substantially as described.

13. In combination with the movable jaw or press-head, a flexible diaphragm or bag-presser, and the mold, the lifting and lowering mechanism, substantially as described.

14. In combination with the movable press-head, a flexible diaphragm or bag-presser, and the mold, a lifting and lowering mechanism, and a pressing mechanism, substantially as described.

15. In combination with the movable jaw or press-head, diaphragm, and mold, a lifting and lowering mechanism, a pressing mechanism, and an automatic reversing mechanism, substantially as described, whereby the motion of the lifting and lowering mechanism and the pressing mechanism is reversed at each extremity of the movement of the press-head, and the action of the press-head arrested at the desired point, or suffered to continue without intermission, substantially as described.

REISSUE PATENTS.

5,461.—*Separating Zinc from Gold and Silver.*—EDWARD BALBACH, Jr., Newark, N. J.—Patent No. 64,934, dated May 21, 1867. Application filed June 7, 1873.

Retort formed with a neck at one end, and rests upon the bridge or bearer of fire-brick.

Claim.—A black-lead retort, arranged within a furnace, substantially as described, so that it can be turned up for the reception of the alloy, and for distilling off the zinc, and then turned down to empty it of its contents, as and for the purpose herein described.

5,462.—*Strap-Machine.*—AARON F. STOWE, Worcester, Mass.—Patent No. 125,766, dated April 16, 1872. Application filed May 27, 1873.

Claim.—The combination, with a feed-roll, C, of a small spring-pressed contact-roll, E, having its axis beneath, parallel to, and in front of, feed-roll, as and for the purpose described.

5,463.—*Paper-Cutting Machine.*—GEORGE A. WALKER, Boston, Mass., assignor to WM. G. ELY, Norwich, Conn.—Patent No. 118,308, dated August 22, 1871. Application filed May 31, 1873.

An eccentric working in an oblong slot at the end of the cutter-bar draws it horizontally against the pressure of the pivoted rods which cause its vertical movement, thus accomplishing a draw cut.

Claims.—1. In combination with the cutter-bar *b*, and with the links *g g* for suspending it and controlling its movement, the eccentric *e* and slot *n*, the whole being constructed and arranged to operate substantially as shown and described.

2. The cutter-frame, guided as shown and described, and having the cutter-stock adjustable by means of the adjusting-screws *u v*, or their equivalent, substantially as shown and described.

5,464.—*Butter-Package.*—HENRY P. ADAMS, Cleveland, Ohio.—Patent No. 132,555, dated October 29, 1872. Application filed June 5, 1873.

The package is formed from two thin strips of wood placed transversely and locked at the end by tongues and slits, and, when filled with butter, is placed in quantities in an air-tight box having an opening and valve so that it may be filled with brine and hermetically sealed.

Claim.—1. The process of packing butter for transportation or preservation in thin wooden envelopes or packages without openings in their side, and that may be unfolded from around the inclosed butter and leave the latter intact in form, substantially as described.

2. In combination with the butter-package A', formed of two thin strips of wood bent transversely about each other, the slots or slits in the ends of one of said pieces to form a lock and retain said pieces in box form, without other separate fastening devices, substantially as described.

3. In combination with the tight exterior case B and the rectangular butter-packages A' A', in close layers within it, a filling or packing of brine, which completely fills all the interstices, whereby the butter is not only kept sweet, but safely transported, substantially as described.

4. In combination with an exterior packing-case, constructed so as to be hermetically sealed, a valve that closes from the inside of the case to cover the opening through which the brine is introduced, substantially as described.

5,465.—*Apparatus for Obtaining Air or Gas with Hydrocarbon Vapors.*—E. HALL COVELL, Brooklyn, N. Y.—Patent No. 24,199, dated May 31, 1859; extended seven years. Application filed June 20, 1873.

The pressure of the gas or air is governed by a regulator. The charging with hydrocarbon vapor is effected in a series of trays

with free passages over the liquid so that the vapor is taken up simply by passing over the surface.

Claim.—1. The combination of a chamber for vaporizing hydrocarbon, provided with a pan or pans, or other surfaces, in substantially a horizontal position, and arranged in the manner described, so that a free current of air or gas may be forced in a horizontal direction over the surface of the liquid hydrocarbon contained therein at rest, with a forcing apparatus, and inlet and outlet cocks or valves for the admission of the air or gas to be charged and the delivery of the mixed gas, substantially as herein set forth.

2. The combination of a chamber for vaporizing hydrocarbon, in which the liquid is held at rest on horizontal surfaces, arranged in the manner described, so that the air or gas is forced to pass horizontally over them, with an apparatus for forcing said air or gas over said surfaces, substantially as herein set forth.

3. The combination of a chamber for vaporizing hydrocarbons, an apparatus for forcing air or gas into said chamber, and a self-regulating device for equalizing, checking, or controlling the pressure, substantially as set forth.

4. The combination of a self-regulating apparatus and a vaporizing-chamber, substantially as herein set forth.

5. The combination of a gas or air forcing apparatus, a reservoir, and a self-regulating device, substantially as herein set forth.

6. The combination of a chamber for vaporizing hydrocarbons, a reservoir provided with a self-adjusting device for regulating the pressure of the mixed gas, and a commingling-chamber, substantially as herein set forth.

7. The combination of a vaporizing-chamber, a reservoir, and a self-regulating device and valve, substantially as herein set forth.

8. The combination of a commingling-chamber, self-regulating device, and outlet-cock *j*, for the purposes substantially as herein set forth.

9. The combination of the reservoir-pipe for admitting air or gas to it, and an adjustable cock or fluid-valve for regulating the quantity and flow of the air, substantially as herein set forth.

10. The combination of the vaporizing-chamber, the reservoir, forcing apparatus, regulating device and valve, and inlet and outlet pipes, substantially as herein set forth.

11. The combination of a chamber for vaporizing hydrocarbons, with partitions or channels for extending the surface and reducing the depth of the liquid, with a regulating device, arranged in the manner described, so that a current of air, under regulated and controlled pressure, may pass over said extended surface, and every portion of it, substantially as set forth.

12. The combination and arrangement of pipes for feeding the liquid hydrocarbon to the pans, and drawing off the heavy unvaporized liquid, whenever desired, from each pan or division separately, substantially as herein set forth.

5,466.—*Lubricating Axle for Vehicles.*—JESSE SCOTT EGGLESTON, Auburn, N. Y., assignor, by mesne assignments, of one-half interest to E. H. KELLOGG, New York city.—Patent No. 122,374, dated January 2, 1872. Application filed March 26, 1873.

A recess is formed in the solid spindle of the axle for the lubricant, and a plate is supported therein to hold a wicking and form, with the axle-box, a chamber above the plate.

Claim.—1. The journal of a vehicle-axle having a cavity or recess in its upper portion to contain a lubricant, in combination with a removable cap-plate, D, supported in the top portion of the cavity, substantially as described, for the object specified.

2. A cap-plate having one or more pendent tubes, E, in combination with an axle journal or spindle having a cavity or recess, C, substantially as described.

3. In combination with the cap-plate D and an axle having oil-recess C, the tube or tubes E, and capillary conductor F, for effecting a distribution of the lubricant, as herein set forth.

4. The cap-plate D having one or more openings, h, in combination with an axle journal or spindle having a cavity or recess, C, substantially as described.

5. The cap-plate D, in combination with a journal or spindle having a cavity or recess, C, to form a secondary chamber, *g*, substantially as and for the purpose specified.

5,467.—*Wagon-Top.*—ANDREW R. TULLY, Harlem, N. Y. Patent No. 58,001, dated September 11, 1866. Application filed February 15, 1873.

A fine and broad spring-stay attached to the rear end of the wagon-frame, and secured at its upper end to the rear bow, preventing said bow from being drawn forward by the shrinking of the leather cover, and also preventing the creasing and crumpling of the cover by keeping it always distended.

Claim.—1. In combination with the cover of a folding carriage-top, metallic plate or ribbon spring-stays, arranged to stretch the cover and fold therewith, substantially as shown and described.

2. The knobs *a*, connected to the metal strap or stay concealed beneath the leather strap H, substantially as shown, and for the purpose specified.

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COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of those classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture	2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles	1,200
FELTING and HATS; including caps, bonnets, flock, &c	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)	

The specifications of patents have been reprinted back to November 20, 1866; from that date to June 30, 1871, on the larger paper; from July 1, 1871, to the present time, on the smaller paper.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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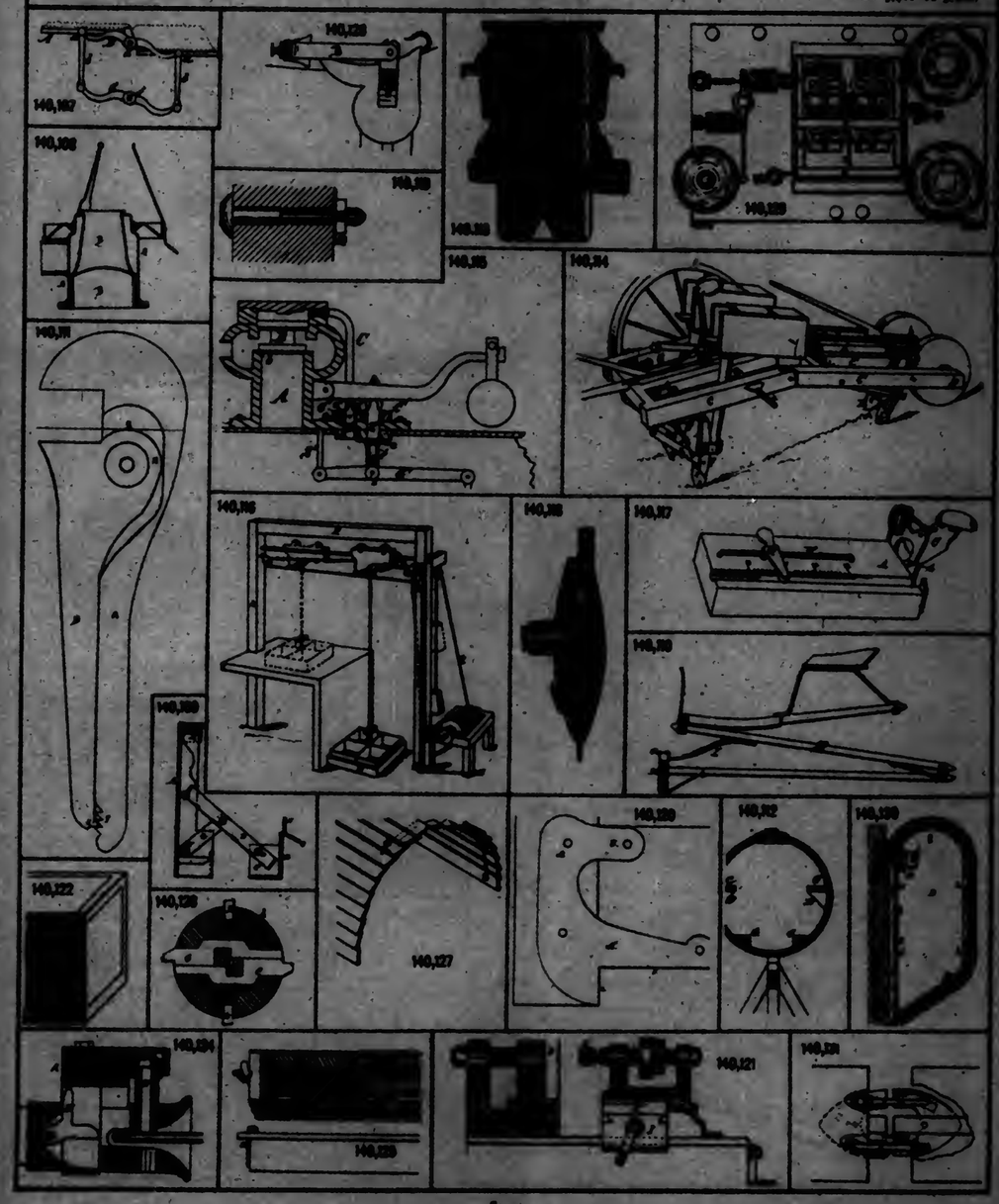
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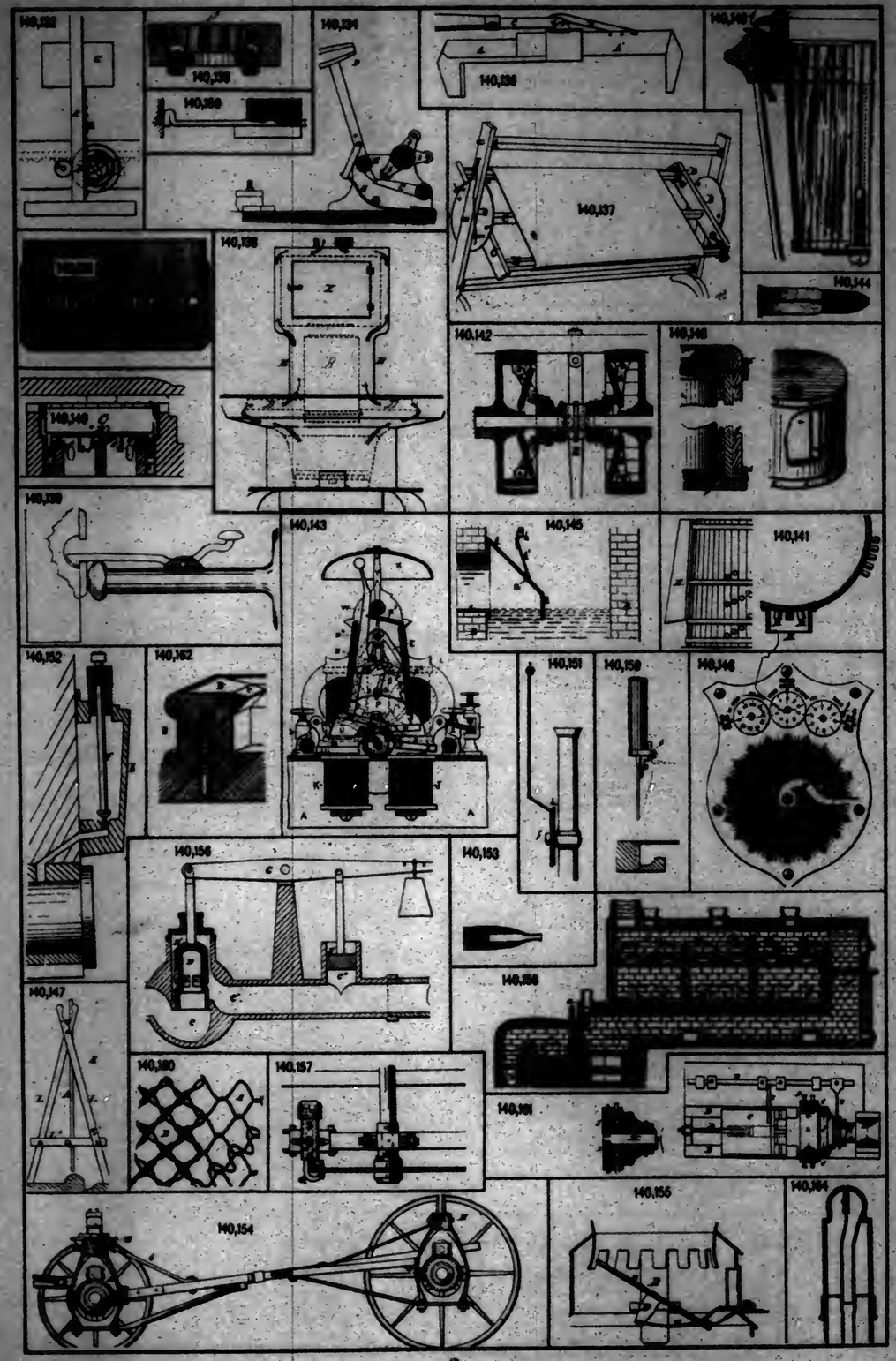
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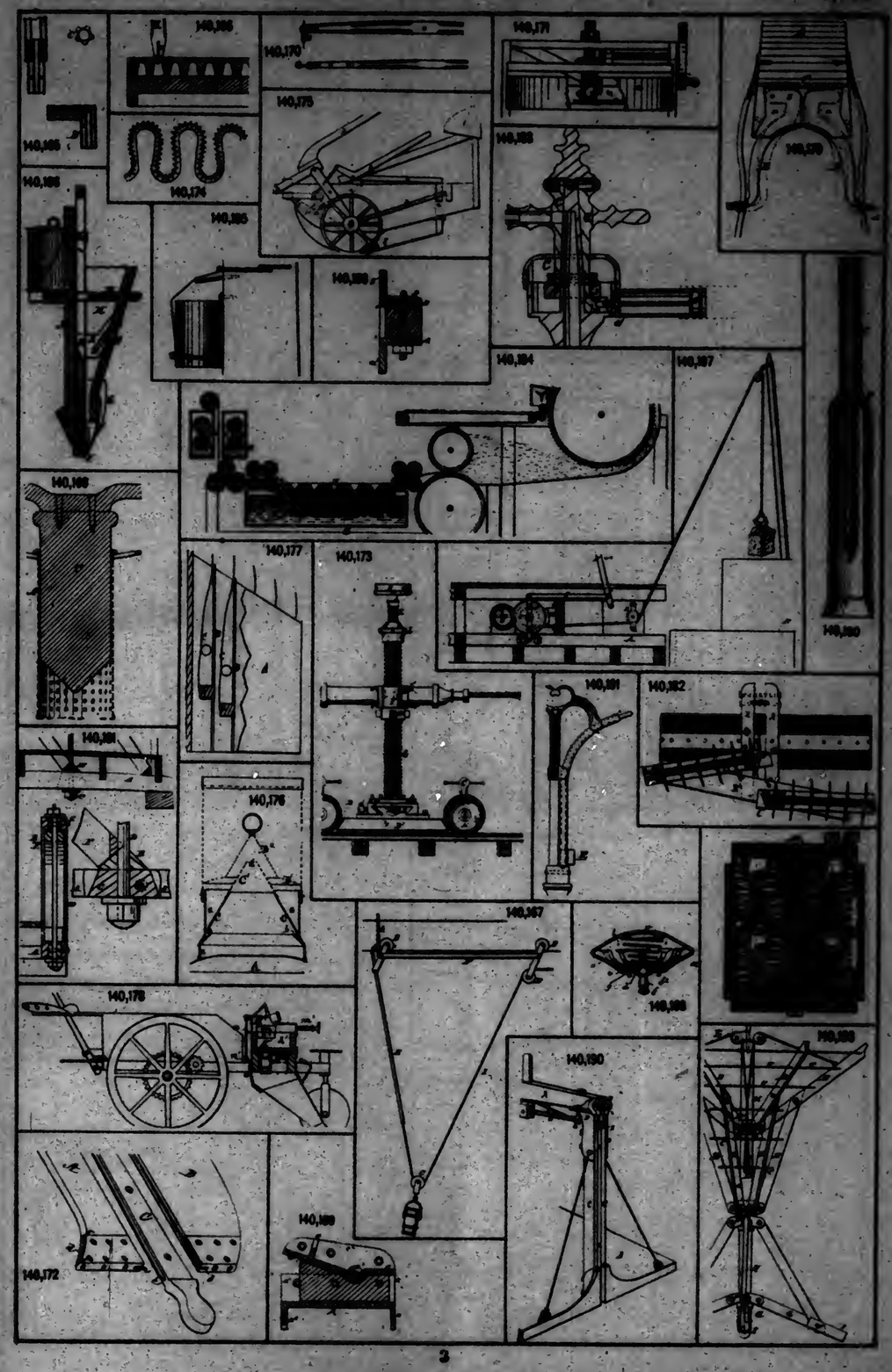
ORIGINAL PATENTS Nos. 140,197 to 140,338. JUNE 24, 1873. REISSUED PATENTS Nos. 5,461 to 5,467.



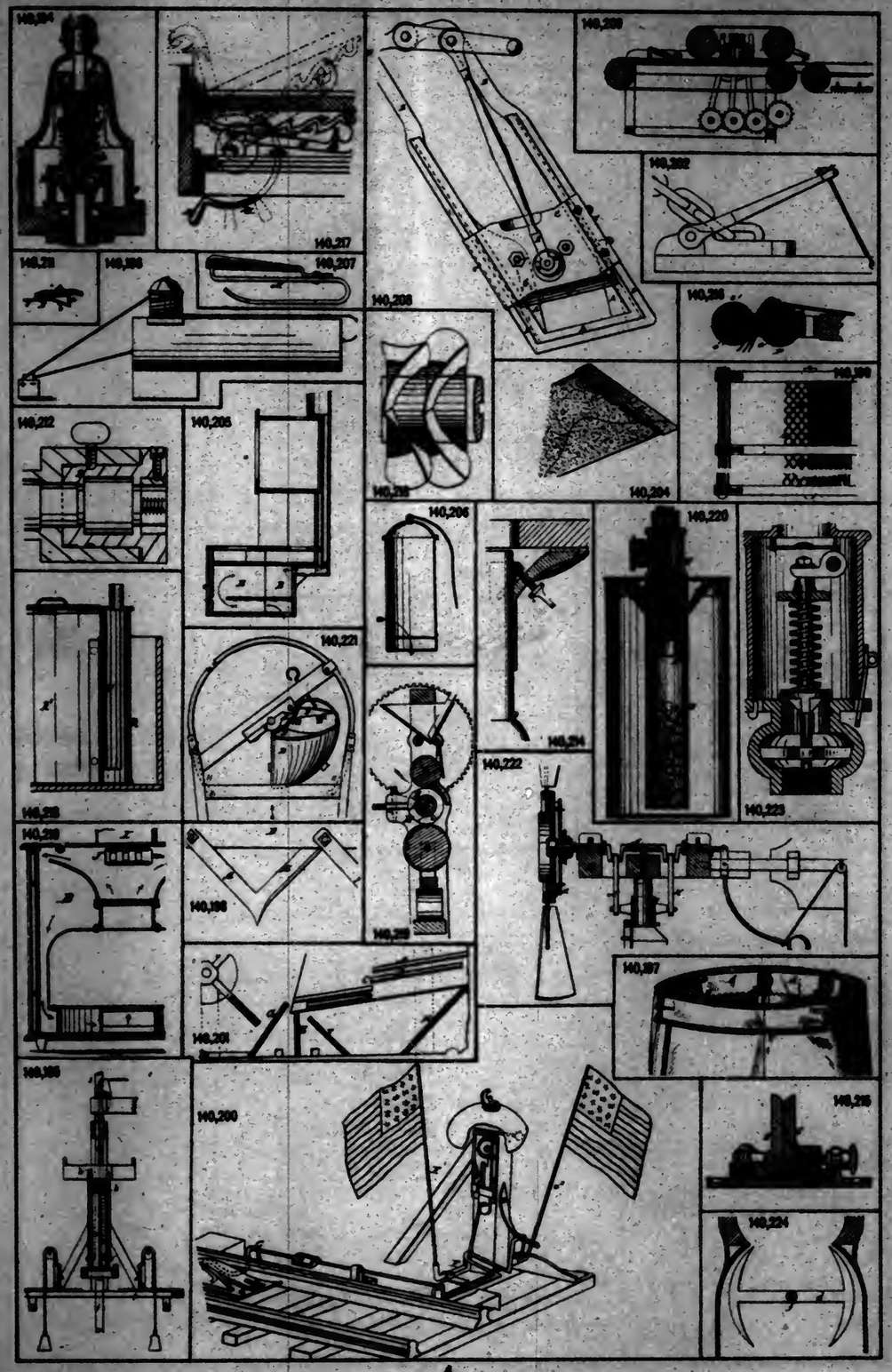
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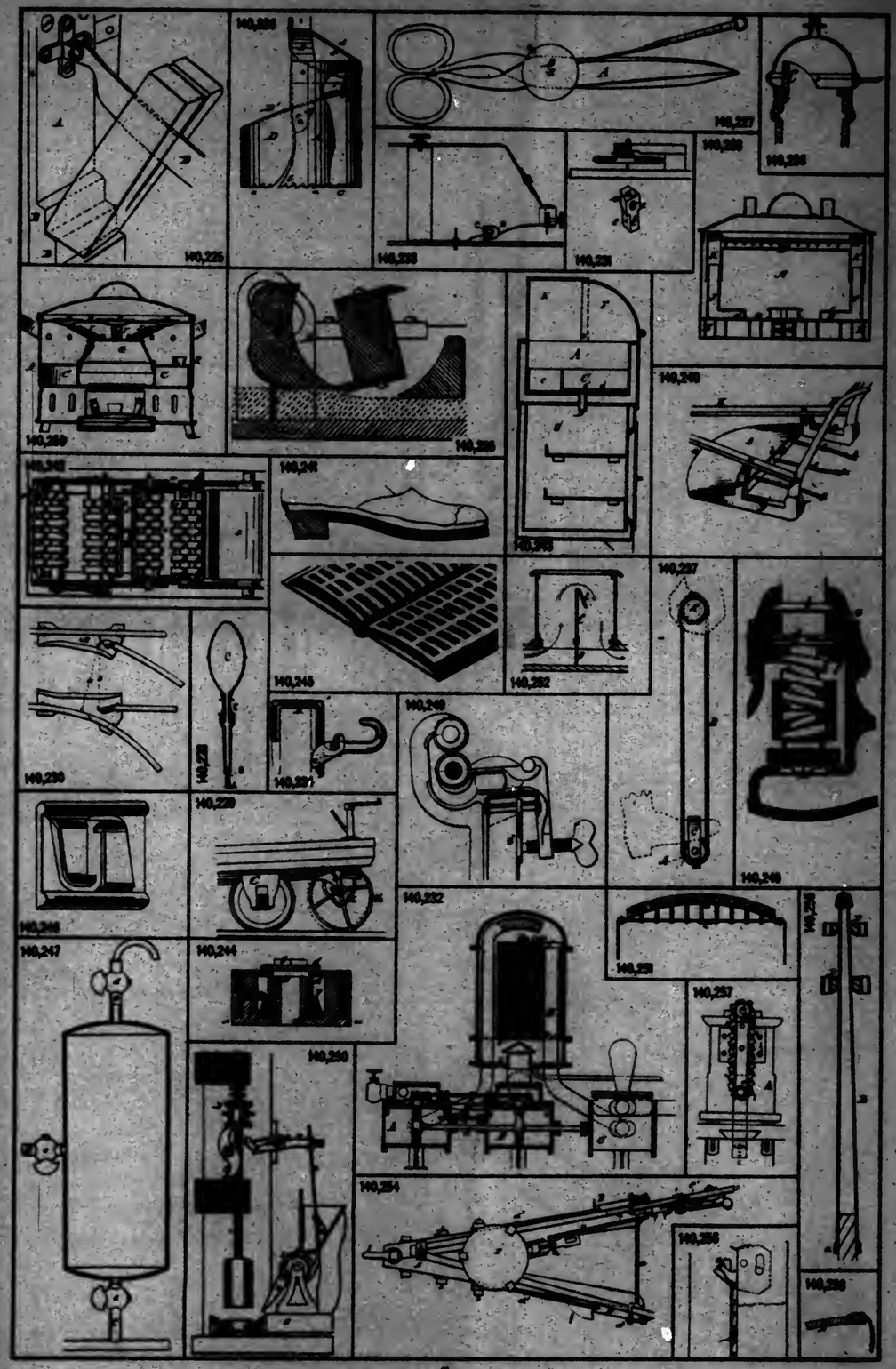
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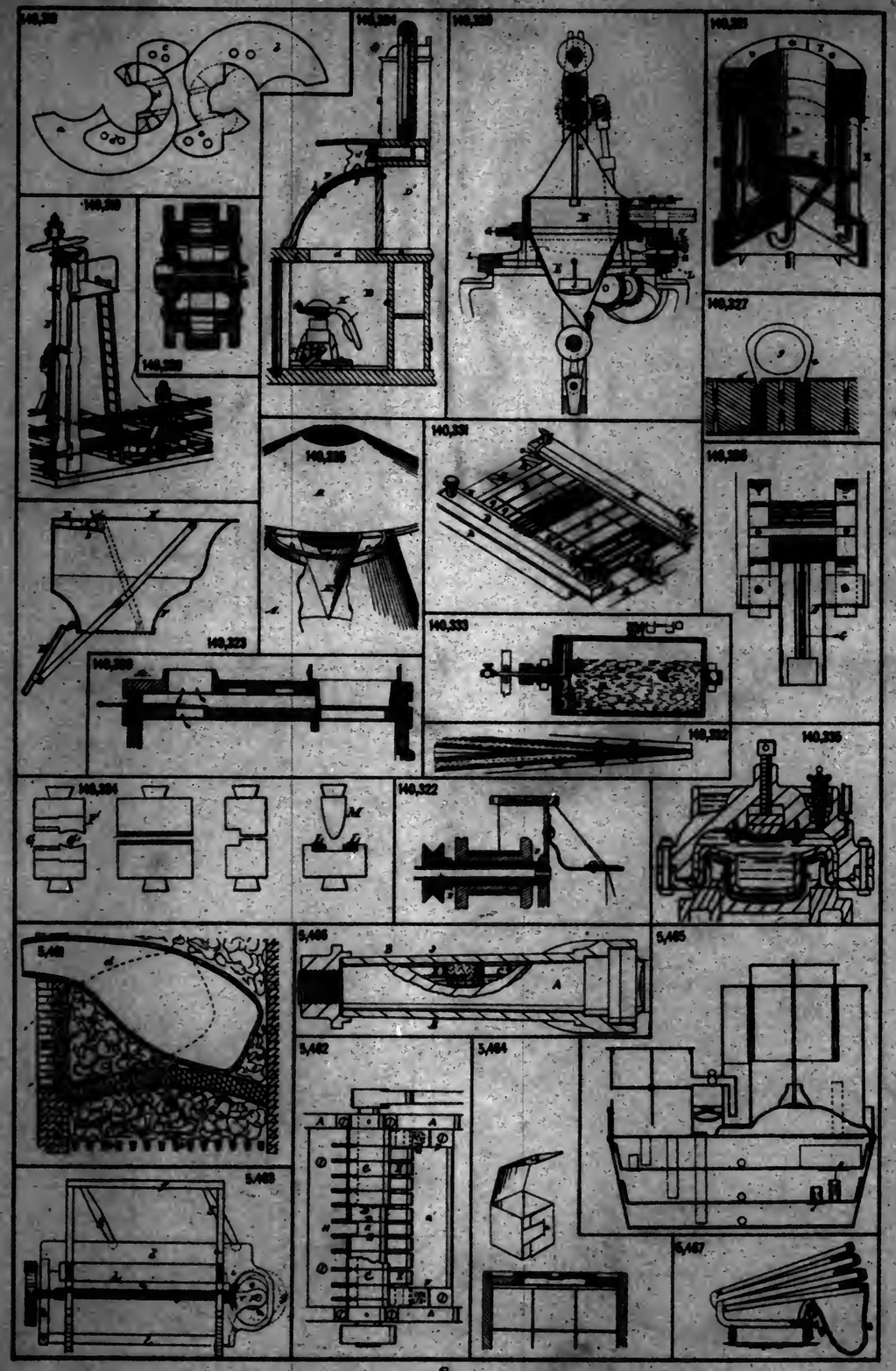
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OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME IV.

JULY 1 TO DECEMBER 30, INCLUSIVE,

1873.

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1874.

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ERRATA.

On page 28, first column, line 51, for 140,343 read **140,519.**

On page 103, first column, line 66, for "Lamey, P. H., coal-car ventilator," read *Lamey, P. H., coal-car elevator.*

On page 156, first column, line 52, for 1872 read **1873.**

On page 504, in "Extensions Granted," No. 26,060, for "James Simpson" read *James Stimpson.*

In illustrations of issue of December 2, for Fig. 145,226 read **145,236,** and for 145,236 read **145,226.**

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UNITED STATES PATENT OFFICE.

JULY—DECEMBER, 1873.

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COMMISSIONER'S DECISIONS.

JOHN W. MASURY.—*Extension.*

[*In the matter of the application of John W. Masury for extension of Patent No. 24,748, granted July 12, 1859, for* IMPROVEMENT IN PAINT-CANS.—*Decided July 10, 1873.*]

LEGGETT, *Commissioner:*

This invention consists in providing the top of a can for containing paint or other substances "with a rim or ring of thin soft metal," forming an annulus around the cover, and connecting it with the "top edge" of the can. This annulus may be readily cut with a knife, and the object of its employment is to enable the entire cover to be conveniently disconnected from the "top edge" of the can and removed without disturbing the contents. It is obvious that such a construction is well adapted to the purpose contemplated. It leaves the salient points of the can their full strength for packing and transportation; it does not diminish its capacity for holding or detract from the perfectness and security of its sealing qualities; and it renders it always readily openable, thus overcoming a great objection to soldered vessels, which it is necessary to employ for prepared paints, milk, fruit, and vegetables, now everywhere in vast demand.

The patent has been twice sustained in suits in which the novelty of the invention was placed in issue. The scope of the invention has also been so far defined that it is unnecessary for me to inquire whether it comprehends an annulus of thin or taggers tin, as well as one "of thin brass or other soft metal."

It appears, however, from the testimony submitted by the opposition, that this applicant was not the first to secure the general result at which he aimed, and consequently I do not see how he could be allowed to invoke the doctrine of equivalents. It is a well-known fact that tinners always use up their taggers tin in such parts of tin structures as require least strength and stiffness; and if, with this view, taggers tin had been used for the ends of hermetically-sealed cans prior to applicant's invention, it would certainly be giving an unjustifiable scope to his patent to construe his claim to include taggers tin simply because it is found to contain the quality of being easily cut with a knife. If taggers tin was so used before applicant's invention, then applicant should be limited to his special device of an annular rim of "thin brass or other soft metal."

The claim in terms does thus limit him, and I cannot act upon a presumption that he will be allowed more than he has claimed. It is in this view of the case that the testimony of the opposition, even if all admitted, could have but little weight.

De Lignac's English patent was considered by the court, and I think justly held not to exhibit the same invention. He presents the idea of opening a can by cutting through soft metal, and that is all. As Judge Blatchford remarks, he does not embody this idea "in a form which was practically of any substantial utility, and the means he adopted were substantially different from those adopted by Masury." The soft metal is shown as connecting the upper and body portions of the *side* of the can, and is not a part of the top or cover at all. That soft metal could be cut with a knife was always known. To employ it so as not to deteriorate the can, to preserve all its qualities, and still to avail of the use of the soft metal in the most advantageous way to effect the opening of the can, was the province of invention. De Lignac practically accomplished nothing in this direction. A comparison of the merits of devices actually produced is the proper measure of invention in a case of this kind. The fact that only a little step is necessary to pass from a crude and valueless device to one of great simplicity and excellence, when that step is once thought of, does not detract from the importance of an invention or from the merit

of an inventor. Masury's device is as manifestly an improvement upon De Lignac's as the pointed screw (made by simply putting a gimlet-point upon a screw) was upon the old blunt-ended screw.

The French patent of Chartonet of May 20, 1859, falls still further short of anticipating this invention. It does not definitely describe any device. The entire patent comprises only four lines, in which the invention is said to be a box for preserves, of which "the cover is very thin and can be easily attacked with a pen-knife." Neither the material nor form of the box or cover is stated, and the use of soft metal is not specified at all.

The testimony in behalf of the Borden Condensed-Milk Company, with reference to the novelty of this device, cannot be admitted. Although it appears in proof that a suit was brought against them for infringing Masury's patent, in the early part of this year, which is still pending, they delayed opposing this extension until after the time for taking testimony had expired. The case was reopened to admit them, and all the additional time was given they asked for. They failed, however, to give due notice of the names of their witnesses, in compliance with Rule 113, and proceeded with their examination *ex parte*. Notwithstanding this defect of notice, which, under the circumstances, would be fatal, I have read the affidavits submitted and I do not find that they would be of such probative force, if admitted, as to warrant the refusal of this extension. Their credibility and effect depend altogether upon the memory of witnesses, some of them interested, of facts alleged to have transpired more than fourteen years ago. None of the cans said then to have been manufactured are produced. The courts have uniformly refused to acknowledge the sufficiency of testimony of this character to invalidate a patent, and I should not be justified either in admitting this testimony or in pronouncing against the novelty of this invention upon it.

The testimony in behalf of Geo. T. Lewis is of much the same character. The only difference is that an exhibit is put in for the purpose of corroboration—"Exhibit Green"—which serves to flatly contradict the memory and statements of the witnesses. If their accounts, merely, were to be taken as sufficient proof, the novelty of applicant's device would be fairly defeated. But "Exhibit Green" cannot be readily cut by a knife, even if it be admitted to be an annulus of the nature, except its thickness, of that shown by Masury, which I think extremely doubtful. Walker swears these cans were *patented* to Wilson, Green, and Wilson in 1857.

The records of the Office show that they took out a patent for a certain can in that year, which I have no doubt is the one they made. Liethead, their foreman, says that all the cans made by them were substantially the same, for the first few years, for powder and paint cans. The commencement of the manufacture of the latter, according to his memory, was about March or April, 1858. He also says the rim—"Exhibit Green"—was generally *the last thing put on*. If Everett's testimony were corroborated by a specimen (made before 1859 and actually showing this invention) from the many thousands of cans he has made since 1853, it would then amount to proof. I do not regard the novelty of the invention under consideration as in the least shaken by anything appearing in this case. Its importance is amply attested, in connection with the direct testimony, by the undisputed fact of its extensive and almost universal use.

This fact, in the present case, relieves the inventor from the duty of showing diligence in introducing his invention into public use, although he is not without merit in this regard, having made and sold about a million of his cans a year for the past ten years. When it happens, upon the mere production of an invention and placing it upon the market, as Masury did, even while his application for patent was pending, that it soon commends itself to general adoption, there is nothing further for the inventor to do to introduce it. He has thus fully introduced it to the public himself, and none the less because he has been early and largely followed by infringers. In such a case he need only exercise reasonable diligence in seeking to obtain adequate remuneration, by legally asserting his claim, and this it appears Masury has done. After unsuccessfully endeavoring, prior to 1863, to induce parties who were using his invention to take license under his patent, he instructed his counsel to bring suits against them. Under advice to bring a single test suit, an action was commenced in 1863 in the Circuit Court of the Southern District of New York, but it was not defended. In September, 1864, pursuant to the same purpose, another suit was brought, which came to issue and at different terms was set for hearing. The parties were present with their witnesses for trial, but owing to pre-engagement of the court the cause was not tried. In 1867 or 1868 the defendant relinquished that branch of his business involving the use of cans, and declined to be at further expense to defend, preferring to pay Mr. Masury the amount of profit made, if he obtained judgment. The issue did not come to judgment on its merits, but a settlement was effected. All this is proved, and there is no evidence to contradict it. The only answer made to it is the assertion that it is "absurd." In 1869, the suit *Masury* vs. *Tieman* was brought and was decided in favor of Masury in May, 1871. Since the termination of that suit many prominent firms engaged in the paint trade have made settlements. In the summer of 1871 the suit *Masury* vs. *Anderson & Pierce* was brought and decided in favor of Masury in May last. Another suit has since been instituted against the Borden Condensed-Milk Company. Three or four years' delay transpired between the time Masury admits he was informed that company were infringing his patent, and the time he brought his suit against them; but in the mean time he was engaged in two other suits to enforce his patent in the same jurisdiction. I think he is shown to have been reasonably diligent throughout in endeavoring to protect his patent and obtain proper remuneration for his invention.

His account admits the receipt of about $13,800, from which is deducted about $4,800 for expenses of litigation and procuring patent. His receipts all date subsequent to June 1871, after the successful termination of his suit, *Masury* vs. *Tieman*. He swears that only one party is now under his license to manufacture. Remonstrants insist that he ought to have returned about $60,000, not yet collected for alleged infringements by the Borden Condensed-Milk Company, during the four years that he has been aware of such alleged infringements, and at least $50,000 for profits on account of his own manufacture. If he had made no endeavor to secure a recognition of his rights under his patent, and it was shown that he had actually received the latter sum, beyond a fair manufacturer's profit, there would be reason to demand a different return from him. But he alleges that the sales by infringers, against whom he has maintained five suits during the term of his patent, have rendered it impossible to obtain any more for cans made according to his invention than for other cans, and he swears that he has received no more. The inference is sought to be raised that he has, by testimony, not showing the ordinary profit of manufacturers of cans, but what different individuals have themselves been accustomed to charge in another State. Masury swears that the average manufacturer's profit on tin cans in New York and vicinity is from twenty to twenty-five per cent., and this is all the evidence adduced on this point. He says that he calculates to make a profit of twenty per cent. Not having succeeded in charging others prior to 1871, although almost constantly prosecuting them, it is not very reasonable that he should be called upon to charge himself. I find no proof that he has actually received more from his invention than he has returned, except probably the profit he ought to have made on his own manufactures since he began to get returns from licenses in 1871. His own manufacture should have netted him, since that date, whatever profit, on account of the invention, others could pay and sustain themselves in the business. This is a defect in his account, as is also his failure to set forth in his statement the fact that he has an English patent, and whether or not it has netted him any profit. But he swears that he has received nothing on account of his English patent, and adding to his receipts all that could justly be charged him since he has finally succeeded in making collections from others, his remuneration would be far from commensurate with the value of his invention, estimating it, as he does, at the lowest rate of license charge.

Referring to the effect upon the public interests of granting this extension, it is urged that large established manufacturers will be placed under contribution if it be granted. It does not appear, however, that the patentee has yet been extortionate in his demands, and no more can be apprehended in this case than in any other grant of exclusive privilege under a patent. It must be admitted that the public have received the advantages of the invention without rendering that commensurate remuneration to the inventor which sound policy, looking to the encouragement of inventions, contemplates shall be vouchsafed him, when, in addition to inventing, he has made reasonable efforts to secure adequate compensation. The argument that established interests will be disturbed is of no force whatever, in any case, unless it refers to existing public rights in an invention. Property in this invention has not yet vested in the public. Pirating by individuals confers no rights, and gives no title to consideration. Whatever individual interests parties may have, on account of unauthorized investments in the property of others, are not to be regarded.

The remarks of the learned judge in *Cook & McComb* vs. *Ernest*, OFF. GAZ., vol. 2, p. 87, where the same argument was used by alleged infringers, is applicable in this connection. He said: "It is now claimed that an injunction should not issue, because it would disturb the existing order of things—that is, it would put a stop to infringements and give a protection to the property of complainants which the defendants will not voluntarily accord. In other words, the claim is that, because the defendants have been invading the rights of claimants, * * they should not be enjoined, lest the existing order of things be disturbed.

"The very purpose of the bill of complaint is to disturb the existing order, and to induce a new order, by which the complainants may be protected in their property and rights."

The extension will be granted upon payment of the required fee.

E. WHEELER.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Elbridge Wheeler for patent for* MANUFACTURE OF WROUGHT-IRON OR STEEL TUBES.—*Decided July* 1, 1873.]

An application claiming the rolling of tubes without a mandrel from a hollow fagot composed of layers of bars riveted together, is answered by a patent describing the same process, except that it does not mention how the bars are attached together, that being a requisite which every mechanic would supply without its being specified.

LEGGETT, *Commissioner:*

Applicant forms a tubular pile from layers of rolled bars, fitted and riveted together so as to break joints, and rolls and welds it without the aid of a mandrel. He claims:

"As an improvement in the art of manufacturing tubes, rolling the same without the use of a mandrel, directly from a hollow fagot consisting of two or more layers of bars securely connected, as set forth."

It is not new in the art of rolling, as exhibited by the references, to weld tubes without the use of a mandrel. Neither is it now to form hollow piles for rolling from layers of segments which break joints.

The English patent of Clay, No. 2,821, shows such layers forming such piles. But neither the drawing nor specification exhibits any means of uniting the segments together in the pile. It is obvious that they must be secured together in some manner, else they would fall apart, and it would be impossible either to form or to roll the pile. An inspection of the drawing, which exhibits a cross-section of the pile, suggests at once that the pieces must be riveted or otherwise secured together. It is not essential, even to one not skilled in the art, to show or describe rivets for the purpose; because rivets or some equivalent means, such as bands or dowel-pins, must be adopted.

After the piles are formed it is proposed to roll them "either with or without" a mandrel. This does not mean always *with* a mandrel, as applicant seems to suppose, but sometimes *without* a mandrel.

This patent is a complete anticipation of his alleged invention. The necessity and the means of securing the segments together in forming the piles for rolling are so obvious that the omission to expressly set them out would not prevent a mechanic from making the device, and employing the process in question, as readily from the description and drawing of the patent as

from applicant's specification and drawings which exhibit the rivets.

The decision of the Board is affirmed.

N. I. DONALDSON.—*Reissue.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Niles I. Donaldson for reissue of Patent No. 134,861, for* MEDICAL INHALER.—*Decided July 1, 1873.*]

It is proper to specify in the reissue of a patent for a medical inhaler in what parts two medicated liquids, when two are used, shall be placed, though no mention was made of them in the patent.

Such an explanation is in fact required by section 26 of the act of 1870.

LEGGETT, *Commissioner:*

The original patent describes an inhaler provided with either one or two inlet-tubes, each tube having a bulb for the reception of medicinal liquid. The bottle or main receptacle is filled about half full of water, "medicated or otherwise, as preferred," into which the open end of each tube is immersed. There is no specification as to where the medicinal liquids are to be placed when only one inlet-tube is employed—whether they are to be mixed together in the one bulb, or whether one of them is to fill the bulb and the other to be placed in the water through which the vapor of the other must pass to the exit or inhaling tube.

But when two are used, it is set forth that each is to be filled with one of the liquids usually employed for producing medicated vapor. Applicant now specifies in his application where the liquids are to be placed when only one inlet-tube is used. He says in such case "the alkali is placed in the main receptacle with the water, the acid being introduced into the bulb of the inlet-tube." This does not add a new feature—*new subject-matter*—to the device itself. It only explains the manner in which the device is to be operated when constructed as described in the patent. Such explanation is required by section 26 of the statute, and should have been embraced in the original specification. Its omission there was such an inadvertence or mistake as a reissue is designed to correct. If a process were in question an amendment of this nature might constitute a substantial modification of it, and therefore be inadmissible. But being in this instance merely explanatory of the way of using the device for the purpose it was intended to subserve, when constructed according to the patent, it is proper and necessary.

The Examiner curiously suggests that other parties using only one tube are entitled to test in the courts whether they are infringing the patentee or not, and whether they cannot prevent him "from using their arrangement."

It should have occurred to him that if this is a matter belonging to others who can invoke any such test, they must be patentees, and in that case an interference would be required.

But it is not easy to perceive that an explanation how this device, as described in the patent, is to be made serviceable for the purpose contemplated, could constitute an invention and be the property of one not the inventor of the device.

The decision of the Examiner must be reversed.

CHASE AND WHITE *vs.* CHASE.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the patent of Chase and White and the application of W. H. Chase, for patent for* COVER FOR SEWER-BASINS.—*Decided June 16, 1873.*]

Where two persons have taken out a patent as joint inventors each of them seems to be estopped from setting up a claim that he is the sole inventor, so long as the other denies it.

If such a claim can be considered at all, it must be established by clear proof.

If one originates the general idea of an improvement, and another aids him in developing it and reducing it to a practical form, they may be considered joint inventors.

Where one person invents part of an apparatus and another suggests the idea of another part which is perfected by the first, and the whole is elaborated and reduced to form on the united consultations of both, the second cannot claim to be the sole inventor.

LEGGETT, *Commissioner:*

Chase and White took out a joint patent for a cover and trap for sewer-basins, April 2, 1872. The device consists of three principal features—a corrugated cover having a man-hole through it, and suitable flanges; a gutter-plate upon which the cover is supported, forming the mouth or opening from the gutter into the sewer; and the valve for closing this mouth suspended on pivots a little above its center, so that its own gravity will keep it closed ordinarily, but a very slight pressure of water from the gutter will open it sufficiently to permit the escape of the water into the sewer-basin. The design of the corrugated cover is to prevent pedestrians from slipping and falling, and the purpose of the valve is to cut off the exhalations of the sewer, while at the same time it automatically opens to admit sewage.

The claim of the patent is as follows:

"A cover or trap for sewer-basins, consisting substantially of the corrugated top A, cast in one piece of iron, with the flange C and the cover B, plate D, and valve E, all as and for the purposes herein set forth."

Chase is superintendent of sewers in this city, and White is engaged in iron manufacture. It appears that the invention was adopted by the city authorities of Washington, and a number of the traps and covers have been made by White, through negotiations of Chase, for the city government, marked "Wm. H. Chase and Geo. White, patent, April 2, 1872."

After the lapse of about five months, some disagreement having in the meantime arisen between the parties, Chase filed an application September 16, 1872, claiming to be the sole inventor. It was held by Commissioner Fisher in a similar case—*De Lill* vs. *Avery & Hill*, Decisions, 1870, p. 128—in substance, that a party to a joint patent was estopped from asserting his sole proprietorship, where it was denied by the other party. I have no doubt of the soundness of this opinion. But certainly if this were not the case, it ought to be clearly proved on the part of such an applicant that he was in fact a sole inventor. I concur with the Board that "Chase is very far from proving himself to have been the sole inventor." The weight of evidence is decidedly the other way. White first produced the corrugated cover and brought it to the notice of Chase. Chase, in connection with that, as admitted by White, conceived the idea of the gutter-plate and a valve.

He made a rude model of the plate and cover and took it to White. It had no valve in it, and Chase does not appear to have had any definite idea how a valve was to be adapted to it. White explained how the valve might be applied, as he and his brother swear, and the model-maker testifies that he worked out the model under the joint instructions of Chase and White. The production of the combination which constitutes the invention was apparently as much the work of White as of Chase. Each produced independently certain parts of it, and both joined in completing and embodying the whole. The attorney who prepared the application says White introduced him to Chase as the attorney who was to take out their patent; that upon particular inquiry he took the full names of the parties for this purpose at the time. Chase signed the specification, upon examining it and the drawing, (notwithstanding he swears he did not,) after White had signed it. Against all this, and his own oath, there is nothing but the bare assertion of Chase that he was the sole inventor, and that in making affidavit to the joint application he did not know what he was about. The testimony of Richards and Murtagh goes to show that Chase probably had a general idea of the invention in his mind before he saw White about it, but nothing more. When they consulted together White's suggestions were such that they came to a definite agreement how the device ought to be made, and he made it accordingly.

This is the ordinary process of joint invention. It is the result of the mutual contributions of the parties. If one suggests an idea in a general way and the other falls in with it, and by his aid develops it and gives it definite practical embodiment, the two may be considered joint inventors. The mere suggestion of the valve by Chase, and his conversation about it, did not constitute him the sole inventor. The thing itself was old. Its practical application was to be accomplished for the use contemplated in connection with a sewer-trap. That is what White *suggested* and consummated. He was not ordered to make a trap with a valve, upon specific directions, accompanied with a model or drawing showing him so much that no suggestions were necessary in order to accomplish it. He had already made the top, and he was consulted as to how a desirable improvement in connection with it, which Chase had thought about, might be accomplished. He is clearly upon the proof a joint inventor with Chase.

The decision of the Board awarding priority to Chase and White is affirmed.

WHEELER AND WHEELER.—*Reissue.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Harriet W. Wheeler and Wm. H. Wheeler, assignees, for a reissue of Patent No. 68,674, granted to L. H. Wheeler, September 10, 1867, for* WINDMILL.—*Decided June 28, 1873.*]

Such combinations of the parts shown in a patented machine as are operative in themselves, and constitute distinct and separate parts of the thing patented, may be embraced in separate divisions upon a reissue of the patent.

But several parts of a patented machine which will together constitute a new invention not hinted at in the original, cannot be selected and claimed by themselves on a reissue.

THACHER, *Acting Commissioner:*

In the original patent granted to Wheeler, he describes a windmill provided with a hinged vane and a "side vane," the latter at about right angles with the axis of the wind-wheel. The purpose of these two vanes is to render the motion of the wind-wheel uniform by turning it, automatically, when in operation, more or less "edge to the wind," according to the violence of the current. To stop its motion entirely the hinged vane is to be turned parallel with the side vane and wind-wheel.

It is not necessary to describe the details of the mechanism by which this operation of the vanes upon the wind-wheel is accomplished. It is sufficient to say that the two vanes are, according to the patent, to be used together to jointly control the motion of the wheel. There is no suggestion in the patent that either could be operated alone to accomplish the object contemplated, or any other specified object. It is now alleged to have been discovered that each is practically operative alone (or at least that the hinged vane is) for the object in view, and it is sought to obtain a divided reissue covering them, respectively, when independently employed in windmills. If this allegation be true, then there is ground for new patents, but not for the reissue sought.

The Examiner says that none of the parts of this device are new *per se*. The novelty, then, must consist in their combination. No doubt such combinations of the parts shown in the machine as are new combinations, as there shown and operated, may be claimed; and so far as they are "distinct and separate parts of the thing patented," may be divided by reissue. But in an application for reissue parts of a device cannot be selected to make up a new device not hinted at in the original patent. That constitutes new invention, and is not proper subject-matter for protection by reissue of the old patent. The discovery that the omission of one of the material elements of a machine or combination invented and patented will leave an operative and valuable machine or combination, is such a discovery as warrants the grant of a new patent. See *Minter* vs. *Mower*, Webster's Patent Cases, p. 138; *Russell* vs. *Crowley*, *ibid*, 458.

This is precisely the discovery applicant has made. It amounts to an improvement upon his first invention, and cannot be fairly said to be a distinct part "of the thing patented."

The decision of the Examiner adverse to the basis of division of reissues here presented is sustained, and in view of this decision it is not necessary to go into the minor points presented.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,915.—*Casting Copper Cylinders.*—Granted to FREEBORN ADAMS, August 2, 1859. Hearing July 16, 1873.

24,923.—*Elevators for Warehouses, Factories, Mines, &c.*—Granted to ALBERT BETTELEY, August 2, 1859. Hearing July 16, 1873.

24,947.—*Journal-Boxes.*—Granted to JOHN A. MONTGOMERY August 2, 1859. Hearing July 16, 1873.

24,953.—*Meat-Cutters.*—Granted to JOHN G. PERRY, August 2 1859. Hearing July 16, 1873.

24,963.—*Flour-Packers.*—Granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871. Hearing July 16, 1873.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873.

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OTIS TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JENKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,343.—*Stoves.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL R. PRENDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors Shears.*—Granted to ROCHUS HEINRICH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—*Rolling-Mills.*—Granted to JOHN and GEORGE FRITZ, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—*Bedstead-Slats.*—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,572.—*Molding Water-Traps.*—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—*Burglar-Alarms.*—Granted to ABBOTT O. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—*Steam Punching-Machines.*—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,640.—*Steam-Boilers.*—Granted to JOSEPH HARRISON, Jr., October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,683.—*Hydrants.*—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,796.—*Jacquard Machines.*—Granted to AVERY BABBETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,539.—*Manufacture of Gun-Barrels.*—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,598.—*Improvement in Harvester-Rakes*, granted to MCCLINTOCK YOUNG, Jr., June 28, 1859; reissued May 17, 1870, numbered 3,978.

Claim.—1. The combination of the radial rake, revolving around its shaft, and oscillating on a pivot, both eccentric and transverse to said shaft, the fixed double-walled cam, to guide and support the rake and mechanism connecting the rake and cam, substantially as set forth.

2. The combination of the fixed double-walled cam, the radial rake revolving around its shaft and oscillating on a pivot, both eccentric and transverse thereto, and the guide, located on the gearing side of the platform, to hold down the rake when discharging the gavel from the platform, substantially as set forth.

Disclaimer filed June 27, 1873.

Disclaims second clause of claim as above set forth.

24,700.—*Improvement in Harvesters*, granted to LEWIS MILLER and JACOB MILLER, July 5, 1859.

Claim.—Extending the finger or platform bar, one or both, far enough under the yielding-bars, by which they are hung to the main frame, as that the two may be united by suspension-rods, which allows them a yielding motion in one direction, makes them rigid in another direction, and prevents the motions of the main frame from being communicated to the finger-bar, substantially as described.

24,664.—*Improvement in Elastic Railroad Frogs*, granted to GEORGE P. SANBORN and WILLIS MANSFIELD, July 5, 1859. (WILLIAM R. SANBORN administrator of the estate of GEORGE P. SANBORN, deceased.)

Claim.—1. An elastic frog constructed of layers of plate metal and wood, substantially in the manner specified, and either with or without layers of vulcanized rubber.

2. Constructing an elastic frog with end slots suitable to receive the lower flange and neck of a rail, as specified, whereby the frog may be kept in alignment, as described.

24,654.—*Improved Pin-Sticking Machine*, granted to J. W. NARMORE, July 5, 1859.

Claim.—1. Operating the driver or drivers and the crimping and feeding apparatus, or any portion of the same, by means of a clutch or clutches, carried by a constantly-rotating shaft and thrown into gear therewith to effect such operation by the action of the sliding bed or pin-carriage, as the latter, after having received the pins, completes its movement to the necessary position for the sticking operation, substantially as herein described.

2. The combination, with a single reciprocating sliding bed or pin-carriage and a single conductor, of two drivers and two sets of crimping and paper-feeding apparatus arranged on opposite sides of the mouth of the conductor in such a manner that the said bed or carriage, in every movement in either direction, is caused to be filled with pins from the conductor, and to convey them to a proper position relatively to one or the other of the drivers, to be thereby driven into the paper supplied and crimped by its respective feeding and crimping apparatus, substantially as herein described, whereby a saving is effected of the time heretofore lost in running the bed twice under the conductor to be once filled.

3. Effecting the combination between the sliding bed or carriage and a clutch carried by a constantly-revolving shaft to operate a driver, a crimper, and a feeding apparatus, or either of them, by means of a toothed lever, E or E', a spring, T, a notched slide, F or F', plate U or U', with an inclined edge and a sliding-tooth, *i*, the whole applied and operating substantially as herein described, to permit one and only one revolution of the loose portion of the clutch, and hence but a single operation of the part or parts driven by it.

24,688.—*Improved Machine for Boring or Mortising Blind-Stiles*, granted to LEONARD WORCESTER, July 5, 1859.

Claim.—1. Combining the transversely-reciprocating carriage A A with the cam-cylinders L L, by means of the pairs of vibrating levers E E and *f f*, substantially in the manner and for the purposes herein set forth.

2. The notched plates N N for sustaining the stiles during the operation of mortising or boring the same when the said plates are combined with reciprocating bearings and other suitable mechanism in such a manner that the necessary laterally-reciprocating and longitudinally-feeding movements will be imparted to said plates, substantially as herein set forth.

3. Combining the bearings of the bit-shaft G with the reciprocating carriage C, when the said shaft is so arranged with relation to the notched plates N N that the bits which project from the ends of said shaft will act upon the stiles as they are automatically presented to them, substantially as herein set forth.

4. The combination and joint operation with each other of the reciprocating carriages A A, the notched plates N N, the pairs of levers E E and *f f*, the cam-cylinders L L, the reciprocating spring-pawls K K, and the bit-carrying cylinder G, substantially as herein set forth.

24,685.—*Alarm-Attachment for Tills*, granted to E. B. WHITE, July 5, 1859. (LAURANA C. WHITE administratrix of the estate of EDWIN B. WHITE, deceased.)

Claim.—1. The bolt-plate *b* provided with bolts C, connected by a joint, *c*, to the box B, and connected to a bell-striking apparatus, substantially as shown, in connection with the keys *k* and a stop, D, the whole being applied to the till, substantially as and for the purpose set forth.

2. In combination with the bolt-plate *b*, bolts C, and keys *k*, the bar *j* and screws *o'* in the parts *k'* of the keys, when the bolt-plate and bar *j* are both connected with the lever A, or to the bell-striking apparatus, in any proper way.

3. The employment or use of the sliding plate G, combined and arranged, with the bolt-plate *b* and stop D, to operate automatically, as and for the purpose set forth.

4. The employment or use, for the purpose specified, of a supplemental spring *u*, fitted in a socket, *t*, or otherwise arranged to resist the movement of the bar *j*, when said bar *j* is used in connection with spring-bolts C, substantially as described.

24,665.—*Improvement in Protecting Surfaces of Articles of Iron*, granted to THADDEUS SELLECK, July 5, 1859.

Claim.—A horseshoe or other article, as indicated herein, made by uniting Franklinite pig-metal with the surface of iron, as set forth.

24,668.—*Improvement in the Picker-Motion for Power-Looms*, granted to WILLIAM STEARNS, July 5, 1859.

Claim.—1. Extending the picker-staff down, through, and below the rocker, and through the rail, as described.

2. The rocker D, made to receive the staff, in the way and manner described.

3. In combination with the rocker D, the hook G or G', whether made separate or cast on the rocker, for the purposes set forth.

4. Making the picker-staff adjustable in the rocker, in the manner described, or in some equivalent manner.

5. Making the stud surrounded by the coiled spring P smaller in the middle than at the ends, to allow the spring to contract in diameter, in the middle, as it is drawn in working.

6. Making that portion of the stud surrounded by the stationary end of the coiled spring permanent or stationary, and that portion surrounded by the moving end of the spring to revolve, to facilitate the working of the spring.

Disclaimer filed June 30, 1873.

Disclaims first and sixth clauses of claim, as above set forth.

24,680.—*Improvement in Corrugating Sheet Metal*, granted to WILLIAM E. WORTHEN and HENRY B. RENWICK, July 5, 1859.

Claim.—The method of corrugating or molding sheet metal by several dies acting in succession, substantially in the manner specified, upon a sheet resting upon a bed die or dies so as to cause the metal to conform to shape, substantially in the manner herein described.

24,635.—*Improvement in the Construction of Sheet-Metal Coffins*, granted to ISAAC C. SHULER, July 5, 1859.

Claim.—1. The arrangement of stiffening the lower part of a sheet-metal coffin by locking together the scrolled edges of the sides and bottom, forming a firm rim when they are soldered together, substantially as described.

2. The sheet-metal rim *c* on the outside of the walls as a means of stiffening the base, either with or without a filling of molten metal, according to the size of the coffin.

3. The rim *d* of sheet metal, single or scrolled, forming an inside chamber which may be filled with molten metal or left hollow, according to the size of the coffin.

4. A cast-metal rim, *f*, with a deep groove on the under side, which receives, straightens, and stiffens the walls, and which serves to support the lids.

5. Setting the pillars or braces *x* at the corners and around the body of the coffin between the inward projections of the rims *d* and *f*, which gives them an extended purchase, for the purpose of stiffening the walls, substantially as described. I also claim the peculiar braces *k* to prevent the lateral racking of the bottom.

6. The arrangement of pressing inverted beads or recesses in any required number in the sheet metal of the lid, walls, and bottom of a metal coffin, on the inside and on the outside of the same, which may be filled with molten metal in the large size and left empty in the small size coffins, for the purpose of securing, by a peculiar mode of manufacture, of a level surface between the indented parts described.

7. The arrangement of fastening firmly, on the under side near the outer edge of the air-tight lid of a sheet-metal coffin, a cast-metal rim or its equivalent, for the purpose of strengthening this lid, and also for fitting into the groove in the rim F on the upper edge of the walls of the coffin, substantially as described.

8. The arrangement of fastening around the face-window on the under side of the air-tight lid of a sheet-metal coffin a cast-metal sash or rim, *m*, which receives and supports the face-glass, when it is cemented, in its proper place.

9. The arrangement of fastening permanently on the under side, near the outer edge of the sheet-metal blind *m* which covers the glass in the face-window of a sheet-metal coffin, a cast-metal rim, O, or its equivalent, for the purpose of strengthening and furnishing a means of securing the same to the outer lid which covers the air-tight joint, substantially as described.

10. The arrangement described, of two entire distinct separate sheet-metal lids.

DISCLAIMERS FILED.

24,668.—WILLIAM STEARNS.—*Improvement in Picker-Motion for Power-Looms*, granted July 5, 1859. Disclaimer filed June 30, 1873. Disclaims:

"The first and sixth clauses of the claim to the invention set forth in his said patent."

24,598.—MCCLINTOCK K. YOUNG, Jr.—*Harvesting-Machine*, granted June, 28, 1859; reissued to assignees CYRUS H. MCCORMICK and LEANDER J. MCCORMICK, May 17, 1870, No. 3,978. Disclaimer filed by inventor and assignees June 27, 1873. Disclaims:

"The second clause of claim of said reissue."

24,588.—JOSHUA C. STODDARD.—*Improvement in Hay-Spreaders*, granted June 28, 1859; reissued June 1, 1869, No. 3,461. Disclaimer filed June 26, 1873. Disclaims:

"That part of the claim in said specification which is in the following words, to wit:

"'9. The combination, with a hay-making machine, of rotating rake-teeth, adjustable relatively to their axis of rotation.

"'10. The combination, with a hay-making machine having rotating teeth, of a stop to cause the teeth to act as rakes.

"'11. Making one set of the adjustable rotating rake-teeth longer than the others for use as a hay-rake, as set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 1, 1873.]

6,735.—*Printing-Type.*—ANDREW LITTLE, New York, N. Y. Application filed June 20, 1873.

6,736.—*Printing-Type.*—RICHARD SMITH, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed June 16, 1873.

6,737.—*Cooking-Stove.*—WALTER S. STEVENSON, Philadelphia, Pa., assignor to THOMAS, ROBERTS, STEVENSON & CO., same place. Application filed June 4, 1873.

6,738.—*Carpet.*—JOHN T. WEBSTER, Falls of Schuylkill, Philadelphia, Pa., assignor to JOHN & JAMES DOBSON, same place. Application filed June 16, 1873.

6,739.—*Carpet.*—JOHN T. WEBSTER, Falls of Schuylkill, Philadelphia, Pa., assignor to JOHN & JAMES DOBSON, same place. Application filed June 16, 1873.

6,740.—*Carpet.*—JOHN T. WEBSTER, Falls of Schuylkill, Philadelphia, Pa., assignor to JOHN & JAMES DOBSON, same place. Application filed June 16, 1873.

6,741.—*Plaster Cast.*—FREDERICK S. BATCHELLER, Providence, R. I. Application filed June 16, 1873.

6,742.—*Picture-Frame Molding.*—STEPHEN GARRISON, Baltimore, Md. Application filed June 13, 1873.

6,743.—*Flower-Stand.*—JOSEPH E. MORRIS, Minneapolis, Minn. Application filed June 28, 1873.

6,744.—*Toy Bank.*—FRIEND W. SMITH, Bridgeport, Conn. Application filed June 20, 1873.

6,745.—*Cooking-Range.*—SAMUEL S. UTTER, Brooklyn, N. Y. Application filed June 7, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date July 1, 1873.]

1,340.—*Liquors, Wines, Bitters, Syrups, and Cordials.*—WILLIAM S. DUNHAM, New York, N. Y. Application filed June 23, 1873.

1,341.—*Playing-Cards.*—CHARLES K. PEVEY, Worcester, Mass. Application filed June 23, 1873.

1,342.—*Forks, Spoons, and Other Table Ware.*—C. B. ROGERS & BROTHERS, Meriden, Conn. Application filed June 25, 1873.

1,343.—*Soap.*—SHERWOOD & GENIN, Buffalo, N. Y. Application filed April 28, 1873.

1,344.—*Machine-Wound Bobbins or Spools for Sewing-Machine Shuttles.*—JAMES HERBERT BULLARD, Chicopee Falls, Mass. Application filed June 20, 1873.

1,345.—*Fertilizer.*—HUNT, RANKIN & LAMAR, Macon, Ga. Application filed June 14, 1873.

1,346.—*Sugar-Cured Hams.*—OAKFORD & COMPANY, Baltimore, Md. Application filed June 19, 1873.

1,347.—*Roofing-Slate.*—THOMAS W. PARRY, Lehigh township, Northampton county, Pa. Application filed June 14, 1873.

1,348.—*Playing-Cards.*—CHARLES K. PEVEY, Worcester, Mass. Application filed June 16, 1873.

1,349.—*Playing-Cards.*—CHARLES K. PAVEY, Worcester, Mass. Application filed June 25, 1873.

1,350.—*Files, Rasps, and Steels.*—THE SHEFFIELD FILE WORKS, Albany, N. Y. Application filed June 25, 1873.

1,351.—*Preparation for Toothache.*—RACHEL A. TRACY, Brooklyn, N. Y. Application filed June 24, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date July 1, 1873.]

ORIGINAL PATENTS.

140,336.—*Tool for Working in Leather.*—JAMES S. ALEXANDER, Pittsburg, Pa. Application filed March 5, 1873.

Claim.—A combined tool, consisting of a bit, *a*, and knife *e*, fitted with a handle, *f*, having an awl, *g*, the whole combined and arranged substantially as described and shown.

140,337.—*Compression-Cock.*—EDMUND ALLT, New York, N. Y. Application filed September 2, 1872.

Claim.—The combination of the shell A of the cock and its cap B with the soft-metal washer G and packing *s* contained in said washer, substantially as and for the purpose set forth.

140,338.—*Trunk-Fastener.*—JOHN ARNOLD, Newark, N. J.* Application filed June 2, 1873.

Claim.—1. The revolving lock-shaft C provided with the segmental projection *d*, operating in a recess on the inside of the casing A, as and for the purpose set forth.

2. In combination with the shaft C, constructed as described, the hasp B and casing A, all constructed and arranged as and for the purpose set forth.

140,339.—*Car-Wheel.*—ANSON ATWOOD, Brooklyn, N. Y., assignor of one-half his right to ISRAEL D. CONDIT, Millburn, N. J. Application filed June 10, 1872.

The body of the wheel is formed with alternate convex and concave projections and cavities. The tire is formed with its inner surface concave. Between the body and tire is interposed rubber on the convex surface of the body, and oakum within the concavities.

Claim.—1. The body of a car-wheel, its rim having alternate convex and concave sections, in combination with a tire having a concave inner surface.

2. The wheel when packed with rubber and oakum or other fibrous material in the alternate cavities between the tire and the body of the wheel, as herein described, and for the purposes herein set forth.

3. The combination of the tire A having a concave inner surface with the rim C having concave cavities and convex projections, by means of the packing, substantially as described, and for the purpose set forth.

140,340.—*Electrical Anemometer.*—FRANK S. BALDWIN, St. Louis, Mo. Application filed April 21, 1873.

Two wipers, connected with the wind-vane and insulated on opposite sides, are so arranged in connection with two insulated metallic circles, having projecting points, that when the vane moves in one direction metallic contact is made with only one set of points, and when in the opposite direction with only the other set. These contact-points being in circuit connection with electro-magnets, a swinging frame is caused to press against a clock-revolving cylinder or fillet at each contact, and thus print a record of the direction of the wind at such times.

Claim.—1. In combination with the indicating-arm A^2 of the wind-vane, the metallic plates *a a'* insulated on one side, constructed and arranged to form electrical contact as the arm moves in one direction, but not when it moves in the opposite direction, substantially as and for the purpose set forth.

2. In combination with the dial B of the wind-vane, the metallic circles *b* b^1, having projecting points b^2 b^2, for operating with the moving plates *a a'*, substantially as and for the purpose set forth.

3. The moving plates *a a'* and projecting points b^2 b^2, respectively connected by circuit-wires with the magnets I I', and their armature clutch-lever G^1, substantially as and for the purpose set forth.

4. The combination of a type-wheel, *d'*, lantern-wheel E, roller e^3, arm F, spring *f*, and swinging frame D with the clutch-lever G^1 and electro-magnets I I', for printing on the recording-cylinder C^1, substantially as and for the purpose set forth.

5. The swinging frame D and its type devices, as described, armature N, in combination with magnet K and its circuit connections, as and for the purpose set forth.

6. The magnet K, binding-screw M, vibrating lever L, in combination with rock-shaft G, as and for the purpose set forth.

7. The arrangement of the swinging frame D and its type devices, armature N, magnet K, lever L, binding-screw M, in combination with either circuits formed by the magnets I I', substantially as shown and described.

140,341.—*Apparatus for Steaming Hats.*—CHARLES W. BANTA, Orange, N. J. Application filed March 15, 1873.

The hats are supported upon a perforated shelf in a chamber, into which steam is admitted from a combined generating and superheating boiler. A circulation of water is kept up through the water-back by means of the water therein, when heated, being discharged into the steaming-chamber, from which the cooler water is conducted to the water-back.

Claim.—1. The system of pipes arranged in the described relation, consisting of the water-circulating pipes a^1 and a^2, and the steam-pipe E, in combination with a boiler, and with a steaming-chamber provided with perforated shelves for the purpose of subjecting hats or other objects to a bath of dry steam.

2. The boiler or water-back *a*, the described system of pipes, and the steaming-chamber, in combination with the water-gage b^2, substantially as and for the purpose set forth.

3. The boiler, the described system of pipes, the steaming-chamber, and the water-gage, in combination with the surface-pipe cock *c*, substantially as set forth.

140,342.—*Bag-Machine.*—NICHOLAS BIEDINGER, Cincinnati, Ohio. Application filed June 9, 1873.

The bag-tube is fed by an apron and projected between two drawing-rolls, which, moving in opposite directions, slip the upper ply back upon the lower ply, when the knives sever the two, leaving one end, as the feed takes place, projecting beyond the other.

Claim.—The described arrangement of two oppositely-rotating drawing-rollers, D E, between the delivery end of the apron A and the severing-knife K, said rollers having the coacting pads or protuberances F F', substantially as and for the purpose set forth.

140,343.—*Brick-Kiln.*—DANIEL BLOCHER, Baltimore, assignor of one-half his right to JONATHAN H. SEYMOUR, Hagerstown, Md. Application filed December 18, 1871.

Through the orifices H a poker may be inserted to agitate the burning fuel.

Claim.—1. A brick-kiln having a fire-place, I, constructed at the ends of the arches, said fire-place having grated fronts, all being constructed and arranged substantially as and for the purpose set forth.

2. In combination with fire-places in the arch of a brick-kiln, constructed as described, the holes or openings H, arranged as and for the purpose set forth.

3. In combination with the fire-places in the arch of a brick-kiln, as herein described, the protecting hoods G, arranged to operate as and for the purpose set forth.

140,344.—*Clothes-Wringer.*—WILLARD P. BROOKS and JOHN D. HARTZELL, Ozawkie, Kans. Application filed October 25, 1872.

The standards of the wringer are constructed to fit on a washing-machine and have the legs or clamps wide apart. Between the standards are the rollers, and on the shafts between the standards are spools and elastic bands. On each side of the rollers are boards with openings, serving to guide the clothes to the rollers.

Claim.—In a clothes-wringer, the combination and arrangement of the frame H, holding-legs F, rollers J K, spools M, bands L, and guide-board O, as shown and described.

140,345.—*Oil-Tool Extractor.*—SAMUEL BUCKLEY and PERLEY H. LAWRENCE, Lawrenceburg, Pa. Application filed March 5, 1873.

The rotating piston-stem of a hydraulic pump has attached to it a die or grapple, which is operated in unscrewing the joints of the tools in an oil-well.

Claim.—1. In an oil-tool extractor the rotating piston-stem of a hydraulic pump, in combination with a die or grapple affixed thereto, so as to be operated thereby in unscrewing the joints of the tools, substantially as set forth.

2. As a means for making connection with the tools in the well, the combination of the rotating piston-stem D^2 and a threaded screw-die, A, affixed thereto, substantially as set forth.

3. The rotating piston-stem D^2 with one or more wings, *d'*, in combination with the barrel D, with a corresponding number of wings, *d*, relatively arranged and operative under fluid pressure, substantially as set forth.

4. A port or ports leading from the pumping-chamber b^2, and entering the piston-chamber between two piston-wings, one of which wings shall be on a stem, and the other on the barrel, and one of which is capable of a rotary movement under the pressure so imparted, substantially as set forth.

5. In combination with the port or ports *e'*, entering the piston-chamber between two adjacent faces of the piston-wings, the port or ports *e* entering the same chamber between the other two or opposite faces of the same wings, substantially as set forth.

6. A series of spikes or projections of any known form forced outwardly against the walls of the well by water-pressure, substantially as set forth.

7. A series of spikes or projections capable of being forced out intermittently against the walls of the well, in combination with a hydraulic apparatus arranged to rotate a screw-cutting die or grapple, while the pump itself is, by means of the spikes or projections, secured against rotating, substantially as set forth.

8. The combination of pump, spikes, or projections, and rotating piston-case D, whereby, with the upward stroke of the plunger, the spikes will lose their hold on the walls of the well, and the pump and piston-case be free to rotate back, while the die A or grapple retains its hold on the tool or part of a tool below, substantially as set forth.

140,346.—*Cap or Cover for Bottles.*—JAMES G. CHILLINGWORTH, London, England. Application filed April 4, 1873.

To allow of the tin-foil used to seal bottles being removed with ease from the corks, the latter are first covered with clean tin-foil and then dipped in wax. By giving the wax a twist the whole covering can be removed.

Claim.—A cap or covering for the corks of bottles, consisting of tin-foil and wax or composition, applied in the manner and for the purpose specified.

140,347.—*Drop-Light for Chandeliers.*—ROBERT CORNELIUS, Philadelphia, Pa. Application filed March 11, 1873.

Within a box upon the end of the supply-pipe is placed a rigid collar perforated to receive the fluted sliding pipe. A disk, similarly perforated, is placed below the collar, and is governed by a coiled spring. The sliding pipe is, by combined action of spring, disk, and collar, clamped in place. By turning sliding pipe against the action of spring, it may be moved up or down.

Claim.—The combination, in a chandelier, of the sliding pipe C, the spring I, the friction-collar G, and disk E, arranged, combined, and operated substantially as hereinbefore set forth.

140,348.—*Drop-Light for Chandeliers.*—ROBERT CORNELIUS, Philadelphia, Pa. Application filed April 1, 1873.

Upon the end of the main pipe is a core-box containing a screw-threaded conical core. Inside this core a divided nut is operated by the polygonal sliding pipe in such manner that, by turning in one direction, the pipe is unclamped and may be slid to required elevation, and the reverse motion will firmly clamp the pipe in place.

Claim.—The combination and arrangement, in a chandelier, of the pipe E, the sliding pipe B, the collar D, the cone-bed box C, and the cap G, formed, combined, and operating for the purposes and in the manner hereinbefore substantially set forth.

140,349.—*Railroad-Car Brake.*—GEORGE W. CROWE, Cincinnati, Ohio. Application filed September 11, 1872.

To a bar which is pivoted to the beam of the truck the brake-levers are pivoted. Power being applied to one of the brake-shoes, the same is forced against the wheel, and the latter tends to carry the shoe in the direction of its revolution, which raises the shoe and depresses the brake-shoe, which is pivoted to the opposite end of the lever.

Claim.—In combination with post B, cords or chains *c c'*, lever C, and brakes G G', the pivoted levers H H', and auxiliary brakes I I' J J', arranged to operate substantially as and for the purpose specified.

140,350.—*Funnel.*—WILLIAM B. CROWTHER, Philadelphia, Pa. Application filed April 22, 1873.

Two funnels, one placed within the other, are united by a curved flange projecting outwardly from the inner funnel so as to leave a continuous air-space between the two. At the upper end of the inner funnel are arranged inwardly-projecting nozzles, from which is discharged any liquid that may be forced up through the air-passages.

Claim.—The improved funnel herein described, composed of cups *a* a^2 and tubes *b* b^2, united by a curved marginal flange, *g*, on the inner cup, embracing the upper edge of the outer cup, the inner cup being further provided with inwardly-projecting vents *s f*, (one or more,) for the purpose set forth.

140,351.—*Shifting Top for Buggies.*—ROBERT C. DUHL, Scott township, Columbia county, Pa. Application filed May 22, 1873.

The shifting seat, which is designed to support the top, fits into a recess in the permanent seat, and can be removed at pleasure.

Claim.—The movable or shifting seat A, having false bottom *a a*, bolts *b b b*, or equivalents, in combination with permanent seat B, the whole constructed to operate substantially as and for the purpose set forth.

140,352.—*Fire-Proof Tile-Floor.*—WEAR L. DRAKE, Evanston, Ill. Application filed December 3, 1872.

The hollow tiles meet above and below the supporting-beam, and at the same time leave an air-space to protect the metallic girder from the heat. A tension-rod ties the chord of the arch and resists thrust.

Claim.—1. The hollow tiles A, so constructed as to form an air-chamber, *b*, inclosing the upper and lower edges, or either of them, of the joists B, substantially as and for the purposes described.

2. The arrangement of the hollow tiles A, constructed as described, with the joists B, and tension-rods C, substantially as set forth.

140,353.—*Cultivator.*—REUBEN ELLWOOD and RICHARD L. PITCHER, Sycamore, Ill. Application filed December 7, 1872.

A frame converging forward is attached to the axle of a pair of carrying-wheels. On each side descends a sleeve holding a rod rigidly fixed to the front end of each drag-bar. To the top of each rod a horizontal cross-bar is fixed, having a slotted plate on its rear end. The plate of each drag-bar can be connected by a lateral rod or be disconnected for independent adjustment. The drag-bars are raised by chains and levers pivoted on segmental racks, between the teeth of which a pin on the lever is held by a spring. The chains are attached not directly to the drag-bars, but to horizontal arms pivoted at their rear ends thereto.

Claim.—1. The combination and arrangement of the beams G, rods N, and brackets M with the arms *a*, provided with the slot or holes *c* and rod *d*, substantially as and for the purposes specified.

2. The combination and arrangement of the beams G, rods N, brackets M, with the arms *a*, rod *d*, and locking device *e f*, substantially as described.

3. The swing-bar K, in combination with a beam, G, and chains L, substantially as specified.

4. The combination of the rack with the bracket A by spring *i* and pin *j* of the lever, constructed and operating substantially as described.

5. The foot-rest I, when provided with projections above and below the plow-beam, in combination with the clamp *n*, so that it can be both vertically and laterally adjusted, substantially as described.

140,354.—*Reservoir Cooking-Stove.*—ANDREW B. FALES, Troy, and HILAN SEABURY, Albany, N. Y.; said SEABURY assignor to said FALES. Application filed April 3, 1873.

The boiler has an indentation in its lower front side, and this is adapted to coincide with the opening in the rear stove plate. A damper journaled in the middle flue-plates can direct the draft down to the said opening into the chamber formed by said indentation, and thence to the exit-pipe, or cause the smoke, &c., to pass through the usual stove-flues out of contact with the boiler.

Claim.—The boiler-receptacle F herein described, one side of which forms a portion of the rear wall of the stove, and having a depression or draft-passage, I, for the oscillation of the damper G, in combination with each other and with the flues C C and D, all constructed and arranged substantially as described, for the purpose specified.

140,355.—*Machinery for Making Plow-Handles.*—ARTHUR B. FARQUHAR, York, Pa. Application filed March 7, 1873.

The material from which the handles are to be made is secured to a sliding carriage and passed between suitable guides over rotating cutters, which give the desired form to the handle.

Claim.—1. A form or holder having self-adjusting spring-guides F F and clamp D, when constructed and operated substantially as and for the purpose set forth.

2. The combination of the form or holder A A with the table I, having cleats M M and self-adjusting guide-springs H H, when constructed and operating substantially as and for the purpose set forth.

3. The combination of the form A A, the table I, and the cutter-heads J J, when all constructed and operated substantially as and for the purpose set forth.

140,356.—*Ironing-Table.*—JACOB FRANKENFIELD and WILLIAM E. KICHLINE, Bethlehem, Pa. Application filed February 13, 1873.

An ironing-board arranged upon a pair of legs at one end, with a brace or support leading from them with a foot, and an adjustable brace or support leading from the other end of it, and held in connection with the legs by a notch in a cross-piece, by which the two legs are supported, and the parts sustained by a cord from them to the supporting-braces.

Claim.—The combination of the board A, legs B B, oblique supports C C, and brace or braces D D, substantially as herein specified.

140,357.—*Guide and Core-Barrel for Revolving Rock-Drills.*—GIDEON FREDERICK, Pottsville, Pa. Application filed May 26, 1873.

A tubular guide and core-barrel for a revolving rock-drill, the outer surface of which guide is grooved and armed with diamonds or other hard substances.

Claim.—1. The above-described revolving rock-drill guide and core-barrel, forming a part of the drill-rod, and constructed with external grooves, substantially as and for the purpose set forth.

2. The above-described revolving rock-drill guide and core-barrel, whose outer surface is armed with diamonds, substantially as and for the purpose set forth.

140,358.—*Toy Money-Box.*—RUSSELL FRISBIE, Cromwell, Conn., assignor to the J. and E. STEVENS COMPANY, same place. Application filed March 31, 1873.

The front and back are provided with knobs which fit into a socket in the roof. When thus fitted, drawing the two bases toward each other locks the roof in place.

Claim.—1. The latches or hooks *c d* attached to the sides *a b*, for the purpose of holding on the roof, substantially in the manner herein described.

2. The roof and sides, constructed as described, in three pieces, *a b c*, and secured by one screw, substantially as herein specified.

3. The combination of the socket *g*, the recess *i*, and the screw *h* with the sides *a* and *b*, substantially as herein described.

140,359.—*Step-Ladder.*—CHARLES FRIZELL, Boston, Mass. Application filed April 10, 1873.

The sides of the ladder are made in two parts, which are connected at intervals by short bars or rungs, from which extend diagonal braces supporting the steps.

Claim.—1. The sides A, when constructed with bars *a a* and tie-rods *b*, substantially as and for the purposes specified.

2. The combination and arrangement of tie-rods *b*, braces *d*, and steps *c*, substantially in manner as and for the purposes specified.

140,360.—*Smoking-Tube.*—AUGUST GEDIES, New York, N. Y. Application filed March 28, 1873.

A plug, having an elastic ring for inserting in the mouth-piece and for receiving the outer shell, has a recess for receiving a cigar and a bearing for receiving a case into which tobacco may be placed for smoking. The outer end of the exterior case is perforated to admit air. The case is also pierced near its rear end for the same purpose.

Claim.—The combination, with the mouth-piece B, of the plug A, having chamber *a* and elastic ring *n*, smoking-tube C, and casing D, with ventilating-holes *v* and *s s*, substantially as and for the purposes herein set forth.

140,361.—*Stirrer for Maple-Sugar.*—FURMAN B. GRAVES, Cortlandville, N. Y. Application filed March 8, 1873.

Claim.—The combination of the removable shaft *j* with the stirrers *k k* and the pail or tub *d*, when placed in a portable frame, substantially as and for the purpose above described.

140,362.—*Sewing-Machine Table and Chair Combined.*—LAURENCE N. B. GRAY, Boston, Mass., assignor of one-half his right to EDWD. B PAUL, same place, and DEXTER A. REED, New York, N. Y. Application filed May 19, 1873.

The seat has four curved legs, the same being hinged thereto. The front ones are connected to the treadle-shaft by a pin or bolt. The height of the seat is adjusted, by means of a curved notched bar which is attached to the round of the front pair of legs and engages with the round of the back pair. The back is made so as to fold over the seat, and the whole chair can be folded closely under the table when not required.

Claim.—In combination with a sewing-machine top, A, cross-piece C, and treadle-shaft D, the folding-chair, composed of curved legs E E' and F F', pivoted to the seat G and connected together by rounds N and M, curved arm L provided with notches P P P, the seat G being raised or lowered and held in position by said arm L, the hinged folding back H, spring I, and set-screw J, when constructed and arranged to operate in the manner described, as and for the purposes set forth.

140,363.—*Chair and Step-Ladder Combined.*—BENJAMIN F. GREEN, Syracuse, N. Y. Application filed June 6, 1873.

The ordinary chair and step-ladder has a spring-clamp and dowels with serrated plugs to prevent the ladder from slipping.

Claim.—The apex spring-clamp *d e*, dowels *i j*, and serrated plugs *k*, as herein shown and described, in combination with the hinged sections A *a* B *b* of the chair and ladder, as and for the purpose specified.

140,364.—*Barrel-Transporter.*—JAMES GRIFFING, Ipswich, Mass. Application filed June 12, 1873.

Two curved metallic bars hinged together at one end and provided with handles embrace the barrel below its middle, and fastened by a hasp and latching-stud to admit of the barrel being easily raised upward or moved from place to place.

Claim.—The barrel-transporters, substantially as described, consisting of the curved and hinged jaws A B, the handles C C, the connection-hasp D, and the latching-stud E, all arranged and combined essentially as specified.

140,365.—*Cotton-Gin.*—BENJAMIN D. GULLETT, Amite City, La. Application filed April 14, 1873.

A series of blades are arranged edgewise beneath the revolving brush, in lines parallel to the axis of said brush, and in a manner to form a space which converges to and diverges from the middle blade.

Claim.—The arrangement of blades *g*, or their equivalent, with relation to the revolving brush of a saw-gin, substantially as described, for the purpose set forth.

140,366.—*Roofing Composition.*—WILLIAM H. HAIGHT and THOMAS S. GLADDING, Leavenworth, Kan. Application filed March 18, 1873.

Candle-tar, thirty gallons; rubber solution, five gallons; glycerine, four gallons; water-cement, twenty-five pounds. Mix over a slow fire.

Claim.—A compound composed of the ingredients, and substantially in the proportions and for the purposes above set forth.

140,367.—*Rotary Fluid-Motor.*—HENRY Q. HAWLEY, Albany, N. Y. Application filed March 7, 1873.

The loose shouldered pistons are placed in shouldered piston-chambers, which communicate with each other at their inner ends by a groove, and at their outer ends are provided with loose metallic packings. The actuating fluid has free access to these chambers, and presses the packings outward to the case and the pistons themselves back from the case. The ends of the wheel are provided with grooves in which is loose metallic packing, which is kept in position by the actuating fluid entering the groove behind the packing through apertures in the face of the wheel.

Claim.—1. In a rotary fluid-motor, an inner wheel carrying pistons in separate chambers communicating with each other, but not with the passage containing the actuating fluid, when said wheel revolves concentrically with a portion of the periphery of the case and eccentrically with the remainder, substantially as and for the purpose described.

2. The loose shouldered pistons P and the shouldered chambers S operating together, in combination with an exterior case, substantially as and for the purpose described.

3. The pistons P constructed with chambers and loose packing, as described, when combined with an inner wheel, operating substantially as and for the purpose set forth.

4. The combination of the grooved case A with the eccentric wheel W carrying the loose pistons P, said wheel and pistons having chambers, shoulders, and pins, substantially as described.

140,368.—*Side-Stick for Printers' Galleys.*—ROBERT B. HINDLE, St. Louis, Mo. Application filed November 29, 1872.

The side bars are linked together at their ends so as to move freely, and are sustained a proper distance apart by two dogs pivoted to one bar and engaging in a rack upon the other.

Claim.—The combination of the side-bars A A', pivoted arms *a a'*, swinging arms B B', rack C, grooves *b b'*, all arranged to form an improved side-stick, substantially as set forth.

140,369.—*Book-Support.*—ROBERT B. HINDLE, St. Louis, Mo. Application filed November 29, 1872.

Two bars linked together at their ends are adjusted the proper distance apart by two dogs pivoted to one, and, engaging a rack on the other, support the book. The upper bar carries a clamping device, which slides in a guide-slot therein.

Claim.—An improved book support and holder consisting of the combination of upright E, slide *s*, swinging arm F, set-screw G, swivel-foot *g*, supporting-bar B, grooves s^1 s^2, pivoted arms *a a'*, rack D, swinging arms C, and standard A, all constructed to operate as and for the purpose set forth.

140,370.—*Boring-Bit.*—STEPHEN HIPKINS, Jr., South Wheeling, W. Va., assignor of one-half his right to RALPH HEATHERINGTON, same place. Application filed January 8, 1873.

The main cutters B have secondary cutters D arranged on their edges; the central cutter C has the secondary cutters on opposite edges.

Claim.—1. In a boring-bit, the adjustable supplemental or clearing cutters D, in combination with the main cutters B, for the purpose described.

2. In a boring-bit, the combination of the main cutters B and the bit-shank, consisting of the parallel straight-holding ridges *a*, with the discharging spiral ribs *b*, and grooves *c d*, constructed as and for the purposes described.

3. In a boring-bit, having the main cutters arranged upon its shank, as described, the center projecting cutter *e*, having adjustable supplemental or clearing cutters D arranged upon its opposite faces, and to project from its opposite edges, as described.

4. The combination, in a boring-bit, of the straight and spiral ribs *a b*, grooves *c d*, main cutters B, the center cutter *e*, and the adjustable clearing cutters D and holders E, the several parts being constructed and arranged for operation as described.

140,371.—*Spike-Extractor.*—AMBROSE F. JACKSON, Minneapolis, Minn. Application filed January 25, 1873.

The lever B has two fulcrum-points, *a a'*, which bear, respectively, on pins *a* and *a'* in the standard A.

Claim.—The spike-puller, consisting of the block A having two fulcrums, *a a'*, and the lever B recessed at its end to form jaws, and provided with the guide-slot *z*, the ends of which, *z'* and *z''*, form seats for said fulcrums, substantially as specified.

140,372.—*Tassel.*—GEORGE E. JENKINS, Philadelphia, Pa., assignor to OGDEN, MILSTED & Co., same place. Application filed May 14, 1873.

The blocks forming the tassel are fitted closely to the metallic stem, and are confined thereon by the adjustable fastening. The curtain-cord is attached at the eye.

Claim.—The single metallic stem or bar F with its eye or opening *f'*, and adjustable removable fastening at *f''*, in combination with a series of separate blocks having central bores respectively to correspond in diameters with the diameter of the said stem or bar, substantially as and for the purpose hereinbefore set forth and described.

140,373.—*Shirt-Bosom Supporter.*—GEORGE F. JOHNSON, Philadelphia, Pa., assignor of two-thirds his right to WASHINGTON G. WALTER and D. W. J. HUTTON, same place. Application filed May 3, 1873.

Frame for supporting a shirt-bosom.

Claim.—The frame A, consisting of the vertical side pieces B B, the horizontal piece D, and horizontal neck-piece E, in combination with the central strip or strips C C and horizontal piece or pieces D' D', substantially as and for the purpose set forth.

140,374.—*Hose-Coupling.*—JOSIAH W. KENNEDY, St. Louis, Mo. Application filed April 3, 1873.

An internally screw-threaded sleeve is slipped over the hose and a friction-ring after it. An internal tube having a raised rim is then inserted in the hose and the other ring introduced between the sleeve and hose; the sleeve is then screwed tightly onto the screw-nut.

Claim.—1. The internal tube-section S, having a raised rim on its outer surface, in combination with the sleeve K and screw-threaded nut or rim D, as and for the purpose set forth.

2. The combination and arrangement of the internal tube-section S, having a raised rim on its outer surface, with the sleeve K, screw-threaded rim D, and friction rings B and C, as and for the purpose set forth.

140,375.—*Apparatus for Cooling Air.*—THOMAS D. KINGAN, Indianapolis, Ind. Application filed June 18, 1873.

Several boxes containing ice and salt are connected with each other by tubes; and a pump draws the brine from a box at one end of the series and forces it up into a box at the other end, causing a continuous circulation for equalizing the temperature.

Claim.—The combination of the pump *d*, the tubes *c' c* and *e' e*, and the tubes *b* and *b*, with the refrigerators *a*, *a*, and *a*, for the purpose and in the way substantially as set forth.

140,376.—*Card-Grinding Machine.*—THOMAS C. KIRKHAM, Ancaster, Canada. Application filed March 22, 1873.

The traversing grinding-wheel is capable of adjustment to varying lengths of card.

Claim.—1. The slotted bar L, carrying the shift *m* for adjusting the belt I to varying lengths for the purpose of regulating the travel of the grinding-wheel, substantially as shown and described.

2. The arrangement of the adjustable collars D D in combination with the shaft A and movable boxes *c c*, to which the traversing motion is attached, substantially as and for the purpose specified.

140,377.—*Lock for Doors, &c.*—THEODORE KROMER, Freiburg, Grand Duchy of Baden. Application filed April 17, 1873.

The bolt is held in the locked position by a hinged latch, the free end of which engages with a projecting spring-pin arranged in the bolt. The latch is provided with a tongue that enters the true notches in a series of sliding pins, when properly adjusted, and releases the bolt. The outer ends of the notched sliding pins are made conical, so as to fit into corresponding recesses in the pins of the push-key.

Claim.—1. The notched or grooved sliding pins *a*, with tapering or conical ends a^1, operating in combination with the key *c*, with pins c^1 having conical or tapering recesses, substantially as and for the purposes hereinbefore described.

2. The spring-pins *d* operating in combination with the sliding pins *a*, substantially as and for the purposes hereinbefore described.

3. The sliding bolt *f* with spring-stud f^1, and stud or projection f^2, operating in combination with the hinged latch *e* with inclined face e^2, substantially as and for the purposes hereinbefore described.

4. The spring *h*, operating in combination with the sliding bolt *f*, spring-stud f^1, and hinged latch *e*, substantially as and for the purposes hereinbefore described.

140,378.—*Rotary Steam-Engine.*—JOHN LEAVER and JOHN WOOK, Canal Fulton, Ohio. Application filed April 26, 1873.

The revolving cylinder is provided with removable concave-faced piston-blades in its rim, and combined with a case on which is a steam-chest divided by a partition, to make the engine reversible.

Claim.—The combination, with a cylinder having a steam-chest thereon, of a concentric piston-wheel having removable piston-blades, with concave faces secured to the rim thereof, the several parts being constructed and arranged substantially as and for the purpose specified.

140,379.—*Combined Shirt-Bosom Support and Shoulder-Brace.*—SAMUEL F. LONG, Cleveland, Ohio. Application filed May 16, 1873.

A combined shoulder-brace, shirt-bosom support, and chest-protector.

Claim.—The springs C D and E and A B, as arranged, in combination with the covering *f* and elastic straps F, G, and H, substantially as and for the purpose set forth.

140,380.—*Washing-Machine.*—SAMUEL MARTIN, Parshallville, Mich. Application filed March 14, 1873.

Is constructed with a bed of rolls working on friction-wheels within a box of ordinary form, having a stop to limit its action, which move in connection with a corrugated cylinder, the journals of which pass through each side of the box into sliding uprights connected with springs below its bottom, by which the tension is governed, the slides having a cross-bar on which the springs rest.

Claim.—The arrangement of the movable bed of rolls H H and I I, with its stop N, in combination with the corrugated cylinder, the journals of which pass through the sides of the box, and connect with the sliding uprights K, supported in brackets connected by the cross-piece O, which sustains the springs V, to give tension to the cylinder E, as shown and described.

140,381.—*Reed-Organ Stop-Action.*—ISAAC T. PACKARD, Fort Wayne, Ind. Application filed March 31, 1873.

Draw-stop action, consisting principally of a lever, to fully open one stop, and at the same time to only open the other a very little.

Claim.—In combination with the stop-valves *a* and *b*, the sliding bar A provided with the cams D and E and the pin *c*, constructed and arranged substantially as and for the purpose described.

140,382.—*Thill-Coupling.*—ALEXANDER J. PATTERSON, Genesee, assignor of one-half his right to EMERY W. OSBORNE, Rochester, N. Y. Application filed April 23, 1873.

The clip-bolt is conical, as is also the thill eye, that wear may be compensated for. Between the thill-eye and the nut is a follower, and the coupling is tightened by the nut being screwed against the follower and on the clip-bolt, suitable packing being interposed.

Claim.—The coupling-head E, having conical pin *a*, thill-eye D, packings *d d*, follower G, jam-nut H, and stay-pin *h*, combined and arranged to operate in the manner and for the purpose specified.

140,383.—*Process for Preparing Iron Chips, &c., for Re-Melting.*—ARIEL PEVEY, Portland, Me. Application filed June 28, 1872.

Iron chips, &c., are moistened in a solution of lime-water and beer-returns and pressed into a core-box, provided with radial ribs upon its bottom and sides, until the same is full, when the core is removed from the box and allowed to dry, after which it is placed into a mold and melted iron poured upon it, which enters the grooves formed by the ribs upon the core-box, and thereby incloses the core in a cast iron netting or basket.

Claim.—1. The method herein described of forming a core or block of iron chips, scraps, or other small pieces or particles of iron, for the purpose herein set forth.

2. The method herein described of forming a core or block of iron chips, scraps, or other small pieces or particles of iron by wetting said pieces or particles of iron with a solution of lime in water, and then pressing said pieces or particles into molds, for the purpose herein described.

3. The method of uniting pieces or particles of iron into a core, cake, or block, by wetting said pieces or particles of iron with a liquid solution of lime, and then pressing them together, as and for the purpose herein described.

140,384.—*Harness-Pad.*—MARTIN W. POND, Elyria, Ohio.—Case A. Application filed December 2, 1872.

The yoke is hinged in its center and rigidly connected to the pad.

Claim.—1. In combination with a jointed yoke and separate fulcrum-pads, as described, the ends F provided with angular projections *b*, in the manner and to obtain the advantages herein stated.

2. The harness-tree having the yoke A' A' rigidly connected to the pad-plates *a*, independent lever-pads B B', the central hinge or joint A, and the set or cut back of the yoke, the several parts being constructed and arranged for use as described.

140,385.—*Harness-Pad.*—MARTIN W. POND, Elyria, Ohio.—Case B. Application filed December 2, 1872.

A center-cap to connect the tree secured by a staple, which serves as a loop for the back-strap and likewise forms the hinged joint. The tree-plates are concaved to adapt themselves to the pad. The upper flanges of the tree-plate have turned-over lips at its lower ends to hold the back-band in proper position.

Claim.—1. The center cap and flanged plates A F, secured and held in position by the staple D, which forms the pad-joints, and the loop E for the back-strap, as described.

2. The flanged pad-plates F, having a concave form in their cross-section, as and for the purpose described.

3. The turned-over lips F' of the flanged plates F, as and for the purpose described.

4. The coach harness-pad having the jointed flanged cap A, flanged concave pad-plates F with turned lips F', and the back-band in two separate and distinct sections B B', the several parts being constructed and arranged for use with a double fulcrum-pad, C C, substantially as described.

140,386.—*Log-Turner.*—ISAAC W. POOL, Eau Claire, Wis. Application filed April 19, 1873.

A chain, to which motion is given by a system of gearing, is provided with teeth and placed upon an oscillating frame, by which it is brought in contact with the log to be moved, through the agency of a lever and pair of segmental gears.

Claim.—1. The spurred chain C, applied to a log mover and turner, B, which is applied loosely on a shaft, *g*, in combination with wheels *c c'*, substantially as described.

2. The toothed segment *b* on the vibrating log mover and turner B, in combination with the toothed segment *h* on the shaft *i* of lever F, substantially as described.

140,387.—*Bed-Bottom.*—EDMUND W. QUINCY, Peoria, Ill. Application filed February 5, 1873.

A frame is formed by attaching the outside slats permanently to the cross-bar. Upon the cross-bar are blocks between which the slats are held. Underneath the whole are four India-rubber cylinders, clamped to the cross-bar by metallic straps.

Claim.—The construction and arrangement of the frame A A B B, slats B B, &c., blocks a a, &c., straps b b b b, &c., and rubber cylinders C C, &c., at corner of the frame, as described.

140,388.—*Pruning-Shears.*—JOHN G. ROGERS, Berrien county, assignor of one-half his right to S. S. WHITE, Michigan City, Mich. Application filed May 13, 1873.

These shears are operated by a hand-lever pivoted at one end to the long shank or pole upon which the shears are mounted. The pendent link which connects this hand-lever to the shear-blade is adjustable vertically, so as to allow a greater spread of the shears to grasp a large limb.

Claim.—The above-described pruning-shears, consisting of the blade A with its hook B, blade C with its elbow-shaped shank D, adjustable connecting-bar E with notches a a a, and forked lever F, as and for the purposes hereinbefore set forth.

140,389.—*Device for Attaching Hubs to Axles.*—OSCAR F. SHEPARD, Cincinnati, Ohio. Application filed September 25, 1872.

A detachable collar is screwed upon the axle against a fixed collar, and a cap which clasps the collar is screwed upon a band on the inner end of the hub.

Claim.—The combination of the axle A B C having a screw-thread at b, detachable collar c, hub D having the band e, and cap E, substantially as and for the purpose specified.

140,390.—*Process of Hardening Edge Tools.*—LEVERETT W. STUART, Hawley, Pa., assignor to GUSTAVUS AMES, Rochester, N. Y. Application filed June 27, 1872.

Claim.—The process of hardening edge tools, by applying an edge thereof under pressure against a revolving smooth-faced metallic wheel, as described.

140,391.—*Treating Offal and Manufacturing Gas.*—JAMES TURNER, Chicago, Ill. Application filed December 27, 1872.

The gas and vapors from the rendering-tank are passed through a condenser, the waters allowed to escape, and the gas carbureted by passing through a hydrocarbon.

Claim.—The mode herein described of suppressing the offensive odors arising from rendering animal substances and utilizing the gases therefrom, by separating the gases from the moisture and carbureting the same, substantially as specified.

140,392.—*Extension-Table.*—WILHELM VALENTIN, New York, N. Y. Application filed June 5, 1873.

The extension-leaves are hinged together, and one of them is pivoted to the frame of the table. When not in use they are swung under the closed table-top. When the table is extended the leaves are turned over on the pivots and unfolded; then the leaves are flush with the stationary top. The leaves extend longitudinally on the table, and the width of the two leaves corresponds with the width of the table.

Claim.—In combination with the frame A and sliding leaves B B, the extension-leaves F G, hinged together and supported on pivots n n, attached to one of the leaves, and turning in cross-bars E E fast to the frame A, substantially as and for the purpose set forth.

140,393.—*Platform for Stoves.*—WILLIAM WESTLAKE, Chicago, Ill. Application filed August 16, 1872.

An improvement on a former patent to same inventor. The upper edge of the platform has a bead spun over a wire.

Claim.—The platform for stoves herein described, consisting of the interior A covered by the two pieces of metal a b, and having its upper edge protected from injury, substantially as and for the purpose set forth.

140,394.—*Joiner's Work-Bench.*—HENRY WHITE, Chicago, Ill. Application filed January 16, 1872.

The standards for the support of the top are framed together at each end, as at A. The top is made with side pieces E and under battens F F, to rest on and around the standards, to which they are fastened by buttons N at the ends.

Claim.—1. The standards A, when constructed in the manner and for the purposes set forth.

2. The top D, in combination with the standards A, when used in the manner and for the purpose set forth.

3. The pins H and buttons N, in combination with the standards A and top D, when constructed in the manner specified, and for the purposes set forth.

140,395.—*Mallet.*—SILAS M. WILLIS, Athol, Mass. Application filed March 15, 1873.

The face has a skin of rawhide cemented to it.

Claim.—A mallet, A, with a skin of rawhide cemented to its face, substantially as set forth.

140,396.—*Combined Harvester and Thrasher.*—JAMES HAZEL ADAMSON, Auburn, Australia, assignor to WILLIAM TAYLOR and M. STUART TAYLOR, Alameda, Cal. Application filed May 14, 1872.

A combined harvester and thrasher has two concentric revolving conical screens capable of vertical adjustment, the inner of which screens has both spiral and radial vanes to act as elevators.

Claim.—1. The cone D, when constructed of two or more concentric perforated or gauze tubes, in combination with the conveying tube E, beaters F, and comb P, constructed and operated substantially as and for the purpose set forth.

2. The concave N with its series of lugs o o, in combination with the beaters F F with their corresponding slots, and the comb P, all constructed and arranged as described.

3. The comb P, having a slot between each alternate tooth extended, for the purpose of allowing the beaters to operate on the heads successively, as specified.

140,397.—*Blower for Gas-Engines.*—JOSEPH H. BEAN, Cincinnati, Ohio. Application filed April 21, 1873.

A continuous blast is produced by mounting two bellows upon the same base, their nozzles opening into a common air-chamber and provided with check-valves. Each bellows is operated by a cam-wheel acting on a spring attached to the upper board. A cam-block is placed behind the spring to enable the bellows to expand without a sudden shock. The spring actuates a lever attached to the inlet-valve stem, insuring the proper working of valve.

Claim.—1. In a blowing-machine of substantially the described construction, the combination of the cam-wheels, the spring, and the lever controlling the valve, substantially as described.

2. In a blowing-machine of substantially the described construction, the combination of the cam-wheels and regulating cam-block, substantially as described.

3. In a blowing-machine of substantially the described construction, the combination of cam-wheels, spring-lever controlling the valve, and cam-block, as described.

140,398.—*Wash-Boiler.*—ARP BECKER, Peotone, Ill. Application filed March 28, 1873.

A wash-boiler constructed with a detachable bottom resting upon projections formed upon the lower end of the conductors and supports at each corner, and having floating valves covering apertures to control the supply of water and steam. The conductors are arranged on the ends and sides of the boiler, with closed tops and perforated sides.

Claim.—The construction and arrangement of the false bottom C provided with the arched ribs b b b, the openings c c, the cages d d, the floats D D, and the channel-ways C', with relation to the tubes B in the boiler A, substantially as shown and set forth.

140,399.—*Saw-Filing Machine.*—WILLIAM B. BIZZELL, La Grange, N. C., assignor to himself and W. H. HARDEE, same place. Application filed April 26, 1873.

The file-holder is capable of fixed adjustment at any angle. The file moves in guides, and can be adjusted vertically for various lengths of teeth. The clamp is graduated lengthwise for regulating the movement of the file-holder.

Claim.—The clamp A, rule D, clamps E, set-screw F, guide-frame G, set-screw H, file-handle I, and adjustable screws L, in combination with each other, substantially as herein shown and described, and for the purpose set forth.

140,400.—*Nailing Boots and Shoes.*—LYMAN R. BLAKE, Brooklyn, N. Y., and ABA S. LIBBY, Lawrence, Mass. Application filed August 14, 1872.

Claim.—1. Nails, cut from wire of lenticular section, with the one-sided points, substantially as shown and described.

2. Soles and uppers of boots and shoes united by side-pointed nails, the form of which points causes them to upset or clinch as they strike the anvil-surface upon which the boot or shoe is supported.

3. Soles and uppers of boots and shoes united by means of side-pointed nails, the form of which points causes the nails to assume inclined positions as they enter the soles, substantially as described.

4. Soles and uppers of boots and shoes united by side-pointed nails, the nails being alternately pointed upon opposite sides, and being thereby caused to assume opposite inclinations as they enter the sole.

140,401.—*Water-Wheel.*—OLIVER J. BOLLINGER, York, Pa. Application filed May 24, 1873.

The lug of a pivoted or hinged gate of a water-wheel is made with a vertical hole to receive the stud, and a transverse hole to receive the wedge-key. The cross-headed stud is made with a transverse notch to receive the key for securing it detachably to the lug of the pivoted or hinged gate.

Claim.—1. The lug B of a pivoted or hinged gate of a water-wheel, made with a vertical hole to receive the stud, and a transverse hole to receive the wedge-key, substantially as herein shown and described.

2. The cross-headed stud C, made with a transverse notch to receive the key for securing it detachably to the lug B of the pivoted or hinged gate of a water-wheel, substantially as herein shown and described.

140,402.—*Toy.*—LAURANCE BRYAN, New York, N. Y. Application filed April 12, 1873.

A trundle-wheel has bearings in the end of a push-rod or handle. Upon the handle is secured a small bellows, in the top of which is a whistle operated by the alternate inflation and collapse of the bellows. A pitman connects bellows-handle and wheel.

Claim.—A mechanical toy whistle composed of the frame D, handle B, bellows E F, whistle C, wheel A, wrist-pin G, and connecting-rod H, as shown and described.

140,403.—*Harrows.*—ALEXANDER C. CARNES, Smithville, Tenn. Application filed November 11, 1871.

The side-pieces have the general form of sled-runners, and are provided with a series of oblique notches upon the lower edge, into which are fitted cross-beams, and to the beams are bolted flat spring-teeth, projecting rearwardly.

Claim.—The longitudinal timbers A having notch a', the inclined cross-timbers B, and the teeth C, combined substantially as and for the purpose described.

140,404.—*Vise.*—DANIEL S. COE, New Hartford, Conn., assignor to CHAPIN MACHINE COMPANY, same place. Application filed March 1, 1873.

The inner ends of the right and left screw-rods are supported by bearings in a yoke, which also holds and preserves the parallelism of the other moving parts.

Claim.—The combination of the yoke G with the bar C, the right screw D and the left screw F, substantially as herein shown and described.

140,405.—*Bolt and Rivet Cutter.*—DE LANCY D. CONN and PETER POLDER, Panama, N. Y. Application filed April 30, 1873.

A device for holding rivets to be cut is pivoted to an ordinary bolt-cutter, and can be turned to one side when the bolt-cutter is used.

Claim.—The rivet-holding device E attached to the bolt-cutting device, consisting of the lever B, eccentric C, and cutter D, and operating substantially as described, and for the purpose set forth.

140,406.—*Cloth-Holder for Sewing-Machines.*—LOUIS ALADIN DUPRÉ, Donaldsonville, La. Application filed May 31, 1873.

The holders are to be applied to the edges of fabrics to be united on a sewing-machine, to hold them properly together, and to obviate basting.

Claim.—The device A, consisting of a strip of thin sheet steel made wider at one end and narrower at the other end, having a single bent point at its narrower end, two bent points at its wider end, and a short slot in its wider end, and bent so that its narrower end may be passed through the slot in its wider end, and the two ends may project parallel with each other, substantially as herein shown and described, and for the purpose set forth.

140,407.—*Stop-Valve.*—GEORGE W. EDDY, Waterford, N. Y. Application filed April 5, 1873.

The ball is prevented from turning when forced by means of the screw against the concave disks by means of sockets upon the latter and bosses upon said ball.

Claim.—The concave disks D J having sockets b, combined with ball E having bosses, as and for the purpose described.

140,408.—*Medical Compound.*—AARON FUQUA, Woodville, Ky. Application filed May 31, 1873.

Red oak bark, sweet gum bark, cinnamon bark, blackberry root, cloves, pimento, extract of logwood, refined sugar, brandy or other spirits, and water.

Claim.—The medical compound above described, substantially as and for the purposes set forth.

140,409.—*Rotary Hog-Scraper.*—ROBERT FYFE, New York, N. Y. Application filed September 14, 1872.

An adjustable rotary scraping device for dressing hogs, operated by a belt and shifting-pulley or other adjustable device.

Claim.—A rotary scraping or scuttling instrument with blades C, handles F, and apparatus adapted to rotate it while being held in the hands of an attendant and applied to the carcass of a hog, the blades being adapted for scraping off the hairs when so applied and operated, all substantially as specified.

140,410.—*Apparatus for Moistening the Atmosphere.*—JAMES G. GARLAND, Biddeford, Me. Application filed January 11, 1873.

The atomiser is provided with a compressing-pump and air-chamber, together with a water-reservoir and cistern, and with an automatic apparatus for regulating the supply of water.

Claim.—1. The combination, with the atomizer, pressure-blower, and water-supplying cistern, of a reservoir for supplying the cistern, and an automatic-supply regulating-valve, substantially as specified.

2. The combination of the filter with the reservoir, the cistern, and the atomizer, substantially as specified.

3. The combination of the overflow-pipe G with the atomizer, cistern, and the water-supply cistern, substantially as specified.

140,411.—*Iron Railway Tie.*—CHARLES W. GULICK, New Brunswick, N. J. Application filed April 19, 1873.

Claim.—Wrought-iron ties for railroad tracks, having transverse flanges B formed solid upon them to form grooves to receive the rails, and having holes formed through them to receive the clamps, substantially as herein shown and described.

140,412.—*Neck-Tie Fastener.*—JOSIAH A. HARD, Lawrence, Kans. Application filed May 6, 1873.

Claim.—The spring-wire frame A, provided with the bent ends a a and hook b, in combination with a neck-tie shield, B, all constructed and arranged to operate substantially as and for the purpose described.

140,413.—*Stalk-Cutter.*—BENJAMIN R. HARNESS, Schooley's Station, Ohio. Application filed April 29, 1873.

Claim.—The frame A having a series of longitudinal openings to receive cutters, and mounted on wheels having fixed axles, in combination with one or more star-shaped cutters rigidly fixed upon the shaft of the bearing-wheels and receiving a rotary motion therefrom, and working in concert with depending stationary knives, substantially as shown and described.

140,414.—*Engine-Governor.*—JOSHUA HENDY, San Francisco, Cal. Application filed April 7, 1873.

The valve-stem is made in two parts, which are held together by a weighted pawl pivoted to the upper end of the lower stem, and engaging with a groove on the lower part of the upper stem. When the speed becomes too great or the belt breaks the stems are parted and the valve is closed.

Claim.—1. The divided stem C L, in combination with a mechanism for connecting and disconnecting the two parts, substantially as set forth.

2. The weighted catch Q secured to the lower stem C, in combination with a groove in the lower end of the upper stem L for connecting or disconnecting the two stems, as described.

3. The sleeve, made with the projecting section S, in combination with the catch Q, for the purpose of automatically disconnecting the two stems, substantially as set forth, and for the purpose described.

140,415.—*Dress-Protector.*—ADOLPH HERRMANN, New York, N. Y. Application filed May 24, 1873.

A reversible protector for the bottoms of dresses.

Claim.—A reversible dress-protector formed of stiffened fabric or other suitable material folded longitudinally so that its edges meet or overlap each other along the central line, and provided with transverse plaits secured by two rows of stitching about equidistant from the edges and from each other, substantially as hereinbefore shown and described.

140,416.—*Dash-Board Bag.*—SAMUEL HIPKISS, Charlestown, Mass. Application filed April 5, 1873.

An expanding bag is provided with spring-hooks for attachment to the dash-board of a vehicle.

Claim.—A bag or receptacle, B, provided with spring-hooks C, adapted for attachment to the dash-board of a vehicle, in the manner set forth.

140,417.—*Protecting-Mask for Bee-Keepers.*—LOUISA C. HUFF, Sonina, Ala., assignor of one-half her right to JAMES J. HUFF. Application filed March 22, 1873.

A head and neck covering of a flexible material with elastic band surrounding the face, bowed wires in front of the face, over which a netted fabric is extended, a tube for the mouth extending through this netted work.

Claim.—A honey-bee screen made up of the parts a, b, c, d, and e, as herein recited.

140,418.—*Belt-Guide for Paper-Machines.*—ROBERT HUTTON, Holyoke, Mass. Application filed April 26, 1873.

As the belt runs to one side it engages a bar, N, which slides the rod J and moves one of the star-wheels to engage the revolving arm O, by which it and its screw-shaft are revolved to move the journal-box and incline the roller so as to feed the belt in the contrary direction. When arm O engages the other star-wheel further motion of the shaft ceases.

Claim.—The combination, in an automatic wire belt adjusting apparatus, of the following instrumentalities: A sliding journal-bearing, C, propelling-screw E, actuating star-wheels G, bell-crank L, shifting-bar M, plates N, and a revolving blade, O, when arranged in connection with the belt and one of the rollers, substantially in the manner described.

140,419.—*Belt-Fastener.*—ANDREW HYDE, Springfield, Mass., assignor of one-half his right to JOHN W. TRAFTON, same place. Application filed March 20, 1873.

Claim.—The device for joining the ends of belting, consisting of the bar b with its spring-hook ends h h, in combination with the yoke d, the parts being constructed substantially as shown and described.

140,420.—*Heel-Trimming Machine.*—ELISHA U. JONES, Woodhaven, N. Y. Application filed May 17, 1873.

The plate G, supported upon the end of a vertical shaft, is made in the form of a double cam, carrying upon its upper face a guide of the contour of a finished heel.

Claim.—The cam-plate G grooved upon its lower side, the guide-plate M, the knife J, screw-rod K, spring L, hinged arm H, and hook-pin N, in combination with the gears E D, shafts C F, crank B, swiveled clutch Q, and hand-screw O, substantially as herein shown and described.

140,421.—*Hoisting Apparatus.*—DAVID KNOWLES, Philadelphia, Pa. Application filed May 8, 1873.

Cam-wheel attached to the shaft of the hoisting-drum and operating in unison with friction-rollers within a hollow pulley or case, which is controlled by means of a weighted lever and brake-straps applied to the periphery. When the weighted lever is raised and retained in a horizontal position the brake-strap is loose from the pulley, allowing it to revolve freely with the shaft. When the end of the lever is depressed the brake-strap is tightened on the pulley, which checks the motion of the pulley and causes the friction rollers or balls to leave the sockets and pass around the curved recesses until they jam sufficiently tight against the rim of the case to hold and prevent the cam-wheel and shaft from turning.

Claim.—1. In combination with the pulley E and brake-strap G, the cam-wheel A, composed of the arms a, a^1, and a^2, the extremities of which are provided with recesses to accommodate the friction rollers or balls C C C, which operate to bind within the pulley and arrest the motion of the shaft, when the brake-strap is tightened on the pulley, substantially as herein shown and described.

2. In combination with the hoisting rope and drum proper of a hoisting apparatus, the supplementary drum L and counter-balance K', arranged to carry and guide the hoisting-rope, to prevent wear and chafing of the same, substantially in the manner as herein set forth and shown.

140,422.—*Die for Enlarging and Sizing Plain Finger-Rings.*—GEORGE KREMENTZ, Newark, N. J. Application filed April 12, 1873.

The ring is placed in an annular cavity in the stationary die, and inside of this cavity the die is open. A tapering plunger is

passed through the ring and hole in the die, and is pressed into the ring, which enlarges the ring on the inside by condensing the metal.

Claim.—The die B, having hole b^1 and concavity b^2, combined with a tapering plunger, C, to size rings, in the manner described.

140,423.—*Die for Manufacturing Plain Finger-Rings.*—GEORGE KREMENTZ, Newark, N. J. Application filed April 12, 1873.

A thin washer is struck up by one pair of dies, leaving both the upper and lower sides slightly rounded; it is then placed in the cavity of another die, where a plunger comes down and turns the upper side of the washer inward; the article is then inverted in the same die to bring both sides of the opening to the same size.

Claim.—The pairs of dies B C and D E, for forming a jointless ring, A^3, from a solid ring-plate, A, substantially as herein shown and described.

140,424.—*Die for Making Watch-Case Caps and Backs.*—SILAS C. LEWIS, Brooklyn, N. Y. Application filed March 29, 1873.

Claim.—The die A B, having circular concavity *a* and central convexity *b*, as and for the purpose described.

140,425.—*Stamp for Crushing Ores.*—JAMES M. MCFARLAND, Golden City, Col. Ter. Application filed May 31, 1873.

The stamps consist of bars provided with stamp-heads, and slide through slots in a central cylinder. During a portion of the revolution of the central cylinder the stamp has a triturating action on the ore, but when the bar gains a vertical position it will slide in the cylinder and strike a blow. The ore fed into one end of the cylinder is moved to the other by a spiral rib, being discharged through perforations upon a series of sieves, which return the coarser particles to the feed-end of the cylinder.

Claim.—1. The mode of operating stamps by a revolving cylinder in which a series of stamps are arranged in radial mortises, substantially as specified.

2. The combination, with a series of stamps and an operating-cylinder, as described, of a revolving case inclosing the stamps and holding the ore to be crushed, substantially as specified.

3. The said revolving ore-holder, having spiral ribs or corrugations, in combination with the stamps for passing the ore along toward the discharge as the crushing progresses, substantially as specified.

4. The combination, with the rotating case and ore-holder, of the screens K L, arranged substantially as specified.

140,426.—*Glazier's Tool.*—SAMUEL G. MONCE, Bristol, Conn. Application filed December 1, 1870.

Putty-knife and glass-cutter attached to opposite ends of a common handle.

Claim.—As a new article of manufacture, the improved glazier's tool herein shown and described, which consists of a rolling steel glass-cutter and a putty-knife united in one common tool, substantially as specified.

140,427.—*Portable and Adjustable Hoisting Apparatus.*—GEORGE A. MYERS, Williamsburg, N. Y. Application filed May 31, 1873.

Claim.—The clamps B, one or more, the ratchet-wheel M, and the double pawl N, or their equivalents, in combination with the frame, drum, and gearing of a hoisting apparatus, to adapt said apparatus to be detachably and adjustably attached to the stanchions of a storehouse, substantially as herein shown and described.

140,428.—*Piano-Action.*—EDWARD G. NEWMAN and PETER ANDERSON, New York, N. Y. Application filed April 24, 1873.

Claim.—1. The hammer-butt I provided with the elongated end *f*, acting against a back-check, K, placed on the key L, to check the rebound of the hammer J, constructed substantially as shown and described.

2. The set-screw *e*, in combination with the hammer-butt I and damper-lever G, arranged to operate as specified.

3. The guide-pin *g*, in combination with the hammer-butt I, and with the slot *h* in the fly-arm N, as and for the purpose specified.

4. In combination with the slotted fly N, hammer-butt I, and guide-pin *g*, the lever R, constructed and arranged to operate substantially as described.

5. The arrangement shown, of the fly O directly on the key L, the set-screw *k* at the upper end of the fly-arm N, the hammer-butt I, its elongated end *f*, and the back-check K, with relation to each other, substantially as specified.

140,429.—*Tooth-Brush.*—JAMES D. O'DONOGHUE and WILLIAM O'DONOGHUE, New York, N. Y. Application filed May 31, 1873.

On the end of the handle of an ordinary tooth-brush is arranged a convex brush for cleansing the teeth on the inside.

Claim.—A tooth-brush, C, arranged in relation to its handle, as herein shown and described.

140,430.—*Staple for Securing the Ends of Barrel-Hoops.*—HARRISON OSBORN, Richmond, assignor of one-half his right to SAMUEL WATSON, Indianapolis, Ind. Application filed June 20, 1873.

The staple is formed with four prongs, which are driven through both parts of the hoop and clinched upon the inside.

Claim.—The staples constructed substantially as shown and described, for the purposes and uses indicated.

140,431.—*Shirt-Bosom.*—JOHN PAGAN, Yonkers, N. Y. Application filed May 17, 1873.

Claim.—1. The method of re-enforcing the single web between the plaits of a shirt-bosom by means of narrow plaits formed of the cloth of which the wide plaits are made, and by overlapping the edges of the wide plaits, substantially in the manner described.

2. The plaits C, E, A, B, and G, formed of the web composing the upper side of the bosom, substantially as specified.

3. The plaits L, A', J, and K, formed of the web composing the under side of the bosom, substantially as specified.

140,432.—*Corn-Planter.*—EDWARD PARMENTIER, Clifton, Ill. Application filed January 25, 1873.

A rectangular frame on a pair of running wheels; in front of it, loosely hinged thereto, is another one with seed-boxes, spouts, and openers; on the latter, to limit adjustably their depth, are runners. A lateral seed-slide is worked, through a lever, by a cam on disk attached to the axle-tree. There is loose on the axle-tree, of the full diameter of, and on the outside face of, each wheel a land-marking arm, adjustable in any position by a clamp-screw.

Claim.—1. The arrangement of the springs D, levers E, rods G, and angle-levers H, with the tongue I, frame F, and clutches C, that connect the drive-wheels A with the axle B, to throw the said drive-wheels out of gear with said axle by raising the furrowing and dropping devices from the ground, substantially as herein shown and described.

2. A furrower, R, adjustable in slot of drag S and opening of standard T, as and for the purpose described.

3. The combination of the flanged or grooved rings *a'*, adjustable bars A', and set-screws B', with the drive-wheels A, substantially as herein shown and described, and for the purpose set forth.

140,433.—*Street-Railway Switch.*—JOHN E. PATTISON, New Orleans, La. Application filed May 5, 1873.

An improvement in the class of street railway switches, which are operated by driving the animal to the right or left upon a platform. The descent of one platform is transmitted through a semicircular rod resting upon a pulley to cause a rise of the other platform, and at the same time, through a lever and link, to shift the switch-point.

Claim.—1. The reciprocating semicircular piston D, in combination with the oscillating platforms C arranged in boxes B, and operated by the weight of the draft animals, forked post *b*, or supporting band E, switch-levers *d d'*, and casing A, substantially as and for the purposes described.

2. The vertical lever *d* having pronged head *e*, applied to piston D around post *b*, to limit motion of piston, substantially as specified.

3. Boxes B, having perforated bottoms for passage of piston-rod D and platforms C, as described.

140,434.—*Plow.*—LEVIN B. RICHARDSON, Carrollton, Ill. Application filed May 31, 1873.

For rolling down weeds, stubble, &c., so that they may be turned under.

Claim.—1. The roller F, bent bar G, bent or looped bar H, draft-bar I, and adjustable brace-bar J, constructed and arranged in connection with each other, substantially as herein shown and described, to adapt them for attachment to a plow, as and for the purpose set forth.

2. The combination of the guard K with the roller F, the bent bar G, the bent or looped bar H, the draft-bar I, and the adjustable brace-bar J, substantially as herein shown and described, and for the purpose set forth.

140,435.—*Washing-Machine.*—WILLIAM M. ROWLAND, Tyler, Tex. Application filed May 26, 1873.

Is constructed with its box in ordinary form, having on its bottom, pivoted at one end, a bed of octagonal rolls, with its upper end connected by cords passing over rolls attached to a set of rolls working in connection and under a corrugated roll journaled in the box. The cords are attached to pivoted levers, having at or near their center a box for weights to hold the rollers in contact when in use. The upper set is pivoted at one end to allow it to be turned over.

Claim.—In a self-regulating washing-machine, the fluted cylinder C, in combination with the curved-face wash-board B, constructed with the octagonal rollers *b' b'*, the cords *d d*, the pulley-roller D, the rack E, and weight-box F, all constructed and arranged as and for the purpose described.

140,436.—*Type.*—WILLIAM SHAW, Hollister, Cal. Application filed January 30, 1873.

The head is cut away at one side and provided with a notch to permit the introduction and engagement of a hook to remove the type from a line.

Claim.—As a new article of manufacture, type cast with the upper portion of the body narrower than the remainder, and containing a notch, *c*, substantially as and for the purpose described.

140,437.—*Cultivator.*—MATTHEW P. SIMPSON, Pana, and JOSEPH P. ELLACOTT, Shelbyville, assignors to THE SHELBYVILLE MANUFACTURING COMPANY, Shelbyville, Ill. Application filed May 16, 1873.

The draw-heads are formed in two parts so as to be capable of vertical adjustment to regulate the depth of the plows. The plates by which the plow-beams are connected to the draw-heads are made concave and laterally slotted to receive the fastening-bolts, so that the beams may be turned to the right or left, and thus cause the outer or inner plows to run the deepest, as may be desired.

Claim.—1. The combination of the draw-heads *f*, grooves or recesses f^2, bars or rods f^3, and connecting-pieces f^7, substantially as shown and described.

2. In combination, the draw-head *f*, grooves or recesses f^2, bars or rods f^3, connecting-piece f^7, plates g^1, and convex surfaces g^2, substantially as specified.

3. The plates g^1, formed with concave surfaces g^3, in combination with the convex surfaces g^2, substantially as described.

4. The combination of the draw-head *f* provided with the grooves f^2 and slot f^6 with the slotted bar *a*, bars f^3, connecting-piece f^7, concave plates g^1, convex surfaces g^2, gangs *g*, when constructed, arranged, and operating substantially as described, and for the purpose set forth.

140,438.—*Sewing-Machine.*—EDWIN D. SMITH, New York, N. Y. Application filed May 10, 1873.

A screw is fitted to a branch of the arm and the head-plate in which the needle slides, the head at that place being severed from the arm, and, by means of this screw, the needle-bar and its needle may be adjusted to work harmoniously with the shuttle. The lever for raising the presser is pivoted on this screw.

Claim.—1. The head cast together with the branches of the arm and separated from the lower branch to obtain the adjusting movement of the head, substantially as specified.

2. The presser-lever F pivoted on the adjusting-screw G between the lower branch and head, as and for the purpose described.

140,439.—*Well-Bucket.*—CHARLES F. SITES, Cincinnati, Ohio. Application filed May 24, 1873.

To the metallic cylinder of the bucket is secured a wooden bottom by means of head and flange. The top or upper rim of the bucket is provided with metallic buffers cast with slots, which embrace the top.

Claim.—As a new article of manufacture, a tilting bucket, composed, essentially, of the metal cylinder A, wooden bottom B, and the metal buffers C, all constructed and arranged substantially as specified.

140,440.—*Thrashing-Machine.*—FREDERICK R. SUTTON and WILLIAM O. SUTTON, Wellington, Ill. Application filed March 29, 1873.

A peculiar mode of attaching and detaching the beater-blades to the cylinder.

Claim.—1. The combination, with the cylinder and concave of a thrashing-machine, of crushing-rollers D C and an endless carrier, E, substantially as described.

2. The adjustable blades of the beaters secured to the arms of the cylinder by extensions S, hook-shaped angle-bars U, clips W, and hook-bolts X, as described.

140,441.—*Saw-Set.*—GUSTAF SWENSON, Hackensack, N. J. Application filed April 12, 1873.

The bars E F clamp the saw-blade just before the dies N are operated to set the teeth, and are opened after the setting is complete. The machine is then moved forward by the hook V the distance of two teeth, when the saw is again clamped and two more teeth set.

Claim.—1. The combination of the plates B C, bar or flange D, adjustable bar E, movable bar F, plate H, pin *h'*, cam-wheel J, levers P, crank-shaft K, crank L, and punches N with each other, substantially as herein shown and described.

2. The combination of the levers P and pins *p'* with the cam-wheel J, plates B C H, bars E F, and punches N, substantially as herein shown and described.

3. The combination of the cam-wheel S, connecting-bar T, elbow-lever U, and hook-rod V with the shaft K of the cam-wheel J, levers P, the plates B C H, bars E F, and punches N, substantially as herein shown and described.

140,442.—*Dog for Circular-Saw Mills.*—JAMES TABER, Rockford, Mich. Application filed April 26, 1873.

The dogs are made vertically as well as horizontally adjustable with relation to the setting-jacks of the head-blocks.

Claim.—1. The combination of the plate B, block F, dogs G, keeper H, connecting-bars I, and lever J with each other and with the standard A, substantially as herein shown and described.

2. The combination of the connecting-bar L, block M, and lever O with the block F, dogs G, and plate B, substantially as herein shown and described.

3. The combination of the rack-bar C, lever-pawl D, and spring E with the plate B and its attachments, substantially as herein shown and described.

4. The spring K, in combination with the lever J and plate B, substantially as herein shown and described.

140,443.—*Apparatus for Treating Cane-Juice.*—GEORGE R. TAYLOR, Thibodeaux, La. Application filed March 29, 1873.

The cane-juice to be treated is trapped in at a point below the drip-shelves and trapped out at the base of the arched part of the apparatus, so that no gases escape from the apparatus.

Claim.—1. The fan-wheel F and spraying-wheel G I, arranged as specified, to be rotated together on the shaft *a* by means described, and thus cause the supply or current of gas admitted through pipe E to be proportional to the amount of juice raised by the wheel.

2. The shelves I I, alternated and inclined, as shown, to cause the cane-juice to flow from one to the other, spaces being provided for admission of gas and circulation thereof beneath each shelf, as shown and described.

3. The rotating spraying-wheel G I and the series of absorbing-shelves I, all arranged to operate as specified.

140,444.—*Wash-Boiler.*—WILLIAM J. THOMAS, Frederick city, Md. Application filed May 31, 1873.

With a movable bottom having openings covered on its under side by valves, pivoted on one side or edge, the other resting upon projections formed by an inverted T-plate which governs the flow of water. Side pipes are attached to each end of the boiler for the discharge of water upon the clothing, which is held from contact with the bottom by angular strips attached to it over the openings.

Claim.—The combination of the bent stripe E, downwardly-projecting flanged plates F, the T-plate H I, and the hinged plates J with the false bottom D and the tubes C, substantially as herein shown and described.

140,445.—*Reciprocating Churn.*—WILLIAM M. THOMPSON and JOHN L. MAHURIN, Rockfield, Ind. Application filed March 22, 1873.

A vertical dasher-shaft having two fixed perforated dashers reciprocates through two perforated dashers which are attached to side pieces sliding in grooves within the churn. The fixed and sliding dashers alternate. The former imparts motion to the latter.

Claim.—The four parallel perforated dashers *d d* and *d' d'*, the former moving with bar *f*, and the latter surrounding said bar *f* but moving only with the guide-bars *b b*, as and for the purpose described.

140,446.—*Door-Spring.*—ALEXANDER TITTMAN, Evansville, Ind. Application filed May 20, 1873.

A casting or bed-plate provided with a dovetailed tapering groove is attached to the door-frame, near its upper end. A metallic frame carrying a coiled spring held by a central rod fits by wedge-shaped connection in the bed-plate, serving at the same time as the upper hinge of the door, and the wire ends or extensions of the spring extend horizontally outward on opposite sides of the door, bearing against the same, this construction permitting the door to swing both ways, while the action of the spring is equally operated in either direction.

Claim.—1. The spring H attached in the metallic frame E, and having its ends operating on opposite sides of a door, B, hinged to said frame, substantially as and for the purposes herein set forth.

2. The combination of the casting D having dovetailed tapering groove, the frame E fitting in said groove, the spring H, and hinge-bar G, with the door B, all constructed and arranged substantially as and for the purposes herein set forth.

140,447.—*Boot-Blacking Kit.*—SOMERS VAN GILDER, Knoxville, Tenn. Application filed June 7, 1873.

A box of blacking is secured to the back of the brush, and the handle of the daubing-brush fitted in its form to the handle and held by loops, can be detached at will for use.

Claim.—A boot-blacking kit, comprising the polishing-brush, daubing-brush, and the blacking-box, or the two brushes only, contained in one article, the daubing-brush being detachably connected to the handle of the polishing-brush, all substantially as specified.

140,448.—*Naval Store-Room or Coach Lamp.*—JOSEPH J. WALTON, New York, N. Y. Application filed March 12, 1873.

The ordinary store-room or coach lantern is provided with a central perforation in the bottom plate, and has arms for the attachment of a candlestick. The lantern may be used with the ordinary lamp or the candlestick shown, and the candlestick may be used separate from the lantern.

Claim.—The bottom B having central perforation, flange *e*, bars I, and hooks *f* with no device attached to the top of the bottom B to allow the lamp or lantern A to be used with the tube C and its attachments for a candle, or the tube C and attachments to be removed from the lamp and used by itself, and the lamp or lantern to be used with the ordinary oil-lamp, as desired, as and for the purpose specified.

140,449.—*Hinge.*—JAMES W. WOOD, Conshohocken, Pa. Application filed May 5, 1873.

One wing or leaf of an ordinary butt-hinge is provided with a supplementary leaf or flange, cast or otherwise formed thereon. A metallic socket of proper configuration is mortised into the jamb, and in this socket the flange or supporting-leaf slides, and is adjusted in any desired position by two set-screws, this construction allowing double adjustability, both vertical and lateral, merely by the loosening or tightening of the set-screws.

Claim.—A butt-hinge having extension D, held by a set-screw or other fastening at any point of adjustment in a socket, E, and applied to a door, B, and jamb A, as and for the purpose described.

140,450.—*Piano-Tuning Key.*—ALEXANDER H. AFFLECK, Marshallville, Ga. Application filed April 11, 1873.

Special construction of parts in a tuning-hammer, the handle of which, by pressure of a thumb-button, will turn without carrying the stem with it.

Claim.—The presser H, lever F, spring G, detent E, and pinion C, combined with a key, B, and all constructed and arranged as and for the purpose described.

140,451.—*Drill and Bit-Stock.*—CHARLES H. AMIDON, Miller's Falls, Mass. Application filed October 31, 1872.

This may be used by hand or in a vise, and can be removed from the handle P by unscrewing the sleeve O, by which the hinged journal-box *e* is retained around the stock-shank J. The jaws A A' will adapt themselves to any shape of the bit-shank.

Claim.—1. An adjustable socket formed by and between two sets of jaws, A A A' A', independently pivoted, base to base, to the head B, and actuated by the means described or their equivalents.

2. The separate sets of jaws A A A' A', independently pivoted, base to base, to the head B, combined with a sleeve, D, hav-

ing a rectilinear movement on the spline groove *b*, and the sleeve C having a circular advancing motion on the screw-thread to actuate the said jaws, in the manner described.

3. The spindle H, with the quill I and loose screw-socket G, combined with the hollow coupler-sleeve E fitted over said spindle and quill, and engaging with said screw-socket to connect the cap F with the brace, as set forth.

4. The sleeve spindle O combined with the jointed shank Q *o o*, as described, so as to be readily detachable, as set forth.

5. The combination of the pinion L on the shank J, intermediate double gear-wheel N, and pinion M on the spindle K, carrying the bit-head B, substantially as and for the purpose shown and described.

6. The frame S constructed in the manner described, with a rest, *f*, for the cap F, combined with an adjustable feeding-device, U V, so that the whole may be secured in a common vise, and operated in the manner described.

140,452.—*Manufacture of Artificial Fuel.*—DAVID BARKER, Northfleet, England. Application filed May 16, 1873.

Claim.—1. The manufacture of my improved fuel by treating carbonaceous substances and combining with them the materials required to give the fuel cohesion, substantially as hereinbefore set forth and described.

2. The use of the solution of sulphate of alumina or of chloride of alumina in combination with carbonaceous matters prepared substantially in the manner and for the purposes above set forth.

140,453.—*Sofa-Bedstead.*—JACOB BEIERSDORF, Chicago, Ill. Application filed May 7, 1873.

A hinged pillow-guard is attached to the upper part of the pillow-frame, which is detachably connected with the foot of the unfolded sofa-bedstead.

Claim.—The frame B provided with the folding pillow-guard *b*, in combination with the hinged folding sofa-bedstead, as described.

140,454.—*Combined Stove-Pipe Shelf and Drum.*—THOMAS BLADON, Oak Harbor, Ohio, assignor of one-half his right to JOHN C. METZGER, same place. Application filed March 25, 1873.

A direct or indirect draft through the drum is obtained by adjusting suitable dampers. In its front top, under a hooded projection, is a dampered aperture to carry off the fumes of cooking. Small vessels can be placed on the flat top of the drum.

Claim.—1. In combination with the drum shown, the openings *h*, damper H, and hood I, substantially as and for the purpose set forth.

2. The combined stove-pipe shelf, heating-drum, and ventilator as a whole, when its several parts are constructed and arranged to operate substantially as and for the purpose shown.

140,455.—*Connection for Wrought-Iron Beams and Columns.*—ADOLPHUS BONZANO, Phœnixville, assignor to CLARK, REEVES & CO., Philadelphia, Pa. Application filed April 26, 1872.

Beams and columns are united by plates or bars, which, passing through the columns, are bolted to the flanges of the column-bars, and are connected to the web of the beam by splicing-plates.

Claim.—The combination described of wrought-iron columns, beams, and splicing-bars.

140,456.—*Roller-Press for Polishing Photographs.*—NELSON S. BOWDISH, Richfield Springs, N. Y. Application filed March 5, 1873.

Claim.—The stationary polished bed, in combination with the rollers *g* and *e*, carriage *d*, and adjusting mechanism, substantially as and for the purposes set forth.

140,457.—*Coffin-Plate.*—GEORGE BRADBROOK, Taunton, Mass., assignor to REED & BARTON, same place. Application filed May 8, 1873.

Claim.—The coffin-plate A, having circumjacent flange *a* at the bottom, and body *a'* tapered toward the top, combined with a detachable border, B, beveled on the under side *b*, in the manner and for the purpose described.

140,458.—*Inclined Way for Building Levees.*—JOHN BRADFORD, Wilmington, Del. Application filed May 19, 1873.

A portable jointed track-way for building levees, in connection with a dumping-car. The inclined portion of the track is supported by an adjustable prop, L. The car is drawn up by a rope passing over a pulley-block at the upper end of the track, and the load is discharged by its own weight, when a spring-catch, which holds the dumping-body from turning, comes in contact with a diagonal cam-block placed at the upper end of the track.

Claim.—1. A machine or apparatus for making mud banks and repairing breaches in the same, consisting of a portable track, made in horizontal and inclined sections, adjustable substantially as set forth.

2. The movable or shifting track C jointed at *c*, and having the oblique block or stationary cam F, or equivalent, and pulley head-block G, as set forth.

3. In combination with the truck and tilting body, the spring-catch, for the purpose set forth.

4. The truck K, arranged for operation on the bank, in combination with the track B, as set forth.

5. In combination with the track B, the shifting adjustable support L.

6. In combination with the automatic dumping-car D, having the spring-catch E, the oblique block or stationary cam F, for the purpose set forth.

140,459.—*Sliding or Extension Chandelier.*—JAMES BRANNEN, Philadelphia, Pa. Application filed March 27, 1873.

The sliding pipe moves upon a stationary supply-pipe, which is packed at its lower end. Gas for supply of side burners is kept from contact with the slide by a division-pipe, concentric with the slide and with extension casing. Two friction-wheels bear against the slide, one of which is hung eccentrically, and is governed by a cord and spring.

Claim.—1. The combination, with the sliding pipe C, of the eccentric or eccentrics I^1, the latter being so constructed and arranged that it will, by frictional contact or pressure upon the surface of said pipe, prevent it from being lowered until the pressure is withdrawn, substantially as specified.

2. The stationary pipe D, having the adjustable packing E on its lower end, in combination with the nut *e* and the sliding pipe C, substantially as and for the purpose specified.

3. The combination, with the extension chandelier having the adjustable pipe C, central tube D, and casing-pipe A, of the partition-pipe B, located between the adjustable and casing pipes so as to include the former, substantially as shown and described.

4. The combination with the extension chandelier having the adjustable pipe C, central tube D, and casing-pipe A, of the partition-pipe B, having its ends threaded, as shown, and thereby so secured to the body F and cap *a* that it may be readily removed and replaced without injury to the chandelier, substantially as and for the purpose specified.

140,460.—*Subsoil-Plow.*—GREEN B. BRIMINGHAM, Trenton, Tenn. Application filed November 9, 1872.

Claim.—1. The subsoiler, as described, having the diamond-shaped point G, raised neck H, and scoop-shaped wings I, substantially as described and shown.

2. The slotted and removable bar Q in combination with the guiding-frame T, having a removable and clamping bolt Y, and united with the plow-standard by a detachable arm, substantially as shown and described.

3. The clamp O, wrench P, and set-screw *h*, in combination with the standard L and removable bolt M, constructed and arranged substantially as and for the purpose herein specified.

140,461.—*Apparatus and Process for Extracting Saccharine Matter from Sugar-Cane.*—MARIUS S. BRINGIER, Ascension parish, La. Application filed June 24, 1873.

The sugar-cane is cut into small fibers or chips and falls into a drying-cylinder, through which it passes and falls into digesters, through which it passes back and forth with a stream of water passing in the opposite direction. It is finally squeezed dry by rollers.

Claim.—1. The process herein described of extracting the saccharine from sugar-cane and other vegetable substances, the same consisting in, first, thinly slicing said substances, then heating or drying them, and then subjecting them to the action of a current of water, either hot or cold, caused to move in a direction opposite to that in which the slices or shavings of said cane or other substance are moved through the washing apparatus, substantially as shown and set forth.

2. The combination of the heating or drying chamber with the displacement apparatus, consisting of a series of vessels connected together, substantially as described, and provided with feed screws or worms, or their equivalents, whereby the material fed from the drying-chamber is caused to pass in one direction through the apparatus, to meet water passing through the same in an opposite direction, as and for the purposes set forth.

3. In combination with the heating or drying chamber, the cutting apparatus or feed-hopper, arranged and operating to cut the cane into slices and deliver it to the drying-chamber, as shown and described.

4. The combination, with the heating-chamber, of a blower or air-forcing apparatus, arranged to discharge air into said chamber, substantially as and for the purposes set forth.

5. The herein-described displacement apparatus, consisting of two oppositely-arranged series of upright or inclined vessels or receptacles connected by horizontal cylinders or channels, in combination with rotary feed-screws or their equivalents, in the said cylinders, and elevators or their equivalents in the said vessels, under the arrangement and for operation substantially as shown and set forth.

6. In combination with the displacement apparatus, the endless apron for carrying off the exhausted sliced cane or other substance, the rollers for pressing the water from the same, and the gutter or trough for catching said water and conveying back to the displacement apparatus, as shown and described.

140,462.—*Water-Feed for Boilers.*—HOWARD C. BRISTOL, East China, Mich., assignor to himself, WILLIAM D. HART, and JOHN CLARK, Jr., same place. Application filed March 17, 1873.

Two pipes of different lengths connect with the steam-pipe of the pump. They are enlarged at the lower ends, forming on each a seat for a ball-float valve, which is confined in a cage. The rising and falling water closes and opens the pipes.

Claim.—The combination of the main pipe B with pipes B^1 B^2, of unequal lengths, having valve-seats *d* and cages *e e*, adapted to hold the float-valve C, as described.

140,463.—*Trace-Buckle.*—THOMAS BROWNLEE, Fairbury, Ill. Application filed May 21, 1873.

The buckle is made in two rectangular sections, one of which slides within the other. The top is hinged near its center, and has a pin or stud on its under side. The strap is adjustable by elevating the hinged portion.

Claim.—The sliding section B having a hinged front end, C, carrying a pin, *c*, and provided with grooves *f f*, in combination with the section A, its guides *b b*, and with or without the flanges *c c* and shoulder *g*, substantially as described, for the purpose set forth.

140,464.—*Machine for Cutting Sugar into Blocks.*—PETER O. BRUNJES and ALBERT BENNECKENDORF, Hoboken, N. J. Application filed February 20, 1873.

The difference in the diameter of the saws prevents the breaking of the blocks, which would occur at the saw next to the bottom of the incisions were the second saw to strike the block before the first had passed through.

Claim.—1. The combination of two or more cutting-off saws with sawing mechanism arranged to cut the incisions the required depth for two or more pieces, substantially as described.

2. The said cutting off saws, arranged in differential sizes, as described, to cut the parallelopipeds successively, as specified.

140,465.—*Tar and Petroleum Burner.*—JAMES BURNS, London, Canada. Application filed May 8, 1873.

Perfect combustion of infinitely small particles of tar and steam is effected by means of an atomizer provided with a tar-passage, steam-passage, and nozzle-bore, in which the tar and steam unite, the latter equal, or nearly so, to the two others in point of capacity, and also being of uniform diameter throughout.

Claim.—The atomizer for burning tar or petroleum, comprising a tar-passage, *t*, a steam-passage, *s*, and a nozzle bore, *n*, in which these unite, the latter being equal, or nearly equal, in capacity to the two passages, and of uniform diameter throughout, and of suitable relative length, as herein described, for the objects set forth.

140,466.—*Compressed-Air Heating Apparatus.*—HENRY BUSHNELL, New Haven, Conn. Application filed March 12, 1873.

Combined with a reservoir and pump for forcing air are any number of registers or openings, and between the reservoir and the registers is a pressure-valve, so adjusted that when the air shall have been compressed to a certain degree it will force open the valve and allow the heated air to escape through the registers into the space to be warmed. The reservoir C may be filled with water, to be heated by the compressed air in its passage through the tubes *a*, and the steam thus generated will pass to the radiator L.

Claim.—1. In combination with a suitable reservoir within which to compress the air, the conductors or pipes D, more or less in number, leading to their respective registers E, with a pressure-valve, G, arranged between the said registers and reservoir, substantially as specified.

2. In combination with a steam-generator having a series of tubes through which compressed air is forced as a means for generating steam, the radiators L, more or less in number, having pipes leading thereto from the said generator for heating purposes, substantially as set forth.

140,467.—*Governor for Engines.*—EDWARD BUSS, Buckau Magdeburg, Prussia, assignor to ARNOLD BUDENBERG, Manchester, England. Application filed March 22, 1872.

The throttle-valve is attached by a forked lever to a sliding collar on the governor-spindle, which is driven by a pulley. To said collar peculiarly-twisted arms carrying the weights are attached by eye-studs, the arms interlocking as closely as possible on opposite sides. Two sockets branching from the arms serve as a support for the lower barrel-shaped weights. As the speed increases or decreases the upper pendulum-weights swing outward and the lower ones rise, thus regulating the speed of the engine.

Claim.—The combination of the pendulum-support D and arms E, with the double-weighted pendulums F and G, when arranged, mounted, and operating substantially as and for the purpose described.

140,468.—*Chain-Propeller for Vessels.*—THOMAS W. CARTER, New Orleans, La. Application filed April 17, 1873.

A chain-propeller having the chains at the sides of the boat and revolving around the cabins, the sides of which are so constructed as to afford supports for the shafts or axes of the paddles.

Claim.—The combination, with the hull of the boat A, having its deck so constructed as to form troughs upon its lower side, of the structures or cabins C C, having their sides supplied with flanges, substantially as and for the purpose specified.

140,469.—*Apparatus for Leaching and Concentrating Bark Extracts.*—PHILETUS M. CHURCH, Sault de Ste. Marie, Mich., assignor to himself and PHILETUS S. CHURCH, same place. Application filed April 2, 1873.

The grates which support the bark are hinged at their inner ends, the outer ends resting upon girts on a sliding frame so that they may be dumped to empty the leach. The evaporator is of semi-cylindrical form, the ends resting in wooden cradles. An oscillating shaft carries a wooden blade having agitating-blocks secured thereon. Each time it rises carries a portion of the liquid with it, which spreads over its entire surface in a thin film exposed to the atmosphere.

Claim.—1. The leach-tank A, constructed substantially as herein described, and provided with the hinged sectional grates B, the slides *e e*, girts *f f*, and screws *g g*, arranged and operating substantially as and for the purpose set forth.

2. The construction and arrangement of the evaporating-trough C, heads D secured to the cradles E by the tie-rods *i*, the oscillating shaft F carrying a blade, G, with the agitating-blocks G' secured thereto, substantially as and for the purpose set forth.

140,470.—*Wash-Boiler.*—MICHAEL J. CLAPPER, Holland, Mich. Application filed April 21, 1873.

Is constructed in ordinary form, with a grate at or near its bottom, with end conductors with a cross-section open at its ends to receive the water from the conductors, having perforations for the distribution of water over the clothes being washed.

Claim.—A wash-boiler with a grate, A, near the bottom, double ends B B with slots C C, a perforated conductor, D, arranged substantially as described.

140,471.—*Truss-Bridge.*—THOMAS C. CLARKE, Philadelphia, and ADOLPHUS BONZANO and JOHN GRIFFEN, Phœnixville, assignors to CLARKE, REEVES & CO., Philadelphia, Pa. Application filed June 16, 1873.

Light posts are substituted for heavy ones in truss-frames for bridges, and they are grouped together to form towers, each one of which is stiffened by horizontal and vertical diagonal braces, and all the towers are connected together by cross-ties and horizontal and vertical diagonal braces. The transverse beams supporting the roadway are suspended at their ends from the centers of the opposite towers.

Claim.—1. A truss-frame bridge in which the posts are combined to form towers, as set forth.

2. A truss-frame bridge in which the transverse beams for supporting the roadway are suspended to the frames in the manner described.

140,472.—*Manufacture of India-Rubber Rings.*—WILLIAM H. COLLINS and CHARLES K. LONGDEN, Prospect, Conn. Application filed June 4, 1873.

Consists in forming the rings from a thin tube of gum, rolling the gum from one end of the tube toward the other until the requisite diameter of the body of the ring is obtained; then vulcanizing or otherwise curing the gum.

Claim.—The process herein described for manufacture of rings from India rubber or similar gums.

140,473.—*Elevator.*—CHARLES W. COLLYER, Marblehead, Mass., assignor to himself and CHADWELL TUCKER, same place. Application filed May 23, 1873.

A lever-bar on the bottom of the car, provided with friction-rolls at each end, is held in position by a spring which forces the ends into notches cut at given distances into guide-rails in the hatch-way, and is released by a lever, to be again arrested at the next landing; also, fixed pinions, which engage with a rack-bar on the car and one on each landing-door, serving to close automatically the said doors.

Claim.—1. In combination with the car and hoist-way, the lever-bar *f*, lever *k*, rails *c*, and notches *d d*, operating to arrest the falling or descending car, substantially as described.

2. In combination with the car *b* and landing-door, the door-rack *n*, sliding car-rack *o*, and pinions *m*, operating substantially as described.

140,474.—*Harness-Fastening.*—ENOCH COVERT, Farmer Village, N. Y. Application filed December 26, 1872.

The ring which secures the breeching to the braces has points which assist in securing it to the leather.

Claim.—The metallic loop or ring A, provided with raised points *a a*, and used substantially as and for the purposes herein set forth.

140,475.—*Hames-Fastening.*—ENOCH COVERT, Farmer Village, N. Y. Application filed December 7, 1872.

The hooks which secure the ends of the hames are secured together by a strap and buckle.

Claim.—The sheet-metal hook D, attached to the cross-bar of the buckle C, in combination with the strap B having the sheet-metal hook D riveted to its end, all used as a hame-fastener, as set forth.

140,476.—*Loom-Shedding Mechanism.*—GEORGE CROMPTON, Worcester, Mass. Application filed November 2, 1872.

Claim.—1. The three armed harness-levers having their vertical arms connected with hooked jacks moved by the lifting and depressing and pattern mechanism, and notched, as shown and described, so that the harness-cording may be extended at option, either from two opposite horizontal arms of the same lever, or from one of said arms and the vertical arm of the same lever, as and for the purpose described.

2. The combination of the harness-levers provided with a vertical and horizontal arm, the harness-cording, horizontal jacks, lifter, depresser, and evener bars, and pattern chain or cylinder, when constructed and arranged to operate as shown and described.

140,477.—*Pencil-Case.*—ALONZO T. CROSS, Providence, R. I. Application filed February 3, 1873.

The shank, carrying at one end the pencil, has, at its opposite end, a watch-key, and is provided on one side with a stud fitting into a slot in the end of the case to hold the watch-key rigid.

Claim.—1. The improved pencil-case having a watch-key and the pencil arranged on opposite ends of a separate piece, which is inserted and held for use in the open end of the sheath or case, substantially as shown and described.

2. The friction-collar R, substantially as and for the purpose specified.

140,478.—*Pen-Holder.*—ALONZO T. CROSS, Providence, R. I. Application filed February 3, 1873.

Claim.—The improved pen-case in which, besides the sliding pen-holder, a watch-key and a tooth-pick are combined in a separate piece, *f*, and held for use in the tubular end of the case, substantially as shown and described.

140,479.—*Automatic Gate.*—GEORGE C. CRUM, Barr's Store, Ill. Application filed May 14, 1873.

The hub or wheel of the approaching vehicle strikes a lever at the side of the way, which, through an upright shaft and connecting-rod, operates a vibratory lever pivoted to the top of the

gate-post, and having arms extending downwardly on each side of the gate, the arms being connected at their lower ends by an inclined rod which acts upon the latch as the arms are moved back and forth to operate the gate.

Claim.—1. The vibratory lever F provided with arms *f f*, connected at the lower end by a cross-bar, *f'*, inclined on its subjacent face, and arranged to operate the latch of the gate, as and for the purpose described.

2. A lever, F, pivoted on top of post, and provided with arms *f f* to turn the gate on its hinges, in combination with shafts E E having arms *e e* and connected with said lever by straps G G, as and for the purpose set forth.

140,480.—*Gang-Plow.*—MARSHALL S. CURTISS, Bradford, Ill. Application filed November 13, 1872.

A device for tilting the plows to accommodate them to sidelling ground.

Claim.—The plate B provided with teeth or cogs *k*, and pivoted to axle A, in combination with lever B B, and transverse arms *f f* of rod *b* having transverse arms *d* arranged in guides *e e* of beams C C, the whole constructed to operate substantially as set forth.

140,481.—*Device for Locking a Series of Drawers.*—WILLIAM F. DALY, Peru, Ind., assignor of one-half his right to EDWIN D. OLIN, same place. Application filed June 3, 1873.

To the side of the case containing the drawers is attached an upright bar which extends nearly to the top of the case, where it is encircled by a spiral spring. The bar has notches in which engage spring-catches attached to the several drawers. At a point near the center of the case, vertically, is placed a plate, through the center of which extends the shank of a tumbler that engages with and operates the vertical bar. Said shank receives the key which moves the tumbler.

Claim.—In a device for locking a series of drawers, the combination of the notched bar A, spring B, plate C, tumblers D D', and spring-catch E E', the parts being constructed and arranged substantially as and for the purpose set forth.

140,482.—*Means of Attaching the Fore End Stock to Gun-Barrels.*—JOHN DEELEY and JAMES S. EDGE, Jr., Yardley, England. Application filed June 20, 1873.

Claim.—The combination, with the fore end and the barrel or barrels of small-arms, of a spring-catch, carried by the fore end, and arranged and operated to engage with, and to be disengaged from, a lump or its equivalent on the barrel or barrels, substantially as and for the purposes herein shown and described.

140,483.—*Sad-Iron.*—WILSON P. DODSON, Philadelphia, Pa. Application filed June 2, 1873.

The sad-iron is open at the top to admit a heater, and the handle is rigidly attached at the ends of the iron.

Claim.—The shell A open at the top to receive a heater, B, and provided with a handle rigidly attached thereto, for use as a sad-iron, substantially as described.

140,484.—*Cultivator.*—JOHN W. DOUD, Ward's Corner, Iowa. Application filed September 21, 1872.

The frame is supported on two wheels, the main beam being diagonal to the axle-tree. The plows are attached to the diagonal beam. The upper end of the standards are clamped to a segmental arch in such a manner that a strong pressure against the share will release the gripe, thus allowing the share to move backward, and thus prevent breakage.

Claim.—In a cultivator, the bent adjustable plate K and bolt L, as described, in combination with the pivoted shovel-standard H and arched bars J, secured to and rising above the drag-bars *c*, as specified.

140,485.—*Elevating-Machine.*—GEORGE A. DUPUIS, Detroit, Mich. Application filed April 5, 1873.

A frame secured to the ground having within it two pulleys or drums, and another frame designed to be set on the floor above, successively, immediately above the ground-frame, and likewise provided with two drums. Around these drums are ropes to which two elevating-platforms are attached, and so arranged that when one platform is at the top of the frame the other is at the bottom, and the weight of a man descending on one platform carries the building material on the other to the required height.

Claim.—1. The combination of the frames A C, pulleys or drums B D, platforms E, ropes *d d'*, guide-ropes A, guide-pulleys *h*, drums and cranks *m*, tightener-drums *h'*, ratchet and pawl *g*, and brake H, when the parts are constructed and arranged to operate substantially as and for the purposes described.

2. The hooks F, provided with bails *c*, in combination with the hooks *b* of the platforms E, for the purposes specified.

140,486.—*Seal-Lock.*—GEORGE R. DUNN, Newark, N. J. Application filed June 19, 1873.

The sliding hasp is held in the locked position by a sheet-metal sealing-key, which passes through openings in the case and hasp. The key is provided with shoulders that engage with corresponding shoulders arranged in the hasp, so that when the key is inserted within the openings it cannot be removed without breaking off the enlarged end or head.

Claim.—The key D provided with the shoulders *d* and *d'*, in combination with the opening *a* within the casing A, and the opening *c''* provided with the shoulders *c'''* within the hasp C, substantially as and for the purpose specified.

140,487.—*Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed February 18, 1873.

Relay *m* closes circuit to printing-magnet, which turns type-wheel one step, and, by break-wheel A, breaks circuit 3 of *m*, which, in turn, breaks circuit 2 of *f*, the armature of which, being drawn back, turns type and break wheels another step, closing circuit 3, *m*, and *f*, thus automatically making and breaking each other's circuits until *h* is stopped by the depression of a key. Printing-magnet *w* thrown in during pause by spring *u* through a relay.

Claim.—1. The combination of the type-wheel, pallet-wheel, circuit-wheel *h*, and pallets with the circuits 2 and 3 and electro-magnets *m* and *f*, substantially as set forth, for automatically opening and closing the respective circuits and rotating the type-wheels, as set forth.

2. The printing-circuit closed by the spring *u* of the pallet-lever when the circuits 2 and 3 are broken, and the movement of the type-wheel arrested by the depression of a finger-key, in combination with the pallets that are moved by the spring and close the type-wheel circuit when the finger-key is released, substantially as set forth.

140,488.—*Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed May 16, 1873.

Break-wheel *o* connected to motive train by devices of first claim, so that when former is stopped latter runs on. Main governor-shaft started in right direction by pawl m^2. Stroke of printing-armature adjusted by screws passing through it and resting on magnet-cores. Double set of circuit-closing points attached to printing-circuit closes on end of type-wheel armature-lever for certainty of contact.

Claim.—1. The circuit-breaking wheel *o* actuated by the wheel h^4, in combination with the pawl 15, ratchet-wheel *k*, arms *m*, and range of finger-key bars *b'*, substantially as and for the purposes set forth.

2. The switch-block *t*, circuit-springs 21 23 24 25 and their connections, substantially as set forth, in combination with the circuit-closer *o*, line-connections and type-wheel magnets d^1, substantially as set forth.

3. The starting mechanism, consisting of the pawl m^6 and ratchet-wheel m^5, in combination with the governor and magnetic motor, substantially as set forth.

4. The screws c^2 applied to the armature of the printing-magnet, for the purposes set forth.

5. The stop-pawl s^1, in combination with the type-wheel, wedge-acting pallets, and ratchet-wheel, for the purposes set forth.

6. The double pairs of spring circuit-closing points 20 and 35, one pair set to come into contact before the other pair, for the purposes set forth.

140,489.—*Circuit for Printing-Telegraph.*—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed February 18, 1873.

Two relays in main-line circuit, central printing and type wheel circuits, form one local battery, the relays having polarized armatures and being so wound that one armature is attracted while the other is repelled. One or the other brought into action by reversal of current.

Claim.—Two polarized electro-magnets in a main circuit, in combination with two local circuit-connections to the magnets of a printing-instrument, and a mechanism for opening and closing the main circuit and reversing the polarity of the current, substantially as and for the purposes set forth.

140,490.—*Boot-Tree.*—ORSON V. ELLIOTT, Mansfield, Pa. Application filed May 28, 1873.

The notched collar and pawl enable the operator to adjust the stretching device, as may be required, and to hold the tree firmly in position for the finishing process.

Claim.—The boot-tree D D', provided with the screw-shaft B having wedge-shaped nut G, said screw-shaft fitting in a socket in the base A, in combination with the notched collar *a* and pawl I, all arranged for operation as and for the purpose specified.

140,491.—*Thrashing-Machine.*—JOHN ELLIS and NATHAN HOFFMAN, East Coventry, and JAMES LEE, Pottstown, Pa. Application filed May 9, 1873.

A thrashing-cylinder, with fans attached to the ends, communicating with a dust-conveyer which extends forward over the feed-table and conveys the dust through air-passages into casings on each side, the fans forcing the same into and through the main flue in the lower part of the frame.

Claim.—1. The fan-blades *d d* with ears *e e* attached to the ends of the thrashing-cylinder, and leaving spaces between said cylinder and the fans, all substantially as and for the purposes herein set forth.

2. The combination, in the dust-conveyer G, of the passages *n n*, fan-casings *p p*, side flues *r r*, and main or bottom flue H, all substantially as and for the purposes herein set forth.

3. The combination, with the flues *r r* of the dust-conveyer, of the valves *s s*, ball *t*, rod *v*, spring *w*, and nut *x*, substantially as and for the purposes herein set forth.

140,492.—*Bed-Bottom.*—DAVID FRANKFODER, Wakarusa, Ind., assignor to himself and GEORGE W. STALEY, same place. Application filed May 17, 1873.

Transverse rods, with eyes for the slats, are placed at the head and foot. Over these rods the bail of the spring is hooked. At the head is a bolster-frame operated by an independent bolster-prop.

Claim.—1. The arrangement of the rod C, provided with eyes *b*, with relation to the springs B for supporting the slats D, as shown and set forth.

2. The combination, with the frame A, springs B, rods C, and slats D, of the bolster-frame E E^1 E^2, links *d*, rod *e*, radius-rods *f*, bolster-prop F, pawls F', and rod *g*, substantially as and for the purpose set forth.

140,493.—*Corn-Planter.*—JESSE P. FULGHUM and L. LOVELL LAWRENCE, Dublin, Ind., assignors to WAYNE AGRICULTURAL COMPANY, same place. Application filed May 26, 1873.

The invention relates to planters which deliver their seed by a horizontally-rotating perforated disk, and comprises—first, a device for cutting off surplus seed and insuring the discharge of that which is to be dropped; and, second, a device to facilitate the introduction, removal, and adjustment of the cut-off brush.

Claim.—1. In the described combination with horizontally-revolving seed-disk D *d d'*, the vertically-revolving spider Q, formed and operating as set forth.

2. The combination of the plate J *j f*, curved ribs K K', and swinging door or flap N, together with the lugs *n' n''* and apertures P P', whereby said door is rendered capable of being detached from the hopper for the insertion of a brush, M, as herein explained.

140,494.—*Plate for Vulcanizing Belting, Hose, &c.*—DENNIS C. GATELY, Newtown, Conn. Application filed June 25, 1873.

Heretofore the steam-tables and tops of molds for long articles have been made by joining sections with open ends. The difficulty has been to close the joints so no steam would come through the joints to touch the article. In this case each section is a separate chamber with steam connection.

Claim.—A vulcanizing-plate consisting of two or more sections, each section forming a distinct and separate jacket having a distinct and independent steam-supply as shown and set forth.

140,495.—*Saw Attachment.*—JOHN GIGLIN, Boston, assignor to himself and HIRAM K. HINES, East Boston, Mass. Application filed May 7, 1873.

One end of an elastic strap is made fast to some stationary point, the opposite end being attached to one extremity of a cross-cut saw, at the other end of which is the operator.

Claim.—As a new manufacture, the elastic band or spring B, the connections *c d*, the saw A, and handle *e*, combined and arranged substantially in manner and to operate as described, the whole constituting an automatic and manual power apparatus or mechanism for cutting off piles, as specified.

140,496.—*Envelope.*—LOUIS GIEBRICH, Ottumwa, Iowa, assignor to KAROLINA GIEBRICH and JOHN EBRACHER, same place. Application filed May 10, 1873.

An envelope having two pockets is provided with narrow gummed tags on its flaps, which are inserted into angular slits cut in the back of the envelope.

Claim.—A safety-envelope, having the lap *i* cut in the body of the envelope to fit the tag *b* of the flap *a*, and provided with the back tag arranged to pass through a suitable slit in the face of the envelope, or through the bend of the flap, substantially as specified.

140,497.—*Bee-Hive.*—DEMUS L. GROVER, Groton, N. Y. Application filed May 10, 1873.

A hive having on two sides interior perforated walls and space between them and the outer walls; also, sheltered apertures in the outer walls and a removable honey-board resting upon the inner walls and having a gauze or perforated center part.

Claim.—The perforated linings B B, arranged along opposite sides of the interior of the hive, with sheltered ventilating-openings in said sides, and the honey-board with perforated shield, all substantially as and for the purposes specified.

140,498.—*Metallic Arch for Tunnels, &c.*—JOSIAH GROVES, Ellicott City, Md. Application filed May 31, 1873.

A metallic arch for tunnels, &c., composed of flanged sections connected together by bolts and resting upon flanged sectional side walls of the same material. The flanges of the arch overlap the joint to exclude moisture, and the radial flanges are of dovetail form to assist in retaining cement in the recesses.

Claims.—1. An arch composed of cast-iron sections, provided with overlapping flanges 8, which rest upon the top of the raised flanges 7, and serve to support the sections in position without the aid of bolts, and to prevent leakage, substantially as shown and described.

2. The side walls, consisting of iron sections provided with the shoulder 4 and flanges 5 6, substantially as set forth.

3. The inwardly-beveled flanges 7 2', in combination with the cast-iron sections, substantially as specified.

140,499.—*Closing Hatchways.*—EDWARD M. HACKETT, New York, N. Y. Application filed June 19, 1873.

As the elevator-car rises and falls a pin projecting therefrom engages a screw-shaped cam-groove attached to a vertical-journaled shaft carrying a horizontal arm, which raises and supports the hinged doors to close the opening after the passage of the car.

Claim.—The combination, with a hinged or a sliding door, the elevator C, and pin *c*, of a vertically-journaled shaft, E, spirally-grooved half-tubes F F, and arm *e*, the latter working beneath and forming a partial support for the door, and all arranged to operate in the manner and for the purpose specified.

140,500.—*Combination Lock.*—PHIDELLO W. HALL, Calvert, Tex. Application filed June 20, 1873.

A lock adapted to be used also as a latch. A pin is arranged to pass through the disk-tumblers and hold them in position, so that the bolt may be used as a latch. The said pin may also be passed through a hole in the bolt when it is desired to hold the latter in the locked position.

Claim.—1. The combination of the bolt B, disks G H, pin J, and plate K, whereby the disks may be secured when the bolt is used as a latch, or the disks and bolt secured when desired to lock the bolt, substantially as described.

2. The combination of the bolt B having lugs or projections *a a*, disks F G H, constructed as described, and secured to their respective spindles by set-screws *c c*, safety-pin J, plate K, spindles F^1 G^1, and knobs F^2 G^2, the whole constructed, arranged, and operating as described, and for the purposes set forth.

140,501.—*Cigar-Molding.*—JOHN THOMAS HENNAMAN, Baltimore, Md. Application filed May 24, 1873.

For applying the wrappers to molded filler-bunches and finishing the point, an adjustable apron is employed, fastened at its ends to a table, and passing around a roller which is free at one end, and which moves from end to end of the table, rolling the "bunch" in a bight of the apron on either side of the roller. Near the ends of the table are depressions for permitting the bunch to be inserted, and centrally on one edge of the table is arranged a gage-plate for gaging the wrapper and for supporting the same for gumming.

Claim.—1. The combination, with the apron I, of a roller, F, supported above the table without any connection from below the latter on that side on which the point of the cigar is formed, the whole arranged as herein described, to wrap a cigar while its head or point projects beyond the table and apron in convenient position for manipulation by the operator during the rolling process.

2. The combination of the roller F, the apron I adapted to form a bight on either side of said roller, and the cavities M M', all arranged substantially as herein described, for the purpose of wrapping right or left hand cigars by a movement in either direction.

3. The gage-plate H, in combination with a table, roller, and apron, constructed, arranged, and operating substantially as herein specified, for the purposes stated.

140,502.—*Hydraulic Hoisting Apparatus.*—PHILIP HINKLE, San Francisco, Cal. Application filed May 23, 1873.

The cylinders are mounted upon wheels and reciprocate upon fixed hollow piston-rods. To a cross-head fastened to the cylinders a rope or chain is attached, passing over suitable pulleys and fastened to the top of the car. The hollow piston-rods communicate by a pipe with a reservoir above the hoist-way, so that for lifting the empty cage or light loads the water can be re-used.

Claim.—1. One or more horizontal cylinders, C C, mounted upon wheels D D, and arranged to reciprocate upon the hollow piston-rods F F, substantially as and for the purpose above described.

2. The traveling horizontal cylinders C C, in combination with the fixed hollow piston-rods F F and perforated piston-head A, substantially as and for the purpose above described.

3. The fixed hollow piston-rods F F with their perforated piston-heads A, in combination with the three-way cocks *e*, the plug of which has an end delivery into the hollow piston-rods, substantially as and for the purpose above described.

4. In combination with the cage and traveling cylinders with their fixed pistons A or equivalent device, the upright pipe or pipes *r* and tank or tanks S, substantially as described, for the purpose specified.

5. The traveling cylinders C C with their centrally-pivoted pull-bar *i*, in combination with the cord, rope, or chain *j* and pulleys *k*, for the purpose specified.

6. The guide-timbers A A of an elevator-frame having the groove *c* and inside recess *b*, in combination with the H-shaped cramp-arms V and lever-bar W, substantially as and for the purpose above described.

140,503.—*Automatic Rope-Shipper.*—JOSEPH HOFFMAN, Waterbury, Conn. Application filed May 6, 1873.

To imitate a girl skipping a rope.

Claim.—1. The doll or figure E, made of superior weight below, and freely pendent at its hands, by or on the wrist-pins *b b'* of the revolving cranks C C', in combination with the clock-work B, substantially as specified.

2. The skipping-bow G, in combination with revolving cranks C C' and the figure E, of superior weight below, and pendent by its hands from or through the wrist-pins *b b'* of the cranks, essentially as herein described.

140,504.—*Railroad-Car Basket.*—JOHN F. HUDSON, East Cambridge, Mass. Application filed March 15, 1873.

A fin is formed by compressing the lower portion of the metallic tube, and the wires are passed through holes punched in this fin.

Claim.—A cross-support for the wires or bottom of a car-basket constructed from a metallic tube, a portion of which is compressed longitudinally to form a fin to sustain the basket-bottom, substantially as shown and described.

140,505.—*Sulky-Plow.*—DAVID W. HUGHES, Mexico, Mo. Application filed October 12, 1872.

The tongue is attached to a transverse bar which rises above and extends beyond the near wheel, so that the tongue may be in line with and directly above the plow-beam. The bar also supports the driver's seat. The rear of the plow-beam is adjustably supported by chain Z and lever K.

Claim.—1. In a wheel-plow, the transverse bar D, constructed and arranged and used to support the driver's seat E' and tongue C, in the manner substantially as described.

2. The bar H', braces I, beam A, plow-beam F', lever K, and chain Z, combined substantially as and for the purpose set forth.

140,506.—*Combined Wall-Protector and Towel-Rack.*—JOHN F. HUMMEL, Cincinnati, Ohio. Application filed June 9, 1873.

Suspended from the back of the cornice is an oil-cloth covered by a lace curtain. On the front of it is a towel-roll held by brackets. At each end is pivoted arms cut from the body of it, which may be turned out for use.

Claim.—A combined wall-protector and towel-rack, consisting of the supporting-bracket A, for attachment either of a curtain, H, or screen I, said bracket being provided with two pivoted and horizontally-swinging arms, B B' C C', and also with the fixed horizontal rail, rack, or bar, G, when adapted to be employed in the manner herein described, and for the purpose set forth.

140,507.—*Tailor's Measure.*—JONES AMASA JOHNSTON, Montreal, Canada. Application filed March 6, 1873.

Claim.—The square A with straight edge B and strap C, constructed substantially as described, whereby the datum lines F and G are applied to the figure, as set forth.

140,508.—*Fruit-Jar.*—AMANDA T. JONES, Clinton, Wis. Application filed June 10, 1873.

The cover has a central opening within which is a packing-shelf, and on the inside of the rim of the cover are segments which fit to flat faces on a flange, and serve to steady the cover. The hooked ends of a clamp, made with an opening in the middle and curved outward and downward from this opening, forming cams with straight edges, pass over the flattened faces of the lower flange, and when turned pass under the flange, securing the cover to the jar. The packing is held in place by a cap-plate, whose hooked ends engage with the curvature of the clamp. The plate is prevented from slipping by the straight edges of the clamp.

Claim.—1. A secondary flange, B, above the clamp-flange C, having the flat faces or recesses *b*, substantially as specified.

2. A concave-convex cover having the internal segments or swells *a* within its rim, substantially as specified.

3. The annular packing-shelf *g* within the central opening *e*, substantially as specified.

4. A clamping-bar, open in its middle portion, and provided with the outward and downward cam-curves *z*, substantially as specified.

5. A clamping-bar, open in its middle portion, and provided with the outward and downward cam-curves *z*, terminating in straight edges *u*, substantially as specified.

6. A cap, H, concave in form, and provided with the downwardly-hooked ends *n*, substantially as specified.

7. The combination of the double-flanged jar, the concave-convex and centrally-perforated cover, the packings *h* and *k*, the clamping-bar E, the cams *z*, and the hooked cap-plate H, substantially as specified.

140,509.—*Rotary Blower.*—RICHARD F. KNOX, San Francisco, Cal., assignor to PALMER, KNOX & CO., same place. Application filed December 30, 1872.

The ends of the case are constructed with removable sections, so that the interior of the apparatus can be repaired without taking the entire case apart.

Claim.—A blower constructed with the ends of the casing having removable sections, substantially as described.

140,510.—*Ribbon-Case.*—JOSEPH K. LANDIS, York township, Sandusky county, Ohio. Application filed February 15, 1873.

Is constructed polygonal in form, pivoted at its center to revolve, having a series of compartments to receive shafts, with cranks outside, over which the ribbons, &c., are wound, and the end passed through slits formed in the outer face or side of each compartment for exhibition and sale of them.

Claim.—A revolving ribbon-case, C, composed of a series of compartments, D, each provided with slits *b*, and the crank-shafts F having hooks *a*, substantially as shown and described.

140,511.—*Fruit-Packer.*—MARY E. LEWIS, Mansfield, Ohio. Application filed April 29, 1873.

The nut, which is arranged upon the upright threaded standard, is provided with curved arms, the ends of which extend downward, and are provided at such lower ends with screw-threads, upon which the pressers are operated.

Claim.—The table A, standard B, burr C, arms D, and pressers E, arranged and operated substantially as shown.

140,512.—*Fire-Extinguisher.*—CHARLES LIPPINCOTT and JAMES PATTERSON, Philadelphia, Pa. Application filed February 15, 1873.

Curved arms, arranged to fit the back of the person carrying the extinguisher, are secured to the exterior of the cylinder, thereby preventing any lateral movement.

Claim.—The curved arms H on the exterior of the apparatus, for the purpose specified.

140,513.—*Horse Hay-Rake.*—LYMAN LITCHFIELD and J. SPENCER CORBIN, Gouverneur, N. Y. Application filed June 6, 1873.

The tooth-thimble has an upwardly and rearwardly projecting hook which spans, and, by means of levers, controls the position of the teeth.

Claim.—1. The combination, with lifting-bar L fastened on holder J, and a wheel, B, connected with the latter by pivoted straps, of the foot-pin E and hand-lever device A C, operated simultaneously, as and for the purpose described.

2. A disk-wheel, B, having ratchet-teeth placed at intervals on the periphery with a smooth space between them, combined with the pawl I to operate the rake-lifting mechanism, as and for the purpose set forth.

3. The tooth-head K, consisting of sleeve *k* and standard k^2 attached together by arms k^1, as specified.

140,514.—*Windmill.*—GILES MANIE, Dixon, Ill. Application filed April 8, 1873.

Two castings with semicircular projections provided with ears, and with bolt-holes drilled through them, by means of which they are fastened together, making a circular aperture to receive a sleeve. This sleeve has shoulders formed on its upper and the under side of the aperture formed by the two castings. The sleeve receives the pumping-rod and the shifting-rod. This shifting-rod has shoulders formed to rest on either side of the sleeve, thus securely holding the pumping-rod in position, without the use of bolts or pins. The fans are also connected without the use of bolts or pins, by means of forked castings, grooved on their under sides, and provided with slot bolt-holes to receive the radial arms of the wheel.

Claim.—1. The castings C C^1, having semicircular projections C^2, ears C^3, bolt-holes C^4, and bolt C^5, in combination with the sleeve D, having shoulders D^1 D^2, hole D^3, forming a device for holding the shifting-rod and pitman or pumping rod of a windmill, substantially as described and set forth.

2. The sleeve D, provided with shoulders D^1 D^2, and a hole, D^3, in combination with the shifting-rod F having shoulders F^1 F^2 formed thereon, and locking or holding in position the pitman or pumping rod E, substantially as described and set forth.

3. The forked castings G, formed with journals G^1, knobs or projections G^2, and bolt-holes G^3, in combination with the fan-shafts I, provided with castings H, substantially as shown and described.

4. The casting M, formed in two parts M^1 M^2, projections M^3 M^4, forming a fork, and provided with bearings, in combination with the block N, journals N', and hole O^3 for the reception of the threaded ends O^2 of the brace or connecting-rods O, substantially as and for the purposes described and set forth.

5. In combination with the fan-shafts and connecting-rods and the bosses Z' A^5, connected as described, the levers L, provided at one end with forks L^2 and projections *l*, the opposite ends l^3 of such levers L passing through a mortise, A^4, in the hollow shaft A, and being connected, within such shaft A, with the upper end of the shifting-rod F, substantially as and for the purposes specified.

6. The combination of the boss A^5, flange A^3, levers L, forks L^2, main brace A^1, mortise A^4, hollow shaft A, shifting-rod F, pitman E, sleeve D, castings C C^3, and projections C^3, substantially as shown and described.

140,515.—*Molasses-Pitcher.*—EDWARD B. MANNING, West Meriden, Conn., assignor to MANNING, BOWMAN & CO., same place. Application filed March 1, 1873.

The pitcher and pouring-spout are made from the same material and in one piece. The cover has a flange projection downward on the inside. There is also an upward-projecting flange in the drip-channel, and a socket on the body of the pitcher for the handle to be attached to.

Claim.—1. In a molasses-cup having a central spout, B, and a surrounding return-channel for the drip, the cover D, provided with a flange, *c*, upon the inside, substantially as and for the purpose specified.

2. In a molasses-cup having a central spout, B, and a surrounding return-channel for the drip, the channel formed by the auxiliary flange *f*, substantially as and for the purpose described.

3. In a molasses-cup, the body of which is glass or similar material, and the neck and cover of metal, the socket E formed upon the body of the cup, and a metallic handle, F, constructed with an arm, *n*, to enter the said socket, the upper end of the handle attached to the metal neck, substantially as set forth.

140,516.—*Revolving Fire-Arm.*—JOHN M. MARLIN, New Haven, Conn. Application filed May 10, 1873.

The arbor upon which the hammer revolves is provided with a slot for holding the pawl-spring and a head for holding the hammer in place when the side plate is removed.

Claim.—The arbor C, provided with a head having a slot therein, whereby the pawl-spring and the hammer are secured, as herein set forth.

140,517.—*Bottle-Stopper.*—THOMAS J. MAYALL, Boston, Mass. Application filed July 18, 1873.

The elastic stopper is compressed laterally by a cam-lever after being inserted in the bottle, and the lever locked while in a vertical position by a spring-bolt entering a socket in the bottom of the lever, and unlocked by a key when it is desired to withdraw the cork from the bottle.

Claim.—The herein-described expansible cork or stopper, in which the lever for drawing together the heads of the cork to laterally spread the rubber or other expansible body held between them is combined with a locking device arranged to lock said lever when the latter is in the position it occupies when the cork is expanded, as herein shown and set forth.

140,518.—*Nursing-Bottle.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 20, 1873.

A single stopper of wood or suitable material is turned out so as to afford a projection at each end for attaching a rubber tube, and two shoulders for holding a rubber sleeve which is slipped over the body of the stopper to pack it tight in the neck of the bottle.

Claim.—The herein-described stopper for nursing-bottles, consisting of a main body or portion formed of one piece of wood or other suitable material with top and bottom knobs for attachment of the flexible suction-tubes, a head by which the stopper can be readily handled, and a central cylindrical stem terminating in two shoulders, upon which stem is sprung a rubber sleeve clasping said stem and confined between said shoulders and constituting the stopper proper to fit the neck of the bottle, as shown and set forth.

140,519.—*Vulcanizing Rubber Belting, &c.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 21, 1873.

The molds which are to form the article are attached to the steam-table and pressure-plate by means of screws and clamps, so that they may be adjusted and the upper half of the mold-lifter is lifted with the pressure-plate.

Claim.—1. In a vulcanizing-press, the combination, with the top and bottom heating jackets or plates, of removable and adjustable top and bottom mold-plates, or molds proper, and followers, attached, respectively, to the said top and bottom jackets, substantially as and for the purposes described.

2. The combination, with the steam jackets or plates provided at their ends with horizontal ledges or flanges, as described, of mold-plates, or molds proper, and followers, provided at their ends with ears holding set or binding screws, which catch under said ledges or flanges, as and for the purposes shown and set forth.

140,520.—*Apparatus for Preserving Wood.*—HENRY G. MCGONEGAL, Washington, D. C. Application filed May 20, 1873.

Consists in chutes or hoppers so arranged as to readily conduct the wood to and from a cylinder, the cylinder being mounted upon trunnions or supports so that it may be easily tilted to receive and discharge the charge of wood.

Claim.—A treating-tank, for Kyanizing or Burnettising or treating wood with chemicals to prevent decay, mounted on trunnions and capable of being tilted, as described, and for the purposes set forth.

2. The combination of a treating-tank with a chute or chutes, as described, and for the purposes set forth.

3. A treating-tank, as described, when mounted upon a vertical axis or support, by which it may be swung around to any desired point, as described, and for the purposes set forth.

140,521.—*Device for Releasing Horses from Carts.*—GEORGE H. MEIER, Cincinnati, Ohio. Application filed May 22, 1873.

The thills are divided near the body, the outer ends being secured by means of prongs on a rock-shaft engaging with a fastening-bar. The rock-shaft being turned releases the outer thills.

Claim.—In combination with the axle B *b b'*, the divided shafts D D' *d d'* E E', straps F F' *f f'*, staples G G', rock-shaft H *h h'* J, and retaining devices K *k* L, or their mechanical equivalents, for the object herein described.

140,522.—*Carpet-Stretcher.*—A. FORD MICHAEL and H. N. DUNCAN, Lockport, N. Y. Application filed April 14, 1873.

A carpet-stretcher constructed in the ordinary form of a card with its teeth, with a handle pivoted on the back of it by which it can be adjusted to different angles for convenience in the use of it, and for attaching the handle.

Claim.—The back *a* with pivoted handle *b*, strips *a*, and wire-points *c*, substantially as shown and described.

140,523.—*Hot-Air Furnaces.*—GEORGE H. MILLER, Leavenworth, Kans. Application filed May 31, 1873.

The radial chambers, through which the products of combustion pass, are so located over the dome of the furnace that the central chamber with which they connect is axially above said dome and is heated by it. In this central chamber, the movable exit-pipe, being vertically adjustable, acts as a damper. The basket-grate rests upon cleats or flanges. Its grated dumping bottom is supported by the handle journaled in the rear plate and in supports near the front of the ash-pit.

Claim.—1. A radiator having the radial chambers H and the central chamber L axially arranged over the center of the fire-pot, substantially as specified.

2. The radiator, having air-tubes M passing through its radial chambers H, smoke-inlets at the ends of said chambers, the central vertical smoke-outlet pipe, and the tubular damper or extension tube, substantially as specified.

3. The combination, with a radiator having a central smoke-pipe, of a fire-pot dome axially arranged below said radiator and the tubes G, connecting the base of said dome with the radial chambers of said radiator, substantially as specified.

4. The combination, with a removable or sliding basket-grate and a connected rotating or dumping grate, of the operating-rod and the removable journal-seat bracket, substantially as specified.

5. The horizontally-sliding or removable basket-grate and the removable rotating or dumping-bottom grate journaled at the rear of said basket-grate, and at the front of the ash-pit, substantially as specified.

6. The combination, with a radiator having chambers H, the central chamber L, and a vertical smoke-pipe, of the vertical cylindrical damper-tube sliding in said smoke-pipe, and long enough to extend to the floor of said radiator, substantially as specified.

140,524.—*Hydraulic Air-Compressing Apparatus.*—CHARLES MOORE, Jersey City, N. J., assignor of part interest to CHARLES BARCHLEY and GEORGE SOMMER, same place. Application filed May 13, 1873.

Water is alternately introduced and discharged by means of a main valve, operated by an auxiliary valve, the latter being controlled by a float which rises and falls with the water, causing the air to be alternately admitted and discharged under pressure through suitable valves.

Claim.—The combination, with the air-compressing water chamber or tank A, provided with upper air-inlet and outlet valves, of the free or independent main water-valve E and supplementary water-valve F, controlled by a float within the tank, and arranged for operation in relation with passages to keep up an automatic action of the apparatus, substantially as specified.

140,525.—*Carpet-Beater.*—WILLIAM G. MOWRY and CONRAD PULIS, New York, N. Y. Application filed May 24, 1873.

Beaters are arranged over an elastic supporting-bed and turn on a common shaft, and are exposed to the action of a spring and cam. The tails of the beaters are bifurcated. The elastic bed consists of a series of spiral springs in rails, and connected by cords.

Claim.—1. The recoil prong *f* on the rear end of the arm of a beater, B, in combination with a cam, *d*, and spring, *b*, constructed and operating substantially in the manner set forth.

2. The elastic bed C, constructed of spiral springs *g* arranged in pairs, and connected by cords or pieces of webbing, in combination with beaters B, revolving brush D, and feed-rollers *k l*, substantially as shown and described.

140,526.—*Iron Window-Shutter.*—SAMUEL B. MUNSON, Jr., Chicago, Ill. Application filed July 10, 1873.

Claim.—A window or door-shutter composed of corrugated plates combined together to form a series of vertical passages open at each end, when the upper ends of such passages communicate by means of lateral openings with the external air, substantially as and for the purpose specified.

140,527.—*Garbage-Tub.*—SAMUEL B. MUNSON, Jr., Chicago, Ill. Application filed June 6, 1873.

A tub of corrugated-metal sides, wooden and metallic bottom, secured by upper and lower hoops.

Claim.—As a new article of manufacture, the hereinbefore-described garbage-tub A, constructed of or from corrugated sheet metal, provided with the metal bands B and C, wooden bottom D, metal bottom *d*, and handles F, substantially as and for the purpose specified.

140,528.—*Key for Piano-Fortes, Organs, &c.*—ELIAS P. NEEDHAM, New York, N. Y. Application filed May 2, 1873.

Claim.—A key for organs, piano-fortes, and other musical instruments, having its upper front edge rounded off, and a veneer extending from its top continuously over such rounded edge and down its front, essentially as and for the purpose herein set forth.

140,529.—*Liquid-Cooler.*—JAMES R. NEIL, Wolcottville, Conn. Application filed May 20, 1873.

The cooling-vessel, which is set in a tub of water, is made of casings *a*, the lower ends of which are united to form an annular chamber, and the upper ends made flaring and supporting a perforated plate for directing the liquid down the sides of the casing. An annular cover or open trough is placed over the plate, and the liquid is introduced through one pipe and withdrawn through another.

Claim.—The cooling apparatus composed of the casings *a* and *b*, united together near the bottom, and formed with their upper portion flaring, in combination with the perforated plate *c* that directs the liquid to be cooled, so that it runs upon the flaring portions of such casings, as and for the purposes set forth.

140,530.—*Compound for Coating Wood and other Articles to Render them Acid-Proof.*—ROBERT NEWELL, Philadelphia, Pa., assignor to R. NEWELL & SON, same place. Application filed July 21, 1873.

1. Paraffine and wax are placed in any suitable vessel and melted or fused. 2. Resin, Burgundy pitch, and asphaltum are also placed in a suitable vessel and melted or fused. Preparations Nos. 1 and 2, in a heated state, are well incorporated with each other, after which time it is ready for use.

Claim.—The herein-described composition for the purpose described, when compounded of the ingredients in the manner and about the proportions as set forth.

140,531.—*Snap-Hook.*—OLIVER B. NORTH, New Haven, Conn., assignor to O. B. NORTH & CO., same place. Application filed May 13, 1873.

The conical chamber allows the hook and loop to be cast in their permanent positions and readily withdraw from the mold.

Claim.—In a snap-hook having the hook A and loop B in the relative position to each other, as described, a conical chamber formed in the head to receive the conical spring, the tongue E constructed with the ear F and stud *d*, the said parts being united by means of the said stud, substantially as set forth.

140,532.—*Pigeon-Trap.*—WILBUR F. PARKER, Meriden, Conn. Application filed May 23, 1873.

By projections upon the inside of the lids the plunger gives them a more vigorous throw. The plunger is prevented from shooting too far by a stop device.

Claim.—1. In a trap consisting of the hinged sides C, and a follower, E, the projection H upon the inner surface of the said sides, substantially as and for the purpose specified.

2. In a trap consisting of the hinged side C, with the projections H and follower E, a stop, L, arranged in connection with the said follower, so as to arrest the upward movement of the follower at a certain defined point, substantially as described.

140,533.—*Process of Preparing Wall-Paper.*—ARCHIBALD W. PAULL, Wheeling, W. Va. Application filed January 23, 1873.

The designs, enlarged or reduced in scale to accommodate the height of ceilings of different apartments, are photographed directly upon the wall-paper.

Claim.—The process of preparing wall-papers, substantially as above described.

140,534.—*Dumping-Car.*—JAMES G. PAYSON, Foxborough, Mass. Application filed June 14, 1873.

The dumping-boxes are moved outwardly and dumped over the edges of the truck. The elevations on the elevated portions of the tracks are designed to check the speed in dumping.

Claim.—1. The partly-horizontal and partly-curved tracks C' D, secured on the end walls of the bed-section A, in combination

with the bearing-rollers E, arranged at the rear of the dumping-section, substantially as specified.

2. The brake-protuberances Z, arranged on the convex portions C' of the tracks, in combination with the rollers E, substantially as and for the purpose specified.

3. The combination, with the tracks C' D and pinions E, of the guards U, substantially as specified.

4. The combination, with the tail-board latch *n*, of the cam N and arm J, having a suitable lifting-lug, L, substantially as specified.

5. The combination, with the dumping-section B', having a shaft, F, with end rollers, of the bed-section A, having the dumping-tracks C' D, substantially as specified.

140,535.—*Jigger for Separating Ore.*—WILLIAM H. PLUMB, Paterson, N. J., assignor to JOSEPH A. STERLING, New York, N. Y. Application filed May 6, 1873.

The adjustable ring is lowered upon the grate, the ore admitted through the funnel, and the grate vibrated. The ore adjusts itself according to gravity, after which the ring is raised a little and again fixed to vibrate with the grate. This permits the heavy matter to escape at the opening between the grate and ring into the conical receptacle while the lighter particles pass over the upper edge of the ring into the outer tub.

Claim.—1. The ore-separator, containing the reciprocating grate E in conjunction with the vertically-adjustable ring H, which ring is arranged above and nearly in line with the rim of the grate, substantially as and for the purpose specified.

2. The combination of the ring H, having the outwardly and downwardly projecting flange *d*, with the lower stationary funnel G, and the grate E, as and for the purpose set forth.

3. The yoke I connected by the nut J with the stem D of the grate, and serving to support the adjustable ring H, as set forth.

4. The tub or outer vessel A, receiving the water-supply at or near its middle and discharging the same from the top, and embracing the reciprocating grate E and adjustable ring H and stationary funnel G, as and for the purpose specified.

140,536.—*Circuit for Electric Railroad Signals.*—FRANK L. POPE, Elizabeth, N. J. Application filed May 15, 1873.

Combines with one battery several signal-stations, each having its own signal, magnets, and circuit-closers. Branch circuit from one station to station in rear reverses signal at rear station simultaneously with display of signal at forward station.

Claim.—1. The battery B, in combination with the positive and negative conductors C and Z, two or more electro-magnets, M M^1 M^2, for actuating or causing to be actuated visual or audible signals, and two or more circuit-closers, a a^1 a^2, placed at intervals along the line of a railroad, substantially as and for the purpose specified.

2. The battery B, in combination with the positive and negative conductors C and Z, two or more electro-magnets *m* m^1 m^2, for releasing or reversing visual or audible signals, and two or more circuit-closers, a^0 a^1, placed at intervals along the line of a railroad, substantially as and for the purpose specified.

3. The combination of the battery B, conductors C and Z, circuit-closer *a*, and electro-magnet M, for actuating a visual or audible signal, with the circuit-closer a^1, wires 5, 7, and 8, and electro-magnet *m*, for reversing, releasing, or stopping said signal, substantially as specified.

140,537.—*Shirt-Bosom Support.*—ISAAC M. POST, Philadelphia, Pa. Application filed November 9, 1872.

A wire-gauze frame, to be worn under the linen bosom to keep it in shape.

Claim.—As a new article of manufacture, the shirt bosom or shield, constructed of wire-gauze, as and for the purpose herein described.

140,538.—*Dress-Shield.*—ISAAC M. POST, Philadelphia, Pa. Application filed April 1, 1873.

A shield to protect the dress at the arm-pits.

Claim.—As a new article of manufacture, the wire-gauze dress-shield, constructed as shown and described.

140,539.—*Speaking-Tube.*—ANDREW RANKIN, Philadelphia, Pa. Application filed February 27, 1873.

The hinged cover of the mouth-piece of a speaking-tube is cast with two interior recesses, into which, two perforated disks being compressed, the whistle is formed.

Claim.—The combination, in a mouth-piece for speaking-tubes, of the recessed lid B, its shoulders *x x*, opening *q*, and perforated plates *n n*, all constructed and arranged as set forth.

140,540.—*Bed-Bottom.*—CLINTON VAN BUREN REEDER, San José, Cal. Application filed May 3, 1873.

A box, braced by cross-bars, incloses the springs, which are linked together, braced in the center, and hooked to staples on the inner sides of the box or frame.

Claim.—The bed-bottom herein described, consisting of the box-frame A, having the staples *b'*, the braced cross-bars B, and the double-conical spiral springs C, connected together and to the frame at both ends and middle by the hooks *a* and *b*, which hold the springs mainly in an upright position, as shown and described.

140,541.—*Ventilator and Cinder and Dust Guard for Car-Windows.*—OREN C. RIFE, North Manchester, Ind. Application filed April 26, 1873.

Fenders provided with deflectors and connected by an adjustable rod change the courses of the air-currents away from the open window. The crevices between the fenders and window are covered by angular ribs to prevent leakage.

Claim.—1. The combination of the plate B having angular rib B', the sockets *b*, and the fender C having the deflectors *c' c*, substantially as specified.

2. In a deflector for railroad cars, the plate B, having at each end the lugs *b' b'* for the reception of a pivot-rod of a fender, and the sockets *b* provided with rubber, substantially as and for the purposes set forth.

3. The fender C constructed with the deflectors *c c'*, substantially as specified, and for the purpose mentioned.

140,542.—*Typographical Printing-Plate.*—JOHN L. RINGWALT, Philadelphia, Pa. Application filed May 9, 1873.

Claim.—1. The within-described process of making plates for typographical printing—that is to say, drawing on a varnished and scored plate with resisting-varnish the picture to be produced, and then subjecting the plate to the action of acid, as set forth.

2. A typographical printing-plate on which the pictorial effect has been produced by drawing on a varnished and scored plate with resisting-varnish and subjecting the plate to the action of acid, as set forth.

140,543.—*Fire-Place.*—WILLIAM D. ROSS, New Philadelphia, Ohio. Application filed April 3, 1873.

The products of combustion may pass either laterally around the oven or directly through the flue in the center to the place of exit.

Claim.—1. The arrangement of the passages J J, flues *e e*, chamber *i*, and exit-pipe I, substantially as shown and described.

2. The combination of the casing A B, fire-place C, side passages J J, flues E E, chamber *i*, oven E, damper *d*, flue H, and pipe I, all constructed as described.

140,544.—*Water-Wheel.*—NORMAN C. ROBERTS, Waterville, N. Y. Application filed April 12, 1873.

The construction and novel arrangement of the wheel and curb or fore-bay so that the wheel can be placed either side upward, constituting it an under-draft or over-draft wheel, as may be desired.

Claim.—1. The concave or dish-shaped water-guide E having the peripheral portion F inclined to correspond with the angle of the bucket of the wheel secured on the inner wall, and extending outward, leaving a continuous opening, *h'*, between its outer edge and the edge of the outer wall, substantially as specified.

2. The combination, with the water-guide E having a central opening, A, larger in diameter than the shaft *m*, of the shaft and the removable shouldered step *k*, substantially as specified.

3. The wheel, consisting of the upper plate H having the convex center and the annular concavity near its circumference merging into the inclined edge *s*, the lower conical annular plate I parallel with the part *s* of the upper plate and the upwardly and inwardly inclined curved partitions *n*, substantially as specified.

4. The combination, with the concave water-guide E having a free edge, *g*, of the wheel having the buckets inclined at an angle corresponding to the angle of the water-guide, and the fore-bay having a rising helical bottom, an inner scroll-shaped wall, and an outer circular wall, of different heights, substantially as specified.

5. The gate, consisting of the shaft N, the cylinder-plate T, and the sector-shaped arms U, substantially as specified.

6. The combination of a gate having arms extending from the operating-shaft across the spout to the closing plate T, with the spout recessed in its top and bottom and in each side, substantially as specified.

140,545.—*Car-Coupling.*—SILAS ROGERS, London, England, assignor of one-half his right to JOHN COATSWORTH, same place. Application filed September 14, 1872.

The bolt F, when it is thrust between the rear ends of the coupling-hooks, allows them to be forced back by the projecting links until they reach the slots in said links; they are then thrown into the slots by the springs E. The hooks, being squared on one side of their rear ends, are held against the draft by the bolt F. Uncoupling is effected by withdrawing the bolt, when the hooks are free to be drawn forward.

Claim.—In combination with the hook or hooks D, working in connection with the springs E, the bolt F, and the links C, the rock-shaft A, levers I, and slotted arm or wheel G, all constructed and arranged substantially as set forth.

140,546.—*Wash-Boiler Attachment.*—ISABELLA C. SCHRAMM, Des Moines, Iowa. Application filed November 15, 1872.

A sheet-metal plate is made to conform to the shape of a wash-boiler; the central part is depressed, and perforated bars extend across the depression; feet are attached to the under side.

Claim.—A washing device, composed of the plate A A with fixed feet *a a*, and a depressed perforated center, and a series of bars, 1 2 3 4, over the depressed part, substantially as described, and for the purposes specified.

140,547.—*Music-Stand.*—OSCAR SCHULZE, St. Louis, Mo. Application filed June 4, 1873.

The standard is constructed on the "lazy-tongs" principle, and, by extending it, the base is expanded and the book-rest is opened.

Claim.—The combination of expanding base A B C, extension-standard composed of bars *d*, and automatically-opening book-rest frame E F H I, substantially as set forth.

140,548.—*Hand-Trunk and Hat-Box.*—QUINCY A. SCOTT, Pittsburg, Pa. Application filed June 4, 1873.

An elliptical-shaped hand-trunk has a hat-box in one end and a separate compartment in the other for wearing apparel. The annular space between the hat-box and the outer portion or covering of the trunk is arranged for the reception of linen, &c.

Claim.—1. A combined hand-trunk and hat-box, provided at one end with the main compartment C, and at the other end with the separate hat compartment or box D, substantially as described.

2. A hand-trunk provided with a main compartment, C, the separate hat compartment or box D and the annular compartment D^1 outside of and surrounding the hat-box, as described.

3. In a combined hand-trunk and hat-box, A, the compartments C D D^1 D^2, arranged substantially as described.

140,549.—*Cut-Off and Regulating-Cock for Gas.*—CHARLES E. SEAL, Winchester, Va., assignor of one-half his right to EDWIN F. BROOKS, Baltimore, Md. Application filed May 23, 1873.

A valve which is held to its seat by means of a spiral spring is operated from any part of a building by a bell-crank-lever, to the upper extremity of which is attached a dog, serving to hold the valve at any desired distance from its seat by operating into notches in a ratchet-wheel thereto attached.

Claim.—The valve B having stem *b'*, valve-chamber A, and connecting-rod L, combined with the lever G and ratchet and pawl mechanism I H *h'*, arranged as and for the purpose described.

140,550.—*Cooking-Range.*—NATHANIEL M. SIMONDS, St. Louis, Mo. Application filed April 16, 1873.

A pipe or chamber, open at both ends, extends from one side of the range over the fire-chamber and to the opposite side. On its upper part the top plates of the range rest; in its lower side, over the fire, are openings to allow air to flow in to aid combustion.

Claim.—1. The bearing-bar F, extending the whole length of the range, and having interior passage or air-flue *f*, to allow a current or currents of air to pass therethrough, substantially as and for the purpose set forth.

2. In combination with hollow bearing-bar F, the orifices *f''* and deflector G, arranged substantially as set forth.

3. The combination of the longitudinal hollow bearing-bar F and top plates, made in two portions, H H', receiving support at the middle upon the bearing-bar, substantially as set forth.

140,551.—*Wheel-Plow.*—HENRY M. SKINNER, Rockford, Ill., assignor to CHESTER C. BRIGGS and ABRAHAM L. ENOCH. Application filed March 29, 1873.

The plow is mounted upon two wheels. The forward end of the beam is controlled by a self-locking lever fulcrumed upon the tongue, and the rear end of the beam is raised by a lever mounted upon the axle-tree. One of the wheels is adjustable in height.

Claim.—1. The self-tilting plow-beam and hinged tongue, in combination with the tilting locking-lever I, operating substantially as described.

2. The combination of evener M with the forward end of the tilting plow-beam, and with the pivoted tongue, by means of the chain N, as and for the purpose described.

3. The angular stub axle-plate A^1, made adjustable on the axle-bar, as and for the purpose set forth.

4. The adjustable colter-standard R, in combination with the adjustable supporting-plates *s* provided with slots with knife-edge pivot-bearings *s'* formed on them, as described.

140,552.—*Wheel for Vehicles.*—GEORGE W. SMITH, Darlington, Wis. Application filed July 11, 1872.

One of the hub-shells is fixed on the conical end of the box, and the other is adjustable on the cylindrical end.

Claim.—The axle-sleeve A, the periphery of which forms the frustum of a cone from the spokes outward and a cylinder from the spokes inward, in combination with the hollow collars C C' having corresponding bearing-surfaces, and vertical spoke-bearing surface having the rim c^1 and nut c^2, substantially as shown and described.

140,553.—*Stove-Pipe Thimble.*—HENRY SMITH, Southington, Conn., assignor to himself and PECK, STOW & WILCOX COMPANY, same place. Application filed February 14, 1873.

The interior face of the thimble is corrugated, and the projections thereof impinge upon the stove-pipe and hold it in place, and in the spaces between the pipe and the inside of the thimble air circulates. The thimble is divided into two parts so that it can be easily packed for shipping.

Claim.—1. The thimble A, corrugated as described, whereby a single wall performs a double office, substantially as specified.

2. And in combination with the subject-matter of claim 1, the register C *b*, substantially as and for the purpose described.

3. The longitudinal halves *d d* of the thimble A, when arranged so as to be detached and nested together for packing, substantially as described.

140,554.—*Wire-Gage.*—HENRY SMITH, Southington, Conn. Application filed January 27, 1873.

A disk having a spiral or snail-like contour is pivoted to an overhanging index or caliper arm, so as to give a varying distance between such arm and the circumference of the disk as it is rotated. A series of radial graduations on the disk serves to indicate the space or distance at each point of rotation.

Claim.—1. The improved caliper herein shown, consisting of the cam-plate A and its arm B, relatively arranged substantially as and for the purpose described.

2. In combination with the subject-matter of claim 1, the index *c* and a scale, substantially as and for the purpose described.

140,555.—*Check-Hook.*—AUSTIN V. M. SPRAGUE, Rochester, N. Y. Application filed April 8, 1873.

Claim.—The spring C arranged within the hook B and having a curvature, *a*, corresponding thereto, so as to leave a space, *b*, for the check-rein, said spring being provided at its free end with an upwardly-projecting curve, *c*, for the purpose of guiding the rein into the hook, substantially as described.

140,556.—*Bale-Tie.*—WILLIAM C. STIFF, Birmingham, England. Application filed June 11, 1873.

Claim.—A loop or eye for bands or hoops for baling cotton or other substances, substantially such as herein described and illustrated in Figs. 7, 14, 15, 16 of the accompanying drawing, said loop or eye being formed from a portion of the band, or from a separate piece, bent and fashioned in the manner shown and set forth.

140,557.—*Ruffler for Sewing-Machines.*—MARSHALL J. STOLL, Middletown, Conn. Application filed June 4, 1873.

The serrated surface on the sliding bar has four motions as an ordinary feeding device, and will ruffle a piece of material passing over the separator, and the usual feeding device of the machine will ruffle a second piece under the separator.

Claim.—As an attachment for under-feed sewing-machines, the supporting-plate A having the sliding bar D arranged thereon, and the said bar provided with serrations or other feeding-surface *a*, and receiving a combined up and down forward-and-back movement from the needle-arm through the lever E in connection with the said needle-bar, and combined with the separator C.

140,558.—*Washing-Machine.*—LYMAN H. STROBRIDGE, Naples, N. Y. Application filed May 6, 1873.

Is constructed with a connecting-rod to the rubber by a pivot in each side, operating in a curve in the rod, and extending to its connection, which is passed through spiral springs and connected to the cross-bar at the top. On the outer part of the rod is the handle, held by a turn in the rod, which is constructed from one piece or rod by bending. To the uprights connected with the rubber are attached loops, by which it may be suspended or raised from the lower bed of rolls.

Claim.—1. The combined spring push-rods B B and oscillating arms C C, formed of one continuous rod or piece of wire, in combination with rubber A and vibrating arms D D, substantially as set forth.

2. The combined spring push-rods B B and oscillating arms C C, arranged so as to have a pivotal connection with the rubber A and with the slotted ends of the vibrating arms D D, in combination with the stop-pins *d* and *e e*, the whole constructed and arranged substantially as and for the purpose set forth.

3. The wire-holders J J, having a pivotal connection with the standards G G, in combination with one or more headed pins, *n n*, attached to the sides of the box, substantially as set forth.

140,559.—*Manufacture of Superphosphate of Lime.*—BENJAMIN TANNER, New Brighton, England. Application filed July 20, 1871.

Phosphate of lime is made into a solution by the use of hydrochloric or phosphoric acid or mixtures thereof, and so continues until dried. The chloride of sodium and calcium produced is decomposed into sulphate or oxalate of lime, or otherwise utilized. The sulphuric acid is added to, and acts upon, chloride of calcium. The sulphate of lime thereby formed is separated from the liquor, which subsequently yields superphosphate.

Claim.—The process for production of superphosphate of lime, consisting of the several steps in their order of succession, substantially as described.

140,560.—*Detached-Lever Escapement.*—SILAS B. TERRY, Waterbury, Conn., assignor to THE TERRY CLOCK COMPANY, same place. Application filed December 20, 1872.

The arm or lever attached to the escapement-pallets consists of a thin plate with a bent fork or crotch at its extremity, and placed at right angles to the plane of the balance-wheel, so as to be elastic toward the balance-staff, while rigid enough laterally to transmit the oscillations of the pallet-arms. Two recessed stops receive and hold the said elastic lever at each side in position to receive in its fork the free pin of the balance-wheel.

Claim.—In combination with the detached lever N, made elastic, and its axis of vibration at right angles to the axis of the balance, and the balance E, the stops P and P', constructed and arranged to arrest and hold the said lever before the balance has completed its movement in either direction, substantially as described.

140,561.—*Pipe-Wrench.*—GEORGE WARSOP, Queen's Road, Nottingham, England, assignor to JAMES B. WAYNE, Detroit, Mich. Application filed February 3, 1873.

The lever is formed with a hook at one end, and is transversely slotted at the base of the hook to receive an adjustable serrated jaw which slides in the slot at a right angle with the lever.

Claim.—A pipe-wrench having the hook-headed lever A *a'* provided with the slot *a*, and the serrated jaw B *b*, and set-screw *c*, constructed substantially as herein shown and described.

140,562.—*Corn-Planter.*—ZACHARIAH D. WATERS, Brookville, Md. Application filed May 20, 1873.

A rectangular frame carries the furrow-openers and the seed-box, which has a seed-slide in the bottom. The seed-slide is moved outwardly by means of pins upon one of the wheels operating a lever, a weighted arm moving it to its original position for receiving seed.

Claim.—1. The combination of the disk *a* on the off wheel, pins *b'*, swinging arm A, slotted link *c*, as coacting devices for rocking the bar B, provided with a standard, *i*, and weights C and *s*, each constructed and all arranged substantially as shown and described.

2. The combination of the dropper L, having the mouth *l'*, and the India-rubber spring K, seated in the corn-box D, constructed and arranged substantially as and for the purpose described and set forth.

3. The combination of the dropper L, having the mouth *l'*, and

the said India-rubber buffer W, constructed and arranged substantially as shown and described, for the purpose set forth.

4. The combination of the dropper L, link I, corn-box D, and rocking bar B, substantially as and for the purpose above set forth.

5. The combination of the crooked lever I, the spring-catch *n'*, lever F, link P, beam E, and standard E', each constructed and all arranged substantially as and for the purpose set forth.

140,563.—*Harrow.*—GEORGE WATT, Richmond, Va. Application filed May 16, 1873.

Claim.—A harrow, pulverizer, or cultivator composed of the spaced bars A A B and a series of chains, E, connected by loop-links F, and held in position by cross-bars D D, as described.

140,564.—*Caster-Bottle.*—AUGUST WEBER, Newark, N. J. Application filed May 14, 1873.

The bottle has a screw-cap, through which passes a plunger-rod actuated by a spring. In the bottom of the bottle is a cylinder with a nipple, through which the sauce is ejected.

Claim.—The bottle *a*, screw-cap *c*, rod *d*, spring *i* and piston *h*, in combination with the cylinder *s* and nipple *r*, as and for the purposes set forth.

140,565.—*Drop-Light for Chandeliers.*—NAPOLEON W. WILLIAMS, Philadelphia, Pa., assignor to WILLIAM C. BAKER, same place. Application filed April 3, 1873.

A ball upon the end of sliding pipe receives the rubber connection-tube. The clamping device consists of a slotted curved spring to which dogs are pivoted. These dogs have plane faces to bear against the faces of the polygonal sliding pipe.

Claim.—1. A friction-clamp to hold sliding tube F, consisting of a curved plate-spring having a dog pivoted in each end thereof, as and for the purpose described.

2. The dogs that act upon the slide F, made with plane faces A A, as and for the purpose set forth.

140,566.—*Mop, Wringer, and Scrubber Combined.*—WILLIAM R. WINTER, Cedar Falls, Iowa. Application filed May 10, 1873.

A triangular frame with two rollers at the front; to the first is attached a mop-cloth; behind the rollers is a pan; and in the rear of that a brush.

Claim.—The combination of the mop roller E, wringer-roller E', water-pan D, and scrubbing-brush C, substantially as specified.

140,567.—*Die for Making Sheet-Lead.*—NELSON YORK, Boston, Mass. Application filed March 26, 1873.

The die-plate has a linear slot of length and breadth equal to the width and thickness desired of the sheet to be made, and may be in one piece, or of two pieces joined longitudinally, but so, in either case, as to be confined in the recess of the block by wedges at the sides.

Claim.—1. The combination of a slotted and recessed die-holder with a linearly-slotted die-blank, each relatively constructed from end to end for the die-blank to be wedged in the recess of die-block, substantially as herein described, for the purpose specified.

2. In combination with a slotted and recessed die-holder, constructed as described, a die-blank made in two parts, from end to end, and otherwise constructed and adapted to secure a slot through the same, substantially as set forth.

REISSUE PATENTS.

5,468.—*Machine for Dressing Tiles.*—GEORGE BARNEY, Swanton, Vt., and VALENTINE G. HARNEY, Charles City, Iowa.—Patent No. 107,435, dated September 20, 1870. Application filed March 15, 1873.

Above a horizontal revolving dressing-disk are arranged the horizontally and vertically operating frames, with a device for clamping the tile while dressing the sides or squaring the edges thereof. A device for feeding sand and water to the disk is also arranged in such a manner that it discharges the same upon the disk at a point near its center.

Claim.—1. In a tile-dressing machine, the combination of an adjustable weight with a frame having an up-and-down movement, and containing a mechanism for clutching the tile edgewise, substantially as described.

2. The combination, with the rotary grinding-disk A, of the horizontally-moving frame F, and the vertically-moving frame I, the frames F and I being arranged for holding the tile to be acted upon by the disk, all substantially as specified.

3. The combination, with the frame I, of the shaft M, crank L, link K, and weighted lever O, arranged for moving the frame I vertically, substantially as specified.

4. The combination, with the vertical holder S on the frame I, of a clamping-bar, T, and clamping-head, and a presser, the clamping-head and presser being provided with friction-rollers to admit of the adjustment of the stone when being clamped up to the vertical support S, substantially as specified.

5. The arrangement of the bar S for adjustment at its upper end relatively with the bed A, substantially in the manner described.

6. The arrangement of the presser U for adjustment on the diagonal bar V, substantially as specified.

7. The combination, with the angle-plate *a b*, of the roller *f* and spring *e*, substantially as specified.

8. The combination, with the bar T made adjustable as to length, and with the angle-plate *a b*, of the roller *f*, spring *e*, and plate *d*, substantially as specified.

9. The combination, with the block U, of the roller *g*, substantially as specified.

10. The combination, with the rollers *g* and block U, of the yoke *h*, springs *k* and *l*, all substantially as specified.

11. The combination, with the disk A, of the disk *n*, spindle *p*, clamping-bars *s''*, spring-handle *t*, and ratchet-bar *w*, substantially as specified.

12. The adjustable connection of the clamping-bars *s''* with the lever *t*, by means of the pins *w²* and the spring *y*, substantially as specified.

13. The feeding-trough A' having the adjustable oblique hinged bottom and water-trough, all arranged for operation substantially as specified.

5,469.—*Ornamented Pencil-Case.*—EPHRAIM S. JOHNSON, Jersey City, N. J.—Patent No. 121,627, dated December 5, 1871; reissue No. 5,134, dated November 5, 1872. Application filed March 25, 1873.

The barrel of a pencil is ornamented with stripe of mother-of-pearl secured by cement.

Claim.—A pencil-case ornamented with longitudinal slabs of mother-of-pearl or other ornamental material secured to the surface of a metallic tube, *a*, as herein shown and described.

5,470.—*Upright Piano.*—G. C. MANNER, New York, N. Y.—Patent No. 97,943, dated December 14, 1869. Application filed January 8, 1879.

The strings are inclined from the upper front to the bottom of the frame rearward. The action is arranged in front and sounds the strings near their upper portion. The sound-board is bowed forward toward the strings, and the frame is firmly constructed to resist their tension.

Claim.—1. In an upright piano having its strings inclined downward from the upper front to the rear, arranged above and below the key-board and in front of the sounding-board, the hammers C placed near the upper end of said strings and pivoted back of the striking-point of said hammers, substantially as and for the purpose set forth.

2. The supporting-beams D, placed so that their ends occupy points between the front and rear sides of the top and bottom pieces, substantially as and for the object explained.

3. The frame E, provided with the concave rabbet *e''*, for the purpose of giving the sounding-board a bellying form, substantially as and for the object specified.

5,471.—*Apparatus for the Manufacture of Pasteboard.*—HENRY L. PALMER, Stillwater, N. Y., assignor to EDWARD W. O'NEILL and MAURICE FITZGIBBONS.—Patent No. 87,350, dated March 2, 1869; reissue No. 4,951, dated June 18, 1872. Application filed December 20, 1872.

A web of thin paper is led between rolls C and D, receiving paste from the former, which is in contact with a roll running in a paste-vat, and, thus coated, joins a web conducted directly through the machine, being combined therewith between two pressing-rolls, from which it is carried forward upon an endless apron under a drying cylinder to and between knives, which cut it into sheets.

Claim.—1. The combination of paste-reservoir A, paste-roller B, paste-distributing roller C, pressing-rollers D and L, with drying-cylinder H, substantially as and for the uses and purposes above described.

2. The combination of paste-reservoir A, paste-roller B, paste-distributing roller C, pressing-rollers D and L, drying-cylinder H, with cutting-knives K and K', substantially as and for the uses and purposes above described.

5,472.—*Wood-Screw Machine.*—CYRUS B. F. TINGLEY, Pawtucket, R. I., assignor to WILLIAM H. HASKELL.—Patent No. 123,307, dated January 30, 1872. Application filed June 2, 1873.

The die A^6 threads the body of the blank. Cutter-block d^2, pivoted to and moving with the die-stock, carries on one side two cutters for pointing the blank as they are drawn beneath it, and upon the other side one cutter for finishing the point when moving in the opposite direction—the tool-stock being tilted in opposite directions alternately by the lever F, whose extremity passes alternately underneath and over the loose cam-block *g* lying within a slot, f^1, in a stationary plate, G.

Claim.—1. The combination, substantially as described, in a screw-cutting machine, of the threading-dies A^5 with a vibrating tool-holder, d^2, furnished with threading-tools *d d'*, and a finishing tool or tools, *i*, when such tools are arranged to act alternately as the screw advances or retreats through the dies in cutting and dressing the thread upon the point, as herein set forth.

2. The automatic rising and falling cam *g*, in combination with the plate G having the slot *f* and the enlarged space f^1, for the purpose of guiding the tool-post of a machine for threading gimlet-pointed screws, substantially as specified.

3. In a screw-threading machine, the combination, with the plate or bracket G having the slot *f* and beveled enlargement f^1, of the cam-block *g*, vibrating tool-holder, and arm F, substantially as specified.

5,473.—*Railway Frog.*—JOSEPH WOOD, Red Bank, N. J., assignor of one-half interest to E. R. BENNETT.—Patent No. 34,022, dated December 24, 1861. Application filed March 31, 1873.

The curved wings of the frog are moved by the flange of the wheel so as to accommodate the line upon which the wheel is traveling. The side rails rest upon a metallic plate, to which the point is riveted. A metallic block is placed between the rails of the point to give them rigidity.

Claim.—1. A railroad frog having wings *k* and *l* connected to each other, and constructed so that such wings are moved automatically by the flanges of the wheels when passing through it, substantially as shown and described.

2. A railroad frog with the point *n* riveted to a plate, substantially as described.

3. A railroad frog having a plate, *o*, upon which the side rails rest, and to which the point *n* is riveted.

4. The bolt *m* passing through the point *n* and fastened to the frog-bars *k* and *l*, substantially as shown and described.

5. A railroad frog with a block, *p*, placed between the rails of the point and secured thereto, substantially as and for the purposes shown and described.

5,474.—*Manufacture of Sheet Iron.*—W. DEWEES WOOD, McKeesport, Pa.—Patent No. 137,585, dated April 8, 1873. Application filed June 18, 1873.

Claim.—In the process of finishing sheet-iron, the combination of the following steps: First, coating the sheets separately with a mixture of graphite, or other carbonaceous matter ground in oil; second, rolling and annealing; and third, hammering in packs while cold, substantially as set forth.

5,475.—*Hand-Nailer for Lasting Boots and Shoes.*—WILLIAM E. FISCHER, Boston, assignor, by mesne assignments, to CHARLES H THANK, Lynn, and FRANCIS GOULD, Boston, Mass.—Patent No. 90,650, dated June 1, 1869. Application filed June 14, 1873.

The cylinder, in descending, first brings the stationary cutter between the end nail or tooth and the next adjacent one of the nail-blank, and then forces the lever against the feed-spring or pawl, carrying it back into position to again feed forward. The continued descent of the cylinder separates the nail, when the driver forces it into its place.

Claim.—1. The combination of a stationary cutter, a sliding nail-blank holder, and a sliding nail-driver, when arranged to operate substantially as described.

2. A machine for cutting and driving nails, in which the nail-blank is composed of a series of shank forming teeth, united at top, each tooth being severed from the blank, (to be driven,) substantially as described.

3. The feed-spring or spring-pawl, operating to present the end of the nail-blank to the action of the cutter, substantially as described.

4. The nail blank, formed of metal, and having a head-forming bar, *p*, from which project the tapering shank-forming teeth *o*.

5,476.—*Apparatus for Transmitting Motion.*—ALBERT H. KENNEDY, Brunswick, assignor, by mesne assignments, to J. M. SEGUR, Akron, Ohio.—Patent No. 52,293, dated January 30, 1866; reissue No. 2,615, dated May 14, 1867. Application filed June 13, 1873.

A large wheel turned by a crank, a band therefrom turning a pulley at a distance, the pulley being journaled at the end of a shaft, within the bisected arm of which shaft the large wheel is journaled, a rear extension of which arm is held by a coiled spring beneath, so that the pulley may rise or fall. To the shaft of this pulley is attached a coiled metallic shaft, which is the medium for transmitting power, being yielding so as to act when measurably bowed, and extensible so that the instrument at its end may be applied to different parts of the object upon which it is to act.

Claim.—1. In a machine or apparatus for transmitting power for operating mechanical implements directed by hand, a flexible shaft, composed of a spirally-coiled wire, operating in a rotating or torsional movement, and having one end attached to the operating mechanism, while the other end is free to move in any direction at the will of the operator, substantially as set forth.

2. In a machine for transmitting power for operating mechanical implements directed by hand, the combination of the stand A, hinged extended arm C C', pulleys B and E with belt or cord, and spring D, substantially as described.

3. The combination of the coiled-wire shaft G, pulleys B and E with belt and cord, and arm C.

4. The machine herein described, consisting of an upright stand with vertical arms supporting a shaft operated by a crank or its equivalent, and embracing a driving-wheel or pulley for imparting motion to a smaller pulley, in combination with an arm hinged to the said shaft, and extending in opposite directions therefrom, and having said smaller pulley carried on its longer end, which pulley communicates with a coiled-wire flexible shaft, and also having a spring connected to its shorter end for holding it in position, substantially as described.

5,477.—*Machine for Shearing Sheep.*—ALBERT H. KENNEDY, Brunswick, assignor, by mesne assignments, to J. M. SEGUR, Akron, Ohio.—Patent No. 59,293, dated January 30, 1866; reissue No. 2,615, dated May 14, 1867.—Division B. Application filed June 13, 1873.

A tool to be operated by the apparatus No. 5,476, and constituting a shearing-instrument, which may be described as a coarse comb with shear-edged teeth, a cutting-blade reciprocating upon these teeth so as to act with them in excising the hair or wool standing between said teeth, this blade being operated at the rear of the comb-like tool, through a wrist-wheel and a slotted lever, from the coiled power-transmitting apparatus herein referred to.

Claim.—The cutting instrument or shears composed of the fingers K, blade J, slotted lever I, and wrist-wheel H *c*, in combination with the coiled-wire shafts G and the operating mechanism, substantially as and for the purpose set forth.

5,478.—*Umbrella-Runner.*—OREN M. SMITH, Philadelphia, Pa.—Patent No. 116,767, dated July 4, 1871. Application filed May 20, 1873.

Claim.—1. The disk A, having a flange, *d*, and radial arms *b* formed with partly straight and partly tapering sides, with intervening slots of similar character, the tapering ends of said arms being bent inwardly at an acute angle, as shown in Fig. 5 of the drawing, the whole constructed and constituting a device of the particular form described and shown, for the purpose set forth.

2. The head of an umbrella runner or notch, composed of two metal disks cut, bent, and secured to a tube, substantially in the manner described.

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The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks) 6,500
SEWING-MACHINES and attachments 2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes 4,000
PRINTING; including presses, type, and printers' furniture. 2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles 1,200
FELTING and HATS; including caps, bonnets, flock, &c. 1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments) 1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs 1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)

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After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,060 pages per month: 9,600 pages of specifications, 3,120 pages of drawings—12,720 pages.

OFFICIAL GAZETTE

OF THE

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF OHIO.

[It is evident from the remarks made by the learned judge in the two following decisions that they are addressed exclusively to those who are familiar with the circumstances of the two cases, and they will be found almost unintelligible to others. It has only been with great difficulty that some of the points determined have been eliminated so as to be embraced in the syllabus, and others it has been found impracticable to understand sufficiently for that purpose.]

P. H. AND F. M. ROOTS *vs.* WILLIAM G. HYNDMAN.

A patent for a rotary blower-case, of which the interior and certain specified parts are rendered true by means of plaster of Paris, "or its described equivalent," and which describes as an equivalent a material capable of being made plastic when applied, and becoming hard in a suitable time, is infringed by the use of litharge and glycerine for the same purpose.

The novelty of the device is not impeached because a pump was before known lined with molten metal.

Nor because others have, by means somewhat similar, made the abutments in such a machine true, those not being specified in the claims.

A claim for "a rotary blowing-case having concave arcs, in combination with end plates arranged so as to admit of the abutments being introduced or removed without requiring the case to be taken apart," held to mean so much of the case as incloses the operative parts, and that it was infringed by a case cast in two parts, of which one included only the legs and such portions as performed none of the functions of the machine, and on removing it the abutments could be introduced or removed.

[*James Moore*, counsel for complainants.
Wood & Boyd, counsel for respondent.]

In an action for injunction to restrain infringement of reissued letters patent, granted P. H. & F. M. Roots, for cases for rotary blowers, dated July 27, 1869, wherein the inventors were complainants and William G. Hyndman respondent, in the United States Circuit Court for the Southern District of Ohio, before Justice Swayne and Judges Emmons and Swing, the following opinion, upon final hearing, was delivered June 11, 1873:

The four claims of the patent which were in controversy are as follows:

"1. A rotary blower-case, the interior of which is rendered true and accurate by means of plaster of Paris, or its described equivalent, applied substantially as described.

"2. A rotary blower-case, the ends or heads of which are rendered true and accurate by means of plaster of Paris, or its described equivalent, applied substantially as described.

"3. A rotary blower-case, the concaves or arcs of circles of which are rendered true and accurate by the use of plaster of Paris, or its described equivalent, applied substantially as described.

"4. A rotary blower-case having concave arcs B B, in combination with end plates I I, arranged so as to admit of the abutments being introduced or removed without requiring the case to taken apart, substantially as set forth."

EMMONS, *J.*:

What is said is much influenced by the course of the argument, and more intended to meet the objections of defendant than as a full consideration of the case.

An independent treatment of the patent would assume a more brief and somewhat different form.

The first three claims are for a rotary blower-case, the interior of which is rendered true by means of plaster of Paris, or its described equivalent, applied substantially as described.

The difference between the three need not be noticed.

The described equivalent, we think, includes the material used by the defendant. The patent speaks of "plaster of Paris or other similar substance," and again of "plaster of Paris, hydraulic cement, or other material having the properties above referred to." These "similar substances," with "properties above referred to," are understood to mean the property of being rendered plastic for the purpose of application in the described mode, and of "hardening" or "ceasing to be plastic" in such conditions and in such time as accomplishes the purpose desired. It does not refer to the chemical constituents of the material. They are indifferent to the objects aimed at, and cannot be supposed to have been in the mind of the patentee.

Nor do we think the description of the mode in which

the substance is to harden, "by the evaporation or fixation of its water," confines complainants to substances which are hardened in that way only. The words already referred to—"that is, ceases to be plastic"—immediately follow, and enlarge the meaning. And whether there is or not some evaporation or fixation of water in the process of hardening litharge and glycerine, we do not deem it necessary to determine. Little aid is given us for such a judgment in this record. We should say such effect was in some degree involved, if necessary for this judgment. But it is not rested upon such an assumption. The adoption of any plastic material which will harden in the conditions described, which may be applied as described, for the precise purposes described, and accomplishing all the results described, we hold, under our construction of these three claims, will infringe them. An improvement in the material itself, and a patent for that, is a different matter. But the substances used by the defendant we do not think had even the merit of novelty in this department of the arts. It would seem to have been described as a cement and filling long before employed by the defendant. This, however, is unimportant, save as slightly influencing such a construction of the claim as would protect it from so obvious a substitute.

A mechanic who could not, so far as this feature is concerned, line defendant's machine, with complainants' models and specifications before him, and the knowledge which familiar publications afforded him of the properties of glycerine and litharge, would hardly be entitled to be called such. We think the case clearly within the familiar rule which makes the use of a readily-adopted and well-known substitute an infringement.

The Evans pump lined with molten metal does not antedate for many reasons. In the arts it is not known as a plastic material. It is incapable of application in the mode described, and cannot, by the same or even analogous instrumentalities, make true the machines in controversy.

The evidence of Overton fails to show the use of a plastic material, applied as described in complainants' patent, in such mode as to avoid the necessity of boring and planing iron cases. It affords only an illustration of how long the mechanical world will stand with all the elements of a great improvement in its hands, placing them in almost the conditions demanded for its realization and yet stop just short of the desired end. Overton manifestly did not know of, or in the least approximate the idea of saving the great labor of planing cast-iron head plates or boring cylinders. He went on doing both. We cannot take time to criticise his somewhat extraordinary testimony. It must, however, be understood and some of its literalisms limited by the leading fact that he never employed the complainants' discovery for the purposes or in the manner described, and which are the obvious and best, if not the only ones an intelligent mechanic would employ the moment the idea was suggested. It might be doubtful whether a man had the complainants' idea if there was no proof on the subject at all; but when you show that he is engaged in the very department of production where it is most important; see him with the means in his hands to employ it if he knew how; and for years manufacturing in a different mode, with less accuracy and at greater expense, then, upon any principle of action, this is conclusive that this one man at least did not possess the idea. Overton placed his fans so near the arcs as to render complainants' process impossible. The most he could do was to use a brush, and he swears he is sure he never in that mode put upon his arcs more than one-eighth of an inch. It is most manifest even such thickness was never in that way applied. Plumbago and varnish in such mixture as to render smoothly from a brush would require many applications to assume such a thickness. Besides, in cross-answer thirty-one, this witness concedes it was the experimental substances only he put on with a brush. He says the invariable material used upon all marketed machines was plumbago and varnish, and adds: "It was the other substances I applied with a brush." Substantially his knowledge and use of plastic materials was confined to truing the abutments and reaping the accidental benefits by way of lubrication of such portions as flew off from them by centrifugal motion.

The views expressed in reference to the direct use by Overton of plastic material to true the cylinders and end plates sufficiently answer the other somewhat closely-related position, that its use for the abutments only was so near in principle as to constitute a prior use. That the one did not suggest the other in fact, in the circumstances of the case, is considered sufficient evidence that it was so unlike in principle as not to antedate the first three claims.

The testimony of Williams very properly has been but little pressed. The use of a heated substance with a syringe bears little resemblance to either the mode or the material of complainants.

The fourth claim is more difficult of construction, so as to include defendant's machines. We all agree, however, that an application of that liberality which should be adopted for the protection of what is believed to be a meritorious and useful invention, one never before used and industriously sought to be infringed since, will extend it to include what defendant has done. It would not be difficult to show he uses what complainants really invented—the shortened arcs and all their benefits; the labor is to bring it within the claim which so prominently speaks of an arrangement permitting the removal of the abutments without taking the case apart. The argument submitted turns upon what we shall include in this word *case*. The legal answer to this is that which the patent by its words and necessary implications gives. That tells us the case, the thing which it has discovered, may be cast in one piece; is to have its arcs slightly more than one-fourth of a circle; that these are to be on one side of the axis; and the head-pieces correspondingly shortened and located. This is the device which *may* be so cast as to enable the abutments to be removed without taking apart these shortened arcs and these shortened end plates. Just this the defendant has so cast. All which he takes off without separation is described, and no more.

This patent does not assert as a necessary condition that the arcs shall be cast in one piece. It enumerates among the benefits this capacity as a result only of the invention. But it also as distinctly asserts that "in our large blowers we do *not* cast the case in a single piece."

It is not said, nor do we think it implied, that the small ones *must* be so made. It is not true that if not so constructed the essential character of the invention is omitted. A machine in all respects like the complainants', with the exception of a useless division of the shortened arcs by casting them in two pieces, would be an infringement without any doubt whatever. The leading idea is the apparently simple, when once pointed out, but wholly novel and useful fact, that a blower is more efficient when its arcs are but a little more than a quarter of a circle than when made in the mode universally employed before by carrying them uselessly down far below the axis of the shaft. Material was thus wasted; the manufacture and truing of the interior was more difficult in whatever mode it was done; the machine was far less effective, and produced counter-currents at and narrowed the air-feed; and was less readily repaired and more easily got out of order. These benefits are not necessary to the support of the patent, but they illustrate its principle; and when clearly perceived as resulting from the invention, impose on the court the duty of avoiding if possible an interpretation which will hand them all over to an infringer because he has cast the blower-case in *one piece*, and the *frame or standard* upon which it rests in another. Substantially, and within the spirit of the claim, these are what the defendant divides. He does so without taking his case apart. That remains intact still, substantially as complainants describe it. The patent declares that to remove them the journal-boxing must come off. Besides this, all that the defendant removes is an inconsiderable portion of the head-piece so readily and without a particle of invention attached to the standard as not to take it out of the domain of infringement. All the rest of the severed part is as independent of the case or arcs as are the legs on which it stands. It was conceded that to take complainants' device with it shortened arcs and enlarged opening so as to secure all its benefits, severing only its legs, would be a manifest infringement. They would be no part of the case. If so a line must be drawn somewhere. That can be intelligently done only by making it include all which perform any function; all which may rightfully be called a part of the arcs and case, as distinguished from standard table or support. Here what defendant removes performs no office in the operation of blowing. It is added solely to produce a formal diversity. No additional pistons are added. It would be useless to do so, as complainants' discovery shows.

That the slot arrangement cannot be considered as indispensable by the terms of the specification, would seem clear from the fact that it declares the cases are sometimes to be made in two pieces. When so made, then such an arrangement is impossible, or at least it would be so utterly useless as not to be contemplated by the patent. This consideration is quite conclusive, that when the fourth claim demands an arrangement which will allow the abutments to be removed without taking the case apart, it means such a taking apart only as would divide the operative parts of the machine, leaving such a separation as defendant makes within the meaning of the claim. This reading is necessary in order to save in any degree that part of the patent which refers to making the cases in separate parts. What is meant when all is read together is simply this: When the machines are small I cast case, table or standard, and legs all together. If large, so as to render this too cumbersome, I cast them in two or more pieces, making the division just as the defendant has made his.

We have carefully read defendant's original and supplemental briefs, and see nothing which modifies these views.

[*Delivered April* 16, 1873.]

THE UNION PAPER-BAG CO. *vs.* NIXON & CO.

A specification is not fatally defective because it does not mention such modifications as practical use would readily suggest in order to render the machine efficient, such as employing a weight or a spring, or changing the dimensions of the parts.

Nor because it does not mention a cam on the main shaft, and the arms and connecting-rod, which are all necessary to give the proper reciprocating movement to the pasting-rollers on a paper-bag machine, they being devices which any mechanic would introduce of his own accord.

Nor because the office of giving motion to the pasting-rollers is attributed to another cam on the shaft, which is incapable of performing it, since any mechanic would know that another cam is necessary for the purpose, as well as its form, and where it should be placed.

Drawings of the bags indicated in the patent of a paper bag machine by which they are produced may be annexed to a reissue of the patent, although they were not to the original.

Because other United States Courts have decided that certain words constitute under the circumstances a claim to a principle, they are not necessarily to be so construed in all cases.

Claims which can be construed to embrace meritorious combinations and devices will not be construed to embrace a principle, and to be therefore void, though they are capable of being so interpreted.

Where the bar on which the tube is supported in a paper-bag machine has the lower side extended beyond the upper, so that the lower side of the tube will be cut off with a lap to form the bottom of the bag, a claim for a combination of several of the devices employed, which enumerates among the rest "machinery for cutting the tube slantwise, as specified, while it is on the former or holder, and machinery for pasting or cementing the said tube near its front end, and bending or lapping the end of the tube on the cemented part so as to form the bottom of the bag," was held to embrace the extension of the lower side of the bar.

Such a claim is infringed by the use of such a supporting-bar, although turned upside down, and made with its rear end smaller than the rest, and without the cutting edges or the rollers that carry forward and paste the paper.

A claim for "arranging the pitch-line of the feeding-gear in, or about in, the prolongation of the axis of the shaft of its crank, whereby we obtain intermittent and variable motions of the paper, as described," held to be a combination claim, and to include the roller which works in the supporting-bar and the devices for carrying forward the paper, and giving it tension while it is severed, though they are not specified.

A patent for making the frame of a paper-bag machine adjustable upon its bed by means of a slot and screw, is infringed by making the frame so heavy as to be held in place by its weight.

A claim for creasing-rollers in a paper-bag machine, in combination with other devices, is infringed by rounded bars or hooks working in a similar combination with the same effect.

An alternative claim to only one or the other of two things, but to neither positively, is void; but a claim to each of two things, whichever is used, is valid.

[*James Moore*, respondent's counsel.]

EMMONS, *J.*:

It is due to counsel and the court to say that while examining this case we have been unable personally to

peruse either the briefs or the record. Wholly unaccustomed to labor through the reading of others, and unable to make the memoranda which long habit renders a necessity, we have found it impossible to dictate with anything like satisfaction even the outlines of conclusions. These circumstances forbid all attempts to verify by citations the legal conclusions we announce. It must be apparent that in these circumstances we must have less confidence in the general result.

The objection that the specifications of the Rice patent are so imperfect that a working machine could not be made from them, has given us much trouble. Various criticisms of the experts, which assert the impracticability of the described machine, without certain readily-perceived additions, are not among those which have created doubt. The necessity for a spring, a weight, a slight difference of mere dimensions, or other quite obvious modifications which practical use may suggest to make the machine more efficient, would not render invalid otherwise sufficient specifications; certainly not if it would work without them. Here, however, an important device, without which it could not operate at all, is wholly omitted. An intelligent assistant and expert are unable to find it in either the specifications or the photo-lithographic copies of the Patent Office drawings. To this precise defect the complainant's counsel directed the attention of neither of his expert witnesses, nor has he referred to it in argument. It is rested upon the general unreasoned assertion of Renwick & Morgan, that from the specifications and drawings they could make an operative machine.

Four cams on the main shaft are indispensable. Stated in the order in which they occur, the first moves the presser-bar; the second the pasting-knife; the third gives the reciprocating motion to the pasting-rollers and the devices connected with them; and the fourth, the severing-blade. That which is required to give this motion to the pasting-rollers is wholly omitted. This error is accompanied by another, which refers to the cam which moves the presser-bar, as the one which is to perform the function of that which is not described at all. Such an office by it is impossible; another cam on the main shaft for this purpose is necessary. The specifications and drawings are to a scale. The exact reciprocating movement required for these bottom pasting-rolls and accompanying devices is given, and the location of the cam on the main shaft to impart it is in no degree doubtful. A hundred intelligent mechanics would all, necessarily, from data given, locate it in the same place. Its shape and dimensions result from mathematical calculations, well understood by all educated mechanics. The arms and connecting-rod, in order to enable it to perform its office, are among the most familiar devices, and we cannot agree with the experts who have sworn so pointedly that invention would be necessary to supply the omitted features. There is no other instrumentality, except this cam, arms, and connecting-rod, which would suggest themselves to a builder by which this omission could be supplied. They are so common and obvious they would be inserted by a mechanic as readily as a driver would put the fourth wheel on the naked axle of his coach.

It is objected that the reissue of the Rice patent is void because it contains new matter. Four drawings, representing bags to be manufactured by the machine, which did not accompany the original patent, are referred to as bringing the case within the rule. These forms were clearly *indicated* by the original specification, and may be legally added to the drawings of the reissue.

It was presented in this connection in the brief, and, therefore, somewhat out of order, we have referred to the objection that the original patent was for a machine and the reissue for a principle, and therefore void. It is of no consequence, so far as this question is concerned, that the original patent is different; it may illustrate the argument, but is of no other consequence. Our judgment upon other points with sufficient fullness shows that we do not consider any of the claims in the latter subject to such an objection. That they *may* be so construed, without violence to language, is clear. That some judgments of authority have so rendered nearly equivalent words is conceded. It is a mere matter of construction. Did the solicitor *intend* to make a void or a lawful claim? The decisions leave this to be decided in view of the art, the character of the machine, the entire specifications, drawings, and claims. Few cases constitute precedents for others. Because in a particular case other tribunals, co-ordinate or appellate, have decided that certain words, when used in connection with their accompanying incidents, did impart a claim for a result or principle, another tribunal should not treat these judgments as setting up formulas in all circumstances involving a similar meaning. They assert no such rule. All go upon a full critical review of the accompanying facts in reference to which they have been used, excluding the idea that other courts are not to perform the same duty. Words identical should be rendered as diversely as the conditions in which they are employed demand, in order not to defeat the fairly-presumed intention of those who use them. Applying to these claims the rules of interpretation applicable to all other instruments, we do not think that construction necessary which renders them void. Being capable of a different reading, and these being in fact a novel meritorious set of combinations and devices for the accomplishment of a result to which they *may* be referred, we understand it to be a duty to give them such a reference.

It is said the first claim of the Rice patent is for the machine, technically so-called, and demanding for its validity the novelty of all its parts. It is held to be a combination claim.

It is conceded that if the second claim is for a supporting-bar, with its end distended and shaped so as to enable the oblique cut to sever the tube and form a lap for the bottom of the bag, then it is not antedated. That we so construe it will more fully appear hereafter. It is only when held to be a former, without more, that there is any claim it is not novel. This objection is not sustained.

The third claim of the Rice patent, it is alleged, is also antedated. If it is construed to include only the eccentric spur-wheel and its fellows on the side of the machine, and the shaft connected therewith, then it was suggested to Pettee by Morgan, and taken from Willis' Principles of Mechanism, p. 256. It is, however, a combination claim, including the roller which works in the supporting-bar, and the devices more immediately concerned in carrying forward the paper and giving it tension while it is severed. So construed, it is not claimed to be old.

It is also argued in this connection that as Rice knew this eccentric cog-wheel was old, it avoids his whole patent. This objection is disposed of by our construction of the claim. It is not for the mechanism he knew to be old. The fourth claim has been abandoned by the complainants.

The first claim of the Rice patent, as construed, is not infringed by the Morgan machine. It is unnecessary to refer to other features than the omission of the intermittent feed motion and the substitution of the revolving instead of reciprocating knife.

That the second claim of the Rice patent is not infringed, has been argued with great pertinacity and extended discussion. Were we considering the case in much more fortunate circumstances, all its details could not be dealt with. In the present unfortunate condition but little more than conclusions can be stated.

This claim is for the bar only, *not* for the *former* or any of the pulleys and other devices which in the accidents of its association in the Rice machine are mechanically connected with it. It does not form the tube, and, what is unnecessary for the purposes of this judgment to say, no part here claimed even aids in doing so. Decrease the size of the bar over the forming device to that of the defendant's, and the tube will still be formed; and if not no such property in the bar is claimed. It is for a bar *around* which a tube may be formed, and *not* for one which will form it. Nor is this mere literalism. Four leading features are required. First, that it be sustained in place at a point so far removed from the forming device, no matter what that may be, as to enable the paper to be gradually bent into a tube, that the connection with the bed or table which sustains it in place shall be on the same side of the bar where the side lap of the tube is formed and pasted, so that the forward movement of the material may meet with no obstruction upon the top, along which it proceeds; that this point of support, which sustains it in place, shall be in the rear of the locality where the tube is completed by being united and pasted; and it must also have an end of sufficient size to distend the tube for severing, so as to form the lap for the bottom of the bag. These conditions are all found in the defendants' bar, and all the others in every machine before us. They are all necessary to enable a tube to be formed *around* it, to travel unobstructedly its whole length while being formed on its passage by other collateral devices, and, arriving at the distended end, to be severed without waste, to form the desired lap. The essence inheres in the conditions which give it this capacity. The contrivances to accomplish it are as ingenious as they have been beneficial to the public. Turning the bars upside down upon a bed or table, making its dimensions from the head backward smaller, omitting the cutting-edges, and the other alterations by the defendants, do not escape infringement. The side guides on the Morgan machine, the rollers that work by the side of the bar instead of through it, the rollers in the Rice bar, the fact that by its weight or spring it presses these rollers on others beneath them, to pinch, carry forward, and paste the paper, we do not consider as included in this claim. It reaches in no way to these devices intended to perform collateral functions. The bar around which a tube may be formed and so held in place with its tube-distending end, and in connection with which it may without waste be severed in a direction to create a lap, is all which is claimed. Just such a bar, literally, the defendants use. The patent would enable them to make it. The seeming differences all depend upon the other and collateral devices for pasting, forming, carrying forward, and completing the bag. Remove all these from both bars, and with the wholly immaterial diversity of lessened dimensions in the rear of the all-important head, it is identical in function, form, and mode of operation.

It is admitted that while the defendants used what is called the Rice machine, they infringed the first, second, and third claims of that patent.

There is much proof to show that the Pettee patent is antedated. With some hesitation we overrule the objection as to all the claims, save the eighth and ninth.

The defendants' testimony to show want of novelty in the first, second, third, and fourth claims is very strong. Without a description of the machinery, the relation of the parties, the transfers of title, the condition and interest of each witness at the time he testifies, and a multitude of circumstances which we cannot reproduce, a minute analysis of the testimony would be unintelligible. That which annexes all these devices to the Morgan machine early in September, 1860, is the most formidable. There is much quite as positive in character to show that they were all on the Armstrong machine when Pettee was introduced to it, before the date of his own invention. Much of the conflict might naturally result from imperfect memory, while other portions, on one side or the other, are undeniably corrupt.

Substantially, and without exact accuracy, the history out of which this part of the contest springs is as follows:

The condition of the art in 1860 materially affects this question of fact. In the latter part of August in that year Morgan, being the assignee of the Rice patent, worked in Philadelphia a machine like his model, and which was an improvement of the former by the addition of the revolving knife. For *this* he obtained a patent in 1863, without making any claim to these devices. Armstrong, the other person alleged to have invented them at the same time and at the same place, was working a machine, and, as we think, without them. It severed the tube with the lap, but had no apparatus for pasting and finishing the bottom of the bag. September 1, in that year, he made a contract with Pettee to add machinery for that purpose, and to share with him any patent which might be procured for their joint invention. He then had pending an application for a patent in which no right is asserted to anything contained in these claims. He was entitled to one-half of the Pettee patent, which does claim them, and, we infer, promoted its procurement. We have not examined the proof in this regard, but it was conceded at the bar that he took a license under it. We assume, also, he participated in and reaped a part of the benefit of its transfer to these complainants. Immediately after the date of the contract, September 1, 1860, Pettee entered upon the work of improving Armstrong's machine, and swears circumstantially that he added the devices in question. He alone, of all those

who are asserted to be the inventors, claimed and procured a patent for them. We conclude the facts are what all this public action by Morgan, Armstrong, and Pettee indicate, that each invented what he claimed, and was not the inventor of what he omitted to claim. Each knew of the action of the other. There is a large amount of most significant action in regard to this question since the granting of the patents. All of it is in harmony with our theory. The oaths of some of these parties, and the irrational explanations by which they attempt to account for passively resigning to another what they knew they were entitled to, are incredible.

In reference to the eighth and ninth claims of the Pettee patent, the respondents' testimony is full, that the pasting-knife and the other devices connected with it were used by Morgan before their adoption by Pettee. Nothing in the least contradicts this. We reluctantly hold that these two claims were antedated. We say reluctantly, because there is much which raises the supposition that if attention had been directed to these devices as pointedly as to those included in the first, second, third, and fourth claims, the result would have been the same. We may be mistaken, but there seems to be an implication in the argument that the plaintiff's evidence does include them. However this may be, the conclusions from the record as it is can but be as declared.

The first and second claims of the Pettee patent are infringed. It is argued by the defendants that they include only the slot and screw which fastens the bottom of the frame to the bed, and are not therefore infringed, unless some mechanical device is employed to effect that purpose. The defendants' frames are held in place by their own weight only. The essence of these two claims, and substantially of the first four, is the quality of adjustability. This is the subject of a patent, so far as it is embodied in practical instrumentalities to make it operative. The patentee will be protected from obvious modes, readily adopted without invention, for accomplishing the same end. A screw, a cord, weight, either laid upon or included in a heavier construction of the frames, or other obvious modes which would hold them in place while at work, and secure adjustability, would infringe the patent. They would cease to do so only when they accomplished it in a mode which requires such invention as to be the subject of a patent. The defendant has not escaped infringement by making his frames so heavy that they will lay in position without a slot and screw. He has so secured them to the table as to obtain adjustability within the meaning of these claims.

The third claim is for the combination of adjustable forming-rollers with a creasing pulley or pulleys. The defendants, in their industrious changes, in order to avail themselves of this feature of adjustability, have successively adopted different forms of creasing apparatus in combination with the guides or formers. We think them all infringements. The last resort, and that most earnestly defended, is two rounded bars or hooks suspended from a frame and adjustable with a slot and screw, by coming in contact with the paper at the same point, and having in all respects the same relations to the residue of the machine; they perform in the same mode the function of the creasing-rollers. The only imputed difference we are able to glean from the elaborate argument is that the *friction* from the bent bars is greater than that of the rollers. Various other immaterially-varied forms so pressed in contact with the moving paper as to crease it would also increase the friction. But it would be a blemish upon the law, which professes to protect useful improvements, if such substitutes, capable of selection by persons of ordinary intelligence, are not deemed invasions of an inventor's rights.

That the fourth claim is also infringed by these bent bars is involved in what is just said; that the adjustable pulleys did so is conceded. While the Morgan machine was worked with the single creasing pulley, it did not infringe this fourth claim for an adjustable one.

It is also said the third claim is void because in the alternative. An alternative claim is invalid only in those instances where it claims positively neither of several subjects, but is good if *all*, of many which are mentioned, are claimed, as one or the other are employed by an infringer. If it is said A or B is claimed, this asserts a right to neither; but to claim the one or the other, as either are used, with an assertion that it has been discovered, both are interchangeably available for specified purposes, is not an alternative claim within the case cited by defendants. Such is the third claim in this case.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

24,987.—*Fishing-Reels.*—Granted to WILLIAM BILLINGHURST, August 9, 1859. Hearing July 23, 1873.

25,005.—*Governor-Valves.*—Granted to BENAIAH FITTS, August 9, 1859. Hearing July 23, 1873.

25,014.—*Machines for Cutting Out Wooden Ware.*—Granted to GEORGE R. HAY, August 9, 1859. Hearing July 23, 1873.

25,015.—*Wood-Saw Frames.*—Granted to JAMES HAYNES, August 9, 1859; reissued August 25, 1863. Hearing July 23, 1873

25,017.—*Steam-Boilers.*—Granted to ROBERT HOOPER, August 9, 1859. Hearing July 23, 1873.

25,036.—*Post-Marking Stamps.*—Granted to MARCUS P. NORTON, August 9, 1859. Hearing July 23, 1873.

25,061.—*Elevator or Hoisting Apparatus for Hotels, &c.*—Granted to OLIS TUFTS, August 9, 1859. Hearing July 23, 1873.

25,071.—*Roof for Railroad Cars.*—Granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865. Hearing July 23, 1873.

25,115.—*Self-Acting Wagon-Brakes.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JANKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machines.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,343.—*Boxes.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL R. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors Shears.*—Granted to ROCHUS HWINACH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KERBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—*Rolling-Mills.*—Granted to JOHN and GEORGE FRITZ, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—*Bedstead-Slats.*—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,572.—*Molding Water-Traps.*—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—*Burglar-Alarms.*—Granted to ABBOTT Q. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—*Steam Punching-Machines.*—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,640.—*Steam-Boilers.*—Granted to JOSEPH HARRISON, Jr., October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,683.—*Hydrants.*—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,726.—*Hand-Machine for Wiring Blind-Rods.*—Granted to BIRAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—*Cutting and Penning Cubes.*—Granted to JOHN H. SHOTE, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,796.—*Jacquard Machines.*—Granted to AVERY BARRETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,814.—*Sleeping-Cars.*—Granted to JOHN DANNER, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,843.—*Cultivators.*—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,867.—*Machines for Covering Saddle-Trees.*—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,539.—*Manufacture of Gun-Barrels.*—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 10, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

15,861.—*Improvement in Machines for Making Nuts*, granted to WILLIAM E. WARD, October 7, 1856; reissued January 1, 1867, numbered 2,434.

Claim.—1. The two punches arranged side by side, and operated, substantially as described, for punching the central hole, cutting off the blanks from the bar, and discharging the same, substantially as described, in combination with the two holes or dies, so that a hole is punched in the bar for another nut during the continued motion of the punch to discharge the nut which was cut off during the previous part of the same motion.

2. In combination with the punching and cutting mechanism, or either, and with the mandrel or its equivalent, for entering the central hole of the nut-blank, the employment of the spring-jaws or the equivalents thereof, for transferring the nut-blank from the die to the mandrel and there holding it until the mandrel enters the hole, substantially as described.

24,734.—*Improvement in Machines for Making Paper-Bags*, granted to WILLIAM GOODALE, July 12, 1859.

Claim.—1. Making the cutter, which cuts the paper from the roll or piece, of the form herein described, that in cutting off the paper it also cuts it to the required form to fold into a bag without further cutting out.

2. The attachment of the former F directly to the cutter to operate in combination therewith, and with a folding table, C, substantially as herein described.

3. The within-described mode of applying and arranging the paster *f* to operate in combination with the folding table C and former F.

4. The construction of the side lappers with angular ends *e e*, substantially as described, for the purpose of partly folding the bottom lap by the act of folding the sides of the bag.

5. The knock-off I, operating in combination with the former, substantially as and for the purpose described.

6. The vibrating frame J, with its rollers *i i*, operating in combination with the former and the knock-off, substantially as and for the purpose herein described.

7. The arrangement of the table, the cutter, the former, the side-lappers, the bottom-paster, the knock-off, and the vibrating frame J, to operate in relation to, and in combination with, each other, substantially as described.

24,748.—*Improvement in Paint-Cans*, granted to JOHN W. MASURY, July 12, 1859.

Claim.—The construction of a metallic can for hermetically sealing paints and other substances, having attached thereto a rim or ring of thin brass or other soft metal in such a manner that the top or cover may be removed by severing the said rim or ring of brass or other soft metal with a pen-knife or other sharp instrument, in the manner and for the purposes herein described and represented, or its equivalent.

24,755.—*Methods of Operating Windlasses*, granted to PETER PHILIP, July 12, 1859; reissued March 4, 1873, numbered 5,304.

Claim.—1. The sweep or horse lever B, when loosely attached in its bearing to the shaft or drum, for the purpose set forth.

2. The loose sweep B as combined horse and friction lever.

3. The combination of the loose sweep B, shaft A, drum A', arm *c*, and lever *D*, or equivalent adjusting attachments, substantially for the purpose set forth.

24,773.—*Improvement in Powder-Kegs*, granted to JAMES WILSON, CHARLES GREEN, and WILLIAM WILSON, Jr., July 12, 1859; reissued January 6, 1863, numbered 1,363; reissued December 7, 1869, numbered 3,757.

Claim.—1. The method of closing the ends of sheet-metal cans by means of a countersunk head or cap fitting within the

orifice to be closed, and provided with a flange, which rests upon the upright edges of the can around the orifice, and is formed, with said edges, into a lap-seam, against an external mandrel as a support, substantially as shown and set forth.

2. The flaring lap-seam, formed by the union of the flange of the countersunk head with the upright edges of the can surrounding the orifice to which said head is applied, substantially as and for the purposes shown and set forth.

3. A sheet-metal can, composed of flanged and countersunk heads, in combination with corrugated or bulging sides, the two being united by a lap-seam, formed as specified, and brought within the compass of the bulging sides, so that the seam or seams may be protected from injury, as herein set forth.

4. The formation of a groove or recess in the body of the can, parallel with the lap-seam, and adjoining the edge of the turned-down flange of the countersunk head or cap, as and for the purposes set forth.

5. A sheet-metal can, one or both ends of which are closed by means of a flanged and countersunk head or cap, applied and secured to the can in the manner substantially as shown and set forth.

24,773.—*Improvement in Hollow Augers*, granted to ARCALOUS WYCKOFF, July 12, 1859; reissued March 13, 1866, numbered 2,204.

Claim.—1. In an annular auger, in combination with a prime cutter, *a*, a transverse auxiliary cutter, *b*, carried back to the extremity of the stock, either longitudinally with the auger or obliquely toward the heels of the next preceding cutter.

2. In combination with the spiral flange B, beveling to a thin edge the cylinder at *d* in front of the base of the prime cutter, for the purpose of giving an outward direction to and carrying away the cuttings, substantially as set forth.

3. The mandrel for holding the nut-blank, in combination with the swaging surfaces by which the faces of the nut are formed, substantially as described.

4. In combination with the mandrel for holding the nut-blank, substantially as described, the hammers for hammering or swaging the edges of the nut, substantially as described.

5. The combination of the swaging surfaces, for forming the faces of the nut, with the hammers for forging the edges of the nut, substantially as specified, and for the purpose set forth.

[Extended by act of Congress, approved March 3, 1873.]

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 8, 1873.]

6,746.—*Advertising Frame.*—MORLEY M. BURNHAM and JOSEPH B. OAKS, Syracuse, N. Y. Application filed May 21, 1873.

6,747.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,748.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,749.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,750.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,751.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,752.—*Carpet.*—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,753.—*Carpet.*—JOSEPH M. CHRISTIE, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,754.—*Carpet.*—JOSEPH M. CHRISTIE, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,755.—*Carpet.*—JOSEPH M. CHRISTIE, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,756.—*Carpet.*—JOSEPH M. CHRISTIE, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

6,757.—*Table Cutlery.*—JAMES D. FRARY, New Britain, Conn. Application filed April 10, 1873.

6,758.—*Carpet.*—HEINRICH F. GOETZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed June 30, 1873.

6,759.—*Watch-Chain Charm.*—WILLIAM B. HAHN, Philadelphia, Pa. Application filed May 26, 1873.

6,760.—*Railway Station.*—JOHN W. HOYT, Springfield, Mass. Application filed December 24, 1872.

6,761.—*Printing-Type.*—ANDREW LITTLE, New York, N. Y. Application filed June 20, 1873.

6,762.—*Cemetery-Fences.*—THOMAS PITBLADDO, Brooklyn, N. Y. Application filed April 26, 1873.

6,763.—*Sword-Hilt and Scabbard.*—VIRGIL PRICE, Woodside, N. Y. Application filed March 27, 1873.

6,764.—*Bolt-Threading Machines.*—SALMON W. PUTNAM, Jr., Fitchburg, Mass. Application filed January 24, 1873.

6,765.—*Cemetery Fences and Gates.*—JAMES SHARKEY, Brooklyn, N. Y. Application filed May 3, 1873.

6,766.—*Shelf-Paper.*—SALI SIMON, New York, N. Y.—A. Application filed June 16, 1873.

6,767.—*Shelf-Paper.*—SALI SIMON, New York, N. Y.—B. Application filed June 16, 1873.

6,768.—*Shelf-Paper.*—SALI SIMON, New York, N. Y.—C. Application filed June 16, 1873.

6,769.—*Printing-Types.*—RICHARD SMITH, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed June 16, 1873.

6,770.—*Phaeton-Bodies.*—GEORGE DELKER and CHARLES L. BLONDIN, Henderson, Ky. Application filed April 8, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date July 8, 1873.]

1,352.—*Packages Containing Cranberries.*—NATHANIEL H. BISHOP, Manahawken, N. J. Application filed June 27, 1873.

1,353.—*Railroad Greases.*—A. GUNNISON & Co., Cincinnati, Ohio. Application filed June 27, 1873.

1,354.—*Sugar-Cured Meats and Smoked Beef.*—GARDNER PHIPPS & Co., Cincinnati, Ohio. Application filed June 25, 1873.

1,355.—*Preserved, Canned, or Bottled Vegetables, Fruits, Pickles, Sauces, and Honey.*—SLEEPER, WELLS & ALDRICH, Burlington, N. J. Application filed June 12, 1873.

1,356.—*Perfumery.*—THOMAS E. JESKINS, Louisville, Ky. Application filed July 3, 1873.

1,357.—*Oil Cans or Packages.*—MEISSNER, ACKERMANN & Co., New York, N. Y. Application filed June 25, 1873.

1,358.—*Shirtings.*—JESSE L. MOSS, Jr., Westerly, R. I., and NATHAN F. MOSS, New York, N. Y. Application filed March 20, 1873.

1,359.—*Water-Gages for Steam-Boilers.*—TOMEY & SONS, Perth, Scotland. Application filed July 5, 1873.

1,360.—*Rough Bathing-Towels.*—THE STARK MILLS, Manchester, N. H. Application filed May 21, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date July 8, 1873.]

ORIGINAL PATENTS.

140,568.—*Railway-Car Journal-Box.*—RICHARD N. ALLEN, Pittsford, Vt. Application filed March 28, 1873.

The journal-bearing is made of alternate layers of pasteboard and sheet lead, and is secured within the box by means of fillets.

Claim.—1. In railroad journal-boxes, the filling A made of laminated paper and lead, substantially as and for the purpose set forth.

2. The combination of the laminated filling A and box B, constructed and arranged substantially as and for the purpose specified.

3. The filling A, in combination with the fillets C and box B arranged in relation to one another, substantially as and for the purpose set forth.

140,569.—*Mechanism for Making Counters for Boots and Shoes.*—EMERY ANDREWS, Welchville, Me. Application filed February 14, 1873.

Refers to the manufacture of counters or heel-stiffeners for boots and shoes, and of those especially which are made from "leather-board," and to that part of the manufacture which terminates in the production of the skived or beveled blank or flat counter. The improvements relate to cutting up leather-board or other stock into counters or counter-blanks, which are subsequently crimped or molded into form for use. The invention consists: First, in a peculiar process of manufacture; secondly, in two co-acting machines or a two-part apparatus to carry out this process.

Claim.—1. The process of cutting out counters by first slitting the sheets of stock into strips with beveled or ready-skived edges, and subsequently dividing these strips into finished counters with ready-skived straight-edges formed by the edges of the strips, substantially as herein set forth.

2. A series of oblique slitting and skiving knives, k k^2, arranged and operating substantially as herein described, for cutting sheets of leather-board or other stock into ready-skived strips without waste, as set forth.

3. The series of slitting and skiving knives k k^2, mounted in independent stocks H H^2, adjustable laterally, substantially as herein described, for the purpose set forth.

4. The supporting-bar E, with rails *y* on opposite sides, in combination with the removable and laterally-adjustable knife-stocks H H^2, for the purpose specified.

5. The cutting-blocks F F^2, arranged and operating substantially as described, in combination with oblique slitting-knives k k^2, for the purpose set forth.

6. The oblique slitting and skiving knives k k^2, constructed with retreating cutting-edges, as described, and combined with cutting-blocks F F^2, for the purpose specified.

7. The oblique slitting or slitting and skiving knives k k^2, beveled only on the upper side, in combination with stocks H H^2, having recesses 6 to co-operate therewith, as described, for the purpose set forth.

8. The combination of a series of slitting or slitting and skiving knives, k k^2, and a head, G, with fingers *f* arranged in the rear of the knives, so as to operate as herein set forth.

9. The gripers *u*, constructed and operating substantially as described, in combination with the fingers *f*, for the purpose specified.

10. The revolving knives k^4 in combination with the cutting-table T^2 and clamps I, operating as herein described, for severing parti-circular counters C from strips *z*, or for severing and skiving the same at one operation, as set forth.

11. The forms or patterns D and springs *n* in combination with the revolving knives k^4, for the purpose specified.

12. The combination of revolving knives k^4 with their stocks H^4, clamps I, forms D, springs *n*, and cams J J^2, operating as described, for the purpose set forth.

140,570.—*Machine for Sawing Laths.*—GEORGE P. APPLETON, Suncook, N. H. Application filed April 21, 1873.

The lath-bolt is passed through a series of feed-rolls above the saw-arbor and returned through another series below it, sawing a lath as it passes each way.

Claim.—1. A sawing-machine substantially as herein described, in which the saw is hung to cut on both sides of its arbor at the same time, or consecutively, the feed being from opposite directions, as and for the purposes specified.

2. In a sawing-machine the upper and lower auxiliary rolls E E′ F F′, in combination with the main rolls D D′, as and for the purposes specified.

140,571.—*Bed-Bottom.*—HARMON BENEDICT, Philadelphia, Pa. Application filed March 18, 1873.

Clasping plates or blocks are secured to the under side of the slats, which receive the end of the coiled spring, and to which the rigid end of the links are connected. The lower or flexible ends of the links are attached to the outer end of the lever-arms, and the inner end of the lever-arms are partially hinged together by an ogee finish.

Claim.—1. The combination of the links H H and springs C C with the slats A and A′, the links being flexible at their lower ends, and having a rigid connection at their upper ends by means of the blocks F F, substantially in the manner and for the purpose above described.

2. The connection of the levers B B at their inner ends by means of ogee projections *g*, substantially as and for the purpose set forth.

140,572.—*Carriage-Seat Fastener.*—MARCUS BROCKWAY, Jr., Angola, Ind. Application filed April 12, 1873.

A slot in the carriage-body is avoided, the sliding plate is protected, and the cam is arranged to operate independently of the carriage-frame.

Claim.—The plate B, having the shoulder *b*, in combination with the cover C having arm *a* and cam D, all constructed substantially as and for the purpose set forth.

140,573.—*Barrel-Stand and Keg-Holder.*—CHARLES N. CASE, Winchester, Ill. Application filed May 2, 1873.

The barrel-rest is pivoted to an oscillating platform, one end resting on a hinged prop when in position for supporting the barrel. At one end of the platform are pivoted bars, serving at times as handles for moving the support and as a pair of skids to roll the barrel over upon the rest.

Claim.—1. A barrel-support, composed of a frame, A, an elevated platform, C, provided with a suitable device for sustaining the barrel, and hinged to the frame, and a hinged graduated prop, D *d*, substantially as and for the purpose specified.

2. The combination of the frame A, hinged platform C, hinged prop D, and swiveling rest E, substantially as specified.

3. The combination of the platform C, bed-plate G having depressions *g*, and rest E provided with projecting knobs *f*, substantially as and for the purpose specified.

4. The combination of frame A, hinged platform C, swiveling rest E, hinged prop D, and hinged bars H, substantially as and for the purpose specified.

140,574.—*Railway Frog.*—THOMAS J. CLARK and GEORGE M. CLARK, Higganum, Conn. Application filed January 6, 1873.

Claim.—1. A railway frog having the extensions *d* beyond the ends of the frog proper, so that the rails may be lapped thereon, substantially as described, and for the purpose set forth.

2. A railway frog having extensions *d* connected by a bolt or truss, *e* running under the frog, substantially as described, and for the purpose set forth.

140,575.—*Cotton-Bale Tie.*—RUFUS W. COBB, Helena, Ala. Application filed June 7, 1873.

Claim.—A cotton-bale tie, consisting of the buckle and the slotted plate or keeper, combined with the hoop, as and for the purposes described.

140,576.—*Stove Foot Shoe.*—ALBERT D. COLES, Newark, N. J. Application filed December 7, 1872.

Improvement on his patent of December 3, 1872. The shoe has a rim all around it, and a flange at one side in which is a hole for a screw.

Claim.—The improved stove-foot shoe herein shown and described, consisting of the base-plate *c*, the rim *a* all around, and the holes *b*, all as set forth.

140,577.—*Means for Draining Basins.*—LEVI R. COMSTOCK, Philadelphia Pa. Application filed August 28, 1872.

The foul and stagnant water which settles in the hollows of basins, &c., is by this means elevated and caused to flow through a pipe to a place where a current exists strong enough to carry it away.

Claim.—For draining basins, the combination, with the elevator E, of the bent conducting-pipe C having its discharging end below the water and level with the river bottom, and its receiving end extended some distance above the water-surface, substantially as specified.

140,578.—*Step-Ladder.*—CHARLES FRIZELL, Boston, Mass. Application filed May 29, 1873.

The diagonal rods transmit the strain between the upper and lower members of the ladder-stile, giving increased strength with diminished weight after the manner of a truss.

Claim.—The diagonal rods *d*, in combination with bars *s s* and tie-rods *b*, substantially as and for the purposes specified.

140,579.—*Egg Carrier.*—GEORGE M. HUSTON, Zanesville, Ohio. Case A. Application filed October 17, 1872.

Three frames are placed one above another, the upper one being provided with pliable strands, interwoven, so as to make separate receptacles for the egg; the next frame with a canvas partition or floor for the eggs to rest upon; the bottom frame with a canvas partition to rest upon the eggs of the next series below.

Claim.—The egg-carrier herein described, composed of frames A, partitions B B′, and pliable strands C C, all constructed, arranged, and operating substantially as set forth and shown.

140,580.—*Egg Carrier.*—GEORGE M. HUSTON, Zanesville, Ohio. Case C. Application filed October 17, 1872.

Each narrow strip passes through the corresponding openings in all the wide partitions, binding them together to form receptacles for the eggs. The slots are formed in the central part of the partition, not reaching to the edge.

Claim.—The egg-carrier herein described, composed of continuous partition pieces A and C, when constructed and united in the manner substantially as set forth and shown.

140,581.—*Hand-Setting Watch.*—FLORENTINE A. JOHNS, Boston, Mass. Application filed April 21, 1871.

The thumb-pin for engaging the hand-setting gear operates a cam which preserves the hand-setting engagement until automatically released by the closing of the watch-case.

Claim.—The combination of the cam button G, having the recess *g* and point *i*, with the lever A′, having the point F, and the lever H having the point I, all these parts being arranged as specified.

140,582.—*Sheet-Metal Roofing.*—GEORGE F. LEONARD, Newport, Vt., assignor to himself and JOHN P. LINDSAY, New York, N. Y. Application filed November 26, 1872.

The metallic strips A A extend under the main sheets and lap over the upturned edges of the same in a fold, as shown. Tarred paper is inserted between. The transverse joints are formed in the same manner, except that the fold laps only one way, to facilitate the shedding of rain.

Claim.—1. The strips A A, formed as described, with the exposed edges projecting downwardly over the main body of the roofing, and the edges where they are secured to the sheathing being extended under the main body of the roofing, as hereinbefore set forth.

2. The combination of the strips A A, constructed as hereinbefore described, with the sheets D D turned upward at the edges, which are overlapped by the strips A A, as hereinbefore set forth.

3. The combination of the strips A A and D D, and the sheets of tarred paper or other packing *d d*, as hereinbefore set forth.

4. The combination of the strips A A and E E, constructed as hereinbefore set forth.

5. The combination of the strips A A and E E, and the slates F F, substantially as hereinbefore set forth.

140,583.—*Chain-Machine.*—FRANKLIN LEONARD, Cleveland, Ohio. Application filed April 25, 1873.

A rod of the proper length is bent into a U-shape by the former G carrying it between the arms B C. The ends are next scarfed in dies formed in the face of the hammer and anvil, after which they are lapped by the rollers on the arms K J bending them around the post. The welding is done on a curved rounded horn projecting from the anvil and a concave projection on the hammer.

Claim.—1. In link-machines, the vibrating arms B C having shoulders or rabbets A''', rollers *d*, as arranged in combination with the springs D and sliding bill G, operating conjointly substantially as and for the purpose set forth.

2. The horn C′ and corresponding section D′, constructed as described, in combination with the scarf dies or prints *b′* and *a″* of the block and hammer, co-operating substantially as and for the purpose described.

3. The arms J K and rollers E′ F′, as arranged in combination with the post or standard L, studs *w′*, constructed and operated in the manner substantially as described, and for the purpose set forth.

140,584.—*Sewing-Machine.*—JESSE B. LINCOLN and CHARLES F. CLOUGH, Providence, R. I. Application filed September 24, 1872.

The needle and presser bars are connected with the slide-bars by studs, the slide-bars work in grooves in the head of the machine, the oil for lubricating the slide-bars is caught in the receptacles, and oil is prevented from reaching the needle and presser-bars and the goods.

Claim.—1. The isolated needle-bar, as described, connected with a slide-bar, G, by studs or connections J, by means of which the needle and its thread are removed from liability to soil the work by the oil or fluid used to lubricate the same.

2. The isolated presser-bar, connected with its slide-bar by studs or their equivalents, for holding the fabric to be sewed without liability of soiling the same with the oil or fluid by which its working parts are lubricated.

3. The combination of the isolated needle-bar with a guide-bar and guides constructed substantially as described, to keep the lubricating-oil from the needle-bar, and to conduct any excess of the same into a receptacle provided for the purpose.

4. The oil-receptacle O, as described, and in combination with the head H, or its equivalent, substantially as and for the purpose specified.

140,585.—*Abdominal Supporter.*—MARY M. MERRILL, Boston, Mass. Application filed February 5, 1872.

A supporter is made to fit and support the abdomen by combining pieces cut with curved seams and furnishing them with coiled springs inserted in the form of the figure 8. The supporter is also furnished with an adjustable and detachable lining to protect the person from the wire spring and to permit of washing the device at will elastic straps secure the supporter in position upon the abdomen.

Claim.—A combined abdominal and spinal supporter consisting of the bodies A and B, made with curved longitudinal and transverse seams, and furnished both with coiled wire springs inserted in the forms shown, and with adjustable linings, the parts being secured together by elastic straps, all as and for the purposes shown.

140,586.—*Machine for Sewing Turned Shoes.*—THOMAS L. MULLER, Philadelphia, Pa. Application filed May 16, 1873.

The edge-guide acts as a presser against the outer edge of the sole and upper: is adjustable by means of its extension-piece, which engages a rack on the frame; and it holds the shoe down so that the rest and channel-opener are retained in the sole, and the rest and opener serve as supports each side of the needle for the shoe.

Claim.—1. The combination and arrangement of the rest K with the standard L by means of the screws *b b* and slots *a a*, to admit of the lateral adjustment of the rest when change is made in the length of the stitches, substantially as set forth.

2. The combination of the spring-catch N, notched stop O on the presser foot rod I, and the vertical rod P with the rock-shaft C', for holding the presser-foot down and releasing it, substantially as described.

3. The combination of the lever R, having the bevel-edge guide S on its front end and an extension-piece, R', the standard L, and rack U, for varying the height and forward or backward position of said guide S, substantially as and for the purpose set forth.

4. The combination of the stationary rest K, channel-opener H, and needle-bar F, when the latter is arranged between the rest and the channel-opener, and the opener has a lateral movement with the needle-bar, substantially in the manner and for the purpose set forth.

140,587.—*Spinning-Mule.*—MICHAEL MOFFATT, Watertown, Mass. Application filed April 28, 1873.

A locking mechanism to prevent the "counter-faller" being raised by the operator (to prevent the breakage of weak yarns) until the carriage has reached the limit of its outward run and the "faller" has been regularly depressed. The bolt is in the path of the curved arm on the "counter-faller" shaft until the faller is depressed, whereby the cam on the shaft of the latter swings the lever and withdraws the bolt, allowing the "counter-faller" to be raised.

Claim.—The faller-shaft B bearing the cam H and collar *h*, in combination with the counter-faller shaft C carrying the curved arm *g*, and the frame G carrying the spring-bolt *b*, the lever *c*, and arm *f*, substantially as and for the purpose set forth.

140,588.—*Metal Window-Sash.*—JOHN D. MORAN, New York, N. Y. Application filed September 21, 1872.

The head of the sash-box is made of lead, and is grooved for the reception of the iron bar or tang, which is soldered into it. To form ornamental sash, the lead bar has a thin sheet of metal drawn upon it by passing them together through a properly-shaped die.

Claim.—1. The construction of plated moldings or bars for windows by the method herein described—that is to say, by forming the body of the head, in the shape described, of lead, by forcing it through a die, A, drawing the plated cover on the lead bar in a draw-plate, and soldering the iron bar and lead bar together by placing the iron bar heated in a bath of solder in the groove of the lead bar, all substantially as specified.

2. The new article of manufacture, consisting of a plated molding or bar for show-windows, constructed by the method herein described.

3. A molding or bar for show-windows, consisting of the iron bar C and lead bar A, constructed and united substantially as specified.

140,589.—*Compound for Preventing Incrustation in Steam-Boilers.*—THEODOR E. PETERSEN, Copenhagen, Denmark. Application filed October 10, 1872.

Claim.—A compound for the prevention of boiler incrustations, composed of beef or other tallow or fat, double carbonic natron, or its equivalent, rye-flour, and water-glass, mixed substantially in the proportions and the manner specified.

140,590.—*Compound for Cleaning Gas-Retorts.*—WILLIAM L. PITKIN and CARLISLE J. GLEASON, Montpelier, Vt. Application filed June 19, 1873.

Claim.—1. The compound, composed of the ingredients in quantity and proportions substantially as and for the purpose described.

2. The combination of carbonate or bicarbonate of potash and soda, or any of its carbonates, with chloride of sodium and oil of turpentine, substantially as and for the purposes described.

3. The combination of any of the carbonates of potash with any of the carbonates of soda, substantially as and for the purpose described.

4. The combination or use of any of the carbonates of potash, and any of the carbonates of soda, with or without chloride of sodium, substantially as and for the purpose described.

140,591.—*Gas-Lighting Apparatus.*—ARTHUR POTTER, Philadelphia, Pa. Application filed December 12, 1872.

A small electro-magnet being arranged at each burner for controlling the electric spark, a rotating commutator provided with a rolling arm, and as many radial contact-strips as there are burners, and each in circuit therewith, serves to light the burners separately in rapid succession.

Claim.—1. The face or plate B of the commutator, divided into any number of contact pieces, *c*, in combination with an intermittent rotary contact-former, E, of any construction, for the purpose shown and described.

2. The contact-face B, contact-roller E, arm F, shaft D, toothed wheel J, armature and armature-lever H I, electro-magnets G, and the spring K, combined as shown and described.

140,592.—*Clothes-Wringer.*—CHARLES ROBINSON, Boston, Mass. Application filed January 3, 1873.

A clothes-wringer constructed with rolls, springs, crank, frame, &c., in ordinary form, to which, on each upright or end of the machine, is attached a lever resting upon the journals of the upper rolls, over which an India-rubber spring is secured to the upright which furnishes elasticity to the upper roll to admit the passing through between them of articles of uneven thickness.

Claim.—The pressure-levers D D and elastic stops E E, constructed and operating substantially as herein described, in combination with the bar or roller B of a wringer, for the purpose specified.

140,593.—*Water-Wheel.*—ISAAC S. ROLAND, Reading, Pa. Application filed February 27, 1873.

A supporting-frame, composed of four or more arms, radiating from a central portion, upon which is arranged an adjustable step on which the main shaft revolves. A circular plate is affixed to the lower part of the main shaft, the periphery of which is provided with a dished rim, upon which is affixed the lower portion of a series of spiral vanes, which form the buckets of the wheel. These spiral vanes on one side are constructed vertically to the plane of the surface of the circular plate, while their other side is formed at an angle and extends out beyond the periphery of the circular plate, and are curved on the upper sides.

Claim.—1. In combination with the shaft A, plate B, rim b^3, vanes *c*, plate c^1, plate *g*, and vanes *f*, the disk E, chamber *k*, flange *k'*, ring *h*, plate *i*, and annular gate *n*, when arranged and operating substantially as set forth.

2. An annular gate, *n*, operated within a chamber, *k*, and arranged between a series of buckets, c^2, and a series of chute-buckets, *f'*, substantially as described and set forth.

3. The disk E, chamber *k*, flange *k'*, ring *h*, plate *i*, in combination with the chute-buckets *f'*, plate *g*, annular gate *n*, when arranged and operating substantially as and for the purpose set forth.

140,594.—*Device for Preventing Cows from Kicking.*—HENRY J. SADLER and SOLOMON H. SPENCER, Mecca, Ohio. Application filed April 30, 1873.

A bar with hooks to clasp the leg of the animal above and below the hough, and a strap to bind the leg near the hough.

Claim.—A device for preventing cows from kicking, consisting of a strip of wood, *s*, or other inflexible material, having the hooks A at each end and the pliable clasp *f* near the middle, arranged and applied to the leg of an animal, substantially as specified.

140,595.—*Earth-Boring Machine.*—WILLIAM H. SALYER, Hamburg, Iowa, assignor of one-half his right to J. M. CAMPBELL and DANIEL RITCHEY. Application filed November 11, 1871.

The auger is rotated by the sweep, through which it slides vertically. When the auger is to be raised the upper section of the shaft is disconnected from the one below it and raised until its lower end is supported by the sling. The sweep is then adjusted on the shaft so as to engage with the stud-pin on the drum, and the hoisting-rope drawn tightly on the drum, which is then rotated by the sweep to raise the auger.

Claim.—1. In combination with the shaft U, the sling *f*, substantially as and for the purpose specified.

2. The combination of the sweep Y, shaft U, drum X, stud-pin *a*, rope *b*, and shaft G, substantially as specified.

140,596.—*Rock-Drill.*—HENRY C. SERGEANT, New York, N. Y. Application filed March 20, 1873.

The tripod, which is provided with adjustable legs, is arranged in such a manner that the cylinder can be adjusted at any angle, either vertically or horizontally. The cylinder is also provided with an elastic cushion, which is so constructed as to cushion the piston at each end of the stroke. A projection upon the piston-rod enters a spiral groove in the frame-work of drill, and thereby imparts motion to the valves.

Claim.—1. The base or tripod of cast-iron, with two upright pieces forming a jaw for holding the clamp F, in combination with the adjustable feet, operating substantially as shown and described.

2. The cone cast on the back B of a rock-drill, in combination with the casting F, made to receive the cone, and bolted together, substantially as shown and for the purpose described.

3. The reversible ends *b' b'*, in combination with the extended feed-screw D, so as to allow reversing and bolting together, as shown and described.

4. The combination of the crank, bevel-wheels, reversible ends, and feed-screw, operating substantially as described.

5. The arm K, working in between the flanges or collars, and having a reciprocating and oscillating motion, in combination with the stationary spiral incline L and arm M, for the purpose shown and described.

6. The elastic cushion and packing-box H, constructed and operated as shown and described.

7. The combination of the cylinder A, piston-rod, and elastic cushion H, arranged and operated substantially as shown and described.

140,597.—*Compound Blower.*—THOMAS SHAW, Philadelphia, Pa. Application filed May 23, 1873.

In a rotary blower, several series of alternate stationary and rotative wings are concentrically arranged, each series adding to the amount of compression effected by the preceding series.

Claim.—The combination of two or more alternating series of stationary and rotative wings, in the manner and for the purpose set forth.

140,598.—*Child's Carriage.*—GEORGE L. SHEPARD, Albany, N. Y., assignor of one-half his right to CHARLES C. GALLER, same place. Application filed March 24, 1873.

The body is suspended from the springs in such a manner that it will freely oscillate and remain always in the same plane independently of the running-gear.

Claim.—The body E, suspended by the links *a a* from the springs D D, so that it is capable of being oscillated independent of the running-gear, substantially as and for the purpose set forth.

140,599.—*Hand Peg-Cutter.*—PAUL SUMMITER, Marlborough, Mass. Application filed May 26, 1873.

Claim.—A removable cutter, B, in combination with a bifurcated shank, A, provided with grooves and with a tightening-screw, *c*, substantially as and for the purpose set forth.

140,600.—*Shaft-Coupling.*—EDWIN SWAIN, Chelmsford, Mass. Application filed September 12, 1872.

Two shells formed of annular disks with cylindrical rims, which cover the flanged coupling and its bolts, thereby producing a smooth and regular surface for belting.

Claim.—1. The combination, with the flanged couplings A, secured by bolts through the flanges, of the shells B B covering the bolts of the coupling, and secured substantially as described, the whole arranged substantially as and for the purposes specified.

2. The shells B B, formed of an annular disk with a cylindrical rim attached, in combination with the screws D D, as and for the purpose described.

140,601.—*Machine for Trimming and Burnishing Shoe-Soles.*—BENJAMIN J. TAYMAN, Philadelphia, Pa. Application filed February 12, 1873.

The jack-carriage is provided with both a sliding and rotative movement, that all portions of the sole-edge may be properly presented for the trimming and burnishing operations.

Claim.—1. The combination and arrangement of the slide G, spring H having a pin, *d*, and rim *a* having stops *b b* and holes *c c* for changing the motion of the carrying-plate F, substantially as described.

2. The combination of the spring N with the upright rod J and jointed piece L for holding the cutter-head in an elevated position, and holding it in connection with the shoe-sole, substantially as specified.

3. The arrangement of the scales Q and Q' with the slotted rest I for regulating the adjustment of the cutter-head and burnisher to suit different lengths of shoes, substantially as described.

4. The combination of the spring N' and yoke *q* with the swivel-heads T and T^2 for pressing the burnisher down upon the shoe-sole, thus dispensing with hand-pressure, the device in measure being regulated by the set-screw, substantially as described.

5. The eccentric journals *x'* of the burnisher-shaft R, in combination with the swinging boxes *x x* for giving a reciprocating movement to the burnisher, substantially as and for the purpose set forth.

6. The combination of the connecting-rod *n*, wrist-pins *o* and *o'*, shafts X' and Y, pulleys V, V^1, V^2, and V^3, and belts W and W', as arranged, to give a limited reversible rotary movement to the burnisher, substantially as set forth.

140,602.—*Turbine Water-Wheel.*—HENRY VAN DE WATER, Rochester, N. Y. Application filed September 28, 1872.

A circular gate is opened by moving it downwardly, and the water, when flowing into the wheel, flows over the upper edge of the gate under the inclined part of the wheel. When the gate is partially open the inflowing water is compressed into a solid mass, which tends to raise and free the wheel-shaft of friction. There is also a cutting device applied to the buckets, which is to remove obstructions.

Claim.—1. The gate P closing upward, arranged between the guides B and buckets C, and so constructed and applied in relation to grooves of the water-wheel casing that said grooves are entered and a tight joint formed at top and bottom of the gate when the gate is shut, substantially as described.

2. The ring *b* with its bottom surface forming regular or uninterrupted inclined continuations of the curved portions of the buckets of the hub, thus forming smooth flaring or funnel-shaped sluice-ways for the inflowing water, substantially as set forth.

3. The crowning or arched cap E, in combination with the inclined or flaring ring *b*, the same being applied as described and shown, whereby the ring is made to serve as an abutment for the cap E, substantially as described.

4. The cutting device *y*, applied to the buckets, so as to precede it in its path of motion and cut away any obstruction between it and the casing, substantially as described.

140,603.—*Feeding Mechanism for Sewing-Machines.*—WILLIAM WESTMORELAND and EDWIN WESTMORELAND, Nottingham, England, assignors of one-half their right to JOHN KENT, New York, N. Y. Application filed August 26, 1872.

The presser-foot engages and moves the material, and it is reciprocated in a bracket so pivoted as to have a universal movement. The bracket has a slotted collar through which works a rod provided with an adjustable incline or cam, and the rod and its cam may be turned so as to move the frame in any direction that the operator desires. The presser is held down by a spring carried by its operating-lever, and is raised by the end of the lever which engages a pin or the presser-shank.

Claim.—1. The combination of the T-shaped piece D, carried by the axle D', and the swinging bracket E carrying the presser-foot, substantially as and for the purpose hereinbefore set forth.

2. The combination of the spring H, stud H^1, lever H^2, pin H^3, bracket E, presser-foot E^1, and the cam provided with groove I, all arranged as shown and described.

3. The combination, with the feeding presser-foot and its bracket, pivoted as described, of the reciprocating adjustable rod F, springs F^1 and F^2, wedge-piece F^3, and slotted collar, all combined and operated as described.

140,604.—*Can-Opener.*—JOHN WOOD, New York, N. Y. Application filed June 11, 1873.

A frame rests upon the edges of the can-cover and carries a feeding-screw, upon the lower part of which is secured an arm which carries a cutter at each end, extending the one upward and the other downward. A reversal of this arm changes cutters and varies the size of the circle of metal cut out.

Claim.—The combination, with a supporting-frame, B, and a screw, F, of the reversible cutting-head E, provided with two cutters, as described, and for the purposes set forth.

140,605.—*Doll.*—HENRY C. WORK, Brooklyn, N. Y. Application filed November 19, 1872.

A multipedal wheel is pivoted at the knee, and is moved by friction as the figure is moved. The doll is represented as raising its dress enough at the side to show but one pair of feet at once.

Claim.—1. The multipedal wheel A, substantially as described, or the device for bringing successively into use several pairs of feet, which revolve on a common axis.

2. In connection with said wheel, the partly-lifted and partly-trailing skirt, substantially as specified.

140,606.—*Metallurgic Gas-Furnace.*—WILLIAM C. WREN, Brooklyn, N. Y. Application filed April 19, 1873.

The grate of the furnace is filled with brick to within six or eight inches of the arch, and the gas-pipe, with its central air-pipe, is introduced through the brick-work.

Claim.—1. The compound air and gas pipe herein described, made by arranging the air-blast pipe inside the gas-pipe, substantially as specified.

2. The arrangement of the air blast and gas-pipes, the former within and shorter than the latter, and provided with suitable regulating valves or cocks, as set forth.

140,607.—*Motor for Sewing-Machines.*—WILLIAM YOUKO, Baltimore, Md. Application filed April 9, 1873.

Claim.—1. The combination of coil or coils of springs with two spirally-grooved conical drums, or one spiral and one cylindrical drum, a cord or chain uniting them, and a train of wheels, through which the power of the springs may be transmitted to the mechanism to be driven by it.

2. The combination, with the above combinations, of a brake, formed of an elastic spring-bar, pressing upon the pulley-shaft of the machine.

3. The idle-wheel above described, when used in the motor for the purpose of reversing the movement of the winch, as above described.

140,608.—*Piston-Packing.*—CHARLES S. BARRY, Providence, R. I. Application filed May 10, 1873.

A case with valves to admit steam surrounds the piston; in it are placed the packing-rings with small break joint rings and a wedge-shaped ring to force the packing against the sides of the casing.

Claim.—1. The combination of the L-shaped ring D and cover E, inclosing the packing-rings K L, the joint-break rings *k l*, and the wedge-ring I, the spring H, the valves *f' g'*, the valve-seats F G, and the steam-ways *f g*, substantially as specified.

2. The combination of the wedge-expanding ring I, the packing-rings K L, and the joint-break rings *k l*, forming a universal piston-packing between the parallel bearings of a piston, when operated either by steam or by spring power, substantially as specified.

140,609.—*Needle-Cushion.*—WASHINGTON H. BIXLER, Easton, Pa. Application filed April 15, 1873.

Claim.—1. A needle-cushion, A, constructed for attachment to a thread-spool, substantially in the manner herein specified.

2. A needle-cushion, A, combined with a thread-spool, substantially as described, and for the purpose specified.

140,610.—*Letter File and Binder.*—ECKFORD BURLL and JOHN W. LILLEY, Columbus, Ohio, assignors to LOUIS SIEBERT and JOHN W. LILLEY, same place. Application filed February 27, 1873.

The index leaves and letters are strung on short needles *l* and secured by long needles *i* attached to the hinged-back frame. When this frame is swung back its needles and papers moved and supported upon them are cleared from the short needles, from which the remaining sheets may be detached.

Claim.—1. The disposition of needles of different lengths in a paper file and binder in a manner relative to each other and to the cross-bar E of the frame, and the cross-bar E of the end-gate, and to the other devices therewith connected, whereby individual papers or folios are detachable without deranging the remaining papers filed, substantially as set forth and described herein.

2. The combination and arrangement of the base C and metallic frames D E, the bracket-shaped sides *b b* and *c c*, the end-gate F, the gages *m*, *m*, *m*, and *m*, the needles *i i* and *l*, and the divider, Fig. 2, operating together substantially as and for the purpose herein shown.

140,611.—*Manufacture of Knitting-Machine Needles.*—JAMES H. BULLARD, Chicopee Falls, Mass., assignor of one-half his right to AMOS W. PAGE, same place. Application filed April 19, 1873.

The round wire is first bent at one end; the other end is then drawn out to the diameter required the sides flattened in dies, the point or small end set back, as seen in the drawing, and the point turned and latch inserted in the usual manner.

Claim.—The method herein described of making knitting-machine needles, namely, first, drawing the point; second, swaging the parallel sides; third, pressing the point and offsetting it in line with the back of the shank; and, fourth, finishing in the usual manner, substantially as specified.

140,612.—*Farm-Gate.*—MAHLON BURTLESS, Seneca Falls, N. Y. Application filed March 22, 1873.

To the gate, which slides and swings upon a frame hinged to the rear gate-post, is attached a short horizontal swinging latch-bar, which, upon being turned down, locks the gate in its closed position.

Claim.—The hinged latch M, arranged to operate in connection with the gate J and hinged frame G, substantially as herein shown and described.

140,613.—*Glove-Fastening.*—HORACE P. CARVER, Binghamton, N. Y. Application filed June 7, 1873.

A plate on one side of the glove has projections which support a pin longitudinally. A plate on the other side has coiled parallel springs. The pin catches between the springs and fastens the glove.

Claim.—1. The glove-fastening, consisting of pin-plate A, in connection with coiled spring-plate B, substantially as and for the purpose described.

2. The plate A having abutting parts *b b'*, which carry, longitudinally, pin *d*, as set forth.

3. The plate B with parallel coiled springs *c*, for the purpose described.

140,614.—*Extension Hat-Brim.*—I. IGNACIO CASSIANO, San Antonio, Tex.—Case A. Application filed March 29, 1873.

Into the crown of a hat is fitted a metallic ring to which radiating arms are fastened having branched arms pivoted to their extremities. To the edge of the brim is sewed an annular piece of cloth having an elastic cord fastened by metal clips to its outer edge, the clips being provided with sockets which fit upon the ends of the pivoted arms when the cloth is extended, or upon hooks when it is folded.

Claim.—1. The combination, with a hat, of a brim or sunshade, J, for extending beyond the permanent brim, also for folding back under it, substantially in the manner described.

2. The combination of the ring C, stationary arms D, adjustable arms G, and clips L with a hat and an extension brim, J, substantially as specified.

3. The combination of the elastic cord K with the extension brim and the clips L, substantially as specified.

4. The combination of the hooks O with the clips L, elastic cord, and the extension brim, substantially as specified.

140,615.—*Extension Hat-Brim.*—I. IGNACIO CASSIANO, San Antonio, Tex.—Case B. Application filed March 29, 1873.

An annular extension brim of cloth, sewed to the edge of the brim of a hat, is attached to folding arms which are mounted on sliding rods moving on sockets fastened to a metallic band fitting into the crown of the hat. The sliding arms are provided with spring-catches so that the brim may be more or less extended at pleasure, an elastic cord retaining the cloth in position.

Claim.—1. The combination of an extension-brim, E, and extension devices for varying the extension with the permanent brim of a hat, substantially as specified.

2. The folding extension-arms H, mounted on sliding extension-arms K, substantially as specified.

3. The combination of the elastic straps L with the extension-brim E and the sliding extension-arms K, substantially as specified.

140,616.—*Device for Manufacturing Jewelry-Bases.*—SHUBAEL COTTLE, New York, N. Y. Application filed March 24, 1873.

A former composed of five pieces is placed in a dish-shaped blank, and a die is brought down to turn the upper rim inward upon the former; the rim is then burnished to form square corners, and the former is removed piece by piece, after which the bottom of the article is punched out.

Claim.—The former B, consisting of a middle section, *b*, and several surrounding sections *b'*, in combination with a die, C D, burnisher F, and mandrel E, as and for the purpose described.

140,617.—*Padlock.*—HENRY ESSEX, Meadville, Pa. Application filed May 3, 1873.

The sliding staple is tapered at its inner end so as to force back the spring-bolts and allow the staple to be locked without the aid of a key. The grooves in the staple, for the reception of the bolts, are made of different widths to correspond with the different widths of the bolts, so that when the staple is pressed into the case the spring-bolts must enter their respective grooves.

Claim.—1. The combination of the sections A and B, the sliding staple C with inclined plane c^4, check D, recess *d*, bolts E E^1 E^2, removable partition-plates *g*, and spring G, substantially as specified.

2. The construction and arrangement of the grooves c^1 c^2 c^3, and sliding bolts E E^1 E^2, and the inclined plane c^4 on the sliding staple C, substantially as specified.

140,618.—*Screw-Post for Electrical Apparatus.*—STEPHEN DUDLEY FIELD, San Francisco, Cal. Application filed April 10, 1873.

Wire securely griped in hole *i* and between A and C.

Claim.—A binding-screw post for electrical purposes, composed of the base A, set-screw C, and screw-stem B having the perforation *i* in its base, substantially as and for the purpose above described.

140,619.—*Cake-Pan.*—JOHN B. FIRTH, Brooklyn, N. Y. Application filed May 24, 1873.

A cluster of cake-pans is connected to the frame by double-seaming the top of each pan thereto.

Claim.—The cluster of cake-pans B, connected to the frame A by the flanges *a'* and turned edges *b'*, as and for the purpose described.

140,620.—*Washing-Machine.*—WILLIAM K. FLIETSTRA, Holland, Mich. Application filed June 14, 1873.

A rectangular box pivoted at its center to uprights or frame, having on its bottom, suspended from its center, an adjustable weight to aid in giving it motion. The bottom sides and one end inside of it has beaters or ribs, and one end projecting plates with rounded edges, which gradually increase in height toward the end of the box.

Claim.—An improved washing-machine, formed of the frame A, box B, pivots C, ribs or cleats D, projecting plates E, cover F, and balanced weight I J K L, constructed and arranged, in connection with each other, substantially as herein shown and described.

140,621.—*Fire-Place.*—JOHN L. GARLINGTON, Snapping Shoals, Ga. Application filed April 19, 1873.

This grate has an inclined back provided with a sliding damper to regulate combustion and cause a better radiation of heat. By means of adjustable side plates the grate can be readily fitted into any chimney.

Claim.—1. The back extension-plate F with lateral strips *h'*, guide-rods *i*, and chimney-plate K, as described.

2. The top and bottom extension-plates C having slots *a*, in connection with damper D and side plates B, substantially as described.

3. The combination of the extension-plate F, lateral strips *h'*, guide-rods *i*, plate K, plates C having slots *a*, side plates B, and damper D, as shown and described.

140,622.—*Horse-Power.*—WILLIAM GILFILLAN, Speier, Minn. Application filed May 10, 1873.

Claim.—1. The arrangement and combination of the bed-wheel B, bed-frame A, revolving frame I, vertical wheels F F, pinion-wheels N N, bevel-wheels P P, pinion Q, bevel-wheel R, and pinion T, with their respective shafts and stands, substantially as shown and described.

2. The external and internal gear-wheels F, mounted on the cross-shaft G having its bearings in the frame H, in combination with the wheel B and pinions N, as and for the purpose specified.

140,623.—*Table Dish-Stand.*—FLORIAN GROSJEAN, New York, N. Y. Application filed June 21, 1873.

A stand of sheet or cast metal covered on its upper surface with an enamel of porcelain, and mounted in a frame.

Claim.—A dish stand or tray for the table, composed of a metal plate having its upper surface enameled with porcelain, and mounted in a metal, wood, or other frame, either with or without a backing of wood, and whether mounted on legs or not, substantially as specified.

140,624.—*Apparatus for Charging Gas-Retorts.*—ALONZO F. HAVENS, Brooklyn, N. Y. Application filed May 14, 1873.

Two leaves hinged together in the center form the bottom of the scoop. Arms attached to the hinges lift the center drawing in the edges of the leaves, allowing them to fold and deliver the charge toward the side or angles of the retort. The bottom, when in place, is supported by projecting pins and ledges on the main frame.

Claim.—1. The hinged folding bottom *s* and crank-arms upon the shaft *k*, in combination with the charger *c d*, substantially as set forth.

2. The frame *a* and ledge *u*, in combination with the hinged bottom and charger, the parts being constructed and operating substantially as set forth.

140,625.—*Washing-Machine.*—MOSES L. HAWKS, Kinderhook, Mich. Application filed June 14, 1873.

A large roll resting upon a bed of smaller ones, all corrugated. The two outer rolls of the bed have journals extending through the uprights of the frame, and rest upon a yoke suspended by a spring which passes over a block resting upon the journals of the large upper roll and attached to the yoke by a curved metallic holder. The holding-bar has a key fitted to slots in it, by which it may be adjusted to the size or form of the tub.

Claim.—1. The combination of the standards A, the cross-bar N, bed-piece B, the large roller C, the two stationary inner rollers E, the two movable outer rollers E, the half-bearings F, the rubber-band springs G, the cross-bars H, and the wires or rods I with each other, substantially as herein shown and described.

2. The combination of the cleat J, the slotted cross-bar K, the pin L and the cleats M with the ends of the bed-piece B of the machine, substantially as herein shown and described.

140,626.—*Cutter-Head for Molding.*—EDE H. HINNERS, New York, N. Y. Application filed December 14, 1872.

A molding cutter with a staggered saw to form the rabbet with a thin fillet.

Claim.—A cutter-head consisting of the molding-cutters B and staggered saw C, arranged on the cutter-head A to form a rabbet, D, separated from the molding by a narrow strip, E, substantially as represented in the drawing.

140,627.—*Button-Fastening.*—WILLIAM HOLLOWAY, Buffalo, N. Y. Application filed March 8, 1873.

A slotted concave spring-disk engages in a groove in the end of the shank of a button. The center of the slot is enlarged to embrace the shank.

Claim.—The combination of the concave spring-disk C, having a slot, *c*, and a slit, *c'*, extending therefrom to the edge or periphery of the disk, with the button A and shank B, all being constructed and operating substantially as described.

140,628.—*Blasting-Plug.*—JULIUS H. HOLSEY, Butler, Ga. Application filed April 16, 1873.

Blasting-plug made in segments, the rabbet jointed, and having a fuse-hole passing vertically through both parts so that a limited expansion may take place without escape of the gases generated at the time of the explosion.

Claim.—A sectional blasting-plug, rabbet-jointed at the meeting edges, substantially as specified, and rabbet-jointed across the top, as specified.

140,629.—*Combined Refrigerator and Soda-Water Apparatus.*—THOMAS W. JOHNSON, Fort Madison, Iowa. Application filed May 14, 1873.

The receptacle for the alkali-water, having a piston worked by a lever, is placed within an ice-chamber, and in the upper part of this chamber is a sirup-receptacle. Below the ice-chamber is a refrigerating-chamber.

Claim.—1. The combination of the ice-chamber C, the jar G for soda-water with its piston K, the refrigerator-chamber B, and sirup-receptacle T, as set forth.

2. The combination of the jar G for alkali-water with piston K for forcing it out, the ice-chamber C and the receptacles T arranged together and with faucets for use in forming soda-water, substantially as set forth.

140,630.—*Emery-Wheel.*—WILLIAM A. JOHNSTON, New York, N. Y. Application filed January 9, 1873.

Claim.—A corundum, emery, or other grinding or polishing wheel having a screw-thread formed in its eye or center, as shown and described.

140,631.—*Leather-Trimming Machine.*—SAMUEL H. JONES, East Albany, N. Y. Application filed August 26, 1872.

A curved cutter is attached to the needle-bar. A slide piece in the bed of the machine yields laterally upon the downward stroke of the needle-bar, permitting the cutter to pass down, and is closed by spring-pressure during the upward stroke.

Claim.—1. The combination of sliding plate H and spring S with the throat-piece, substantially as and for the purpose set forth.

2. The combination of the lateral-curved cutter G and needle-bar D with the throat-piece B provided with the sliding piece H and spring S, substantially as and for the purpose set forth.

140,632.—*Equalizing Attachment for Plows.*—DAVID H. KING and WILLIAM M. HULSE, Palmyra, Ill. Application filed March 29, 1873.

Claim.—1. The loop B, closed at both ends, and secured to the beam by the bolt C and clevis D, to hold the equalizing mechanism, in the manner described.

2. The combination, with the chains attached to a band, F, movable on an eccentric, E, of the guide-bar H, applied as and for the purpose set forth.

140,633.—*Machinery for Pebbling and Graining Wet Skins.*—NORMAN O. LOUSSBERRY, Wilmington, Del. Application filed April 12, 1873.

Claim.—In a machine for graining and pebbling skins, the arrangement, with or without the cover, of the two graining-rollers, turning in the same direction horizontally parallel with each other, as shown, so that the skin will gravitate into the space between said rollers, together with operating devices, substantially as specified.

140,634.—*Horse Hay-Rake.*—WATSON C. MARTINDALE, Philadelphia, Pa. Application filed May 10, 1873.

A rod arranged parallel with the axle, carrying a spur-pinion on each end, through which it receives motion from the supporting-wheel, has a pawl and ratchet near the center, by which the rod and rake-head is locked and revolved for discharging.

Claim.—The combination of the gear-wheels G, loose gear-wheels H, pawls and ratchet wheels J K, rod I, ratchet-wheel L, lever-pawl M, and inclined arm P, with the wheels E, hinged axle D, shafts A B C, curved teeth N, and straight teeth O, substantially as herein shown and described.

140,635.—*Knitting-Machine.*—GEORGE MERRILL, East Orange, N. J. Application filed May 13, 1873.

The machine is for the production of a knit fabric having incorporated with it a loose warp and weft thread. The warp-frame delivers longitudinal threads at an angle to and between the reciprocating needles. The weft-thread carrier moves inside the range-needles and delivers its thread across the warp and between them and the needles, and the locking thread guide delivers a thread which is knit into loops, and binds the warp and weft together.

Claim.—1. In combination with a series of reciprocating needles, arranged to operate as described, the frame F, or its equivalent, arranged to guide and deliver a series of warp-threads at an angle to the line of reciprocation of said needles between the needles, substantially as set forth.

2. Such frame or guide F, when made adjustable in relation to the needles, whereby the angle at which the warp-threads are presented to the needles may be varied, as set forth.

3. In combination with a series of reciprocating needles and a warp-frame or guide, arranged to deliver its threads at an angle to the line of reciprocation of said needles, a weft thread carrier, J, or its equivalent, said parts being arranged to operate in connection with each other, substantially as described.

4. The combination of a series of reciprocating needles a warp frame or guide, F, arranged to deliver its threads at an angle to the line of reciprocation of said needles, and a weft-thread guide, J, with a locking-thread guide, L, the said devices being arranged to operate in relation to each other, substantially as herein described.

5. The tubular shaft K, in combination with the thread-carrier L, arranged to move within the circle of needles, and deliver the thread in front of the needles, as set forth.

140,636.—*Combined Refrigerator and Beer-Cooler.*—GEORGE NUSS, New York, N. Y. Application filed June 21, 1873.

An inclined recess for the cask is above the ice-chamber whose ends are free of the sides of the casing, to permit the cold air to descend into the refrigerating chamber.

Claim.—The box A provided with a chamber, B, an ice chamber, D, and one or more downwardly-projecting recesses, G, substantially as herein shown and described, and for the purposes set forth.

140,637.—*Rock-Drill.*—GEORGE E. NUTTING and JOSEPH C. GITHENS, New York, N. Y., assignors to A. C. RAND, same place. Application filed June 30 1873.

The valve is operated by means of pistons, which are arranged upon the valve-stem, and they are so arranged as to discharge the steam that actuates them through the piston-head into the open air. A rotating device is also provided, in which the retaining-pawl is hung in a ring in such a manner that when the drill is prevented from turning the ring turns and carries with it the pawl, and thereby obviates the breaking of the drill.

Claim.—1. The combination, with the valve I, of pistons L and port N, constructed substantially as described, so as to exhaust the steam from the end of the steam-chest F into the main exhaust, or directly to the atmosphere, as shown.

2. The combination, with the piston of a steam rock-drill, of a rotating device, substantially such as is herein described, so that it may be held to its work by friction, and may yield should the drill-bit be prevented from turning.

3. The loose ring and adjustable stationary friction-strap and pawl and ratchet, or equivalent, with the piston of a rock-drill, substantially as herein shown and described.

4. An improved chuck for rock-drill bits, formed by dividing the hollow forward end of the piston-rod C longitudinally into three or more parts, and contracting said parts to hold the drill-bit by a strap or clip, open upon one or both sides, substantially as herein shown and described.

5. The valve mechanism, substantially as described, consisting of the piston-valves L, disks K, valve I, and ports N, as and for the purposes specified.

140,638.—*Door-Spring.*—CHARLES W. OLDHAM, Leipsic, Ind. Application filed May 24, 1873.

A cylinder is filled with liquid and furnished with a valved piston. The upper end of the piston-rod is connected to one end of an elbow-lever, which lever is operated by the opening of the door. An adjustable spring aids the drawing down of this lever. The resistance of the liquid to the piston with the closed valves prevents the slamming of the door.

Claim.—The valved piston B F, having two plates, of which the upper has a small and the lower a large aperture, and operating, in connection with the parts A C D E, to prevent the slamming of doors, in the manner described.

140,639.—*Mail-Bag Fastening.*—JOHN A. PAUL, Huntingdon, Pa., assignor of one-half his right to ANDREW B. BRUMBAUGH, same place. Application filed January 21, 1873.

The jaws of a bag-frame are made with flanges or projections on their outer sides, and a clasp or clamp, made either in one or two pieces, slides on the flanges and clamps both jaws. The clamp is notched on one side, and one of the jaws is correspondingly notched so that when the projections on the clamp are brought opposite the notches on the jaw the bag is readily opened.

Claim.—The jaws A and B, one of said jaws being notched, as described, in combination with one or more sliding notched clasps, all constructed and arranged to operate substantially as and for the purpose set forth.

140,640.—*Window Weather-Strip.*—GILES P. POTTER, Coventry, R. I. Application filed May 5, 1873.

Claim.—In combination with the sash B and grooved frame A the battens C right angled in cross-section and provided with the rubber strips D, as shown and described.

140,641.—*Washing-Machine.*—FRANCIS B. PRESTON, Fayette, Mo., assignor to himself and WILLIAM H. STAPLETON, same place. Application filed May 17, 1873.

In a box of usual form beaters are placed, acting one against the other by a rolling or rocking motion produced by the connecting-levers inside and out, by means of jointed arms and by an outside framed lever attached to a triangular-formed connection, to the lower point of which the outside lever is pivoted, and having an arm connecting with the cross-shaft. On the bottom of the box, at one end, is a raised part of it to give motion to the beater.

Claim.—The combination of the rocking beater C, sliding beater D, shaft E, levers F, connecting-rods G, rigid arms H, shaft I, rigid arms J, connecting-rods K, and brackets or arms L, with each other and with the box A, substantially as herein shown and described.

140,642.—*Medical Compound for Cholera.*—ANTOINE RACICOT, Troy, N. Y. Application filed March 21, 1873.

Tincture of sesquichloride of iron, tincture of capsicum, laudanum, tincture of camphor, sulphuric ether, tincture of cinnamon, tincture of pyrola.

Claim.—The compound composed of the above ingredients, in substantially the proportions set forth.

140,643.—*Pump.*—CHARLIE D. RATHBONE, Belpre, Ohio. Application filed November 16, 1872.

The ends of the glass bushing are formed with shoulders fitting into correspondingly-shaped recesses in the cylinder, forming a water-space so that the bush will be relieved of all strain due to the pressure of water by being surrounded by it.

Claim.—The bush C, having bead *a* on the outside of each end, as described, so that a water-jacket may be formed thereround, when placed in the cylinder, and any contraction of wood, which might break the glass, be prevented.

140,644.—*Nut-Lock.*—JOHN A. REED, Dunellen, N. J. Application filed February 8, 1873.

The blocking piece is punched out of the washer in the form shown, and turned in a different position to form the lock. The base is curved to facilitate the introduction beneath the nut.

Claim.—1. The foot-shaped blocking-piece with a curved base, 3, introduced within and opening in the washer and passed up behind one of the angles of the nut to prevent the same from unscrewing, as set forth.

2. The blocking-piece cut out of the metal of the washer, so as to be introduced into the opening in a different position and lock the nut, substantially as set forth.

140,645.—*Stitching-Gage for the Blind.*—WILLIAM H. RICHARDSON, Fort Smith, Ark. Application filed May 5, 1873.

A stitching-gage with an adjustable platform for holding the work, a slotted frame-plate, and a slide with a spring and pawl moving forward upon a ratchet-bar to give the required length for each stitch.

Claim.—An improved stitching-gage, formed of the bottom A, slotted front plate C, rear plate B, swiveled nut D, screw E, platform F, stationary bars G I, detachable ratchet bar H, slide J M, and spring-pawl K, constructed and operating in connection with each other, substantially as herein shown and described.

140,646.—*Invalid-Bedstead.*—JOHN ROBINSON, Madison Station, Miss. Application filed May 31, 1873.

Upon a right and left screw-rod nuts are placed. To the head-rest and to the nuts bars are pivoted, and when the screw-rod is revolved in the journals the nuts travel in either direction and elevate or depress the rest.

Claim.—The right and left screw-rod K, the nuts J, the rods or bars I, and the sockets H, in combination with the slats and side rails of a bedstead, substantially as herein shown and described.

140,647.—*Machine for Sawing Laths.*—ALEXANDER RODGERS, Muskegon, Mich. Application filed April 12, 1873.

The table and feed-rolls are placed at such an angle to the saws as to form lath having a rhomboidal section.

Claim.—1. The combination of the gang of differential saws B on a horizontal arbor, A, and the inclined feed-table C, substantially as specified.

2. The combination, with the differential saws B and inclined feed-table C, of a feed-roller having a tapered form, also a spiral rib, and arranged to confine the work to the guide, substantially as specified.

140,648.—*Seed-Planter.*—WILLIAM J. SAFFERY, Bremen, Ohio. Application filed March 15, 1873.

A triangular frame with handles. An opening plow in front at the apex with a surface-smoother; next, in rear, a seed-hopper and spout; then a carrying-wheel, with pins on its sides to actuate the seed-hopper slide and that of a guano-hopper behind; also, to raise intermittently a dragging-hoe, when a hill has been formed, over the seed.

Claim.—The combination, in a seeder, of a seeder in front, a guano-dropper in the rear, and an intermediate wheel, O, all arranged in the same vertical longitudinal plane with the furrow-opener G, as described, so that the seed may be slightly covered with soil by the wheel before the guano is dropped upon it, and all danger thereby removed of destroying the vitality of any of the seed.

140,649.—*Toy.*—JACOB SCHWENNESEN, Chicago, Ill., assignor to HANS PETER SCHWENNESEN, same place. Application filed December 3, 1872.

To imitate, by pressure of the finger, the evolutions and movements of a horizontal-bar gymnastic performer.

Claim.—A figure, G, suspended from a rock-shaft, C, and operated by means of the lever E, cord F, and spring D, substantially as and for the purposes set forth.

140,650.—*Sky-Light Bar.*—CHARLES SELLMAN, New York, N. Y. Application filed May 26, 1873.

Claim.—The main supporting-bar A, bent of symmetrical shape to form an upward-projecting part, *a*, inclined supports *b*, and inclined gutters *d*, substantially as described.

140,651.—*Washing-Machine.*—JACOB SHEFFLER, Deselm, Ill. Application filed June 7, 1873.

An ordinary tub having within it another with a corrugated bottom with openings, located upon wheels for its easy revolution, over which is a fluted roll pivoted to a frame attached to the side of it, having a handle by which its tension is controlled, and a crank to give it motion. On one side of the center is pivoted or hinged a curved arm, which passes through a flanged cylinder to control the direction of the clothes being washed.

Claim.—An improved washing-machine, formed of the corrugated and flanged bottom B E, the rollers or wheels C, the pivot D, the corrugated roller F, hinged frame G *g'*, crank H, flanged cylinder I, and curved arm J, constructed and operating in connection with each other and the tub A, substantially as herein shown and described, and for the purpose set forth.

140,652.—*Suspender.*—ABRAHAM SHENFIELD, New York, N. Y. Application filed May 23, 1873.

The front connecting-straps are made in one, and have three button-hole pieces, the middle one of which supports the middle and front part of the pantaloons.

Claim.—In combination with the suspender-straps *a a*, the connecting-straps *d* having three button-hole pieces, *e e f*, constructed as shown and described.

140,653.—*Apparatus for Making Vinegar and Aging Spirits.*—WILLIAM M. SKELTON, Greencastle, Ind. Application filed March 22, 1873.

Claim.—1. The combination, with the revolving feeder E, of the radially-channeled distributer D, substantially as specified.

2. The revolving feed-cup F, provided with the bent discharging spouts *n* and the cone *m*, adapted to be suspended upon a needle-pivot, substantially as specified.

140,654.—*Sewing-Machine.*—JOHN ALBERT SMITH, Columbus, Ohio. Application filed April 12, 1873.

The pin projects from the shuttle-carrier and is fitted loosely to a hole in rotating disk; and the pivoted link serves to maintain the carrier in an upright position as it moves.

Claim.—The combination of the disk A, shuttle-carrier B, pin E, and the rod F, said rod being jointed to the pin or shuttle-carrier and to the frame, all substantially as described.

140,655.—*Combined Scrubbing-Brush, Mop, and Wringer.*—JOHN D. SMITH, Sacramento, Cal. Application filed February 3, 1873.

The handle is attached to the brush by a staple extending nearly its length and to which the mop is connected. The handle, in its connection, is by a countersink in the staple, by which it may be turned to wring the mop by the aid of its cross-head, which slides upon the handle, and may be rigidly held by the set-screw when using the brush.

Claim.—The brush A, with its back rod *b* and handle C, in combination with the sliding and revolving handle E, having the set-screw *f* and cross-bar *g*, substantially as and for the purpose above described.

140,656.—*Fishing-Rod.*—WILLIAM M. SMITH, Reading, Pa., assignor of one-third his right to HENRY Z. ERMENTROUT, same place. Application filed May 17, 1873.

To prevent unjointing while in use set-screws are tapped into the outer band, which take into grooves upon the inner ferrule-point.

Claim.—1. The combination of the part A of a fishing-rod having ferrule B, collet D, and set-screws E, with the part A' having ferrule B' and extension C, substantially as and for the purpose described.

2. The outer ferrule B, having collet D with set-screws E and staple *b*, as set forth.

3. The inner ferrule B', with grooved, notched, or smooth extension C, substantially as described.

140,657.—*Sawing-Machine.*—HARRY M. STOW, Milan, Ohio. Application filed April 26, 1873.

The bar to which the saw is attached is suspended and reciprocates in two vertically-adjustable guides.

Claim.—1. The saw-bar B, having sliding front and stirrup chains *b* and *d*, as described.

2. The combination of levers F G with saw-bar B, by-rods *l l'*, arms *m m'*, and rope *p*, substantially as described.

140,658.—*Band-Cutter and Feeder for Threshing-Machines.*—JOSIAH SULLIVAN and JOHN MINES, Newark, Ind. Application filed May 3, 1873.

The knives so arranged as to propel the separated sheaves with an oblique front, thereby breaking joints between the succeeding sheaves.

Claim.—1. In a band-cutter for thrashing-machines, the cutter-shaft C having the curved cutters *c c*, arranged in progressive order, and operating in the manner set forth.

2. The combination and arrangement of the compensating feed-rake D with the straight rake-teeth *d*, and the cutter-shaft C with the curved cutters *c c*, arranged in progressive order, substantially as and for the purpose specified.

140,659.—*Clothes-Clamp.*—WILLIAM TUNSTILL, Brooklyn, N. Y. Application filed May 9, 1873.

Two jaws are recessed to receive a coil-spring, with two arms and a staple passing through the jaws and securing all in place.

Claim.—The clamp formed of the parts *a* and *b*, united by the wire *c*, in combination with the coil *e* having arms 4 4 that act as springs, which coil is in recesses within the clamp *a b*, and secured by the wire *c* passing through the same, as set forth.

140,660.—*Subsoil-Plow.*—AUGUSTUS L. P. VAIRIN, Ripley, Miss. Application filed April 19, 1873.

A slot is formed in the share having an enlarged portion at the rear for the passage of lugs formed on the rear of the standard. The standard, being moved forward so that the lugs engage with the share, is held in position by a key.

Claim.—The toe a^2, ribs or flanges a^3, lugs a^4, slot b^2, enlarged at its rear end, and the wedge-plug C, for securing the share B to the standard A, substantially as herein shown and described.

140,661.—*Transmitting Time-Movements to Distant Dials.*—HERMANN J. WENZEL, San Francisco, Cal. Application filed March 21, 1873.

Two inverted cups attached to a balanced arm or beam, which is oscillated by a clock-wheel or cam once in a minute, are thereby caused to be alternately raised and depressed in vessels containing liquid, so as to transmit pneumatic impulses through connected air-tubes to any desired point where a closed double-chambered vessel provided with a float and lever is arranged, so as to synchronously operate ratchet-wheels carrying indexes upon a suitable dial or dials.

Claim.—1. A cylinder or vessel, raised and lowered periodically by clock-work into and out of liquid contained in a vessel, in combination with the tube connecting to a distant vessel containing a float that actuates the mechanism of a dial in unison with the main clock mechanism, substantially as set forth.

2. The equalizing-vessels *h h'* connected by a tube, in combination with the cylinders *e e'*, vessels *f f'*, and tubes *g g'*, substantially as and for the purposes set forth.

140,662.—*Splint.*—ARA WHEAT, Canaan, N. H. Application filed June 7, 1873.

A swiveled exterior rod is connected with the upper hinged section. The foot-rest is attached to the lower hinged section by a sliding bar and screw extension-rod.

Claim.—1. The swivel I, extension-rod H, support J, nut K, and banding-strap N, combined with section A, substantially as specified.

2. The combination of the sections B and C D, sliding joint L, and extension-rod M, substantially as specified.

140,663.—*Railway Snow-Plow.*—WILLIS WHEELOCK, Decorah, Iowa, assignor of one-half his right to WILLIAM T. BAKER, same place. Application filed May 10, 1873.

The plow after being filled is backed out from the drift, and the rope connecting with the inner movable plow winds around the car axle and causes the snow to be discharged from the front.

Claim.—The shovel A B, supported on the truck C, and having the chilled shoes D, in combination with the inner sliding plow E, substantially as specified.

140,664.—*Music-Leaf Turner.*—GEORGE W. WHITE, Brooklyn, N. Y. Application filed May 10, 1873.

Two bell-cranks, having at their upper ends segmental gears, connect with two pinions upon the leaf-arm shaft. To the lower ends of said cranks finger-levers are attached, one to carry all the arms at once to the right, the other to carry them one by one to the left, the latter engaging with each arm consecutively by an upwardly-working spring-sleeve which always takes the lowest unturned arm.

Claim.—1. The combination of the arms A, wheels E and F, the pin J, the segmental bell-cranks L S, and their operating levers and springs, substantially as specified.

2. The combination of the sliding pin V, sleeve H, and spring I with the notched arms, substantially as specified.

3. The combination of rod d and bar *s* with sleeve H, spring I, and the mechanism for throwing the arms A to the side for engaging the leaves to be turned, substantially as specified.

4. The combination of spring-plates *g*, push-pins *h*, and arms A, substantially as specified.

140,665.—*Driven Well.*—ALPHONSO WILSON, Plainfield, N. J. Application filed May 5, 1873.

The water-section of a drive-well tube is cast of malleable iron with a conical point, contracting and expanding ring-sections, and a tubular top section, having its contracting sections perforated and covered with wire-gauze, and a screw-thread cut upon its tubular top section. The wire-gauze is so applied that it cannot be cut or torn off by stones or other obstructions while the tube is being driven.

Claim.—A water-section, A, of a drive-well tube, cast of malleable iron with a conical point, a^1, alternate contracting and expanding ring-sections a^2 a^3, and a tubular top section, a^4, and having its contracting sections a^2 perforated and covered with wire-gauze B, and a screw-thread cut upon its tubular top section a^4, substantially as herein shown and described.

140,666.—*Coach or Carriage.*—JOHN ALLGAIER, Philadelphia, Pa. Application filed December 17, 1872.

The windows are so arranged that they may fold inwardly and be thrown back or forward, as the case may be, with their respective sections of the top.

Claim.—1. The top part E having its sides, back, and top united with one another by hinges *f* and *g*, and with the bed part A by the hinges *b d*, as specified.

2. The side windows F hinged to swing or open inwardly against the back of the rear top part E, or inwardly against the front of the forward top part D, respectively, essentially as herein described.

3. The seat back or backs G hinged below to the fixed or bed portion of the vehicle, in combination with the inwardly swinging and opening windows F, substantially as specified.

140,667.—*Car-Coupling.*—BENJAMIN ATKINSON, Indianapolis, Ind. Application filed June 9, 1873.

The coupling-pin is raised automatically by projections on the link striking independent front wicket-plates in the draw-head and pushing them inward against a hinged back plate, which raises and lets fall the pin through the connecting-arms. The wickets open outward to uncouple when the pin is raised by hand.

Claim.—1. The independent wicket-sections F G, in combination with the lifting device D E, the pin B, and the link H having projections, essentially as described.

2. The combination of the hinged back plate D, arms E, pin B, with the front wicket-sections F G, and coupling-link having projections I, the several parts being constructed and arranged for joint operation substantially as described.

140,668.—*Artificial Marble.*—BINY AUGUSTE, Chicago, Ill., assignor of one-third his right to BENJAMIN GOTIA, same place. Application filed May 31, 1873.

Hydraulic lime, plaster, marble-dust or common sand, litharge, drawn from white lead, rock alum, linseed-oil, resin, paste of Flanders, (Colle de Flanders,) red litharge, and water.

Claim.—1. An artificial marble or stone, composed of the ingredients in and about the proportions substantially as specified.

2. In the manufacture of artificial marble and stone, the process substantially as herein specified.

140,669.—*Fare-Box.*—HENRY BARANGER, St. Louis, Mo. Application filed January 6, 1873.

Claim.—In combination with a fare-box with glass walls, and divided into two compartments by a tilting platform, as described, the lamps D and E, or either of them, and reflector F, so arranged that the said reflector will throw the rays of light from the lamp or lamps into both of said compartments through the glass walls thereof.

140,670.—*Cheese-Vat.*—DAVID F. BARCLAY, Elgin, Ill. Application filed April 26, 1873.

The series of pipes connecting the heater with the vat is provided with a series of sliding valves, which are opened and closed simultaneously by means of a rod connecting them, and above the pipes are arranged independent deflecting plates for evenly distributing the heated water.

Claim.—The combination of the heater B, pipes *a a a a*, simultaneously-sliding valves D D D D, ways D' D', rod E, and distributing-plates F F F F, all constructed and arranged to operate substantially as and for the purpose specified.

140,671.—*Horse Hay-Rake.*—JACOB H. BEAN, Macon, Ill. Application filed February 24, 1873.

Inclined forwardly-projecting teeth are pivoted in front of the axle. The part of the teeth in rear of the pivots enter mortises in the axle, so as to have vertical play.

Claim.—The combination of the head A, projecting-gudgeons B B', ground-wheels C C', hitching devices D D' *d d'*, arms E E', rollers *e e'*, pivoted teeth F *f* G H, and mortises *a*, for the purpose herein described.

140,672.—*Saw Gummer.*—WILLIAM G. BLACKLIDGE, Metamora, Ind., assignor of one-half to JAMES P. ALLEY, Cincinnati, Ohio. Application filed April 11, 1873.

The reamer is moved obliquely endwise while revolving by means of the screw G drawing the wedge-bar E through the frame A and across the blade of the saw.

Claim.—The combination of the reamer C, frame D, wedge E, screw G, gears H H', and cranks I I, all constructed and arranged as described, and operating in the frame A, substantially as and for the purposes herein set forth.

140,673.—*Manufacture of Steel for Boiler-Plates, &c.*—OGDEN BOLTON, Jr., Chartiers township, and JOHN PADDEN, Pittsburg, Pa. Application filed April 12, 1873.

Steel containing from three-tenths to four-tenths per cent. of carbon is brought to ingot or plate form of about one inch thick.

ness, the plates embedded in metallic or other suitable oxide, and subjected from one-half to two days to a cherry-red heat in a heating-furnace such as is used in the cementation process.

Claim.—The manufacture of homogeneous boiler-plate steel by bringing a hard or high steel to a uniformly low grade, through the agency of decarbonizing agents brought to bear on the same after pouring, and while in an unmelted state, substantially in the manner set forth.

140,674.—*Window-Screen.*—JOHN W. BOUGHTON, Philadelphia, Pa. Application filed June 26, 1873.

Claim.—The screen consisting of the two frames B B, constructed with the connecting-bars of one frame passing through one of the side pieces of the other frame, in combination with the netting E respectively secured to each frame, and operating in the manner and for the purpose set forth.

140,675.—*Harvester.*—ISAAC W. BRAGG, Kidder, Mo. Application filed May 31, 1872.

A reciprocating trough in rear of the cutters serves to even the butts of the cut grain. The platform after receiving a load slides backward, the falling grain being meanwhile supported upon an interposed rod. Arms sliding toward the center of the platform compress a gavel which is seized by grapples suspended from a crane and swung around to the rear of the machine and dropped.

Claim.—1. The combination of the horizontally-reciprocating table B, retreating at intervals from the cutters, cut-off supporting-bars Y' Y'', and oscillating trough Q', substantially as and for the purposes specified.

2. In combination with the reciprocating table B, the bundling-prongs S S', having a reciprocating motion across the face of the table, and operated substantially in the manner and for the purpose specified.

3. In combination with the bundling-table B S S', the vibrating arm V and carrying-fingers W W', connected and operating substantially in the manner and for the purpose specified.

4. In combination with the arm V and carrying-fingers W W', the rotating and vertically-sliding journal X y, bar m, lever Y y', rods Z, and cranks f f', the bar being connected to the driving mechanism, and the whole operated substantially in the manner and for the purpose described.

140,676.—*Fly-Wheel for Vehicles.*—GEORGE ABA BEICE, Townville, Pa. Application filed February 1, 1873.

The quadrant-plate and the anchor-piece are intended to be used in place of a head-block.

Claim.—The anchor or quadrant shaped plate C, having the arm c and arc-shaped slot H, in combination with the arc-shaped plate D, substantially as and for the purpose specified.

140,677.—*Treadle for Sewing-Machines.*—SAMUEL R. BUSHFIELD, Baltimore, Md., assignor to himself, ROBERT D. MORRISON, and JOHN H. WARNER. Application filed June 9, 1873.

Claim.—1. The combination of the stationary shaft B, rubber block C surrounding the shaft and extending above it, and the treadle A connected to the top part of the block, all substantially as and for the purposes herein set forth.

2. The combination of the stationary shaft B, block C, and the treadle A, rubber block D, and pitman E, all substantially as shown and described.

140,678.—*Sheet-Metal Seaming-Machine.*—GEORGE D. BROOKS, Baltimore, Md., assignor to himself and MARY C. BROOKS, same place. Application filed April 8, 1873.

The circular edges of the top and bottom of the body of the can are flared by the tapering dies. The top and bottom are placed within the flared ends and other dies are substituted, which turn the edge of each end of the body of the can over the top and bottom. The joints are then dipped in solder to make them air-tight. The dies are perforated to allow the escape of air, which prevents the displacement of the head.

Claim.—1. The combination of two tapered dies arranged in a machine having a suitable operative mechanism, as described, so that both the edges of can can be simultaneously flared.

2. A die, M, constructed with inside upward flange m, and applied as and for the purpose described.

3. The combination of two dies, N, flared or beveled on the inside and applied to turn over both edges of can simultaneously, the dies provided with holes therein, as and for the purpose described.

140,679.—*Soldering-Machine.*—WILLIAM D. BROOKS, Baltimore, Md., assignor to MARY C. BROOKS and GEORGE D. BROOKS, same place. Application filed May 20, 1873.

The cans are brought up on a carriage-truck or car so as to be centered by the cap-holder B, that first comes down, and so that the seam which is to be soldered shall come directly under the burners and the pipe E. The can then is revolved and is quickly heated, while the bit of solder that is cut off in tube E falls through the lower end thereof, and rests with one end on the can, being melted gradually as the can revolves.

Claim.—1. A circle of burners for a soldering apparatus, having the annular feed-pipe made in two parts, C C, closed at each end, and provided with coupling-pipes c c, which adapt them to be fitted specially on corresponding pipes a d of the reservoir, as described, so that the circle of burners may be readily enlarged or diminished with the increase or decrease in the size of cans.

2. The tube E, knife F, and feed-pawl L, combined in a soldering apparatus, to feed successive bits of soldering-wire, in the manner set forth.

3. The combination, with the lever G, of the shank f^1, the slide J, strap K, and the rod P, attached respectively to knife, feeding-pawl, and cock, to operate them simultaneously, in the manner described.

4. The water-jacket Q, applied about the tube E, as and for the purpose set forth.

140,680.—*Cutting-Board for Shoemakers, &c.*—CHARLES E. COOPER, Philadelphia, Pa. Application filed April 21, 1873.

A cutting-board composed of strips or blocks of wood with their grain-edges exposed or forming the cutting-surface, each block being grooved for the introduction of a tongue, which, when applied, its grain will be at right angles to the grain of the blocks.

Claim.—1. The interposed tongues C in combination with the blocks A of a cutting-board, substantially as and for the purpose set forth.

2. The blocks A with their grain forming the surfaces of the cutting-board, and the tongues C arranged with their grain extending at an angle to that of the blocks, when combined and operating substantially as and for the purpose set forth.

140,681.—*Method of Splitting Stone.*—PATRICK CROGHAN, Cockeysville, Md. Application filed May 27, 1873.

The holes are bored subjacently beyond the longitudinal middle line, and the side pieces are placed across such line, when the wedges are driven, and the force exerted thereby is applied to the inside of the stone instead of at the edges, as heretofore.

Claim.—The method herein described of splitting off blocks of stone, the same consisting in boring subjacently beyond the longitudinal middle line of the block, and placing the side pieces across said line, so as to cause the up-and-down pressure of the wedge to be exerted inside and not on the edge of the rock, substantially as set forth.

140,682.—*Loom-Shedding Mechanism.*—GEORGE CROMPTON, Worcester, Mass. Application filed November 8, 1872.

The horizontal hooked jack-bars have each at their inner ends two notches to which the two harness-cords are fastened, and pass through a guide and fulcrum-plate placed near the notches, then between the evener-bars, then over the pattern-cylinder, and then between the lifter and depresser bars. The stress of the harness-cording presses the free ends of the jack-levers down toward the cylinder, while the pins lift the ends to bring their hooks within the path of the lifter-bar.

Claim.—1. The hooked horizontal jack-bars having cording-notches h^2, and resting on the fulcrum-plate g^6, and arranged with respect to the lifter, depresser, and evener bars, and with their outer free ends lying over the pattern mechanism, substantially as shown and described.

2. In combination with such jack-bars and their cording-notches h^2, the lifter and depresser bars v z, evener-bars w j, fulcrum-plate g^4, harness-cording and pattern-chain or cylinder, and the mechanism that actuates the pattern mechanism and actuates and adjusts the lifter, depresser, and evener mechanism.

140,683.—*Mechanical Movement.*—JOHN DAUGHER, Cincinnati, Ohio. Application filed May 31, 1873.

To a crank, 1, is attached a pitman, 2, to the other end of which are pivoted two levers, 3 and 5; the first attached to a pivot-pin, 4, to which is also pivoted another lever, 8; the other secured to a lever, 6, pivoted on another pin, 7. The two levers 6 and 8, attached to pivot-pins, are connected by a cross-bar, 9, at one end of which is a connecting-rod, c, which imparts the reciprocating motion of these two levers to a pitman, c.

Claim.—A mechanical movement, in which the parts are arranged and combined substantially as shown and described.

140,684.—*Flock-Cleaning Machine.*—RICHARD H. DAWSON, Rockville, Conn. Application filed October 16, 1872.

The flocks from a cloth-napping machine are fed from an apron to the brush-cylinder, and loosened by contact with stationary combs. The fibers are deposited on a card-cylinder, while the teazle-points are carried off by the brush cylinder. The fibers are doffed by a brush-cylinder running against the teeth.

Claim.—1. The combination of the rotating brush-cylinder c^3 with the overlying stationary combs i^1 i^2 i^3, one or more, both constructed, arranged, and designed to operate substantially as described, for the purpose set forth.

2. The combination of the rotary brush-cylinder c^3, the overlying combs i^1 i^2 i^3, one or more, and the card-toothed cylinder k, all constructed, arranged, and designed to operate substantially as and for the purpose set forth.

3. The combination of the brush-cylinder c^3, the overlying combs i^1 i^2 i^3, one or more, the card-toothed cylinder k, and the brush-cylinder m, rotating in the same direction with the card-toothed cylinder, the whole constructed, arranged, and designed to operate substantially as and for the purpose set forth.

140,685.—*Cock.*—ALMOND S. DEVENDORF, Galesburg, Ill. Application filed October 12, 1872.

A pipe is provided with a two-way cock in its central portion, a hollow screw at one end, and a socket screw and cap at the other, constructed as described in the claim, whereby the device may be detached at will from the vessel without the escape of gas or liquid from the same.

Claim.—The cock A, having the internally-screw-threaded tube A' at one end and the externally-threaded tube A'' at the other, in combination with the flanged tap-piece D and removable cap E, substantially as and for the purpose specified.

140,686.—*Baker's Oven.*—DAVID DONALD, Williamsburg, Brooklyn, N. Y. Application filed April 9, 1873.

The products of combustion pass partly through orifices g at the right and left of the fire-chamber; thence partly through similar orifices in the side partitions, and partly around the rear of said partitions, to the rising flues H at the front; thence to and through the side flues I, above the baking-chamber, to the entrance of the central flue J at the rear; thence through said flue J to the exit-flue k at the front.

Claim.—The arrangement, substantially as herein shown and described, of the fire-place A, the flue E having side openings g g, the flues F F G G, the back side openings A A, the baking-chamber C, the vertical corner-flues or openings H H, the upper flues I I J, the side openings i i, and the outlet or chimney k.

140,687.—*Lamp-Burner.*—JOHN H. DOOLITTLE, Ansonia, Conn., assignor to WALLACE & SONS, same place. Application filed February 6, 1873.

The deflector is secured to the socket by a metallic brace having shoulders which bear upon the top of the air-distributer. The brace is riveted to the deflector, passes through the air-distributer, and the end is secured to the socket.

Claim.—In a lamp-burner, consisting of the socket A with the base C attached thereto, and the deflector D supported above the said base, the supporting-posts attached to the sockets below, extending up through the base to the deflector, and formed with projections or shoulders f to bear upon the base, and the deflector secured to the upper ends of the post, all substantially as set forth.

140,688.—*Scaffold.*—M. DINGUID DRAKE, Trenton, Ky. Application filed April 14, 1873.

A builder's scaffold capable of expansion in the several directions mentioned by means of the extensible beams, legs, arms, and braces.

Claim.—The combination of the extensible beams A', extensible legs B^1, extensible arms D', extensible supports and braces C^1 B^2, substantially as shown and described.

140,689.—*Show-Case.*—DAVID D. ELDER, Philadelphia, Pa. Application filed May 26, 1873.

The cover of the show-case extends beyond its axis, and the extension is weighted so as to assist in opening and closing the cover. The extension-piece is received, when tilted, in the portion of the show-case back of the longitudinal partition.

Claim.—The show-case A, having its cover B formed with an extension, D, beyond the axis of the cover, in combination with the weight F applied to said extension, and operating as herein set forth and for the purpose described.

140,690.—*Gearing.*—FRANK EMMERICH, New York, N. Y. Application filed June 5, 1873.

Claim.—The gear-wheels C D, constructed each of two or more toothed disks, the teeth of each pair being formed on the same pitch-line, but with different pitches, substantially as described.

140,691.—*Knitting-Machine.*—SAMUEL V. ESSICK, Alliance, assignor of two-thirds his right to GEORGE W. RAFF, Canton, and HENRY C. HEDGES, Mansfield, Ohio. Application filed November 14, 1872.

The needle has an upward and slightly forward movement to enter the loop thrown off from a hook by a pair of wringing-fingers, and a backward, downward, and slight sidewise movement for leaving the loop and forming and depositing a new one on a hook, a looper being dispensed with. A point on the end of the feed-bar enters between the hooks and feeds the comb along. The comb is carried by a turn-table which is locked to the head by one of a pair of vertical levers, which, when struck by a stop applied to the comb, is liberated from a notch in the head, and the turn-table turned slightly by a spring so as to bring a cam on its shaft into the path of vibrating lever by which it is swung half way around so as to bring the opposite row of hooks into operation.

Claim.—1. The combination, in a knitting-machine, of a single, solid, eye-pointed needle, carrying the yarn, and operating substantially as herein described, and a single comb, having two parallel rows of straight teeth, the points of which stand outward in opposite directions, substantially as herein set forth.

2. The combination, in a knitting-machine, of a single eye-pointed needle for carrying the yarn, a single comb, having two parallel rows of straight teeth, the points of which stand in opposite directions, and a swinging head, substantially as described, or its equivalent, for the purposes set forth.

3. The combination, with the needle h, the comb W, having two parallel rows of straight teeth, the points of which stand in opposite directions, and the swinging head, or its equivalent, of the movable stops s', for the purposes herein set forth.

4. The combination, with the needle h and the comb W, having two parallel rows of straight teeth, the points of which stand in opposite directions, of the claws b' and spring k, substantially as and for the purposes herein set forth.

5. The combination, with the needle h and the comb W, having two parallel rows of straight teeth, the points of which stand in opposite directions, of the tension device n substantially as and for the purposes herein set forth.

6. The combination, with the needle h and the comb W, having two parallel rows of straight teeth, the points of which stand in opposite directions, of the claws b', spring k, and tension device n, substantially as and for the purposes herein set forth.

7. The combination of the sliding cam Y, stud w', lever Z and cam A', all substantially as and for the purposes herein set forth.

8. The combination of the comb W, needle h, claws b', spring k, feed-bar s', lever Z, and double cam A', all substantially as and for the purposes herein set forth.

140,692.—*Apparatus for Raising Oil, &c., from Wells.*—HIRAM W. FAUCATT, Titusville, Pa. Application filed May 1, 1873.

A cylinder composed of two sections is inserted in the well. The ends of each section are closed by a partition dividing them into separate chambers. An air-tube connected with a double-acting air-pump is connected with each chamber. Supply-tubes with suitable valves are provided for each chamber, and a common delivery-tube with check-valves conducts the liquid from both. The supply of air from and to the pump is regulated by a four-way valve. Air is forced into the lower chamber at the same time it is exhausted from the upper chamber, and vice versa.

Claim.—1. In an apparatus for raising oil or other liquid from wells, the combination of a sectional pneumatic cylinder placed at or near the bottom of the well, pipes for creating a vacuum and pressure in the sections of the cylinder inlet-tubes, a common outlet-tube opening in the sections of the cylinder, a four-way valve for shifting the pressure and exhaust from one section to another, and a double-acting air-pump, as shown and described.

2. A cylinder, B, divided into compartments a b, and provided with inlet-tubes g h and their valves i, discharge-pipe C with valves j, and air-tubes e f connected with an air-pump, substantially as and for the purpose shown and described.

140,693.—*Self-Cleaning Tobacco-Cutter.*—WILLIAM J. FAUL, New York, N. Y. Application filed January 30, 1873.

The beveled edges of cutters revolve close to the projecting feed-mouth, and are cleaned by a curved knife arranged to press against them and an endless traveling brush kept wet.

Claim.—1. The combination, with the knives B B, of the scraper D, constructed and secured in place, as described, essentially as and for the purpose specified.

2. The cleaner E, composed of the endless apron of bristles, in combination with the knives B B, essentially as and for the purpose herein set forth.

140,694.—*Grass-Seed Attachment to Grain-Drills.*—JESSE P. FULGHUM, Dublin, Ind., assignor to himself and WAYNE AGRICULTURAL COMPANY. Application filed April 10, 1871.

A grass-seed hopper is attached to that of a grain-drill, and the seed-distributer receives its motion directly from the seeding-shaft, so that they work in concert. Provision is also made, by a change of gear, to change the speed of the grass-seed delivery.

Claim.—The combination of the feed-shafts C M, counter-shaft G, gearing E F and K L, jack-plate H, lick I, and bolt J, arranged and operating substantially as herein described, for the purpose specified.

140,695.—*Dough-Machine.*—OAKLEY B. FULLER, Newark, N. J. Application filed June 9, 1873.

A cylindrical vessel has supported within it a screw-propeller. In the bottom of the vessel, under the propeller, is a longitudinal opening, through which dough is forced into sheets when the propeller is put in motion.

Claim.—1. The combination of the propeller P, vessel C, and throat D, whether adjustable or not, as shown and described.

2. The combination of the holders or partitions A with the propeller P and vessel C, substantially as shown and described.

140,696.—*Meat-Chopper.*—OLIVER GARDNER, New York Mills, N. Y. Application filed June 4, 1873.

The chopping-knife is provided with a box through which steam or hot air is made to circulate to prevent the material adhering to the knife.

Claim.—The combination, with a chopping-blade, of a hot air or steam box, as and for the purpose set forth.

140,697.—*Glass Piston and its Packing for Pumps.*—ARTHUR E. GAY, Nashua, N. H. Application filed May 24, 1873.

The piston is a cylinder of glass, connected to the rod by cross-bars and a nut at the bottom. The packing is stationary and is held between the two sections of the pump-cylinder.

Claim.—In a pump, the glass-piston A and its packing E, cross-bars C D, pump-rod B, and nut d, substantially as specified.

140,698.—*Medical Compound or Liniment.*—DANIEL J. GISH, Hopkinsville, Ky., assignor of one-half his right to HARRY B. GARNER, same place. Application filed May 16, 1873.

Cayenne pepper, gum camphor, spirits turpentine. Mix and allow to digest, the vessel being shaken every day. The mixture is then strained or filtered. Whites of wild-goose or hens' eggs, acetic acid, oil sassafras.

Claim.—The within-described wild-goose liniment, consisting of the ingredients substantially as herein set forth.

140,699.—*Stave-Jointer.*—JAMES E. GREEN, St. Louis, Mo. Application filed June 11, 1873.

A pair of jointing-cutters are secured to a vertically-reciprocating frame so as to joint both edges of the stave at one operation.

Claim.—1. The holder B, operating cam and yoke C C', or their equivalent, in combination with the cutter-knives E, operating-cam and yoke F F', and shaft D, substantially as and for the purpose set forth.

2. The holder B with pivoted plate b, crank-shaft b'', pin b''', dogs H H', tappet or cam G', lever G, arm g', and shaft D, in combination with the arm I and spring I', as and for the purpose set forth.

3. The combination and arrangement of the holder B, frame B b' operated by cam and yoke C C', plate b, dogs H H', crank-shaft b'', pin b''', cam or tappet G', lever G, arm g', arm I, spring I', and shaft D, with the knives E, frame E', cam and yoke F F', and table A', as and for the purpose set forth.

140,700.—*Brake Mechanism.*—OTTO GRÜNINGER, New York, N. Y. Application filed June 11, 1873.

When the speed of the locomotive is to be checked steam is shut off, link-motion is reversed, and the piston pumps in through

the exhaust-port air and water, the former taken through a pipe leading from the atmosphere and connecting with the exhaust-pipe, the latter through pipe connecting with feed-water tank, into which the water and air are forced through a pipe leading from the steam-chest into said tank. In this manner the heat developed by pumping action is employed in raising the temperature of the water in the reservoir.

Claim.—1. The arrangement of a pipe leading from the exhaust-cavity of the steam-valve, or from the exhaust-port of the valve-chest of a compression or steam-cylinder, into a reservoir containing water, with a pipe leading from the steam-space of the valve-chest to said reservoir, so that when the cylinder is used as a brake it is prevented from becoming overheated by the water drawn in through said pipe and forced into said reservoir, substantially as described, for the purpose specified.

2. The combination of an air-pipe with a pipe from the exhaust-cavity of the steam-valve, or from the exhaust-port of the valve-chest of a compression or steam cylinder, into a reservoir containing water, and with a pipe leading from the steam-space of the valve-chest to said reservoir, for operation, in connection with a locomotive or stationary engine, substantially as described, for the purpose specified.

140,701.—*Separating Apparatus.*—GEORGE W. HATFIELD, Nashville, Tenn., assignor to himself and DIXIE OIL COMPANY, same place. Application filed March 28, 1873.

Arranged spirally upon a common shaft is a series of paddles or agitators which are continually lifting and transferring the fluid matter from one end to the other of a close boiler or mixing-chamber.

Claim.—The blades E, cup-shaped at the ends, flanged thereabove, placed spirally close together, and the end blade reversed, as and for the purpose set forth.

140,702.—*Bee-Hive.*—EDWARD E. HENEGAN, Downsville, Wis. Application filed April 23, 1873.

A large base-box and two upper boxes with inclined hinged floors which may be opened downward to throw all into one. These floors have central holes as communicating doors, the bee-entrance being into this base-box through a partitioned vestibule, in which is suspended a movable moth-frame. The two equal boxes have a space and connected slide doors between them, and communicating honey boxes above.

Claim.—1. The combination, with the boxes E E, slots F, slides L, doors M, and box A, of a honey-box, N, constructed and arranged substantially as and for the purpose set forth.

2. The under honey-box N, constructed as described, and provided with the moth-frame O, substantially as and for the purposes set forth.

140,703.—*Dumping-Wagon.*—JESSE HIGHFIELD, Centerville, Ind. Application filed May 23, 1873.

The bottom of the wagon is divided into two sections, which are hinged in the center, and connected by means of a cord to a windlass, by means of which the sections are raised and the load dumped.

Claim.—1. In combination with the folding bottom C D, the V-shaped supports E E and rollers *b b* in the edges of the wings C, as set forth.

2. The rollers *m m* arranged inside of the box B, as and for the purposes set forth.

3. The movable frame G, in combination with the sides B having the slots *d* and *e e*, substantially as and for the purpose set forth.

4. The combination, with the bottom C D, of the cords *f f*, lever I, windlass J, and hinged standards K K, as and for the purposes herein set forth.

140,704.—*Butter-Printing Machine.*—ABRAHAM F. HINES, Washington, D. C. Application filed June 7, 1873.

A matrix is fixed in position for perpendicular action, its base-plate being a top expansion of a follower and resting on the interior shoulder of the matrix. A segment of a spoke-wheel being removed the die attached to the upper end of the rim descends into the matrix, and a hammer on the lower end strikes the lower end of the follower and throws up the printed butter.

Claim.—The combination of the rim or levers B B, the die *f*, and delivery end *e*, all moving together and around a common center, *a*, with the mold *b* or *c* and follower C, as and for the purpose described and represented.

140,705.—*Thill-Holder.*—JOHN P. HISLEY, Syracuse, N. Y., assignor of one-half his right to HENRY L. DUGUID, same place. Application filed June 11, 1873.

Claim.—The loop A, cast in one piece, with guards *a a* forming a pocket at the point of the loop to hold the ends of the lining, and with projections *b b* at its lower part, substantially as and for the purpose described.

140,706.—*Cork-Extractor.*—CHARLES F. HUNT, Brooklyn, assignor to himself and EMIL P. EMMELUTH, Mount Vernon, N. Y. Application filed June 21, 1873.

Double-spring loops are attached to a slide that moves in the hollow handle of a cork-screw.

Claim.—The double-spring cork-extractor *f*, attached to the slide *d*, in combination with the hollow cork-screw handle *a* and thumb-piece *c*, as and for the purposes set forth.

140,707.—*Ridge-and-Furrow Sidewalk-Plate.*—THADDEUS HYATT, New York, N. Y. Application filed May 31, 1873.

Claim.—1. A ventilating corrugated pavement-plate, constructed with curved reflecting upper and lower surfaces, in which said surfaces and the ventilating-openings are relatively arranged to transmit the rays of light from above into the space beneath said plate, in the manner and for the purpose substantially as specified.

2. In combination with the ventilating-openings D, the cowls *d*, secured upon the sides of the ridges B, and extending outward over said openings, substantially as and for the purpose shown.

140,708.—*Ridge-and-Furrow Sidewalk-Plate.*—THADDEUS HYATT, Atchison, Kans. Application filed December 23, 1870.

Claim.—1. A ventilating corrugated pavement-plate, in which the corrugations in transverse section show a series of straight lines, substantially as and for the purpose specified.

2. A ventilating corrugated pavement-plate, A, in which the openings D, constructed in and through the walls *b*, have their upper and lower sides formed upon lines having an outward and downward inclination, substantially as and for the purpose shown.

140,709.—*Illuminating Vault-Cover.*—THADDEUS HYATT, Atchison, Kans. Application filed December 23, 1870.

Claim.—A corrugated illuminating pavement-plate, in which the lenses are placed wholly or in part within the sides of the ridges, substantially as and for the purpose specified.

140,710.—*Coupling for Earth-Auger Shafts.*—GEORGE W. IRWIN and THEODORE A. COX, Champaign county, Ill. Application filed January 2, 1873.

The slide H locks the coupling when the sections of the shaft are united, and by sliding it up the flange *i* can be withdrawn from the recess below the projection in the section *g* and the sections uncoupled.

Claim.—In couplings for earth-auger shafts, the combination of the flange *i* and the projection *g* with the slide H, substantially as and for the purpose hereinbefore set forth.

140,711.—*Carbureting Apparatus.*—THORWALDSEN JUDD and CHARLES H. PIERSON, Philadelphia, Pa., assignors to PHILADELPHIA GAS-MACHINE COMPANY, same place. Application filed February 7, 1873.

Claim.—1. In a carbureting apparatus, the air-wheel A thereof, driven by an air-blast or force which supplies the carbureter and is the motor to the machine.

2. The feed-wheel B and the air-wheel A, both driven alike by means of an air-blast or air-pressure motor, essentially as described.

3. The bent ends *e* of the conducting-tubes M, arranged to revolve in a vertical plane within a sealed chamber, N, as and to obtain the advantages described.

4. The sleeve S for the weight-cord, in combination with the spool R of the air-wheel shaft, as a means for putting the weight-propelling devices in and out of gear with the air-wheel shaft, to adapt the machine for use by either of two independent motors, as described.

5. The hand-lever T in combination with the separate sleeve S for the cord, as a means for putting the cord-sleeve in and out of gear, according as either the weight or air-blast motor is used, as described.

6. The gearing device W X Y Z for winding the weight, arranged to be put into gear to wind the weight without the attendant having to go into the vault, as described.

7. A carbureting apparatus having the air-wheel driven by an air-blast or weight motor, when these motors are employed to operate the carbureting apparatus independent of each other, as may be required.

140,712.—*Water-Cooler.*—WILLIAM S. KIMBALL, Philadelphia, Pa. Application filed May 26, 1873.

The filtering-block in a receiver is fitted on a tube communicating with the cooler, and the displaced air in the cooler passes through a pipe into the atmosphere.

Claim.—1. The filtering-block F in the receiver, and fitted on a tube communicating with the cooler, substantially as and for the purpose set forth.

2. The combination, with the cooler A, of the vessel B having the upwardly-projecting pipe C, and the filter F fitted on said pipe, substantially as and for the purpose set forth.

3. In combination with the cooler A, the pipe D of the vessel B, substantially as and for the purpose set forth.

4. The combination, with the cooler A, of the vessel B with pipe C, filter F, and pipe D, substantially as and for the purpose set forth.

140,713.—*Track-Lifter.*—GEORGE J. KENZEL, Knoxville, Tenn. Application filed June 14, 1873.

A shaft in the upper part of the frame, governed by ratchet wheel and pawl, is actuated by a lever or wrench working on a six-sided nut on the end of the shaft, which is provided with chains attached to heavy hook, which raises the rail. These chains are guided by a loose link attached to the hook, and sliding on a rod attached to the central part of the frame.

Claim.—1. The combination of the chains *d d* with hook G and guide-rod *n*, for the purposes set forth.

2. The combination of the frame A B C, shaft D, lever E, chains *d d*, hook G, guide-rod *n*, ratchet-wheel A, and pawl *f*, all constructed and arranged substantially as and for the purposes herein set forth.

140,714.—*Horse-Collar.*—OLIVIER LAFRENIERE, Brooklyn, N. Y. Application filed December 30, 1872.

A metallic flange is secured to the inside of the front of the collar, which serves the purpose of a rim.

Claim.—The metallic hames-retaining rim B applied to and connected with the body A of a horse-collar, substantially in the manner herein shown and described.

140,715.—*Plow-Clevis.*—WILLIAM LAHMAN, Wellsville, Ohio. Application filed April 3, 1873.

A spring-pin secures the clevis to the plow-beam.

Claim.—The U-shaped clevis-bar A, forming prongs *a a* having holes for the passage of the clevis-pin, and the lower prong provided with a countersunk recess, *b*, in combination with the headed pin B, provided with a spring, C, having a square shoulder and extended below the bottom of the lower clevis-prong, all as shown and described.

140,716.—*Plow.*—AUSTIN S. MANN, St. Louis, Mo. Application filed May 26, 1873.

The frame consists of three beams, the side ones being attached to the center one by a spring-clevis. Each beam carries a shovel. The handles are pivoted to a cross-beam secured to the center beam, and the handles being pivoted to this, and to the side beams, these can be moved out and in at pleasure.

Claim.—1. The combination of the elevated fixed cross-beam B' carried upon the rear standard of the center beam, adjustable side beams, lever-handles, and latches for locking the handles to the cross-beam B', substantially as and for the purpose specified.

2. The combination of the cross-beam B', the handles D D', the latches H, cross-beam C, and the adjustable beams G G, substantially as shown and described.

140,717.—*Drop-Hammer.*—JAMES MCGEORGE, Bellaire, Ohio. Application filed October 28, 1872.

The upper wheel, carrying the wrist-pin, has a portion of the periphery removed, and is revolved by the friction drive-wheel. The wrist-pin is made adjustable in a slot by means of a screw-bolt countersunk in the tread of the wheel. When operating, the drive-wheel, by its friction on the upper wheel, raises the wrist-pin until it has passed the vertical center, when, by reason of the removed portion coming opposite the drive-wheel, the friction ceases and the hammer drops, unless held suspended by a catch on the side of the wrist-pin wheel.

Claim.—1. In a drop-press, the combination of the wrist-pin wheel M, having a portion of its periphery flattened, as set forth, a drive-wheel, F, with plain periphery for communicating motion to said wrist-pin wheel, and a holding and tripping device operating in connection with said wrist-pin wheel, all substantially as described.

2. In combination with the wrist-pin wheel M, constructed and arranged as described, the stud T, upon the side of said wrist-pin wheel, and the weighted catch U, arranged as and for the purpose described.

3. In a drop-press in which the wrist-pin wheel is constructed and arranged to operate as herein described, the combination, with the shaft of said driven wrist-pin wheel M, of the yielding or spring journal-box K, to obtain the advantages herein described.

4. In a drop-press, the combination of the wrist-pin wheel M, constructed as described, the adjusting-screw Q, and the wrist-pin N, with the drive-wheel F, with plain periphery for communicating motion to said wrist-pin wheel, and a holding and tripping device operating in connection with said wrist-pin wheel, all substantially as described.

5. The combination in a drop-press of the driven wrist-pin wheel M, constructed and employed for the purpose described, the drive flat periphery wheel F, stud T, weighted catch U, spring journal-box, and hammer C, the several parts being constructed and arranged to operate substantially as herein set forth.

140,718.—*Cartridge Capping and Uncapping Device.*—GEORGE V. MCGRAW, Mankato, Minn., assignor to CHARLES PARKER, Meriden, Conn. Application filed June 4, 1873.

Claim.—In combination with a priming device for cartridge-shells, consisting of the base A and lever C provided with suitable means for supporting the shell to be primed, the post E having the spindle *d* in its head, and the lever C constructed with a cavity, *f*, over the said spindle, substantially as and for the purpose set forth.

140,719.—*Heater and Filter.*—LOUIS FELIX MEUNIER, Fives-Lille, France. Application filed January 9, 1873.

A heater and filter in the same vessel. Steam enters pipe A, passes through a perforated pipe, commingling with water entering pipe B, and down the central pipe to a spreader. The water thus heated passes up through two perforated disks, the space between which is filled with charcoal or other filtering material, and out pipe G.

Claim.—The vessel E, provided with a central vertical tube, L, and with perforated partitions N N around the said tube, the disk or spreader O at the bottom of the said tube, the inlet B, and the perforated steam-tube M within the said vertical tube L, to discharge steam into the water flowing into the said tube L, and the said vessel further provided with the outlet G, all constructed and operated substantially in the manner and for the purpose specified.

140,720.—*Car-Coupling.*—SPENCER MILLER, Holley, assignor of one-half his right to HUDSON MILLER, Bergen, N. Y. Application filed May 7, 1873.

A hook-head attached to an ordinary draw-head in such a manner that the hook-head may be turned out of the way when not needed.

Claim.—The hook-head B, having the hook *d* and bumper *f*, and attached to and combined with the draw-bar A, so as to be turned back for the connection of the ordinary link, as herein shown and described.

140,721.—*Manufacture of White Lead for Pigments.*—EDWARD MILNER, Springfield, Warrington, England. Application filed June 18, 1873.

Claim.—The manufacture of white lead or carbonate of lead by treating a mixture composed of litharge and chloride of ammonium, or of potassium, or of sodium, with carbonic-acid gas, either under pressure or in an open vessel, substantially as described.

140,722.—*Alphabet-Block.*—ELIZABETH H. MULDAUR, Dover, Del. Application filed April 28, 1873.

The slides are separated from the blocks, and the exercise for the child is the putting the right slide back.

Claim.—An alphabet or toy block having a picture on one or more of its faces, and provided with a groove and a removable slide bearing the name of the object represented by said picture, substantially as shown and described.

140,723.—*Carriage-Curtain Knob.*—CHARLES M. MUNSON, Greenfield, Mass. Application filed May 23, 1873.

To a tack or nail having a broad, finished head a collar and washer are applied.

Claim.—A carriage-curtain knob, composed of the tack or nail 1 having the finished head 2, collar 3, and washer 4, the parts being arranged and combined substantially as shown and described.

140,724.—*Cultivator.*—BENJAMIN F. MUSCHERT, Morrisville, Pa. Application filed December 7, 1872.

The cultivator has a fixed center shovel and two side shovels adjustable as to width by having their standards placed movably upon two cross rods or bars with screw-ends and adjusting-nuts, the whole held firmly in position by rigid braces.

Claim.—The combination, with the rods F F' and their adjusting-nuts and standards, of the rigid braces *b b*, and the beam D, as specified.

140,725.—*Portfolio.*—CHARLES W. PALMER, Cleveland, Ohio. Application filed June 16, 1873.

The folding-leaves of a portfolio have hinged flaps, which, when raised at right angles thereto, form supporting-shelves for the sheets.

Claim.—In combination with a portfolio, A A, the hinged shelves B B, substantially as shown and described, and for the purpose set forth.

140,726.—*Mode of Siding Boot-Legs.*—GEORGE C. PARKER, Worcester, Mass. Application filed June 17, 1873.

Claim.—The improved mode or process above described of siding boots, consisting of first sewing the side seams with a blank thread by machinery and then withdrawing it and inserting the permanent stitches by hand in the holes thus made, as and for the purposes described.

140,727.—*Nut-Tapping Machine.*—SALMON W. PUTNAM, Jr., Fitchburg, Mass. Application filed April 11, 1873.

Each of the arbors is inclosed by an eccentric sleeve, which can be turned by hand to throw the gears of the arbors in or out of connection with each other or with an auxiliary gear on a swinging pendant, and thus enable the machine to cut right or left hand threads, or both, at the same time.

Claim.—1. The combination, as specified, of the eccentric carrier L with the tapping-tool arbor, the head-stock A, driving-gear G, and pinion H, all being arranged as represented.

2. The combination of the auxiliary gear P and its slitted carrier or pendulous arm O with the two driving-gears E G and the eccentric carriers L L applied to the head-stock and the arbors of such gears, all being essentially as explained.

3. The tubular bushing N provided with the prismatic mortise or holder *d* and the hole *e* arranged in it, as described.

4. The combination of the bushing N, (so made or provided, viz., with the holder *d* and hole *e*,) the arbor D, and the clamp-screw *f*, all arranged and to operate together and with the tapping-tool, as represented.

140,728.—*Grave-Guard.*—AMOS RANK, Salem, Ohio. Application filed September 12, 1872.

A guard to support the sides of a grave-mound.

Claim.—1. The grave-guard, made of molded or cast material, and constructed with a socket or sockets for holding the head-stone or head and foot stones of the grave, substantially as and for the purpose specified.

2. The grave-guard made of molded or cast material, and constructed with holes or sockets for the reception of the posts of a fence or railing, substantially as and for the purpose specified.

140,729.—*Upright Steam-Boiler.*—GEORGE W. RAWSON, Cambridgeport, assignor to himself and MICHAEL HITTINGER, Somerville, Mass. Application filed December 18, 1872.

A central circulation-tube, connected by brace-rods to the upper and lower tube-sheets, assists in bracing the tube-sheets, as well as creating a circulation. The tubes are arranged so as to leave radial or diametric passages between them, with peep-holes in the sides of the boiler for observation and for removing accumulations on the crown-sheet.

Claim.—The circulation-tube G and the brace-rods H at its opposite ends, arranged within the water and steam chamber, or interior of the boiler, or with such and the superheating-dome E, and connected together and to the opposite ends of such boiler, all substantially as specified.

2. The tubular boiler having the diametric passages H' and spy-holes *s s* arranged between its tubes B and with respect to the crown-sheet of the fire-place, as set forth and represented.

140,730.—*Puddling-Furnace Door.*—JOHN S. REES, Phillipsburg, N. J. Application filed April 11, 1873.

The slotted adjustable guides bolted to the frame keep the door tight in any desired position, dispensing with the use of

lugs, pins, and bars now used. The stopper slides in dovetailed guides, and is held up by a spring while working the iron.

Claim.—1. The combination of the frame A, door B, and adjustable guides G G, substantially as and for the purposes herein set forth.

2. The combination of the door B, stopper H, and spring I, substantially as and for the purposes herein set forth.

140,731.—*Water-Meter.*—ALBION M. ROUSE, St. Louis, Mo. Application filed July 17, 1872.

A right-hand and left-hand propeller are arranged on the same shaft. In the induction-opening is a fixed deflector to throw equal quantities of water to each propeller.

Claim.—The combination of the fixed deflector G and right-hand and left-hand screw-propellers E E' on one shaft, C, to balance the water-pressure on the shaft, and cause a free rotation of the same, substantially as described.

140,732.—*Spoke-Polishing Machine.*—GEORGE L. ROUSE, Cincinnati, Ohio. Application filed February 21, 1873.

Spokes or similar articles are polished by a continuous sand-belt moving in a direction contrary to the rotation of the spoke, &c. Several articles are placed in the same frame, which are automatically moved to the sand-belt in succession.

Claim.—1. The recessed cups for holding the ends of the spokes, substantially as set forth.

2. The combination of the recessed cups for holding the ends of the spokes, the wheels L L L mounted at intervals on the periphery of the disks K' K', and the friction-wheel *m*, arranged and operating substantially as described.

3. The combination of revolving detent R, and the gear-wheel Q, provided with a notched disk *q* or its equivalent, substantially as described.

140,733.—*Corset-Spring.*—GEORGE O. SCHNELLER, Ansonia, Conn. Application filed April 16, 1873.

Claim.—1. The auxiliary leaf *b*, fastened at its lower end to the lower end of the main leaf by a rivet, *d*, and, at its upper end, by a rivet, *e*, to the main leaf near its upper end, as shown, so as to leave a free end to the said main leaf, substantially as described.

2. The clasp *f*, in combination with the main leaf and auxiliary leaf, when the said leaves are combined and fastened together by rivets *c d*, as herein shown and described, for the purpose specified.

140,734.—*Mold for Clay and Cement Pipes.*—JOSEPH SHARPE, Paterson, N. J. Application filed March 15, 1873.

Main and branch cores with central screws extending through their entire lengths, so that by turning the screw in each core the core will be forced out of the pipe.

Claim.—1. The screw D, fitted through a core, B, to connect the same with the mold-bottom C and allow its elevation out of the pipe, as described.

2. The branch-core E, provided with a screw, G, by which it is connected with the main core B, substantially as and for the purpose specified.

140,735.—*Plastic Composition for the Manufacture of Knobs and other Molded Articles.*—HENRY E. SHEPARD, New Haven, assignor to BRADLEY & HUBBARD, West Meriden, Conn. Application filed February 21, 1873.

Mica broken finely and mixed with shellac reduced to a liquid state until it assumes the consistency of putty; then rolls into any convenient form for molding, varnishing the surface with a shellac varnish, and placing in the dies, the material is pressed into any desired form.

Claim.—The composition herein described for the manufacture of articles, consisting of shellac and mica, prepared for molding, substantially as set forth.

140,736.—*Paper Box.*—GEORGE K. SNOW, Watertown, Mass. Application filed May 16, 1873.

Two blanks combined fold and paste together to form a box and cover with cylindrical interior and square exterior.

Claim.—1. As a new article of manufacture, the within-described blanks for the manufacture of boxes having a rectangular exterior and a cylindrical, oval, or polygonal interior, consisting of two pieces of material, one of which is a plain rectangular band, and the other cut to the outline shown in Fig. 1, and having cut therein the slits *h h* to separate the several flaps which form the sides or ends of the box and to form the radiating points *a a*, and with or without the lines *o p* embossed thereon to determine the folds, substantially as described.

2. A box having a square or rectangular exterior and an oval, polygonal, or cylindrical interior, when the body of the box or the body and cover complete are composed of two pieces of material formed and combined as set forth, and secured together by means of paste, gum, glue, or other suitable adhesive material, without the intervention of other stay or strengthening pieces to bind the parts together, substantially as described, for the purpose specified.

140,737.—*Electric Railway Signal.*—HENRY W. SPANG, Reading, Pa. Application filed April 12, 1872.

Circular signal-frame divided into two or more signals, and attached at center to shaft revolved by sector-rack on end of armature-lever.

Claim.—1. An electric railway signal which revolves on or around its center, and the face of which is divided into two or more signals, as shown.

2. The slotted armature-lever G, in combination with the slotted crank I and the adjustable crank-pin *e*, substantially as and for the purpose shown and described.

3. The toothed sector K, pinion L, shaft J, and the revolving signal N, substantially as and for the purpose shown and described.

4. The toothed sector K, pawl R, shaft Q, lever P, and the armature O, substantially as and for the purpose shown and described.

140,738.—*Harvester.*—GEORGE H. SPAULDING, Rockford, Ill. Application filed November 6, 1872.

An extension-board is arranged at the rear of the moving or apron platform, and is serrated to prevent the heads of the cut grain from moving faster than the stubble ends; the presser-frame is also serrated to prevent the grain from falling back while being elevated.

Claim.—1. A serrated extension board, placed at the rear of the horizontal apron, and designed to prevent the heads of the straw from traveling faster than the stubble ends, substantially as described.

2. The press-board *c h*, hung to the arm G, and attached only to the front side of the machine, in the manner described, and for the purpose of preventing the projecting heads of the straw from being obstructed while being elevated.

3. The press-board *c h*, serrated on its inner face for the purpose of preventing straw from falling while ascending the elevator, substantially as described.

4. The combination of the elevator-frame with the lever I, transporting-wheel H, band-wheel J, band K, tension-pulleys *k*, and elevator-roller E, arranged as described, for the purpose of raising and lowering the machine without slackening the band.

5. The vertical shaft O, having a foot-piece, P, and head-piece R, for the purpose of enabling the binder to guide the horse with his foot, substantially as specified.

140,739.—*Butter-Worker.*—PIERSON M. STACKHOUSE, Pineville, Pa. Application filed April 21, 1873.

An unyielding fluted roller journaled across the trough. The trough yields when the bulk of butter is large, inclining forward in the direction of grooves for the escape of the expressed water. Vertical grooves at the ends of the trough admit of the play of the trough upon the ends of clamps, which hold it laterally to the horizontal rack beneath the propelling-pinion.

Claim.—1. The combination of the vertically-yielding inclined trough B and the fluted roller H working in connection therewith, in the manner and for the purposes described.

2. The rack J, in connection with the rising and falling trough B, substantially as and for the purpose set forth.

3. The straps K, in combination with the rack J and yielding trough B, when applied and operating as set forth.

140,740.—*Traversing Cam for Card-Stripping Mechanisms.*—GUSTAVUS E. TAFT, Whitinsville, Mass., assignor to THE WHITIN MACHINE WORKS, same place. Application filed March 29, 1873.

An improvement on patent No. 126,367, and designed to produce a cam that may be turned backward, as is sometimes necessary. For this purpose it is provided with the second recess *g'* and the part *m*, which latter causes the rack-pin to enter the recess. To prevent a rack-pin entering this recess when the cam is moving forward, and preventing its proper operation, the part A is provided, which catches over a pin in advance of the cam and holds it forward until the recess passes the pin.

Claim.—The stripper-cam provided with the recess *g* and parts *m* and A, and being otherwise constructed, as shown and described, so as to enable it to have a forward and backward motion, essentially as herein specified.

140,741.—*Apparatus for Ventilating Ships and Heating Steam-Boilers.*—JOHN THOMAS, Middlesbrough, England. Application filed May 24, 1873.

A fan-blower is connected to the hull or stoke-hole of a vessel, by which means the foul air is extracted and forced into a jacket encircling the smoke-stack, when said air is heated and then conveyed to the furnace, where it is consumed, and assists in promoting combustion.

Claim.—1. The arrangement of the pipe or pipes G and D in combination with the fan F, or its equivalent, jacket A, distributing-pipes E E, and perforated bridge I, substantially as shown and described, for the purpose set forth.

2. The pipe H and valve *b*, in combination with the fan F, or its equivalent, jacket A, and distributing-pipes E E, substantially as set forth.

140,742.—*Brick-Machine.*—JOHN S. THOMAS, St. Louis, Mo. Application filed May 27, 1873.

A mold-cylinder containing plungers which move the distance of the thickness of a brick, the clay being pressed therein by a follower which, while pressing the clay, drives the plunger forward and expels the formed brick from the other side.

Claim.—1. The combination of the cylinder K, plungers I, and followers *g*, the plunger being actuated by the pressure of the incoming clay and controlled by stop-pins *i'*, substantially as and for the purpose set forth.

2. The combination of the cylinder K provided with the plungers I and the segment-rack *l* on the wheel L, arranged and operating substantially as and for the purpose set forth.

3. The combination of the cylinder K, spring-catch M, balance-wheel L, and lug *l'*, all arranged and operating substantially as set forth.

4. The combination of follower *g* box A, rollers P, and balance-wheel L provided with tooth *l'*, all arranged and operating substantially as and for the purpose set forth.

5. The combination of the mold-cylinder K, plunger I, box A, plunger G, and cams F, arranged and operating substantially as set forth.

140,473.—*Coal-Oil Stove.*—JAMES H. THORP, New York, N. Y. Application filed April 30, 1873.

Water-tubes surround the wick-tubes and obtain their supply of water from a tank upon one side of the stove. The chimneys are supported upon a perforated plate, and are held in place by a metallic ring.

Claim.—1. The water-chambers C and D, conducting-pipes E, and reservoir F, all combined and arranged to operate as described.

2. The chimney I, supported on the perforated guard-plate O, in combination with the rim or hoop N, substantially as and for the purposes specified.

140,744.—*Fire-Extinguisher.*—JONATHAN S. TIBBETS, Jeffersonville, Ind. Application filed May 31, 1873.

The acid-chamber is attached to the outside of the alkali-chamber, in which the gas is generated, and communicates with it by a passage which opens into a "diving-pipe." This latter prevents premature mixing of the acid and alkali by reason of the column of air it contains. By this construction the cocks may be dispensed with.

Claim.—1. The communicating pipe or passage between the acid-chamber and the generator of a fire-extinguisher, in combination with a diving-pipe which covers said passage where it opens into the generator, and, extending into the latter, operates in the manner specified.

2. The combination of the cylinder A, diving-pipe G, cocks C and D, respectively controlling the pipe or passage *a* and the equalizing-pipe J, and acid-cylinder B, all arranged and operating substantially as specified.

140,745.—*Tape-Measure.*—HENRY B. TYLER, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place. Application filed May 13, 1873.

A side plate within the case, having play upon the central pivot, is arranged to engage with projections upon the spring-drum so as to hold it in position, and when depressed by a thumb-piece to be disengaged and allow the tape to be wound upon the said drum.

Claim.—In a tape-measure having a drum, B, and a spring arranged within the said drum to wind the tape upon the said drum, the said drum provided with teeth or projections *b*, the plate D arranged between the drum and side of the case, and with a slot, *d*, so as to work radially on the axis *a* of the drum, and with a projection, *f*, therefrom, and a spring to cause the said projection *f* to engage the said teeth on the drum, combined with a projection extending outside the case, whereby the said plate may be operated, substantially as described.

140,746.—*Combined Cotton Chopper and Cultivator.*—JOSEPH B. UNDERWOOD, Fayetteville, N. C., assignor to EDMUND L. PEMBERTON, JOHN W. HINSDALE, and MRS. S. C. UNDERWOOD, same place. Application filed February 4, 1873.

The plows are mounted on a frame in the usual manner. The choppers consist of two sets of three knives each, radiating from the lower end of a vertical shaft, two of the knives on each being nearly in a line and the other at about 90°, thus leaving one-half of the circle free. They are caused to rotate in concert, thus leaving the hills of growing plants as they sweep around just beneath the ground. The shovels and sweep are interchangeable.

Claim.—1. The hinged U-shaped bar D combined with frame A, axle C, and draft-bar E, as and for the purpose described.

2. One or more sets of horizontal chopping-knives, K K K, arranged and applied horizontally, as and for the purpose set forth.

3. The standards J J' M combined and relatively arranged to receive plows and horizontal choppers, as and for the purpose described.

4. The loose pulley Q having notched side flange *q*, the disk R having notch *r'* and pawl *r*, the lever *s* and the rod T combined with shaft P, as and for the purpose set forth.

140,747.—*Joiner's Clamp.*—EDWARD A. WALKER, New Haven, Conn. Application filed March 26, 1873.

The movable bar is retained by a spring-ratchet pawl engaging with the rack in the side of the clamp-frame.

Claim.—As an article of manufacture, the herein-described joiners' clamp, consisting of the beam A with its head B, and the arm C with its screw D, the beam constructed with a channel, *a*, on its side, and a series of notches, *d*, combined with the pawl *b*, head F, and spring *f*, all constructed and arranged substantially as described.

140,748.—*Sealing Paint-Cans.*—JOHN F. WALTER, Jr., Brooklyn, N. Y. Application filed September 3, 1872.

Apply to the joint between the can and cover a coating of shellac varnish, wrap the can with a strip of paper saturated with the shellac, and coat with a second coating of shellac.

Claim.—A metallic can for paint and similar material, sealed or rendered air-tight by shellac varnish and a strip of paper or similar material applied in the manner specified.

140,749.—*Plow.*—LEWIS B. WHITE, Norfolk, Va., assignor to himself and SILAS R. WHITE, same place. Application filed April 9, 1873.

A slotted wedge is introduced between the beam and handles so that the latter may be firmly secured at any adjustment of the beam. The land-side is of the same form at both ends and sides, so as to be reversible.

Claim.—1. The combination, with beam and handles connected by an adjustable piece, D, of the slotted and adjustable wedge E, applied substantially as and for the purpose described.

2. A land-side for turn-plows, with two similar ends and two similar but reversed bottom flanges, constructed substantially as and for the purpose described.

140,750.—*Reed-Board for Organs.*—ALFRED W. WILCOX, New Haven, Conn. Application filed June 4, 1873.

The reed-cell has a resonant chamber immediately above and parallel with it, communicating therewith by an orifice near the mouth of the reed-cell.

Claim.—In combination with the reed-chamber C and its reed, the auxiliary chamber E opening directly into the reed-chamber near its outer end, substantially as and for the purpose set forth.

140,751.—*Mode of Changing the Speed in Machinery.*—WILLIAM H. WILSON, Easton, Md. Application filed June 24, 1873.

Two cone-pulleys are arranged with their bases adjacent or opposite each other upon one and the same shaft, the driving one being fast and the driven one being loose thereon. By means of the shifting belt or movable friction-gear the speed of the driven cone can be regulated at pleasure.

Claim.—In combination with the two cones A B on one and the same shaft, *a*, the cone A being fast and the cone B being loose thereon, the endless belt *b* or its substitute, the friction-wheels *g g'*, for transmitting power from the driving to the driven cone, at such regulated speed as may be required.

140,752.—*Portable Fence.*—THEODORE L. WISWELL, Olathe, Kans., assignor to RAY AMARA WISWELL, same place. Application filed April 5, 1873.

The rails of a panel are fastened to a batten at each end by a single pin so as to make a flexible attachment, adapting the fence to grades. The panels are united by links passing through the end battens and a rail, and through a triangular intermediate post, giving the zigzag direction to the panels. A key then tightens the whole. A lower key descends as a stake into the ground.

Claim.—1. A fence, composed of the rails A, triangular posts B, battens C, staples D, key E, and stake F, arranged as shown and described.

2. The stake F, combined with a staple, D, a post, and the rails A of a fence, as shown and described, for both securing said parts together and supporting them upright, as set forth.

140,753.—*Washing-Machine.*—GEORGE L. WITSIL, Beverly, N. J., assignor of one-half his right to THOMAS L. BATES, Philadelphia, Pa. Application filed June 16, 1873.

Two end pieces of triangular form, curved on their lower edges, have boards on their straight edges that are corrugated on their inner sides.

Claim.—1. A washing-board, having an internal chamber, the sides of which are corrugated, substantially as and for the purpose set forth.

2. The combination of the internally-corrugated sides B B, the rounded and beveled ends A A, and suitable handles for operating the same, substantially as and for the purpose specified.

140,754.—*Tenoning and Boring Machine.*—GEORGE WITTER, Sherrill's Mount, Iowa. Application filed April 17, 1873.

The machine, when used for tenoning, is secured upon the spoke of a carriage-wheel in such a manner as to bring the tenoning-tool in line with the spoke. For boring felloes a table is attached to the device and a boring-tool substituted for the one which tenons the spokes.

Claim.—The combination, with the bar A, arm E, frame G, shaft I, and auger N, of the slotted bar O, adjustable platform P, standard R with lever S, and the posts *t t*, all constructed and arranged substantially as and for the purposes herein set forth.

REISSUE PATENTS.

5,479.—*Toy.*—CORTLAND BALL, Augusta, Mich., assignor of one-half interest to THOMAS MARRIOTT.—Patent No. 139,365, dated April 29, 1873. Application filed May 27, 1873.

Claim.—A toy, composed of a hollow case of cylindrical or other form, provided with an eye at one end for the attachment of a cord, and having an opening or mouth in its side, substantially as set forth, for producing a warbling sound when said toy is whirled through the air, as described.

5,480.—*Design for End Frames of Car-Seats.*—GEORGE BUNTIN, Boston, Mass.—Design No. 2,609, dated April 2, 1867. Application filed April 25, 1873.

A general compound shape given to the casting.

Claim.—The design for the outer end frame of a car-seat, the design consisting in a cast-metal frame in which the bars *s s* have the outward curves from the bars *c g* and the inward curves toward each other, and the bars *f* curve inward under the seat and toward each other, substantially as described.

5,481.—*Mechanical Movement for Sewing-Machines, &c.*—EDWIN COWLES, Cleveland, Ohio, assignor, by mesne assignments, to EDWIN HOLMES, New York city.—Patent No. 103,647, dated June 7, 1870. Application filed May 26, 1873.

Rolling clutches are applied between many-sided hubs, and pulleys are applied loosely on the shaft of said hubs, operated by straps.

Claim.—1. A mechanical movement consisting of rolling clutches *a*, applied between many-sided hubs J, and pulleys which are applied loosely on the shaft of said hubs, substantially as described.

2. The stops or studs *b*, in combination with rollers *a* and hubs J, inclosed by pulleys, so as to operate substantially as described.

3. Offsets *f f* on the treadles E and E', arranged to receive the lower ends of the pulley-straps without having these straps crossed, as set forth.

4. The combination of two independent treadles, E E', and two clutch mechanisms, arranged to impart rotary motion to a fly-wheel, pulley, or shaft by alternate intermittent actions thereof, when each of said treadles is connected to both clutch mechanisms by two straps, belts, or other flexible connections, one end of both of which is secured to the toe end of a treadle, and the other ends of which are connected, one to each clutch mechanism, but upon opposite sides of the axis thereof, substantially as described.

5,482.—*Car-Frame.*—WILHELM GABRIEL VON STADEN, Strathroy, Canada.—Patent No. 131,725, dated September 24, 1872. Application filed May 24, 1873.

Each pair of posts and the connecting-bow are made of one piece of wood bent to the form shown.

Claim.—The posts and bow C C M formed in one piece of bent wood, secured at bottom to the sills A, and braced by longitudinal bars D, substantially as herein set forth.

5,483.—*Egg Stand and Boiler.*—EDWARD P. WOODS and DANIEL SHERWOOD, Lowell, Mass., assignors to themselves and CYRUS H. LATHAM.—Patent No. 70,769, dated November 12, 1867; reissue No. 5,270, dated February 4, 1873. Application filed June 17, 1873.

A ring forms the base; a wire in spiral form forms the sides. Standards support the base and sides, and a handle is formed by twisting several wires and separating at the lower part to form rings.

Claim.—The combination, with a stand or holder made of wire, of the compound twist A, substantially as described, for the purpose specified.

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COMMISSIONER'S DECISIONS.

ALOIS KOHLER.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Alois Kohler for patent for Design for* ROLLING SHUTTER-SLATS.—*Decided May* 17, 1873.]

A patent will not be granted for a design which is shown in the drawings annexed to a patent already issued for a machine, although the machine or design may either of them be used without the other.

Although the grantee of the machine patent is the applicant for the design patent, he should be denied in such a case.

If the patentee of a machine discloses in his specification his intention of obtaining a patent for the design shown in his drawings, it seems that he might then obtain such a patent.

The cases *ex parte* Bartholomew, Com'rs D., 1871, p. 298, and *ex parte* Collender, 2 Off. G., 360, commented on.

LEGGETT, *Commissioner:*

A patent was granted the applicant May 7, 1872, the drawing of which exhibited the design now claimed. That patent covered the construction of the opposite edges of a blind-slat, whereby a peculiar hinge-connection was formed. This construction was entirely concealed from view when the slats were united to form blinds. It was intended to perform a practical useful function, and was wholly independent of the exterior conformation of the slat shown, or of any other particular exterior design. It could be used as well with one design exhibited by the surface of the slat as another, and this fact was set forth in the specification of the patent in the following words: "A represents the slat made with any suitable molding, form, or design upon their broad faces." This is all of the specification of the patent that refers to the design. The patent does not protect it, of course, and cannot be reissued so as to protect it, because it is not subject-matter which a mechanical patent will protect. It is proper subject-matter for a design patent, and the construction of the hinge-connection is entirely distinct subject-matter, and was properly patented as a mechanical device.

In view of this state of facts, the Examiner and the Board of Examiners-in-Chief have refused the application, the Examiner holding that the patent of May 7, 1872, is a bar to the patent now sought, but the applicant continues his appeal, holding that, following the precedents set in the Bartholomew case (C. D., 1871, p. 298,) and the Collender case (OFF. GAZ., vol. 2, p. 360,) he is entitled to a patent.

In each of the cases cited the patent for the design was first obtained, and the mechanical patent subsequently applied for and allowed. In the present case the mechanical patent was first allowed, fully showing the design, and the design patent is now sought—sought upon drawings which are exact duplicates of those upon which the mechanical patent was granted. The cases are radically different. A design patent relates only to configuration and arrangement for esthetic effect. The mechanical patent is for practically useful mechanism. The design may be shown and described in the case pending without developing the mechanism upon which the patent was granted, but the mechanism could not have been described in accordance with the requirement of law without showing some design. Hence the design patent might have been first granted and afterward the mechanical, but not *vice versa*, for the mechanical is the greater and must include the right to use the design shown, unless it was previously patented, but the design is the less, and does not necessarily include the mechanism. It will be remembered that in this case the special mechanism and special design have no necessary connection, as either can be used without the other. But when the applicant applied for his mechanical patent he was obliged to show his invention in some form in his drawings and model. He chose to

adopt the identical form which he now seeks to cover by a design patent. If a valid patent could be given him, he could then say to the assignee of his former patent that said assignee shall not use the mechanical invention in the manner and form set forth, and fully described in that patent. The law certainly never contemplated the granting of patents that might thus come n conflict with each other. If the precedents quoted go that far, which I deny, then it is high time they were reversed.

If the applicant, at the time he applied for his mechanical patent, had at the same time applied for his design patent, and had put a clause in the specification of the mechanical application stating that the *design* shown was the subject of a pending application for design patent, I should not question his right to both patents, for then the purchaser of the mechanical patent would buy with notice, but having fully shown his design in the mechanical patent without notice of intention to claim it, he has barred himself from setting up any subsequent claim to it, and has dedicated it to, at least, any person who now does, or may hereafter, own the mechanical patent. It might be said that both of these patents will belong to the inventor, hence will not come in conflict; but as they may, by future contingencies, either with or without the patentees consent, fall into different hands and become antagonized, the Office must be guided by the same principles as if the existing patent had already been assigned. The cases relied upon as precedents have gone to the utmost verge of propriety, if not a little beyond. The intent has been to correct mistakes, the applicants having taken patents for designs when they should have taken mechanical patents.

The decision of the Board is affirmed and patent denied.

G. HIBBARD.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of George Hibbard for* MANUFACTURE OF GRINDSTONES. *Decided July 2, 1873.*]

Stone has usually been quarried by sawing or cutting, or by splitting where the texture permitted and the stone was of little value, and it is a mere matter of judgment which mode shall be adopted.

It is not patentable, therefore, to sever grindstones from the quarry by sawing and then finish them by turning and eyeing them, instead of first splitting them out as usual.

A grindstone produced by such new process is not distinguishable from one manufactured in the usual way, nor patentable as a new article of manufacture.

LEGGETT, *Commissioner:*

Applicant sets out that heretofore grindstones have been made by cutting or splitting out slabs of suitable size and turning and eyeing them; that this process is wasteful of material when employed to make grindstones of certain kinds of stone of suitable quality for the purpose, in which the stratification is irregular and the grain or rift is diagonal to the beds or natural partings of the rock; and that, therefore, he proposes to saw slabs out of blocks of such stone, and afterward turn and eye them in the usual manner. He claims the process of manufacturing grindstones by "*sawing*," turning, and eyeing them, and also the grindstone thus produced as a new article of manufacture.

He proceeds to saw his stone in the same way that stones are ordinarily sawed, and obviously for the same purpose, viz., to save material. Both splitting and sawing stone for all uses are universally practiced. Where stone is to be employed of which the grain is regular, and the material abundant and capable of being readily split, that plan of working it is adopted, because it is most convenient and economical. But when stone is to be used which is valuable or not easily split it is sawed. The judgment of the workman as to the better and more economical course to take in a given case is all that is required to direct him. Applicant has added nothing to the art, and his alleged process is barren of invention.

The grindstone he produces would obviously be the same when completed as if the slab had been originally split instead of sawed from the block. Whether it had been quarried by hand or by machinery would be a matter quite as likely to affect its character as an article of manufacture, and invest it with patentable novelty, as whether it had been split or sawed after quarrying. Neither process nor article possesses the faintest attribute of patentability.

The decision of the Board is affirmed.

J. M. STONE.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Joseph M. Stone for patent for* COUPLING.—*Decided July 2, 1873.*]

Where two devices, each of which has previously been used to effect a certain purpose, are combined to effect the same purpose, the combination is patentable if it is operative and new, even though it constitutes little or no improvement.

To secure together by bolts the two parts of a coupling which incloses and unites the ends of two shafts, and to place bands over the coupling which retain the bolts in their place, and give the whole a smooth exterior, while the connection is strengthened, is patentable, although the bolts and the bands have each been used before for the purpose of uniting the two shafts.

LEGGETT, *Commissioner:*

Applicant's invention consists of a coupling made in two parts to inclose the ends of two shafts to be secured together. Dowel-pins projecting from the interior of the coupling enter the ends of the shafts to prevent them from drawing apart, and a spline prevents the shaft from turning in the coupling. The two halves of the coupling are secured together by bolts, over which bands are placed which aid to keep the bolts in place, cover the bolt-holes, leaving a smooth exterior, and also strengthen the connection of the parts of the coupling.

Applicant claims the combination, with the two parts of the sleeve, of the bolt-head recesses and the band. The patents of S. A. Smith and P. W. Reinshager have been cited, but neither of these patents shows the combination claimed. One has not the bands, and the other has not the bolts and their recesses. The two cannot be united to make an answer to the claim. One alone must be sufficient for the purpose, or else both must fail. A comparison of the merits of applicant's device and either of the patented ones is not required. The question is not how much improvement he has made upon either of them, or in fact whether he has *practically* made any, provided his combination is *operative* and is new. Its comparative *practical* utility and merits are for the public to determine.

The decision of the Board is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

JOHN W. MASURY *vs.* WILLIAM ANDERSON AND FREDERICK O. PIERCE.

[*In Equity, before Blatchford, J.—May 6, 1873.*]

A patent for a paint-can, the top piece of which is extended and united to the sides by a disk-ring of brass, and which can be opened readily by cutting through the brass, is not void for want of novelty, because milk-cans have been known with their sides carried up and united to the top by a tube-ring of lead, capable of being easily severed for the same purpose.

Nor on account of cans, for holding potash, made of tagger's iron, nor of such cans made with heads and bottoms of tin not intended to be opened by cutting.

Cans for holding paint, with one end made wholly of thin tin, which could be easily cut through, held to be an infringement.

[*W. Howard Wait*, complainant's solicitor.
George Harding, defendant's solicitor.]

BLATCHFORD, *J.:*

This suit is founded upon the same letters patent upon which the suit of the same plaintiff against Daniel F. Tiemann and others was brought. (8 *Blatchf. C. C. R.* 436.) The opinion in that case describes the invention and sets out the specification and claim. It also states, at length, the value and use of the patented can.

In this suit the infringement charged in the bill is the same as in that suit, namely, "That the defendants have made and caused to be made, for their use, cans embodying the patented invention, and have vended paints and colors put up in cans so constructed." The defendants are shown to have sold cans containing paints made liquid with oil, put up by them in such cans.

The answer in this suit sets up the defense of want of novelty in the invention, as did the answer in the former suit, but adduces, to support such defense, matters not set up in that suit. It avers, among other things, that the plaintiff's invention is described in Letters Patent No. 11,892, granted in England to Jules Jean Baptiste Martin de Lignac, and dated October 7, 1847. In the specification of the Lignac patent, which was enrolled April 3, 1848, the following language is all that is material to this case: "The concentrated milk is then, as quickly as possible, to be filled into vessels made of plate tin, or other suitable material, which will allow of being closed hermetically, and also allow of being treated by heat, as hereinafter explained. The vessels I prefer for this purpose are cylinders, such as are shown at Fig. 5, and in order that the upper end or cover may be readily removed by the simple act of cutting, I prefer that lead should be used all around, *i. e.*, as is shown by the drawing. These vessels, being filled quite full with concentrated milk, are allowed to stand for twenty-four hours, when the vessels are soldered all around, so as to hermetically close them." An exhibit, introduced in evidence by the defendants as being constructed in accordance with such description, is a cylindrical can, made of ordinary sheet tin some five inches in depth and four inches in diameter, one end of which is composed of a circular-shaped piece of tin, formed with a flange something less than a quarter of an inch deep, turned down at the outer circumference of such end. The lower edge of such flange is connected with the outer wall or side of the can by a band of sheet lead, a little over one-half of an inch wide, encircling the circumference of the can, the lower part of the band being soldered to the top of the wall or side of the can, and the upper part of the band being soldered to the lower edge of such flange, so as to leave a width of lead of about one-quarter of an inch between the upper edge of the wall or side of the can and the lower edge of the flange and allow the lead to be penetrated and cut in such width around the circumference of the can, and thus the top or end of the can to be separated from the body of the can. This arrangement differs from the plaintiff's invention. The latter consists in placing in one end of the can, and adjacent to the edge of the wall or side of the can, a rim or ring of thin brass or other soft metal, such rim or ring thus forming part of the end of the can. It is shown, by the evidence, that lead is a much more difficult metal to solder than thin brass, owing to the fact that especial preparation is required in order to enable the solder to adhere to the lead, and that the lead is liable to melt when the soldering-iron is brought in contact with it in the process of soldering; and that for these reasons it would take a workman a much longer time to manufacture a given number of cans, constructed according to the Lignac specification with a lead band, than it would to make the same number of cans constructed in the same form, but with a brass band in the place of one of lead. It is also shown that the use of thin brass instead of lead, in such form of can, admits of a neater and more perfect finish. Independently of this, the testimony shows that the plaintiff's can presents several advantages over the Lignac can. First, the plaintiff's can, in the size and number of the pieces of which it is composed, and in the labor of preparing them and putting them into the form of, and securing them together as a can, does not differ materially from the simplest form of can used; while in the Lignac can the band of lead constitutes a separate and additional piece, requiring additional labor in preparing it and inserting it in the can, and the seams cannot be soldered by machinery as in the plaintiff's can; second, in the plaintiff's can the force necessary to cut the metal in the end of the can can be applied in an oblique or vertical direction, and is not required to be applied laterally, as in the Lignac can. The former mode of cutting affords a freer passage to the knife, for the reason that it causes the lips of the opening to spread in different directions, while in cutting the lead band in the Lignac can, by lateral pressure, both lips of the opening are forced inward, and they, in turn, bind upon and obstruct the passage of the knife-blade, so as to render the process of cutting more difficult. Third, cutting one end, with the can standing on the other end, permits the can to be filled to its entire capacity, while in the case of the Lignac can, if it be filled above the center line of the inserted band, the contents will run out in the process of cutting through the band.

If the Lignac can be an improvement on the ordinary hermetically-sealed can, these advantages make the plaintiff's can a material improvement on the Lignac can; and the advantages thus shown to result from changing the position of the soft or thin metal from the side to the end are sufficient, in my opinion, to sustain the patent as against the Lignac can.

The defendants prove that the plaintiff made cans in the form of the Lignac can, but having in place of the band of lead a band of brass, and that he placed on such cans labels claiming them to be within his patent. It is urged that, by reason of this, the plaintiff is estopped from denying that the Lignac can is the equivalent of his invention. But this view is not tenable. The rights of the plaintiff depend upon the claim in his patent, according to its proper construction, and not upon what he may erroneously suppose it covers. If at one time he insists upon too much and at another on too little, he does not thereby work any prejudice to the rights actually secured to him. The evidence shows that a can constructed according to the Lignac patent does not accomplish the end sought by it, and is not a can which can be easily opened; and that even when the plaintiff substituted in it a brass band for one of lead, his customers who used it found it more convenient to open the can by cutting out the hard top by the use of a hammer and a knife than to do so by cutting through the brass band. Although the inventor of the Lignac can had the general idea of enabling a can to be opened by cutting more easily through a softer or a thinner metal, while the body of the can should have the strength of the harder or thicker metal, he did not embody his idea in a form which was practically of any substantial utility, and the means he adoped were substantially different from those adopted by the plaintiff.

The defendants also introduce in evidence, on the question of novelty, a can made wholly of tagger's iron —that is, sheet-iron rolled so thin as to be easily cut by a pocket-knife—and claim that similar cans had been used by the Pennsylvania Salt Manufacturing Company, for putting up caustic alkali, for some years prior to the date of the plaintiff's patent. These cans were filled by pouring in the alkali in a molten state, and it solidified on becoming cold. The only reason given for using tagger's iron, by the witnesses who testify to the use of those cans, are, that when tin was used, the heat the cans were subjected to caused the tin to melt, and that iron was less expensive than tin. It also appears that, previously to July, 1857, while tagger's iron was used for the sides, sheet-tin was used for the bottom and top, showing that the original use of tagger's iron was with no purpose to facilitate the opening of the cans. One witness testifies that the company put up the alkali in broken pieces in cans made wholly of tagger's iron, but he does not state that they did so previous to the date of the plaintiff's patent, or that he knew of its being put up in that condition in such cans prior to such date. The defendants, at the hearing, asked leave to put in further proof on the question whether the tagger's iron was used with a design to facilitate the opening of the cans, and on the question whether it was practicable to open the cans, when filled with the alkali, by cutting out the top, leave was given to both parties to put in further proofs on those points. The defendants, however, failed to avail themselves of the leave so granted, but the plaintiff has furnished evidence which conclusively puts to rest all pretensions in favor of such can. He has produced, in evidence, sheet-iron cans containing caustic alkali of the manufacture of said company, the same being put up by said company in such cans, and sold by it, together with the circulars in which the cans were enveloped when sold. These cans are made of sheet-iron not capable of being easily cut with a knife; and their contents consist of a solid mass of alkali, apparently conforming in shape to the capacity of the can. But the circular furnishes conclusive evidence against the claim set up in behalf of this can in the directions it gives for opening the cans, which directions are in these words: "Break up one box of the saponifier into fragments, by striking upon the sides of the box;" and again: "Knock off either end of a pound box of concentrated lye." Moreover, on the whole testimony, it is doubtful whether the tagger's iron actually used by the company before the date of the plaintiff's invention was so thin as to be capable of being cut to facilitate the opening of the can. It is, therefore, not shown that the use of tagger's iron, in the manufacture of such cans by said company, was a prior use of the plaintiff's invention.

The defendants admit, by stipulation, that they have made and used, for putting up paints and colors, and vending paints and colors put up therein, "cans with one end made wholly of thin tin, which can be easily cut at the outer edge of such end." The plaintiff claims such can to be an infringement of his patent. In the view I take of the patent, if one end of the can is made wholly of thin tin, and thereby the location of the thin or soft metal in such end is secured at the only part of the end where, by the patent, it is required to be, or where it is essential it should be, namely, at the part of the end nearest its outer edge, it is not material whether the metal in the other parts of the end be thick or thin, so far as the plaintiff's invention is concerned. The use of a plain end of thin metal secures what the patent is designed to accomplish, and in the mode specified in it, by enabling the end to be removed by cutting it out near its outer edge with a knife, while the body of the can may be made of a thicker metal and thus strong, and the thinness of the metal left thin to be cut does not interfere with the safe handling and transportation of the can.

There must be a decree for the plaintiff for a perpetual injunction, and an account of profits, with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,115.—*Self-Acting Wagon-Brake.*—Granted to BENJAMIN S. HEALY, August 16, 1859. Hearing July 30, 1873.

25,148.—*Weighing-Scales.*—Granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859. Hearing July 30, 1873.

25,149.—*Blanks for Shoe-Pegging Machines.*—Granted to BENJAMIN F. STURTEVANT, August 16, 1859; reissued June 12, 1866. Hearing July 30, 1873.

25,153.—*Carding-Engines.*—Granted to SAMUEL WETHERED, August 16, 1859. Hearing July 30, 1873.

25,166.—*Iron Fences.*—Granted to JOHN B. WICKERSHAM and HENRY JENKINS, August 16, 1859. Hearing July 30, 1873.

25,167.—*Mode of Lighting Gas by Electricity.*—Granted to ARCHELAUS WILSON, August 16, 1859. Hearing July 30, 1873.

25,183.—*Nail-Machine.*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 22, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,343.—*Stoves.*—Granted to EDWARD M. MANGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL R. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors Shears.*—Granted to ROCHUS HEINISCH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—*Rolling-Mills.*—Granted to JOHN and GEORGE FRITZ, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—*Bedstead-Slats.*—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,572.—*Molding Water-Traps.*—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—*Burglar-Alarms.*—Granted to ABBOTT O. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—*Steam Punching-Machines.*—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,640.—*Steam-Boilers.*—Granted to JOSEPH HARRISON, Jr., October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,673.—*Machines for Lasting Boots and Shoes.*—Granted to JAMES PUSHTON, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,683.—*Hydrants.*—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 26, 1873. Hearing September 17, 1873.

25,692.—*Sewing-Machines.*—Granted to KASIMIR VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—*Skeleton Skirt.*—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,726.—*Hand-Machine for Wiring Blind-Rods.*—Granted to BIRAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,733.—*Double-Friction Couplings.*—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—*Cutting and Panning Cakes.*—Granted to JOHN H. SHROTE, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—*Mode of Manufacturing Barrels, &c.*—Granted to GEORGE W. BARKER, October 11, 1859. Application filed July 8, 1873. Hearing September 24, 1873.

25,796.—*Jacquard Machines.*—Granted to AVERY BARBETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,797.—*Harvesters.*—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,807.—*Hem-Folders.*—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Hearing October 1, 1873.

25,814.—*Sleeping-Cars.*—Granted to JOHN DANNER, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,843.—*Cultivators.*—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,862.—*Weeding-Hoes.*—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,867.—*Machines for Covering Saddle-Trees.*—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,539.—*Manufacture of Gun-Barrels.*—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 10, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,838.—*Improvement in Pumping-Engines*, granted to HENRY R. WORTHINGTON, July 19, 1859.

Claim.—1. The combination, herein set forth and exhibited of two direct-acting pumping-engines, propelled by steam or other fluid, so arranged as that each engine shall actuate the inlet and outlet valves governing the motive power of the other, thereby insuring the constant action of at least one pump-piston upon the water and relieving the action of the pump from shocks and concussions.

2. The arrangement, herein shown, of two distinct systems of levers adapted to the steam and exhaust valves of each engine, the one system to be operated upon for producing motion and for determining the duration of the repose of the piston at the termination of the stroke, the other for bringing the pistons to a state of rest, all substantially as herein explained and set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 15, 1873.]

6,771.—*Burial-Casket.*—BENJAMIN F. HEIMBACH, Allentown, Pa. Application filed April 25, 1873.

6,772.—*Burial-Case.*—BENJAMIN F. HEIMBACH, Allentown, Pa. Application filed April 25, 1873.

6,773.—*Jewelry-Box.*—EDWARD C. MOORE, Yonkers, assignor to TIFFANY & Co., New York, N. Y. Application filed June 14, 1873.

6,774.—*Fan.*—JAMES T. BRUNDAGE, Niagara Falls, N. Y. Application filed June 18, 1873.

6,775.—*Drawer-Pull.*—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place. Application filed June 30, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date July 15, 1873.]

1,361.—*Licorice-Paste.*—DANIEL V. ARGUIMBAU, New York, N. Y. Application filed June 26, 1873.

1,362.—*Quill-Bobbins.*—DAVID BASS, Jr., Woonsocket, R. I. Application filed June 27, 1873.

1,363.—*Roasted Coffee.*—DILWORTH BROTHERS, Pittsburg, Pa. Application filed June 13, 1873.

1,364.—*Casks and Other Packages of Whisky.*—HOWE & HUBBELL, Cincinnati, Ohio. Application filed June 26, 1873.

1,365.—*Cigars, Cheroots, and Cigarettes.*—FRANCIS S. KINNEY, New York, N. Y. Application filed June 21, 1873.

1,366.—*Saddle-Trees.*—S. E. TOMPKINS & Co., Sing Sing, N. Y. Application filed May 17, 1873.

1,367.—*Razors and Cutlery.*—FRIEDMANN & LAUTERJUNG, New York, N. Y. Application filed April 26, 1873.

1,368.—*Varnish.*—LEWIS L. MANDEL, New York, N. Y. Application filed June 28, 1873.

1,369.—*Globules for Homœopathic Medicines.*—SMITH & PARKS, Cincinnati, Ohio. Application filed July 5, 1873.

1,370.—*Cylinder-Stoves.*—SOUTHARD, ROBERTSON & Co., New York, N. Y. Application filed June 28, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date July 15, 1873.]

ORIGINAL PATENTS.

140,755.—*Drip-Cup for Candles.*—DAVID M. AYER, Lawrence, Mass., assignor to EDGAR W. AYER, same place. Application filed May 19, 1873.

The drip-cup is provided with a central perforation to admit the candle, and has springs attached for adjustment upon the candle or candlestick.

Claim.—The reservoir 4, provided with springs 5, adapted for the use of different-sized candles, and for adjustment near the top of the candle independent of the candlesticks, substantially as shown and described.

140,756.—*Earth-Auger.*—GEORGE H. BAISLEY and GEORGE WILSON, Hamilton, Mo.; said BAISLEY assignor of his right to ISAAC V. SPLAWN. Application filed March 7, 1873.

A two-part auger of ordinary construction, the valve of which is regulated in the extent of its aperture by the adjustable stop *l*.

Claim.—The movable or adjustable stop *l*, in combination with the auger *a* and valve *e*, when so arranged as to regulate the distance to which the valve shall open, substantially as shown and described.

140,757.—*Adjustable Spinning-Ring.*—JOSEPH B. BANCROFT, Hopedale, Mass. Application filed June 2, 1873.

By removing the ring from its socket and turning the screws in its shank, its position in the socket and with reference to the spindle is governed.

Claim.—The spinning-frame ring, (whether having a stationary or reversible race,) provided with two or any other suitable number of adjusting-screws, *a*, arranged in its shank, in the manner and to operate in connection with the socket in the ring-rail, substantially as specified, for effecting or to aid in effecting adjustment of the ring into concentricity with the spindle.

140,758.—*Ironing-Board.*—EZRA BASSETT, Topeka, Kans. Application filed June 14, 1873.

An ironing-board rests on cleats that project beyond each end. Near the head and foot of the board are swinging clamps to hold the shirt when being ironed.

Claim.—1. The shirt-bosom holder, stretcher, and ironing-board, consisting of the board A *a a*, clamps or head and foot pieces B *b' b*, hinged or otherwise attached to the board A, all constructed, arranged, and operating substantially as and for the purposes set forth and described.

2. The clamp B, so shaped as to conform to the neck of the shirt, when the same is swung upon the hinges *b*, and is thereby made to pass over the extremity of the board A and rest upon the cleat *a*, substantially as and for the purposes described.

140,759.—*Treating Bessemer Steel and other Metals to Anneal them for Punching, &c.*—GEORGE W. BILLINGS, Chicago, Ill. Application filed June 25, 1873.

Steam is employed to render steel or iron the more easily to be punched, drilled, upset, &c.

Claim.—1. The herein-described application, in the process of annealing steel and iron, of the use of steam, applied either directly to the article or by heating the same by placing it in a heater heated by steam, substantially as set forth.

2. The herein-described apparatus for annealing steel wire, &c., consisting of the cylinder A, tube B, and chamber, substantially in the manner as described, and for the purpose specified.

140,760.—*Railway-Rail Joint.*—JAMES BISHOP, Owego, N. Y. Application filed June 19, 1873.

The joint is supported by two fish-plates placed on the sides of the rails, united by a bolt or rivet swaged into oblong dovetailed recesses in the plates, the bolt passing through slots formed in the web of the rails at the ends. The rails are thus firmly clamped laterally, and supported vertically against displacement by concussion of the wheels.

Claim.—In combination with the rails A A', slotted as shown, the bevel-slotted clamps B B' and swaged key C, substantially as shown, and for the purposes described.

140,761.—*Manufacture of Iron and Steel.*—OGDEN BOLTON, Jr., and JOHN PEDDER, Pittsburg, Pa. Application filed March 11, 1873.

If the sponge contain much foreign matter, such as silica, alumina, &c., flux is added to the sponge in the base, and the mold and contents when heated are subjected to compression to squeeze out the foreign matter, and the compressed sponge then used in a steel-melting furnace, crucible, or puddling-furnace.

Claim.—The method herein described of manufacturing iron or steel from "sponge" by the inclosure of the sponge in molds or tubes, and covering said molds with a coating of clay or clay and black-lead, substantially as set forth.

140,762.—*Manufacture of Steel Plates.*—OGDEN BOLTON, Jr., Pittsburg, Pa. Application filed March 7, 1873.

Claim.—1. The method described of casting an ingot of steel with a recess or recesses, substantially as set forth.

2. The method described of manufacturing soft-steel plates, substantially as specified.

140,763.—*Miter-Machine.*—DANIEL BULL, Amboy, Ill.; assignor to himself and JAMES H. HOLMES, same place. Application filed May 16, 1873.

The guides are made adjustable horizontally by the series of holes, and vertically by screws.

Claim.—A miter-machine constructed as described, with the slotted shafts A B working through the holes *a'* and *a n* in the base W, and connected by the sliding arm *b*, and having the adjusting-screws *a b'* and *e e'*, all constructed and arranged substantially as and for the purpose described.

140,764.—*Lamp.*—JAMES M. CLARK, Lancaster, Pa., assignor to FRANKLIN L. CLARK, same place. Application filed April 12, 1873.

A regulating device is connected with a system of burners. An overflow-receptacle is connected with the regulating-chamber in such manner as to prevent too great an elevation of oil at the burners.

Claim.—1. The regulating-valve 5 operated by a nut, 8, through the medium of a rod, 6, inclosed in a pipe, 7 in combination with the nozzle 4, regulating-chamber 9, conducting-pipe 12, and separate air-pipe 10, all arranged to operate as herein described, for the purposes set forth.

2. The overflow-receptacle 21, in combination with the reservoir 1, supply-chamber 9, and pipe 22, substantially as and for the purposes set forth.

3. The combined apparatus, consisting of the reservoir 1, chamber 9, valve 5, feeding-plug 11, overflow-receptacle 21, connecting-pipes 22, 12, 13, and burners 14, all arranged to operate as specified.

140,765.—*Toy Automaton.*—ROBERT J. CLAY, New York, N. Y. Application filed June 14, 1872.

A music-box barrel is geared to the handle of a wounded soldier or other figure, to imitate a street-organ operator.

Claim.—1. The combination, with the barrel *i*, of the gears *g h*, the crank *d*, and the arm *b* of the automaton, substantially as specified.

2. The combination of the cranked shoulder-joint spindle *c* with the head of the automaton, fitted so as to be capable of turning the arm *b* and the crank *d*, set in motion by the organ, essentially as herein set forth.

140,766.—*Cotton-Bale Tie.*—FREDERIC COOK, New Orleans, La. Application filed June 26, 1868.

Claim.—1. The cotton-tie, made as shown and described, on the band or on a separate piece riveted on.

2. The side cut or notch in the band to receive the looped end sidewise.

3. The notched edge, so arranged that when the looped end enters it the looped end laps over a double thickness of the band and holds the beat end in position by the expansive force of the bale.

4. The raised lip *J* in the band.

140,767.—*Feeding Mechanism for Rock-Drills.*—JOHN DOTY, Buffalo, N. Y. Application filed May 3, 1873.

The feed-box is provided with a lever and a feed-catch or qualifier, to each of which is connected a coiled spring. When the projection on the sliding rod raises up the lever it is depressed by the coiled spring, and thus operates the drill-bit which is connected with the lever.

Claim.—1. The combination of the coiled spring *e*, qualifier C, pin *f*, and slot *g*, arranged and operating substantially as described.

2. The qualifier C with its pin *f*, constructed substantially as described, for the purpose specified.

3. The lever B and qualifier C, in combination with the coiled springs *b e* and projection D, arranged and operating substantially as herein described.

140,768.—*Eye-Wash.*—RANSOM C. FISHER, Belleville, N. Y. Application filed October 5, 1872.

Soft water, green tea, sugar of lead, white vitriol, and camphor gum dissolved in alcohol.

Claim.—A compound, composed of the ingredients, substantially in the proportions and for the purposes set forth.

140,769.—*Dish-Heater.*—SAMUEL S. FITCH, New York, N. Y. Application filed May 7, 1873.

Claim.—The new article of manufacture, or dish-heater, as described, composed of the guard-plate the legs, and the box, provided or for use with the heating block or blocks, all being arranged and constructed and for use, substantially as specified.

140,770.—*Railway Switch.*—ALFRED C. GARRATT, Boston, Mass. Application filed December 2, 1872.

The switch is shifted by turning the crank-handle of the vertical cam-shaft, the shaft being returned to position by a coiled spring which surrounds it. A thumb-spring latch engages the crank when returned, and locks it and the switch from accidental displacement.

Claim.—The vertical shaft *g*, provided with the spring *p*, crank *g'* at its upper end, and cam or cranks *f* at its lower end, the latter connected with the track by the rod *e*, in combination with the frame *h*, slotted arm *m*, and spring or latch *o*, all arranged and operating substantially as described.

140,771.—*Fountain-Pen.*—JOHN GOODYEAR, Groton, N. Y. Application filed May 27, 1873.

A tube provided with plugs near each end, through holes in which passes the valve-rod, is pointed at one end and has a brush for regulating the flow of the ink through the point and a rubber cap at the opposite end.

Claim.—1. A fountain-pen, constructed of a tube, A C, tapering to a point, with a brush, E, and valves B *b b'* arranged in said tube, by which to regulate the flow of ink to the point, all constructed, arranged, and operating substantially as and for the purposes described.

2. The combination of the valve-rod B, plugs *c*, tube A, and perforated brush E, all arranged and operating substantially as and for the purposes described.

3. The fountain-pen constructed of tubes A C *c*, valve-rod B *b b'*, plugs *c*, pen-holder D *d*, brush E *e*, rubber cap F, all constructed and arranged substantially as and for the purposes described.

140,772.—*Iron Roof-Truss.*—ABRAHAM GOTTLIEB, Chicago, Ill. Application filed January 24, 1873.

The two chords are connected to each other by struts, ties, and braces, and to the end post, in the manner shown, with the object of subjecting the top chord to compressive strain only, and the bottom chord to tensile strain only, thus relieving the walls from lateral thrust, while obviating the use of the ordinary tie-rod.

Claim.—1. The combination of an arched bottom chord and the top chord composed of two equal inclined beams without the use of a tie-rod, in the manner and of the construction as described and shown.

2. The construction of the lower arched chord of an internally-arched roof-truss, with the inner members made of short link-bars *b''*, or riveted flat bars in their place, and the outer ones of continuous channel or angle bars *b'* to form the curves, as shown and set forth.

3. The employment of the end posts F in a roof-truss to transmit the weight of the roof to the walls, as shown and set forth.

140,773.—*Animal-Trap and Seed-Safe Combined.*—SAMUEL V. GREER, Rocky Hill Station, Ky. Application filed April 19, 1873.

Utilizing a valuable and specially attractive winter-bait to protect itself.

Claim.—The seed-safe A, provided with the openings G, Q, and W, and the movable seed-case C and D, the latter having the opening E covered with wire-cloth F, in combination with the box R and rat-trap H, composed of the box I, wall N, drop J, plates L M, weight O, and spring P, substantially as hereinbefore set forth.

140,774.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed June 28, 1873.

Claim.—The composition denominated metaline, incorporated with wire-cloth, substantially as and for the purpose specified.

140,775.—*Journal-Box Lining.*—STUART GWYNN, New York, N. Y., assignor to THE AMERICAN METALINE COMPANY, same place. Application filed June 28, 1873.

Claim.—The composition denominated metaline, incorporated with perforated metal sheets, substantially as and for the purpose specified.

140,776.—*Barrel-Making Machine.*—HIRAM PORTER HALL, Akron, N. Y. Application filed January 22, 1873.

The staves are taken from a hopper, arranged within a ring in the proper form for a barrel, and held in position until a hoop is driven on.

Claim.—1. In a barrel-machine, the circular holder B, provided with the rims U, substantially as and for the purpose herein described.

2. In a barrel-machine, the combination of the spring-lifts *i*, traveling-hooks *t t'*, upper and lower guides *c k*, and circular holders B, all constructed and operating substantially as and for the purpose specified.

3. In a barrel-machine, the combination, with the circular holders B and the rims U, of the spring-rollers *w w*, arranged and operating substantially as and for the purpose described.

4. The traveling-hooks *t t'* running on the guides *u*, constructed and operating substantially in the manner and for the purpose hereinbefore specified.

5. The machine, consisting of the frame A, one side hinged and made adjustable, the circular holders B B', the holding-guides *a a'* setting in grooves *b*, the guides C *k*, the lifts *i i*, rock-shaft I, arm J, traveling-hooks *t t'*, cutters K K', and spring-roller *w*, all constructed and operated substantially in the manner and for the purpose specified.

140,777.—*Combined Water-Cooler and Show-Case.*—PETER J. HANOUR, Buffalo, N. Y. Application filed June 19, 1873.

A revolving case has concentric shelves and is provided with a water-cooler the top of which is formed by a drip-cup having a perforated cover. The drip-water from the faucet falls on a grate and passes into a drawer, from whence it is emptied.

Claim.—1. The combination, with the revolving sample-case C, having concentric steps or shelves D, of a water cooler or filter, A, substantially as shown and described.

2. The combination, with a revolving sample-case, C, and a water-cooler, of a drip-cup, A', having a perforated cover, *a'*, the said drip-cup forming the cover of the water-cooler, substantially as shown and described.

3. The combination, with a revolving sample-case, C, having concentric steps or shelves D and a water-cooler, A, of a cock or faucet, F, arranged at or near the periphery of the lower shelf, as and for the purpose described.

4. In combination with a revolving sample-case, C, having concentric steps or shelves D, a water-cooler and filter, A, and a cock or faucet, F, of a drip cup or drawer, G, having a perforated or grated surface, *f*, over or above it, substantially as and for the purpose set forth.

140,778.—*Abdominal Supporter.*—ELIZA J. HARDING, St. Louis, Mo. Application filed December 6, 1872.

The part of the supporter which passes over the posterior regions is furnished with a novel arrangement of elastic gores to insure a proper fit.

Claim.—The arrangement of the posterior brace B, designed wider at bottom than top, extending and supporting the entire loins, and having top and side goring *b'*, to operate as and for the purpose set forth.

140,779.—*Dumping-Car.*—JOHN HUGHES, New Berne, N. C. Application filed March 12, 1873.

The angular casings around the axles of the dumping-box prevent the lodgment of the material to be dumped.

Claim.—1. In a dumping-car, the angular shields or casings G arranged around the axles, substantially as specified.

2. In a dumping-car, the combination of brakes H having slots A to engage with the wheels E, set-screws passing through the slots and the lever J, operating substantially as specified.

140,780.—*Screw-Cutting Machine.*—GILBERT B. JAYCOX, Hartford, and ALLEN WEBSTER, Farmington, Conn. Application filed November 18, 1872.

The shaft is provided with two pairs of wings, which, as it is reciprocated, engage pins in the oppositely-rotating pulleys, causing the shaft to rotate alternately in opposite directions. The shaft is reciprocated by a half-nut that engages its screw-thread on the shaft, so that it raises a weight, which, by its gravity, finally throws the shaft endwise, thereby changing the clutches.

Claim.—1. The combination of the rotary and longitudinally-reciprocating shaft b^3 provided with the clutch-arms and the nut-piece *f*, the contrarily-rotating clutch-pulleys *c d*, and the ball-lever s^3, actuated from the nut *f*, the whole constructed, arranged, and designed for operation and use, substantially as described.

2. The combination of the feeding-trough A with the wings *e*, constructed and arranged as described, for the purpose set forth.

140,781.—*Car-Starter.*—THOMAS W. JOHNSTON, Chicago, Ill. Application filed March 27, 1873.

A coiled spring inclosed within a case, in combination with a ratchet and beveled wheel, is secured to a lever which is pivoted to the truck in such a manner that, by moving it to the left, the beveled wheel engages with a beveled wheel secured to the axle, by means of which the spring is tightly coiled in stopping the car. When the lever is turned to the right the spring expends its force in propelling the car forward.

Claim.—The pivoted lever C having attached thereto the case E with inclosed spring, ratchet-wheel F, gear-wheel B, and spring-pawl G, in combination with the wheels D D rigidly affixed to the axle A, and stop *b*, as described, for the purpose set forth.

140,782.—*Ink for Stamping Purposes.*—JOHANN B. FEINDOLIN JUD, New York, N. Y. Application filed May 31, 1873.

Red aniline, citric acid, mucilage, glycerine, acetic acid.

Claim.—A stamping-ink, compounded and prepared of the herein-named ingredients, substantially in the proportions and for the purpose hereinbefore set forth.

140,783.—*Window Sash and Frame.*—DONALD MCKAY, Chicago, Ill. Application filed March 5, 1873.

The window-sash and its frame is made in such a manner that weather-strips need not be employed, and wind, dust, rain, &c., cannot enter the window when the sash is closed.

Claim.—The grooved window-frame B, provided with the beveled and grooved sill C, and with the removable and grooved separating-ribs D D arranged in the vertical grooves of the frame B, in combination with a double sash, each part of which is constructed to match the other, and provided with vertical ribs arranged to ride in the grooves of the ribs D D, the lower sash being also constructed to match the sill, and the upper one to match the top of the window-frame, substantially as and for the purposes specified.

140,784.—*Hose-Reel.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 24, 1873.

Claim.—1. The revolving reel for hose, constructed and arranged substantially as herein described, whereby the hose may be wound upon the same in a volute or scroll, each layer or fold of which is supported separately therein without contact with the other layers or folds, substantially as and for the purposes shown and set forth.

2. The combination of the two sets of radial arms, connected by a center-stem constituting the axis of the reel, as described, with detachable rollers or cross-pins fitting and held in inclined slots or open bearings in said arms, under the arrangement and for operation substantially as shown and described.

140,785.—*Lemon-Squeezer.*—JOHN H. MEAD, New York, N. Y. Application filed June 23, 1873.

A socket-die is attached to a hinged lever. The sleeved die has a separate removable perforated bottom and a single aperture in the bottom. The whole secured to a box or frame.

Claim.—The combination of the die G, having a conical bottom, *e*, and central aperture *i*, with the removable perforated bottom A and the die F attached to the hinged lever E, all mounted upon the frame or case C, as and for the purpose specified.

140,786.—*Hoisting-Machine.*—PETER W. MELLEN, St. Louis, Mo. Application filed April 2, 1873.

The pivoted shaft, upon which the brake is secured, is operated by means of a screw-shaft, which is rotated by means of a rope passing over a pulley upon such shaft. The counter-balance weight is arranged in vertical slides upon the side of the hatchway, and it is secured to the platform-rope by a pulley or a hanger on said rope, which has free horizontal movement on a slide-rod or bail secured to the top of said weight.

Claim.—1. In combination with the check-rope *k*, pulley L, screw-shaft K, lever I, and shoe J, the pivoted nut *i'*, enabling positive movement to be imparted to the brake in both directions.

2. The combination of the rope B, hanger H A, bail or slide-rod *d'*, and weight D, all substantially as and for the purpose set forth.

3. The combination of the platform-rope B, drums C C', hanger H A, bail *d'*, and weight D, all arranged substantially as and for the purpose set forth.

140,787.—*Sewing-Machine.*—THOMAS L. MELONE, Mount Gilead, Ohio. Application filed May 16, 1872.

The serrated feeding-block is carried by a spring-bar, and is operated by lever K, which first strikes the incline on the feeding-block and raises it, and then engages the lug and moves it horizontally. On the return movement of the lever the spring-bar lowers the block from the cloth, and the block is then carried back as the lever strikes the opposite lug. The lever is operated by a lug on the shuttle carrying arm secured to the vertical shaft.

Claim.—1. The balance-wheel E constructed with a central cavity, F, and arranged as described, to inclose the crank B and slotted yoke C, so as to conceal and shield the same.

2. The standard Y, supporting the arm W, and constructed with the cavity V^2 V^3, and internal pendent bearing U, the driving-shaft A constructed with a crank, B, the wrist of which is oval in form, and the balance-wheel E having a cavity, F, to inclose said crank, when all are combined, and operate substantially as herein described, for the purpose set forth.

3. The feed-bar working in suitable guides and constructed with lugs S S^2 and an incline, Z, between the same, the friction-spring T, and the lever K provided with a yoke and set-screw, when combined and operating together as and for the purposes described.

140,788.—*Stove-Pipe Shelf.*—WILLIAM PATTERSON, Oneonta, N. Y. Application filed December 6, 1872.

Connected or attached to an ordinary stove-pipe by means of a wire passed around it. The holding device for the shelves is constructed with a surface fitted to the pipe, and a supporting-ring and braced projection, having on its under side a pin projecting downward, to which the shelves are attached when in use, and are held in a horizontal position by the supporting-ring.

Claim.—The arrangement and combination of the supports A A, shelves S S, and wire W, substantially as shown and described.

140,789.—*Manufacture of Soap.*—FRANCIS M. PLEINS, Dubuque, Iowa. Application filed June 19, 1873.

Claim.—1. The process of making hard soap in which rosin enters as a material in one charge, and without using muriate of soda, and commencing my process with dissolving and partly or wholly saponifying the rosin with carbonate of soda, and retaining the glycerine in it.

2. The compounding of three mixtures used in the soap to improve the same, substantially as described.

140,790.—*Electric Railroad Signal Apparatus.*—FRANK L. POPE, Elizabeth, N. J. Application filed October 24, 1872.

Secondary or tell-tale signal automatically set at the signaling-station by the primary signal, both signal mechanisms being in the same circuit. Secondary signal, actuated by a "duplex magnet," circuit through one branch, going directly to battery or ground, and through other branch to primary signal; primary signal at conclusion of setting cuts a resistance in or out of its branch of circuit, destroying equilibrium of magnets at secondary station.

Claim.—1. The arrangement, substantially as herein described, of the electro-magnet M and armature *m*, in combination with a circuit changer, N, so that the movement of said armature will cause a variation in the strength of the electric current, in the circuit which includes or operates said electro-magnet, by means of which the movement of the said armature and its attachments may be indicated or recorded at any point in the said circuit.

2. The combination of primary signal and a secondary signal or indicator, included in or operated by one and the same electrical circuit, when the movements of the latter are dependent upon and controlled by the movements of the former, substantially as herein specified.

3. The combination of the electro-magnets C and E, together with their armature or armatures, and the electro-magnet M, circuit-changer N, and rheostat R^1, or its equivalent, substantially as herein specified.

4. The combination of the electro-magnet M and its armature with the circuit-changer N or T and rheostat R^1, or its equivalent, substantially as herein specified.

140,791.—*Cotton-Gin.*—MERRILL E. PRATT, Plattville, Ala. Application filed May 13, 1873.

Revolving plates are let into recesses on opposite interior sides of the cotton-box to diminish friction.

Claim.—A cotton-box provided with the revolving plates E let into its heads or sides, substantially as shown, said plates operating as and for the purpose set forth.

140,792.—*Apparatus for Cooling Storage-Rooms.*—JOHN RING, St. Louis, Mo. Application filed May 5, 1873.

The lower chamber is cooled by air driven through tubes arranged between timbers, and covered with water from the ice placed on the timbers to keep it from contact with the water. A tube carries off any excess of water.

Claim.—In combination with the chamber B, the cooling apparatus, consisting of the ice-chamber or tank A, having ice-supporting timbers D arranged between the coils of the serpentine pipe F, and provided with the overflow-pipe E, located above the level of the top of the pipe F, and below the level of the top of the timbers D, so that the pipe F is kept immersed in the cold water dripping from the ice as it melts, while the ice is kept from contact with the water, and thereby prevented from melting too rapidly, all as herein shown and described.

140,793.—*Molasses-Pitcher.*—DANIEL C. RIPLEY, Pittsburg, Pa. Application filed March 29, 1873.

A molasses-pitcher with a saucer-shaped base to catch the drip from the spout; all made of glass.

Claim.—A glass molasses-pitcher provided with a saucer-shaped base, c, substantially as and for the purposes described.

140,794.—*Wheel or Pulley for Band-Saws.*—JOHN A. ROCHE and GERAIT V. ORTON, Chicago, Ill. Application filed March 17, 1873.

Cork is substituted for the wood commonly used for producing the required elasticity.

Claim.—1. The use of cork for wheel-rims for band-saws, for the purposes set forth.

2. The construction of the cork rim *d* in combination with the hoop *c* and the band *a*.

3. The combination of the cork rim *d*, the hoop *c*, the band *a* with the arms and hub of a wheel used for the purpose set forth.

140,795.—*Pump-Plunger and Pump.*—NATHANIEL P. SHELDON, San Francisco, Cal., assignor to HENRY H. WELCH, same place. Application filed June 2, 1873.

The cylinder and plunger are held in the well-pipe by rods and a head-piece, which is made to fit as closely as is practicable to the pipe of the well, and is provided with a packing to prevent the passage of water between the head-piece and the well-pipe. The water is discharged through the hollow rod that is attached to the plunger.

Claim.—1. In combination with the cylinder P, plunger A, and hollow rod E, the head-piece H and rods I I, for holding the cylinder in the well, pipe or tube L, the whole being constructed and arranged to operate substantially as described.

2. The head-piece H, provided with a stuffing-box, M, for the hollow rod E and a hub, to connect it to the head of the cylinder P, substantially as described.

140,796.—*Reciprocating Churn.*—MOSES W. STAPLES, Richmond, Va. Application filed March 19, 1873.

A reciprocating or swinging churn of semi-cylindrical form, its outer upper portion rising above a central opening; an interior bottom segment divided off by a perforated floor held between two abutments; an outer case affording space for a cooling or non-conducting material, through which the buttermilk may pass after the butter has formed.

Claim.—The suspended vessel A having spaces *e e*, arranged as described, and provided with a perforated plate, *b*, and ribs *f*, for the purpose set forth.

140,797.—*Water-Closet.*—JOHN H. STEVENS, Cambridge, Mass. Application filed May 29, 1873.

The tilting-pan of a water-closet is connected by a series of levers to the door, so that the opening and closing of the door insure the proper condition of the pan.

Claim.—1. The combination of the door I of a retiring-closet with the tilting-pan A of a commode located therein by means of a system of lever connections, substantially as described.

2. The convertible bell-crank or hinge connection H, composed of the members *a c* and clamping device *b*, in combination with the door I and the lever connection, to tilt the pan A, substantially as described.

140,798.—*Toy Money-Box.*—THOMAS A. TAYLOR, Salem, Mass., assignor of one-half his right to GEORGE M. WHIPPLE and A. AUGUSTUS SMITH, same place. Application filed April 24, 1873.

Having a secret lock with a drop-catch, so as to be opened in but one position.

Claim.—A toy money-box having the plates B and C arranged to slide one up on another, and provided interchangeably with the cell D and notch E, for the reception of a loose disk, *f*, the inner plate C having an aperture, A, all said parts being constructed and combined for operation substantially in the manner and for the purpose described.

140,799.—*Construction of Doors.*—WINAND W.-J. TOUSSAINT, Boston, Mass. Application filed May 14, 1873.

Claim.—A molding, extending through from one side of a door to the other side, and provided with a groove at its inner surface for the reception of the panel which it incloses, or with one or more grooves or projections for holding another molding, and provided with one or more grooves or projections at its outer surface for securing it to the door, each portion of the molding being formed of a single piece, or of two or more pieces previously united, substantially as and for the purpose set forth.

140,800.—*Knitting-Machine.*—OTHNIEL F. TRIPP, Battle Creek, Mich. Application filed April 8, 1873.

For enabling the needles to be lowered in their grooves when desired, so that their butts will not be engaged by the cams. The front end of the lever rests on the bar, in the front of the bed, as a fulcrum, and its rear end is split and spread out so that, when elevated, its sides catch over shoulders in the grooves. It has an arm that catches over a rearward extension of the needle so as to draw the latter down when the lever is depressed.

Claim.—The bed A, provided with the bar E, or its equivalent, and transverse slots S, in combination with the spring-lever C and the needle having the extension N, all constructed substantially as and for the purpose hereinbefore set forth.

140,801.—*Refining Petroleum.*—SAMUEL VAN SYCKEL, Titusville, Pa., assignor to himself and GIBBS, STERRETT & CO., same place. Application filed March 10, 1873.

Draws off such gases and lighter vapors from the oil at any suitable point between the well and tank, and conducts them to the engine-furnace, where they are usefully employed as fuel.

Claim.—1. A steam or air ejector arranged at any desired point in the gas-pipe *c*, such pipe leading to the fire from the oil-passages at any desired point between the well and tank or between the tank and fire, substantially as set forth.

2. In combination with a pipe for supplying air or steam to the oil while in its passage from the well to the tank, and a pipe, *c*, for carrying the gases and vapors over to the fire, a refrigerating or cooling apparatus applied to some part of the gas and vapor conductor, substantially in the manner and for the purposes set forth.

140,802.—*Cylinder for Lining Wooden Pumps.*—RICHMOND W. WHEELER, Bushnell, Ill. Application filed April 26, 1873.

A porcelain-lined iron cylinder is provided with a wedge-shaped flange, which permits the lining to be driven into the stock, the wood behind the flange being afterward compressed.

Claim.—The cylinder *d*, as shown, with a wedge-shaped ring, *a*, as and for the purpose set forth.

140,803.—*Machine for Cutting Off Pegs in Boots and Shoes.*—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed May 27, 1873.

The cutter-stock, shaped somewhat like the sole of a shoe, has two circular recesses formed in its upper surface for receiving two rotary cutters, which revolve in opposite directions, and is also provided with serrated faces at its ends for removing the nails or pegs from the toe or heel of the shoe. The cutting-edges are set flush with the bolts, which hold them in position; also with the surfaces which surround or inclose them, thus protecting the leather while the ends of the nails or pegs are removed.

Claim.—1. Two rotary peg-cutters, revolving and cutting in opposite directions, applied to a cutter-stock, substantially as and for the purpose set forth.

2. The flanged guard *r* applied beneath one of the cutters and working in a groove which is beneath the other cutter, for the purpose described.

3. The cutters *c* and their spur-wheels recessed into the sole of the stock A, flush with the edges thereof, and also flush with the heads of the bolts c^1 c^2, substantially as described.

4. The fixed serrated cutter *s*, combined with the rotary cutter *c* and stock A, substantially as and for the purposes described.

140,804.—*Harvester.*—ELGIN M. AWREY, Caistor, Smithville Post-Office, Canada. Application filed May 10, 1873.

A cog-wheel and pulley, by which the finger-bar is elevated, is driven by a loose pinion on the main axle, and is connected to said axle by a ratchet, which is automatically released when the finger-bar has been elevated.

Claim.—1. The combination of the wheel F G H, pawl I, chain J, loose gear-wheel K, clutch L, lever M, and spring N with each other and with the axle and frame-work of a reaper or mower, substantially as herein shown and described.

2. The combination of the adjustable block O, head-screw P, and stop Q with the wheel F G H, pawl I, chain J, loose gear-wheel K, clutch L, lever M, and spring N, substantially as herein shown and described.

3. The combination of the inclined projection *g* with the wheel F G H and gear-wheel K, substantially as herein shown and described.

140,805.—*Car-Coupling.*—EZEKIEL W. BARKER, Portland, Me., assignor of one-half his right to CYRUS S. CLARK, same place. Application filed January 30, 1873.

The entering link striking the head of the plate forces it from the notch in the pin, which falls, and with it the coupling-pin.

Claim.—The combination, in a draw-head having a flaring mouth or entrance, as shown, and projection *l* of the spring *b*, plate *e* provided with heads *f g* and slot *d*, the vertical bar *c* having the notch *h* and carrying on its upper end the arms *i n*, or the device shown at A, as herein shown and set forth, and operating as described.

140,806.—*Tobacco-Transplanter.*—CLEMENT E. BATES, South Deerfield, Mass. Application filed April 12, 1873.

The body of the machine consists of a hollow cylinder provided with handles, by which the machine is operated. The opening blades penetrate the soil while closed, and the plant is dropped root foremost, and as the openers are caused to expand scrapers sweep around and press the soil upon the roots.

Claim.—1. In a transplanter, the combination of opening-plates H with horizontally-rotating wheels F, substantially as and for the purpose specified.

2. In a transplanter, the combination of covering-paddles J and wheels G with blades H and wheels F, all operating as specified.

3. The levers L N, belts or chains I K, wheels G, paddles J, wheels F, and blades H, combined and operating substantially as described.

140,807.—*Egg-Carrier.*—JOHN A. BEAN, California, Mo. Application filed May 24, 1873.

The packing-box is provided with projections to separate it from the adjacent box. The tiers of cells have sections of cells attached to the sides, which act as springs to prevent concussion.

Claim.—1. A packing-box for eggs, having projections C D, as and for the purpose specified.

2. The tiers F of cells provided with springs G at the sides, and arranged with the case and with the separating plates and cushions, substantially as specified.

140,808.—*Water-Elevator.*—SILVESTER BENNETT, New Orleans, La. Application filed May 10, 1873.

The combination, with a spiral flange, of the cone and case, the former diverging more rapidly toward the top than the latter, so that as the diameter of the case increases upwardly the distance between cone and case correspondingly decreases, thereby preserving the same transverse area in the water-passage from bottom to top.

Claim.—The combination, with a spiral flange, F, of the cone D and case A, the former diverging more rapidly toward the top than the latter, so that as the diameter of the case increases upwardly the distance between cone and case correspondingly decreases, thereby preserving the same transverse area in the water-passage from bottom to top, as set forth.

140,809.—*Knitting-Machine.*—CORNELIUS CALLAHAN, Chelsea, Mass., assignor to himself and EDWIN E. SIBLEY, same place. Application filed June 20, 1873.

For producing a knit fabric having a loose weft-thread laid between the loops. Alternate needles are bent either inward or outward near their upper ends, so that by impinging against projections on the needle-cylinder they will, as they rise, be divided into two lines to receive the weft between them, and will return to line at the knitting-point by their bent parts passing under the projections or by being pushed outward by striking the top of the cylinder. There is a stop-motion, consisting mainly of a wheel surrounding the needle-cylinder and carrying pawls, each connected to a drop-rod suspended on a thread, the wheel being stationary and the machine operating until a thread breaks, when a pawl is lowered into engagement with a ratchet-wheel carried around with the needle-cylinder. Both wheels then move together to throw out a clutch and stop the machine.

Claim.—1. A needle for knitting-machines having an angular or bent portion, 22, below the pivot of the latch, and in that part of the needle which traverses through the loop, whereby the needles may be brought into and out of line without stretching the loops, substantially as and for the purpose set forth.

2. In combination with a series of needles, constructed substantially as described, the needle-cylinder C having alternate straight and cut-under grooves for their reception, substantially as set forth.

3. The ring L provided with pawls and drop-rods for operating the shipper by which the driving-pulley is thrown into and out of action, substantially as described.

4. The ring L, connected with the shipper and provided with a series of pawls engaging with a rotating ratchet-wheel connected with or forming a part of the needle-cylinder, in combination with the rods f^1, by which the pawls are operated on the breakage of a thread, substantially as described.

5. In combination with the ring L for actuating the shipper, the relieving-stop Q operating substantially in the manner and for the purpose set forth.

6. The drop-rods f^1 supported by the threads and passing directly down through openings g^1, in combination with the pawls and ratchet to operate the stop mechanism, substantially as set forth.

7. The drop-rods f^1 with their hooks 30, in combination with the slotted thread-guides a^1, b^1, all constructed substantially as and for the purpose described.

8. The pawls 31 provided with arms A^1 sliding through eyes at the lower ends of the drop-rods f^1, substantially as and for the purpose set forth.

9. The independent pawls 31, each connected with a separate drop-rod and pivoted on studs projecting from the ring L, in combination with the ratchet-wheel M, operating substantially as and for the purpose described.

10. The adjustable drawing-rolls T U attached to a frame revolving with the needle-cylinder and actuated thereby, in combination with a support, A^2, for the spreader placed above the rolls, substantially as described.

140,810.—*Machine for Grinding Harvester-Knives.*—JAMES M. CONNEL, Newark, Ohio.—Case B. Application filed January 9, 1873.

The conical emery-wheel is supported on an arm, and gets its motion from the driving-wheel through intermediate pinions. The arm is supported by a rest on a standard.

Claim.—1. The rest *d* formed upon the standard B, substantially as and for the purposes herein set forth.

2. The combination, with the arm D and emery-wheel E, of the cogged driving-wheel C, intermediate pinion *a*, and pinion *b*, all arranged substantially as shown and described.

3. The frames or rests G G with adjustable end pieces *f f*, substantially as and for the purposes herein set forth.

4. The adjustable guide J arranged to hold the knife-bar, for the purposes herein set forth.

140,811.—*Machine for Grinding Harvester-Knives.*—JAMES M. CONNEL, Newark, Ohio.—Case A. Application filed January 9, 1873.

The emery-block of suitable form receives its motion from the driving-wheel through intermediate mechanism, which gives it a reciprocating movement. The block moving upon the knives properly placed produces the effect desired.

Claim.—1. In combination with the driving-wheel C, bolt *b*, and arm D, the slotted standard B having holes or perforations, as described, and the pins *d d*, substantially as and for the purposes herein set forth.

2. A beveled emery-block, G, provided with diagonal channels or serrations *i i*, in the manner herein described, so that the block will cut when moving in either direction, the dust carried off, and the knives kept cool, substantially as set forth.

3. In combination with an emery-block, G or G^1, the metal band I with head *m*, flange *n*, and set-screw *p*, constructed and arranged substantially as and for the purposes herein set forth.

4. The combination of the emery-block G or G^1, band I, pitman H, crank-shaft *f*, pinion E, arm D, and wheel C, all substantially as and for the purposes herein set forth.

5. The rest K, arranged as described, to support the arm D in proper position, for the purposes set forth.

6. The brace or guide L, arranged as described, one end being secured to the handle M on the arm D, and the other end slotted and connected by a screw, *s*, with a reciprocating emery-block, for the purposes herein set forth.

140,812.—*Washing-Machine.*—JOHN W. CONROY, Terry, Miss. Application filed May 24, 1873.

Is constructed with a corrugated cylinder and a jointed curved rubber, which, by connecting-bars, is attached to a cross-bar, from which a spring is attached to an adjustable pivot with a thumb-screw, from which, by a coil, it passes over a cross-bar supported by uprights secured to the ends of the box or tub.

Claim.—The combination of the jointed rubbing-board E, pivoted bars G, cross-bar H, adjusting-bolt I, spring J, and corrugated, fluted, or toothed cylinder C, with each other and with the box A, substantially as herein shown and described.

140,813.—*Printing-Press.*—CALVERT B. COTTRELL, Westerly, R. I. Application filed June 21, 1873.

The sliders have racks by which they are geared with pinions fast to the shaft, whose cog drives the bed, whereby the sliders are prevented from moving too great a distance from the center of the bed.

Claim.—The sliders, for the reciprocating bed of a printing-press, geared with the bed and the press-frame in such a manner that they will be prevented from overrunning or retrograding relatively to the bed while being free to perform their special function, substantially as specified.

140,814.—*Waste-Removing Device for Carding-Machines.*—GEORGE W. CRAMER, Darby, Pa. Application filed June 14, 1873.

An endless apron runs lengthwise of the burr-box and carries a brush, which sweeps the burrs and waste therefrom.

Claim.—The combination of a brush and an endless carrier with the burr-box of a carding-machine, substantially as specified.

140,815.—*Supplying Oil to Street-Lamps.*—RICHARD F. DE GUIRON, Jersey City, N. J. Application filed June 12, 1873.

The oil is raised to the burner of the street-lamp from a tank beneath the sidewalk by means of compressed air. The tank is provided with a nozzle, which serves as a filling-port and as a coupling for the air-pump.

Claim.—The combination, with a street-lamp post of common form, of the separate subterranean reservoir B, the supply-pipe C extending from the burner E down through the lamp-post nearly to the bottom of the reservoir, and the cock F connected with the top of the reservoir, the whole constructed and arranged, as herein specified, to admit of pouring oil into the reservoir at ordinary pressure, and subsequently forcing air into the reservoir above the oil with any necessary pressure, or as often as may be necessary in order to elevate and consume the whole quantity of oil.

140,816.—*Hog-Trap.*—AARON B. DE VORE, Talkington township, Sangamon county, Ill. Application filed May 31, 1873.

The sides of the crib converge toward the front, where a head-lock is arranged for securing the animal. The crib has a bottom inclining where the fore feet of the animal rest, to present a sure foot-hold. For smaller animals an interior auxiliary crib is employed.

Claim.—1. The crib, constructed and arranged as described, and provided with the inclined bottom G, and open space under the neck-rest A, substantially as specified.

2. The combination, with a crib such as herein described, of an interior auxiliary crib, substantially as specified.

140,817.—*Paint for Oil-Barrels, &c.*—WILLIAM L. ELKINS, Philadelphia, Pa. Application filed June 26, 1873.

Claim.—The oil-varnish, consisting of metallic or mineral oil paint, rosin, and benzine or turpentine, compounded substantially as and for the purposes specified.

140,818.—*Insect-Destroyer.*—JOHN A. FINNEY, Nashville, Ohio. Application filed September 21, 1872.

A long tight box is mounted upon traction-wheels, the axle-tree of which passes through the rear end of the box and forms one of a pair of crushing-rollers. An endless belt with transverse slots traverses the length of the box, the upper surface moving rearwardly. A reel is attached to one side of the box, and in its revolution brushes the insects from the plants and throws them upon the endless belt, from whence they are thrown between the crushing-rollers and destroyed.

Claim.—1. The carrier-belt H provided with cross-bars, the platform I, and the bottom-slotted hopper J, combined with roller K and axle B, as and for the purpose described.

2. The combination, with endless apron H and platform I, of the spring-guard L, arranged as and for the purpose described.

3. The combination of the spring-hammers U V and stop-bar W, with the reel N, substantially as herein shown and described, and for the purpose set forth.

140,819.—*Double-Acting Force-Pump.*—JOHN P. FLANDERS, Vergennes, assignor to himself, ELI B. HAYES, same place, and H. M. MITCHELL, Burlington, Vt. Application filed April 5, 1873.

Two twin double-acting force-pumps are arranged upon a bed-frame, and connecting with suction and discharge pipes so as to discharge into one chamber. The piston-barrel is in sections, divided longitudinally, with lap-joints at the edge, so that they can contract and expand by the pressure of the water.

Claim.—1. The arrangement of the cylinders A, bed-frame B, suction-pipes C D, discharge-pipes F G, discharge-box I, and the air-chamber, substantially as specified.

2. A sectional piston-barrel, contracted upon the piston for packing it by hydrostatic pressure, applied in the manner described.

140,820.—*Ditching-Machine.*—HYACINTHE GONELLAZ, Vermillionville, La.—Case B. Application filed May 31, 1873.

The rotating colters cut the earth, which is taken up by the bucket-wheel and delivered to the discharging-pan, from which it is discharged onto the side of the ditch.

Claim.—1. The combination of the rotating colters, the rotating bucket-wheel, and the discharging-pan, the colters being arranged in advance of the bucket-wheel, as described.

2. The combination, with the bucket-wheel of a ditching-machine, of a discharging-pan arranged on a crane so as to swing around and discharge at the side of the ditch, substantially as specified.

3. The combination of the stationary cutters H′ with rotating colters, arranged between them, substantially as specified.

4. The mode of operating the machine, and also moving it along the ground by the unwinding of a rope having the power applied to it from a roller mounted on the machine and connected with the operating parts so as to work them, the forward movement of the machine being controlled or checked by cutters H′, or other regulating apparatus, substantially as specified.

140,821.—*Dredging-Machine.*—HYACINTHE GONELLAZ, Vermillionville, La.—Case A. Application filed May 31, 1873.

The bucket-wheel and discharging-pan are arranged at the bow of the boat, so that the wheel revolves at right angles to the boat and delivers the earth to the pan, which carries it to the bank. The colters are arranged in front of the wheel, and are so inclined as to draw the boat forward at the same time that they loosen the earth.

Claim.—1. The combination, in a dredging-boat, of a bucket-wheel, C, and discharging-pan D, and their operating devices, arranged to discharge the earth dredged up laterally to the boat and onto the bank of a river or canal, substantially in the manner described.

2. The colters F, arranged on the front of the dredging-wheel, and inclined so as to pull the boat along by the act of cutting down the bank preparatory to the taking of it by the spoons.

140,822.—*Grain-Binder.*—JAMES F. GORDON, Rochester, N. Y. Application filed October 24, 1872.

The head of the wire twister is provided with a groove in which one end of a spring-arm is placed, said groove and arm passing the opening for the wire for the purpose of clearing the wire from the twisting-head in its backward movement.

Claim.—A wire twister-head, in combination with a clearer A, or its equivalent, arranged to operate conjointly, as and for the purposes set forth.

140,823.—*Grindstone.*—JAMES F. GREEN and SIDNEY H. GREEN, Haverstraw, N. Y.—Application filed May 5, 1873.

The crank-shaft is detachable. A bushing is cemented in the central aperture. The shaft is provided with a fixed collar having a recess for the reception of a screw, by means of which it is secured to the bushing.

Claim.—1. The side bushings B, having projecting teeth *a* and aperture *b*, for the purpose described.

2. The crank C, having flange D with recess *c*, to insert screws *d* and connect the crank with the bushings, as described.

140,824.—*Meat and Vegetable Cutter.*—JERRY R. HALL and CHARLES H. ELLIS, Salem, Ohio; said HALL assignor to said ELLIS. Application filed March 6, 1873.

The cutter-head is removable, and the knives are arranged so that they project near the rim of the hopper on opposite sides. The circular cutting-block is pierced transversely to permit circulation of air and prevent warping. The block and hopper are rotated by means of a bevel-gear underneath and ratchet-and-pawl mechanism operated from the main arm.

Claim.—1. The removable cutter-head H, in combination with the knives *d d* having their points arranged in opposite directions, for the purpose specified.

2. The cutting-block I, provided with holes *e f* and a hopper, substantially as and for the purpose specified.

3. The combination, in a meat and vegetable cutter, of a perforated cutting-block with a rotating mechanism, substantially such as described.

4. In a meat and vegetable cutter, the combination and arrangement of the crank *b*, pitman *a*, open arm G, cutter-head *c*, cutters *d*, and stanchion F, in the manner described.

140,825.—*Tassel for Canes and Umbrellas.*—WILLIAM HARNACK, New York, N. Y. Application filed May 5, 1873.

A cane or umbrella tassel made of paper in imitation of leather.

Claim.—As a new article of manufacture, the tassel, consisting of the slitted paper A, covered with water-proof and leather-colored varnish, and combined with the leather braid B, as and for the purpose described.

140,826.—*Weighing Attachment for Wagons.*—JACOB W. HILL, Jefferson, Iowa. Application filed March 1, 1873.

The bolsters are formed with V-grooves on top for receiving angular cross-pieces, by which the wagon-body is supported and by which it is lifted, through suitable levers, when it is desired to throw the weight upon the weighing-levers.

Claim.—The weighing attachment hereinbefore described, formed of the graduated beam O pivoted to a fixed support, P, on the reach, the convergent weighing-levers K having their fulcrums on bars L pivoted to hand-levers M, the false V-shaped bolsters H, and grooved and slotted bolsters B F, all arranged as shown and described, to operate as specified.

140,827.—*Last Block Fastener.*—DAVID HUARD, Ashland, Wis. Application filed May 10, 1873.

The fastener is attached to the heel portion of the last and hooks over a pin upon the instep-block, being locked in position by the shape of the slots, which permit it to slide back after catching the pin.

Claim.—The block-fastener C, having slotted recesses *a c*, pivoted by button *d* to block A, substantially as set forth.

140,828.—*Inhaler.*—CLIFTON D. HUNTER and ERASTUS S. WOODS, Marlborough, Mass. Application filed May 31, 1873.

A T-shaped tube is inserted in the cork, and has upon one end of the horizontal part a rubber tube and upon the other a valve opening outward, so that if the patient accidentally blows in the tube the air will pass out the valve, and thus not force up the liquid into the acid-bottle.

Claim.—The T-shaped tube, the under portion 10 of which enters the stopper, while the horizontal portion 11 has at one end the elastic tube C and at the other end a valve, all constructed and arranged substantially as and for the purpose described.

140,829.—*Rubber Shoe.*—LEWIS L. HYATT and JARED H. CANFIELD, New Brunswick, N. J. Application filed April 5, 1873.

A rubber shoe has its upper made of one piece, which is thick and strong at its junction with the sole and gradually lessening in thickness from the bottom upward.

Claim.—A one-piece rubber "upper" made thick at *a a* and thin at *b*, as and for the purpose described.

140,830.—*Hose-Coupling.*—SIMON INGERSOLL, Stamford, Conn. Application filed May 31, 1873.

Short sections of metallic tubes are coupled together by a screw-collar swiveled on to one of them. Each section is provided with a clamp composed of two semicircular parts, connected together by flanges and bolts, for clamping on hose to the metallic tubes by stud-pins, which prevent the hose from slipping off the tubes endwise.

Claim.—The combination, with the metal pipe-sections A B, coupled together as described, of the clamps D F G connected to them by ears and stud-pins, substantially as specified.

140,831.—*Railroad-Car Stove.*—WARREN S. JONES, Damariscotta Mills, Me. Application filed March 29, 1873.

Claim.—An improved railroad-car stove, formed of the bottom A, double top C D, double walls B G, partitions H H′ H″, collar S, doors E J L, and lock-pin N, said parts being constructed and arranged to operate, in connection with each other, substantially as herein shown and described.

140,832.—*Sharpening-Machine.*—JAMES P. KEALY and JOSEPH RIGNEY, Bridgeport, Conn. Application filed March 29, 1873.

The machine being adjusted to the lathe-center, is turned by the crank with one hand to revolve and traverse the grinder, and the worm is shifted from time to time by the other hand when it is required to change the feed-screw.

Claim.—The combination of a traversing lathe-center grinder, a frame adapted for being supported in the tool-post of a lathe, and an automatic feed-screw for traversing the grinder, the grinder and the feed-screw being actuated independently of the lathe, substantially as specified.

140,833.—*Tail-Coupling.*—CHARLES F. KIDDER, Millbury, Mass. Application filed April 21, 1873.

The thill-eye is held in connection with the shackle-bolt by the hinged brace which is held down on the rests, so that its concave end is pressed against the thill-eye by a bolt having an elongated head which engages between lugs on the bottom of the rests, and is tightened by a thumb-screw on the other end of the bolt.

Claim.—1. The combination, with the grooved supporting part A of the shackle, of the hinged shackle-brace D, holding-screw F, and bolt-head brace F′, substantially as and for the purposes set forth.

2. The combination of the peculiarly-constructed thumb-bolt F, having head-brace F′, with the shackle-brace D and slotted shank A, having lugs i^1 i^2 i^3, substantially as described, and for the purposes set forth.

3. The combination of the slotted eye *c* of the shaft-iron with the shackle-bolt E and hinged shackle-brace D, substantially as and for the purposes set forth.

140,834.—*Coupling for Gas and Water Mains.*—WELLS KILBURN, Napa, Cal. Application filed March 10, 1873.

Two eccentrics operating upon opposite sides of the coupling by straps passing around each of them, and over a pin upon the other part of the coupling, so that when the eccentrics are turned so as to draw on the straps it brings the parts closely and firmly together.

Claim.—A pipe-coupling, consisting of the cams or eccentrics F, with their straps H, together with the pins J, upon the two parts of the coupling, respectively, when constructed to operate substantially as and for the purpose herein described.

140,835.—*Pavement.*—WELLS KILBURN, Napa, Cal. Application filed March 24, 1873.

The blocks are formed of artificial stone, and have rabbets formed on their upper and lower faces, the sides of the lower portion being beveled, and they are so placed as to overlap each other for mutual support, a space being left between the upper edges to be filled with gravel. Where the pavement is to slope from the center to the curb, a central key-block, having both rabbets on its upper face, is used.

Claim.—1. The described pavement, composed of blocks having the rabbets B, beveled sides B^2, and space C between the blocks, as and for the purpose described.

2. The blocks or keys F, provided with double-surface rabbets B^2, substantially as and for the purpose specified.

140,836.—*Ladies' Gaiter-Shoe.*—HENRY C. LETSINGER, New York, N. Y., assignor to EDWIN C. BURT, same place. Application filed May 24, 1873.

Claim.—A lady's gaiter having the vamp made in one piece with one half quarter and seamed to the other half quarter, the seam commencing at the junction of the overlapping parts, and terminating in the shank between the heel and sole, as and for the purpose set forth.

140,837.—*Shaft-Furnace for Roasting Ores.*—THOMAS MCGLEW, Austin, Nev. Application filed April 9, 1873.

Combining, in a roasting and chloridizing furnace, the principles of the stack or upright furnace, and of the reverberatory furnace, so that the ore, in falling through the upright portion of the furnace, will come in contact with the heat and blast from one or more blast-furnaces situated at different points along its descent, and finally fall upon a hearth over which the combined heat and blast from all of the furnaces pass to the chimney of draft-flue. A blower is connected by pipes with each of the fire-places, and a cock or valve is connected with each of the pipes by which the air from the blower can be regulated.

Claim.—In an ore roasting and chloridizing furnace, the fire-places D E F on different horizontal planes, and with the draft arranged, as shown, so that it will strike and scatter the falling ore, in combination with the inclined passage-way H, blower J, hearth B, and chimney C, all constructed and arranged substantially as and for the purpose set forth.

140,838.—*Apparatus for Scraping Hogs.*—ORISON MCNEIL and PETER W. DALTON, Jersey City, N. J. Application filed March 1, 1873.

The hog is drawn, by a moving endless hooked chain, through a series of vertical and horizontal yielding blades with concave edges moving in ways secured to the upper part of the frame work, said chain being guided, by two grooved rollers at opposite ends of the frame-work, over small intermediate friction-rollers.

Claim.—The combination of the carrying-rollers K with the notched blade and the hooked chain, substantially as specified.

140,839.—*Fire-Proof Shutter.*—ISAAC S. METTLER, Jersey City, N. J. Application filed June 21, 1873.

The shutter is composed of hollow metallic sections open at the ends, which slide vertically. The open ends afford a free cir-

culation of air in case of fire, counterpart slots being formed in the casing for that purpose.

Claim.—1. A door or window shield or protector with openings I, by means of which a free circulation of air, laterally, is secured through the protector, substantially as shown and described.

2. A window or door protector constructed of sections formed of two or more sheets or plates of metal which are arranged to be raised and lowered vertically for the purpose described.

3. A window or door protector consisting of two or more sections having horizontal openings for the passage of air, whether such sections have a corrugated plate intervening or not.

140,840.—*Preparation of Solder for Sealing Oyster and Fruit Cans.*—EDMUND MORRIS, Burlington, N. J. Application filed December 3, 1872.

Claim.—A ring made of solder-wire, coated or supplied with resin, substantially as described, and for the purpose set forth.

140,841.—*Cotton-Press.*—JAMES P. PRIDGEON, Marion Court-House, S. C., assignor to J. P. PRIDGEON & Co., same place. Application filed May 10, 1873.

The follower is operated by means of levers which are arranged below and are connected at one end to the follower, while at the other end wheels are provided which run upon a suitable track. These levers are operated by means of a rope, which also assists in raising the follower.

Claim.—The combination, with the press-box and follower C provided with pulleys N, of the cords or ropes I, windlass H K, arms D, pulleys M O, rollers F F, and track or way S, all constructed and arranged as shown and described.

140,842.—*Pencil-Case.*—SAMUEL S. REMBERT, Memphis, Tenn. Application filed April 19, 1873.

A perforated septangular cap, carrying the days of the week, is adjustable upon the case which carries the days of the month. A case slides within the outer case, both carrying scales. The common lead-pencil is fitted within this compound case, and may project through the cap.

Claim.—1. The cap E, perforated as shown, in combination with the case B, said parts being inscribed with the letters and numbers indicating the days of the week and month respectively, as shown and described, for the purpose specified.

2. A pencil-case formed of the two parts A and B, one sliding in the other, and graduated to indicate inches and fractions of an inch, as described, to adapt it for use as an extension rule.

140,843.—*Heating-Stove.*—JACOB L. RING, Mt. Pulaski, Ill. Application filed March 29, 1873.

Claim.—The combination of combustion-chamber A, pipe D, hot-air chamber G having register at the top, the circumjacent drum F and exit-pipe I, constructed and relatively arranged as and for the purpose described.

140,844.—*Spike.*—GEORGE N. SANDERS and GEORGE N. SANDERS, Jr., New York, N. Y. Application filed April 8, 1873.

Claim.—The spike A B C D E, with the shoulder C, neck D, tail E, and bevel *f g*, substantially as described.

140,845.—*Cigar-Machine.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed April 14, 1873.

The passage for the tobacco to the sizing-chamber is made to expand and contract as the cutting and feeding proceeds, thus lessening the frictional resistance. One side of the sizing-chamber is formed in grooves corresponding to the grooves or bars of a hinged throat-plate.

Claim.—1. The throat or passage K, arranged to expand and contract in timely relation to the movement of the knife, substantially as described.

2. The transversely ribbed or grooved bar N, forming one side of the sizing-chamber, in combination with a grooved or barred throat-plate.

140,846.—*Cigar-Machine.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed January 2, 1873.

A series of rollers, partly upon fixed and partly upon movable supports, close around the cigar, rolling it into shape. A curved apron, acting concentrically with the movable rollers, moves forward through frictional contact with the rollers or heads carrying the cigar-bunch until the rollers are completely closed, when it falls back to its normal position and permits the cigar to drop out, when the rollers are again separated.

Claim.—1. The combination of the circumferentially-grooved roll B' with the ribs or bars *c' c' c'* o the movable apron E arranged to cover and uncover the space *e* when receiving the loose filler and discharging the bunch, substantially as described.

2. The apron E receiving a forward movement conjointly with the primary closing movement of the rolls, and also receiving an independent backward movement toward its normal or receiving position upon the complete closing of the rolls, substantially as described.

3. A frictional connection between the head A', or any of its attachments, and the apron E, operating to transmit a forward movement to the apron during the closing movement of the rolls, substantially as described.

140,847.—*Cigar-Trimmer.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed October 26, 1872.

An inclined bed, the lower part of which is a covered passage—receives the cigars, which roll down through the passage into buckets or grooves upon a revolving cylinder, in which the cigars are carried against a stationary jaw or knife, which trims the ends, a cam serving to adjust the cigar longitudinally.

Claim.—1. The combination of the moving jaw D with the stationary jaw E, and carrying-bucket *c*, operating substantially as described.

2. The cam K in combination with the jaws D and E, and bucket *c*, operating substantially as described.

3. The passage A, or its equivalent, in combination with the jaws D and E, and bucket *c*, substantially as described.

4. The guard I in combination with the passage A, or its equivalent, jaws D and E, and bucket *c*, operating substantially as described.

140,848.—*Machine for Making Cigar-Bunches.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed July 8, 1872.

The tobacco is thrown into a hopper having two transversely-barbed cylinders at its base. The hopper is vibrated by means of a crank-shaft and cam and a reacting spring, a cam combined with this mechanism serving to give a less frequent intermittent action to these rollers, which force the tobacco down, whence it is automatically carried horizontally and delivered into the sizing-chamber, previously to which it is stricken by a die which cuts off the filler, excising therefrom a portion of the ends. It is then automatically delivered from the sizing-chamber.

Claim.—1. The combination, in a cigar-bunching machine, of a primary feeding device, actuated by rigidly or positively operating mechanism, with a regulating mechanism for controlling the extent of such movement as desired, and a reciprocating yielding feeding mechanism, the whole operating substantially as herein specified.

2. The combination of a grated or barred chamber or passage, L, with a reciprocating yielding feeding device, substantially as and for the purpose described.

3. The combination of a knife or gate, U, passage L, feed-rolls C C, and vertically-vibrating or rocking hopper B, substantially as described.

4. A knife or gate, U, with the thickened end or ends for operating in the corresponding die *u*, substantially as and for the purpose specified.

5. The combination of the movable back *y* of the chamber Y with the rods *i i* and obstructing-bar *l* or its equivalent, operating to discharge the filler upon the backward movement of the chamber, substantially as described.

140,849.—*Cigar-Wrapping Machine.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed November 29, 1872.

The die which forms the tip of the cigar has a vibratory motion imparted to it in order to lessen friction and prevent injury to the wrapper. The forward movement of the plunger, which pushes the cigar into the head of the machine, is modified by a friction-joint to give the required pressure. A friction-clasp is employed in connection with the driving-power and the hand-crank to regulate the motion of the machine.

Claim.—1. A cluster of rolls, A A, in combination with a vibrating heading, B, arranged to operate upon the head of a cigar, substantially as described.

2. A plunger, F, arranged substantially as described, receiving an automatic movement through suitable mechanism, including a yielding friction-joint, thereby operating upon the cigar with a uniform pressure.

3. In combination with the opening and closing rolls of a cigar-machine, a cam, U, and sliding bar S, operating to move the plunger back in timely relation to the opening of the rolls, substantially as described.

4. In a cigar-wrapping machine, a friction-clamp, *s*, or its equivalent, when interposed between the driving-pulley F and the rolls A A, and also combined with a hand-crank, *m*, substantially as described.

140,850.—*Apparatus for Arranging Cigar-Fillers.*—SOCRATES SCHOLFIELD, Providence, R. I. Application filed October 26, 1872.

The tobacco is arranged upon separately-removable plates. A knife works through an upper slotted plate and between the lower plates, and divides the tobacco into "bunches" of the proper size for a cigar-filler, after which each section may be removed and its contents deposited upon the endless apron of a cigar-machine.

Claim.—1. A bed or flooring, composed of separately-removable plates D D, for the primary deposit and arrangement of cigar-filler tobacco, substantially as described.

2. The removable slotted plate E, in combination with a grooved or slotted bed, upon which the sheet or layer of tobacco is first formed and afterward divided into the proper sections or strips, substantially as described.

140,851.—*Mirror-Holder.*—WILLIAM SIMPSON, Berlin, Canada. Application filed March 1, 1873.

A wire-holder having a loop-apex, equal sides, and extensions provided with suitable ends for attachment to the sides of the frame.

Claim.—A wire-holder, B, having a loop-apex, *a*, equal sides *b b*, and extensions *d*, with end *e*, arranged and applicable as and for the purpose described.

140,852.—*Clamp.*—JOHN E. SINCLAIR, Worcester, Mass. Application filed November 11, 1872.

The clamping-jaw, composed of two arms and pivoted at *c*, is "set" upon the bar by means of a screw.

Claim.—The combination of the piece *a*, the movable piece *b*, the lever *c*, and the screw *d*, or their equivalents, by means of which the results described may be produced.

140,853.—*Miter-Box.*—GRENVILLE M. STEVENS, Portland, Me. Application filed March 5, 1873.

The saw-teeth, when the cut is about completed, impinge upon rotary disks of India rubber to protect the stock-board.

Claim.—1. The combination of the stock *a*, lever *d*, slot *e*, saw-guides *f f* and *g g*, spring-catch *i*, perforations *w w*, perpendicular guide *n*, disks *o o*, guide *p*, and stop *q*, in the manner and for the purposes as set forth.

2. The elastic rotary disks *o o*, when used in the manner and for the purposes as set forth.

140,854.—*Windmill.*—JOHN F. STEWART, Modesto, Cal. Application filed May 19, 1873.

A duplex or balanced wind-wheel so constructed that the action of the rudder-vane will turn the box and cause it to carry the wheels out of the wind as it increases in intensity. The weights bring the wheels back again when the wind lulls, thus providing a self-regulating windmill.

Claim.—A duplex or balanced self-regulating windmill, having the shaft *e*, wind-wheels F, transverse rudder-vane G, cords *t*, and weight *p*, all arranged and combined substantially as above described, and for the purposes set forth.

140,855.—*Combined Spade and Fork.*—HEBER STONE, Galveston, Tex. Application filed February 17, 1873.

A fork provided with a cover made in the form of a shovel, into which the fork is inserted when a shovel is desired.

Claim.—The sheath or pocket E, formed of sheet metal and provided with the hinged section *b* and projections *d*, whereby it is adapted to be applied and secured to a fork by means of a ring, *c*, as shown and described.

140,856.—*Bed-Bottom.*—JONATHAN V. TAYLOR, La Cygne, Kans. Application filed April 19, 1873.

There are two frames with levers pivoted to a central bolt and connected by longitudinal straps or webbing. Slotted brackets are fastened to the head and foot boards, in which pendent screws with nuts are placed for the adjustment of the frames.

Claim.—1. The two frames C D F D and B D F, connected by longitudinal straps G and pivoted at the ends on a common cross-bolt, A, so that the inclination of the bed-bottom, from head to foot, may be produced or changed in the manner described.

2. The slotted brackets K on bedstead, and the pendent screws J on bed-bottom combined, as described, with the nuts L to hold the head and foot at the desired relative adjustment.

140,857.—*Box-Scraper.*—ABRAHAM TESTER, Brooklyn, N. Y., assignor to himself and JOHN CUNNINGHAM, same place. Application filed November 16, 1872.

The blade of the scraper is braced by the rod and nuts.

Claim.—The combination of the rod *d* and nuts *f f* with the pivoted blade B of the scraper, as and for the purpose specified.

140,858.—*Adjustable Scaffold.*—JOHN S. TILLEY, West Troy, N. Y. Application filed June 7, 1873.

The trestle has a rising standard, vertically adjustable to different heights, for plasterers' use, and the top thereof has a pair of adjustable plates which can be arranged either vertically or horizontally, so as to sustain a plank edgewise or flatwise to form a platform, as may be desired. The legs fold up for portability.

Claim.—1. The combination of the vertically-adjustable standards, having the adjustable plates J with the trestles A B, substantially as specified.

2. The heads A and legs B jointed together and arranged in relation to the shoulders D and the ends of the legs, as described.

140,859.—*Roll for Cigar-Machines.*—DANIEL A. WIGHTMAN, East Greenwich, assignor to SOCRATES SCHOLFIELD, Providence, R. I. Application filed November 22, 1872.

A central shaft supports a flexible tube of greater diameter than the central portion of the shaft, by which form and arrangement the tube is made to conform to the shape of the cigar-bunch, the middle portion of the tube being forced to revolve eccentrically while the ends move concentrically with the shaft.

Claim.—1. A revolving shaft, A, in combination with a loose flexible covering, C, arranged to operate with a varying eccentricity in forming a cigar-bunch, substantially as described.

2. The combination of a friction-roll, B, with a flexible tubular covering, C, and revolving shaft A, substantially as described.

140,860.—*Machine for Making Cigar-Bunches.*—DANIEL A. WIGHTMAN, East Greenwich, assignor to SOCRATES SCHOLFIELD, Providence, R. I. Application filed July 8, 1872.

The tobacco, being placed in the hopper, is carried by revolving spurs into the channel H. A knife divides off the "bunch;" another knife divides the traveling layer of tobacco, controlling its forward movement as produced by the alternately and intermittingly acting spur-rollers. The sizing-chamber has a hinged lower jaw, which is opened to release the "bunch" by means of a projecting cam-slide. The feed-throat is formed wholly or partially of bars which have their bearings upon the shafts between the feed-disks.

Claim.—1. The feeding-rolls C^1 and C^2, or any equivalent feeding devices, in combination with a throat or passage, H, and knife or gate *j*, when the said feeding devices are controlled in their forward movements in such a manner that one of them will be caused to operate when the gate is raised, and the other when it is down, substantially as described.

2. The sizing-chamber I, with a hinged lower jaw, in combination with the arm *a*, pin *b*, and the cam-slide *c*, or their equivalent, operating substantially as described.

3. A throat or passage, H, when formed either on one or both sides by the bars *k k*, arranged between the spur-disks C C upon a shaft, *m*, substantially as described.

140,861.—*Machine for Making Cigar-Bunches.*—DANIEL A. WIGHTMAN, East Greenwich, assignor to SOCRATES SCHOLFIELD, Providence, R. I. Application filed November 21, 1872.

The tobacco-feeder is operated by a weight or spring which is wound up automatically by a cam movement.

Claim.—The combination of a sizing-chamber, D, knife F, throat or passage Y, and roll C with a ratchet movement, M N, operated by a spring or weight, substantially as described.

140,862.—*Barrel-Hoop.*—HENDERSON WILLARD, Grand Rapids, Mich. Application filed April 14, 1873.

The lock is made without shoulders, and after the ends are put together they are secured by nails or rivets.

Claim.—As an article of manufacture, a hoop with scallop-lock, substantially as shown and described.

140,863.—*Paper-File.*—JOHN F. WINTER, Brooklyn, N. Y. Application filed May 31, 1873.

The fold of the sheet is placed under one of the longitudinal strings and held in place by a loop or knot made with the tying-string.

Claim.—The paper-file consisting of piece A, having longitudinal strings B and binder-string C, and strings D and needle E, substantially as and for the purpose described.

140,864.—*Floor.*—LEVI S. WOOD, Marion, Iowa. Application filed May 31, 1873.

The tension-rod and breech-blocks are used in connection with the joists of a floor to give strength and rigidity.

Claim.—The bridging D and the rod C, in combination, substantially as and for the purposes described.

140,865.—*Treadle of Sewing-Machines.*—WILLIAM D. WOOD, Mount Sterling, Ohio, assignor to himself and JOHN CLAMBIDGE, same place. Application filed June 7, 1873.

The wheel is started by movement of the pedal and is prevented from running the wrong way.

Claim.—The combination, with the wheel A, of the bell-crank lever E, the pawl-lever B, provided with inclined plane G, and the pivoted pawl D, substantially as shown and described.

140,866.—*Medical Compound.*—THOMAS T. WRIGHT, Memphis, Tenn. Application filed June 13, 1873.

Apple brandy, loaf-sugar, black pepper, (pulverised,) gum camphor.

Claim.—A medicine composed of the ingredients above enumerated, mixed and compounded in about the proportions and manner herein specified, and for the purpose set forth.

140,867.—*Dial for Pressure-Gages.*—JOSEPH ASHTON, New York, N. Y. Application filed September 16, 1872.

The graduations or figures are marked on small plates, held in place on a circular recess or slot in the dial, so as to be capable of independent adjustment, to meet any changes in the indication of the instrument.

Claim.—1. The independently-adjustable plate B, showing figures, numerals, words, or letters, in combination with the dial A of the gage, for operation substantially as herein set forth.

2. The dial A, constructed with a curvilinear slot, *c*, and bridge-piece *d*, in combination with the adjustable plates B provided with studs *e*, substantially as shown and described, for the purpose specified.

140,868.—*Invalid-Chair.*—THOMAS ARMSTRONG, Sandwich, Ill. Application filed June 14, 1873.

To a suitable base, near its center, is hinged a seat, and to this is hinged the back. To the top of the back are pivoted levers and a rack for adjusting the back and seat, by arms and levers. The foot and leg rest are connected by levers and adjusted by the same rack.

Claim.—1. In an adjustable chair, the combination of the frame A, the bars D and B with the hinges *d* and *b*, the elongations D', the levers K, and the pins *b'*, constructed and arranged substantially as specified.

2. In an adjustable chair, the combination of the bars D B G, the hinges *d g*, the connecting-rods K L, and the supporting-arms O, constructed and arranged substantially as specified.

140,869.—*Sifter.*—ALFRED BANDELL, Williamsburg, N. Y. Application filed April 25, 1873.

The movable portion to which the sieve is attached is held in place by means of a lip secured to the stationary body opposite the operator, while the downwardly-inclined handle tends to hold down the other side when in operation.

Claim.—The body C having the segmental lip *b* and stops *c c*, in combination with the body A having the conical flange E, sieve B, flange *a*, and inclined handle D, substantially as described.

140,870.—*Summer Stove.*—WILLIAM A. BARLOW, Chicago, Ill. Application filed May 19, 1873.

Air enters the chamber near its top, passes downwardly and thence up through the bottomless fire-pot. The products of combustion pass out through a central flue extending up within the fire-pot. The bottom of the air-chamber is provided with openings and a shaker surrounding the central flue.

Claim.—1. The chamber D, provided with a damper, the central flue, and the registered or grated annular bottom G H, all combined to operate in the manner set forth.

2. In combination with the air-chamber D of the summer stove having the central draft-passage and the annular grated or registered bottom, the bottomless fire-pot I, substantially as shown and described.

3. In a summer stove, the chamber D and central escape-flue F, and annular grated or registered bottom, in combination with the escape-flue M C', substantially as shown and described.

140,871.—*Reciprocating Churn.*—ELIJAH BARNETT and GEORGE W. FENIMORE, Franklin, Tenn., assignors to WM. H. KIRKPATRICK, same place. Application filed December 13, 1872.

Action is given to the dasher-rod directly from the main shaft or intermediately from a supplemental shaft to change the speed of motion.

Claim.—The supplementary shaft L, gear N, rod K, and adjustable cross-bar M, arranged in relation to the main driving-shaft G, gear O, the dasher-shaft, and the guide-bar C, as shown and described.

140,872.—*Steam-Generator.*—ISAAC BARTON, Williamsport, Pa. Application filed March 24, 1873.

The boiler has two sets of tubes, the lower shorter than the upper in order that a chamber may be formed with a crown-sheet under the longer set of tubes. Drop circulating-tubes from the rear crown-sheet extend down into the combustion-chamber. The front crown-sheet is convex, leaning toward the rear, having a sediment blow-off pipe. The bridge-wall is hollow and communicates with the water-legs. A hot-air supply from the ash-pit is provided under the bridge-wall. The boiler is also provided with a front and back smoke-box.

Claim.—1. The combination of the double set of return-flues G L, the front and rear smoke-boxes K S, the fire-box B, the crown-sheet A, the water-legs or sides C, the back tube-sheet H, and the upper back crown-sheet I, when said sheets H and I and the other parts above named are arranged in relation with each other, substantially as specified.

2. The combination of the air-distributing box P with the hollow bridge-wall Q and water legs or sides C C, with which said bridge-wall connects, substantially as and for the purposes specified.

140,873.—*Band or Hoop Tie for Cotton-Bales.*—ELEAZAR J. BEARD, St. Louis, Mo. Application filed May 1, 1873.

Claim.—The bale-tie, formed by looping one end of the band into the recess *a* cut in the edge near the other end of the band, and locked by rivet a^2 near the recess, and rivet a^1 at the extreme end, substantially as shown and described.

140,874.—*Sewing-Machine Table.*—JOSEPH BENNOR, Philadelphia, Pa., assignor to NESBIT D. STOOPS and JOHN B. MYERS, same place.—Case A. Application filed May 9, 1873.

When the cover is used as an extension of the table-top the cover and top are connected at the top by fixed hooks and eyes, and at the bottom by a jointed arm and hook pivoted on the inner side of the cover and engaging with a pin on the table-leg. When not required for use this jointed arm is swung back under the cover.

Claim.—1. The combination of the hinged arm I, having a hook, J, bracket K, and spring M, with the frame D and cover B, substantially as and for the purpose set forth.

2. The combination of the extension hook J with the arm I, frame D, cover B, brackets E E, and hooks F F, substantially as and for the purpose above described.

3. The V-shaped stop *j* of the arm I, in combination with the grooves *k* and *k'* of the bracket K and spring M, as and for the purpose set forth.

140,875.—*Sewing-Machine Table.*—JOSEPH BENNOR, Philadelphia, Pa., assignor to NESBIT D. STOOPS and JOHN B. MYERS, same place.—Case B. Application filed May 9, 1873.

A bracket is hinged to the under side of the table and swings outward, and the head engages with the inner surface of the vertical side of the cover when it is used as an extension to the table. A spring-pin is connected with the hinged bracket and engages with the fixed support of said bracket.

Claim.—1. The swinging bracket C, in combination with the casting D and cover B, for holding the cover in its level connection with the table-top A, substantially in the manner above described.

2. The spring-pin E, in combination with the bracket C and casting D, substantially as and for the purpose set forth.

140,876.—*Sewing-Machine Table.*—JOSEPH BENNOR, Philadelphia, Pa., assignor to NESBIT D. STOOPS and JOHN B. MYERS, same place.—Case C. Application filed May 9, 1873.

The under side of the table is provided with swinging brackets having hooks and lugs, said hooks engaging with staples on the side of the detachable cover, when said cover is used as an extension of the table.

Claim.—The combination of the swinging brackets C C having hooks *c c* and lugs *d d*, top A, and cover B having staples E E, substantially in the manner and for the purpose above described.

140,877.—*Extension-Table for Sewing-Machines.*—JOSEPH BENNOR, Philadelphia, Pa., assignor to NESBIT D. STOOPS and JOHN B. MYERS, same place.—Case D. Application filed June 12, 1873.

Sliding and swinging brackets are arranged under the table top that engage with eye-plates attached to the side of the cover. The top of the table is provided with studs that enter slotted plates on the lower edge of the cover, and one of the studs has a vertical hole in which plays a drop-bolt.

Claim.—1. The swinging and sliding brackets I I, in combination with the holders J J and eye-plates H H and H' H', substantially in the manner and for the purpose above described.

2. The combination of the slotted plates C, C, and C' of the cover B with the studs D, D, and D' of the top A, the said studs having necks *d*, and the stud D' a vertical hole, *e*, in combination with the drop-bolt E, substantially in the manner and for the purpose set forth.

140,878.—*Device for Transferring Motion.*—WILLIAM H. BENSON, Waynesborough, Va. Application filed March 22, 1873.

When the shaft A is put in motion it will be communicated by the connecting-lever D to the shaft B, the rotation of the shafts being in opposite directions.

Claim.—The sliding lever D, slotted at *a* and *b*, in combination with the guide-pin *c* and the crank-arms A and B, substantially as specified.

140,879.—*Pneumatic Apparatus for Elevating Water.*—JAMES M. BLANCHARD and WILLIAM E. PRALL, Washington, D. C. Application filed June 9, 1873.

Two or more tanks having induction-valves are connected with a compresser by means of pipes having suitable valves, which are to be opened and closed automatically. As the air is forced into one of the tanks the water is expelled. The compressed air from this tank is then allowed to pass into the compressing-cylinder in the rear of its piston, so as to cause its force to act in the direction in which the piston is moving, and thus aid in transferring the air from one tank to the other.

Claim.—In an apparatus for raising and forcing water by pneumatic pressure, the combination of an air-compressing cylinder, two or more water-tanks, and suitable pipes and valves for conducting and controlling the movements of the air, the construction and arrangement of the parts being such that the reflex force of the compressed air is made to act alternately upon the opposite sides of the piston of the compressing-cylinder, and thus aid in its transfer from one of the water-tanks to the other, substantially in the manner and for the purpose set forth.

140,880.—*Reciprocating Churn.*—LEVI ISAAC BODENHAMER, Kernersville, N. C. Application filed January 10, 1873.

A perpendicular reciprocating churn having radial arms carrying vertical dash-boards at their extremities, and a deflecting concavo-convex disk beneath the lid.

Claim.—In combination with the churn A, the dasher B, consisting of the slats *a* and *b*, and having attached to the upper portion thereof, within the churn, the deflector *m*, all substantially as described.

140,881.—*Manufacture of Hollow Rivets.*—MELLEN BRAY, Newton, Mass. Application filed March 17, 1873.

The die is such as is now commonly used for forming a head upon the closed end of a tube, but to increase the size of the head a short section of tube (closed or not at one end) is in this instance placed either upon or within the main tube, and both are then flattened together.

Claim.—1. In the process of forming a hollow rivet, by upsetting the end portion of a closed tube, the combination, with the closed end of the tube, of a secondary or supplementary piece of tube, to be upset to furnish additional material to form the head of the rivet, substantially as described.

2. The hollow rivet, formed by the process herein described, as a new manufacture.

140,882.—*Crane.*—ROBERT BRIGGS, Philadelphia, Pa. Application filed June 26, 1873.

The endless driving-rope passes around the pulley on a driving-shaft adapted to fixed bearings clear of the crane. The rope takes the course around the horizontally-arranged pulley revolving freely on a pintle of the frame; a second endless driving-rope passes around the same pulley over guiding-pulleys on the shaft and around pulleys on the other shaft, through which motion is communicated to the hoisting-gear and chain-barrel.

Claim.—1. The combination, with a crane, of a double-grooved pulley, D, deriving its motion from a driving-pulley clear of the crane, through the medium of an endless rope, A, and having its motion transmitted through another endless rope, A', to the driving-gear of the hoisting mechanism, all substantially as set forth.

2. The combination of the shaft H, its pulleys serving as guides for the rope A', and the clutch mechanism described, or its equivalent, with the driving-shaft *d* of the gearing for operating the carriage.

3. The combination of the pulley D on the pivot of the crane, and the endless rope A', with the pulleys J J' on the driving-shaft I of the hoisting-gearing, and the clutch mechanism described, or its equivalent.

4. The rope A' formed into a loop for carrying a weighted pulley, *q*, by causing it to pass from the pulleys J J' over the pulleys *p p*, in the manner set forth.

5. The combination of the driving-shaft *d* and its gear-wheels d^1 and d^2, with the driving bevel-wheel d^3, through which the said shaft can slide without turning, independently of the same, all substantially as and for the purpose specified.

140,883.—*Automatic Toy.*—HENRY L. BROWER, New York, N. Y. Application filed May 24, 1873.

The motive power is attached to the toy figure by mechanism arranged to give said toy a series of leaps and swinging motions alternately in opposite directions but at irregular intervals of recurrence, imitating a self-propelled gymnastic performer.

Claim.—1. The toy, composed of a flexible figure mounted on an oscillating bar operated by clock-work, in such manner as that said bar will make a complete revolution in one direction and a subsequent complete revolution in the opposite direction, substantially as specified.

2. The gears I J, with suitable operating means, and pinion *d* mounted on a support moved relatively to the said wheels so as gear alternately with each, and arranged to give motions in opposite directions to a toy figure from a constant motion of the wheels, as specified.

3. The stop *g* arranged as shown relatively to the flexible arms E of a toy acrobatic figure in combination with suitable operating means to induce a motion of the shaft or spring-bar C alternately in opposite directions, as specified.

4. The spring-bar C, slotted at the end, as described, and arranged in combination with shaft D, so that it may be keyed, either tightly or loosely upon it, at will, in order to vary the movements of the automaton, as described.

140,884.—*Apparatus for Loading Carts.*—JACOB BYERLY, Frederick, Md. Application filed June 26, 1873.

Weighted pawls are arranged on the frame of the machine so as to engage automatically with the racks beneath the cars to hold the latter on the dumping platform and to dump and release them.

Claim.—1. The weighted pawls F F, in combination with the racks G on the bottom of the cars, arranged and operating as described.

2. The continuous drawing-ropes *d*, arranged and operating in the manner and for the purpose described.

3. The arrangement of the several parts composing the cart-loading apparatus, herein described and shown, viz., the rails A A^1, forming the ways on which the wheels of the cars run, the pulley-shaft C having the continuous ropes, the cars B held and released automatically by the weighted pawls, the whole operating substantially as and for the purpose set forth.

140,885.—*Cultivator.*—JACOB CAYLOR, Fairview, assignor of one-half his right to CHARLES E. JONES, Redkey, Ind. Application filed October 12, 1872.

Interposing a transversely-recessed block having its outer faces plated with metal between the cultivator-shank and the beam to render easy adjustment of the shank, in connection with the adjustable brace provided with an eye, to which the brace is secured.

Claim.—In a cultivator, the combination of the transversely-recessed block D, having its outer face plated with smooth metal, the laterally-adjustable shovel-beam E, provided with the eye *e* and the adjustable perforated braces F, substantially as shown and described.

140,886.—*Potato-Screen.*—GEORGE CLAFLIN, Miller's Corners, N. Y. Application filed March 6, 1873.

A potato-screen made in two parts, the lower part provided with a smooth bottom, slightly inclined to the front. Above the stationary bottom, and moving on friction-rollers at the sides, is a frame provided with different sized screens, the smaller coming first. The potatoes are put in at the rear, and the frame is raised up and pushed from or pulled toward the operator, thus imparting to the potatoes a rolling motion. The front and rear are provided with spouts, through which the potatoes pass out.

Claim.—The screen-frame B, provided with the screens C C' and cleat *m*, when combined with the main frame A, provided with the spouts *d f*, the whole so arranged that said cleat acts as a division between the screened potatoes, as herein shown and described.

140,887.—*Sash-Cord Guide.*—CHARLES B. CLARK, Buffalo, N. Y. Application filed June 23, 1873.

A sash-pulley, consisting of face-plate and case, divided into longitudinal parts held together by friction, is cast with two pairs of frictional arms projecting from the face-plate within the shell or case. A bar or friction-guide is cast on the interior of the sides of the case, and engages with the friction-arms, thus forming a reliable connection between the face-plate and the case, of symmetrical form, easily molded, and giving larger extent of surface in the bearings of the axle-journals.

Claim.—In a divided case sash-pulley the arms C C C C on the face-plate A and ribs D D of the shell B, arranged and operating substantially as and for the purposes set forth.

140,888.—*Constructing Bridges.*—THOMAS C. CLARKE, Philadelphia, Pa., assignor to himself, DAVID REEVES, ADOLPHUS BONZANO, and JOHN GRIFFEN, Phœnixville, Pa. Application filed July 2, 1873.

Claim.—The mode described of erecting bridges—that is to say, building on each shore of the river to be spanned one-half of the bridge, swinging the two halves round on turn-tables and permanently securing them where they meet, then introducing beneath the turn-tables rollers which will permit longitudinal expansion and contraction of the bridge and anchoring the shore ends of the bridge, all as described.

140,889.—*Carpet-Rag Looper.*—WILLIAM CLAYTON, Jr., Bristol, Conn. Application filed February 25, 1873.

Claim.—The tool herein shown, consisting of a carpet-rag looper, button-hole cutter, and quilt-frame holder, either with or without the sewing-clamp, substantially as and for the purpose described.

140,890.—*Mowing-Machine.*—CHARLES COLAHAN, Cleveland, Ohio. Application filed April 26, 1873.

To the rear side of the inner end of the finger-bar is attached a journal or pivot, which journal or pivot has its bearing in a modified form of the ball of a ball-and-socket joint, and from which ball lateral spurs or pivots extend, having their bearings in supports at right angles to the pivot first named, thus forming a two-way joint.

Claim.—The pivoted drag-bar C and cutter-bar A, having the two-way joint connecting the same, consisting of the pin A, head B having the hole *d*, and rocking bearing *e*, all constructed and arranged for operation, as and for the purpose specified.

140,891.—*Egg and Cake Beater.*—JOHN W. CONDON, Logansport, Ind. Application filed January 3, 1873.

An egg and cake beater constructed with beaters revolving in opposite directions, with wings attached to the driving-shaft, and with an outer frame with scrapers on its sides and bottom, with double-acting gears attached to the main shaft to give motion, and all the moving parts connected with and attached by a bracket, and the bracket to an upright post by a clamp and thumb-screw.

Claim.—The means described for operating the beaters and scrapers I in opposite directions, consisting of the frame H, rods *g g*, pinion G G', shaft F, and crank-wheel E, arranged as set forth.

140,892.—*Compound Steam-Engine.*—JOHN H. COOPER and ABRAM D. EMERY, Philadelphia, Pa. Application filed February 27, 1873.

The casing which unites the two cylinders is made open, so that the heads and pistons can be removed. The peculiar arrangement of the ports permits the condensed water in the small cylinder to flow through the exhaust-ports into the large cylinder, from which it is carried by the inclined exhaust of the latter. The stuffing-boxes are constructed so that if the two cylinders get out of line they will adapt themselves to the untrue line of the bore of the cylinders.

Claim.—1. A compound engine having large and small cylinders A and B, united by an open casing, D, or frame, in the side of which communicating passages are formed between one of the cylinders and a steam-chest common to both cylinders, all substantially as set forth.

2. The base H', combined with and forming a part of the large and small cylinders and connecting casing D, as specified.

3. The combination of the steam-chest, common to both cylinders, the slide-valve E, constructed as described, the ports *a a' f f'* A, arranged in respect to each other, to the valve, and to the bores of the two cylinders, all as set forth.

4. The combination of the two cylinders and piston-rod and the compensating stuffing-boxes, constructed and applied to the cylinder-heads substantially as and for the purpose specified.

140,893.—*Device for Securing Man-Hole Covers.*—JOHN J. CRAVEN, (Bergen District,) Jersey City, N. J. Application filed January 13, 1873.

The man-hole is secured and readily removed by a removable cam-lever provided with projecting pins on each side, passing under ears on the tank-cover.

Claim.—The removable holding-pin E, and its eccentric F and handle-bar G, in combination with bearings *a* for said pin, and the cover B, substantially as described, whereby the holding device can be entirely removed from the vessel and quickly inserted in place.

140,894.—*Loom.*—GEORGE CROMPTON, Worcester, Mass. Application filed November 9, 1872.

The horizontal hooked jacks are pivoted to the vertical harness-levers and operated by reciprocating bars. The jacks rest upon the pattern-cylinder, which is driven by means of a crown-wheel, pin-wheel, shaft, and bevel-gearing, the shaft being constructed in two parts with a rotating and sliding connection for the purpose of disconnecting the cylinder, when desired, from the driving-gear. The fly-wheel is rigidly connected to the loose pulley, and the belt so arranged as to operate the driving and loose pulley at the same time, or the loose pulley alone. The brake mechanism is so arranged that when the belt is shifted to the loose pulley the brake is applied, and when shifted back it is released. The picker rock-shaft carries a sliding arm so constructed and arranged that in reversing the loom the picking mechanism is inactive.

Claim.—1. The combination and arrangement, substantially as shown and described, of the gears *l m*, shaft *k*, pin-wheel *i*, crown-wheel *g*, and pattern-chain or cylinder, with respect to the upright harness-levers, the jack resting upon the pattern-chain or cylinder, and the lifter, depresser, and evener-bars operated by the rocker-arms, levers *u y* and link *q* connecting the arm *r* with the wheel.

2. In combination with the loom mechanism, the pulley g^2 fast upon the shaft e^2, and the loose pulley h^2 fast upon an auxiliary shaft which bears the fly-wheel p^2, and a shipper mechanism holding the belt with relation to both pulleys, substantially as and for the purpose described.

3. In combination with the fast pulley g^2, loose pulley h^2, and reversing-pulley i^2, a brake mechanism and a shipper mechanism, that in shifting the belt to the loose pulley applies the brake z^2, and in shipping the belt to the reverse or fast pulley releases the brake, substantially as described.

4. The combination of the lever f^2, operated by the dagger to release the shipper-lever, with the lever a^2 that applies the brake z^2 by means of the intermediate devices, substantially as described.

5. In combination with the shaft s^2 that operates the picker-staff, the sliding cam or incline x^2 that is turned by the arms y^2 on the shaft d^2 in the forward movement of said shaft, but is slid upon said shaft by said arms without rotating it when the motion of the shaft is reversed.

6. In combination with the harness and driving mechanism, a pattern-chain or cylinder, arranged to be thrown out of operative connection with the harness and driving mechanism at the will of the operator by means of the adjustable sleeve *x* and cam-sleeve y^2 on the rotating shaft, substantially as shown and described.

140,895.—*Revolving Seat.*—GEORGE F. DAWSON, Washington, D. C. Application filed June 14, 1873.

The internally-threaded tube, in which works the revolving bolt, is provided with a flanged top plate, the flanges of which embrace the heads of the legs. The lower part of the tube is threaded externally, on which works a nut that holds the lower plate against the inside surface of the legs.

Claim.—1. The legs C having legs C' C' C' C' combined with

the plates *b b'* and *d*, the end-threaded tube B, and the nut D, as and for the purpose described.

2. The combination, with the tube B, threaded externally at the lower end, of the plate *d*, with or without a flange, d^1 or d^2, and held by a nut, D, as and for the purpose set forth.

140,896.—*Cigar-Machine.*—CHARLES J. DELBRIDGE, Rochester, N. Y. Application filed November 2, 1872.

The surfaces of the rollers are composed of washers or rings which intermatch so that the rollers close around the cigar more perfectly.

Claim.—1. In a cigar-machine, the series of rollers D D D, when they are formed with a series of washers or rings, *c c*, which intermatch, as herein shown and described, and for the purpose specified.

2. In combination with the washers *c c*, the interposed division-plates *f f*, arranged and operating as herein described.

140,897.—*Iron Fence.*—BENJAMIN G. DEVOE, Fredericktown, Ohio. Application filed April 3, 1873.

A wrought-iron facing is laid in the mold in which the post is cast and thus joined to it. For the corner-posts wrought-iron hooks are inserted and angular facings employed, together with a metallic base; all placed in the mold before casting.

Claim.—1. The fence-post herein described, formed of a wrought-iron facing, A, and cast-iron main portion B, constructed and united together in the manner and for the purposes set forth.

2. The corner or gate post herein described, consisting of the wrought-iron disks C D, cast metal portion E, posts G H, and top I, all constructed and united together as set forth.

3. In combination with the corner-post, as described in the foregoing second claim, the hooked bolts *d* and the cross-bar J, constructed and arranged substantially as and for the purposes herein set forth.

140,898.—*Sash-Holder.*—JONATHAN L. DEVOL and JAMES M. OKEY, Parkersburg, W. Va. Application filed July 1, 1873.

A spring-hook is combined with a bolt and operating-lever, all arranged inside a shell or case and attached to the window-sash in such manner that, as the bolt enters the keeper in the jamb or window-frame, the hook at the same time enters another aperture in the keeper, and, hooking over the edge thereof, locks the device firmly in place, preventing any horizontal movement of the bolt, whereby it might be released, (as by the jarring of cars, &c.,) until the hook is first lifted by the lever, the terminal movement of which will then withdraw the bolt and allow the sash to be raised or lowered.

Claim.—The bolt B, lever D, and hook E, when combined and arranged in such relation to one another and to the recess or recesses in which the bolt and hook are received, that the bolt cannot be retracted until the hook has been first disengaged, substantially in the manner set forth.

140,899.—*Numbering-Head.*—CHARLES W. DICKINSON, Belleville, assignor to himself and GEORGE ROWDEN, Newark, N. J. Application filed March 12, 1873.

A hub, fast to the shaft, is oscillated by a lever, and carries a series of dogs, each consisting of one detaining and one actuating dog for each number disk, which disks are mounted loosely upon a cylinder, and are each provided with ten slots, one cut entirely and nine partially through their bodies. As the actuating-dog E moves back it enters one of the partial slots of the unit-disk just as its pin H releases the detent-dog F, which the spring-pin G forces out of the slot it engages. As the hub moves forward it rotates the disk locked to it by the dog E until the dog F coincides with a slot into which it is forced by the spring-pin G, which has been thus moved to the rear of its pivot, thus setting and locking the disk for printing. When the whole slot of the unit-disk coincides with the dog E, the corresponding dog of the tens-disk, which has ridden upon the inner periphery of the unit-disk, enters a semi-slot of its disk, and the two are thus locked and move together. At the next rearward movement the tens-dog is raised and rides upon the periphery of the unit-disk until the whole slot is again engaged. These motions follow throughout the disks.

Claim.—1. The locking-pawls or detents F, when constructed as shown, and combined with the cylinder B and the disks A, substantially as and for the purpose specified.

2. The means employed for throwing the pivoted detents F into or out of engagement with the disks A, consisting of the spring-studs G, contained within and oscillated by the rock-shaft D, substantially as and for the purpose shown.

3. The operating-pawls E when constructed as shown, and combined with the rock-shaft D and disks A, substantially as and for the purpose set forth.

4. The operating-pawls E and detents F, when arranged to operate as cams, and combined with each other by means of the pins H, substantially as and for the purpose shown and described.

5. The operating-pawls E constructed as shown, and combined by means of projections *e''* and lips *e'''*, substantially as and for the purpose specified.

6. In combination with the disks A provided each with a full notch, *f'*, and nine half-notches *a*, the operating-pawls E provided with the projections *e'*, substantially as and for the purpose shown.

7. In combination with the rock-shaft D and operating-pawls E, the cylinder B provided with the openings *b''*, substantially as and for the purpose set forth.

8. The operating-pawls E, the detents F provided with the notches *f'*, the pins H, and the rocker-shaft D, in combination with each other and with the edge *b'''* of the cylinder B or its equivalent, substantially as and for the purpose shown and described.

9. In combination with the operating-lever K, the pivoted button I provided with the spring-stud *i*, and the stop L secured within and extending outward from the head C, substantially as and for the purpose specified.

140,900.—*Children's Chair.*—JEROME F. DOWNING, Erie, Pa. Application filed June 24, 1873.

The seat has an opening in it covered by a sliding cushion, and both are connected, by elbow-shaped arms, to the chair-frame, so that they can be swung to the rear of said frame. The shelf or table in front of the chair is connected, by a swivel-joint, with a sliding block that slides in a groove in one of the arms of the chair. The rear of the table has an adjustable rest projecting from the under side thereof.

Claim.—1. The seat G having an opening, G, sliding cushion-frame H, and the pivoted elbow-shaped arms G' G', the same being combined and arranged in connection with the frame of a child's chair, in such manner as to operate substantially as described.

2. The arm D of a child's chair, having a slot, D', table L, and swivel-joint *l*, when the latter is secured to a sliding block so as to operate within said slot D', substantially as described.

3. The table L having cleats or strips M M, sliding rest M, and spring-latch M', the whole being constructed, combined, and arranged to operate substantially as described.

140,901.—*Curtain-Fixture.*—LLOYD J. EARLL, Union City, Pa. Application filed March 18, 1873.

The curtain and roller are suspended by a wire frame having bearings and eyes and double-journaled detachable disks.

Claim.—The combination of curtain B, suspended by adjustable cords from the cornice, the wire frame having bearings *d d* and eyes *d' d'*, and the double-journaled detachable disks C C, all constructed and relatively arranged in connection with the same curtain-fixture, as and for the purpose described.

140,902.—*Steam-Nozzle.*—WILLIAM ERNST, New York, N. Y. Application filed April 30, 1873.

The mouth-piece is made removable so that access may be had to the conical spout to regulate the current of steam by increasing or diminishing the annular space between the spout and mouth-piece without disturbing the connecting-pipes.

Claim.—The body of the nozzle G, formed with a flange, *g'*, in combination with the mouth-piece K and adjustable spout J, all constructed and arranged to operate as shown and described.

140,903.—*Hat-Stretching Machine.*—RUDOLF EICKEMEYER, Yonkers, N. Y. Application filed June 11, 1873.

Angularly-shaped stretching-fingers, hinged at their inner ends upon studs radiating from a screw-threaded spindle suspended from an arm, are connected to an adjusting-plate above by jointed links, by which the fingers are operated by the rotation of a hand-wheel, in whose recessed hub the adjusting-plate is loosely fitted.

Claim.—1. In a hat-stretching machine which operates on the corrugation principle, a set of tip-stretching fingers, each of which has a longitudinal stretching-surface, and is hinged at its inner end to a support which is common to all of the fingers, substantially as and for the purposes specified.

2. The stretching-fingers B, hinged to a suitable support upon axes which radiate in the same plane from a common center, substantially as described.

3. In a corrugation hat-stretching machine, the several angularly-radiating fingers, hinged at their inner ends, and provided with longitudinal radiating tip-stretching surfaces, in combination with a suitable former for sustaining the hat, substantially as and for the purposes specified.

4. The combination of the several angular and radial stretching-fingers with the mechanism for adjusting, substantially as described, whereby the tips and squares of hats of various kinds and sizes may be stretched to any desired degree, as set forth.

140,904.—*Siding Hook.*—JAMES F. ELLIOTT, Forest, Ill. Application filed April 7, 1873.

The hook is sustained against the jambs of windows, &c., or corner-boards by the extension-bar and jam-nut. The boards are supported in the hook.

Claim.—1. The combination of the hook A, bar B pivoted thereto, and adjustable stud C, substantially as and for the purpose specified.

2. The combination of the hook A A' having spurs *a*, reversible bar B, and adjustable stud C *c*, substantially as and for the purpose specified.

140,905.—*Cutter-Head.*—JOHN F. W. ERDMANN, Philadelphia, Pa. Application filed October 5, 1872.

The cutting-blades are bedded upon a sheet of India rubber.

Claim.—The combination, with the bit B constructed from a thin plate of steel furnished with a feather-cutting edge, of the rotary cutter-head A and elastic cushion *c*, arranged substantially as and for the purpose described.

140,906.—*Cigar-Machine.*—THEODORE ERNST, Fort Madison, Iowa. Application filed September 10, 1872.

A roller has a groove for the cigar-bunch and an apron adjusted by rod and ratchet-wheel, the said roller being partially revolved by a treadle and strap, and retracted by a coiled spring located within it. The table has an opening covered with wire cloth, a hinged lid for exposing the rolling mechanism to view, an inclined way, and a hinged box for receiving the cigar.

Claim.—1. The combination of the plates C C, roller D, shaft *b*, lugs *c c'*, coiled spring *f*, sleeve A, toothed wheel *i*, shaft *s*, and lever *y*, all constructed and operating substantially as and for the purposes herein set forth.

2. The arrangement, with the mechanism herein described for making cigars, of the table A with wire-cloth-covered opening *w*, hinged lid B with opening *z*, incline J, and hinged box K, all substantially as and for the purposes herein set forth.

140,907.—*Filter.*—JAMES M. EVARTS, New Haven, Conn. Application filed April 16, 1873.

A ring for receiving the filtering material and retaining it in position is formed with an angular rib to receive an elastic packing, by means of which the ring is fitted in a recess in the filter-shell and a water-tight joint obtained

Claim.—The ring C for receiving the filtering substance, constructed with an angular rib, in combination with an elastic packing, so that said ring may be fitted in the recessed shell, as described.

140,908.—*Apparatus for Extracting Nitrate of Soda.*—ROBERT F. FAIRLIE, London, England. Application filed April 25, 1873.

The wagon-bodies, cylindrical in form and provided with internal arms for working up the contents, are supported upon trunnions upon the wagon-frame and rotated by means of suitable shafts and clutches, whereby the quantity of water and steam used in extracting the nitrate is diminished and the working of the crude nitrate facilitated.

Claim.—1. The wagon-bodies B B mounted on the axis C C, adapted to have a free rotation inside the cachucho A, substantially as and for the purpose specified.

2. The driving-shaft K having a clutch or driver, G, in combination with the wagon-bodies B B and their respective shafts and clutches, substantially as described, for the purpose specified.

3. The clutches or drivers G G, or equivalents, in combination with the mounted cylinders B B, substantially as and for the purpose herein set forth.

4. In combination with the rotating wagon-body, the bars or arms E R, substantially as and for the purpose herein set forth.

140,909.—*Railway Switch.*—MEDARD FELS and JOHN W. FELS, Cincinnati, Ohio. Application filed June 26, 1873.

A disk is attached to the axles of certain cars which are intended to traverse the main line only. Said disk operates a tappet which shifts the switch-point so as to clear the line, the point being reset by another tappet after the passage of the car. All cars not provided with a disk are switched off by the point as it lies in its ordinary position.

Claim.—The combination of the switch E *f*, rod G, pivoted center-plate H *h h'*, connecting rods *j j'*, rock-shafts K *k* K' *k'*, and tappets M M', when employed in connection with the rails C C' D D', and adapted to be operated by a rotary disk, N, substantially as herein described and illustrated.

140,910.—*Mold for Forming Clay Articles.*—CHARLES A. FISCHER, Baltimore, Md. Application filed May 9, 1873.

A mold for shaping articles of clay, having recess to receive excess of clay.

Claim.—The two-part mold N having die P with its circumjacent channel *p* and clay-space Q in cover, applicable as and for the purpose described.

140,911.—*Apparatus for Making Gas from Oils.*—SAMUEL H. GOLDTHORP, Pittsburg, Pa., assignor to R. H. SMITH, same place. Application filed June 4, 1873.

The retort surrounds a part of the stove, the shell of the stove forming the inner surface of the retort.

Claim.—A heating-stove provided with an exterior shell, H, arranged, as described, so that it, with that part of the stove which it surrounds, will form a gas-retort, substantially as herein set forth.

2. The flanges A A, within the retort, formed by the stove and the exterior shell, substantially as and for the purposes herein set forth.

140,912.—*Eye-Glass.*—STANLEY GERACEN, Rye, N. Y. Application filed February 7, 1872.

In jointed or pivoted eye-glasses the spring is applied to projections extending beyond the pivot, instead of being applied within or beneath the pivot.

Claim.—1. The combination, with a pair of eye-glasses of an elastic cushion arranged as a compression-spring to keep the glasses in position when in use, substantially as herein described.

2. The combination, with eye-glass frames, of arms or shoulders extending beyond the connecting-pivot, substantially as shown and described, to receive the spring which holds the glasses in position when in use.

140,913.—*Powder-Keg.*—CHARLES GREEN and WILLIAM WILSON, Jr., Wilmington, Del. Application filed July 2, 1873.

Claim.—A powder-keg, constructed of a cylinder of paper, pasteboard, or any equivalent fabric, connected and inclosed by heads and staves, in the manner and for the purposes substantially as hereinbefore set forth.

140,914.—*Rotary Steam-Engine.*—CHARLES GROTZ, Ottumwa, Iowa, assignor to himself, D. B. DENNISON, J. T. HACKWORTH, J. G HUTCHISON, W. T. MAJOR, and ALLEN JOHNSTON, same place. Application filed May 22, 1873

The piston-blade is completely surrounded on its edges with flexibly-seated packing, and the ends of the drum are also provided with the same, so that steam tight joints at all points between the cylinder and drum and piston are obtained.

Claim.—In combination with the steam-cylinder, eccentric drum, and reciprocating piston-plate, the side-spring packing-strips and end rocking-packing pieces for the piston-plate, and the end-spring packing-strips for the drum said parts being constructed and arranged together for operation substantially as shown and described.

140,915.—*Railway Switch.*—BENJAMIN HALL, St. Louis, Mo. Application filed May 28 1873.

The switch-rails are seated in triangular recessed "head-chairs," embracing both portions of the rail, which rises upon a toggle when shifted and falls securely into place during the last half of the movement. The "head-chairs" are provided with lips M M' for holding the base of the rail, and with lateral openings for the escape of dirt, &c.

Claim.—1. The switch-rails A A', provided with the recesses *a a'*, the head-chairs F F', constructed as described, the toggles J J', the main tracks D D', and side tracks E E', combined, arranged, and operating substantially as described and shown.

2. The head-chairs F F, provided with the lips M M', &c., and toggles J J, combined arranged, and operating substantially as and for the purpose set forth.

3. The head-chairs F F', provided with the openings K K', constructed and arranged as and for the purpose shown.

140,916.—*Fruit-Jar.*—ELLA G. HALLER, Carlisle, Pa. Application filed June 25, 1873.

Claim.—A fruit-jar body and cover, A B, respectively, blown in a single piece, with the downwardly-beveled outside groove C, and the inside beveled flange *b*, as and for the purpose described.

140,917.—*Railway Switch.*—FRED. P. HANCHETT, Nepeuskun, Wis. Application filed May 3, 1873.

The movable rail of the switch is made with a so-called "blind head," W, at the joint, covered by a projecting lip, and a similar lip covers a projection at the moving extremity, with the object of excluding grit, and also of preventing the easy removal of the shifting-rail, either by design or accident.

Claim.—The switch-rail D, formed with blind-head W, in combination with lips K and O, when constructed and arranged substantially as described, and for the purpose specified.

140,918.—*Water-Supply Valve.*—PATRICK HARVEY, Chicago, Ill., assignor to NELSON C. GRIDLEY, same place. Application filed March 31, 1873.

At the end of a valve-stem, which is operated through a perforated piston, is attached a flexible valve, so arranged that upon removing the piston and rod the valve shall be drawn through its seat and removed therewith.

Claim.—1. In a water-supply valve, the perforated piston H, in combination with the washer J, constructed of the material specified, and arranged and operating substantially as and for the purposes set forth.

2. In a water-supply valve, the grooved stem I, provided with the washer N, attached to its end by means of the nut K, in combination with the fixed valve-seat L, the said stem and seat being constructed and arranged substantially as shown and described, to allow the said washer to be drawn and pushed through the valve-opening, for the purposes set forth.

140,919.—*Milk-Cooler.*—JAMESON F. HAWKINS, Hannibal, Mo. Application filed April 22, 1873.

The cover is made with a conical surface, a central vertical tube, and a water-guard, so that it can be adapted to any can and present a large cooling surface to the milk.

Claim.—A milk-cooling-vessel cover, having an inclined varying cooling-surface, A, within the vessel, a vertical central tube attachment, B, and a circumferential water shed or guard, C, and adaptable to vessels of varying lesser diameters, as described.

140,920.—*Manufacture of Umbrella-Notches.*—ABRAM HERZBERG and ISAAC HERZBERG, Philadelphia, Pa. Application filed May 27, 1873.

Blanks having radial projections are cut from a sheet of metal by the cutter A entering the die B from which the blank falls into the recess *a* of the die D, when plunger E descends and bends the projecting pieces up, and at the same time slightly draws down the center The blank is transferred to another die, where a punch cuts out the center, and an upper die on the punch bends in the ends and completes the notch.

Claim.—1. The punch A and its plunger E having a projection, *f*, in combination with a die, D, having the recess *e*, opening *h m*, and shoulder *i*.

2. The combination of the die H, its opening *n*, and recess *q*, with the plunger G, and its movable collar *t*.

3. The mode or process described of manufacturing umbrella-notches—that is to say, punching from a sheet of metal, blanks, Fig. 3 and forming these blanks into notches by bending and punching in the manner described.

140,921.—*Machine for Mitting Stereotype-Molds.*—ROBERT A. HILL, Chicago, Ill. Application filed March 6, 1873.

A ductile plate is attached to a bar having ratchet-teeth on one edge and a rack upon the other, and mounted in the feed-bed. As each die is depressed upon its surface and struck by the hammer the bed is fed forward the width of a letter by a pawl-ratchet-pinion, and rack. At the completion of a line the bed strikes an elbow lever, H, which has engaged the rack and moves the plate longitudinally such a distance that when it is withdrawn to its normal position by its spring—when the pawl J, moved by the arm *j*, lifts the detent I—one of its ratchet-teeth will engage the fixed wedge E and move and adjust the plate to properly space the lines preparatory to stamping the next line.

Claim.—1. The combination of the hinged lever B with holder K and set-screw *n*, the die or stamp *b*, spring *y*, and key V, constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination, with the hammer-lever W and connecting-bar T, of the crow-lever D, ratchet-wheel *d*, cog wheel P, and cogs *s* on the bar E for the purposes herein set forth.

3. The spring-pawl L, engaging with the ratchet-wheel *d*, and provided with the pin L in combination with the pawl lifter J, for the purposes herein set forth.

4. The hook *f* attached to the bar E and operating on the pawl-lifter J, for the purposes herein set forth.

5. The push-bar K attached to the bar E and operating on the pawl-lifter J, for the purposes herein set forth.

6. The combination of the cogged and toothed bar N, plate G with guides *e e*, and bar E, as and for the purposes herein set forth.

7. The elbow-lever H with points P and R, and the spring O, operating in combination with the plate G, as and for the purposes herein set forth.

8. The beveled tooth O operating in combination with the bar N, as and for the purposes herein set forth.

140,922.—*Toy Catapult.*—WOODBURY S. HOW, Cincinnati, Ohio. Application filed May 14, 1873.

Made principally of wire and in one piece, and adapted for carrying in the pocket.

Claim.—1. The toy catapult formed of the elastic members or loops A D A′ and A″ D′ A‴ *e*, in the described combination with cap B or guide B′, or both, substantially as set forth.

2. In combination with the elements A D A′, A″ D′ A‴ *e*, and B or B′, the coiled or helical spring-elbow D″.

3. In the described combination with the elements A D A′, A″ D′ A‴ *e*, and B′, the hook *h* for locking the parts into compact form for the pocket, as explained.

4. In combination with the elements A D A′, A″ D′ A‴ *e*, and B′, the separable joint *h e′* and the brace-coupling F.

5. In combination with the elements A D A′ and A″ D′ A‴, the braces F′ and I, guide J, and trigger K *k k′*, or devices substantially equivalent.

140,923.—*Pneumatic Telegraph.*—ALBERT JAYNOR, Regent's Park, England. Application filed March 26, 1873.

The transmitting air-chamber is provided with a valve controlled by a peculiarly-formed cam on the operating crank or index-shaft, so as to equalize the pressure at each pause or rest in the signaling. A notched plate, against which a light spring from the diaphragm-lever is pressed, serves to give precision to the movements of the receiving-index.

Claim.—1. The valve B, lever *c*, and cam A, in combination with the air-chamber *a* having flexible top, and with one or more air-pipes *b b*, substantially as described.

2. The air-chamber *a* having flexible diaphragm 1, in combination with one or more air-pipes, *b b*, and the sancer *c*, substantially as described.

3. The corrugated quadrant piece, D, arranged and operating in respect to the index-hand 2, as and for the purpose specified.

140,924.—*Electro-Deposition of Aluminum.*—JOHN A. JEANÇON, Newport, Ky. Application filed November 1, 1872.

Dissolve the desired salt of aluminum or a double salt of aluminum and potassium, sodium, &c., in distilled water, and concentrate to 20° Baumé, (at 50° Fahrenheit.) The battery used is either four pairs of Smee's zinco-platinum or three Bunsen's zinco-carbon, the elements connected for intensity. The solution is heated to 140° Fahrenheit, slightly acidulated, and a plate of aluminum is attached to the negative wire in working.

Claim.—The herein-described process for aluminum plating, by means of electricity from aqueous solutions of the salts of aluminum, substantially as herein specified.

140,925.—*Metal-Drilling Machine.*—JACOB C. KELLER, Philadelphia, Pa. Application filed May 24, 1873.

The upper part of the frame carrying the drill-spindle is hinged to the lower or fixed frame, and is adjustable at any desired angle with the table, up to ninety degrees. A sleeve journaled in a vertical slide in front of the table, supports the boring-tool when used for enlarging holes.

Claim.—1. A drilling-machine in which a frame carrying the drill-spindle is hinged to the permanent frame or standard, having a vertically-adjustable table, all substantially as described, so that the drill-spindle can be adjusted to a position at right angles, or at any other angle, to or parallel with the table, as set forth.

2. The adjustable frame B′ carrying the drill-spindle, the fixed frame B, and the connecting sleeve H, in combination with a shaft, I, passing through and turning in the said sleeve, and the gearing described, or its equivalent, by which the said shaft derives its motion from the driving-shaft and transmits it to the drill-spindle.

3. Tops or shoulders *x* and *f* arranged on the fixed frame or standard B, in the manner substantially as described, in respect to the adjustable frame B′ and to the table F, so as to insure a proper adjustment of the drill-spindle at right angles to or parallel with the table, as set forth.

4. The combination of the adjustable frame carrying a drill-spindle with the slide G and its vibrating bearing *m*.

140,926.—*Hasp-Lock.*—JACOB KINZER, Pittsburg, Pa. Application filed February 20, 1873.

Claim.—A hasp containing the lock-case *a*¹ and lock, the slot *b* for the staple, a pair of guides formed by the boxing of the hasp immediately above such slot, in combination with the pin *d* having the bread part *d′*, the recess *h*, and flange *f*, all constructed and combined substantially as set forth.

140,927.—*Apparatus for Cooling and Removing Blast-Furnace Slag.*—ANDREW KLOMAN, Pittsburg, Pa. Application filed June 16, 1873.

A series of pans or boxes smaller at the bottom than at the top, and provided with removable central tapering pins are supported in a spider and rotate in an annular water-chamber. Slag is run into the pans, and, after cooling, is removed by tackle inserted into the eye of the pin. The pin, being wedge-shaped, is readily removed from the block and replaced in the pans.

Claim.—1. As a step in the removing of blast-furnace slag or cinder, running the same off into boxes which are partially or wholly immersed in water, substantially as described.

2. In combination with an annular water-pan, A, a series of boxes, D, suitably arranged to be rotated successively under the spout leading from the tap-hole of the blast-furnace, substantially as set forth.

3. In combination with a slag-receiving box, a lifting-pin, *b*, largest at its lower end and having an eye or equivalent connecting device at its upper end, substantially as set forth.

4. A centering pin or projection and a recess corresponding thereto, one arranged in the bottom of each box D and the other on the bottom of each lifting-pin *b*, substantially as set forth.

5. The combination of the trough A, spider B B¹, the boxes D, and caps *n*, arranged substantially as described.

6. The combination of the annular rings B, boxes D, and T-heads *d′*, or other suitable stop device in lieu thereof, substantially as described.

140,928.—*Metallic Roofing.*—CHARLES LEWANDO, Cambridge, Mass. Application filed December 21, 1872.

The metallic plate is folded at the edges and attached by a single nail. The part N is folded under on the line *p p*, (this constituting the novelty,) thereby covering the nail and locking the lower angle. The successive plates interlock by means of the folds.

Claim.—The metallic roof, when the same is formed by uniting the plates A A and B B, &c., cut and folded and arranged substantially as described, and for the purpose set forth.

140,929.—*Sewing-Machine Stand.*—HENRY LOTH, Philadelphia, Pa. Application filed May 6, 1873.

The sewing-machine is secured to a bed that is hinged to the table-top, and the latter is rendered vertically adjustable in its frame by combining a spindle having a central and two end pinions with a segmental rack attached to the under side of the bed, and two vertical plain racks attached to the under side of the table-top, one near each end. The spindle has a milled head at one end, by which it is operated. When the machine-bed is inclined the table-top is lowered by means of the racks and pinions.

Claim.—1. The combination of the top B, hinged bed A, and the pinions and racks, or equivalent devices, whereby the opposite movements of the top and bed are so equalized as to preserve the distance between the band-wheel A and the driving-shaft revolving in fixed bearings.

2. The combination, with the hinged bed or trap A and adjustable table B, and with their racks *f* and *e*, of the spindle F and its pinions for simultaneously operating the said hinged bed and table, substantially as herein described.

140,930.—*Compound Hinge.*—HENRY LOTH, Philadelphia, Pa. Application filed May 6, 1873.

The several leaves are hinged by rule-joints at their corners, and all the surfaces are upon the same horizontal plane. An ordinary leaf is pivoted in the usual way to the side of one of the number of leaves used. These are secured to the three or four legs of a table, and to its lid allowing the entire table to fold compactly together.

Claim.—1. The within-described compound hinge, consisting of three or more connected sections, *b*, *c*, &c., the intermediate section or sections being constructed with two circular projections, and the outermost sections with one, and the surfaces of all the sections being on the same plane, substantially as and for the purpose specified.

2. The combination, with the outermost section *d* of the hinge, of a hinged leaf, *k*, for the purpose specified.

140,931.—*Windmill.*—WILLIAM W. MARSH and OREN E. MILES, Sycamore, Ill. Application filed April 21, 1873.

The shaft of this wheel, where it unites with the pitman, is bent to form a crank which passes through a ball located in the head which forms the bearing for the ball, and makes a universal joint for the shaft to play back and forth in as the wind is light or heavy. When light the stroke of the piston will be short, pumping a small quantity of water. As the wind increases in force its pressure upon the sails and the end of the mill will force the crank-shaft through the ball, lengthening, thereby, the stroke of the piston and increasing the quantity of water.

Claim.—1. In a windmill, a movable shaft, D, substantially as and for the purposes specified.

2. The spring *e*, in combination with a movable shaft, D, substantially as and for the purposes specified.

3. The sails F, slotted curved arms *r*, plate *n*, and pins *u*, in combination with a movable shaft, D, and spring *e*, substantially as specified.

4. The movable shaft D, when provided with a graduated crank, *v*, substantially as and for the purpose specified.

5. The movable shaft D, spring *e*, and chain *m*, substantially as described.

6. The movable shaft D having a graduated crank, *v*, in combination with the ball-and-socket joint *d e*, substantially as described.

7. The jointed stay A, in combination with the pitman-rod and head P *e*, substantially as specified.

140,932.—*Apparatus for Cleaning Knives, Forks, &c.*—EMMA MARWEDEL, Washington, D. C. Application filed June 10, 1873.

Within a suitable case are arranged the two pads *a* and *b*, which are so constructed as to conform to the inside and outside of the spoon or fork. A device for scouring knives is arranged within the cover.

Claim.—The receptacle A provided with the scouring-pads *a*, *b*, and E, the said parts being constructed and arranged, relatively to each other, as shown and described.

140,933.—*Machine for Cutting Rubber Sheets into Strips.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 28, 1873.

The rubber sheet passes under binding-rods or rolls, which press it against the carrier-drum, and is cut by knives arranged obliquely in a rack over the carrier-drum. The strips pass to and are wound upon a series of spools upon loose shafts. These spools receive their motion from a series of friction-rolls beneath, and suspended above them are a second series of spools which supply the cambric or other lining to be wound with the strips.

Claim.—1. In a machine for cutting uncured rubber sheets into strips, the combination of a rotary carrier-drum, constituting the table or support for the rubber sheet during the cutting operation, with adjustable presser or binding bars or rollers, arranged to hold the rubber sheet down on the drum, substantially as and for the purposes shown and set forth.

2. The combination, with the carrier-drum and adjustable presser or binding bars or rollers, of cutters for dividing the sheet of rubber passing beneath said presser and over said drum enter strips, substantially as shown and set forth.

3. In a machine for cutting up sheets of uncured rubber into strips, the combination, substantially as set forth, with the cutters, of devices substantially such as described, for discharging water on the cutters or on the sheet of rubber immediately in advance of and in line with the cutters during the operation of the machine, for the purposes stated.

4. The rolls or shafts upon which the rubber strips are wound, each of said shafts resting on and between two rollers revolving in the same direction and deriving its rotary movement from its frictional contact with said rollers, as herein shown and described.

5. The combination of the shafts for receiving the rubber strips and the rollers, which support and impart movement to said shafts with the rotating carrier-drum and cutting mechanism and adjustable presser or binding-rolls, substantially as herein shown and described.

6. The combination of the shafts for receiving the rubber strips and the rollers which support and impart movement to said shafts, of shafts or rolls carrying the cambric or other lining to be wound up with the rubber strips, under the arrangement and for operation as shown and set forth.

7. In combination with the rotating carrier-drum, the horizontal knife-carrying bar arranged above said drum, and the yielding knives held in slanting slots formed in said bar, so as to cut the sheets of rubber passing below into strips with beveled edges, substantially as and for the purposes set forth.

140,934.—*Machine for the Manufacture of Hose.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 30, 1873.

A lining of uncured rubber is applied to the revolving mandrel and enveloped by canvas or cords longitudinally arranged to prevent the wrapping-threads from cutting into the rubber. The threads from the spools are then passed through the bowed guide under and over the movable tension-bars, through the reed, and wrapped around the end of the covered mandrel. Motion is given to the traveling-carriage, the mandrel revolving at the same time so as to lay the threads in a uniform manner. At the end of its travel suitable mechanism reverses the movement of the carriage.

Claim.—1. The means herein described for supporting the hose-mandrel, the same consisting of a revolving chuck or cup-like socket, adapted to receive and hold firmly one end of the mandrel, and to impart rotary movement to the mandrel, in combination with uprights or standards placed at suitable distances apart and carrying friction-rollers, upon and between which said mandrel is supported and rests, said standards being formed and arranged as set forth, so as not to interfere with the winding of the cords from end to end of the mandrel.

2. The combination, with the sliding carriage and its spool-rack, of a reed and reed-frame carried by the said carriage, the frame being adjustable up and down, and toward and away from the mandrel, substantially as shown and described.

3. The combination, with the sliding carriage and adjustable reed-frame, of the tension device carried by said frame, and arranged and operating substantially as shown and set forth.

4. The adjustable reed-frame carrying the tension device and bowed guide, said parts being arranged together, substantially as set forth.

5. The combination, with the sliding carriage traveling back and forth in a line parallel with the hose-forming mandrel, of the reed and adjustable reed-frame, the tension, the bowed guide, and the spool-rack, under the arrangement and for operation substantially as shown and set forth.

6. In combination with the sliding carriage and the means, substantially such as described, for driving the same in either direction, the shipper-bar, operated, to reverse the movement of said carriage, partly by a finger on the carriage engaging stop-pins on said bar, and partly by a vibratory weighted lever connected with the bar, and operating to complete the movement of said bar commenced by the carriage-finger, substantially in the manner shown and set forth.

140,935.—*Scraper.*—WILLIAM D. MAYFIELD and JOSEPH M. PAYNE, Fort Worth, Tex. Application filed May 24, 1873.

The scraper is pivoted in a swinging frame and is elevated or depressed from the driver's seat, being connected by means of a ball and chain passing over a pulley to the rear end of the draw-bar, so that when the draw-bar is released by a spring-bolt, which the driver operates, it slides upon the tongue and the force of the draft is exerted in lifting the scraper with its load. The backing of the team lowers the scraper for action and locks the draw-bar. The swinging frame is adjustable at its rear end for varying the inclination of the scraper.

Claim.—1. In a road-scraper, the combination of the movable draw-bar D secured to the tongue C by clasps *c*¹ *d*¹, and the spring-bolt E with the chain *d*², the pulley D′, the bail I, the scoop K, and the pivots *i*, substantially as specified.

2. In a road-scraper, the chains *g g′*, the brace G′, the bars H, the bail I, the chain *d*², and the adjustable bar N, in combination with the frame M, the spring-bolt L, and the scoop K, substantially as specified.

3. The combination of the bar D, the scoop K, and the frame M with the seat R and the brake O, substantially as described.

140,936.—*Wash-Boiler.*—EDWARD H. MCDONALD, Wytheville, Va., assignor of one-half his right to SAMUEL Y. TOWSON, St. Louis, Mo. Application filed March 1, 1873.

Is constructed in two parts, separated in its center, with an upper chamber connected with the lower by a pipe extending from its bottom with a joint at the center, through which the steam is conducted, which is covered by a perforated division or plate connected to and with the lower chamber or section, and has outlet-pipes for passing off the steam and water.

Claim.—1. The condenser D, provided with the tubes 2 3 and perforated plate E, substantially as set forth, in combination with the boiler F.

2. The false bottom A B, boiler F, condenser D, tubes *c* 2 3, and discharge *n*, substantially as shown and described.

140,937.—*Stone and Glass Polishing Machine.*—JOSEPH MEHAS, New Albany, Ind. Application filed April 3, 1873.

The polishing-blocks are composed of wood faced with felt and incased in a metallic frame, which has a recess in the top for the reception of a weight. A number of blocks are linked together and form a chain, which is connected to a swinging frame that moves them longitudinally. A sidewise movement is given to the chains by means of an attachment to right-and-left-hand threaded rods, operated by the swinging frame and having a reversing mechanism.

Claim.—1. The block-chains herein described, consisting of the blocks G G and H H and frames I, constructed as described, and connected by means of a frame, J, with the screw-shafts *d*, substantially as and for the purposes set forth.

2. The combination, with the screw-shafts *d d*, of the double cog-wheel K, frame L with pawls *m m*, and roller M, and the double incline N, substantially as and for the purposes herein set forth.

3. The combination of the swinging frame C, screw-shafts *d d*, block-chains G H I, frames J with pins *i i*, and the bars *f*, all constructed and operating substantially as and for the purposes set forth.

140,938.—*Rotary Cutter.*—CHARLES H. MELLOR and MORRIS L. ORUM, Philadelphia, Pa. Application filed January 11, 1873.

A removable central cutter is inserted within the arms for surface-cutting.

Claim.—The cutter having side cutting-arms A A and an end cutting-bit, D, as set forth.

140,939.—*Stove-Pipe Shelf, &c.*—DAVID R. MOORE, Owego, N. Y. Application filed May 7, 1873.

A pan, formed to fit around a stove-pipe, has a flat cover and a damper, and arms on which clothes may be dried.

Claim.—1. The combination of the perforated pan A with collar *a* and sliding damper *n*, plate D with collar *a′*, and plate C with opening *b* and damper *h*, all substantially as and for the purposes set forth.

2. The combination of the pan A, the arms *p p*, and catches *i i*, all substantially as set forth.

140,940.—*Smoking-Pipe.*—WILLIAM H. MORRIS, Brooklyn, assignor to himself and ARTHUR B. ROSS, New York, N. Y. Application filed March 5, 1873.

The bowl of the pipe is reversible, having movable covers at both ends and tubular openings leading to the stem, which acts as a faucet to close the connection leading to the upper end of the bowl and open that leading to the lower end, so that the smoking can be continued without relighting the pipe, by simply inserting fresh tobacco in the upper end of the bowl upon the remaining embers, applying the cover, and reversing the bowl.

Claim.—The reversible bowl and removable covers applied to and combined with the stem that closes one of the tubular passages, 2 or 3, and opens the other, substantially as set forth.

140,941.—*Construction of Houses.*—THOMAS W. H. MOSELEY, Hyde Park, Mass. Application filed February 25, 1873.

The boards are laid up so as to leave notches or recesses at the corners of the house for the reception of corner-strips or fenders.

Claim.—1. The combination of the lapped ends of the boards B, forming notched or recessed corners, with corner-fenders applied, as set forth.

2. The composite wall, consisting of the boards B with lapped ends *b* and inter-spaces, the corner-strips F, and the cement H filling said inter-spaces and enveloping the edges of the boards, all as herein described.

140,942.—*Construction of Houses.*—THOMAS W. H. MOSELEY, Hyde Park, Mass. Application filed June 17, 1873.

The roofs and floors are constructed of parallel beams or framing enveloped by a body of cement, which fills the spaces between the beams and completely covers the upper and under surfaces of the floor or roof, strips being laid across the joists at intervals to receive the flooring-boards or sheathing for the roof. A covering of felt and gravel is laid over the sheathing-boards, and is secured at the edges of the flanged metallic plates.

Claim.—1. The composite flooring and roofing, constructed of parallel beams, filling and coating of cement, and stripe T, substantially as specified.

2. The combination of the felt U, or its equivalent, gutter G, flanged stripe V V', and outer coating W, arranged and connected as set forth.

140,943.—*Gage for Erecting Plank Walls.*—THOMAS W. H. MOSELEY, Hyde Park, Mass. Application filed June 17, 1873.

A gage for temporary use in erecting walls of wood and plaster. It is composed of two boards placed either parallel or at right angles to each other, furnished with a hinged brace or shore adjustable to different heights, and having a hinged stake at foot. The gage for the corner is right-angled in section, with a rectangular strip inserted in the angle to form a groove for the reception of permanent corner-pieces.

Claim.—The gages N N', constructed and arranged to operate in manner substantially as and for the purposes set forth.

140,944.—*Escapement for Watches.*—DON J. MOZART, Ann Arbor, Mich.—Case A. Application filed May 14, 1873.

The balance-staff carries a disk cut out or made concave on the edge at one side, each of the angles carrying a ruby-pin, which receives alternate impulse from two horns carried on an arm from the escapement-shaft, upon which a four-leaved pinion is fixed to engage with the adjoining wheel.

Claim.—The detent *a* and plate *d* with fangs *e e* upon the shaft *b*, and the disk A with the ruby-pins *i i* upon the balance-staff *f*, all constructed as described, and arranged to operate in combination with the escapement-wheel A, balance-wheel B, and hair-spring C substantially as and for the purposes herein set forth.

140,945.—*Roofing Composition.*—CHARLES MUELLER, Warren, Mass. Application filed February 17, 1873.

Claim.—A fire and water proof roofing made as described—that is, a layer of clay or other aluminous earth, cut straw or hair, and sand, a layer of slaked lime, and a layer of cement, all applied in the manner herein set forth.

140,946.—*Machine for Finishing Pencils.*—THEILE H. MÜLLER, Yonkers, N. Y. Application filed May 28, 1873.

The pencils are forced from the bottom of the feed-hopper under a spring-lever with a beveled end to turn the pencil into a proper pre-determined position for finishing the sides.

Claim.—1. In pencil-feeding machinery, a yielding or adjustable pencil-guide, arranged in front of the pencil-hopper, so that the pencils, as they are fed therefrom, shall successively pass under it, and formed on its under side with one or more inclined surfaces adapted to operate upon the pencils passing beneath, substantially as and for the purposes set forth.

2. The combination of the yielding and adjustable pencil guide-lever with the pencil-hopper and the feed groove or channel beneath said hopper and lever, the whole arranged, for joint operation, substantially as shown and set forth.

140,947.—*Table-Hinge.*—JAMES W. PALMER, Pana, Ill. Application filed June 2, 1873.

An ordinary butt-hinge leaf is provided with an elongated leaf and guide and a spring latch, which engages with a detent or keeper. The outer ends of these latches or plates are connected together by a rod, and a spring is provided which presses against the rod in a direction toward the head or knob, projecting beyond the leaf of the table. By means of this construction the table-leaf is held up by the combined force of the elongated hinge-leaf and the latch or plate, which extend across the joint, the lock being effected by the catch or detent engaging automatically over the double leaf and plate, while pressure on the knob overcomes the force of the spring and releases the parts, so that the table-leaf can be lowered.

Claim.—1. The table-hinge C, provided with the ordinary butt-hinge leaf *c*, the elongated leaf *c'*, and a guide, *d e*, substantially as and for the purposes set forth.

2. The combination of the arms *m m*, rod *r*, spring *s*, and bevel-ed hook *n* with the hinge C and table A B, substantially as and for the purposes set forth.

3. A table-hinge combined with a spring-latch and a detent or keeper adapted to engage with the spring-latch automatically and hold the table-leaf in a horizontal position, substantially as described.

140,948.—*Coverlet.*—CHARLES K. PEVEY, Worcester, Mass. Application filed June 19, 1873.

Between the sheets of cotton cloth or wadding is placed a sheet or sheets of thin paper, preferably crimped or corrugated.

Claim.—A bed comforter or coverlet having the interposed paper applied, substantially as shown and described.

140,949.—*Match-Box.*—CHARLES PRAHL, Stapleton, N. Y. Application filed March 20, 1873.

The box is divided into cells for each match. A plate, hinged at bottom and held against the cells by a spring, has a roughened surface, against which the tips must bear on being withdrawn.

Claim.—A match box constructed as herein shown, and provided on its interior surface with the series of separate match-cells *a a*, in combination with the hinged flaps *b b*, having the friction-surfaces *d d*, and with the springs *c c*, all constructed and arranged as and for the purpose specified.

140,950.—*Meat-Chopper.*—HUGH P. RANKIN, Allegheny, Pa. Application filed May 24, 1873.

A revolving hopper and chopping-block and vertical cutters. The cutters are operated from a crank-shaft through yokes and sliding blocks, the crank-shaft being loosely journaled to yield when a hard substance is struck by the knives.

Claim.—The yokes G *g g* that carry the cutters, combined with a crank-shaft K, loosely journaled in open slots *a a* of uprights A A to rise whenever a bone or other hard substance is struck by the knives, in the manner described.

140,951.—*Apparatus for Producing Intermittent Rotative Movements.*—RUSCOE C. REYNOLDS, Lawrence, Mass. Application filed June 6, 1873.

Claim.—1. For intermittently rotating the gear *l* and a roll or shaft connected therewith, the combination of the eccentric *d*, arm *f*, ratchet *h*, pinion *k*, and pawls *i*, arranged and operating substantially as described.

2. In combination with the two eccentrics *d g*, the head *r* with its slot *s* and clamp-screw *t*, substantially as shown and described.

3. In combination with the ratchet *h*, pinion *k*, and gear *l*, the pinion *u*, ratchet *v*, and pawls *w* for retaining the gear, substantially as described.

140,952.—*Railway Tie.*—GEORGE R. RICHARDSON, Earlville, Ill. Application filed May 26, 1873.

The tie is made in two parts, secured together by screw-bolts. A key prevents lateral play. Wedges are driven in between the two parts at the ends, and afford a means of raising and tightening up the track when any depression occurs, without the labor of tamping.

Claim.—The permanent and adjustable parts of said railroad tie, in combination with each other and with the wedges by which the adjustment is to be made, substantially as described.

140,953.—*Circuit-Closer for Railroad Signals.*—DAVID ROUSSEAU, New York, N. Y., assignor to himself and WM. C. SMITH, same place. Application filed April 9, 1873.

Placed underneath rail between ties; the flexure of rail pressing B down upon E and closing circuit; rubber cushion C holding them apart normally.

Claim.—1. The combination of the top and bottom plates B D, cushion C, and metallic conductor F with each other to constitute an electric circuit-closer beneath a railroad rail, as described.

2. The combination of the adjustable spring E with the metallic conductor F and with the cushion C and plates B D for operation, as set forth.

140,954.—*Ant-Trap.*—LEANDER RUBARTH, Davilla, assignor of one-half his right to JOHN J. PIKE, Milam county, Tex. Application filed March 25, 1873.

The trap is a hollow cone with a center tube which extends below it, each having a detachable overhanging flange. The outside of it is covered with sand for the easy approach of the ant to the inlet.

Claim.—In combination with the hollow cone C, the tube B extended below the bottom thereof at *a*, as and for the purpose shown and described.

140,955.—*Bed-Bottom.*—THOMAS J. SHEARS, Ypsilanti, Mich., assignor of one-half his right to BENJAMIN F. POTTER, same place. Application filed June 11, 1873.

Belts, transverse and longitudinal, interlaced; the longitudinal belts rigidly attached at one end and adjustably at the other, form the bed-bottom, which is held to a proper tension by a roller and ratchet.

Claim.—1. A bed-bottom formed of belts C C and C' C', substantially in the manner described, it being rigidly attached at one end and adjustably at the other, as herein set forth.

2. The combination of the bed-bottom C C C' C', clamp B, roller D, ratchet-wheels *b*, pawls *d*, and lever G, all constructed and arranged, as described, within a frame, as set forth.

140,956.—*Laying Cement Pavements.*—ALEXANDER F. SHIRMA, New York, N. Y., assignor of one-half his right to BERNARD F. MCCAHILL, same place. Application filed May 15, 1873.

The long dividing-plates are notched upon their upper flanges to admit of the insertion of the short cutting-plates, which fit the spaces exactly. The plates are graduated for depth.

Claim.—1. The combination of the cutting-plates B with the dividing-plates A provided with notched flanges, for the purpose of forming a cement pavement, in the manner described.

2. The cement-dividing plate A, graduated substantially as and for the purpose herein shown and described.

140,957.—*Car-Coupling.*—WILLIAM P. SUDDENS, State Line City, assignor to himself and ROBERT CRAIG, Warren county, Ind. Application filed February 21, 1873.

The end of the coupling-pin being placed in the longitudinal groove, coupling will be effected by one draw-head being driven back so that its hole comes beneath the pin. When it is desired that cars should remain together without being coupled the end of the pin is placed in the transverse grooves.

Claim.—1. A buffer-head having in its upper surface longitudinal and transverse or angular grooves for the lower end of the coupling-pin to rest in, arranged substantially as and for the purpose set forth.

2. In combination with a buffer-head having in its upper surface longitudinal and transverse or angular grooves, the bracket or yoke E, arranged to operate substantially as and for the purpose set forth.

140,958.—*Steam-Cylinder Lubricator.*—LEVI F. SMITH, Philadelphia, Pa. Application filed June 6, 1873.

The soft metallic plate that forms the packing between the oil-reservoir and its cover is secured in a hollow cup which is arranged in the stem of such cover in such a manner that it may revolve therein, and thereby relieve the friction and wear occasioned by the screwing on and off of said cover.

Claim.—1. The combination of the stem B with interior chamber *a* of larger diameter than the screw-passage leading thereto, the stem *b* with raised screw-threads on its upper end, the cup E, detachable disk H of soft metal, and the confining-screw *b*, all substantially as and for the purposes herein set forth.

2. The combination of the reservoir D, tube J with hollow screw *d*, globe I with tube K and chambers *f f'*, valves L L', and indicating-finger *h*, all constructed and arranged substantially as and for the purposes herein set forth.

140,959.—*Fare-Box.*—ROBERT D. O. SMITH, Washington, D. C., assignor to JOHN B. SLAWSON, same place. Application filed September 28, 1872.

The guiding-chute delivers the fare at the side of the inspection-chamber, over which is a circular opening in the frame. The fare is swept into the treasury by a vibrating wiper. The box or treasury slides freely in the bottom of the box, to which it is locked by dropping-bolts. A cover, having an irregular end, is inserted through a slot over the box, and, while locking itself to the treasury, and thus closing it, raises the bolts and detaches the locking-bolts and releases the treasury, which is removed and its cover unlocked by a suitable key.

Claim.—1. A fare-box constructed with a semicircular inspection-chamber, A, provided with a transparent cover, *a*, and a vibrating partition or wiper, C, to remove the fares after inspection and deposit them in the passage X leading to the locked safe below, substantially as set forth.

2. In combination with the vibrating partition or wiper C, the swinging doors D and the automatic locking-bolts operated by the wiper-shaft, substantially as set forth.

3. In combination with a safe or drawer, O, provided with locking-bolts P to secure it in its case, a removable sliding combined key and cover, S, and an independent automatic lock, T, to secure said cover S when the same has been inserted, substantially as and for the purpose herein set forth.

4. In combination with the locking-bolts P, the swinging levers R and the sliding cover S, fitted to act as a key to move said levers and locking-bolts, substantially as described.

140,960.—*Farm-Gate.*—THOMAS STEERS, Milton, Wis., assignor of one-half his right to W. G. HAMILTON, same place. Application filed April 17, 1873.

A bar pivoted on the latch end of the gate passes through a guide on the hinge end and hinges to the upper part of the post. The lower hinge slides up and down on a fixed rod. When the gate is lifted for the passage of sheep a cam on the hinge end serves to retain it.

Claim.—The combination of the gate C with strap *a*, the post A with vertical rod *b*, staples *d d*, and hook *f*, the pivoted lever D with eye *h*, the guide E with teeth *i i*, and the pawl G, all constructed and arranged to operate substantially as and for the purposes set forth.

140,961.—*Seeding-Machine.*—HERMAN F. STINDE, St. Louis, Mo. Application filed May 6, 1873.

The furrow-openers consist of V-shaped wheels as to their peripheries, the two outside ones being fixed to the axle and the others independent in their vertical motion. The seed-box has a positive feed, by means of cups upon a shaft in the bottom of the seed-box, and the seed is conveyed to the ground by means of semicircular tubes, one within the other, to allow vertical movement.

Claim.—1. The combination of the frame or harness 1 and 2 with the wheels D^1 D^2 D^3 D^4 D^5 and loops or staples *x* fastened to the cross-piece connecting the posts A^1, in the manner and for the purpose herein set forth.

2. The combination of the supporting-wheels of the machine D and D^5 with the frame A, at the front and side of the same, and the vertical arm 2^{ax} and cross-piece connecting the posts A^1, in the manner and for the purpose herein set forth.

3. The combination of the metallic circular feed-pipe *g'* with the arm a^1, colter or tooth *a* with its wings a^x, and tube *b*, in the manner and for the purpose herein described.

4. The circular metallic feed-pipe *g*, combining with and fitting into the feed-pipe *g'*, both formed upon the same arc of a circle, and allowing a free and easy vertical movement of the pipe *g'* upon the pipe *g*, when constructed and arranged in the manner and for the purpose herein described.

5. The combination of the hooks a^2 with the frame or harness 2, colter-arm a^1, rod or chain a^2, and bar E, in the manner and for the purpose herein described.

6. The combination and arrangement of the levers C c^2 c^4 with the foot-piece c^5, the connecting-rods d^2 d^3 with the curved bars d^4, and bar E, in the manner and for the purpose herein described.

7. The combination and arrangement of the levers C c^3 with rod d^3, crank-lever f^1, and feed-slide *f*, in the manner and for the purpose herein described.

8. The feeding-rod A having formed upon it a series of cylinders or hubs, A^5, in each of which open spaces A^3 are formed of varying size, to regulate and control the supply of seed received within such spaces to be delivered to the seed-pipes *g g*, in the manner herein set forth.

9. The combination, with the feed-rod A, constructed as above set forth, of the bottom f^3 and the feed slide or valve *f* and feed-box B, in the manner and for the purpose herein set forth.

10. The within-described method and arrangement by which the foot-piece c^5 is sustained and released by means of the curved bars c^3, treadle *c*, lever c^4, and its connecting-rods a^1, c^3, and c^5.

140,962.—*Feeding Paper to Printing-Presses.*—CLARENCE H. STODDARD and EDWARD D. NORTON, Ithaca, N. Y. Application filed February 24, 1873.

The paper having been seized by nippers on the impression-cylinder, weighted fingers on a rod above drop upon the feed-table, and, by pressing upon the paper, insure the same remaining smooth.

Claim.—In combination with an impression-cylinder, *a*, having gripers *c*, the guiding-fingers A on a pivoted bar, *d*, having a pendulous lever, *e*, which is intermittingly vibrated by a stop, *f*, on the cylinder.

140,963.—*Driven Well.*—GEORGE W. STORER, Philadelphia, Pa. Application filed June 30, 1873.

An inner wire or strainer is secured upon the periphery of the tube. There is also another wire wound spirally around the same and connected therewith by means of corrugated strips of metal to prevent derangement and obstruction of the strainer while it is being forced into the ground.

Claim.—1. In combination with the perforated tube A and coiled wire C, the corrugated strips D placed upon and secured to said parts, substantially as and for the purpose specified.

2. In combination with the wire C wound spirally upon the tube A, and secured in place by means of the corrugated metal strips D, the wire E, coiled around and secured to said strips, substantially as and for the purpose shown.

140,964.—*Mode of Uniting Boot and Shoe Soles to the Uppers.*—WENDELL STRASSER, Taylorsville, assignor to himself and SAMUEL S. RAUCHMAN, Muskingum county, Ohio. Application filed June 7, 1873.

The upper of a shoe is secured to the sole by staples driven so as to interlock and form a continuous metallic thread.

Claim.—A series of nails, B, applied together to the sole and upper of a shoe, and made to interlock in the manner and for the purpose specified.

140,965.—*Potato-Planter.*—CHRISTIAN SVENDSEN, Blair, Neb. Application filed September 24, 1872.

The potatoes are received from a hopper upon two spiral cylinders winding in opposite directions. The potatoes are cut by a revolving knife, and pass to the hill by a conductor.

Claim.—1. The construction and arrangement, with relation to the hopper D, of the shaft L, pinions P Q Q', worms O O', and spout R, all operated by the traction-wheel axle for planting or dropping the potatoes in the furrow, substantially as described and shown.

2. The wheel N, adapted to revolve by means substantially as described, when arranged, relatively to the worms O O' and dropper-spout R, as described, for the purpose set forth.

140,966.—*Bustle.*—AMOS W. THOMAS, Philadelphia, Pa. Application filed June 5, 1873.

Claim.—1. The construction and arrangement of the bow D, substantially as herein described, its extremities being curved so as to cross or intersect the bows A, to which they are secured by a suitable device, as an eyelet.

2. The tape C, or equivalent strap, lapping over the ends of the bows A A, and made fast by suitable means, as eyelets, substantially as herein described.

3. In combination with the bows, or any number of them, and cord E, the eyelet *c*, or other device for holding, applied after the cord has been passed through an opening to fasten said bows and cord, substantially as described.

140,967.—*Window-Screen.*—JOHN A. THOMPSON, Readington, N. J. Application filed May 24, 1873.

The frame, by reason of the metallic boxes, is extensible so as to fit any desired opening, where it is clamped by means of the thumb-screws. The screen is made to conform to the width of frame required by means of the winding-roller D.

Claim.—The combination of the three-sided frame A, sheet-metal boxes B B having longitudinal slots *a a*, the set-screws *b b*, bar C, roller D with square journal *d*, and screen G, all constructed and arranged substantially as and for the purposes herein set forth.

140,968.—*Harness-Saddle.*—SAMUEL E. TOMPKINS, Sing Sing, N. Y.—Case A. Application filed March 15, 1873.

Claim.—1. The combination of recesses *a* in the frame, one on each side of the channel B, with the flanges C exterior to said recesses, substantially as described.

2. The combination of recesses *a* in the frame, one on each side of the channel B, with the flanges C exterior to said recesses, when said flanges are provided with holes *c*, &c., substantially as described.

3. The combination of recesses *a* in the frame, one on each side of the channel B, with the flanges C exterior to said recesses, either with or without holes *c*, &c., when said recesses contain leather D, substantially as described.

4. The combination of recesses *a* in the frame, and of flanges either with or without holes exterior thereto, substantially as described, when said recesses open out on either side of the frame at the top, the extensions F of the leather pieces D therein contained constituting the middle leather for the saddle.

140,969.—*Harness-Saddle.*—SAMUEL E. TOMPKINS, Sing Sing, N. Y.—Case B. Application filed March 15, 1873.

Claim.—1. The body-frame A, consisting of a thin plate with thickened strengthening portions on the under side along the edge, or thereabout, when such plate is constructed substantially as described.

2. The said frame made flat on the upper side with a sunken bridge, N, at the top, and openings P below it for the back-band to pass over the bridge, and under the middle portion of the frame down the sides, substantially as described.

3. The notches S in the ends of the body-frame A, and projections T to give shape to the back-band, substantially as and for the purpose described.

4. The saddle-frame A, having a plane upper surface, strengthening-ribs on the under side, and a notch and projections at the lower ends, substantially as described.

5. The under plates B, having a wide deep groove on the upper surface to allow the back-band and flap to spring down under the frame between flanges, in the manner described.

6. The said plates having holes Y in the flanges to nail on the leather portions, substantially as described.

7. The plates having holes Z for the nuts of the pad-screws, substantially as specified.

8. The plates having a notch, *b*, and projections *d* at the lower end to allow space for the stiffener, as described.

9. The plates having the notch *s* at the upper end, to allow the back-band to extend up in small saddles, as described.

10. The combination of under plates B with plates A, when said under plates are provided with holes for pad screw-nuts.

11. The middle portion X of the flap to be depressed to make room for the back-band, separated from the sides of the flap by slits *b'*, but not cut off at the ends, substantially as specified.

140,970.—*Harness-Saddle.*—SAMUEL E. TOMPKINS, Sing Sing, N. Y.—Case C. Application filed March 15, 1873.

Claim.—1. A frame cast with a sunken bridge at the top and raised bridges at the middle portions below, so arranged that the back-band passes over the sunken bridge and under the raised bridges, substantially as described.

2. The combination, with a frame cast with the bridge at the top for the back-band to pass over and raised bridges at the middle portions below for it to pass under, of the lower middle portions V for the back-band to pass over, substantially as described.

3. The terret-screws screwed to the middle bridge, which forms a portion of the frame, to allow the back-band to pass under them, substantially as described.

4. The middle portions I, having a raised portion, W, to allow of fitting the terret-nuts flush with the under side, as described.

5. The combination of the strengthening-ribs Y with the frame, when these above are continuous, substantially as described.

6. A frame, with the side portions N, top bridge M, raised bridge I, and lower middle portions V, constructed and arranged substantially as described.

7. The holes Q and R in the seat, to connect it either at the center or rear, substantially as specified.

140,971.—*Corn-Harvester.*—GEORGE M. TOPE, Lecsville, Mo. Application filed June 17, 1873.

Disk-cutters, one of which has a circumferential groove for the other to work in, sever the standing stalks, which are conveyed and delivered in the rear of the machine in quantities sufficient for a shock.

Claim.—1. The combination of the circular knife J with the circumferentially-grooved and serrated wheel K, the two being arranged and operating together, substantially as set forth.

2. The combination of the inner frame C', provided with the rigid guards A A, which are each formed of a single rod and extend around three sides of the frame, with the main frame C, with its upright shafts and endless belts G G, all constructed substantially as and for the purposes set forth.

3. The disks or flanges L L, provided with guards *k k*, in combination with the carrier-belts, substantially as and for the purposes herein set forth.

4. The combination of the ropes f^3, shaft b^3, pulleys d^3, spring *n*, and hooks *m*, substantially as and for the purposes herein set forth.

5. The combination, in a corn-harvester, of the pivoted or hinged derrick M N and hinged part H' of the platform, substantially as and for the purposes herein set forth.

140,972.—*Street-Car Awning.*—CLAUDIA B. TURNBULL, Washington, D. C. Application filed June 13, 1873.

The awning is drawn out by pulling the cords B', and is drawn in by pulling the cords B''. The awning is long enough to protect the horses.

Claim.—In combination with the sliding street-car awning, the cords B' and B'', one attached to lugs C at the extremity of the frame B and the other attached to the front of the awning-frame, the intermediate pulleys *b b' b''*, and cleat E, by means of which the driver, from his position on the front platform, may throw the awning forward, draw it back, or secure it in any desired position, substantially as set forth and shown.

140,973.—*Piston-Rod Packing.*—WILLIAM W. VANDERBILT, New York, N. Y. Application filed May 10, 1873.

The stuffing-box has reverse conical sections, each section having its edges chamfered, so that when two are put together they form a recess with indentations to allow the water of condensation to pass around the various sections, thus making the packing steam-tight.

Claim.—A packing for rods or shafts, composed of a series of sectional conical rings, each section being provided with a groove or recess, *a*, substantially as and for the purpose described.

140,974.—*Pruning-Shears.*—GEORGE VANFOSSEN, Bethesda, Ohio. Application filed June 7, 1873.

An oscillating knife-blade has two cutting-edges for operation upon a double hook-shaped blade, and is connected to the lever-handle by a short link.

Claim.—1. In a pruning-tool with stationary counter-bearings, the combination of the lever D, the link E, and the double-edged knife-blade C.

2. In a pruning-tool, the combination of the shank M, the pivot-holes a^1 a^2, the lever D, the link E, and the knife-blade C with the holes a^3 a^4 a^5, for the purpose of reversing the lever D and its connection with the blade C, and for the purpose of making a chisel of the cutting-edge on the off-side of the blade C.

140,975.—*Bed-Bottom Spring.*—JOHN A. VAN WERT and ARTHUR CROOLEY, Elmira, N. Y. Application filed May 22, 1873.

The spring, made of one piece of wire, has a double stem passing through the center. The base rests upon a slat, through a slot in which the looped end of the stem passes, and through the loop of which a key is inserted.

Claim.—In combination with the slat A, the spring B having the doubled stem C and key *d*, either with or without the cap piece D, as herein shown and specified.

140,976.—*Curtain-Fixtures.*—FELIX WALKER, New Orleans, La. Application filed April 11, 1873.

A round bar bent and sharpened at both ends, and combined with a clutch bearing a cord, wheel, and disks.

Claim.—The combination of the reversible round bar A with bent and sharpened ends *a a*, the clutch B, wheel C, and disks D D, all used with an endless cord, *b*, as and for the purposes set forth.

140,977.—*Step and Step-Box.*—JAMES WATSON, Philadelphia, Pa. Application filed May 5, 1873.

The segmental bearings are held in place by one set of screws and tightened by another set. The disks under the spindle are concave and convex and capable of lateral play, so that the point of wear is constantly being shifted.

Claim.—1. The combination, with a spindle, of a series of disks, H H, arranged below the end of the spindle, and capable of a limited lateral motion, substantially as and for the purpose set forth.

2. The combination, with the segmental bearing-pieces A, of the retaining-screws *a a* and set-screws *b*, as specified.

3. The step-box B, closed at the bottom, and adapted to receive the adjustable segmental blocks A A and disks H H, substantially as described.

140,978.—*Oscillating Cabin for Vessels.*—BERNHARD WEISKER, New York, N. Y. Application filed May 15, 1873.

A platform is hung or pivoted at the middle thereof in a swinging frame. The ends and sides of said platform and frame are connected by rods with vibrating cross-beams of rock-shafts, which have pendent weights rigidly attached thereto to operate as a counterbalance to inequalities of weight on the platform or floor.

Claim.—The combination of pendulums C H with the oscillating frame B and the oscillating floor E of a cabin in a vessel, substantially as shown and described.

140,979.—*School-Desk.*—FRANCIS A. WILBER, Wabash, Ind Application filed May 5, 1873.

Two sliding hinged boards or sections are arranged under the desk-top so that they can be drawn out and form an extended table, or the outer section can be turned back and form a book-support. Pivoted levers are arranged on the sides of the desk to support the outer section when it is turned back.

Claim.—1. In a school desk, the sliding hinged sections *a b*, so arranged within the desk that they may be drawn out and the section *a* turned up to form a book-support, substantially as described.

2. In combination with the sliding sections *a b*, one or more pivoted levers, *c*, arranged at the side of the desk to support the section *a* when turned up, substantially as described.

140,980.—*Die for Making Car-Coupling Pins.*—CHARLES H. WILLIAMS, Cleveland, Ohio. Application filed May 21, 1873.

The dies are adapted to the making of pins of rectangular bars. Dies A gripe the blank and round the corners of it; header B upsets and tapers the head and shapes the collar, and other dies point the other end of the pin.

Claim.—1. The combination of the dies E F G H, constructed as shown, and relatively arranged to operate in such a manner as to impart or give a tapering point to a coupling-pin made from a flat bar of iron having rounded edges, substantially as described.

2. The combination of the clamping or griping dies A A' and the heading-die B for developing the collar and the dies E F and G H for pointing the pin, the whole being constructed and arranged to operate substantially as described.

140,981.—*Die for Manufacturing Car-Coupling Pins.*—CHARLES H. WILLIAMS, Cleveland, Ohio. Application filed May 22, 1873.

A round rod is clamped by two griping-dies, while a header descends and slightly tapers the end and swages a shoulder around the rod near the same end. In another pair of dies this tapered end is flattened, and then placed in another set, where the head is finished and the chain-hole formed in it. The opposite end of the blank is then pointed, which finishes the pin.

Claim.—1. The griping-dies A A' and header or die B for developing the collar, in combination with the pointing-dies K K', the whole being constructed and arranged to produce, by their joint operation, a car-coupling pin, as shown in Fig. 5, substantially as described.

2. The combination of the compound die D and the die E for flattening and drawing out the end of the bar, said dies being of the configuration shown, and constructed and arranged, as stated, so as to permit of their being refaced and refitted without enlarging the cavity they form, substantially as and for the purpose specified.

3. The combination and construction of the dies F F' swaging-dies, G G', and punch H, the whole being arranged and operating as shown, for necking and punching the pin, substantially as described, as and for the purpose specified.

4. The combination of the dies A A' and B for forming a collar, dies K K' for pointing the pin, the compound dies D and the die E for flattening and drawing out the end of the bar, and the dies F F' and G G' and punch H for necking and holding the pin for the action of the punch, substantially as described.

140,982.—*Balance-Wheel for Sewing Machines.*—DAVID G. WILLIAMS, York, Pa. Application filed June 7, 1873.

A loose fly-wheel is arranged upon a sewing-machine shaft with a pawl and ratchet connection, so that the said fly-wheel may be coupled to the shaft only for a forward motion, but will at all times turn loosely when the motion is reversed; also with a stopping-lever which throws the ratchet out of connection, so that the fly-wheel may be revolved either way without affecting the shaft.

Claim.—The combination, with the shaft of a sewing-machine and a loose fly-wheel thereon, of a ratchet-connection, operating in one direction only, and a key-tumbler for disengaging said ratchet-connection when desired, as specified.

140,983.—*Needle-Threader for Sewing-Machines.*—MARY A. WILLIAMS and JOHN T. WILLIAMS, Chicago, Ill. Application filed December 12, 1872.

The thread pushed through the eye of the needle by the point is pressed into and held by the spring-jaw, so that the thread cannot be drawn back by the point.

Claim.—The sewing-machine needle-threader, consisting of the point P for thrusting or carrying thread through the eye of the needle, combined with the plate C, spring B B', and spring-jaws J, all constructed substantially as and for the purpose hereinafter set forth.

140,984.—*Manufacture of Dental Gold.*—RICHARD S. WILLIAMS, New York, N. Y. Application filed June 27, 1873.

A plate having its front and rear edges and one of its sides turned down at right angles to the face of a bed-plate, on which rests the foil with one end bearing against a bridge, is placed over, and one end on, the foil and drawn backward until it reaches a stop, crimping the foil in the operation. The plaited foil is then passed over a spirit-lamp, annealing and making ductile the gold, and is again placed on the bed-plate, when its sides are squeezed between the bridge and turned-down edge of the plate, forming the foil into a bar.

Claim.—1. The apparatus hereinbefore described for preparing dental gold.

2. The process hereinbefore described for preparing dental gold.

140,985.—*Fare-Box.*—JAMES F. WINCHELL, Springfield, Ohio, assignor, by mesne assignments, to JOHN B. SLAWSON, New York, N. Y. Application filed September 6, 1872.

The money and fare drawer has, at its inner end and side, locking-bolts which secure it to the fare-box. A cover, locked open, is unlocked from the drawer by a key which, as a lever, slides it to close the drawer, in which position a spring-bolt secures it, and releases the same from the fare-box, when it is removed and the locked cover again released by another key to gain access to its contents.

Claim.—1. A drawer for fare-boxes, having an automatic lock, *x*, at its inner end for securing the same in its case, and a sliding lid, *w*, for closing the opening in the top of the drawer, and constituting the means or medium for operating the drawer-retaining lock *x* to release the drawer, and a lid-lock, *v*, for securing the lid prior to the release of the drawer, so that the drawer is necessarily closed and locked in the act of releasing it, substantially as herein shown and described.

2. The combination of the stud-catch *y* with one or more circumferential grooves or notches and the lever-bolt 1 with its spring 2, constructed and arranged substantially as shown, for the purpose specified.

3. The catches 4, (two or more,) in combination with the drawer-lid *w* and lock *v* and the drawer-retaining lock *x* for the purpose set forth.

4. The spring-bolts 6 (one or more) and catch 7, arranged and operating substantially as described, in combination with the drawer-lid *w*, for securing the lid in open position and preventing its operation, except by the proper key *t*, as set forth.

5. The spring bolt or catch 14 and ratchet-rack 15, or one or more notches, arranged substantially as described, in combination with a fare-drawer, with sliding lid closed and locked, in the act of operating such bolt or catch, for the purpose set forth.

6. A fare-box provided with a drawer, when said drawer fastens itself in the box in such a manner as to be released only by the movement of a sliding lid, substantially as herein described.

7. A fare-box provided with a drawer which locks itself in the case by means of sliding it in place, and a sliding lid, substantially as herein described, when said lid is moved back over the opening of the drawer and locked, and the drawer unlocked from the case by the movements of said sliding top effected by the action of one key.

8. In combination with a fare-box drawer having a sliding lid for closing and subsequently detaching the same, a key, *t*, constructed substantially as herein described, for releasing and sliding the drawer-lid and withdrawing the closed receptacle.

140,986.—*Change-Gate.*—ALBERT W. WOOD, St. Louis, Mo., assignor to JOHN B. SLAWSON. Application filed February 25, 1873.

The gate is hung upon central pivots embraced by a frame made in two sections and provided with flanges on opposite sides, which limit the play of the gate to one direction only. It is opened by pressure of the hand, and closed by a spring centering one of its pivots.

Claim.—1. In combination with a centrally-pivoted gate, A, a spring A, as arranged to close the gate, in the manner described.

2. In combination with the gate A and spring A, or its equivalent, as described, a gate-frame consisting of two halves, B and C, provided with flanges *e* and *f*, when so arranged, with relation to each other, that the gate can only be opened from either side at one end only, substantially as described.

140,987.—*Flat-Iron Heater.*—JOSEPH C. WRIGHT and JAMES W. SUSSA, Moline, Ill. Application filed April 11, 1873.

Claim.—The combination, with the base A and casing B inclosing lamps C, of the sad-iron-shaped plate G, with alternate up- and down ears *m n*, and the perforated plate D resting on the lugs *b b*, and wire rod *d*, all constructed substantially as and for the purposes set forth.

REISSUE PATENTS.

5,484.—*Bustle.*—MOSES K. BORTREE, Jackson, Mich.—Patent No. 136,127, dated February 25, 1873. Application filed May 17, 1873.

Claim.—1. In a bustle constructed substantially as herein described, the adjusting-cords C, in combination with the band A and springs B, arranged to operate substantially as set forth.

2. The combination of the band A, springs B, adjusting-cords C, and springs E, when the parts are arranged substantially as and for the purposes set forth.

3. The combination of the band A and springs B and E, arranged as shown, with the spiral or coil spring H, substantially as described, and for the purposes specified.

4. The arrangement of the band A, springs B, adjusting-cords C, expander D, and springs E, substantially as and for the purposes described.

5. The arrangement of the band A, springs B, adjusting-cords C, expander D, springs E, with the brace F and spring H, substantially as and for the purposes set forth.

6. The combination and arrangement of the band A, springs B, adjusting-cords C, expander D, springs E, brace F, and adjusting strap G, substantially as described, and for the purposes set forth.

7. The combination of the adjusting-strap G with the band A, springs B and E, and coil-spring H, substantially as and for the purposes described.

5,485.—*Reed-Organ.*—RILEY BURDETT, Erie, Pa.—Patent No. 135,687, dated February 11, 1873. Application filed June 27, 1873.

Besides the qualifying-vent attachment to the stop-valve, three sets of reeds are located in front of the tracker-pins.

Claim.—1. The vent B, in combination with the reed-mute, to allow of a partial or full opening thereof, substantially as described.

2. The reed-board I having three, either full or partial, sets of reeds in front of the tracker-pins, two of which sets enter the reed-board obliquely, substantially as shown.

5,486.—*Process of Making Coke from Lignites, &c.*—HENRY ENGELMANN, Salt Lake City, Utah Ter.—Patent No. 136,592, dated March 11, 1873. Application filed July 7, 1873.

Claim.—1. The process of coking brown coal, lignite, imperfectly coking stone-coal, and analogous coal-like material incapable of effective coking by the usual practice with ordinary coking-ovens, by subjecting these substances to a high initial and sustained heat above the cherry-red, so termed, applied laterally throughout the mass, and derived from a source of heat which is partly or wholly distinct from the combustible gases evolved by the coking process itself, and of a degree above the one created in the ordinary coking-furnaces by the combustion of the coking-gases, substantially as herein set forth.

2. The facilitating of the process of coking of the materials named in claim 1 by mingling the same, if necessary, with coal-tar, asphaltum, or analogous substances, or with bituminous coking-coal, or with coking-coal and coal-tar or asphaltum, &c., together, before subjecting the whole to the high and sustained heat of the coking-oven, substantially as set forth.

3. The process herein described of compacting by mechanical pressure the material to be coked after its introduction into the coking-oven, for the purpose specified.

5,487.—*Machine for Turning Logs.*—ESAU TARRANT, Muskegon, Mich., assignor to ALEXANDER RODGERS, same place.—Patent No. 81,432, dated August 25, 1868. Application filed June 25, 1873.

A toothed or serrated bar is provided with means for imparting to it a vertically-reciprocating movement, when the teeth of the bar catching in one side of the log partially rotate it.

Claim.—1. The toothed bar herein described, operating substantially in the manner and for the purpose specified.

2. The toothed bar C, pivoted at its lower end between the blocks E, which are adapted to slide in vertical grooves formed in the posts D, whereby the said bar C is rendered vertically movable and capable of adjustment to suit logs of different sizes, substantially as herein set forth.

3. The combination of the pivoted brake R, connection S, and pivoted bridge-tree O, substantially as herein shown and described.

4. The combination, with the bar C, of the cord or chain F, pulley G, shaft J, drum I, friction-pulleys K L, and adjustable shaft M, substantially as set forth.

5. The combination of the cam P and shaft Q and weighted arm T with the connected brake and bridge-tree, to operate as and for the purpose described.

5,488.—*Machinery for Goring Gaiters.*—JOSEPH WALDEN, Newark, N. J., assignor of one-half interest to GEORGE PLATTE.—Patent No. 136,508, dated May 7, 1872. Application filed August 12, 1872.

The plate A has converging grooves cut upon its face, which indicate the proper position for the lining, which is held in position by spring-clamps. Attached to the swing-plate are other clamps which press the upper elastic gore-piece and lining when prepared for adhesion.

Claim.—1. The grooved plate A, when made to mark the position in which the lining is to be placed thereon to be folded, and with grooves to aid in folding the edges around the gore-opening, as described.

2. The plate A, made substantially as described, in combination with the spring-clamps *c c*, arranged to receive the shoe-lining and hold it in its adjusted position on said plate while the edges are being creased and folded, as described.

3. The tapering guide-clamp C, made and combined with the plate A to hold the elastic gore, and furnish a guide to set the front and back of the different-sized upper against, as set forth.

4. The press-plates *d d*, combined with the plate A to press the gore, the lining, and the upper, or either two of them, together, as described, for the purpose specified.

5,489.—*Automatic Gate.*—WILLIAM I. WORCESTER, Harvard, Ill.—Patent No. 136,892, dated March 18, 1873. Application filed June 20, 1873.

The latch which holds the gate to and that which holds it open are both operated from the same lever, which is controlled by means of a pendant within reach of the driver approaching the gate, the main latch sliding horizontally against a reacting spring.

Claim.—1. The latch I, in combination with the wire A, lever F, and post E, for the purposes set forth.

2. The combination of the handles G, levers F, posts B E, rod H, link *a*, latch I, and wire A with a gate, substantially as and for the purposes described.

3. The combination of the gate, post C, latch D and connecting-wire, link *b*, rod H, link *a*, levers F, posts B E, and handles G, when the parts are arranged to operate substantially as and for the purposes specified.

4. The arrangement of the gate A, posts B C E, latch D, levers F, handles G, rod H, latch I, links *a b*, and springs *d*, when the parts are constructed and combined to operate substantially as and for the purposes set forth.

5,490.—*Clip-Plate for Carriage-Springs.*—NORMAN C. DEAN, Union Springs, N. Y., assignor of one-half interest to SILAS S. BLISS, same place.—Patent No. 134,859, dated January 14, 1873. Application filed May 17, 1873.

The plate receives the spring-clips and prevents them from being displaced.

Claim.—The metallic plate A, constructed as herein described, having the central vertical hole *a*, parallel transverse flanges *c*, and re-enforced channels *b*, adapted to receive the spring-clips, substantially as and for the purpose set forth.

5,491.—*Inhaler.*—NILES I. DONALDSON, Worcester, Mass.—Patent No. 134,861, dated January 14, 1873. Application filed May 31, 1873.

The vessel to contain the acid is furnished by a bulb blown upon the tubes. The alkali is placed in the wash-bottle, when a single one may serve.

Claim.—1. The combination, with the receptacle in an inhaling apparatus, of the peculiarly-constructed inlet-tube C provided with a bulb, D, upon the lower side of the bent or horizontal portion *a* of the tube, substantially as set forth.

2. The combination, with the inlet-tubes C C', of the funnels or valves F, substantially as and for the purpose set forth.

3. An inhaling apparatus, consisting of a main receptacle, A, having a single opening provided with a stopper, B, inlet-tube or tubes C, liquid bulb or bulbs D upon the lower side of the bent or horizontal portion of the tube which is within the main receptacle and drait-tube E, substantially as set forth.

4. The peculiarly-constructed inlet-tube C bent at *a*, as shown, and having the communicating bulb D blown on the lower side of the bent or horizontal portion of the tube, as and for the purposes specified.

5,492.—*Dress-Facing.*—WILLIAM H. GALLUP, Troy, N. Y.—Patent No. 136,396, dated April 29, 1873. Application filed June 24, 1873.

Claim indicates the invention.

Claim.—As a new article of manufacture, a skirt-protecting facing composed of a plain band of stiffened fabric and a fluted strip attached thereto, substantially as and for the purpose described.

5,493.—*Cylinder for Burring-Machines.*—JOSIAH K. PROCTOR, Philadelphia, Pa., assignor of one-half interest to CHARLES R. LINDSAY.—Patent No. 132,690, dated October 29, 1872. Application filed April 12, 1873.

Claim.—In combination with a grooved cylinder, the toothed wire, constructed as shown, wedge-shaped in cross-section, and applied by having its base inserted in the spiral groove of said cylinder, and secured therein by the compression of the metal of the cylinder around it, as specified.

5,494.—*Dovies for Lining Cement Pipes.*—MELVIN STEPHENS, Brooklyn, N. Y.—Patent No. 126,100, dated April 23, 1872. Application filed June 5, 1873.

Cone left in until cement sets, and then withdrawn.

Claim.—1. The manufacture of cement-lined metal pipe, by means of a contractible cylindrical core that retains the cement lining firmly in contact with the pipe until the cement has consolidated, after which the core is removed, substantially as set forth.

2. The cylinder *a*, with the toggles connected to the inside thereof, for expanding and sustaining the cylinder, and for contracting the same previous to removal, substantially as set forth.

3. The contractible cylinder *a*, connected removably to the conical spreader, substantially as and for the purposes set forth.

5,495.—*Saddle-Tree.*—SAMUEL E. TOMPKINS, Sing Sing, N. Y.—Patent No. 30,168 dated September 25, 1860; reissue No. 4,709, dated January 9, 1872. Application filed May 29, 1873.

Claim.—1. A saddle tree, when constructed with depressions in its sides retaining the stiffener or stiffeners and tongues of flap wholly within such depressions and flush with the top of the flanges, substantially as described.

2. A saddle-tree, when constructed with depressions in its sides for retaining the stiffener or stiffeners and tongue of flap, substantially as described, in combination with the level flanges.

3. A saddle-tree, constructed with depressions in its sides for retaining the stiffener or stiffeners and tongue of flap, such depressions containing a series of holes, substantially as described.

4. A saddle-tree containing such depressions and level flanges, such flanges containing a series of holes, substantially as described.

5. An interposed or separate piece of leather applied to a removable seat-tree, substantially as and for the purposes described.

6. The arrangement of the underneath surface, substantially as described, of a cast-metal harness saddle-tree containing depressions F F in its sides, which depressions form bearings on the under side.

7. The combination of a projection on the tree for retaining the seat in position, with recesses in the under side of the said seat, in which said projection rests, and serves as a support and rest for the front side of the seat.

8. A hook constructed with a shoulder at its rear, when combined and arranged with a jog on the under side of the tree, substantially as described.

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Lemon squeezer, J. H. Mead	88	140,785
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COMMISSIONER'S DECISIONS.

BROOKFIELD AND HEMINGRAY *vs.* BROOKE.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of James M. Brookfield and Robert Hemingray and the patent of Homer Brooke, for* IMPROVEMENT IN THE MANUFACTURE OF INSULATORS. *Decided July* 3, 1873.]

Where two conflicting applications are pending in the Office at the same time, and a patent is issued upon one of them by mistake without declaring an interference between them, the rights of the parties will be determined on the same ground as if both were applicants; the one who has obtained a patent will derive no advantage from it in the controversy, neither will the other be prejudiced by it.

The party who first conceived an invention, and made drawings of it, and endeavored to induce manufacturers to adopt it and introduce it, without whose aid it could not be done, held to be the prior inventor, although his competitor, being a manufacturer himself, was enabled thereby to anticipate him in introducing it into use.

LEGGETT, *Commissioner:*

This cause was decided by the Examiner of Interferences in favor of Brooke, and by a majority of the Board in favor of Hemingray, one member dissenting. Brookfield has filed an admission that both the other parties precede him in date of invention, which leaves the question of priority to be decided between them only. The invention in controversy is a process of making glass insulators for telegraph-wires. Molten plastic glass placed in a mold of suitable form to make an insulator receives a plunger, which is quickly withdrawn, leaving a hole into which a screw-threaded mandrel is inserted. As soon as the glass becomes slightly cooled and set the mandrel is unscrewed, leaving the cavity screw-threaded. The respective steps in the process are the same, except that Brooke proposes to rotate his mandrel while it is descending into the cavity in the glass. Hemingray thrusts his in, and relies alone on unscrewing it to perfect the glass screw-thread.

Brooke's application was filed December 11, 1869, and his patent granted January 25, 1870. Hemingray's application was filed January 3, 1870. Both were pending in the Office at the same time, but by some mistake they were assigned to different classes, and Brooke's patent was granted without an interference. This was in violation of the statute, and Hemingray is not to be prejudiced under such circumstances by the fact that Brooke has a patent. See *Hamilton* vs. *Foster*, Decisions, 1869, p. 30. This interference was declared before preliminary statements were required by the rules of the Office. Hemingray does not fix the date of his invention definitely in his testimony, but says he made it before the 4th of February, 1869, in warm weather, and he thinks in July or August, 1868. At that time a number of insulators were made by the process in question. This is amply proven, and is conceded by Brooke. At least one of the insulators then made was put into use. In May, 1869, he manufactured and sold a large number. It is not necessary to consider the testimony of Hemingray further. The substance of it all is, he completed and successfully practiced his invention in the summer of 1868, employed it largely to supply the trade in the spring of 1869, and applied for a patent early in January, 1870.

Brooke proves that he conceived the invention in the winter of 1867 and 1868, and made a drawing of a machine necessary to the actuation of the process, and illustrating it so far as it is possible to exhibit a process by a drawing. This drawing, which is put in evidence, was exhibited to others, as they testify in support of Brooke, and the machine and process were intelligibly explained to them during the spring and summer of 1868. Brooke at the same time expressed his intention

to take out a patent. In February, 1869, he showed his drawing to a model-maker, explained the invention, and inquired, "What would be the cost of getting up models for the Patent Office?" (Shedlock, 2, 3.) He swears he made efforts at different times to induce different parties engaged in glass manufacture to use his invention. In June, 1869, he practically tested his process in Brookfield's shop, as is fully proven, successfully making a number of insulators. Brookfield was present and gave him an order for a machine, which was completed and delivered July 6, following. Afterward, the same year, he made Brookfield other machines. These are the facts in proof in behalf of the parties, respectively, and they are nowhere disputed. The question is whether Brooke, being first to conceive the invention, used reasonable diligence to adapt and perfect it for practical use. It is to be noted that he is not a glass manufacturer, and Hemingray is. Although he could (as he swears he did in 1869) make the machine, he could not himself readily use it to practically test his process. The best he could do, or all that he could reasonably be required to do, was to explain the process, in connection with the drawing of the machine, to those engaged in glass manufacture who would be likely to be interested by him to take it up and test it. This he did, and in about a year and a half from the date of his first conception of it he succeeded in introducing it into use in Brookfield's shop.

It is not shown by what means he could have had it used or tested any sooner than he did. There is nothing standing against him except the mere lapse of a comparatively short period of time during which another, better situated, perfected and used the invention. He accounts for his delay, and for no greater delay than that his own oath uncontradicted is sufficient. The reason alleged for not applying for a patent sooner, and thus conferring his invention upon the public, is that "he did not feel in circumstances to make application," and it is nowhere alleged or shown that he was. The screw-threaded insulator itself was patented. He could not use his process without making terms with the patentee, and he swears he saw him and tried to interest him in his invention. Hemingray employed the process as soon as he thought of it, because it was for his interest to do so, and he had nothing to prevent him.

But the question is not who *used* it first. That is not the only matter of importance in a controversy of this character. Precedence in its inception, the date of its origination, the time when sufficient proof shows it to have been so far developed by the aid of a drawing or model as to be actually communicated to the knowledge of others, who attest both their knowledge and the means of their knowledge, *is* quite as important. Brooke was unquestionably first as to that much of the act or work of invention, and the test of reasonable diligence afterward must not be applied with unreasonable rigor to cut him off. Although he did not at first perfect and prove his invention by use, or by embodying it in due form in an application for patent in this Office, I think he is shown by the proof to have been reasonably diligent in doing both. If I am correct in this opinion, his right to a patent should not be denied.

The decision of the Board is reversed and priority awarded to Brooke.

GEORGE CROMPTON.—*Appeal.*

[Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of George Crompton for patent for LOOMS.—*Decided July 16, 1873.]*

LEGGETT, *Commissioner:*

It appears that this application has been in interference with an application of John C. Duckworth, and that priority of invention has been decided in favor of Duckworth, who has since been granted his patent. Now applicant submits an amended claim covering, as he alleges, subject-matter which is patentable, which was not involved in the interference, and which is not to be found in Duckworth's patent. In connection with his claim he enters a disclaimer referring to the matter claimed by Duckworth, as follows:

"I do not claim the employment of two series of heddle-levers, one series pendent on one fulcrum, and another series upright on another fulcrum, in combination with horizontal jacks which are in direct contact with the pattern-chain between their pivotal points and notches. But what I do claim as of my own invention is—

"A series of long upright levers, one lever for each leaf of heddles, and each connected to a leaf of heddles, in combination with horizontal jacks which are in direct contact with the pattern-chain between their pivotal points and notches, substantially as and for the purpose described."

From this it is apparent that the only difference between the subject matter of applicant's claim and that of Duckworth's is that Duckworth claims heddle-levers arranged in two series, one above the other; in other words, each lever is divided into two parts, the upper part resting upon and being raised by the lower part. The divided levers or double series, as the Examiner remarks, work, in combination with the other elements of the claim, as one lever. The long single levers are old. Duckworth substituted the double series for them, as he sets out in his patent, because, on account of their length, they were slender and frail, and difficult to cast in a sufficiently perfect manner. Besides, when one was broken the whole lever had to be replaced. By employing two shorter levers, pivoted so as to operate as a single lever, for the purpose of working the heddles, something was saved in case of breakage. He also sets forth in his patent that the arrangement and operation of the pattern mechaniam, jacks, &c., "does not depend upon having the heddle-levers arranged in two series, but is equally applicable to a single series of long upright heddle-levers."

This is obvious, I think, and therefore applicant does not present a combination at all different as such from Duckworth's. The same subject-matter is in Duckworth's patent mentioned as an alternate or equivalent construction, so far as the combination claimed is affected. The decision of the interference in his favor was necessarily an adjudication upon the subject-matter now claimed, as the Examiner and Board have held.

The decision of the Board is affirmed.

THOMAS SLAIGHT.—*Appeal.*

[Appeal from the Board of Examiners-in-Chief in the matter of the application of Thomas Slaight for patent for LOCKS.—*Decided July 3, 1873.]*

A seal-lock in which the bow and seal must be locked by separate movements has merit as an improvement, although a lock has been patented in which both were locked by one movement, but the seal might be released in locking the bow.

LEGGETT, *Commissioner:*

The combination of parts claimed by the applicant is not to be found in the reference cited. The question is whether an equivalent construction is shown. The same general result is accomplished by applicant's lock and that of Kitson & Bennor. In other words, a single bolt fastens the bow and seal in each. Nevertheless, there is a considerable difference in the working of the two locks, as there is also in their construction.

In the patented lock either bow or seal may be locked alone, and in applicant's both must be locked at the same time.

The Board regard this as an advantage in favor of the former, and think there should be little hesitation in granting a patent for the improvement over applicant's lock which the patented lock exhibits. This goes one step too far for the purpose of their argument. It is an admission that there is a substantial difference between the two locks; that they are not equivalents in construction, and is conclusive against their finding. Which is practically superior, and actually entitled to be regarded as an improvement upon the other, is a question for the public. If they are substantially different in construction and operation, that is as far as inquiry in the Office need go. That they are I agree with the Board, and if it were material it might be shown that applicant's lock, whether as a whole a better lock or not, has one or two points of superiority. For instance, the act of locking the bow will unlock the seal of the patented lock (if that has been first secured) unless special care is taken. This is not the case with applicant's.

The decision of the Board is reversed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—SOUTHERN DISTRICT OF NEW YORK.

ELM CITY COMPANY *vs.* GEO. H. WOOSTER.

[In Equity.—Before Woodruf, J.]

A mere agreement to transfer an invention for the joint use of the inventor and of those who advance means for working it, which was entered into more than two years before the patent was applied for, but was not consummated till within that time, will not affect the validity of the patent.

A corporation may maintain a suit in the district where its rights are infringed, although it was created under the law of a State without the district.

Testimony as to the prior knowledge and use of the invention by persons not named in the answer will be considered on the hearing, if no motion is then made to strike it out, although it was objected to when it was taken.

WOODRUFF, *J.:*

The testimony in this case is very greatly conflicting or very much of it is not entitled to credit, either because, in my opinion, the witnesses exaggerate their asserted achievements, erroneously state the time, or describe inventions which did not in fact embrace the patented invention, or refer to crude or imperfect endeavors to imitate the Magic Ruffle, which appears to have been popular at the time when, according to the evidence, many were seeking to compete with those engaged in its manufacture.

After a laborious examination of the evidence my conclusions are—

First. The patentees were the first inventors of the plaiting attachment mentioned in the patent described in the bill of complaint, and on which the suit is founded.

Second. The defendant has infringed the rights of the complainant, as assignees of the said patent, as alleged in the bill of complaint, by the use of a plaiting attachment embracing the said patent invention.

Third. The said patent is not void on the ground that there was any fraudulent misrepresentation in the specification annexed to the patent. No such fraudulent misrepresentation is proved. Nor is the patent void upon the ground that the invention was not the joint invention of the patentees. The testimony proves such joint invention most clearly and distinctly.

There was no such sale of the patented machine or apparatus two years before the application for a patent as renders the patent void. An agreement for the transfer of the invention for the joint benefit of the inventors and those who will advance money for the manufacture or use of the machines invented, not carried into execution, and unaccompanied by any public use of the machine, but being prospective in its character, not consummated until within the said two years, does not in my opinion affect the validity of the patent.

Fourth. I find no ground upon which to hold that a corporation created by the law of a State without the limits of this federal judicial district, may not maintain a suit here for an infringement of their rights committed here.

These conclusions necessarily require a decree in favor of the complainant, according to the prayer of the bill.

It is obvious that the defendant has introduced testimony which was not admissible as a defense, relating to the knowledge and use of the invention by persons not named in the answer, to some or all of which objection was made by the complainant on the taking of testimony. I have not, however, regarded the objection in my consideration, because the briefs submitted do not involve a motion to strike out such testimony, and my conclusions are therefore founded on all the proofs.

Let a decree be entered for the complainant awarding the relief prayed for.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,183.—*Nail-Machines*—Granted to DANIEL DODGE, August 23, 1859. Application filed May 23, 1873. Hearing August 6, 1873.

25,191.—*Machines for Making Paper-Bags.*—Granted to WILLIAM GOODALE, August 23, 1859. Hearing August 6, 1873.

25,199.—*Feeding Paper to Printing-Presses.*—Granted to RICHARD M. HOE, August 23, 1859; reissued June 20, 1871. Hearing August 6, 1873.

25,235.—*Manufacture of Iron.*—Granted to BERNARD LAUTH, August 23, 1859. Application filed May 22, 1873. Hearing August 6, 1873.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 26, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,269.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,342.—*Stoves.*—Granted to EDWARD M. MANIGLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,364.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,385.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 16, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL R. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 23, 1860. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors Shears.*—Granted to ROCHUS HEINISCH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 16, 1873. Hearing September 3, 1873.

25,565.—*Rolling-Mills.*—Granted to JOHN and GEORGE FRITZ, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—*Reducing-Slats.*—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,573.—*Molding Water-Traps.*—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—*Burglar Alarms.*—Granted to ABBOTT Q. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—*Steam Punching-Machines.*—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,646.—*Steam-Boilers.*—Granted to JOSEPH HARRISON, Jr., October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,668.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,673.—*Machines for Lasting Boots and Shoes.*—Granted to JAMES PUSHTON, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,683.—*Hydrants.*—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,692.—*Sewing-Machines.*—Granted to KASIMIR VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—*Skeleton Skirt.*—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,726.—*Hand-Machine for Wiring Blind-Rods.*—Granted to BIRAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,733.—*Double-Friction Couplings.*—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—*Cutting and Panning Cakes.*—Granted to JOHN H. SHROTE, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—*Mode of Manufacturing Barrels, &c.*—Granted to GEORGE W. BANKER, October 11, 1859. Application filed July 8, 1873. Hearing September 24, 1873.

25,796.—*Jacquard Machines.*—Granted to AVERY BABBETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,797.—*Harvesters.*—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,807.—*Hem-Folders.*—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Hearing October 1, 1873.

25,814.—*Sleeping-Cars.*—Granted to JOHN DANNER, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,843.—*Cultivators.*—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,862.—*Weeding-Hoes.*—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,867.—*Machines for Covering Saddle-Trees.*—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

25,874.—*Bronzing-Machines.*—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Hearing October 8, 1873.

25,883.—*Construction of Glass Coffins.*—Granted to JOHN R. CANNON, October 25, 1859. Application filed July 23, 1873. Hearing October 8, 1873.

25,978.—*Tackle-Blocks.*—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Hearing October 15, 1873.

25,984.—*Bit-Stocks.*—Granted to NELSON SPOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Hearing October 15, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,530.—*Manufacture of Gun-Barrels.*—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

30,201.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,963.—*Improvement in Flour-Packers*, granted to SAMUEL TAGGART, August 2, 1859; reissued November 7, 1871, numbered 4,626.

Claim.—1. A portable auger packing-machine having a short packing-shaft and a pressure-controlling brake, and the several parts constructed and arranged to occupy a single floor of a mill instead of two or three stories, as heretofore, as described.

2. In a machine for packing flour and other substances, having a packing shaft and auger, the combination therewith of a variable brake for increasing or diminishing the packing pressure upon the flour when required, essentially as described.

3. The combination, substantially as described, of a packing-shaft and auger with means for connecting it with a controllable brake, consisting of the lever C, connecting-rod K, and pinion M, as described.

4. In combination with a friction-weighted brake and a packing-shaft, the hand-wheel L for controlling the descent of the packing-shaft into the barrel, as described.

5. The upper bearing for the packing-shaft and the bearing for the clutch-wheel formed in one and the same fixed plate, as described.

6. The oil-chamber for the clutch-wheel, constructed and arranged to serve also as an annular centering guide thereto, as described.

7. The barrel-lifter, constructed and arranged to have an automatic lateral swinging movement to deliver the filled barrel out of the way of the filling-tube, as described.

8. A barrel-lifter, having a vertical swiveling-post connected to the frame by guides to admit of its descent, and an oblique guide arranged to operate by a fixed projection, by the weight of the filled barrel, to impart thereto a lateral swinging movement from beneath the flour-tube, as described.

9. The combination of the swinging barrel-lifter with the operating cam-lever U V, guide Y, and fixed projection Z, as described.

10. The guide Y and fixed projection Z, constructed and operating to both swing the filled barrel laterally out of the way and arrest the unfilled one centrally with the filling-tube, as described.

Disclaimer filed July 19, 1873.

Disclaims seventh, eighth, ninth, and tenth clauses of claim, as above set forth.

24,915.—*Improvement in Casting Copper Cylinders*, granted to FREEBORN ADAMS, August 2, 1859.

Claim.—A tube or cylinder cast out of copper and free from blow-holes and other similar defects, when produced as herein stated.

24,923.—*Improvement in Elevators for Warehouses, Factories, Mines, &c.*, granted to ALBERT BETTELEY, August 2, 1859.

Claim.—1. The combination of an automatic safety-shipper and brake apparatus with an elevator, substantially as described, arranged to operate only to prevent an elevation of the car beyond a fixed limit.

2. The combination of the weight *q*, flexible rope or chain *c*, with the shipping and brake-controlling mechanism, substantially in the manner and for the purpose set forth.

24,953.—*Improved Meat-Cutter*, granted to JOHN G. PERRY, August 2, 1859.

Claim.—Combining the revolving knives with a cylinder or block, having studs upon its surface, substantially as herein set forth.

DISCLAIMERS FILED.

24,963.—SAMUEL TAGGART, Indianapolis, Ind.—*Improvement in Flour-Packers*, dated August 2, 1859; reissued November 7, 1871, No. 4,626. Disclaimer filed July 19, 1873. Disclaims:

"Everything claimed in the seventh, eighth, ninth, and tenth clauses of the said claim."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 22, 1873.]

6,776.—*Nubia.*—HENRY BOOT, Philadelphia, Pa., assignor to THOMAS DOLAN & Co., same place.—A. Application filed June 28, 1873.

6,777.—*Nubia.*—HENRY BOOT, Philadelphia, Pa., assignor to THOMAS DOLAN & Co., same place.—B. Application filed June 28, 1873.

6,778.—*Nubia.*—HENRY BOOT, Philadelphia, Pa., assignor to THOMAS DOLAN & Co., same place.—C. Application filed June 28, 1873.

6,779.—*Casket-Handle Tip.*—GEORGE W. BUNNELL, West Meriden, Conn., assignor to C. ROGERS & BROTHERS, same place. Application filed July 9, 1873.

6,780.—*Hand-Bell.*—EZRA G. CONE, East Hampton, Conn. Application filed October 29, 1872.

6,781.—*Ornamental Chain-Link.*—VIRGIL DRAPER, North Attleborough, assignor to OSCAR M. DRAPER, Bristol, Mass.—A. Application filed May 24, 1873.

6,782.—*Ornamental Chain-Link.*—VIRGIL DRAPER, North Attleborough, assignor to OSCAR M. DRAPER, Bristol, Mass.—B. Application filed May 24, 1873.

6,783.—*Ornamental Chain-Link.*—VIRGIL DRAPER, North Attleborough, assignor to OSCAR M. DRAPER, Bristol, Mass.—C. Application filed May 24, 1873.

6,784.—*Carpet.*—JOHN POWELL, Kidderminster, England assignor to HENRY JECKS DIXON & SONS, same place. Application filed June 13, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date July 22, 1873.]

1,371.—*Cross-Cut Wood-Saws.*—E. C. ATKINS & Co., Indianapolis, Ind. Application filed June 18, 1873.

1,372.—*Scarfs, Ties, and Bows.*—BROWNSON BROS. & Co., Chicago, Ill. Application filed June 23, 1873.

1,373.—*Medicine.*—DUNBAR DICK, New York, N. Y. Application filed July 14, 1873.

1,374.—*Mineral Water.*—C. & E. E. DUNBAR, Waukesha, Wis Application filed July 2, 1873.

1,375.—*Stove-Polish.*—FLETCHER & DWYER, Lynn, Mass. Application filed July 7, 1873.

1,376.—*Bottles of Brandy.*—HENRICH IMHORST, New York, N. Y. Application filed June 28, 1873.

1,377.—*Steel and Iron.*—LENG & OGDEN, New York, N. Y. Application filed July 15, 1873.

1,378.—*Smoking-Tobacco.*—LOEWENTHAL, KAUFMAN & Co., Chicago, Ill. Application filed June 16, 1873.

1,379.—*Millers' Soap-Stone Packing.*—SELLERS BROTHERS, Philadelphia, Pa. Application filed June 7, 1873.

1,380.—*Steel and Iron Wares.*—SWEET, BARNES & Co., Syracuse, N. Y. Application filed May 24, 1873.

1,381.—*Heaters.*—THE GOLD HEATING COMPANY, New York, N. Y. Application filed July 12, 1873.

1,382.—*Steam-Gages and Engine-Room Fixtures Generally.*—THE UTICA STEAM-GAUGE COMPANY, Utica, N. Y. Application filed July 12, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date July 22, 1873.]

ORIGINAL PATENTS.

140,988.—*Lamp.*—THOMAS B. ATTERBURY, Pittsburg, Pa., assignor to himself and JAMES S. ATTERBURY, same place. Application filed May 14, 1873.

An air-tube is applied to a glass lamp and the air conducted through the glass bowl of the lamp and through the tube to the center of the flame.

Claim.—A bent or curved air-tube, C, passed through and secured to one side of a glass bowl near its top, and extended up through the center of the burner, substantially as described.

140,989.—*Combined Ruler and Blotter.*—ROBERT M. AUSTIN, Philadelphia, Pa. Application filed May 29, 1873.

A triangular strip of metal is clamped upon a sheet of blotting-paper.

Claim.—The ruler A, formed with the spring-clips a^2 a^3, combined with a sheet of blotting-paper, B, substantially in the manner and for the purpose herein set forth.

140,990.—*Carpet-Cleaner.*—HIRAM W. BATES, Allston, Mass. Application filed April 11, 1873.

With a suitable frame is arranged a series of supporting vibratory lines, and two reciprocating beaters having mechanism to operate them.

Claim.—The two series D D' of whips *c c c* and the separate shafts *d d*, constructed and arranged together and with the series of lines *b b b*, as described, and provided with mechanism by which said two series of whips or beaters, when in operation, are actuated successively on opposite sides of the medial line of a carpet one series being made to approach while the other is caused to depart from the carpet, all substantially as explained.

140,991.—*Paint for Roofing, Wood, Metals, &c.*—JOHN C. BILLS, Ottumwa, and CARROLL M. BILLS, Albia, Iowa. Application filed July 8, 1873.

Coal-tar, Japan varnish, asphaltum, spirits of turpentine, sulphate of zinc.

Claim.—The combination of the several ingredients used, with the proper proportion of each ingredient, and the manner of compounding and using the same, as set forth in the foregoing specification.

140,992.—*Griddle-Greaser.*—WASHINGTON H. BIXLER, Easton Pa. Application filed June 16, 1873.

A cast-metal bar has formed on one end a handle, on the other end a scraper, and near one end a cup to contain the greasing substance. The cup is provided with a perforated cap, over which is placed a cloth, which is held in place by a metallic ring having slots which fit the pins on the cup.

Claim.—1. The combined griddle greaser and scraper, consisting of the bar A having the handle A' and scraper C, and holding the lard-cup B, provided with a cloth or other covering to limit the escape of the contents, substantially as specified.

2. A griddle-greaser, in combination with cup B, perforated cap D, cloth E, and securing-ring F, substantially as described.

140,993.—*Hat-Pressing Machinery.*—DANIEL BROWN, Wrentham, Mass., assignor to himself and WILLIAM E. GRONER, same place. Application filed May 21, 1873.

The sleeved die is raised in contact with the socket-die and held in such position by the rotation of the shaft, after which the plunger descends through a hollow dome partially filled with water, and, by displacement of the latter, distends the rubber diaphragm to press the hat within the die. The continued rotation of the shaft unlocks the dies and returns the sleeved die to its lowermost position.

Claim.—1. In the Bat-press, as described, the mold-carrier A, the hollow dome *e* and its diaphragm *f* and piston *g*, arranged together and combined with the connecting-rods C C, cranked gears D D, partially-toothed gears *p p*, pitman *h*, and eccentric *i*, and with the locking apparatuses or mechanisms *q r t u v*, all substantially as specified.

2. The combination of the system of clawed shafts *c'*, their slotted arms *b'*, the ring *z*, and studs *a*² applied to the support-plate *y* provided with the screw *x*.

3. The arrangement and combination of the system of clawed shafts *c'*, slotted arms *b'*, ring *z*, studs *a*² applied to the support-plate *y* provided with the screw *x*, with the mold-carrier A arranged with the hydraulic press F, as explained.

140,994.—*Sash-Fastener.*—THOMAS P. COIN, Beconsborough, Iowa. Application filed November 21, 1872.

A case or shell, carrying a roller having diagonally-cogged teeth, is so arranged on the sash that the diagonal teeth mesh in a diagonally-cogged strip attached to the window-frame. The case also contains a sliding spring-bolt, the head of which corresponds to the configuration of, and, ordinarily, locks the roller, so that it cannot turn upon its axis until released by the action of a lever having its thumb-piece projecting through a slot in the side of the case, thus holding the sash firmly to prevent rattling, increasing the strength of the device, and producing a noiseless and exact motion.

Claim.—1. The combination, with the diagonally-curved roller B, of the bolt D with cogged or toothed head *f*, spring *e*, and lever E, all substantially as and for the purposes herein set forth.

2. The combination of the casing A, diagonally-cogged roller B, diagonally-cogged strip C, spring-bolt D with cogged or toothed head *f*, and the lever E, all constructed and arranged substantially as and for the purposes herein set forth.

140,995.—*Method of Etching Plates for Electrotyping.*—ALFRED DAWSON and HENRY T. DAWSON, Cedars Chiswick, assignors to GEORGE WILLIAM PETTER and THOMAS DIXON GALPIN, London, England. Application filed January 24, 1873.

Claim.—1. The improvement in the art of producing a coated metallic design-plate for electrotyping, consisting of the following operations, viz: The application of a fusible grounding composition to a metallic plate; the melting of the composition on the plate by heat, and the spreading of it while hot, so as to form a ground, which is permitted to harden; the removal of portions of the ground by tools, so as to form the design or drawing; the building up of the interspaces by the application of melted material; the remelting of the grounding composition by flame, to produce the rounding of the edges, all substantially as before set forth.

2. The improvement in the art of producing a coated metallic design-plate for electrotyping, consisting of the following operations, viz: The application of a fusible grounding composition to the metallic plate; the melting of the composition upon the plate by heat, and the spreading of it by heat, so as to form a ground, which is permitted to harden; the removal of portions of the ground by tools, so as to produce the design or drawing; and the subsequent remelting of the ground by flame, all substantially as before set forth.

140,996.—*Cooking-Stove.*—CHARLES H. DOUGLAS, Hartford, Conn. Application filed May 14, 1873.

Claim.—1. The hinged and movable bonnet or hood H and the valve F operated by and in conjunction with it, as and for the purpose specified.

2. The casting C, as a combination of seat for a ventilator-valve and support for a pipe-shelf.

140,997.—*Knife.*—LAREN EDDY, Taunton, Mass. Application filed June 25, 1873.

The bolster, which is cast upon the blade and handle, is provided with an extension which embraces the blade in the back and both sides, and serves as a finger-rest, and also to more securely hold the blade. The blade is pierced near the tang and the end of the handle is grooved, so that the bolster, when cast upon them, secures the two together very firmly.

Claim.—1. The bolster, provided with the thumb or finger rest or projection *d*, and made to embrace the blade on opposite sides of it, as specified.

2. The blade, provided with the recess *c*, in combination with the bolster furnished with the projection *d*, extended into such recess and on opposite sides of the blade, substantially as specified.

3. The handle A, provided with the recessed or grooved tenon *a*, in combination with the blade B, recessed or holed, as described, and with a bolster, D, cast on and into said blade and tenon, all substantially as specified.

140,998.—*Carburetor.*—FISHER AMES FISHER, Elizabeth, N. J. Application filed January 16, 1873.

Claim.—The combination of the cup K for receiving the feed-liquid and discharging it through the wicking or carbureting-chamber with the inverted cup O for forming, with said cup K, a water-joint that shuts off the liquid from the float-chamber, substantially as and for the purpose specified.

140,999.—*Stove-Pipe Drum.*—ALBERT W. FOOTE, Buffalo, N. Y. Application filed January 20, 1873.

Claim.—1. The combination of the central damper D and circular or ring damper E, as shown or described.

2. The combination of the flat inner head J and its suspended cylinder M with the opposite flat inner head J' and its suspended cylinder N, substantially as shown or described.

3. The combination of the elements of the first claim with the perforations L in the head J, for the purpose set forth.

141,000.—*Rotary Pump.*—JAMES E. GILLESPIE, Norwich, Conn. Application filed May 15, 1873.

Upon the inside of the heads of the cylinder are fixed eccentric rings upon which move loose eccentric rings. These latter guide and support the radially-sliding pistons, by reason of pins upon extensions of the pistons engaging with recesses in the loose rings.

Claim.—1. The stationary eccentric D and loose ring E, in combination with the radial pistons of a rotary pump, substantially as and for the purposes described.

2. The radially-sliding pistons C, having extensions *c c* toward the shaft, as shown, in combination with the correspondingly recessed or grooved revolving drum and loose eccentric ring E, substantially as and for the purpose set forth.

3. The combination of the pins upon the piston C with the recesses *s* in the loose ring E, substantially as and for the purpose specified.

141,001.—*Fastening for Bureau-Drawers.*—AMARIAH J. GRANT, Williamstown, N. Y. Application filed April 10, 1873.

To the back of drawers is attached a staple. From one angle of a bell-lever, which is pivoted to the under side of the top of the outer case, is suspended a bar having hooks at right distances to connect with the staples. From the angle or bell lever is connected a lever or shaft which extends to the outside of the case, by which the drawers may be locked or unlocked.

Claim.—In the above-described fastening for sliding drawers, the bars *d*, hooks *c*, and catches *b*, or their equivalents, combined, arranged, and operated substantially as and for the purposes herein described.

141,002.—*Metallurgic Gas-Furnace.*—JOHN M. HARTMAN, Philadelphia, Pa., assignor to TAWS & HARTMAN, same place. Application filed April 15, 1873.

The air and gas are projected against a brick breast placed in the fire-chamber of the furnace in front of the air-pipes, and become ignited by contact with the breast, which has been previously heated. The ends of the air-pipes are protected by fire-proof tips. The amount of gas passing is regulated by adjusting the valve by means of a lever and pin or ratchet. Any explosion of the gas will force the valve against its seat, cutting off connection with the gas-supply.

Claim.—1. The gas-chamber A, in combination with the air-pipes C, and the breast or brick work M, substantially for the purpose shown and described.

2. The gas-chamber A of a gas-burner, in combination with the balance or blow-shut valve H, for the purpose shown and described.

3. The valve H, constructed with a conical or tapering back, and a valve-seat bearing or ring, as and for the purpose shown and described.

4. The chambers A and G, constructed separately, and bolted or otherwise secured together by their flanges *b c*, substantially as and for the purpose shown and described.

5. The valve H, arm I, shaft J, lever K, the openings *e*, and the pin *f*, as and for the purpose shown and described.

6. The depending fender L, in combination with the chamber A, for the purpose shown and described.

7. The chamber A, in combination with the pipes C, as shown and described.

8. The chamber A, pipes C, and the valves E, as and for the purpose shown and described.

9. The pipes C, in combination with the fire-proof tips D, for the purpose shown and described.

141,003.—*Machine for Jointing Staves.*—EDWARD HOLMES and BRITAIN HOLMES, Buffalo, N. Y. Application filed March 9, 1872.

A stave-holding device is so arranged, in front of a revolving disk provided with planing cutters, as to present the edges of a stave alternately to the disk at the proper angle for jointing.

Claim.—1. The combination, with the cutter-wheel C and knife D, having dovetailed ends, of the fastening-bolt *f* and bearing-block A, provided with dovetail notch *f'*, substantially as shown and described.

2. The combination, with the cutter-wheel, stave-holder I, radial arms M M', and adjustable bars L L', of the hinged arms J J, substantially as hereinbefore set forth.

3. The combination with the stave-holder I, provided with arms I', of the radial arms M M' and arms J, for the purpose of controlling and shifting the centers of the stave-holder I to any desired point to produce the radius required, substantially as hereinbefore set forth.

4. The combination, with the cutter-wheel, stave-holder I, and hinged bearings J, of the reacting spring *j*, substantially as hereinbefore set forth.

5. The combination, with the stave-holder I and cutter-wheel C, of the lever N and rod *n'*, for the purpose of swinging the stave-holder from one side of the center of the cutter-wheel to the other, and to hold the stave firmly against the cutter-wheel while being jointed, as hereinbefore set forth.

6. The combination, with the stave-holder I, pivoted clamp *p*, and foot-lever *q*, of the toggle-joint link *r* and adjusting bearing-block *s*, substantially as and for the purposes set forth.

141,004.—*Belt-Tension Apparatus.*—SEWELL E. JEWETT, Haverhill, Mass. Application filed June 2, 1873.

Tighteners maintained in the driving-belt, and limit or vary the tension or friction of the belt on its pulley.

Claim.—The combination of the vibratory hanger I, pulleys F G, draft mechanism R, auxiliary belt E, main belt D, and the driving and driven pulleys A C, all being arranged and applied together substantially in the manner and to operate as specified,

the said draft mechanism R consisting of the chains *c c f*, levers *e e*, guide-pulleys *d d h i*, links *g g*, and weight h, all arranged as set forth.

141,005.—*Breast-Cup.*—ALBERT M. KNAPP, Lowell, Mass. Application filed December 26, 1872.

The base of the vacuum-cup of the ordinary breast-pump is made of elastic perforated rubber. When the operation of withdrawing the air ceases, the elasticity of the rubber exerts a pressure upon the breast. This is repeated at every stroke of the air-pump, and imitates somewhat the operation of a child in drawing the breast.

Claim.—As a new article of manufacture, in combination with the vacuum-cup of the ordinary breast-pump, the elastic perforated rubber base, as shown.

141,006.—*Metal-Planing Machine.*—GEORGE C. LARNED, Worcester, Mass. Application filed January 30, 1873.

The two tool-posts are secured to hinged aprons or lift-plates in the usual manner, and find their support in a single stem that connects them to the planer-head.

Claim.—The tool-holder for iron-planers, composed of a shank having a head with two tools and lifts, operating in opposite directions, when constructed and operating substantially in the manner and for the purposes described.

141,007.—*Vest-Supporter.*—BASHARD F. MARTIN and ELIAS MAPES, Rochester, N. Y. Application filed January 29, 1873.

The flexible frame, sufficiently described in the claim, is placed under the vest-front to keep it in proper shape.

Claim.—A flexible vest-front supporter or stiffener, consisting essentially of the neck-plate A, cross-plate B, and curved side plates *a* and *a'*, constructed and arranged substantially as shown and described, for the purpose set forth.

141,008.—*Lantern.*—WILLIAM MCKAY, Newburyport, Mass., assignor to himself and CHARLES E. BAILEY, same place. Application filed April 23, 1873.

Air passes through openings in bottom frame of lantern up between glass plates, and thence into flame-chamber. The glass plates slide in grooves upon the uprights, and also fit at bottom in grooves in the detachable perforated threshold. The slates are removed by withdrawing threshold and sliding them through slots in the lower frame.

Claim.—1. A lantern provided with one or more air-inductor passages, *g*, arranged between glass plates *f f'*, and opening into the upper part of the lamp or flame-chamber of such lantern, and provided at their lower parts with one or more air-inducta, *i*, all being substantially as specified.

2. The combination of the grooved separate threshold B with the lantern-case A, provided with the opening *e* and the grooves *b* in the posts at the ends of such opening, all being substantially as described.

3. The threshold B, provided with the grooves A and the air-passage *i*, arranged in it as described.

141,009.—*Toy.*—ROBERT G. MESSINGER, Norwich, Conn. Application filed May 31, 1873.

Instead of the usual momentum ball of whirligigs, a disk is used provided with pivoted rods terminating in knobs, which rods have to-and-fro motion in the plane of the disk's revolution, and are variously colored.

Claim.—1. The combination of the balls D D, having pivoted arms, with the center piece C, to give momentum to a whirling toy, substantially as specified.

2. The toy herein described, consisting of the handle A, stem B, string E, center piece C, and balls D, substantially as and for the purposes set forth.

141,010.—*Flash Light-Signal.*—WILLIAM MITCHELL, London, and JOHN JOSEPH MAYO, Benhilton, Sutton, England. Application filed May 24, 1873.

A cylindrical lantern with a lens at one side, and having arranged within it two rotating screens, one sectional and opaque, the other composed of different colored translucent divisions. By means of connections extending through the hollow supporting-post of the lantern, either division of the colored screen may be brought coincident with the lens, and the light alternately shut off and allowed to pass by rotating the sectional opaque screen.

Claim.—The lantern A, hollow supporting-post B, disks F and G, screens D and E, tubes *d* and *e*, and levers Dx and Ex, when constructed as shown, and combined to operate substantially as and for the purpose specified.

141,011.—*Railway-Car Wheel.*—WILLIAM H. PAIGE, Springfield, Mass., assignor of one-half his right to S. T. HAMMOND, same place. Application filed March 20, 1873.

Claim.—1. An improved two-plate wrought-iron car-wheel, wherein the hub F, side plates, and rim or tire D are forged separately and welded together, substantially as described.

2. A two-plate wrought-iron car-wheel, having the hub, plates, and tire forged out separately and welded together, the tire D having a steel facing welded thereto, substantially as described.

3. A double-plate wrought-iron car-wheel, having the hub made in two separate parts, welded to the side plates of the wheel, and designed to be secured upon the axle, all substantially as set forth.

141,012.—*Milling-Machine.*—GEORGE T. PELLINGS, Philadelphia, Pa. Application filed April 10, 1873.

Two short shafts, located one on each side of the live-spindle of the lathe, and which, with the latter, are driven by gearing, are connected by means of jointed connecting-rods to two rotatable burr-cutters located on a table that is adjustable vertically. The breadth of the burrs is equal to the length of section to be milled, and their bearings are adjustable on the table, in virtue of which their axes may be set parallel or inclined to one another.

Claim.—1. The combination, with the lathe-centers, of the two revolving cutters, arranged on opposite sides of said centers, and the vertically-moving carriage, on which said cutters are supported.

2. The combination of shafts S S', knuckle-joints E^1, and vertically-movable revolving cutters O^1 O^2.

3. The combination, with a vertically-movable slide and carriage, on which revolving cutters are mounted, of screw-shaft X, gear Y, worm Z, and shaft A^1, revolved by power applied to pulley D^2.

4. The combination, with a vertically-movable slide and carriage, on which revolving cutters are mounted, of screw-shaft X, gear Y, worm Z, and shaft A^1, revolved by wheel I^2 and gears E^1 and F^2.

5. The combination of the lathe-bed, stays U U', gibs V V', and slide T, supporting the carriage and cutters.

141,013.—*Music-Notation.*—JOSEPH P. POWELL, Cincinnati, Ohio. Application filed August 12, 1873.

Claim.—In a system of musical notation, the characters shown at *a b c* of the drawing, formed as shown, to designate the first, third, and fifth of the scale, substantially as described.

141,014.—*Carpenter's Gage.*—MATHURIN C. ROBICHAU, Marblehead, Mass. Application filed May 19, 1873.

Two heads are used upon one stem, one of which, D, has one side flush with the side of the stem A.

Claim.—As an article of manufacture, the above-described gage, composed of the adjustable head B, T-shaped bar A, adjustable head D, slide L, and spur S, operating in slot P, in conjunction with metal cap H, set-screw E, and spur F, when constructed in the manner and for the purposes set forth.

141,015.—*Reel for Clothes-Lines.*—CAROLINE ROSENTHAL, Philadelphia, Pa. Application filed February 21, 1873.

A reel is connected by gearing to a cylinder which contains a coiled spring that will wind up the line. An adjustable catch holds the gearing when desired.

Claim.—The combination of coiled spring A, box B with its spur-wheel C, pinion-wheel D, catch E provided with a spiral spring, F, and slotted pivoted catch G, when arranged and combined with the reel, as herein described, and for the purposes set forth.

141,016.—*Mode of Treating Fibrous Substances in the Manufacture of Paper-Stock.*—THOMAS ROUTLEDGE, Ford Works near Sunderland, England. Application filed August 31, 1872.

In commencing the boiling process, the first vessel of the series being filled with fibrous substance, boiling ley is supplied through pipe B', filling the vessel above level of pipe B leading to next vessel. After this vessel has been charged with fibrous material, cock K is opened and another charge of ley is run into vessel No. 1, which displaces an equal amount into No. 2, and so on. This saves fuel, as the ley goes hot into each boiler before firing up. When ley has passed through the series of boilers and the material has been sufficiently boiled, No. 1 is disconnected from No. 2 and a charge of fresh water is run into it. Then Nos. 1 and 2 are connected again, and No. 3 is disconnected, and so on.

Claim.—The continuous system of boiling in an alkaline ley and subsequent washing with water, in a series of vessels connected together, substantially as and for the purpose hereinbefore described.

141,017.—*Machine for Spreading Silk.*—JOHN SAULT, South Manchester, Conn. Application filed March 12, 1873.

The silk, as it comes from the dressing-rooms, is laid cross-wise on a supplementary feed-apron located above and at right angles to the main one, and having a reciprocating endway motion to distribute the fibers longitudinally on the main apron. Beating-rods loosen the fibers on the supplementary apron and facilitate their even distribution.

Claim.—1. In combination with the drawing mechanism A and feeding-apron C, a reciprocating cross-feeding device, substantially as described, adapted to receive the fiber lying transversely and to deliver it in its proper position upon the ordinary feeding-apron, substantially in the manner and for the purpose herein set forth.

2. In combination with the drawing mechanism, the feed-apron C and a reciprocating cross-feeding mechanism, an automatic beating or loosening device acting on the fiber near the point where it is delivered from the reciprocating cross-feed to the true feeding-apron, substantially in the manner and for the purpose herein set forth.

141,018.—*Axle and Sleeve for Vehicles.*—WILLIAM H. SPARKS, Absecom, assignor of one-half his right to JAMES D. SOUDER, Williamstown, N. J. Application filed October 17, 1872.

The screw-thread for engaging the nut extends inward and engages with an internal thread in the outer end of the sleeve to guard against accident should the nut work off.

Claim.—1. The axle A, having at each end a collar, *c*, and conical enlargement *d'*, in combination with the sleeve B, having a corresponding conical cavity and an enlargement, *e*, to increase strength, substantially as and for the purpose set forth.

2. The combination of the nut C with the sleeve B, having a screw-thread, *f'*, and the axle, having a screw-thread, *f*, for securing the sleeve against the collar *c* and enlargement *d'*, substantially as set forth.

141,019.—*Fastening for Sliding Doors.*—ELIAS W. STAPLES, Jr. Norwich, Conn. Application filed May 13, 1873.

Claim.—1. The combination and arrangement of the catch-piece C and the guide-piece A with the sliding bar B having stops D I, the catch-notch *b*, and the locking-hole O extending through both the bar B and the catch-piece C, when so constructed that the bar B slides through the guide-piece A and catches, substantially as herein set forth.

2. The combination, with the sliding bar B and catch-piece C, of the cam L, pin N, and spring M, substantially as and for the purpose described.

3. The combination, with the guide-piece A and sliding bar B, of the pin E and notch and slot K, substantially as and for the purposes specified.

141,020.—*Kettle-Lifter.*—EARL AMRI THURRELL, Lowell, Mass., assignor of one-half his right to JOSEPH CHURCHILL, same place. Application filed September 23, 1872.

Two levers, with handles, pivoted upon a support which can be firmly pressed against a vessel so as to firmly grasp it.

Claim.—The combination of the pivoted levers B B and the support A, substantially as described.

141,021.—*Harrow.*—JOHN A. WALKER, Nashville, Tenn., assignor of two-thirds his right to J. M. SHARPE and WM. H. MORROW, same place. Application filed December 28, 1872.

A central piece of cast metal perforated vertically in the center, into which perforation is driven a piece of wood, and through this the harrow-tooth is also driven. The central piece has four arms of equal length at right angles to each other that receive connecting-links from other centers. By multiplying these centers, and placing them in a rectangular or square frame, a flexible harrow is produced.

Claim.—The combination of cross A, ferrule J, tooth K, pins L L′″″, links F F and H H′″, and frame G, all as described and arranged, for the purposes set forth in the above specification.

141,022.—*Washing-Machine.*—WILLIAM R. WALTON, Freeport, Ill. Application filed May 29, 1873.

An independent circular base, to be placed in an ordinary wash-tub, has radial rollers and ribs, above which a ribbed follower is rotated.

Claim.—1. In the base A, the combination of the rolling rubbing-surfaces C D and the stationary rubbing-surfaces E, as described.

2. The combination of the follower, constructed substantially as described, and the base A having the rolling and stationary rubbing-surfaces, as and for the purpose set forth.

3. The described machine, consisting of the base A, standard B, rollers C D, rubbing-blocks E, ribbed follower F, standards *g g′*, cross-bar A, and pin *i*, combined and arranged as described, for the purpose set forth.

141,023.—*Basket.*—SHEPHERD H. WHEELER, Niles, Mich. Application filed January 24, 1873.

The bottom of the basket is made separately from the body, and of short pieces crossing each other radially, and the outer ends are secured between the outside and inside series of staves by the bottom hoops.

Claim.—A basket-bottom, consisting of the short pieces B crossing each other radially at the center, with their outer ends secured between the outside and inside series of staves A A by the bottom hoops C C, substantially as and for the purposes hereinbefore set forth.

141,024.—*Shawl-Strap.*—FANNIE H. WILLIS, Boston, Mass. Application filed June 19, 1873.

Rubber bands are secured to each end of the handle, and hold the package, instead of the straps which are ordinarily used.

Claim.—The combination of the elastic band *d* with a holder, *a*, substantially as specified.

141,025.—*Sole-Channeling Machine.*—CYRUS C. BALLOU, Albany, N. Y., assignor to "THE EAST NEW YORK BOOT, SHOE, AND LEATHER MANUFACTURING COMPANY," New York city. Application filed February 15, 1873.

Provision is made for pressing back the flap upon the sole, and for clearing the channel of chips of leather left by the groover.

Claim.—The combination of the guide B, knife D, and groover F, with the plow E and roller H, when arranged to operate as and for the purpose specified.

2. The plow E having a detachable groover, F, constructed substantially in the manner and for the purpose specified.

3. The plow J having a projecting point, K, as and for the purpose herein set forth.

141,026.—*Truss-Bridge.*—ALFRED BANNISTER, Alameda, Cal. Application filed May 28, 1873.

The bridge chord or truss consists of two or more longitudinal timbers alternately joined and separated in curved lines to form alternate bays, and strengthened by struts, ties, and braces.

Claim.—A truss for supporting the spans of bridges and other structures, composed of two or more continuous beams or timbers, alternately separated and brought together, so as to form oval or elliptical bays, which alternate and are united together in the manner substantially as above described.

141,027.—*Tilting Gate.*—JOHN BARTHOLF, Hillsborough, Wis. Application filed March 22, 1873.

The gate is formed in two symmetrical halves. Each half consists of horizontal rails held at each end by a batten on each side, and pivoted therewith. The half gate, being drawn upward by a cord attached to the inner end of its bottom rail, moves between two fixed outer posts, to the outer side of which it is hinged near the base. The outer battens now rest at an angle in a slotted inclined brace, and the rest of the gate continues to ascend until its parts come close together in a vertical position. The operation is by cords, pulleys, and weights.

Claim.—The combination, with double main posts A A, of two folding half-gates, C C, each consisting of pivoted side posts *d*, rails *e*, pivoted at both ends, middle posts *d′ d′*, and supports B B, as and for the purpose described.

141,028.—*Saw-Mill.*—BERNHARD BERNDT, Williamsport, Pa., assignor to RILEY & MAITLAND, same place. Application filed May 29, 1873.

The journal-box, which carries the inner end of the feed-shaft, is so arranged as to have a vertical as well as horizontal movement.

Claim.—The combination of the finger-headed lever F, the adjustable plate e^3, the sliding block *e*, and guide-block E, substantially as described.

141,029.—*Parallel Ruler.*—GUSTAV BLUMCK, New York, N. Y. Application filed May 10, 1873.

A sliding frame carrying an adjustable ruler is moved a regulated distance upon a guide-piece by the depression of a curved band-spring, an inclined lug upon which impinges against another upon the sliding frame. Spiral springs draw the parts in position for another movement.

Claim.—1. The frame A, provided with bearing C, pin D, slide E, ruler G, spring H with tapering key I, and rest *e*, as and for the purpose described.

2. The main frame A, composed of center part B and side parts B′, connected by rods *b*, and arranged to slide upon each other, substantially as set forth.

3. The central part B, having inclined bearings C with lugs *g′*, projections *n′*, springs *g*, slot *a*, lever *d*, scale *f*, set-screw F, and ruler G, substantially as described.

4. The side pieces B′, having rests *i* and guide-screws *l*, as set forth.

5. The sliding piece E, having central pin D, standards *m* with pins *h* and set-screws *n*, and top plates E′, for the purpose described.

6. The top plate E′, having the slots l^1 for guiding slide piece E in the direction of the longitudinal axis, and slots l^2 for spring H, as set forth.

7. The sliding piece E, being recessed, in combination with rectangular pieces *o* below slots l^2, and leather bottom stripe *p*, as set forth.

141,030.—*Medical Compound for Neutralizing the Taste of Cod-Liver Oil.*—CHARLES D. BRADLEY, Taunton, Mass. Application filed May 1, 1873.

Claim.—The composition, substantially as and for the purpose described, consisting of one or more carminative essential oils, sulphuric ether, and the essence of lemon, or the equivalent of the latter, all as set forth.

141,031.—*Roller-Clearer for Spinning-Machines.*—CHARLES B. BROWN, Lewiston, Me., assignor to himself and ALVIN WOODMAN, same place. Application filed April 5, 1873.

The enlarged part only of the clearer bears against the lower drawing-roller so as to be turned by it, the reduced parts not bearing closely against the draw-roller, and thereby operating more effectually, it is claimed, to catch the flyings, and also enable them to be removed with greater facility. The clearer is preferably covered with flock.

Claim.—The covered clearer-roll, provided with an enlargement, *b*, as and for the purpose specified.

141,032.—*Spring-Cradle.*—FRANKLIN CHICHESTER, Milwaukee, Wis.—Case A. Application filed June 7, 1873.

The ends are divided into two parts, and spiral springs are introduced between them, with sufficient space for rocking.

Claim.—The separate pieces A, B, and C, with spaces E E between them, combined with the intermediate spring D, arranged to support and allow the cradle to rock, in the manner described.

141,033.—*Cradle.*—FRANKLIN CHICHESTER, Milwaukee, Wis.—Case B. Application filed June 7, 1873.

To the end frames are attached flat springs, which are attached to round bases that have an edged pivot which supports the end frames.

Claim.—The combination, with cross-rails A A and bases B B, of pivot C and plate-spring D, arranged between the said cross-rails and base-pieces, to support and allow the cradle to swing, in the manner described.

141,034.—*System of Supplying Steam, &c., to Buildings for Extinguishing Fires.*—JOHN A. COLEMAN, Providence, R. I. Application filed March 25, 1873.

A series of pipes connected with a group of steam-boilers extend through the streets, and are connected with pipes in the buildings. The last-mentioned pipes are provided with means for attaching hose or with sprinklers, and are also connected with the water-main. By means of suitable valves, arranged to be operated from the outside, the pipes can be supplied with steam or water for extinguishing fires.

Claim.—The steam system described, consisting of a series of pipes or mains extending through a city or district and connected with centrally-located boilers and with pipes applied to buildings, the said pipes being connected with the water-main and provided with valves, as specified, whereby the pipes may be furnished with a supply of steam or water for extinguishing fires, substantially as set forth.

141,035.—*Baling-Press.*—WILLIAM M. CONNER, Burlington, assignor to ALBERT G. WINSTON, same place, and ALEXANDER V. WINSTON, Covington, Ky. Application filed April 16, 1873.

A baling-press having a vertically-acting follower which is elevated and depressed by a pair of toggles, the latter being set in motion by cords or chains which are wound in opposite directions upon a shaft.

Claim.—1. The baling-press herein described, having the follower K elevated and depressed by the operating devices C *e* D *d*, and toggle arrangement H H′, I I′, and *g g′*, the pinion *d* being provided with the pawl F and cord *f* to enable the tramper to control the movements of the follower K, as and for the purpose specified.

2. The door L *l l′*, constructed as described, with the stirrups *m*, loops *m′*, and hook-shaped lugs P P′, as and for the purpose specified.

141,036.—*Saw.*—SYLVESTER COOK, Alpena, Mich. Application filed May 10, 1873.

The teeth are arranged in sets of four cutting-teeth, with a clearing-tooth at each end, one-half the teeth in each set facing the others.

Claim.—The teeth, arranged in groups of four, separated by the wide notches D, said groups, arranged in pairs B B′ and C C′, fronting in opposite directions, the teeth being constructed as described, and having a clearer, G, arranged with each pair, all substantially as specified.

141,037.—*Deck-Sash or Ventilator-Opener for Railroad Cars.*—JAMES E. CROSS, Adrian, Mich., assignor to ILLINOIS MANUFACTURING COMPANY, same place. Application filed May 21, 1873.

A crank-arm on a vertical actuating-rod is connected to a swinging sash by means of a rod and ball-and-socket joints. The sash retains any desired position by reason of the pressure of a spring on a plate attached to the actuating-rod.

Claim.—1. The connecting-rod C and its ball-and-socket joints, combined with the pivoted sash B, crank-arm *e*, and actuating-rod D, substantially as and for the purpose described.

2. The spring *s* in the box C′, combined with the plate G, an actuating-rod, D, crank-arm *e*, connecting-rod C, and a swinging sash, B, substantially as described.

141,038.—*Cleaning Wool of Burrs, &c.*—THOMAS CROSSLEY, Bridgeport, Conn. Application filed July 2, 1873.

The fumes made by burning sulphur and saltpeter are passed through the wool placed upon racks or grating. The wool is then dried and passed through a burr-picker.

Claim.—The process of disintegrating the beard of burrs, seeds, and other vegetable matters entangled in wool by passing a sulphuric or sulphurous acid smoke through the wool, substantially as specified.

141,039.—*Propelling Vessels.*—GEORGE W. DOW, Brooklyn, N. Y. Application filed March 22, 1873.

Wheels, inclosed in the sides of vessels and near the stern, receive the water at their centers, and it is forced out through short channels leading out at the stern, or is deflected to branch passages leading forward and out at the sides. The direction of the water is controlled by valves situated at the intersection of the forward and rear channel. By this construction the usual long channel entirely through the vessel, from bow to stern, is dispensed with, and consequently economy of storage-room is obtained.

Claim.—The combination, with suction-wheel and channel H, of the return-channel I, arranged as and for the purpose described.

141,040.—*Faucet Attachment.*—ERASTUS L. DUNBAR, Bay City, Mich. Application filed May 17, 1873.

Two sharp-edged studs project from the tube, which is placed in a hole slotted to admit the lugs in the wood. A quarter-turn causes the lugs to cut into the wood. A jam-nut on the tube is screwed down to tighten it.

Claim.—1. The stop-cock A having its tube A′ provided with the studs *a a*, substantially as and for the purpose set forth.

2. The combination, with the tube A′ of the stop-cock, provided with the studs *a a*, of the jam-nut, substantially in the manner and for the purpose set forth.

141,041.—*Stop-Valve.*—GEORGE W. EDDY, Waterford, N. Y. Application filed April 26, 1873.

The gates are forced to their seats by means of the levers, (pivoted to plates secured to cross-head in which stem works,) which are operated by the head of valve-stem being depressed, and are released, and they, with the plates and cross-head, raised, upon the saw-head being elevated.

Claim.—The combination of gates D and levers H, each having the lugs described, the device E F having edge and adjusting notches, and the valve-stem provided with enlargement I, substantially as and for the purpose specified.

141,042.—*Sharpening-Machine.*—SIMEON F. EMERSON, Akron, Ohio. Application filed May 9, 1873.

The device is capable of horizontal and inclined adjustment. Ears are formed upon the base which limit the movement and support the wheel-standard in position.

Claim.—1. The ears 1 formed on the base for limiting the movement of the wheel-standard and supporting it in position, substantially as described.

2. The base *c*, standard 2, head 3, and arms 5 7, in combination with a driver and suitable driving mechanism, substantially as shown.

3. The movable adjustable base *s* provided with ears 1 1 and arms *b b*, substantially as set forth.

141,043.—*Blast-Furnace Breast-Plate.*—ROBERT A. FISHER, San Francisco, Cal. Application filed June 6, 1873.

The breast-plate is made with an angular indentation, so as to carry the portion in which the slag-spouts are placed almost up to the fire-arch, shortening the distance which the slag has to flow between the tuyere and slag-spout. To prevent the destruction of the breast-plate a shield is attached and the intervening space filled with fire-clay.

Claim.—1. The arrangement of the slag-spouts in the front of the furnace, as described, so that they shall be heated from the fire-arch, preventing the slag from being chilled while passing out, as set forth.

2. The shield or supplementary back D, in combination with the front or breast plate of a smelting-furnace, substantially as and for the purpose described.

141,044.—*Washing-Machine.*—JOSIAH GLINES, Postville, Iowa. Application filed May 31, 1873.

Is constructed with rolls and frame, in ordinary form, having a U-shaped spring under the lower roll resting upon a cross-bar, by which tension is given the rolls, and a bar or rod extending from the frame, with a yoke and thumb-screw to attach it to the tub.

Claim.—1. The arrangement of the uprights A, cross-bars B, division-board C, corrugated or fluted rollers D F, crank E, and U-springs H with respect to each other, substantially as herein shown and described.

2. The combination of the pivoted bar J and clamp K L with the uprights A, cross-bars B, and rollers D F, substantially as herein shown and described.

141,045.—*Spring-Joint for Watch-Cases.*—JOHN GORDON, San Francisco, Cal. Application filed November 16, 1872.

The spring for throwing open the watch-case is applied to an arm from the case-hinge entirely beneath the pillar-plate, thus permitting the latter to be fitted closely against the butt or barrel of the hinge, and avoiding any opening for the protrusion of the spring.

Claim.—1. The case, joint, or hinge having the attached lug *m*, in combination with the operating-spring, as herein shown, whereby I am enabled to construct a joint and case spring without having any opening for the admission of dust, and avoiding the piercing of the plate A, as set forth.

2. The lug *m* attached to the case B, when constructed to act as a stop or guard, substantially as set forth.

141,046.—*Kerosene Heater.*—ZIBA B. GRANDY and CYRUS E. GRANDY, Stafford Springs, Conn., assignors to themselves and WILLIAM D. HEALD, same place. Application filed April 26, 1873.

The heating-vessel, adapted to be used in connection with a lamp and its chimney, consists of two concentric compartments. Cocks are applied, one to the exterior and one to the interior compartment.

Claim.—The lamp-chimney A, combined with two concentric chambers, D F, arranged on a common base, B, and having cocks G H, respectively, as and for the purpose described.

141,047.—*Shoemakers' Pinchers.*—WILLIAM H. HANNA, Chico, Cal. Application filed May 10, 1873.

Claim.—A pair of shoemaker's pinchers having the jaws in the same longitudinal plane and the teeth abutting against the turning-face of the jaws, so as to bring the bite near to the pivot A, and thereby not only to secure more leverage in the gripe, but thus to enable the upper to be drawn close to the last, in the manner described.

141,048.—*Scroll-Sawing Machine.*—MARQUARD HANSEN, San Francisco, Cal. Application filed February 3, 1873.

The saw-table is arranged upon a spherical bearing in such a manner as to admit of inclination in any direction.

Claim.—1. The arrangement of the rocking lever *f*, with its end block *d* moving in the slides *e e*, in combination with the connecting-rod *j*, walking-beam I, adjustable link K, spring-bar *l*, and upper slide *n*, substantially as and for the purpose above described.

2. The table-top B, with its ball-and-socket bearing *t*, in combination with the adjusting-rods *x y*, bolt V, and nut W, substantially as and for the purpose above described.

141,049.—*Metal-Planing Machine.*—ROBERT HARPER, Glenn Mills, Pa. Application filed May 24, 1873.

The cross-head, sliding on ways, is operated by means of two parallel screws swiveled to the frame, and connected by gearing to a transverse driving-shaft. The tool-post is adjustable both horizontally and vertically on the cross-head by means of screws and sliding blocks.

Claim.—1. The combination of the bed A, swiveled screws B, gear-wheels C D, or equivalent, shaft E, crank-wheel F, cross-head G, ways H, adjusting-blocks I J M, adjusting-screws K N, and adjustable tool-holder P R, with each other, substantially as herein shown and described.

2. The combination of the set-screws T with the bed A, and with the operating parts of the machine, substantially as herein shown and described.

141,050.—*Sash-Cord Fastener.*—HORACE HARRIS, Newark, and FREDERIC HEWITT, Bloomfield, N. J. Application filed February 28, 1873.

Instead of the usual knob to retain the cord in the metal which is inserted in the frame, a barbed wedge is used.

Claim.—As a new article of manufacture, the metal piece *a* with the tapering hole *c*, and the wedge *e* with the serrated edge *f*, and the knob *n*, substantially as and for the purpose specified.

141,051.—*Hoisting-Machine.*—CHARLES H. HERSEY, Boston, Mass. Application filed June 19, 1873.

The brake and driving pulley are both operated by a single movement of the arm.

Claim.—In combination with the drum-shaft friction-pulley *c*, the driving-pulley *g*, fixed upon a shaft extending through an eccentric, which eccentric is actuated by a lever-arm carrying a brake, the brake *e* and pulley A being simultaneously actuated by manipulation of the arm, substantially as described.

141,052.—*Packing for Piston-Rods and Valve-Stems.*—WILLIAM HESTON, Akron, Ohio. Application filed April 11, 1873.

It is provided with an outer textile covering, and is made of a conical form on its inner surface to crowd the fibrous packing against the piston-rod.

Claim.—The packing above described, as a new article of manufacture, constructed substantially as described.

141,053.—*Game-Board.*—FRANCIS P. HOLMES, North Bridgewater, Mass. Application filed May 5, 1873.

The quoit-board is a horizontal table resting upon short legs and having a movable bull's-eye, which, upon being depressed by the stroke of the quoit, sounds a bell. The board has an upholstered or other cover, and, when not in use as a game-board, serves for a seat.

Claim.—1. As an improved article of manufacture, the above-described game-board, the same consisting of the quoit-board C, the disk D provided with the adjustable rod *d*, the hammer F, and lever E, and bell G, constructed, arranged, and combined together, and applied to the case A, in manner and for the purpose set forth.

2. In combination with the subject-matter of the foregoing claim, the upholstered cover B, as and for the purpose set forth.

141,054.—*Sad-Iron.*—WILLIAM L. HUBBELL, Brooklyn, N. Y. Application filed April 15, 1873.

Claim.—1. The sad-iron made with the shells *a b*, with an opening at one end to set over the burner, and with channels *i* for the gas-jets, in combination with the wire helix introduced into recesses near the inner edges of the shells *a b*, substantially as set forth.

2. The malleable-iron bracket-piece *f*, cast with projecting pins *i* that are riveted to the shell *b*, in combination with the handle *d* that is recessed for receiving the upper ends of such bracket-pieces, and secured to them by rivets or screws 5, as set forth.

141,055.—*Die for Punching Washers.*—RUSSELL HUMPHREY, Unionville, Conn. Application filed December 2, 1872.

The cutting-end of the punch is composed of two parts—an internal and an external punch. The die-block has depressions corresponding to these parts, and a circular projection that enters the space between the inner and outer punches. By this arrangement two washers are cut at the same time.

Claim.—1. The combination and arrangement of the punches *a* and *b*, the expelling-thimble *c*, and the pins *e*, constructed and designed to operate substantially as described.

2. In combination with the punches *a* and *b*, the die *d*, having corresponding openings for such punches to enter, and a projection, *f*, corresponding to the opening between the punches, constructed and designed to operate substantially as described.

3. The combination of the die *d*, having the groove *c* and opening *e*, with the expelling devices described, constructed and designed to operate substantially as described.

141,056.—*Truss-Bridge.*—HENRY J. HUNTER and JESSE RICE, Scioto, Ohio. Application filed June 14, 1873.

The three chords are composed of three timbers each, and the posts of two each. The posts pass between the members of the middle chord, and are "boxed" or "halved" into the members of the upper and lower chords. The truss is braced at each panel by diagonal braces E F, the latter of which extend below the lower chord to give greater tensile strength. The ends of the middle and upper chords extend beyond the end posts, and are joined to the lower chord by converging braces.

Claim.—1. The combination of the middle, top, and bottom chords A B C, comprising three timbers each, posts D, and braces E and F, the braces and posts being arranged with and secured to the posts and chords, substantially as specified.

2. The top and middle chords extended beyond the posts at the ends and provided with braces G, substantially as specified.

141,057.—*Cane-Stripper.*—ROBERT C. JAMES, Denison, Tex. Application filed April 19, 1873.

Claim.—The combination, with the stripping-blades D, of the grooves or troughs I, as described.

141,058.—*Machinery for Shaping Boot and Shoe Soles.*—JOSEPH B. JOHNSON, Lynn, Mass., assignor to SWAIN, FULLER, & CO., same place. Application filed June 25, 1873.

Improvement on patent No. 75,428, granted March 10, 1868. A sliding mold-carrier is provided with molds for right-and-left soles, in combination with a rotating bar or last-carrier provided with one right and one left last, with its supporting-foot.

Claim.—1. The combination of the movable mold-carriage I (or such and the two molds G H) and the mechanism for moving such carriage (or carriage and molds) laterally, as described, with the rotary bar C', or the latter and its two lasts D E, all being substantially as specified.

2. The slide A, furcated arm *i*, the studs *i' k*, in combination with the mold-carriage and its operative mechanism, consisting of the notched bar *l*, crank *m*, gear *n n'*, sleeve *o*, arm *p*, and grooved post *r*, applied to the bar C', as set forth.

3. The mechanism or combination for moving the mold-carriage laterally, such consisting in the notched bar *l*, crank *m*, gears *n n'*, sleeve *o'*, arm *p*, and the grooved post *r*, all being arranged and applied to the bar C' and to the mold-carriage either by a stud therefrom or by a slider and furcated arm and stud, as specified.

4. The combination of the treadle-lever L' and its system of toggles with mechanism, substantially as described, for operating such lever by a belt applied to a driving-pulley, U, such mechanism consisting of the driving-pulley U, the clutch T, the shaft Q, the belt P, the fork V, the retractive spring *x*, the bar W, and the cam-plate Z, all arranged and combined substantially as set forth.

5. The combination of the lever-operative mechanism and the pawl S and ratchet-wheel R, applied to the shaft and the clutch, the said pawl and ratchet being for the purpose specified.

6. The combination of the lever-latch A' and its operative spring a^2 with the treadle L, provided with mechanism for operating it, as described.

141,059.—*Bolt-Heading Machine.*—JAMES O. JONES, Brooklyn, assignor to himself and ADOLPH STARKE, New York, N. Y. Application filed March 27, 1873.

The jaws that receive the end of the rod to be headed move longitudinally, one of which is fixed to the slide, while the other is hinged to it. Inclines on the head operate the hinged jaw to open and close it, and the heading-punch works in the center of the slide.

Claim.—The jaw A, hinged to the sliding stock *c*, and carrying one of the dies, *i*, for the bolt-head, in combination with the heading-punch sliding in the stock *c* and the mechanism for opening and closing the jaw *k*, substantially as set forth.

141,060.—*Ice-Cream Freezer.*—ANTONIO LUCATTI, New York, N. Y. Application filed June 21, 1873.

An ice-receptacle is provided with a gate to admit ice in any desired quantity into a chamber around the cream-receiver, and air passes up a hollow shaft, so that the cream on both its inner and outer surfaces is cooled at the same time.

Claim.—1. The open-bottomed tube E, passing up through the center of the cream-receiver D, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the ice-receptacle B provided with a gate, C, with the tub A of an ice-cream freezer, substantially as herein shown and described.

3. An ice-cream freezer formed of the tub A, the ice-receptacle B provided with a gate, C, the cream-receiver D, the open-bottomed tube E, the shafts G and K, the gear-wheels I and J, the frame H, the covers L and M, and the spatula N, constructed and operating, in connection with each other, substantially as herein shown and described.

141,061.—*Paint Vessel and Package.*—JOHN W. MASURY, Brooklyn, N. Y. Application filed May 15, 1873.

Consists in the construction of a metallic tube with apertures opposite each other in the ends thereof, and containing inside a movable diaphragm for expelling the contents. The thimble in the diaphragm is so constructed as, when the diaphragm is operated by the rod, it prevents it from tilting.

Claim.—1. The arrangement of an aperture, O, in one end of a tube opposite to the aperture G in the other end, in combination with an independent movable diaphragm, B, substantially as and for the purposes specified.

2. The movable diaphragm B, provided with the socket S, or its equivalent, for the purpose of preventing the canting of the diaphragm in a receptacle for plastic substances when pressure is applied.

3. A movable diaphragm of a concavo-convex form in a can or tube, substantially as and for the purposes specified.

4. A tube or can for plastic material, with its ends or heads, the one of a convex and the other of a concave shape, in combination with a concavo-convex diaphragm, substantially as and for the purposes specified.

5. As a new article of manufacture, pocket paint-cans, made substantially as and for the purposes specified.

6. The propelling-rod C, with a socket or finger, F, used in combination with a projection or socket in a movable diaphragm, in a can for plastic material, substantially as and for the purposes specified.

7. A traveler or screw-cap, T, in combination with a propelling-rod which works through it to force down a diaphragm, substantially as and for the purposes specified.

141,062.—*Fire-Extinguisher.*—HIRAM S. MAXIM, Brooklyn, N. Y. Application filed March 14, 1873.

Two generators connect with a series of pipes extending to different parts of the building. The main one is charged with gas-generating material. The supplementary one is an automatic generator. The foraminous shell containing the alkali is attached to the movable gas-holder, and is of such a length that while the generator is full of gas the alkali will be above the acid, but on account of any leakage the shell will dip into the acid-generating gas and maintain the pressure in the holder and pipes. When a fire breaks out, and the plugs are melted, burned, or blown from the pipes, the gas-holder falls, a collar on its rod strikes a lever, releasing a hammer which strikes the discharging-end of the main generator, or sounds an alarm.

Claim.—1. The combination, with a system of pipes, of a generator of gas to keep the pipes constantly filled, and automatic mechanism to produce an alarm or set in operation the extinguishing apparatus when one of the nozzles is opened, substantially as set set forth.

2. The combination of tank D and gas-holder E, in which gas is generated and retained, with the main generator A and pipes K, substantially as described.

3. The combination of acid-vessel C, hammer F, and hook *j*, tripping-lever G, operating in connection with holder E E and flange N, substantially as and for the purpose hereinbefore set forth.

4. The combination of foraminous shell H, or its equivalent, tank D, check-valve M, chamber J, gas-holder, and distributing-pipes, substantially as and for the purpose described.

141,063.—*Steam-Trap.*—HIRAM S. MAXIM and LORING P. HAWES, Brooklyn, N. Y. Application filed March 14, 1873.

A thin metallic vessel having a wooden block in its center to prevent collapse, and filled with gummy substance and alcohol. Said vessel is placed within another containing steam, the heat of which causes the alcohol to expand, closing the inlet and contracting at low temperature, thus acting as a trap.

Claim.—1. The combination of the expansive vessel B, adjusting-spindle *c*, and stuffing-nut I, operating in connection with the steam-inlet G, substantially as and for the purpose hereinbefore set forth.

2. The wooden support C introduced within the expansion-vessel B and held in position by the pins *a*, in combination with the inclosing-case and valve-seat, substantially as and for the purposes set forth.

3. The expansion-vessel B of a steam-trap, containing alcohol above a layer of resinous material, for preventing the escape of alcohol, or the vapors thereof at the joint in the metal, substantially as set forth.

141,064.—*Clothes-Reel.*—JAMES MCMAHON, Ann Arbor, Mich. Application filed May 17, 1873.

The clothes-reel is constructed with arms from the center shaft, having on their ends pivoted rollers which are allowed easy revolution. On each roll is attached, by elastic rings, a binding-slat, to secure the clothes to the roller.

Claim.—1. In combination with a revolving clothes-bar, D, the binding-slats E, when constructed and arranged to operate substantially as and for the purposes set forth.

2. The posts A, radial arms C, shaft B, and revolving clothes-bars D, when the parts are constructed and combined to operate substantially as and for the purposes described.

141,065.—*Carriage-Seat.*—JACOB N. MILLER, Bellefontaine, Ohio, assignor to MILLER BROTHERS, same place. Application filed February 21, 1873.

The main seat slides on ways concealed beneath the tops of the sides of the carriage-body, and the ways are arranged as to permit the top of the back portion of the body to be inclosed.

Claim.—1. The seat B supported on ways *d*, concealed beneath the upper plates or rails of the sides of the bed, substantially as set forth.

2. The slides D extending around the outer and upper edges of the sides of the body, so as to avoid any interference with in closing and paneling the top of the rear part of the bed, substantially as set forth.

3. The screw-cylinder E, lever F, rods G G, bell-crank levers H H, and clamps I I, combined and arranged to operate in connection with the seats B and rails D, substantially as set forth.

4. The bolts or pins T and stops *t* employed to limit the movement of the seat B in the manner substantially as set forth.

5. The movable front seat C attached by hinged legs J, and having short rear legs F on which it rests when in either position, in combination with the sockets p^1, which support it in position for a driving seat, substantially as set forth.

6. The construction and combination of the bearing or bushing K *k*, stud *j*, bolt L, and hinged leg J, substantially as set forth.

7. The seat-backs Q constructed with pivot-hooks *q* and supported by sockets R, arranged centrally between the front and rear edges to admit of reversing the said backs, substantially as set forth.

141,066.—*Candle-Guard.*—BENJAMIN MORGAN, San Francisco, Cal. Application filed February 17, 1873.

A circular disk divided equally is surrounded by a raised flange. The halves are hinged, and have handles and springs for opening and closing the device. A central opening admits the candle, and the melted tallow is prevented from passing through the junction of the two parts by a narrow strip of metal extending thereunder.

Claim.—1. A candle-guard consisting of the parts A A' and hinge C, operated by the spring D and handle E, substantially as described.

2. In combination with the parts A A', hinge C, spring D, and handle E, the thin plate or flange G G, as and for the purpose specified.

141,067.—*Manufacture of Sugar.*—JAMES A. MORRELL, New York, N. Y. Application filed June 4, 1873.

Claim.—The mode of inducing a separation of the glucose or grape-sugar and crystallizable sugar contained in saccharine solutions, preparatory to the evaporation and granulation of the same, by passing through such solutions induced currents of electricity, whether accompanied by atmospheric currents or not, such solutions being afterward evaporated and granulated according to any known process.

141,068.—*Process for Delaying the Fermentation of Saccharine Solutions.*—JAMES A. MORRELL, New York, N. Y. Application filed May 14, 1873.

Currents of air, heated to a temperature of two hundred and twelve degrees or upward of Fahrenheit's scale, are passed through the juice as it flows from the mill.

Claim.—The mode of delaying the fermentation of saccharine solutions, in order that they may be preserved for future use, by passing currents of hot air through them, so as to coagulate the albumen and kill the fungous spores contained therein.

141,069.—*Pessary.*—OTHO M. MUNCASTER, Washington, D. C. Application filed February 14, 1873.

The stem of the pessary is left to freely move in a plate which rests upon the lower part of the abdomen, and thus adjusts itself vertically to suit the movement of the wearer. A small flexible loop extends back toward the arms from about the middle portion of stem, just below the part within the vagina. The vertical adjustments and fastenings of the stem are all within a cylinder, and present no rough points.

Claim.—1. The plate A to rest over the symphysis pubis, combined with the pessary-stem which passes through it, and is left free to move within it, as directed.

2. The adjustable fastening, composed of the two clamps upon the upper end of the stem G, combined with the slotted part of the lower end M, all being inclosed within the cylinder E, and all arranged as described.

3. In combination with the above, the loop running backward to the anus, all as directed.

141,070.—*Apple-Parer.*—WILLIAM A. C. OAKS, Reading, Pa. Application filed June 6, 1873.

Is constructed with a gear and flanged pinion, having intermitting teeth, by which an intermitting action is produced at a point which allows a revolution of the apple, and pares it at the stem, and by its action is again connected and the apple pared.

Claim.—In apple-parers, the combination of the flanged pinion D, with recessed teeth *e*, with the gear-wheel C, having also recessed and extended teeth, arranged in such a manner as that the pinion rotates and produces a full revolution of the fork-shaft while the gear-wheel remains at rest, substantially as and for the purpose described.

141,071.—*Leg for Furniture.*—JAMES C. OAS and JAMES M. BAIRD, Wheeling, W. Va. Application filed May 17, 1873.

The two parts of each leg are notched at the top and fit in grooves in the side rails, and held in place by a button attached to the under side of the table-top. The lower ends of the leg are connected together by two inclined blocks.

Claim.—The leg composed of two parts, A B, notched at top and fitting in grooves of rails D, connected at the bottom by blocks E and at the top by button G, as and for the purpose specified.

141,072.—*Manufacture of Beer and Yeast.*—LOUIS PASTEUR, Paris, France. Application filed May 9, 1873.

Impure yeast is caused to act on a solution of sugar, and when fermentation has ceased the liquid is decanted. Into a shallow dish, previously dipped in boiling water, a little beer-wort, preserved by the "Appert process," is put, and a small portion of yeast deposit made by the above process is added, the whole being then covered by a glass plate. The yeast which has been exhausted by the sugar solution is thus revivified and purified. The apparatus of the third claim is for testing the purified yeast.

Claim.—1. The method of obtaining pure yeast by eliminating the organic germs of disease from brewers' yeast, in the manner described.

2. Yeast, free from organic germs of disease, as an article of manufacture.

3. The vessel, having neck A B, rubber tube *b' c'*, and glass plug C D, as and for the purpose described.

4. The apparatus, consisting essentially of a covered vessel having water-trough around the top, rubber tube *e d*, metal pipe *e*, tube *d f g*, top and bottom gutters, and pipes D E, together with suitable cocks, thermometer, outlets, and inlets, substantially as set forth.

141,073.—*Wheel-Plow.*—JOHN C. PEARL, Meadota, Ill. Application filed February 21, 1873.

Claim.—1. The combination of the suspension-rod H^3, which swivels in a sliding coupling attached to the frame of the carriage, and the plow-beam E, which is loosely sustained in the fork of the suspension-rod by a bolt passing underneath it, substantially as and for the purpose specified.

2. The herein-described coupling for suspending a plow-beam, composed of the parts H, H^1, H^2, and H^3, constructed and connected substantially as set forth.

3. The combination of the platform D, elongated socket G fixed thereto, angular draft and suspension rod F F^1, and laterally-adjustable plow-beam E, all constructed and connected substantially as specified.

141,074.—*Water-Wheel.*—EDWARD R. PERCY, Lawrence, Kans. Application filed July 26, 1872.

A water-wheel with a horizontal axis, in combination with fixed upright posts, pillars, or columns, constructed so that the wheel can slide in them and be sustained by the water alone, and caused to revolve in all the varying depths of the running water on which it floats. There is also a floating dam, in combination with the floating wheel and upright posts.

Claim.—1. A water-wheel having a horizontal axis, in combination with fixed upright posts, pillars, or columns, constructed, as described, so that the wheel will be sustained by the water alone, and caused to revolve in all the varying depths of the running water on which it floats.

2. In combination with the floating wheel and upright posts, the floating dam, as and for the purposes described.

141,075.—*Seat for Harvesters, &c.*—JOHN G. PERRY, Kingston, R. I. Application filed May 6, 1872.

A seat is formed from a sheet of metal swaged to the neces-

sary form, and is attached to a block to keep it in position, and secured by a bolt which connects the whole to a spring.

Claim.—A seat for harvesters, &c., consisting of a sheet-metal plate, A, swaged into shape, in combination with the block C and bolt *a*, as and for the purposes specified.

141,076.—*Printing-Telegraph.*—GEORGE M. PHELPS, Brooklyn, N. Y. Application filed December 17, 1872.

Pulsator-wheel *c*, driven by friction, makes and breaks circuit through lever *c'* and point 6, and is stopped by arm taking against key while motor-train continues revolving. Brake applied when necessary to stop train and break circuit. Escapement controlled by two magnets. Current sent through each alternately by circuit-closing device on type-wheel shaft. Other features as per claims.

Claim.—1. The pulsator-wheel *c*, lever *c'*, and springs 4 and 5, combined with the circuit-screw 6, for opening and closing the circuit by the wheel *c*, substantially as set forth.

2. The lever *k*, spring-brake 10, and arm and pin 12, in combination with the pulsator-lever *c'*, for stopping the motor and closing the circuit simultaneously, substantially as set forth.

3. The two magnets *p* and *q*, acting in opposite directions upon the armature 17 and escapement 16 for the type-wheel *m*, in combination with the circuit-changer, acted upon by the type-wheel shaft, to direct the pulsations alternately through the magnets *p* and *q*, substantially as set forth.

4. The sliding shaft 38, and stop 39, and weighted pawl, taking the screw upon the type-wheel shaft, in combination with the weighted lever w^1, substantially as and for the purposes set forth.

5. The weighted armature *x* and electro-magnet *y*, in combination with the circuit-closing spring *x'*, point 30, and main and local circuits, substantially as specified, and operating as set forth.

141,077.—*Inking Apparatus for Oscillating Printing-Presses.*—GEORGE W. PROUTY, Charlestown, Mass. Application filed April 8, 1873.

The ink is more thoroughly broken up and distributed by giving to the ink-table a succession of rectilinear motions, first in one direction and then in the opposite, by means of a cam.

Claim.—The ink-distributing table T, in combination with the cam U *d*, so arranged and operated as to impart to said ink-table a succession of rectilinear motions in one direction, and then a succession of similar motions in the opposite direction, substantially as described.

141,078.—*Sash-Holder.*—GEORGE W. RICHARDSON, Columbus, Ky. Application filed June 21, 1873.

A cogged sector or pinion and rack-toothed wedge are arranged within a shell or case for attachment to the window-sash. The sector is thrown automatically forward by a spring. A spindle passes through the sector, and an operating-lever is fastened to the end of the spindle outside the shell. The toothed wedge is moved up and down by the sector parallel with the casing, its frictional face in contact therewith.

Claim.—1. The arrangement of the spring J, in combination with the sector or pinion D and the wedge G, as and for the purposes described.

2. An automatic sash-lock, consisting of the shell A, spindle E, lever F, sector or pinion D, wedge-rack G, and coil-spring J, arranged substantially as shown and described.

141,079.—*Curling-Iron.*—LEO ROSENSTEIN and SIGMOND FEDER, Memphis, Tenn. Application filed June 4, 1873.

The inner tube or tubes are to contain heated water.

Claim.—1. A curling-iron composed of two or more concentric tubes, arranged substantially as and for the purposes specified.

2. In a curling-iron, the combination, with the tube A, of the tube B, braces *c*, rim *b*, stopper D, and plug E, when arranged substantially as and for the purposes described.

141,080.—*Scroll-Saw.*—JOHN W. ROWLINGSON, Binghamton, N. Y. Application filed May 26, 1873.

The saw is secured to the reciprocating cross-head by jaws, which are caused to gripe the saw by springs which force them together.

Claim.—The combination of the jaws D D and springs *c c* with the guide-plate E and adjustable guide-plate G, cam and lever J, removable block H, and their connections on the suspended standard B, all being constructed as herein shown and described, for the purpose set forth.

141,081.—*Carpenter's Bevel.*—SAMUEL D. SARGENT, Hartford, assignor to THE STANLEY RULE AND LEVEL COMPANY, New Britain, Conn. Application filed May 2, 1873.

Lengthwise through one of the sides of the bevel-stock is arranged a rod having a conical point, which enters and impinges against one side of an opening in the pivot around which the blade plays. The rod has a screw-thread upon it, and one of its bearings has a corresponding thread, so that by turning a thumb-piece upon the projecting end of the rod it is forced as a wedge into the opening in the pivot and draws the two sides of the stock together upon the blade, thus fastening it in any desired angle.

Claim.—The cone-shaped thumb-screw *c* arranged laterally in the stock, in combination with the bolt *c*, substantially as and for the purpose set forth.

141,082.—*Clothes-Pounder.*—EDWARD S. SAXTON, Greenfield, Ill. Application filed May 10, 1873.

A wood block turned to form with a center opening for the handle, and having two rows of concentric holes or openings of unequal depth, the outer row having openings for air, communicating with the inner by a groove on its bottom.

Claim.—The improved pounder, formed of a wooden block provided with the central hole F leading out through the top of the block, the two circular concentric rows of holes B and D, the shallow circular communicating groove E formed between them, and the openings C in the side of the block, all as shown and described, for the purposes specified.

141,083.—*Camel for Raising Sunken Vessels.*—HENRY H. SIEBE, WILLIAM A. GORMAN, and THOMAS CHRISTY, Jr., London, England. Application filed July 1, 1873.

A vessel or float consisting of two hulls united at one end, forming a single bow, and connected at the opposite end by an arch or bridge, has hoisting apparatus connected therewith, and is thus adapted to raise sunken bodies.

Claim.—The within-described single vessel for raising sunken ships or other bodies, in which two lateral parts, *a a*, uniting in the form of an ordinary bow or prow, *b*, are rigidly connected above the water-line by a structure or bridge, *c*, with or without intermediate structures of bridges *c'*, and provided with lifting apparatus and tackle, the whole being arranged and operating as herein set forth, for the purpose specified.

141,084.—*Reel.*—ROBERT SIMON, Paterson, N. J. Application filed March 8, 1873.

The strand, being unwound from this reel, is always on top at the crossings, and can therefore be picked up with facility after breakage, &c.

Claim.—A reel whose arms A are provided with dividing-disks, as described, for separating the parts of the skein, so that the silk or thread wound on such reel may be crossed in opposite directions in the spaces between alternate pairs of arms, in order that at such crossing each separate strand will be above its predecessor, as and for the purpose set forth.

141,085.—*Cotton-Seed Planter.*—JOHN L. SLOCUMB, Raymond, Miss. Application filed November 16, 1872.

A rectangular frame supported in front by the opener and in rear by the covering-wheel, the latter actuating, by two belts, a stirrer in the hopper in front of it, and a feeder in a spout beneath the hopper.

Claim.—The combination, with hopper and slides, of spout F, provided with rotary arms U and stationary arms V, arranged to operate as and for the purpose described.

141,086.—*Pile-Driver.*—CHARLES H. SMITH, Bloomer, Wis. Application filed May 10, 1873.

The drop of the pile-driver is worked by an endless chain and driving-wheel, so arranged that the chain engages the drop immediately after striking, and elevates it without loss of time. The drop carries a centering-wheel, I, to cause the line of gravity to coincide with the guiding-grooves, and the disengagement is effected by means of the mechanism shown in Fig. 4 and claimed in the third clause.

Claim.—1. The combination, with a rag-wheel, over which passes the chain by which the hammer is raised, of a ratchet, K I, on the rag-wheel shaft, and a subjacent sliding pawl, to enable the hammer to be locked to and unlocked from the chain, in the manner described.

2. The combination, with chain F, wheel G, and drum J, of rag-wheel H and centering-wheel I journaled in the drop, to give a non-frictional perpendicular rise and fall.

3. The combination, with movable detent pawl or slide N that locks the rag-wheel shaft, of a shaft having eccentric P and trip-arm R thereon, and with a stop, T or S, to enable the hammer to be tripped at the times and in the manner set forth.

141,087.—*Clasp for Suspenders.*—JOSEPH W. SMITH, Boston, Mass. Application filed January 15, 1873.

A buckle and slide are combined so that two straps may be attached at a right angle and made adjustable in relation to each other.

Claim.—The slide and buckle combined, constructed and operating substantially as described.

141,088.—*Sewing-Machine.*—DAVID M. SMYTH, Lynn, Mass., assignor to STICKNEY, ELLIOTT & WILSON, New York, N. Y. Application filed May 14, 1873.

The cams moved by the ratchet and pawl operate the first one mentioned in the claims, to move through a rock-shaft and links, a pin to stop the lower feed when desired, and the second cam acts against a block in which the needle-bar reciprocates and moves it with the needle laterally, thus enabling the machine to stitch in irregular lines.

Claim.—1. The cams *c* and 5 revolved progressively by a ratchet and pawl, in combination with the swinging needle-bar and block 6 and the locking-bolt *k*, to lock out of action the ordinary feed motion, substantially as set forth.

2. The arrangement of the oscillating plate *r*, pawl *s*, ratchet *s'*, and link *t*, connected with the needle-bar and the arms *u* and *v'* of shaft *v* that actuates the locking-bolt *k*, in combination with the lever *f* and feed-bar *e*, substantially as set forth.

141,089.—*Spinning-Top.*—JOHN SPENCER, Chicago, Ill. Application filed April 16, 1873.

A series of tops arranged to be spun by a single throw.

Claim.—The spinning-top A, provided with a conical receptacle, W, and the nest of cones *a*, *b*, *c*, *d*, *e*, and *f*, which cones are expelled from the top, separated, and made to turn independently of each other by the centrifugal motion imparted to the top, all said parts being constructed and arranged to operate substantially as specified.

141,090.—*Apparatus for the Manufacture of Gas.*—WILLIAM H. SPENCER, New York, N. Y. Application filed May 20, 1873.

Apparatus for carrying out the process covered by Letters Patent No. 131,035. Two arches, side by side, contain the retorts for decomposing hydrocarbon and steam. From a gas-holder, which receives the gas from the first bench of retorts, the gas is pumped through a second gasometer or governor to the second bench of retorts, where it meets and is diluted by steam. After the diluted gas leaves the second bench of retorts its candle-power may be increased by admitting rich gas to the main by means of a pipe connecting with the pipe for rich gas at a point between the pump and second bench.

Claim.—1. A counter-weighted gas-holder receiving the rich gas from the retorts, in combination with a forcing apparatus that passes a regulated quantity of such gas through retorts and in contact with steam at a high temperature, substantially as and for the purposes set forth.

2. The combination of a regulator with a forcing apparatus, a gas-holder, and a retort for superheated steam, substantially as specified, when said regulator is placed between the pump or forcing apparatus and said retorts, for the purposes set forth.

3. In a gas apparatus in which the rich gas is passed through a retort with superheated steam, a connecting-cock between the pipe from the holder containing such rich gas and the conveying-main, to regulate the illuminating power of the gas, substantially as set forth.

141,091.—*Broaching-Machine.*—AXSON P. STEPHENS, Brooklyn, assignor to THE STEPHEN'S PATENT VISE COMPANY, New York, N. Y. Application filed January 24, 1873.

The bearing for supporting the article to be broached is a perforated hemispherical block backed by a concave abutment, and the broach is actuated by a screw propelled by a nut that is revolved by power transmitted to it by belt and gearing.

Claim.—1. The self-adjusting bearing *s* within the abutment *r*, in combination with the broaching-tool *a* and its actuating mechanism, substantially as set forth.

2. The nut *h* and its flange *i*, bearing against the pillar-block *k*, and actuated by the wheel *g*, in combination with the screw *e*, broaching-tool *a*, and supporting-bars, substantially as set forth.

141,092.—*Grafting.*—CHARLES E. SIMONDS, Salem, Mass. Application filed March 15, 1873.

A thin sheet of elastic India rubber is wound around the scion and stock so as to exclude water and keep the parts in contact. Dissolved rubber is used to cause the adhesion of the band.

Claim.—The described improvement in the process of grafting, it consisting in the use or application of India rubber with the stock and scion or bud, substantially in manner as specified, the rubber being in the form of an adhesive sheet or band wound about the stock and scion, and against or upon itself, so as to cause the folds to adhere together and constitute an elastic and water-proof cover to the joint, all as explained.

141,093.—*Fire-Escape.*—JOSEPH A. TALPEY, Somerville, assignor to JOHN HITCHCOCK, trustee, Boston, Mass. Application filed June 21, 1873.

An improvement on Patent No. 139,484, June 3, 1873. The grooved chain-wheel is made in two parts, with lugs and corresponding depressions, so that when taken apart, turned half-way round, and reunited, the chain-wheel is converted into a rope-wheel, the number of sprockets being uneven. The centrifugal levers are arranged with hooks, which serve as means of connection with the revolving arms. The chamber in which the weights revolve is arranged eccentrically to compensate for the increased friction in the lower section of the cylinder, due to gravity.

Claim.—1. In a machine for lowering goods, to be used as a fire-escape and for other purposes, a grooved pulley divided into two parts in a plane at right angles to its axis, provided with the ribs *d d* on either side of said groove, and the lugs *e e* upon one part, and corresponding recesses in the other part arranged to be secured together in two opposite positions at will, to form a sprocket or chain wheel, or a pulley adapted to be operated by a rope, substantially as described.

2. The weighted levers I I, provided with the lips or hooks *i*, arranged with relation to each other, and connected to the arms H H, as shown, and serving as brakes to retard the speed of revolution by being thrown outward by centrifugal action against the inclosing casing, substantially as described.

3. The arrangement of the chamber B eccentrically to the axis of the revolving parts, substantially as described, for the purpose specified.

141,094.—*Windmill.*—CHARLES A. TAYLOR, Hartford, Conn. Application filed March 8, 1873.

Each sail or wing consists of a rigid central post springing from the front end of the shaft, having a flap upon either side of the post, hinged thereto so that they may swing backward. There is a weight attached to keep the sails fully expanded, and by altering the weight the pressure can be adjusted to the opposing pressure of the wind in such a way as to keep the mill in proper limits. Through the center of the length of the shaft is a rod having some longitudinal play. On the front end of this rod are the arms, from the ends of which run connecting-rods.

Claim.—1. A windmill-sail, consisting of a fixed central post, *c*, with flaps c^1 c^2 hinged thereto upon either side, substantially as described, and for the purpose set forth.

2. The combination of the sails, composed of the central post *c* and the flaps c^1 c^2 hinged thereto upon either side, the connecting-rods c^3 c^4, the arms d^1 d^2 d^3 d^4, the rod *d* running through the length of the shaft *a*, the swivel-arm *f*, cords *f'*, and weight *g*, all constructed, arranged, and designed for operation, substantially as and for the purpose set forth.

141,095.—*Tuck-Marker.*—FRED. L. TILESTON, San Francisco, Cal. Application filed May 31, 1873.

The standard of the base-plate supports the spring and the creasing-arm, the latter being acted and pressed against the fabric by one end of the spring, which is moved by the needle-bar. The adjustable gage and spring guide the edge of the material and smooth it.

Claim.—The base-plate and its connected supporting-head, in combination with the adjustable bent creasing-arm, the spring N O, and the sliding gage-plate and spring, all constructed and operated as described.

141,096.—*Dovetail-Machine.*—ALFRED C. VAN ALSTINE, New York, N. Y. Application filed April 5, 1873.

The different parts of sash are dovetailed in this machine and tenons formed by the arrangement of the carriage in connection with the various cutters, the carriage being automatically tilted by ratchet-wheels, pawls, and escapements.

Claim.—1. The combination of the tongue T', escapement *c' d*, ratchet-wheels *a'*, cog-wheels R, pawl 4, and pawl-bar 3, with the branched guide-slot and the carriage M, substantially as specified.

2. The combination of the finger-bar N of the tilting bar V, branched guide-slots Q F I, tongue T', and automatic devices for shifting the tongue.

141,097.—*Earth-Boring Machine.*—GEORGE WILSON and GEORGE H. BAISLEY, Hamilton, Mo. Application filed April 8, 1873.

Claim.—1. The hinged boxes or journals *n* for throwing the boring-shaft out of gear with the driving mechanism, substantially as shown and described.

2. The elevating mechanism, consisting of the shaft *c'*, drum *m*, and wheel *c'*, when arranged, substantially as described, so that it can be operated either independently of, or in connection with, the driving mechanism for raising and lowering the boring-shaft, substantially as specified.

3. The shaft *b*, pinions *e g*, and wheel *d*, in combination with the shaft *h* and spur-wheel *i*, substantially as set forth.

141,098.—*Dumping-Truck.*—FREDERICK H. ABEEL, New York, N. Y. Application filed May 24, 1873.

The end-gate is locked by means of a sliding rod having a hooked end, with which a lever pivoted to the front of the wagon engages. The load is supported upon rollers and the end-gate, and as the latter is unlocked the load slides off from the wagon.

Claim.—1. In a dumping-truck, the hinged tail-board A, arranged to partly support the load, in combination with the locking mechanism B E G H, or its equivalent, for holding or releasing the tail-board, substantially as set forth.

2. The arms B B, rods E E, slotted plate G, and lever H, in combination with the tail-board A, substantially as and for the purpose herein set forth.

3. The roller *d* and elevated roller *e*, in combination with the tail-board A, substantially as shown and described.

141,099.—*Wheel for Vehicle.*—CHRISTIAN ANDEREGG, Lawrenceburg, Ind. Application filed May 14, 1873.

Improvement on patent No. 129,499, July 16, 1872.

Claim.—The combination of stepped wooden hub and spokes A C B D and webbed metallic band E E' F, the metallic band with the socket-webs below the periphery, so as to receive the upper shoulders of the spokes, all substantially as set forth.

141,100.—*Disinfecting and Deodorizing Apparatus for Water-Closets.*—JOHN M. B. BAKER, Lennox Road, Southsea, England. Application filed June 12, 1873.

Within the cylinder containing the disinfecting liquid, and near the bottom, is fixed a small pump-barrel fitted with a flexible plunger operated from the lever which works the flushing-plug. On the descent of the plunger a graduated quantity of the liquid is forced into the pipe leading to the pan. The upper part of said pipe is provided with a conical valve of vulcanized India rubber, slit at its apex, and with a flanged base of woven or textile fabric, the base being secured between the connecting-pipes when screwed together.

Claim.—1. In combination with the reservoir A, the barrel C, plunger D, rod E, rod U, lever R, and pipes H L communicating with the closet-pan M, all arranged and operating substantially as described, for the purpose specified.

2. In combination with the pipes H and L and barrel C, the intermediate valve B, constructed, arranged, and operating substantially as herein described.

141,101.—*Hot-Air Flue for Heating-Furnaces.*—GEORGE R. BARKER, Germantown, Philadelphia, Pa. Application filed March 31, 1873.

An adjustable valve upon the hot-air pipe operates to govern the admission of hot-air to the ventilating-flue.

Claim.—The adjustable valve C, or its equivalent, constructed and arranged to operate in combination with the hot-air flue or pipe A, and the ventilating flue or pipe B, substantially as and for the purposes hereinbefore described.

141,102.—*Compound Faucet.*—WILLIAM S. BATE, Philadelphia, Pa. Application filed June 18, 1873.

By means of two supply-pipes hot and cold water are brought to the faucet, the handle of which, being turned to certain positions, allows water to pass through one of two discharge-pipes—from either the hot or cold supply-pipes, or partly from one and partly from the other. Upon turning the handle to certain other positions the water is permitted to pass through a second discharge-pipe, the temperature being changeable as before.

Claim.—1. A compound faucet in which a casing having two supply-pipes, *a* and *b*, and two discharge pipes or nozzles, is combined with a valve, B, having ports so arranged as to establish communication between either of the supply-pipes independently, or both simultaneously, and either of the discharge-pipes, all substantially as specified.

2. A compound faucet in which a casing, A, having two supply-pipes, *a* and *b*, and a discharge pipe or nozzles, *c* and *d*, is combined with a valve, B, having a surface-port, *h*, for establishing communication between either or both of the supply-pipes and the said discharge-pipe, all substantially as specified.

3. The combination, with the discharge-pipe *c*, of the channel and passage *p* in the valve, for the purpose specified.

141,103.—*Car-Coupling.*—THOMAS BEDDOW and ALEXANDER T. JACKSON, New Albany, Ind. Application filed April 26, 1873.

A pivoted tumbler, which is adapted to fit into a recess formed in the upper part of the draw-head, engages with a projection on the end of the coupling-link. The notch of the link is so beveled and the tumbler is so pivoted that, in the event of any car upsetting, the link will be automatically detached.

Claim.—The combination of the draw-head A, constructed with the recess C, as described, and having the tumbler D with its oblique rear end pivoted therein, with the link E having its coupling-shoulders beveled outward, substantially as shown and described.

141,104.—*Gage-Cock.*—JOHN F. BELLEMRE and FRANK R. FLEKE, Reading, Pa. Application filed April 22, 1873.

If the valve should leak, the escape-passage in the cock having been closed by the central plug, the seat may be unscrewed, and if the defect is in the seat it may be reversed. The peculiar form of the valve and hollow plug permits the removal of the former and the ready exit of the steam.

Claim.—1. The combination, with a gage-cock, of the seat E, constructed substantially as described, so that it may be reversed, for the purpose set forth.

2. In a gage cock, the valve D, having the collar *d*, neck d^1, and flat sides d^2, in combination with the hollow plug F having a transverse channel in its inner end, substantially as and for the purpose specified.

141,105.—*Hardening Steel Wire and Thin Sheets of Steel.*—ALFRED BENJAMIN, Newark, N. J. Application filed July 17, 1873.

Claim.—1. The process of hardening steel wire or thin steel by treating it, when properly heated, to a strong blast of air or gas, substantially as herein set forth.

2. The continuous process of treating and hardening steel wire or thin steel, wherein the material, as it emerges from the heating process, passes at once into a strong blast of air or gas, substantially as described.

3. The continuous processes of heating, hardening, and tempering steel wire or thin steel, wherein the material, as it emerges from the heating process, passes through a strong blast of air or gas, and thence into the tempering process, substantially as set forth.

141,106.—*Stove-Platform.*—GILBERT E. BINGHAM and JOHN F. EWING, Chicago, Ill. Application filed March 1, 1873.

The board B, the upper surface of which is covered with sheet metal, is fitted within the flanges a^1 a^2 of the ring A, which is composed of two or more pieces, which are connected together by means of the lugs *c* and rivets or screw-bolts.

Claim.—1. The stove-platform, consisting of the cast-metal ring A, made in two or more pieces, the board B, and the sheet-metal cover *z*, substantially as shown and described.

2. The flanges a^1 a^2 on the inner edge of the ring, substantially as shown and described.

3. The board B, covered with sheet metal, and held between the flanges a^1 a^2, substantially as shown and described.

141,107.—*Chimney-Cap.*—THOMAS BOYD, Cambridgeport, Mass. Application filed May 21, 1873.

A cylindrical cap surmounts the cone and is attached thereto by a ball screwed upon the stem. An elastic cushion surrounds the stem for prevention of noise in turning. The cone is weighted at its upper extremity, and the shaft about which it turns reaches nearly to the top.

Claim.—1. A cap for ventilator and chimney flues, suspended and provided with an upper outside enlargement, G, substantially as and for the purpose described.

2. The elastic cushion *f*, against which the cap I is confined on its suspension-stem *a*, substantially as described, for the purpose specified.

3. The concave top I to the inner part of the cap, substantially as described, for the purpose set forth.

141,108.—*Trace-Buckle.*—EDWARD K. BRAYTON and JOHN BAUGH, Eau Claire, Wis. Application filed May 24, 1873.

The buckle-frame and clamping-plate are both corrugated on their inner sides. A movable yoke or brace holds the clamp together, and secures the trace by means of a wedge, which is attached to the tug.

Claim.—1. The trace-clamp, consisting of the wedge C to be fastened to a hame or trace, the brace D, and the pressure-plates E F with corrugated friction-surfaces, substantially as specified.

2. In a trace-coupling, the friction-plate F with the buckle-blanks or guides f^1, and the strap-slots f^2 f^3, substantially as specified.

141,109.—*Restoring Tinned Sheet-Iron.*—WILLIAM E. BROCKWAY, New York, N. Y., assignor to WILLIAM L. BROCKWAY, same place. Application filed July 5, 1873.

After collecting a sufficient quantity of cans, subjects them to a temperature of 1,000° in a suitably-constructed oven, and, thereby, not only divesting the iron of all the tin, but annealing the iron. The iron is then taken from the oven and passed between rollers, which press upon it sufficient to straighten and prepare it for market.

Claim.—The above-described process for restoring and utilizing waste material, substantially as set forth.

141,110.—*Seal for Locks.*—FRANKLIN W. BROOKS, New York, N. Y., assignor to EDWARD J. BROOKS, same place. Application filed June 18, 1873.

A thin fibrous material, with numbers, names, initials, or any private or other marks upon it, is applied behind or beneath the glass, the latter serving to protect the paper seal, and having to be broken before the seal can be removed or access had to the lock.

Claim.—The combination of a transparent or semi-transparent protector with a paper seal for locks, substantially as herein described, for the purposes stated.

141,111.—*Wheel for Vehicles.*—JOSEPH Q. BRYER, Wilmington, Del. Application filed February 8, 1873.

A rubber lining placed between the bore of the hub and the axle-box, is forced by any lateral shock into a recess formed in the bore, thereby lessening the shock.

Claim.—1. The plug F, having the flanges *f* and groove *g*, communicating with the recesses *b c*, in combination with the axle-spindle and axle-box, substantially as specified.

2. The hub A, having enlargement I in the middle, and having in the enlargement the groove or recess *a* and the spoke-mortises partly through the enlargement, in combination with the rubber lining B placed between the axle-box and bore of the hub, and extending under said recess *a*, substantially as shown and described.

141,112.—*Tape for Hoop-Skirts.*—CHARLES C. CARPENTER, New York, N. Y. Application filed May 14, 1873.

Claim.—1. As a new article of manufacture, a tape for hoop-skirts having an open body or mesh-work, A, and solid or closed bars B, substantially as described and shown.

2. As a new article of manufacture, tapes for hoop-skirts, constructed substantially as above described, when formed in sheets or widths for separation and use as tapes, as set forth.

141,113.—*Port-Stopper Fastening.*—JOHN CARVER, Lincolnville, assignor of one-half his right to JONATHAN P. CILLEY, Rockland, Me. Application filed May 10, 1873.

Port-stopper made in sections, each of which is separately secured by means of a link and key, and a single cross-bar, which bar is provided with a plurality of slots for receiving the links.

Claim.—A port-stopper, consisting of a plurality of horizontal pieces, B B, each provided with a staple, C, for the reception of a link, D, in combination with a single vertical cross-bar, E, having diagonal slots to receive the inner ends of the links, through which wedge-shaped keys are inserted, as and for the purpose set forth.

141,114.—*Culinary Apparatus.*—REUBEN H. CAZIER, Philadelphia, Pa. Application filed March 5, 1873.

The boiler is placed inside the cylinder on suitable supports, so as to leave a draft-passage all around. The top of this space and a portion of the boiler are covered by a hinged metallic annulus. The steam, &c., easily flow off through this passage.

Claim.—The case A, pan B, lugs *a*, and the open lid or ring C, substantially as and for the purpose shown and described.

141,115.—*Seat-Hinge.*—MARCELLUS W. CHASE, Buffalo, N. Y. Application filed June 30, 1873.

An axial bolt clamps the two parts of the joint together and constitutes the pintle. The seat-arm is provided with a segmental projection, and the standard-arm with a lug and a concentric flange, said flange having a recess or opening to allow the passage of the projection on the seat-arm portion of the joint when the bolt is removed.

Claim.—A seat-hinge comprising a central bolt, C, for clamping the parts together, and a flange, *w*, having a recess, *u*, a stop-lug, *x*, and a projection, *v*, concentric therewith, and formed and arranged on the standard and seat-arm, substantially as herein described.

141,116.—*Process for the Manufacture of Artificial Leather.*—HENRY A. CLARK, Boston, Mass.—Case C. Application filed July 12, 1873.

Lithographic ink or some adhesive substance is transferred to the surfaces of the material to be treated by the ordinary lithographic-press process.

Claim.—The mode or process herein described of preparing paper or other sheet material, for the purpose specified.

141,117.—*Artificial Leather.*—HENRY A. CLARK, Boston, Mass. Case B. Application filed July 12, 1873.

Ink is transferred to the sheet material by the ordinary lithographic-press process, and after it has dried a coating of some water-proof material is applied to both surfaces, after which the remaining unprepared surface is coated (preferably by the process before mentioned) with an adhesive substance and sprinkled with some suitable flock.

Claim.—Paper, or cloth, or other suitable sheet material, prepared on one side with flock, on the other with lithographic ink, and on both sides water proofed, all substantially as herein described, for the purpose specified.

141,118.—*Preparing Cloth, and Paper, and Like Fabrics to Imitate Leather.*—HENRY A. CLARK, Boston, Mass.—Case A. Application filed July 12, 1873.

Lithographic ink is applied to the surface of the stone and the material then laid on the prepared surface. The sheet material, after subjection to the ordinary transfer operation of a lithographic press, is removed from the stone, and after it has dried a water-proof coating is applied to both surfaces.

Claim.—Paper, or cloth, or other suitable sheet material, prepared on one or both sides with lithographic ink, and on both sides water-proofed, all substantially as herein described, for the purpose specified.

141,119.—*Manufacture of Vapor Gas.*—COBERT L. COHEN, Philadelphia, Pa. Application filed May 13, 1873.

Claim.—1. The employment, in the manufacture of vapor gas, of chloride of lime, substantially as set forth.

2. The employment, in the manufacture of vapor gas, of chloride of lime and sulphuric ether, substantially as set forth.

141,120.—*Sash-Fastener.*—ALEXANDER COLE and EZRA DAVIS, Saratoga Springs, N. Y. Application filed May 21, 1873.

The bed-piece is constructed with rounded recess, lip, shoulder, and guards, to confine a bent coiled spring, and has likewise a socket for hinging the thumb-piece, the rivet connecting or hinging this latter to the bed-piece passing through both coils of the spring. The bed-piece, thumb-piece, and spring are inserted in a cavity of the window-frame and fastened by a single screw.

Claim.—1. The spring *e*, bent and coiled as shown and described, in combination with the rivet or bolt *f*, which connects the thumb-piece with the bed-piece, the rivet passing through both coils *i i*, all as shown and described.

2. The bed-piece *c*, constructed as described, with a rounded recess back of the hinge adapted to receive the coils of the spring and the socket of the thumb-piece, and having the lip *n* and the side rims or guards *l l*, aiding to maintain in position the free ends of the spring, all substantially as shown and described.

3. The combination of the bed-piece *c*, thumb-piece *d*, and the spring *e*, adapted to be applied to the window by a single screw, when these parts are constructed, relatively arranged, and operate as set forth.

141,121.—*Reclining Chair.*—EDWARD COLLINS, New York, N. Y. Application filed June 6, 1873.

The seat rests on a pedestal connected by a globe-joint and pivoted legs in the rear, and the back is adjustable by levers and racks.

Claim.—1. The combination of the seat F, arms A, back B, and rods C, provided with the notched bars D for engagement with projections *d* on the back, substantially as and for the purpose shown and described.

2. The legs G pivoted to the seat, and connected to the seat and arms by rods *e* and levers K engaging with notches in the arms for holding the seat in different positions, substantially as shown and described.

3. A globe-joint for connecting the seat with the pedestal, consisting of the bowls L M, formed with projections and depressions *l m*, and secured by a bolt, P, whereby the chair may oscillate backward and forward, and may be held in position when facing in different directions, substantially as shown and described.

141,122.—*Saw.*—JOSEPH CROOKES, St. Louis, Mo., assignor of one-half his right to JOSEPH W. BRANCH, same place. Application filed June 17, 1873.

The cutting-tools are placed between spring jaws which are held securely in the saw-plate by an eccentrically-grooved disk.

Claim.—The combination of spring-clamp E, eccentrically-grooved cam G, and diamond or other set or cutter K, substantially as set forth.

141,123.—*Last-Block Holder.*—DAVID DANIELS, Park's Corners, Ill. Application filed April 10, 1873.

The plate has projections at each end upon its lower side, which run in a groove in the wooden last and prevent the holder from turning.

Claim.—As a new article of manufacture, the slotted plate *a*, having the projections on its lower side so as to hold it in the proper position, substantially as shown and described.

141,124.—*Can for Oysters.*—CHARLES H. DEXTER, Baltimore, Md. Application filed July 8, 1873.

By making the hole in one side and the seam in the middle of the other side the hole can be made larger and with a seat for the cap, because it interferes with no soldered seam, and the seam can be more easily soldered. The pieces that form the ends of the cans are creased and have unbroken-lipped corners to protect the corners of the can, and are crimped to the can before soldering.

Claim.—1. An oyster-can having a filling-hole through one of the sides of its body and opposite a seam, *g*, in the side opposite said hole, substantially as described.

2. Creased ends or heads B, having channels *e* and depressed edges *a*, which latter terminate at the corners of the heads in unbroken lips *b*, substantially as described.

3. The ends or heads B, constructed as described, and crimped or pressed upon the body of the can previously to soldering, substantially as described.

4. The seam in one of the sides of the can, as set forth.

141,125.—*Manufacture of Push-Top for Watches.*—JOHN C. DUBBER, Cincinnati, Ohio. Application filed March 1, 1873.

A cylindrical bar, homogeneous or of bars of different metals soldered together, is first knurled on its surface, then turned to the form of a connected series of push-top blanks, and these blanks are then successively drilled out and out off.

Claim.—The method or process of manufacturing watch case push-tops by knurling the entire periphery of a metallic bar or rod and subsequently turning, drilling, and cutting the same, all substantially as herein described.

141,126.—*Ladder.*—JOHN EAGON, Batesville, Ohio. Application filed March 27, 1873.

The ladder is extensible, and is supported on a base-frame of timber, so as to be adjusted at different angles of elevation, being sustained in an inclined position by hinged braces which are stepped in mortises in the base-frame.

Claim.—The ladder B having the hinged tenoned braces B', in combination with the frame or base A, mortised at different points, substantially as and for the purposes specified.

141,127.—*Harvester-Rake.*—WILLIAM T. EASTES, Summitville, Ind. Application filed June 23, 1873.

A sliding rake, connected to a series of folding levers, discharges the gavel at the inner end of a rectangular platform by means of a foot-lever with intermediate links, and is returned by the action of a spring.

Claim.—The slat-frame *a a* with the sliding clips a'' a'', the slides *s s*, the levers *t t'*, the links *s' s'*, and the slats H H, in combination with the bar *v*, rake-bar *e*, rod or bar E, lever *c'*, rod c'', lever *d'*, rod *m*, spring *f*, and lever or treadle F, all constructed and arranged substantially as and for the purpose set forth.

141,128.—*Rotary Engine.*—WINSLOW P. EAYRS, Boston, Mass., assignor of one-half his right to TIMOTHY E. STUART, same place. Application filed May 14, 1873.

The cleats are so arranged that one valve admits a full head of steam while the other has been moved by them, and cuts off so that the steam admitted may expand. The rollers in the abutments, which are forced radially against the segments of cylinder by steam acting through suitable passages, act as packings.

Claim.—1. The cleats *f f*, arranged in front of the abutments *d d* in the steam-channel of the wheel A, and operating on the valves G G', substantially as and for the purposes herein set forth.

2. The combination of the wheel A having steam-channel *b*, abutments *d*, rollers *e*, and cleats *f*, the casings D, valve-boxes E E', valves G G', inlets H H', and outlets I I', all constructed and arranged substantially as and for the purposes herein set forth.

141,129.—*Frictionless Journal and Shaft-Bearing.*—JAMES ECCLES, Philadelphia, Pa., assignor to himself and SAMUEL ECCLES, Jr., Baltimore, Md. Application filed April 22, 1873.

The sizes of the friction-roller and box are so proportioned with reference to the size of the axle that their respective surfaces, when in contact, shall correspond with the pitch-line or circle of the gearing that unites them.

Claim.—1. Making the surfaces of the interior periphery of the box, the rollers, and the axle, where in contact, correspond with the pitch-line of their respective gearing, in place of making the teeth so that their faces shall project out only to the inner periphery of the box and of the axle, respectively, as required by the specification of the patent granted to Joseph Harris, Jr., February 22, 1848.

2. In the case of end-thrust or pressure, so to construct the plates, whose friction otherwise is to be obviated by the use of conical geared rollers, that their surfaces, where in contact with the surfaces of said rollers, shall correspond with the pitch-lines, respectively, of the gearing, by which said plates and gearing are united.

141,130.—*Grain-Separator.*—OSCAR J. EVERSON, Lake City, Minn. Application filed October 22, 1872.

Hopper feed-gate sliding horizontally so as to be retained in position without locking; hopper-mouth arranged to discharge grain, &c., through the blast onto chess-screens, from which tailings pass into spout, the grain falling through onto grain-screens.

Claim.—1. The combination and relative arrangement of the gate Z, guides *z*, pivoted lever A', and hopper Y, constructed as and for the purpose specified.

2. The combination of the hopper Y with its discharge-opening, arranged relatively as shown, the blast-chute K, and the screens O and P, substantially as and for the purpose shown.

3. In combination with each other and with the screen-shoe L, the screens O and P and tailings-spout B', substantially as and for the purpose set forth.

4. The means employed for securing the tailings-trough to or upon the screen shoe, consisting of the metal loops or stirrups C and D', provided with the openings *c* and *d'*, respectively, and fitted to or over the screws E', substantially as shown and described.

141,131.—*Fire-Plug.*—JOSEPH P. GALLAGHER, St. Louis, Mo. Application filed May 19, 1873.

The valve-chamber is formed with one or more outflow-pipes for the attachment of hose, and with an extension-barrel in which moves a compound valve. The outlet-pipes are connected to the barrel by a brace-pipe, through which the water escapes when the valve is closed into an annular chamber surrounding the stem, and in communication with the water-escape orifice on the opposite side of the barrel. Beneath the valve-chamber is a water-chamber having a slide-valve to close communication when repairs are necessary.

Claim.—1. The combination of valve-chamber A, barrel B, compound valve C *c* C', having annular recess or chamber *c''*, outlet-pipe B', and escape-passages *f b*, substantially as set forth.

2. The slide-valve H, working in the chamber G and operated by the valve-stem I, lever K, and fulcrum-bracket L, in combination with the chamber A and pipe B', substantially as and for the purpose shown and described.

3. The combination of the valve-chamber A, barrel B, outlet or outlets B', valves C *c* C', hand-screw D *d* having collar D', and the water-escape passages *f b*, substantially as set forth.

141,132.—*Coating Metal with Copper.*—OCTAVE GAUDUIN, JEAN B. J. MIGNON, and STANISLAS H. ROUART, Paris, France. Application filed February 11, 1873.

Dry chloride or fluoride of copper and cryolite, to which is

added chloride of barium, is melted in a crucible. The iron or steel goods to be coppered are scoured and then dipped into the mixture.

Claim.—The process of coating articles with copper by immersing said articles in a bath of fused copper salts, with or without other materials, as set forth.

141,133.—*Cooler for Soda-Water, &c.*—WILLIAM GEE, New York, N. Y. Application filed March 27, 1873.

A series of chambers composed of convex disks and pipes connecting them in such manner that the liquid to be cooled is conveyed from the upper part of each chamber to the lower part of the next.

Claim.—The reversed pipes D E, in combination with the centrally-connected, vertically-arranged chambers A A, essentially as and for the purpose herein set forth.

141,134.—*Corset.*—THOMAS S. GILBERT, Birmingham, Conn. Application filed June 3, 1873.

The corset-springs are re-enforced, without increasing their thickness, by means of metallic stripe held in pockets in the corset near the back edges of the main steels, and parallel thereto.

Claim.—1. The supplemental springs x^2, consisting of narrow metallic strips or wires, the same being held in pockets near the back edge of each main steel, and parallel thereto, as herein shown and described, for the purposes set forth.

2. A straight strip, 2, introduced between the first and third sections of each half of a corset, as herein specified, for the objects stated.

3. The compound back pieces, consisting of sections 5 6, formed and united as herein described, the inner section 6 being tapered downward to the width of the eyelet edges, and the lower ends of the adjoining sections 5 so shaped as to give the requisite hip-fullnesses, which are thus made to begin near the middle of the back, as set forth.

141,135.—*Feathering Paddle-Wheels.*—GEORGE K. GLENN, Ashton, Ill., assignor of one-half his right to JOHN L. ROBINSON and MICHAEL ROBINSON, same place. Application filed May 17, 1873.

The paddle-floats are hinged to the ends of the arms, and levers, sliding in and out from the center of the wheel by the action of cams and rollers, cause the floats to present their broad surface to the water as long as they exert any propelling force, and then to feather on their hinges when leaving the water, and thus raise no weight of fluid with them.

Claim.—In a paddle-wheel, the combination and arrangement of the hinged paddles E E provided with the bent rods or loops E' E', the sliding arms F F provided with the rollers G G, or their equivalents, and with the pins e' e', extending into the loops E' E', the cam H, and the pivoted cam I, all substantially as and for the purposes specified.

141,136.—*Washing-Machine.*—HIRAM C. GROVER, Nunda, N. Y. Application filed April 23, 1873.

A washing-machine constructed with octagonal heads, with its outer edge covered with rounds, forming a cage open for the passage of water, and the heads or ends corrugated upon the inner sides, and having wood balls with their surfaces corrugated, by which a rolling motion is given in their contact with inner surface of the heads and outer bars when in use. The cage or cylinder is journaled at its center, and is fitted to journal-boxes on the edge of the tub on which it revolves.

Claim.—The fluted heads C, rounds D, and fluted balls G, all constructed and arranged for operation as and for the purpose herein set forth.

141,137.—*Abdominal Supporter.*—JOHN W. GURLEY, Petersburg, Va. Application filed May 22, 1873.

The corset for the abdomen is made from a single piece, and is laced at the rear and at each side. It is furnished with shoulder-braces and with stocking-supporters, which latter are bifurcated at their tops and fastened directly to the supporter at each side of the side lacing.

Claim.—The combination of the single-piece supporter with back and side lacings, the shoulder-braces and straps for attachment to the stockings, the same being bifurcated at the top and attached directly to the corsets each side of the side lacings, all arranged as described.

141,138.—*Corn-Harvester.*—LEONIDAS HAMILTON, Panora, Iowa. Application filed May 10, 1873.

A large roller, with a gathering wing or screw on the front end of it, is placed parallel with a small one, the two acting together to sever the ears from the standing stalks and deliver them to the husking-rollers, which are placed to one side and at right angles to the gathering-rollers.

Claim.—1. The roller I, with the screw-shaped propelling-plate i, diminishing and contracting into a shallow spiral groove, s, and with the fluted cylindrical surface, in combination with the cylinder K with partly-fluted cylindrical surface, the cylinder K being of comparatively small diameter to facilitate the nipping of the corn-ears, and also to prevent their being caught and mashed between said cylinders.

2. The combination, with the screw-shaped roller I, of the rollers M and N, arranged in pairs and provided with cutters or knives o, and with spiral ribs w and spiral grooves m, for the purpose set forth.

3. The combination of the post c^1 fastened to the end of the axle-tree C, the sliding axle-plate c^2, the rope or chain x', the pulley c^3, and the elevating shaft or windlass X, substantially as set forth.

141,139.—*Furnace for Melting Metals.*—JAMES HARRISON, East Hampton, Conn. Application filed February 20, 1873.

The form of the tap-hole enables any molten metal remaining in the conduit to be forced back into the furnace by the clay-plug used to close the tap-hole, preventing the metal from chilling in the conduit, and facilitating successive tappings. The furnace is provided with a swinging crane to facilitate the removal of the detachable breast. The breast is held in place by a screw-bolt and a stay-bar, which engages with catches on the frame.

Claim.—1. The funnel-shaped metallic tapping-hole M with the breast C, substantially as and for the purpose described.

2. The combination of the screw-bolt P, collars R, and breast-plate C, substantially as described.

3. The combination of the breast-plate C with the stay-bar n and the screw-bolt P, substantially as described.

4. The combination of the swing-crane L with the breast-plate C, substantially as described.

5. The taper fire-place G, with the funnel-shaped arch I, in combination with a furnace, as and for the purpose specified.

141,140.—*Stump-Extractor.*—TOBIAS HERRIG, Jasper, Ind. Application filed May 14, 1873.

Claim.—1. The frame-pieces A A, hinged together, and having the trigger H and guide J connected to them, as and for the purpose set forth.

2. The bars D D', with their levers and collars, in combination with the frame and the trigger H, as and for the purpose set forth.

141,141.—*Combined Refrigerator and Water-Cooler.*—HENRY W. B. HERVEY, Philadelphia, Pa. Application filed July 12, 1873.

Water is admitted into a vertical tank through a tube having an air-vent and provided with a stopper, and passes into a cooler, which supports the ice and which runs at right angles to the tank, from whence it is drawn by a faucet. The cooler is provided with flanges, which conduct the ice-drippings into troughs, from whence they pass into a waste-pipe.

Claim.—The water-tank, water-cooler, and ice-rack, combined in one, made of any suitable materials, in combination with the air-tube, flanges, and drip-troughs, as arranged and described, for the purpose herein set forth.

141,142.—*Cover for Fruit-Baskets.*—JOHN C. INGHAM and CHARLES COLBY, Benton Harbor, Mich. Application filed June 6, 1873.

Constructed from tapering strips crossed at the top, weakened at suitable distances to give it the form of an inverted pan, secured to hoops which conform to the top of the basket, and is held to it by projecting ears fitted to the hoops or supports of the basket by nails or tacks.

Claim.—The within-described cover for fruit-baskets, composed entirely of strips D D and hoops *b b*, said strips being weakened a suitable distance above the hoops, and bent one upon the other, thus forming an open and elevated cover with flattened top, as and for the purpose set forth.

141,143.—*Seeding-Machine.*—GEORGE F. STROUD, Oshkosh, Wis., assignor to WM. D. STROUD, same place. Application filed December 7, 1872.

The seed-box carries in its bottom a series of slides, which are adjustable so that the quantity can be regulated. The seed-slides are worked by a cam-wheel upon the hub of the driving-wheel. An agitator sweeps the seed into the seed-cups.

Claim.—1. The slides Q R, made adjustable longitudinally by means of the arms Y pivoted on X, and set-screw *b*, and provided with projections S and recesses T, in combination with the plates L and N, provided respectively with rectangular slots M and O O', substantially as and for the purposes hereinbefore set forth.

2. An agitator, composed of the lever *e* loosely mortised in the bottom of the seed-box A, and the longitudinal sweep *g* provided with the pendent arms *h* and mortised upon the upper end of the lever *e* when operated by the plates L and N, substantially as and for the purpose hereinbefore set forth.

3. In combination, the serpentine cam-wheel *m*, plates L N, slides Q R provided with the slots M, O O', U, and V, all arranged relatively one to the other, substantially as and for the purposes hereinbefore set forth.

141,144.—*Combined Roller and Planter.*—OLEY KNUDSON, Effingham, Ill. Application filed March 18, 1873.

Two rectangular frames are hinged together, and each carries a roller. Forward of each roller is a seed-box with an adjustable slide working beneath both from a cam on one of the wheels. The furrow-openers are raised and lowered by a weighted lever, and can be thrown out of use when the machine is used simply as a roller.

Claim.—1. In a combined corn-planter and land-roller, the hinged frames A A', adapted to conform to inequalities in the ground, and provided with the stationary seed-box F and sliding box F', the latter being adapted to accommodate itself to the independent movement of the frame A by means of the hinged arm U and ways T, substantially as described.

2. The shafts W W' of the drills V V', connected by the bent single arm Y and bifurcated arm Y', substantially as described.

141,145.—*Cultivator.*—OLIVER KUGLER, Raritan, assignor to himself, JAMES D. MCCAULEY, and JACOB VAN FLEET, Clinton, and JOHN A. THOMPSON, Reddington, N. J. Application filed September 14, 1872.

Concave scrapers are attached to runners, which converge in the rear. These are followed by shorter scrapers or shares, which throw the clean soil toward the row of plants.

Claim.—1. The combination, with gatherers L L, of arms M M, arranged as and for the purpose specified.

2. The hook-chain K on projecting end of bar I, ring *k*, rods J J, and chains *k' k'*, combined and arranged with a cultivator-frame, as described, to form a flexible draft.

141,146.—*Cultivator.*—OLIVER KUGLER, Three Bridges, assignor to himself, JAMES D. MCCAULEY, and JACOB VAN FLEET, Clinton, and JOHN A. THOMPSON, Reddington, N. J. Application filed June 24, 1873.

A rectangular frame supported on runners, having inwardly-projecting scraping wings and a rear cultivating attachment.

Claim.—1. The combination of the runners A A, front and rear standards B B, cross-bars C C, center draft-beam D, and handles E E to constitute the cultivator-frame, substantially as herein set forth.

2. The combination of the up-and-down adjustable bar H, with keys and screw-rods, with laterally-adjustable bar I, plow-shanks J J, pivoted plows K K, slotted as described, and held by pins or screws *i i*, as and for the purposes herein set forth.

141,147.—*Treating Ores.*—MATTHEW LAFLIN, Chicago, Ill. Application filed June 14, 1873.

Claim.—The process herein described for treating ores, the same consisting in heating them in a close retort so as to prevent access of air, and then subjecting them to the action of a caustic alkaline solution, substantially as set forth.

141,148.—*Coal-Car Elevator.*—PHILIP H. LAMEY, Wiconisco, Pa. Application filed July 7, 1873.

The coal-car is drawn up and over the knuckle of slope, and the pusher-truck drawn toward the discharge end of landing; the small truck will start at bottom of main weight-truck, and as the bumpers of small truck come in contact with the bumpers of main weight-truck the latter is drawn along to upper end of pit. This main weight-truck is heavy, and is used only in starting the coal-cars and drawing them up grade and a little over the knuckle of the slope; the main weight-truck will then stop, while the hook-truck and small weight-truck will continue on. The hooks will drop down over a plane and on a level with weight-truck track and stop, while the small weight-truck stops at bottom of main weight-track.

Claim.—1. The combination, with pusher-truck catch, of two springs that yield to a sudden jar, in the manner and for the purpose described.

2. The combination, with pusher, of a front hook-truck, connected thereto by coupling-ropes that admit of slack at the times and for the purpose set forth.

3. The combination, with coal-car, of the drop-hooks, traveling in advance thereof until the spread-chains are hooked and then falling, in the manner specified.

4. A track for weight-truck below and of the same pitch with the inclined car-track, arranged in a pit and covered to protect it against dirt from the coal-cars, in the manner described.

141,149.—*Device for Increasing the Friction of Helical Gearing.*—GEORGE LINDSAY, Belfast, Ireland. Application filed February 25, 1873.

Claim.—The loop *m*, adapted to embrace the collar D', in combination with said collar and with wheels having helical threads fixed on the shafts C D, as specified.

141,150.—*Molding-Pipe.*—ANDREW W. A. LOGEN, Rochdale, England. Application filed April 19, 1873.

The pattern rests on bearings and projects through a table, on which the sand is molded. The journals have depressions on the upper side, so that when the pattern is revolved it is at the same time withdrawn from the sand.

Claim.—The rotary pattern, provided with flanges B B and depressions *d d* in the journals, in combination with the box or table D, the removable slotted or notched slides *c*, and the anti-friction bearing-rollers *a a*, substantially as specified.

141,151.—*Umbrella.*—COMEGYS C. LUBY, Philadelphia, Pa. Application filed June 12, 1873.

Claim.—1. A drip-cup provided with a stick independent of the umbrella-stick, so that it may be applied either to finished or unfinished umbrellas, substantially as described.

2. A telescopic ferrule, forming the cover for an umbrella drip-cup, substantially as described.

3. In combination with an umbrella drip-cup stick, the screw-ferrule G, substantially as described.

4. The plug E, in combination with the cup and ferrule, for the purpose of forming a water-tight joint, as set forth.

5. In combination with the umbrella-stick B, the cup-stick D having the screw *d*, substantially as described.

6. The combination of a stick, D, screw-ferrule G, drip-cup F, and ferrule H, substantially as described.

141,152.—*Piano.*—GEORGE C. MANERE, New York, N. Y. Application filed April 17, 1873.

The sounding-board is attached directly to the iron frame, so as to form, with the wrest-plank and strings, a compact and solid structure independent of the casing. The braces of the iron frame, just above the wrest-plank box, are made separate and removable.

Claim.—1. The metal frame A, sounding-board E, and wrest-plank C, when said parts are combined and arranged substantially as described.

2. The movable pieces or clips *a*, arranged in combination with the wrest-plank C and box B of the metal plate frame A, substantially as described.

3. The wooden frame D, containing the slots *d* and combined with a metal frame, A, and sounding-board E, the latter being arranged between the frames A and D, substantially as specified.

4. The transverse bar F, applied to the front edge of the frame D, in combination with the frame A and sounding-board E, as set forth.

141,153.—*Thrashing-Machine.*—RALPH H. MARTINDALE, Hobbleville, Ind. Application filed May 10, 1873.

A swinging board hung at the end of the thrashing-cylinder and extending down to a rake in the vibrating shoe, and a revolving beater, which beats the straw on its passage to the rake in order to more thoroughly separate any grain that may remain in the straw.

Claim.—The arrangement of the revolving beater M, swinging grain-board K, and rake L, substantially as and for the purposes herein set forth.

141,154.—*Apparatus for Dispensing Soda-Water and other Beverages.*—JOHN MATTHEWS, New York, N. Y. Application filed May 27, 1873.

A recording apparatus and registering device are connected with the fountain, by which the quantity drawn off is measured and recorded. A locking-roller is connected with the sirup-tanks, so that the sirup can be withdrawn only through the dispensing apparatus.

Claim.—1. The improved apparatus herein described for dispensing soda-water and other beverages, composed of an external case, a draft apparatus, a meter-chamber, and a cooling-chamber, as described.

2. The combination of a draft apparatus, a measuring apparatus, and recording devices, so as to dispense, measure, and register the number of portions of either soda-water or sirup, or of both, substantially as herein set forth and described.

3. The draft and measuring devices, consisting of the meter *m m*, with piston and piston-rod, in combination with the branched draft-arm and reversing-valve, substantially as described.

4. The sirup-tanks arranged with a soda-water apparatus and provided with locking-roller or equivalent means to lock the sirup-pumps, as set forth, either with or without the angular passages, so that the sirup can be withdrawn only through the dispensing apparatus, as described.

5. The combination of the sirup-pumps having projecting outlets, the sirup-tanks, arranged as set forth, with a dispensing apparatus, as described.

6. The combination of the three-branched draft-arm with the reversing-valve, as and for the purpose set forth.

7. The combination of a meter, connecting-passages, and draft-arm, arranged and operating substantially as described.

8. The locking-roller with a dial-plate and containing recesses or holes, arranged, as described, so as to permit the working of any particular sirup-pump, as set forth.

141,155.—*Rotary Pump or Engine.*—WILLIAM P. MARSON, Elmira, N. Y. Application filed May 7, 1873.

The case, made in two portions, is constructed with cam-grooves in its inner faces, into which plungers, pivoted at the periphery of the wheel, fit. Steam or water enters a port in one face, and, impinging upon the pistons, rotates the wheel, escaping through a port in the other face.

Claim.—1. The combination of the casing A B provided with recesses *h h'*, inlet-passages *a a*, and outlet-passages *b b*, with the revolving wheel C, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the cams G G, constructed as described, and arranged in the wheel C, with the casing A B having ports *a b*, substantially as and for the purposes herein set forth.

141,156.—*Compound for Cleaning Polished Metals.*—MARK MCGLENN, Aurora, Ill. Application filed June 25, 1873.

Spirits of ammonia, lye, spirits of turpentine, sweet lard oil, hard soap, Tripoli or other earthy silicious substance, rain water.

Claim.—The hereinbefore-described compound, composed of the ingredients and in the manner substantially as and for the purpose specified.

141,157.—*Potter's Lathe.*—WILLIAM MEEK, Anderson, Ind. Application filed April 7, 1873.

Changeable case attached to lathe-head, so as to carry sectional molds of different sizes, the lower ends of mold-sections being secured in slotted disk F. Inner forming-tool adjustably secured to vertically-sliding cross-head.

Claim.—1. The combination of the case E E' attached to the lathe-head B, the slotted disk F, and mold-sections G, and raising-disk H.

2. The molding-tool N attached to the longitudinal sliding block O, and the vertical sliding bar P, all arranged and operating substantially as and for the purpose set forth.

141,158.—*Stopping Mechanism for Twisting-Machines.*—ANDREW J. MILLSTEAD, Woodberry, assignor of one-half his right to WILLIAM E. HOOPER & SONS, Baltimore, Md. Application filed May, 28, 1873.

When a strand breaks, or a spool runs out, a drop-wire will fall and be struck by a wing on a revolving shaft. The frame carrying the drop-wires will be swung back, and the lever L turned on its pivot so as to remove the driving-band from the groove in the whirl of the flier. The lever L will strike and swing a forked lever so as to move the strands out of the bite of the bosses of the rollers, stopping the delivery.

Claim.—1. The described mechanism, arranged to automatically throw the band from the whirl or pulley of any given flier upon the breaking of its thread, without thereby arresting the motion of any other flier.

2. As a means for throwing the yarn laterally out of the bite

or notion of the rollers, the swing-lever O hung on a center and arranged to vibrate, as set forth, in combination with the lever L, swing-frame K, and drop-wires m, arranged to operate, as described, upon the breaking of a thread back of the feed-rollers.

3. The combination, with the swing-frame K and the revolving winged shaft M, of the weight latch-lever P, automatically operating, when a thread breaks, to hold the frame and its drop-wires into the position in which they are swung by the revolving wings.

4. The combination of the described band-shifting devices or their equivalents with the described yarn-shifting devices or their equivalents, substantially as and for the purpose set forth.

141,159.—*Car-Starter.*—CLEMENT J. MOORE, Joliet, Ill. Application filed February 7, 1873.

A combination of levers, which may be attached to the draw-head of a car, to move the same.

Claim.—The bar *m* having the metal binding *o*, serrated point *s*, stop *n*, slot *q*, and stop *r*, in combination with the bar *a* and lever *c*, arranged and operating in the manner and for the purpose set forth.

141,160.—*Grain-Drier.*—WILLIAM F. MORGAN, Buffalo, N. Y., assignor to THE GREAT AMERICAN MALT AND GRAIN DRYING COMPANY, New York city. Application filed April 16, 1873.

The subdivision of the floor of the drier into a series of pockets is intended to secure a uniform distribution of the grain over the entire drying-surface. The scrapers are so adjusted as to adapt themselves to any inequalities in the surface of the floor.

Claim.—1. The combination, in a grain-drier having circular drying-floors and a central driving-shaft, of grain-carriers hung to radial arms *h*, and composed of radial scrapers *c* and concentric partitions *d*, substantially as and for the purpose hereinbefore set forth.

2. The combination, in a grain-drier having circular drying-floors and a central driving-shaft, of grain-carriers hung to radial arms *h*, and consisting of radial scrapers *c* and concentric partitions *d*, constructed of sections jointed together at *e'* and *d'*, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the circular floor, shaft C, and radial beams *f f'* of a grain-drier, of the sleeve or ring K surrounding said shaft, and connecting the inner ends of said beams, substantially as hereinbefore set forth.

4. The combination, with the floors E and F, shaft C, and radial beams *f f'*, of the two connecting-sleeves K K, either cast in one piece or secured firmly together, substantially as and for purpose hereinbefore set forth.

5. The combination with the grain-hopper G of a grain-drier having horizontal drying-floors and radial revolving carriers, of the adjustable gage-board N, arranged at the rear of the discharge-opening of said hopper, substantially as and for the purpose hereinbefore set forth.

6. The combination, with a grain-drier having circular drying-floors and revolving carriers, of the grain-hopper G, provided with two or more independently-adjustable gates, M, arranged side by side on said hopper, substantially as and for the purpose hereinbefore set forth.

141,161.—*Calendar-Watch.*—DON J. MOZART, Ann Arbor, Mich. Application filed May 14, 1873.

The indexes of the calendar-dials on a watch-face are operated by a spring and peculiar works separate from, but tripped at the proper time by, the watch movement. There is also an a. m. and p. m. hand actuated by an extra tooth on the hour-hand wheel.

Claim.—1. The twelve-armed wheel E and spring G, operating in combination with the single cogs *o* on the pinions *m m'*, substantially as and for the purposes herein set forth.

2. The cogged segment I, operated by the pinions *m m'* in the manner herein described, in combination with the seven-cogged pinion A, shaft *c*, seven-armed wheel H, and ratchet device *f*, substantially as and for the purposes herein set forth.

3. In combination with the seven-armed wheel H, the shaft *n* with cogged eccentric *p*, and plate *t* with prongs *s s'*, operated by the tooth *u* on the hour-hand wheel *v*, substantially as and for the purposes herein set forth.

141,162.—*Lantern.*—SAMUEL NAYLOR, Independence, Iowa. Application filed June 10, 1873.

The chimney is secured in place by means of a round wire spring soldered to the lamp-fount, and a spring passing through the gallery, operating in conjunction with depending pieces attached to the lantern-top.

Claim.—1. The wire frame *f* on lamp D, in combination with wire springs *e* on the base A, substantially as and for the purpose set forth.

2. The springs A A, constructed and arranged as described, in combination with wire frame *f* and spring *e*, as and for the purpose set forth.

141,163.—*Sewing-Machine.*—ALBERT T. NICHOLS, Williamsport, Pa. Application filed May 21, 1873.

The saw-arbor is so constructed as to admit of a longitudinal movement, which allows the saws to be taken off without removing the arbor from its frame.

Claim.—The arrangement, with a saw-frame, of the longitudinally-grooved and endwise-movable saw-arbor A, having adjustable saws B B, and provided with a shoulder, *b*, at one end, and an adjustable collar, *d*, and set-screw *e* at the other end, all substantially as and for the purpose set forth.

141,164.—*Harvester-Rake.*—MANNING L. NIX, Chetopah, Kans. Application filed June 14, 1873.

A reciprocating frame placed beneath the slatted platform carries the rake, which is held in position for raking by a spring-pin on the slide in the frame, and automatically released as the slide strikes the side of the frame of the platform.

Claim.—1. The pivoted rakes B, recessed wheel G', slide E, stud G, reciprocating frame C, and slatted grain-platform A, combined substantially as and for the purpose specified.

2. The springs H', in combination with the pivoted rake B, slatted platform A, slide E, and reciprocating frame C', substantially as specified.

141,165.—*Adjustable Car-Window Stop.*—CHARLES PAGE, Meriden, Conn. Application filed May 20, 1872.

The sash and blind are separated by parting-strips, the latter forced apart by the adjustable stop.

Claim.—The elastic or movable cap C, in combination with the elastic or movable strips D, the whole forming a self-adjusting or automatic car-window stop device, substantially as described.

141,166.—*Brake for Preventing Retrograde Movement in Bearing and other Machinery.*—DAVID T. PEEK, New York, N. Y. Application filed July 9, 1873.

The rim of the wheel is corrugated or scalloped on its inner face, propelling a rubber ball forward up an inclined plane in a fixed chamber, and receiving the ball in one of the indentations in case of retrograde movement, thereby stopping the revolution of the wheel.

Claim.—The wheel A provided with a corrugated or scalloped edge, in combination with a fixed chamber, D, containing a roller, *b*, and provided with an inclined bottom, *a*, substantially as shown and described.

141,167.—*Making a Hydrate or Milk of Magnesia.*—CHARLES H. PHILLIPS and LAWRENCE REID, New York, N. Y., assignors to CHARLES H. PHILLIPS, same place. Application filed June 4, 1873.

Magnesia is dissolved in distilled water, and then filtered through paper, if desirable, after which is added a pure solution of caustic soda or potash. These two solutions are thoroughly mixed with each other, and, after standing about twenty-four hours, the clear liquor is drawn off and replaced by more distilled water. When water is added for the fourth washing, steam may be injected into the mass to agitate it.

Claim.—The process herein described of preparing a pure superhydrate of magnesia, to wit, by subjecting a soluble salt of magnesia to the action of a caustic alkali, in the manner substantially as set forth.

141,168.—*Lubricator.*—DAVID T. PRAY, Boston, Mass. Application filed April 12, 1873.

A tube leading from the oil-cup, nearly or quite to the periphery of the journal, and containing one or more balls, (in the latter case placed one above the other,) the lower one resting on the periphery of the journal and rotated by its action, the flow of oil being regulated by the number of balls in the tube, which balls are kept in place by a spring inclosed in the tube, which prevents their displacement, particularly when using a loose pulley.

Claim.—1. In a self-feeding oil-cup for supplying oil to a rotating or sliding bearing for purposes of lubrication, one or more spherical valves, *d d*, for checking or controlling the flow of oil, when arranged to be rotated by the movement of the bearing, substantially as described.

2. The combination of the ball-valves *d d* and the tube F with the oil-reservoir A, arranged substantially as described, for the purpose specified.

3. The combination, with the oil-reservoir A, of the ball-valves *d d* and the spring *e*, arranged and operating as described, for the purpose specified.

141,169.—*Folding Cover for Sewing-Machines.*—SAMUEL J. PUSEY, Philadelphia, Pa., assignor to WILLIAM H. GROVE, same place. Application filed April 17, 1873.

The top is hinged together in such a manner that it may be unfolded, inverted, and laid directly upon the top of the table at one side of the machine.

Claim.—A folding cover for sewing-machines in which the top, front, and back are hinged together, as described, so that they may be unfolded, inverted, and laid directly upon the top of the table at one side of the machine, as set forth.

141,170.—*Paper-File.*—RANSOM RATHBONE, New York, N. Y. Application filed June 16, 1873.

The string, fastened at the bottom, is wound around the two pins inserted in the end of the stick, and then drawn down between them.

Claim.—The combination, with the file, consisting of the guttered stick and cords, of the fastening for its cords, consisting of the two pins *b* and *c*, arranged in proximity to each other to bind the cord between them after it has been wound round them, essentially as and for the purpose specified.

141,171.—*Self-Closing Hatchway.*—ALEXANDER REID, New York, N. Y., assignor to himself and WILLIAM REID. Application filed January 24, 1873.

The rising car raises the hatch by its cam-shaped top and sides. The hatch is kept in a raised position till the car has passed by means of the curved levers connected by the rods *d* to the hatch, which levers press against the sides of the car and ease the fall of the door. In descending, the car raises the door and closes it by a reverse process.

Claim.—In combination with an elevator, *a*, formed with cam-shaped sides *a²*, and a hatch, *c*, the slides *c¹* working in grooves *b'*, levers *e* having curved arms or extensions *f*, connecting-rods *d*, and brackets *i*, all arranged, constructed, and operating substantially as described.

141,172.—*Steam-Boiler.*—SEBASTIAN EITTY, Dayton, Ohio. Application filed February 6, 1873.

Combines with an ordinary cylindrical boiler a central hollow partition, arranged below the boiler and connecting at each side with a series of tubes closed at their outer ends and in communication with the boiler through the hollow partition. The outer ends of the tubes are supported by plates, near the ends of the boiler. The object is to more effectually generate steam.

Claim.—The arrangement of the boiler A, hollow division K, and tubes B B, substantially as described.

141,173.—*Self-Adjusting Injector for Feeding Boilers.*—WILLIAM SELLERS, Philadelphia, Pa. Application filed June 12, 1873.

The regulation of the water is effected by the combining-tube alone. The jet passes through an orifice of suitable size in a diaphragm between the combining and delivery tubes. The waste thereby, at starting, takes place in the overflow-chamber through a weighted check-valve closing automatically when the jet has acquired sufficient velocity to enter the boiler.

Claim.—1. The combination, with a fixed receiving-tube and a fixed delivery-tube, of a self-adjusting combining-tube, substantially as described.

2. The combination of a fixed receiving-tube, a fixed delivery-tube, and a self-adjusting combining-tube with a regulating steam-plug.

3. The combination of a fixed delivery-tube, a self-adjusting combining-tube, an overflow-chamber, and a check-valve waste.

4. The combination, with the overflow-chamber, of a diaphragm, provided with an orifice, substantially as and for the purposes described.

5. The combination of the water-chamber, the overflow-chamber in which the delivery-tube is fixed, and the piston of the combining-tube defining these chambers in a continuous casing, substantially as described.

141,174.—*Injector for Feeding Boilers.*—WILLIAM SELLERS and COLEMAN SELLERS, Philadelphia, Pa. Application filed June 26, 1873.

The area of the jet of water is varied by combining and delivery ajutages having several tubes of different areas, and arranged to rotate simultaneously until the opening of the desired size is brought in line with the combining and delivery tubes, and are then held by a locking device.

Claim.—1. The construction of the combining-tube of the injector with a movable combining-ajutage containing two or more tubes of different transverse areas, substantially as before set forth.

2. The construction of the delivery-tube of the injector with a movable delivery-ajutage containing two or more tubes of different transverse areas, substantially as before set forth.

3. The construction of the movable combining-ajutage of a wedge form, so that the lengths of the tubes in it may be increased as their transverse area is decreased, substantially as before set forth.

4. The combination of the movable combining-ajutage of the combining-tube and the movable delivery-ajutage of the delivery-tube in such manner that both are caused to rotate simultaneously, substantially as before set forth.

5. The combination of the movable delivery-ajutage with the mechanism for moving the same, and for locking it in the position to which it is moved, substantially as before set forth.

6. The combination of the movable delivery-ajutage with the mechanism for moving the same, and with stops which prevent it from being moved in the wrong direction, substantially as before set forth.

7. The combination of the steam-plug and the mechanism for regulating the extent to which it can be operated, substantially as before set forth.

8. The combination of the movable combining-ajutage and the movable combining-tube in such manner that the two are held in contact when the combining-tube is moved to regulate the water-supply.

9. The combination of the steam-plug, the combining-tube, the movable combining-ajutage, the mechanism for moving and locking the combining-ajutage, and the mechanism for regulating the movement of the steam-plug, substantially as before set forth.

141,175.—*Inhaler.*—SAMUEL J. SHAW, Marlborough, Mass. Application filed June 26, 1873.

A long open-ended tube is passed through the cork and connects at its bottom with the ingress-tube and at its top is provided with a valve opening outward. Within this tube is placed the small vial containing the acid. Upon blowing into the mouth-tube the water cannot be forced over into the acid-receptacle.

Claim.—The combination, with the receptacle A, ingress-tube D, mouth-tube C, and stopper E, of an independent opening, G, and stop or valve F, substantially as and for the purpose set forth.

141,176.—*Weather-Strip.*—FERDINAND SIEKING, New York, N. Y. Application filed July 1, 1873.

Claim.—A weather-strip composed of two gaskets and two retaining-strips forming lips, each of which projects beyond its gasket and bears upon the opposite gasket, when the meeting surfaces close up, substantially as shown and described.

141,177.—*Car-Coupling.*—THOMAS SMITH, Waterford, N. Y. Application filed April 3, 1873.

When the pivoted head is struck by an approaching hook it recedes until the other hook has passed behind it, when it is forced back into place by a spiral spring. Uncoupling is effected by an upright lever and a chain attached to the actuating spring and passing through a hole in the arm of the pivoted head.

Claim.—The draw-bar or bumper A, having the pivoted head B with arm C, in combination with the spring D, lever E, and chain *b*, all constructed and arranged substantially as and for the purposes set forth.

141,178.—*Combined Sash-Fastener and Weather-Strip.*—EDWIN J. EFFINGER, Youngstown, Ohio. Application filed June 16, 1873.

A journaled spring-section of the upper part of an inside weather-strip serves, by catching under notches in the frame, to hold the sash up at various parts.

Claim.—The combination of the spring-knuckle section stop or locking device C, and its handle E with the spring weather-holding sash-strip B, as described.

141,179.—*Gas-Furnace.*—LEVI STEVENS, Washington, D. C. Application filed January 21, 1873.

Consists in forming carbonic oxide or protoxide of carbon from oxyhydrogen vapors or steam. Also in distilling bituminous coal, asphaltum, pine wood, &c., which will distill a carbon or hydrocarbon vapor or gas, which vapor or gas is used in the disintegration of oxyhydrogen vapor or steam. Also in the application of carbonic oxide or protoxide thus formed to steam-boilers, furnaces, &c., where heat is required.

Claim.—1. The arrangement consisting of the boilers A A with their furnaces, and the central boiler C with its furnace and retorts, or an equivalent device, constructed to operate substantially as herein described.

2. The retorts F, arranged as shown, together with the superheater G with its connecting-pipe, substantially as and for the purpose described.

3. In combination with the gas-generator, the main J, and the discharge-pipes L L, the heating-furnaces, the arrangement being substantially such as herein described.

4. The superheater G, consisting of the cast-iron box having the steam-space formed therein, with a series of short angular turns, as shown and described, whereby the current of steam is somewhat retarded in its flow, and is thoroughly broken up to effect a more thorough superheating of it, as set forth.

141,180.—*Gas-Furnace.*—LEVI STEVENS, Washington, D. C. Application filed March 24, 1873.

Superheated steam injected through the central tube draws the gas from the grate and coking-chamber through the perforations in the outer tube, where they mingle with the steam and are forced into the working-chamber.

Claim.—The coking-chamber D, with the pipes F and the pipes J or their equivalents, in the combination with the grate C.

141,181.—*Furnace for Roasting and Smelting Ores.*—LEVI STEVENS, Washington, D. C. Application filed January 17, 1873.

The ore is fed gradually down an inclined flue, wherein it is roasted by the escaping products of combustion. From this flue it falls into a second, where, the heat being more intense, the metal separates from the slag in its passage down the flue, the body of metal falling to the bottom of the reverberatory chamber, from whence it can be tapped.

Claim.—1. The combination, in a roasting and smelting furnace, of the inclined flues F and D with a single heating-furnace and regulating-dampers, when constructed and arranged to operate substantially as described.

2. The inclined flue F, provided with the revolving worm or screw I, arranged to feed the ore gradually to the inclined flue D, substantially as set forth.

3. The combustion-chamber A and the smelting-chamber B, in combination with the flues D and F, all arranged to operate substantially as and for the purpose set forth.

4. The arrangement of the gas-pipe M, air-pipe N with its regulating-cock S, and steam-pipe P with the nozzle O, the latter being arranged to deliver the combined gases against the deflecting-breast *b*, located between the combustion and smelting chambers, as shown and described.

141,182.—*Banjo.*—JOHN S. STILES, Springfield, Vt. Application filed March 14, 1873.

The rim and heads are in one piece and both of metal. The bridge, tail-piece button, handle, and strings may be also of metal.

Claim.—As a new article of manufacture, a banjo provided with a body composed of face, back, and rim of sheet metal, as herein specified.

141,183.—*Locomotive Head-Light.*—PETER F. STOUT, Philadelphia, Pa., assignor of one-half his right to WILLIAM C. ROBERTS, same place. Application filed February 5, 1873.

The lens is made horizontally adjustable within the reflector by a bar depending from a rocking shaft, which bar works in slots in the arms attached to the lens.

Claim.—The combination of the lens M, arms *d d*, slots *e e*, vibrating rod E, and arms B B, constructed and arranged substantially in the manner and for the purpose described.

141,184.—*Sash-Holder.*—GEORGE A. STURGIS, Delhi, N. Y., assignor to himself and DEXTER PETTENGILL, same place. Application filed June 5, 1873.

A vertical rod is arranged on inside of the sash, on which works a bracket attached to the upper sash, and consisting of an eccentric cam and spring operated by a knob. A double locking-segment is arranged for the lower sash, which has a spring-catch combined with a toe on its pivot, so arranged within a corresponding bracket that it is readily moved into or out of locked position by the hand applied to the knob. There is also a pull-cord, which

places the locking device of the upper sash in combination with the double locking-segment of the lower sash, this construction allowing the simultaneous raising or lowering of the two sashes, or the separate holding of either one or the other sash firmly in any desired position.

Claim.—1. An eccentric cam, *g*, and knob or handle G, applied to a sash-bracket, through which passes a rod, C, that is secured in a vertical position to a window-frame, A, substantially as described.

2. The V-shaped spring-catch *e'*, combined with a toe, *i*, on the pivot of the lower eccentric segment *g*, and with the lower sash-rail B' and rod C, substantially as described.

3. The combination of the lower double locking-segment *g* and its spring-catch *e'* with the single locking upper segment *g'* and the pull-cord *a*, substantially as described.

141,185.—*Devices for Loading Cartridges.*—THOMAS L. STURTEVANT, Framingham, Mass. Application filed June 6, 1873.

The shelf or chute I serves as a guide for the insertion of the wads and shot to the mouth of the cartridge.

Claim.—The combination, with the cylinder or chute and rammer of an implement for filling cartridges, of the shelf I, surmounting the wad-receiving orifice of such cylinder or chute, substantially as and for purposes stated.

141,186.—*Bag-Holder.*—CHARLES H. THOMAS, Williamsburg, Ohio. Application filed March 21, 1873.

The device claimed is attached to the exterior of a hopper or funnel for securing thereto the mouth of a bag or sack to be filled.

Claim.—1. The provision in a bag-holder of the pivoted clip G, having the bifurcated jaw H H' I, as and for the purpose described.

2. The combination of plate B, slotted lugs C C' *c c'*, shaft D, eccentric E F, retaining clip G *g g'* H H', shiftable pintle J, and spring K, or their equivalent devices, for the object stated.

3. The projection *f* on the handle E, in combination with the clip G in a bag-holder, adapted to operate substantially as herein described, for the purpose set forth.

141,187.—*Picking Mechanism for Looms.*—WILLIAM TOWNSEND, Auburn, N. Y., assignor of one-half his right to J. WESLEY PIERCE, same place. Application filed April 17, 1873.

The picking-stick is actuated by a tappet, roll, and rock-shaft, with a rigid connection between rock-shaft and stick, and the stick is withdrawn by a cam and strap connection, thereby dispensing with springs and weights. To enable the weaver more easily to throw the shuttle out of the box for inserting a fresh bobbin the strap of the withdrawing mechanism is attached to a blade-spring on the actuating-lever instead of the lever itself.

Claim.—1. The spring *m*, in combination with the lever D, belt *n*, pulley *p*, and staff A, as and for the purposes set forth.

2. The combination of the shaft C with arm *b*, roller *d*, cam *f*, lever D with its shoe *i*, spring *m*, guide-roller *p*, belt *n*, or its equivalent, picker-staff A, rod *a*, and lever B, all the parts being constructed and arranged to operate substantially as and for the purposes herein set forth.

141,188.—*Machine for Perforating Drive-Well Points.*—CHARLES L. TRAVIS, Minneapolis, Minnesota. Application filed May 6, 1873.

The article is supported and clamped upon a bed that can be moved longitudinally under three milling-tools, which are placed at equal distances apart. These tools are brought down by means of a hand-lever upon the article to mill holes in it in a row.

Claim.—In a machine for perforating drive-well points, the circular cutters *a a*, in combination with the arbors E E, the frame *d*, the lever F, the carriage B, and bed A, all constructed and arranged substantially as and for the purpose set forth.

141,189.—*Air and Gas Engine.*—OTTO TROMSIN, Berlin, Germany. Application filed August 26, 1872.

The reservoir for the exhaust air incloses the air-supply pump and its driving-shaft, and forms a support for the piston-cylinder and valve-chest. The exhaust air passes through a coil of pipe surrounded by water; thence into the reservoir, from which it is forced by the pump into the heater.

Claim.—1. In an air or gas engine, the reservoir-cylinder D for the exhaust air, made to receive and inclose the air-supply pump B and the driving-shaft U, and to support the piston-cylinder and valve-chest in relation to the parts inclosed, substantially as described, and to obtain the advantages stated.

2. The combination, with an air or gas reservoir cylinder, D, wherein the air-supply pump B and driving-shaft U are inclosed, and which carries at its end the working-piston cylinder A and the rotary cut-off valve D, of the valve-rod G, gearing H I, and driving-shaft U, when inclosed within the reservoir D, substantially as described, and to obtain the benefits stated.

3. In combination with the cylinder A, the air-supply pump B, and the reservoir D of a hot-air engine, a condenser, R, arranged and operating essentially as and for the purpose set forth.

4. The hot-air or gas engine, consisting of the cylinder D, to supply the air or gas, the pump B, piston-cylinder C, rotary valve E, working-shaft U, valve-rod G, gearing H I, heater J, and condenser R S, when these parts are constructed and arranged, for joint operation, substantially as described.

141,190.—*Carriage.*—FRANCIS M. WATSON, Columbia, Tenn. Application filed December 16, 1872.

Jointed couplings are placed between the front head block and the body of the buggy, and between the rear part of the buggy-body and the rear axle, thus dispensing with the ordinary perch-pole.

Claim.—The spring H, head-block E, cross-bar J, front axle, and fifth-wheel I, connected with the body of the carriage through the medium of the coupling G *a b* arranged on each side, all constructed and combined as and for the purpose specified.

141,191.—*Connecting-Rod.*—BENJAMIN F. WILSON, Salem, Ohio. Application filed June 4, 1873.

Claim.—1. A connecting-rod with screwed ends and screwed butts, when the several parts are arranged and operated conjointly, for the double purpose of connecting the parts and also tightening the boxes, as shown.

2. In combination with rod E E', butts G G', and boxes A A and set-nuts C C, the right and left-hand screwed sleeve D and set-nuts C' C', when arranged substantially as shown.

141,192.—*Tray for Cloth-Finishing Machines.*—AMASA WOOLSON, Springfield, Vt. Application filed May 14, 1873.

The edged tracks guide the cloth in a straight line from the delivering to the receiving end of a finishing-machine designed to act upon the cloth repeatedly. When the cloth is to be removed from the machine it can be folded down upon the lid.

Claim.—1. The guiding-tray for cloth-finishing machines, curved as described, and having its bottom formed of a series of parallel tracks or guides, C C, each having a sharp or angular edge along the upper surface, upon which the cloth rests, substantially as and for the purposes herein set forth.

2. The combination of the end piece A with hinged lid B and the ribs C, placed lengthwise of the tray, and arranged on a curve from the receiving to the delivering end of the same, all substantially as and for the purposes set forth.

REISSUE PATENTS.

5,496.—*Cradle.*—LEMUEL A. CHICHESTER, Poughkeepsie, N. Y.—Patent No. 95,768, dated October 12, 1869. Application filed July 2, 1873.

The end frames are constructed wholly or in part of one or more pieces of wood, bent to the proper shape, and are combined with rockers.

Claim.—As a new article of manufacture, a crib or cradle with the ends thereof constructed wholly or in part of one or more pieces of wood bent to the proper size and shape, in combination with rockers, substantially as hereinbefore described.

5,497.—*Combination Lock.*—HENRY CLARKE, Baltimore, Md., assignor, by mesne assignments, to THE CLARKE LOCK COMPANY, Louisville, Ky.—Patent No. 135,533, dated February 4, 1873. Application filed July 1, 1873.

The hook or bolt is held in the locked position by an eccentrically-formed toothed plate secured to a sleeve, within which sleeve sliding notched tumblers are placed, the said tumblers being supported by a stationary outer disk, through which they pass, and an inner annular plate. An outside hand is fitted to the said sleeve so as to draw out the tumblers, when they can be adjusted so that the eccentric plate may be rotated for the purpose of locking and unlocking the lock.

Claim.—1. A keyless lock in which slotted tumblers, arranged in an annular inclosure within the lock and capable of only a sliding movement, are elevated by the pulling outward of an exterior band, C, certain of the tumblers constituting a known combination being adapted to be pushed back to their original place, bringing them to such position with relation to the eccentrically-formed plate that certain teeth thereon can pass through slots in the depressed tumblers, and allow of the movement of the said plate, and the shooting out or in of the bolt, or the releasing of the spring-hook, as set forth.

2. The movable eccentrically-formed toothed plate *b b'*, sleeve B, tumblers *d d'*, and case A, relatively arranged, substantially as herein described, for the purpose specified.

3. The case A and bolt E, in combination with the sleeve B, band C, disk D, and tumblers *d d'* having pins *h*, substantially as and for the purpose herein set forth.

4. In combination with the tumblers *d d'*, the spring G, disk D, circular plate F, and washer H, substantially as herein shown, for the purpose specified.

5. The spring-hook I *m*, pivoted within the case at *k*, and catch K, in combination with the plate *b b'*, adapted to be made stationary or movable by means of the tumblers *d d'* operating with it, substantially as herein set forth.

5,498.—*Base-Burning Stove.*—JAMES EASTERLY, Albany, N. Y., assignor to JOHN S. PERRY, trustee and executor of MARY PERRY, deceased, and NATHAN B. PERRY.—Patent No. 12,362, dated February 13, 1855; reissue No. 3,009, dated June 30, 1868; extended seven years. Application filed February 13, 1873.

Light from the fire shines downwardly both through the central portion of the grate and through the space between the outer edge of the grate and the inner surface of the lower end of the fire-pot.

Claim.—1. The mica windows of the ash-pit, in combination with a space for illumination from the products of combustion between the wall of the fire-pot and the lateral edge of the grate.

2. The combination of the mica windows of the ash-pit with a grate which exposes the illumination from the products of combustion, both between the wall of the fire-pot and the lateral edge of the grate and beneath the grate.

3. In a base-burner having a downward draft into the ash-pit through the grate, and between the grate and the lateral edge of the fire-pot, illuminating windows or doors in the wall of said ash-pit, substantially as described.

4. A stove or heater which is provided with a magazine for reserve coal, and constructed with openings for the admission of air to the fuel at some point or points above the grate, substantially as described.

5. The circularly-movable register-ring, applied at the upper part of the fire-chamber E, and at a point between the magazine and said chamber, for allowing a downward draft through said fire-chamber below the superincumbent ignited coal, and through the grate into the ash-pit, substantially as described.

6. The combination of a magazine, a fire-pot, a grate, and an ash-pit which has windows of mica or other transparent material in it, the combination being such that the ash-pit becomes illuminated, and such illumination is exposed through the windows, as specified.

5,499.—*Coal-Drilling-Machine.*—JOHN GRIMM, Darlington township, Beaver county, Pa.—Patent No. 97,060, dated November 23, 1869. Application filed April 9, 1873.

The post has a longitudinal central opening with sliding or extension ends, by means of which it may be lengthened or shortened, and it also carries a pivoted nut which holds the drill-screw spindle.

Claim.—1. The threaded drill-spindle D, in combination with the screw-bearing C^2 and the standard A, substantially as and for the purposes described.

2. The jointed pivoted box-nut or screw-bearing C^2, jointed in a line parallel with line of its bearing, and pivoted by journals extending out at right angles thereto, substantially as and for the purposes described.

3. The post or standard A for sustaining the drilling-tools, either with or without an extension end, and having bearings upon its face, a center longitudinal opening, A^1, and clamp screws A^2 at its ends, substantially as and for the purposes set forth.

5,500.—*Puddling-Furnace.*—HUGH MCDONALD, Pittsburg, Pa.—Patent No. 129,153, dated July 16, 1872. Application filed February 24, 1873.

Reissue of Patent No. 129,153, July 16, 1872.

Claim.—In combination with the working-chamber of a puddling, boiling, heating, or smelting furnace, a partition-wall, D, extending transversely across the fire chamber or magazine, so as to divide the same into coking and combustion chambers, B B', and at the same time retain, substantially, its magazine capacity for the reception and combustion of fuel, as set forth.

5,501.—*Rotary Printing-Press.*—CHARLES MONTAGUE, Boston, Mass., assignor to CYRIL C. CHILD, same place. Patent No. 98,028, dated December 21, 1869. Application filed March 21, 1873.

A telescopic lever, vibrated on a rock-shaft by a crank, the pin of which is attached to the internal sliding piece of the lever, reciprocates the bed. A gear-wheel, so hung upon a stud outside the end of the crank-shaft that its axis is eccentric to axis of shaft, carries a crank-pin which projects inwardly and fits a slot cut in main gear, to cause cylinder and bed to move together during impression. The cylinder may be raised or lowered at will. The nipper-shaft is moved by an arm attached to its end striking a pin.

Claim.—1. The combination of suitable mechanism, substantially as described, for imparting motion to an impression-cylinder with the extensible vibrating-lever D D^2 and a reciprocating type-bed, B, substantially as set forth.

2. The combination of the cam-levers e^1 and e^2, dog *j*, bed B, and cylinder L, constructed and operating substantially as described, for the purpose specified.

3. The spring-wedge k^2 for arresting the action of the dog *j'*, constructed and operating substantially as described, for the purpose specified.

4. In combination with a reciprocating type-bed, the cam-wedge *n*, pins *m* and *k*, lever *l*, spring *o*, and arm or dog *h*, constructed and operating substantially as described, for the purpose specified.

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Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)..... 6,500

SEWING-MACHINES and attachments..... 2,000

FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes..... 4,000

PRINTING; including presses, type, and printers' furniture. 2,500

CARRIAGE-WHEELS; including hubs, spokes, tires, and axles 1,900

FELTING and HATS; including caps, bonnets, flock, &c..... 1,200

WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)..... 1,600

STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs..... 1,400

CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)

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In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

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FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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COMMISSIONER'S DECISIONS.

BARAK T. NICHOLS.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Barak T. Nichols for* IMPROVEMENT IN NAILS AND SPIKES.—*Decided July* 28, 1873.]

The exclusive privilege of fabricating out of sheet metal nails corrugated lengthwise may be secured to the inventor by a single patent.

He need not divide his application, and apply for a separate patent for each form of nail which he shows by way of illustration in his specification.

Other forms of such nails, if they possess the necessary requisites, may also be protected by subsequent patents, but they will be subordinate to the one first obtained.

LEGGETT, *Commissioner:*

Applicant proposes to make a nail of sheet metal longitudinally ridged or corrugated. He enumerates several advantages which he alleges appertain to a nail so made, independent of its form or size. These are comparative strength, lightness, cheapness of manufacture, slight displacement of material into which it may be driven, and increased surface of contact when driven, giving it greater holding power. He says nails of various shapes and sizes may be made of sheet metal and corrugated, and illustrates three forms of nails in his drawings, differing in taper, in being headed or not headed, and in being transversely bent into tubular or merely angular sectional outline. He makes no claim to any of these forms. The Examiner holds that these different forms "cannot be embraced in one application, being separate inventions," and he requires a division of this application. This, I think, proceeds from a misconception of applicant's real invention. His alleged invention is not in any particular form of nail, but in discovering that nails of various forms may be advantageously made of sheet metal and corrugated. The essence of the invention, if he has made one, is the adaptation of sheet metal to the making of nails, which have heretofore been made of other kinds of manufactured metals. This is by no means an obvious use of sheet metal. The claim is:

"A nail or spike formed of sheet metal, and grooved, ridged, or corrugated longitudinally, to stiffen it, substantially as described, as a new article of manufacture."

If this is a new product, in such a sense as to be patentable, there can be no reason why a claim such as this, as broad as the scope of the invention, should not be allowed. The invention is obviously applicable to various forms of nails, and applicant has merely illustrated this fact. There may be new forms of nails yet undiscovered to which it will apply. When they shall be produced they may be patented on account of their novelty, if it is of such a character as to render them patentable. The merit of such nails will be due to their form alone. But the forms of nails shown have nothing to do with this invention, except to illustrate it. A new article of manufacture may be a foundation invention, as well as any other subject of invention, and in such a case it is proper to grant a claim broad enough to protect it. Such a claim in a patent does not cut off other inventions; it merely renders improvements tributary, as all foundation patents do. This is not such a case as the authorities the Examiner relies on apply to, and his decision must be overruled.

ROBERT M. FRANKLIN.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Robert M. Franklin for patent for* PROPELLING VESSELS.—*Decided July* 24, 1873.]

Every claim in an application must in one sense cover an independent invention, yet all the claims must pertain to one common subject.

Devices exclusively adapted to operate in a given machine may be claimed by themselves in a patent for the machine.

Mechanical movements which are applicable to general use cannot be claimed, though new, in the same patent with any particular apparatus in connection with which they may be shown in operation.

A combination which includes machinery and the subject upon which it operates is not patentable.

A mechanism through which any rectilinear motion may be made to give rotation to two shafts in opposite directions, cannot be claimed in the same application with other new devices in a propeller in which it is employed, though claimed in combination with the parts of the propeller with which it co-operates, and with the propeller itself.

The Commissioner has no power of requiring in all cases that applications should be divided in order that they may conform to the classification adopted by the Office.

LEGGETT, *Commissioner:*

Applicant entitles his invention "improvements for propelling vessels," and presents three claims exclusively referring to propellers. He also makes the following claim:

"The combination of the propellers and their shafts with the toggle-joint levers h i, cross-heads f f, guides g, piston-rod e, and balanced cranks j j, substantially in the manner and for the purpose herein described."

This claim, the Examiner holds, comprehends a subject of invention, distinct from that of the other claims, that should be presented in a separate application for patent and go to another class for examination. The original fourth claim, to which the Examiner objected, covered simply the toggle-jointed levers and their cross-heads for connecting the piston and the cranks of the propeller-shafts, whereby a single reciprocating piston is made to give rotary motion in opposite directions to two parallel shafts. These levers are merely means of converting reciprocating into rotary motion, as specified. They are as applicable for that purpose to any other shafts as to propeller-shafts, and they have no necessary connection with a piston-rod. Any link, arm, rod, frame, or bar having a reciprocating motion is equally well adapted to work them. They constitute of themselves a mechanical movement which must necessarily be applied and operated precisely as it is here, in every machine or device where the same object—viz., the rotation of two shafts in opposite directions—is desired to be accomplished. The amended claim now substituted does not cover a patentable combination, even if the mechanical movement embodied in the toggle-jointed levers be new, (which is doubtful,) because it includes the subject operated upon, as well as the machinery operating upon it. The axe with which a woodman chops might with as much propriety be claimed in combination with the log he is chopping as the toggled levers in combination with the propeller shafts and wheels. Adding the piston-rod to the other end of the series of parts claimed, it is as if the man, the axe, and the log were claimed in combination. Combination claims of this character, consisting of an enumeration of all the parts of a device, from the piston-rod of an engine to the vanes of a propeller, ought never to be allowed. They are, as they have frequently been termed, mere aggregation claims which do not conform to the requirements of the law, and if they did would be of no value to inventors. Applicant submitted this inventory of items, probably, to avoid the pertinent objection of the Examiner to the consideration of the claim for the toggled levers in this application. But it does not have that effect. It is clear that if there is anything patentable in the subject-matter of the claim it is in the toggled levers as originally claimed, comprising a mechanical movement, which is a distinct invention, being no part of and having no necessary connection with the subject of invention to which applicant's first three claims apply. It is not always possible or admissible to divide applications merely for the purpose of following the classification of inventions adopted in the Office. The Commissioner has no arbitrary power to require applications to be divided merely for such reason. The law requiring that but one *subject of invention* can be comprehended in the same patent must always form the basis of the division of an application. Every claim in an application, in order to be valid, must in one sense cover an independent invention, yet all the claims must pertain to one common device or subject of invention. Intermediate parts or combinations of parts constituting special devices exclusively adapted to a particular office in a given machine, although nominally distinct, may be claimed in an application covering the machine, because they are in such cases parts of the same subject of invention. The toggled levers under consideration are obviously not of this character.

The decision of the Examiner is sustained.

P. M. J. CHAMBLANT.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of P. M. J. Chamblant for* IMPROVEMENT IN BOBBINS FOR SEWING-MACHINES.—*Decided July* 31, 1873.]

When material advantages have resulted from the substitution of paper for metal in the fabrication of any article, there arises a presumption, in view of the different qualities of the two materials, that invention has been exercised.

But spools having been previously manufactured from paper, it is not patentable to make bobbins from that material in the same form in which bobbins have been made from metal.

It is incumbent on the Examiners-in-Chief and the Commissioner, as well as on the Examiner, to communicate to an applicant the grounds upon which he has been rejected.

LEGGETT, *Commissioner:*

Applicant proposes to make lenticular bobbins of paper or other like substance, for use in place of the metal bobbins commonly employed in sewing-machines of the construction of the Wheeler and Wilson machine.

The object is to have the bobbins filled with the required grades of thread and sold as articles of trade, and to make them so cheap that it will be more economical to take them out when empty and replace them by filled bobbins than to refill metal bobbins, as is now the practice in this class of machines. They are lighter than metal bobbins, and it is alleged that there is some advantage in that. The claim, which is preceded by a disclaimer referring to the existing state of the art, indicates the construction of the bobbin.

"A bobbin for sewing-machines, consisting of two disks of paper or similar light material, indented at their centers, and united by joining the inner surfaces of said indentations, substantially as described."

This construction, however, is not new, except as to the mode of fastening the disks together, for which glue or other adhesive mixture is used. The bobbins of Blodgett and Johnson, cited by the Examiner, exhibit metal disks indented at their centers and secured by rivets. It has not been held, however, and could not be justly held, that a metal bobbin is the equivalent of a paper bobbin, even though the construction of both were identical. The two materials are so essentially unlike, the situations in which paper articles can be successfully substituted for metal articles are so seldom to be met with, and the qualities of the articles themselves are so different—their difference furnishing the reason for the substitution—that in whatever new relation the discovery is made that a metal article can be advantageously replaced by a paper one, such discovery is likely to be of that ingenious character which the law was intended to encourage by affording the protection of patents.

But the forfeited application of J. S. McCurdy shows a spool made of paper. It consists of two paper disks united by a paper tube. It was intended as a substitute for ordinary wooden spools for thread, and also "for carrying the lower thread of lock-stitch sewing-machines." But when employed in this latter capacity it was suggested that a metallic case might be employed to receive it. Thus it appears that the form and construction of applicant's bobbin were old, and that a paper spool or bobbin for the same use in the same class of sewing-machines existed, of a construction differing only in having the disks united by a paper tube, instead of being indented at their centers and secured together at the edges of the indentations. He has not, therefore, originated the idea of using paper bobbins in sewing-machines or the form or plan of construction of his bobbin. All he has done is to make a bobbin of paper of the construction that had before been employed to make it of thin metal. There does not appear to have been any difficulty to overcome in doing this. The material for his bobbin, the pattern by which to make it, and the idea that it would be useful and practicable all being suggested, he merely did the work of a mechanic and not of an inventor. This case seems to have been dismissed by the Board rather summarily on a mere assertion, without any reasons being stated to support it. From an examination of the claim, which is all that is referred to, the correctness of the assertion respecting it is not apparent, and the applicant insists with some warmth that "the case has not been fairly considered on its merits" by the Board. Perhaps a clear statement of reasons for rejection, indicating a full and candid consideration of the case, would have satisfied the applicant of the correctness of the decision; at any rate it is due to applicants that such reasons be set forth in all cases. Section 41 of the statute imposes the same duty in this regard upon the Board and the Commissioner that it does upon Examiners.

The decision of the Board is affirmed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,237.—*Horizontal Wheels.*—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 20, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—*Elastic Hose Tubing*, granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,269.—*Nail Machines*, granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing, August 13, 1873.

25,243.—*Stoves.*—Granted to EDWARD M. MANDLE, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,244.—*Machines for Wiring the Joints of Clothes Pins*, granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing, August 20, 1873.

25,264.—*Watches.*—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,273.—*Machines for Making Paper Boxes.*—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,295.—*Heels for Boots and Shoes.*—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—*Cotton-Scrapers.*—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—*Boilers and Steamers.*—Granted to DANIEL R. PRINDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—*Seeding-Machines.*—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—*Scales.*—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing, August 27, 1873.

25,484.—*Grain-Separators.*—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—*Hydraulic Presses.*—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—*Railroad-Car Seat.*—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—*Lamps.*—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—*Tailors Shears.*—Granted to ROCHUS HEINRICH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—*Bung-Hole Borer and Reamer.*—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—*Try-Cocks for Steam-Boilers.*—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—*Rolling-Mills.*—Granted to JOHN and GEORGE FRITZ, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—*Bedstead-Slats.*—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—*Mode of Arranging Couches in Railroad Cars.*—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing, September 10, 1873.

25,573.—*Molding Water-Traps.*—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—*Burglar-Alarms.*—Granted to ABBOTT Q. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—*Steam Punching-Machines.*—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,640.—*Steam-Boilers.*—Granted to JOSEPH HARRISON, Jr., October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—*Construction of Prisons.*—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,673.—*Machines for Lasting Boots and Shoes.*—Granted to JAMES PUDDINGTON, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,683.—*Hydrants.*—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 26, 1873. Hearing September 17, 1873.

25,692.—*Sewing-Machines.*—Granted to KASPER VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—*Skeleton Skirt.*—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 9, 1873. Hearing September 17, 1873.

25,726.—*Hand-Machine for Wiring Blind-Rods.*—Granted to BIRAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,733.—*Double-Friction Couplings.*—Granted to JOSHUA HENDY, October 11, 1859; reissued March 23, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

59,747.—*Method of Combining Emery with Caoutchouc.*—Granted to THOMAS J. MATALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—*Cutting and Pressing Cubes.*—Granted to JOHN H. SHEOTE, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—*Mode of Manufacturing Barrels, &c.*—Granted to GEORGE W. BANKER, October 11, 1859. Application filed July 8, 1873. Hearing September 24, 1873.

25,786.—*Jacquard Machines.*—Granted to AVERY BABBITT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,797.—*Harvesters.*—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,807.—*Hem-Folders.*—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Hearing October 1, 1873.

25,814.—*Sleeping-Cars.*—Granted to JOHN DANNER, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,843.—*Cultivators.*—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,862.—*Weeding-Hoes.*—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,867.—*Machines for Covering Saddle-Trees.*—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

25,874.—*Bronzing-Machines.*—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Hearing October 8, 1873.

25,883.—*Construction of Glass Coffins.*—Granted to JOHN R. CANNON, October 25, 1859. Application filed July 23, 1873. Hearing October 8, 1873.

25,936.—*Cut-Off Valves of Steam-Engines.*—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Hearing October 15, 1873.

25,978.—*Tackle-Blocks.*—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Hearing October 15, 1873.

25,984.—*Bit-Stocks.*—Granted to NELSON STOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Hearing October 15, 1873.

26,003.—*Telegraphic Machines.*—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Hearing October 15, 1873.

26,060.—*Machines for Making Box-Joints.*—Granted to JAMES STIMPSON, November 8 1859. Application filed August 2, 1873. Hearing October 22, 1873.

26,069.—*Sleeping-Cars.*—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Hearing October 22, 1873.

26,243.—*Water-Closet Basins.*—Granted to WILLIAM BOCH, Sr., November 22, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,539.—*Manufacture of Gun-Barrels.*—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 10, 1873.

30,291.—*Apparatus for Freezing Liquids.*—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

24,947.—*Improvement in Journal-Boxes*, granted to JOHN A. MONTGOMERY, August 2, 1859.

Claim.—A journal-box formed of a sphere, or segment of a sphere, fitting into a cup or concave, and prevented from revolving with the shaft or journal by a pin and slot, as described, or their equivalent.

24,987.—*Improvement in Fishing-Reels*, granted to WILLIAM BELLINGHURST, August 9, 1859.

Claim.—The combination of the skeleton-ring R R R with the other parts of the reel, the whole being arranged in the manner and for the purpose substantially as set forth.

25,061.—*Improvement in Elevators or Hoisting Apparatus for Hotels, &c.*, granted to OTIS TUFTS, August 9, 1859, (LUCIUS A. BIGELOW and JOSIAH A. BRODHEAD, administrators.)

Claim.—1. The combination of the screw and the passenger car or platform.

2. The construction of a screw for elevating, having stays or bearings at intervals attached to the walls of a building or any fixed adjacent structure.

3. The construction of a nut with a slot or opening in the bank or side, to enable it to pass by the bearings or stays before referred to, and as hereinbefore described.

4. Constructing a nut or carriage with wheels or rollers, running upon the thread of the screw, substantially as described.

5. Controlling the descending motion of elevators or hoisting apparatus by means of fluid retarders, constructed substantially as described.

6. Regulating the action of fluid-retarders by means of a fly-ball governor, or its equivalent, substantially as described.

7. The construction, arrangement, and operation of passenger-cars of an elevator or hoisting apparatus, substantially as described—that is, providing the platform with side-walls and doors or gates, said doors or gates being combined with suitable mechanism, arranged in relation to stationary cams or projections on the gallery-floors, or any contiguous parts of the building, so as to open and close automatically, in the manner and for the purposes substantially set forth.

8. Opening and closing the doors of the galleries or landings automatically by means of cams or projections on the car, through a system of compound or multiplying levers, constructed and arranged substantially as herein described, and for the objects herein set forth.

9. Fastening and unfastening, automatically, the doors or gates of the car by spring-latches, or their equivalents, operated by cams or projections upon the gallery floors or adjacent walls of the building, substantially as described.

10. Fastening and unfastening, automatically, the doors or gates of the galleries or landings by spring-latches, or their equivalent, operated by cams or projections upon the car, substantially as described.

11. The arrester *w'*, in combination with the fluid-retarder, for the objects and purposes set forth.

12. Passing the shipping-rods and the cord or rod that operates the friction-brake through the car or platform, for the objects and purposes set forth.

Disclaimer filed August 7, 1873.

Disclaim as follows:

"1st. We disclaim the first (1st) claim, reserving the privilege of claiming, in a subsequent application for reissue, a combination of the elements of this claim with the nut specified in claim third (3d.)

"We disclaim the second (2d)claim.

"We disclaim all that is expressed by the words 'or carriage,' in the fourth (4th) claim."

25,015.—*Improved Wood-Saw Frame*, granted to JAMES HAYNES, August 9, 1859; reissued August 5, 1863, numbered 1,526.

Claim.—1. A wood-saw frame as made with a wooden-top cross-bar, E, tenoned or firmly fastened in the frame, and combined with the central or bottom wooden bar D, the wooden front and handle-bars F G, the saw-blade, and a straining mechanism separate from such top bar, or employed and to operate substantially as described.

2. The improved straining mechanism, substantially as described, the same consisting of the inclined plane, the rack, and strainer or lever, arranged and combined with the saw-blade and its frame, as specified.

DISCLAIMERS FILED.

25,061.—OTIS TUFTS, Boston, Mass.—*Improvement in Passenger-Elevator*, dated August 9, 1859. L. A. BIGELOW and J. A. BRODHEAD, administrators of the estate of said OTIS TUFTS, deceased. Disclaim:

"1st. We disclaim the first claim, reserving the privilege of claiming, in a subsequent application for reissue, a combination of the elements of this claim with the nut specified in claim third.

"2. We disclaim the second claim.

"3. We disclaim all that is expressed by the words 'or carriage' in the fourth claim."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date July 29, 1873.]

6,785.—*Monumental Urn.*—NICHOLAS BRAYER, Rochester, N. Y. Application filed June 25, 1873.

6,786.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed June 23, 1873.

6,787.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed June 23, 1873.

6,788.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed June 23, 1873.

6,789.—*Oil-Cloth.*—CHARLES T. MEYER and VICTOR E. MEYER, Lyon's Farms, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed June 23, 1873.

6,790.—*Carpet.*—HORATIO SMITH, Kidderminster, England, assignor to JAMES HUMPHRIES & SONS, same place. Application filed July 5, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date July 29, 1873.]

1,383.—*Ginger-Ale, Seltzer Champagne Cider, Soda-Water, &c.*—BERLIN MINERAL-WATER COMPANY, Boston, Mass. Application filed July 17, 1873.

1,384.—*Blueing-Paper.*—DOLE BROTHERS, Boston, Mass. Application filed July 17, 1873.

1,385.—*Apple-Paring Machines.*—D. H. GOODELL, Antrim, N. H. Application filed July 10, 1873.

1,386.—*Composition for Softening, Polishing, and Preserving Leather.*—JOHN G. NORTH, Brookline, Mass. Application filed July 17, 1873.

1,387.—*Butter.*—S. STRAIGHT & SON, Hudson, Ohio. Application filed July 19, 1873.

1,388.—*Chewing-Tobacco.*—WALL, BELVIN & DAY, St. Louis, Mo. Application filed July 21, 1873.

1,389.—*Medicinal Composition.*—CHARLES D. BRADLEY, Taunton, Mass. Application filed July 23, 1873.

1,390.—*Soap.*—JAMES O. DRAPER, & CO., Pawtucket, R. I. Application filed June 14, 1873.

1,391.—*Small or Root Beer.*—SAMUEL F. STOWE, Providence, R. I. Application filed July 14, 1873.

1,392.—*Proprietary Medicinal Preparations.*—THE WILLSON CARBOLATED COD-LIVER-OIL COMPANY, New York, N. Y. Application filed July 10, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date July 29, 1873.]

ORIGINAL PATENTS.

141,193.—*Combined Latch and Lock.*—ANDY M. ADAMS, Sacramento, Cal. Application filed November 15, 1872.

The sliding plate is provided with a projection, which, when the plate is thrown forward by means of a key, engages in a notch in the tumbler and prevents the bolt from being operated by the knob.

Claim.—The tumbler *i* pivoted to the sliding bolt *a*, in combination with the sliding plate A carrying a projection, *n*, when the parts are arranged to operate substantially as set forth.

141,194.—*Rice-Cleaner.*—JOHN L. ARMS, New Orleans, La. Application filed February 13, 1873.

The hulls are removed from the rice by means of a huller, and are then separated from the same by a series of sieves, the rice passing through the sieves into a polisher, while the hulls are drawn off by a suction-fan, which completes the operation of hulling, cleaning, and polishing the rice.

Claim.—1. The huller and separator consisting of the cones C D provided with rubber, as stated, shaft B, the series of sieves or screens *e e*, and the fan *f*, the whole being constructed, combined, and arranged to operate substantially as described.

2. The huller and polisher F, consisting of the tube or jacket *i* having radial arms *h h*, and the shaft B having radial arms *d d*, the arms of each being covered with sheep-skin, rubber, or other soft material, substantially as described, as and for the purpose specified.

141,195.—*Spark-Arrester.*—ROBERT ASH, St. Louis, Mo. Application filed March 31, 1873.

Two parallel and inclined fans extend the whole breadth of the stack. They are kept in proper relative position by gear-wheels.

Claim.—1. The horizontal rotary screw-shaped fans *b b*, connected by the wheels 1 and 2, in combination with the smoke-stack of a locomotive-engine, substantially as and for the purposes hereinbefore set forth.

2. In combination, the rotary fans *b b*, chamber B, conducting-flues *c c*, and opening E, substantially as and for the purposes hereinbefore set forth.

141,196.—*Boot-Brushing Apparatus.*—MAX BECK and CHARLES SCHMIDT, Philadelphia, Pa. Application filed April 30, 1873.

Is constructed with an arch covered within it with bristles, and a brush on each extended side of it. Below the side brush are rows of bottom brushes across a receptacle for the dirt, &c., which is, or can be, drawn out to dispose of it. Over the front of the frame and drawer is a scraper.

Claim.—1. The combination of the brushes *a a*, the side brushes *b b*, and arched brush *d*, arranged above and at the rear of the brushes *a b*, as set forth.

2. The combination, in a boot-brushing machine, of a series of independent brushes, *a a*, arranged as and for the purpose set forth.

141,197.—*Steam Hoisting Apparatus.*—JAMES BROCK, Chicago, Ill. Application filed April 21, 1873.

Whenever the hoisting-cable breaks or slackens an apron fitting upon the hoisting-drum is freed, and, falling by its own weight, turns a short weighted shaft, which frees the spring of a second shaft, and the said spring, moving the second shaft, releases a weight which controls the reversing-lever of the engine, which is thus automatically operated.

Claim.—1. In combination with a drum, A, the apron A, shaft *e k*, spring *k*, bar *m*, and weight W, all constructed substantially as specified, for the purpose of operating the reversing-lever D in case of accident.

2. The shaft *e*, in combination with the apron *a* and shaft A, when the latter is connected with and arranged to operate the reversing-lever, substantially as described, all constructed and arranged to operate substantially as and for the purpose specified.

141,198.—*Breech-Loading Fire-Arm.*—PETER BOURDENEAUX, New York, N. Y. Application filed June 2, 1873.

The invention consists in the arrangement of two sliding catch-bars, one of which engages with a hook on the under side of a rib projecting backward from the upper side of the rear end of the barrel, and the other with a hook or hooks on the under side of the barrel for locking the barrels in position on the stock, said bars being connected by a rock-lever pivoted at its center, and operated by means of a lever and eccentric attached to the upper bar.

Claim.—The combination of the hooked rib or catch *a*, catch-bolt *c*, and vibratory connecting-lever K with the bolt J and catches A' A', substantially as and for the purpose herein specified.

141,199.—*Cultivator.*—EPHRAIM BRIGGS, Cleveland, Ohio. Application filed July 18, 1872.

Furrows are thrown up on both rows at same time.

Claim.—The combination, in a cultivator, of a center beam and two pivoted adjustable side beams with reversible shovels carried on tenoned wooden standards secured to the beams by double grooved metallic sockets, all arranged as described, and for the purpose set forth.

141,200.—*Washing-Machine.*—ISRAEL F. BROWN, New London, Conn. Application filed July 2, 1873.

A cylindrical cover, open and hinged at its center, has within it a receptacle with a center division, the journals of which extend from it to the outer sides of the cylinder, to which the crank is attached to give it motion. The receptacle is constructed in the form of nearly two ovals connected at the center, with ribs or rounds surrounding it, except the openings on each side, which are covered with a corrugated cover, which, by turning over, furnishes a washboard. Within the receptacle, from each side, is a division of ribs extending to the center division, by which the parts are separated by galleries at equal distances from the center circles, by which the clothes are dropped from one to the other and cleansed by the motion.

Claim.—The ribbed rotary receptacle A, constructed as shown and described, with the internal ribs a^2, partition, or equivalent, a^3, and doors *b*, substantially as specified.

141,201.—*Machine for Cutting Sugar into Blocks.*—PETER O. BRUNJES and ALBERT BENNACKENDORF, Hoboken, N. J. Application filed June 2, 1873.

Improvement on Patents Nos. 132,626 and 134,586. To the rear of the saws is a vertical sheet-metal case attached to the frame and terminating in a discharge-hopper, and in front aprons attached to the sides of the hood covering the sugar-loaf, the ends of the aprons being attached to rollers, which take up the slack as the traveling-frame moves in one or the other direction, the combined devices forming an inclosure surrounding the saws and preventing the escape of the fine dust. An additional retaining-pawl is used on the toothed feed-bar, and is thrown out of gear by a stationary stop just before the feed-pawl is acted upon by a second stationary stop.

Claim.—1. The curtains T and U, connected with the movable carriage I and wound upon rollers p^3 and r^4, for the purpose of constituting a shield for preventing the sugar-dust from reaching the operating-parts of the machine, substantially as described.

2. The belts or band s^4 and r^4, combined with the rollers p^3 and r^3 and with the curtains T and U, which are wound upon such rollers in the opposite direction to such belts or bands, substantially as and for the purpose herein shown and described.

3. The band or ring M, constructed with projecting hooks *c*, and made extensible and contractible, substantially as described, for application around the base of the sugar-loaf, as specified.

4. The combination of the plunger *m* on the rod L with the perforated head *j* of the tubular feed-bar J, for action against the base of the sugar-loaf, substantially as specified.

5. The combination of the head *j* of the tubular feed-bar J with the sliding shoe W, as specified.

6. The detaining-pawl *p*, arranged on the sleeve *s* and combined with the feeding-pawl *r* and cams *u* and *w*, for operation as described.

7. The jaws P and R, notched and applied to the carriage I, for operation substantially as described.

8. The combination of the crank g^2 of the sliding feed-bar with notched jaws P R and fixed stops *l'* and m^2, substantially as specified.

141,202.—*Portable Fence.*—SOLOMON G. BUSBEE, Chambers Court-House, Ala. Application filed June 20, 1873.

A fence of horizontal rails, formed into panels by end cleats, is upheld by laterally-inclined braces notched to receive the upper rail, secured to the outer ends of a transverse sill beneath the fence, a key being driven between the bottom rail and the sill.

Claim.—In combination with the panels A A, the panel-support, consisting of the notched sill B, the notched braces C C attached thereto, and the key-wedge D, arranged substantially as shown, and for the purpose described.

141,202.—*Glove.*—RUFUS D. BURR, Kingsborough, N. Y. Application filed April 9, 1873.

Claim.—1. A glove or gauntlet in which the bray back of the hand is formed or cut without fingers, and with which the back and portions of the front of the wrist are all in one continuous piece of material.

2. A gauntlet the front of the wrist of which is gore-shaped, and so arranged and combined with the remaining portion of the wrist that, when folded or made, the seams are brought on the inside of the wrist.

3. A glove or gauntlet having the parts that form the palm and the front, back, and side portions of the fingers made of a separate piece or pieces from the body of the back, substantially as described.

4. A glove or gauntlet finger-back composed of, or wholly reinforced with, leather, when combined with a back composed of cloth or other textile fabric, substantially as specified.

5. A glove or gauntlet in which these pieces, portions, or parts that form the sides of the palm and back portions of the fingers are connected, joined to, and closed on the body of the back with a continuous stitched seam, substantially as described.

6. A glove or a gauntlet composed of the parts H I J K L B C, folded and arranged as described, and having a piece of stiff leather or other material attached to the wrist as a stay or support for the same, as specified.

141,204.—*Metallic Window-Sash.*—FRANK M. CAMPBELL, St. Louis, Mo. Application filed June 25, 1873.

Claim.—A window-sash the frame and bars of which are hollow and constructed of sheet metal, having the upper edge of the bars and the upper edge of the lower part of the frame beveled, as described, to form the specified grooves *a b*, and having holes *c d*, substantially in the manner as and for the purpose set forth.

141,205.—*Baggage-Check.*—JOHN M. CURLESS, Cedar Rapids, Iowa. Application filed January 22, 1873.

The slotted face-plate is teed into the back plate, held between its flanges, and locked to it by a button.

Claim.—The baggage-check A composed of the back and front plates A A′, the former having the lateral flanges *a′ a″*, a button, and the slots *a a*, and the latter the interlocking flange or projection *a²*, substantially as specified.

141,206.—*Wood-Grinder.*—JOHN F. DANIELS, Boston, Mass., and JOHN H. HUBBARD, Stanstead, Canada. Application filed April 8, 1873.

A revolving cylinder is provided with tearing-teeth, against which the wooden logs are pressed by springs. The teeth are placed laterally in a zigzag position. The length of the fiber may be regulated by the width of the cutting-disks of which the cutting-cylinder is composed.

Claim.—1. A cutting-cylinder, *f*, composed of a number of cutting-disks, *g g g*, provided with cross-cut tearing-teeth on their circumferences, for the purpose of tearing off fibers, having pointed ends, as herein shown and described.

2. In combination with the cutting-cylinder *f*, as herein described, one or more revolving log-holders, made to rotate in movable frames *h h′*, as and for the purpose herein shown and described.

141,207.—*Puddler's Ball-Squeezer.*—FRANK DANKS, Cincinnati, Ohio. Application filed October 2, 1872.

The upper roll is driven by one of the lower rolls through the medium of a spur-gear connected to the journal of the upper roll by two links, and whose bearings rest loosely in curved slots in the frame of the machine. The upper roll may be forced downward constantly by the ordinary devices, and a bar lying between the lower rolls, connected to hooked levers, that may be operated at will by one of the lower rolls, ejects the bloom or billet when finished.

Claim.—1. The combination, with the gearing, of the links I I and the curved slots G G, by means of which the gearing of the pinion D with the wheel C upon the adjustable roll A is effected, and at the same time the pinion D is relieved from the weight of the intermediate spur-wheel E.

2. The self-adjusting crab V, in combination with the wheel C, the corrugated rolls B B′, and the upper compressing-roll A, substantially as and for the purpose described.

3. The combination of the levers E M, the shoe T, and the rolls B B′, when arranged and operating, substantially as described, to discharge the bloom from the machine.

141,208.—*Adjustable Stool.*—ARNOLD DOLL, Cleveland, Ohio. Application filed February 3, 1873.

A stool in ordinary form with a hollow upright, in two parts or sections, one sliding over the other. From a plate under the seat is suspended a wire connecting with a pawl fitted to a ratchet. Attached to one side of the inner cylinder from the rod and ratchet is connected a coiled spring, to control the pawl and keep it in contact with the ratchet and secure it in position when raised.

Claim.—The pawl G, rack H, link I, plate E, and spring J, as arranged in combination with the tube C, standard B, and seat D, in the manner substantially as and for the purpose set forth.

141,209.—*Ice-Cream Freezer.*—JAMES DOOLING, Boston, Mass. Application filed June 23, 1873.

The driving mechanism is connected to the cream-holder by a coupling, one-half of which is formed on the lower end of a sleeve-shaft, and the other made separate and hinged to it, and the two are fastened together by a swinging clasp passing over the ears of the coupling, and a pin passed through the three pieces.

Claim.—In combination with a cream-holder provided with a cover having a square or other flat-sided hub thereon, or of circular form with a spline groove or rib formed thereon, and any suitable mechanism for imparting rotary motion thereto, a coupling for connecting the cream-holder to the operating mechanism, made in two parts, one of which is made in the same piece with, or firmly secured to, the sleeve-shaft, through which motion is to be imparted to said cream-holder, and the other half is hinged thereto and arranged to swing in a horizontal plane at right angles to the axis of revolution of said shaft, and the two parts secured together by means of a clamp or pin, substantially as described.

141,210.—*Harvester-Cutter.*—JOHN W. H. DOUBLER, West Alden, N. Y. Application filed January 13, 1873.

A cutter-bar resting on the fingers in front of the finger-bar, and connected thereto by cam-links, is brought to rest by rubber cushions interposed between them.

Claim.—1. The combination of the cutter-bar B with the cushions *a a*, arranged in rear of the said bar and seated in the finger-bar A, as shown and described, substantially as and for the purpose set forth.

2. The combination and arrangement of the cams C C, plate A′, cutter-bar B, cushions *a a*, and finger-bar A, substantially as shown and described, and for the purpose set forth.

141,211.—*Eyelet-Setting Machinery.*—ARTEMAS B. EDMANDS, Saugus, Mass. Application filed June 21, 1873.

The upright portion of the frame, which supports the operative mechanism, is pivoted upon a vertical axis at or near its rear, so that its front end, in which are set the punching and setting tools, may vibrate from left to right and from right to left for the purpose of feeding the material. The eyelets are fed from the hopper into inclined chutes, and are lodged in recesses upon the periphery of a horizontal intermittingly-rotating wheel, and as the wheel presents an eyelet at a fixed point it is seized and carried to the setting-tool by a pair of rotating nippers.

Claim.—1. In an eyelet-setting machine, the frame B, hung upon a vertical axis at or near its rear end, and parallel, or nearly so, to the center line of the setting-plunger mounted in the front end of said frame, when said frame has mounted thereon all the mechanism for separating, delivering, and setting the eyelets, as well as punching the holes in the material, and arranged to vibrate upon said axis to feed the material, substantially as described.

2. The cam-path *f* in the cam-cylinder G, the lever H, acted upon by said cam-path, the rock-shaft H¹, the lever H², and the fulcrum-bolt A, or their mechanical equivalents, when the cam is mounted or has its bearings on, and levers are pivoted to, the frame B, all arranged and operating to vibrate said frame upon its axis, acting upon the pin A as its fulcrum, set in the base or other stationary portion of the machine, substantially as described.

3. The combination of the setting-plunger E, the crank-pin *a*, and cam-shaped slot *e*, formed in, or secured to, the plunger E, arranged and operating as described, for the purpose specified.

4. In an eyelet-setting machine, a hopper or receptacle for the eyelets, in the form of the frustum of a cone, placed upon its side, with the base of the cone in a vertical position and toward the setting-tools, substantially as described.

5. The combination, in an eyelet-setting machine, of a hopper for the reception of the eyelets in bulk, and provided with one or more openings from which the eyelets can escape when right side up, one or more inclined chutes, an intermittently-rotating wheel, provided with a series of recesses in its outer edge, and mounted upon a vertical axis, and a pair of intermittently-reciprocating nippers, arranged and operating as set forth, to feed the eyelets to the setting mechanism, substantially as described.

6. In combination with the wheel N, provided with a series of recesses in its outer edge, and arranged, as set forth, to convey the eyelets from the inclined chutes to the position to be received by the nippers, the groove *g*, to receive the flange of the eyelet, and guide or force it out of the wheel at the proper point, substantially as described.

7. The groove *g*, having its front end made the thickness of the flange of the eyelet lower than the other portion, substantially as described, for the purpose specified.

8. The pin *a*, arranged and operating substantially as described, for the purpose specified.

9. In combination with a series of inclined chutes for delivering the eyelets from a hopper, a conical or cylindrical hopper, placed upon its sides, and having its lower inside shaped to give that portion opposite the mouths of the several chutes an inclination upward from the outer chute on the side from which the brush approaches, substantially as described.

10. The intermittently-reciprocating step-bar W, provided with projecting tongues of rubber or other suitable flexible and elastic material, arranged and operating, as set forth, in combination with inclined chutes, substantially as described, for the purpose specified.

11. In combination with two or more inclined chutes for conveying the eyelets to the work, the pipe V, having one end closed, and the other communicating with an air-pump or other suitable air-forcing device, and provided with a perforation upon its under side to each of said chutes, all arranged and operating substantially as described, for the purpose specified.

12. In an eyelet-setting machine, a frame, upon which is mounted the eyelet separating, delivering, and setting mechanism, having its rear portion divided into two parts, and said two parts again united at the front, and having the eyelet separating and delivering mechanism placed between said parts, substantially as described, for the purpose specified.

141,212.—*Water-Elevator.*—JAMES B. ERWIN, Batavia, N. Y. Application filed June 23, 1873.

The lazy-tongs are operated by segmental gears connected thereto, and are prevented from oscillating by a guide-rod. A rod is connected to the handle and foot-lever, so that additional power is gained by operating both the foot-lever and handle when the downward stroke is given to raise the bucket.

Claim.—1. The combination of the segmental gears C C and series of levers F with the handle E, when said handle is pivoted to the levers and to one of the gears, in the manner described, and for the purpose specified.

2. The combination of the segmental gears C C, series of levers F, handle E, rod Q, and foot-lever Y, substantially as and for the purpose specified.

3. The rod U and staple V, operating in combination with the lever F, segmental gears C C, and handle E, substantially as and for the purpose specified.

4. The combination of the gears C C, levers F, handle E, rod Q, foot-lever Y, weight P, and rope or chain M, substantially as and for the purpose specified.

141,213.—*Marble-Molding Machine.*—JAMES FISH, Boston, Mass. Application filed June 25, 1873.

Two tables, arranged upon opposite sides of the grinder, are supported on parallel rails capable of moving rectilinearly either toward or away from the grinder, which molds two slabs simultaneously.

Claim.—1. In combination with the reciprocating rotary grinder A and the two movable tables B C, arranged as explained, mechanism, substantially as described, for simultaneously operating from one side of the frame D both beds, as set forth, and arresting them in any desirable positions within their ranges of movement, such consisting of the screw O, the spring R, the arm M, the lever K, and the two connecting-rods L L′, arranged together and applied to the tables and frame, substantially as described.

2. The combination of the screw O, the spring R, the arm M, the lever K, and the two connecting-rods L L′, in their arrangement with the frame D and the tables B C of the grinder A, as specified.

141,214.—*Machine for Cutting Balusters.*—PETTER J. FRANTZE, MANTINIUS TILLISEN, and JOHN A. GREGERSEN, Chicago, Ill. Application filed June 2, 1873.

The material is held in a suitable clamp, and each face of the baluster cut separately by presenting it to a rotating cutter of suitable form.

Claim.—The arrangement of the cutter-spindle B, constructed as described, the table D, standards D¹, holder D², and adjustable stops *b b*, with relation to the frame, substantially as and for the purpose set forth.

141,215.—*Fire-Proof Mansard Roof.*—WILLIAM J. FRYER, Jr., and GEORGE H. JOHNSON, New York, N. Y.; said JOHNSON assignor to said FRYER. Application filed May 14, 1873.

The roof is formed of hollow baked-clay tiles placed upon a bed-plate and between upright iron rafters, the ends of the tiles next to the uprights being recessed so as to inclose the uprights. Slates are fastened to the roof through the joints of the tiles.

Claim.—1. A fire-proof Mansard roof formed of a bed-plate, A, top beam B, uprights C, hollow baked-clay tiles D, and slate E, applied to a Mansard roof in the manner specified.

2. The metallic vertical rafters C, in combination with the hollow baked-clay tiles D, constructed in the form shown, and for the purpose specified.

3. The hollow baked-clay tiles D and covering of slate E, combined as and for the purposes shown and described.

141,216.—*Die for Molding Shoe-Soles.*—SYLVESTER B. FULLER, Lynn, Mass. Application filed May 7, 1873.

Claim.—The sole mold or dies, or upper one truncated at the heel, so that the sole, while being molded, may project at its heel out of and beyond the upper or both dies, substantially in manner and for the purpose set forth.

141,217.—*Rail for Street-Railways.*—MARIA L. GHIRARDINI, Providence, R. I. Application filed May 17, 1873.

Claim.—A concave thin metal rail, substantially such as described and shown, provided with downward-projecting sides spanning a wooden bed, to which it is secured by means of bolts or spikes passing through such sides.

141,218.—*Balanced Valve for Steam-Engines.*—WILLIAM GLEN, Toronto, Canada. Application filed March 14, 1873.

The central throttle-valve, in one position, regulates the passage of steam to the side double piston-valves, impinging against their ends, which govern the admission of steam to cylinders; and, in another position, controls its passage through and between the double pistons in such a manner that the engines can be readily reversed.

Claim.—The combination of the chambers M J H with the the valves A B C and ports G I L L′, when constructed and arranged for operation substantially as shown, and for the purpose set forth.

141,219.—*Flue for Buildings.*—EDGAR T. GOULD, Mont Clair, N. J. Application filed February 20, 1873.

Claim.—As articles of manufacture, composite sections of hot-air flues composed of an interior lining of sheet-tin and an exterior casing of plaster of Paris, combined in the manner substantially as described, said sections being adapted for, and so constructed as to form when joined each to the others, a continuous tube or flue, in the manner substantially as described, for the purposes set forth.

141,220.—*Truss.*—EDWIN W. HUNTER, Northampton, Mass. Application filed June 24, 1872.

Two waist-springs are used and connected adjustably together by metallic braces near the hips. The ends of the lower band are secured to the two ends of a convex spring, which bears against the pad.

Claim.—The combination, with the belt A′ and hinged pad B, of the upper belt or girdle A and the movable springs or braces D D, substantially as and for the purpose set forth.

141,221.—*Device for Centering Piston-Heads.*—OSCAR S. HOWARD, Bangor, Me., assignor to himself and HINCKLEY AND EGERY IRON COMPANY, same place. Application filed May 5, 1873.

Attachment to piston-heads, enabling them to be kept in the center of the cylinder, and remedying unequal wear.

Claim.—In combination with a piston-head, the slotted segments *c*, secured to the faces of said piston by bolts *d* passing through said slots, and adjustable by set-screws *f*, all arranged and operating substantially as and for the described purposes.

141,222.—*Reversible Plow.*—GEORGE W. HOWE, Vineland, N. J. Application filed April 17, 1873.

In reversible plows the colter needs to be adjusted to the land-side of the beam. The claim shows how this is accomplished.

Claim.—The pivoted double-edge colter, provided with drum, chain, and slide-bar, working by lever, substantially as and for the purpose described.

141,223.—*Shade-Holder for Lamps.*—MARK WIGGINS HOUSE, Cleveland, Ohio. Application filed May 29, 1873.

A divided ring, attached to retractile arms, enters the recess above the lower flange of the shade. The ends of the ring are extended to form thumb-pieces. Either the ring or the arms may be of spring metal.

Claim.—The combination of the stock, retractile arms, and divided ring, substantially as before set forth.

141,224.—*Can for Oils and other Liquids.*—MARK WIGGINS HOUSE, Cleveland, Ohio. Application filed May 29, 1873.

The upper part of the nozzle has an inwardly-projecting flange, so that the air-vent, which is made by a partition in the nozzle, and the liquid-passage may be closed by the same stopper. A flame-guard, composed of a thin strip of corrugated metal wound into a volute, is secured in an enlarged chamber, which is applied to the inner orifice of the liquid-passage.

Claim.—1. The combination, substantially as before set forth, of the nozzle with the partition having its inner end extended inward beyond the wall of the nozzle, so as to divide the nozzle into an external air-passage and an internal liquid-passage whose end extends beyond the inner mouth of the said air-passage.

2. The combination, substantially as before set forth, of the nozzle, the internal partition, and the internal flange at the exterior mouth of the nozzle.

3. The combination, substantially as before set forth, of the nozzle, the flame-guard, and the enlarged chamber in which the flame-guard is contained.

4. The combination, substantially as before set forth, of the nozzle, the flame-guard, the enlarged chamber for the flame-guard, and the partition which divides the nozzle into a liquid-passage and an air-passage.

141,225.—*Saw-Buckle.*—CHARLES W. HUBBARD, Pittsburg, Pa. Application filed December 2, 1872.

The strap by which the saw is attached to the gate has a bifurcated end, within which the buckle is secured.

Claim.—A saw buckle and hanger composed of a bifurcated hanger, *f*, and blanks D D, bent as at *d*, so that their upper ends may come face to face, while room is left between their opposite hook-ends for the insertion of the saw and straps, substantially as set forth.

141,226.—*Rotary Steam-Engine.*—EDWARD W. JENKINS, Camden, N. J., and SYLVESTER JENKINS, Landsdale, Pa. Application filed May 22, 1873.

The steam enters one end of the hollow stationary crank-shaft and passes into the hollow piston, and thence through fulcrum-neck through ports into cylinder, and is exhausted after the piston and cylinder have made a partial revolution, through the outer end of crank-shaft.

Claim.—The combination of a hollow piston, D, and hollow crank-shaft A with the cylinder C, the piston having slots A A in one side, which connect with the fulcrum-neck F of the cylinder, the neck being provided with ports *f f*, substantially as described.

141,227.—*Manufacture of Bolster-Plates.*—WILLIAM J. LEWIS, Pittsburg, Pa. Application filed May 19, 1873.

Claim.—1. The method hereinbefore described of making male bolster-plates—viz., first, rolling a raised part, *b′*, on the blank, and, second, stamping down the metal in the center of such raised part, so as to widen the blank and spread out the metal to form the ring, substantially as set forth.

2. The method herein described of making female bolster-plates—viz., first, rolling a raised part, *b′*; second, widening the bar by rolling it down; and, third, stamping therein the depressed ring, substantially as described.

141,228.—*Trestle.*—MAHLON M. LUCKY, Indianapolis, Ind. Application filed March 1, 1873.

Screw clamping-pieces to enable a trestle to be taken apart for easy transportation, and to facilitate the adjustment of differently-proportioned parts to different-sized rooms.

Claim.—The trestle-clamp composed of the parts C D E F G G′ H I J, constructed and arranged substantially as and for the purpose set forth.

141,229.—*Device for Dispensing Syrup in Soda-Water Apparatus.*—JOHN MATTHEWS, New York, N. Y. Application filed June 24, 1873.

An elongated valve-plug, by means of which the syrup is driven back from the delivery-tube, is operated by a cap provided

with internal screw-threads. A plate is arranged to act as a washer and to bear a label. The port of the faucet is made oblong, and placed transversely in order to secure the rapid discharge of the syrup.

Claim.—1. The valve-plug *c* provided with an extension, *y*, in combination with the faucet, so as to drive the syrup out of the forward portion, as and for the purpose set forth.

2. The cap *b* provided with an internal screw and external collar, *z*, in combination with the faucet, as set forth.

3. The cap *b* provided with screw-threads, in combination with the valve-plug *c* and faucet *a*, arranged and operated as set forth.

4. The plate *e* with opening, so as to slip over the stem and form a washer with an upward-projecting portion for a label, in combination with the faucet, provided with collar *i* and nut *d*, as set forth.

5. The faucet provided with the discharge-port *g* of an elongated form, transverse to the length of the faucet, so as to be entirely opened by a slight movement of the valve-plug, in combination with said plug.

141,230.—*Machine for Molding Clay Smoking-Pipes.*—HENRY E. MERRILL, Akron, Ohio. Application filed July 3, 1873.

Two or more sets of molds arranged upon a revolving table, said molds being opened and closed by a cam upon the standard around which the table revolves, the hollow in the bowl and the hole in the reed being made by punches operated by cams.

Claim.—1. The herein-described pipe-molds, consisting of the sections H H′, levers J, links L, and slide M, as arranged in relation to and in combination with the cam G, substantially in the manner as and for the purpose set forth.

2. In combination with the revolving table A, the pipe-molds arranged thereon in the relation to and operated by the cam G, in the manner as set forth, and for the purpose specified.

3. The punch O, spring R, and pulley P, as arranged in combination with the molds, consisting of the sections H H′, and with cam A′, in the manner substantially as and for the purpose set forth.

4. The punch S, spring C′, and cam B′, in combination with the molds above described, substantially as set forth, and for the purpose specified.

141,231.—*Compound for Mixing Paints.*—JOHN L. NEWELL, Port Huron, Mich. Application filed June 3, 1873.

Takes starch or farina, mix with cold soft water, and add bicarbonate of soda and thoroughly mix, and add boiling water until the mass thickens.

Claim.—1. The compound herein described, made of the ingredients substantially in the proportions and for the purposes herein described.

2. The described compound, consisting of one pound starch, four ounces bicarbonate of soda, ground and thoroughly mixed for shipment, as set forth.

141,232.—*Hydraulic Jack.*—ANTHONY V. OJEDA, San Francisco, Cal. Application filed June 5, 1873.

The main plunger is provided with a central bore for the operating-piston, and also with passages so arranged that water is taken from above the plunger and forced below it, by means of the piston, with the use of only one valve, which is opened by a projection on the piston when the latter is forced to its lowest point, permitting the water to escape to the upper side of the plunger.

Claim.—1. The plunger J, having an opening for the piston M, and provided with the inlet-passage *s*, and the valve O with the exit-passage *r*, when constructed to operate substantially as herein described.

2. The passage *u* through the plunger and opening against the valve, as shown, in combination with the valve O and the projection *t* on the bottom of the valve, whereby the passage is kept closed while the press is in operation, but can be opened to discharge the liquid when it is desired to depress the ram-head, as herein described.

3. In a hydraulic press or lifting-jack, the plunger J, working within the outer cylinder and provided with the passages *s*, *r*, and *u*, and the single valve O with its flat spring *p*, in combination with a solid piston, M, as herein described.

141,233.—*Apparatus for Lowering Pipes in Wells.*—SVEND P. ORESLUND, Omaha, Neb. Application filed October 3, 1872.

The ring G is drawn up by a suitable attachment, to close the arms and disengage them from the tube when it has reached its resting-place.

Claim.—1. The tube-frame C D D G, consisting of the head-block C, three or more pivoted arms, D, having shoulders E with sloped under edges and hooks H, central spring or springs F, and lower encircling ring G, the several parts being arranged and operating substantially as specified.

2. The tube-box I, in combination with the tube-frame C D D G, said tube-box being attached to said tube-frame, so as to inclose and protect the well-tube during its descent, and to be drawn up with the tube-frame when raised, substantially as specified.

141,234.—*Screw-Cutting Machine.*—JOHN PEACE, Merchantville, and WILLIAM P. COX, Camden, N. J. Application filed July 30, 1872.

The screw for operating the device is held in a bearing swivelled to a projection of the stock A. The nut in which the screw operates is pivoted to the ring which opens and closes the dies. Two jam-nuts are adjustable on the screw, to prevent the ring from being turned too far when screws of uniform size are to be cut.

Claim.—The combination, with the ring B and screw E, of an adjustable stop nut or nuts, for the purpose described.

141,235.—*Thread-Cutter.*—MARY JANE PITEAT, Gallipolis, Ohio, assignor of three-fourths her right to NELSON S. ANGELL, JAMES HANNAN, and DANIEL WILLIAMS, same place. Application filed June 19, 1873.

The thread-cutter is fixed to a spring-band, which slips over and clasps a thimble.

Claim.—1. The detachable thread-cutter for sewing-thimbles, consisting of the spring-band B and spring-cutter C, substantially as shown.

2. The thread-cutter, constructed as herein described, in combination with a sewing-thimble.

141,236.—*Sewing-Machine Caster.*—JAMES ROBERTSON, Northampton, Mass., assignor to himself and LEANDER W. LANGDON, same place. Application filed May 15, 1873.

A caster is arranged within an inverted bowl or cup, which has a seat cast upon it to hold one of the legs of a sewing-machine table. A bent lever is pivoted on top of the bowl, the head of the lever passing over and bearing upon the projecting head of the spindle in such manner that when the lever-head is swung off to one side the weight of the sewing-machine or table forces the roller up into the bowl, thereby locking the caster, while the reverse movement of the lever forces down the spindle, freeing the roller from contact with the bowl and unlocking it. The caster, locked or unlocked, rests directly on the floor and supports the weight of the sewing-machine table.

Claim.—The body A A′, and the roller or wheel C and its shank E operating therewith, so that by means of the lever F the roller may be allowed, by the weight of the table coming upon it or removed from it, to lock against or be freed from the cup or bowl A′, as and for the purpose described and represented.

141,237.—*Letter-Box.*—ANDREAS ROSENSTJERNA, Chicago, Ill., assignor of one-fifth his right to CHARLES BERM, same place. Application filed December 30, 1872.

The letters are temporarily arrested and dropped from a vibrating plate by opening and closing the lid. The act of attaching the receiving-box turns the index and unlocks the bottom of the fixed box A and the cover of A′, thus discharging the letters from one to the other. The removal of the box A′ closes and locks both the doors or covers, preventing access to either box.

Claim.—1. A letter-box made in two separable parts, one to receive the letters and the other to discharge them, when these parts are made to operate together, so as to unlock each other, discharge the contents from one part into the other, and lock each other, by means of a combination and arrangement of parts substantially the same as described.

2. The spring D′ on the bottom B′, and provided with a friction-roller, in combination with the cam V arranged on the bottom C′, substantially as and for the purpose specified.

3. The windows E′ E′, in combination with the slides G′ G′ and the pintle F′, substantially as and for the purposes specified.

4. In a letter-box, an indicator-roller provided with a ratchet engaged by a pawl actuated by the door or bottom of the box, and by a spring, when the said roller, ratchet, pawl, and spring are all arranged upon a removable partition, substantially as and for the purposes set forth.

5. In a letter-box made in two separable parts, A and A′, the lock R′ arranged upon the bottom or door C′ of the part A, in combination with the lock R″ arranged upon the door B′ of the part A′, substantially as and for the purposes specified.

141,238.—*Composition for Burial Caskets.*—WILLIAM H. ROSS, Brooklyn, N. Y. Application filed October 22, 1872.

Claim.—A compound for burial caskets, composed of asphaltum and silica, in variable proportions, and a small quantity of oil-tallow, or other unctuous material, substantially as set forth.

141,239.—*Steam-Generator.*—JOSEPH RYAN, St. Louis, Mo. Application filed August 23, 1872.

By means of the peculiar construction of these devices the circulating-pipe can be connected readily with the boiler or drum.

Claim.—The circulating-pipes B, vertical pipes B′, top discharge-pipe C, saddle-joint b^1, screw-heads b^2, flange-joints c c^1, arranged in combination either directly with boilers or drums, as described and shown.

141,240.—*Treadle for Sewing-Machines.*—FRANK SMILEY, Batavia, N. Y. Application filed March 26, 1873.

Claim.—1. The combination, with two alternately-operated treadles and the shaft or spindle to be rotated, provided with a double smooth-faced wheel or pulley, of the two friction clutches or clamps and supporting-arms, and actuating and reversing straps, substantially as and for the purpose hereinbefore set forth.

2. In a machine constructed substantially as hereinbefore set forth, the radial arms *g g*, adapted to serve as the pivot-bearings for the friction-clutches, and operating as and for the purposes described.

141,241.—*Street-Sweeper.*—WILLIAM SMITH, Barnard Castle, England. Application filed March 18, 1873.

The cylindrical brush is jointed in the middle to permit it to conform to the convexity of the roadway. The brush is also capable of vertical adjustment, is counterbalanced, and may be entirely lifted from the roadway when desired. The whole is set in a diagonal frame having its ends parallel with the line of draft.

Claim.—1. The brushes D D, pivoted or linked together at or near the center of their aggregate length, so that they are free to adapt themselves to any inequalities in the surface being operated upon, whether said brushes be arranged parallel with or at an angle to the axis of the draft-wheels E, substantially as shown and described.

2. The combination of the linked brushes D D with the bars Q Q Q, arranged as described, the bar R, chain S, lever L, weight O, and pawl and ratchet *o n*, so that the brushes are free to adapt themselves to the road-bed by their own weight, or to be counterbalanced or entirely lifted from the road, substantially as herein shown and described.

3. The diagonal frame B, arranged with its ends parallel with the line of draft, as herein shown and described.

141,242.—*Ammoniacal Gas-Engine.*—WILLIAM H. SMITH, deceased, (LUCYNTHA SMITH, administratrix,) and FRANCIS V. DE COPPET, New Orleans, La. Application filed February 5, 1873.

The ammonia is supplied to the vaporizing-chamber from the reservoir by a pump. A pipe conducts the vapor to the engine, the exhaust of which communicates with the condenser, which is supplied with water from reservoirs by a pump. By means of a third pump the charged water is conveyed from the condenser to the reservoirs provided for it. Suitable cocks are provided to regulate the amount of ammonia supplied to the vaporizing-chamber, and also to regulate the degree of heat in the latter.

Claim.—1. The combination of the artificially-heated chamber or vaporizing-vessel I with pipe I^1 and pump L, all constructed substantially as described, and for the purposes set forth.

2. The combination of the artificially-heated chamber or vaporizing-vessel I with pipe I^1, engine D, exhaust-pipe M, and condenser N, all constructed substantially as described, and for the purposes set forth.

3. The combination of the pump P with water-reservoir R R, condenser N, pump O, and storing-tank O^2 O^3, all constructed substantially as described, and for the purposes set forth.

141,243.—*Carpet-Cleaner.*—JOHN SPAULDING, San Francisco, Cal. Application filed March 24, 1873.

A series of rotary brushes are mounted upon a reciprocating carriage and sweep the carpet transversely, and the carpet is raised up for the action of the brushes by means of a series of rollers. An oil-pan is arranged under the carriage to catch the drip. The brushes are held to the rotating arms by adjustable clamps.

Claim.—1. In combination with the rollers R S T, for opening the Brussels, fiber, or nap, and presenting a raised surface or surfaces of the carpet to the action of the brooms, the series of rotary brooms or brushes W W, mounted upon the reciprocating carriage V and acting to sweep the carpet transversely, constructed and operated substantially as herein described and specified.

2. The reciprocating carriage V and its series of pulleys *e e f f* and rotating arms *n n*, carrying and operating the brushes W W, when constructed and connected with the mechanism operating it, in the manner substantially as herein described and specified.

3. The clamping device *r*, for confining and holding the splints composing the brushes, when constructed and applied substantially as described.

4. In combination with the reciprocating carriage V and its truck *c c*, the oil-pan *z*, when applied in the manner and for the purpose described and specified.

141,244.—*Device for Holding Gas-Pipe Nipples.*—LEVI W. STOCKWELL, Ravenna, Ohio. Application filed May 2, 1873.

The end of the nipple that is threaded is screwed into the coupling *g* against a follower, which is backed up by a screw, thus holding the nipple while a thread is being cut upon its outer end. To release the nipple when threaded, the screw is turned back, which permits the nipple to be unscrewed.

Claim.—The combination of the screw *i*, the threaded tube *e*, the follower *d*, and coupling *g*, substantially as and for the purpose herein set forth.

141,245.—*Sewing-Machine.*—SIMON W. WARDWELL, St. Louis, Mo., assignor of one-half of his right to GEORGE W. SHAW, same place. Application filed June 28, 1872.

Claim.—1. The holder R having a hook, *o*, on its periphery, spool-case S having a hinged cover, V, tension-plate W, and hooks *s s′*, for supporting an ordinary wooden spool, the spool and its case S being held stationary by an arm, X, while the holder revolves, in combination with a vertical eye-pointed needle carrying the threads of an ordinary spool and a take-up device, arranged as shown and described on the vibrating and fixed arm, and all arranged in combination with suitable operating mechanism to make stitches, substantially as shown and described.

2. The combination of the holder R having hook *o*, stationary case S having oval cover V, tension-plate W, vertically-vibrating needle, and take-up device, together with operating gearing connections, all said parts being constructed and arranged essentially as described, so that the hook makes two revolutions to each descent of the needle, and so that each stitch is completed before another is commenced, as set forth.

3. The combination of the gears 9 and 11, plate 19, lever 16, dogs 23 24 and their springs, slotted arm 25, diagonal crank-pin 26 arranged on a revolving shaft, and fastening-rod 17, substantially as and for the purpose set forth.

4. The combination of the gears 9 and 11, plate 19, lever 16, dogs 23 24 and their springs, slotted arm 25, diagonal crank-pin 26 arranged on a revolving shaft, fastening-rod 17, lever 14, rack 27, and gear 15, substantially as and for the purpose shown and specified.

5. The combination of the gears 9 and 11, plate 19, lever 16, dogs 23 24 and their springs, slotted arm 25, diagonal crank-pin 26 arranged on a revolving shaft, fastening-rod 17, lever 14, rack 27, gears 15 and 5, the latter communicating an intermittent motion to the feed-wheels *x x′* through the pinion 4, substantially as and for the purpose shown and specified.

6. The take-up device, consisting of the perforated plate *d*, plate K and its eyelets *e e′ e″*, vibrating arm C, and the eyelets *h* *h*, &c., and *y*, all combined and operating substantially as and for the purpose shown and specified.

7. A needle-holder for a sewing-machine, consisting of a cylinder, 29, piston 31 having jaws 35 and a pin, 36, when constructed and operating substantially as set forth.

8. The combination of the needle-holder above described with a hook-headed needle, 32, substantially as shown and specified.

141,246.—*Hoop-Cutting Machine.*—PETER WELCH, St. Louis, Mo., assignor, by mesne assignments, to DAVID T. WELCH, same place. Application filed March 7, 1872.

The material from which the hoops are to be cut is secured upon a reciprocating carriage and carried past a series of cutters which cut off and round the edges of two hoops at each reciprocation.

Claim.—1. In combination with a cutter-stock having knives set thereon at angles, as described, and also throat-pieces, cutters *g* for rounding off the corners of the hoops, substantially as specified.

2. In combination with a cutter-stock, the jointed rod *k*, bumpers *l l*, projection *i*, and set-screw *h*, to allow said stock to adjust itself to inequalities in the timber being cut, substantially as described.

3. The combination of the ratchet *w*, its pawl *o*, finger *r*, and incline *s* with the ratchet *n*, pawl *t*, feed-arm *u*, and incline *v*, for the purpose of operating the timber-feeding carriage, substantially as described.

4. The slatted plates E and F, substantially as described, in combination with the shaft *c*, for the purpose specified.

141,247.—*Apparatus for Hardening Copper Balls.*—ALFRED WELDON, Chicago, Ill. Application filed June 28, 1873.

The hollow balls (or floats) are placed in the closed drum, having a suitable number of steel or other hard-metal heads or protuberances, and the drum rotated for half an hour, after which the balls are removed, filled with water, and replaced in the drum. The force with which the balls come in contact with the steel heads compacts and hardens the metal.

Claim.—1. The drum A B C having hard heads or protuberances *a b c* on the interior, substantially as and for the purpose specified.

2. A float hardened by being rolled in a drum having hard protuberances on the interior, substantially as specified.

141,248.—*Method of Blasting Rock.*—ISRAEL WENTWORTH, Hingham, Mass. Application filed May 21, 1873.

The arrangement of a wooden diaphragm across the blast-hole, whereby, it is alleged, the rock may be cracked or broken in any desired direction.

Claim.—The employment of one or more partitions or pieces of wood, with or in a blast-hole, and with its explosive charge, all substantially in manner as specified.

141,249.—*Steam and Vacuum Water-Elevator.*—JOSEPH C. WIGHTMAN, Newton, assignor, by mesne assignments, to CHARLES HOUGHTON, Boston, Mass. Application filed May 19, 1871.

The pipe which conveys the cold water to condense the steam into the cylinder is made in the form of an inverted siphon. The valve being in its shorter arm the water above and below it forms a packing and also prevents the continued expansion of the steam composing the valve, and thus lessens its liability to wear out.

Claim.—In a water-elevating apparatus, substantially as described, the combination, with the cylinder or chamber A, of the down-condensing pipe, having the form of an inverted siphon, with a valve, K, in the shorter leg thereof, between the lower end of said leg and the point where its upper end communicates with said cylinder or chamber, substantially as and for the purposes set forth.

141,250.—*Sewing-Machine Table.*—FRANCIS R. WOLFINGER, Chicago, Ill. Application filed October 10, 1872.

The top of the table has an opening so that a portion of the machine that is hinged to the top may descend into it. A drawer has a drip cup or trough that catches any of the oil that may fall from the machinery.

Claim.—1. The drawer B, provided with a drip, E C D, and combined with the table X W, as and for the purpose set forth.

2. The combination of the drawer B, provided with a drip, with hinge G, table, and machine, substantially as and for the purpose set forth.

141,251.—*Shade or Globe Holder for Lamps.*—LEWIS J. ATWOOD, Waterbury, Conn., assignor to THE PLUME AND ATWOOD MANUFACTURING COMPANY, same place. Application filed May 20, 1873.

The double wire arms to which the shade-ring is attached are provided with slides for the adjustment of holder to different-sized lamps.

Claim.—The combination of the flanged sheet-metal shade-ring *a b* with the double wire arms *d d* and sliding clamps *e*, as set forth.

141,252.—*Shade-Holder.*—LEWIS J. ATWOOD, Waterbury, Conn., assignor to THE PLUME AND ATWOOD MANUFACTURING COMPANY, same place. Application filed May 20, 1873.

A single piece of wire is bent to form the double arms of the shade holder. The ends are secured by a thin sheet-metal cap secured by indentations.

Claim.—The sheet metal cap *i* receiving the ends of the wires at the end of one of the arms, and confined thereto by indentations, as set forth.

141,253.—*Pessary.*—EDMUND P. BANNING, The Elder, New York, N. Y., assignor to BANNING TRUSS AND BRACE COMPANY, same place. Application filed February 15, 1873.

A supporting-ring is hinged at a single point to an adjustable stem.

Claim.—The adjustable stem, combined with a ring, jointed to the support at one point only, as and for the purpose described.

141,254.—*Window-Sash Ventilator.*—JOHN C. BATES, Cold Spring, N. Y. Application filed May 10, 1873.

An upward opening is formed in the bottom bar of a window-sash, through which the passage of air is regulated by a hinged plate secured on the outside of the bar and operated by a pivoted and swivel screw and nut. Wire-gauze is placed in the opening to prevent the dust from entering the room.

Claim.—1. The combination of the plate and casing or box B C, the hinged plate D, and the pivoted and swiveled screw and nut E F, substantially as herein shown and described.

2. The combination of the wire-gauze G with the plate and box B C, the hinged plate D, and the pivoted and swiveled screw and nut E F, with each other and with the slotted bar of a window-sash, substantially as herein shown and described.

141,255.—*Lasting-Tool.*—JOSEPH H. BEAN, Cincinnati, Ohio. Application filed June 2, 1873.

Adapted for use in the ordinary manner, and also grasps and draws the leather upon each side at the same time.

Claim.—1. The handles A A having the parts a^1 a^2, in combination with the loose jaws B B having the curved faces x x, as described.

2. The combination of the handles A A and loose jaws B B having teeth arranged upon their inner surfaces, the tool as a whole being adapted to grasp the leather between its jaws B B, as shown in Fig. 2, for the purpose set forth.

141,256.—*Camera-Stand.*—NELSON S. BOWDISH, Richfield Springs, N. Y. Application filed March 5, 1873.

To prevent twisting of stand when weight rests unevenly upon the legs.

Claim.—The table or bed *f* and supports *e* attached together, and the latter sliding through the plates *b c*, in combination with the counterpoise or spring and the separate cords or straps to each support *e*, passing over the separate pulleys and connected to such weight, the parts being combined and arranged to operate substantially as set forth.

141,257.—*Manufacture of Boots and Shoes.*—JOHN BOYLE, New York, N. Y. Application filed June 21, 1873.

Claim.—In combination with textile or other similar fabric B, and a grooved or recessed sole, A, the binding-clamp C, for attaching the fabric firmly thereto, substantially as described.

141,258.—*Car-Coupling.*—WINSLOW BRADFORD BARNES, Plymouth, assignor of one-half his right to SAMUEL TALBOT, Jr., Boston, Mass. Application filed September 14, 1871.

The link has reversely-beveled ends to operate in connection with lugs on the bottom of the draw-head, so that while one end is held in the lugs in one draw-head the other end will ride over the lugs in the other draw-head and pass beyond the end of the link-pin.

Claim.—1. The link *i* having reverse inclined faces at the ends, in combination with the recessed lugs *k* and *l* within the bumpers, substantially as and for the purpose specified.

2. In combination with a link pin or catch, arranged for automatic coupling, the link *i* with its inclined reverse faces *k* and *l* at the end, substantially as and for the purpose specified.

141,259.—*Wrench.*—MICHAEL BUMBER, Jersey City, N. J. Application filed April 19, 1873.

A crank-shaft is journaled at one end of the rectangular frame, and the wrench-shaft at the other. Motion is communicated by means of an endless chain. The bearings are movable, facilitating the tightening of the chain. The whole device rests upon a journaled standard, and is capable of angular adjustment.

Claim.—1. The combination of the base A, bearings B, wrench-shaft C, side bars D, endless chain F, chain-wheel G G, bearings I, and extendible crank L M N with each other, substantially as herein shown and described.

2. The bearings I, formed of two parts, one of which is slotted and secured to the bars D, the jam-nuts K, and the screws J, in combination with the shaft C rotating in fixed bearings, the endless chain F, and shaft H, all as shown and described.

3. The combination of the curved and slotted bar O and rod P with the base A and side bars D of the machine, substantially as herein shown and described.

141,260.—*Fire-Proof Floor and Ceiling.*—WILLIAM T. BUTLER, Chicago, Ill. Application filed June 28, 1873.

The joists are made of wood, and are constructed with beveled surfaces at the top and bottom to support the vousoirs of the floor and ceiling arches, the bricks of the bottom arch being formed so as to inclose lower edges of the joists and to be self-sustaining. The floors and ceilings are laid directly on the arches.

Claim.—1. The construction of the joists A, substantially as and for the purpose described.

2. The braces or rods B, more or less in number, in combination with the joists A, for the purpose described.

3. The arch D, in combination with the joists A, substantially as and for the purpose described.

4. The hanging arch G, in combination with the joists A, substantially as and for the purpose described.

5. A fire and water proof floor and ceiling, F and I, supported by joists A and arches D and G, arranged substantially as shown and described.

141,261.—*Rotary Engine.*—GEORGE W. CUMMINGS, Conneaut, Ohio, assignor of one-half his right to DANIEL W. HAZELTINE, same place. Application filed February 8, 1873.

Two sets of ports are provided, either of which can be closed by suitable valves to reverse the movement of the engine. Grooved recesses are formed in the cylinder to permit steam to reach the first piston after the second has passed the induction-port, and thus assist it to complete its stroke. By means of the rings, segmental supports, and springs the piston-arms are properly pressed against inner surface of cylinder.

Claim.—The piston-arms C, with rings *i*, segmental supports *k*, and springs *l*, in connection with the ports *a* a^2, exhausts *b* b^2, and grooved recesses E of cylinder A, as set forth.

141,262.—*Loom.*—HILAS D. DAVIS, North Andover, Mass., assignor to GEORGE L. DAVIS, JOHN A. WILEY, JOSEPH M. STONE, GEORGE G. DAVIS, JOSEPH H. STONE, and JAMES H. DAVIS, same place. Application filed February 21, 1873.

The levers, which are actuated by the pattern-cylinder or chain to control the shuttle-box or shedding motion, have a vibratory movement to and from the cylinder, so arranged that the latter is moved when the levers are not in contact with it, thereby relieving the cylinder of the labor of moving the levers and the mechanism connected with them. To make two picks of the shuttle to one movement of the pattern-chain the cam which actuates the pattern-levers is provided with a removable incline, and the shaft of the cylinder carries a cam which is so arranged as to raise the actuating-pawl out of gear at every other pick. The levers of the shuttle-box mechanism are operated by cranks which receive an intermittent rotation by means of continuously-reciprocating clutches and sliding clutches controlled by the pattern mechanism. In addition to the ordinary cranks of the box mechanism a double crank of peculiar construction is used. The cranks are held in position by means of fixed and adjustable bushings, in combination with the sliding clutches. To prevent the engagement of the clutches, except at certain determined points, they are provided with teeth and corresponding recesses. The device for shipping the sliding clutch is provided with a yielding spring to prevent breakage, and for the same purpose the box-lever is connected to the supporting-rod by a secondary sliding lever and yielding catch. The actuating box mechanism is connected with the boxes on the opposite side of the loom by a chain so attached and led over sheaves that the boxes are moved positively downward as well as upward.

Claim.—1. The combination of the levers, or their equivalent, which work upon the pattern-chain of mechanism for imparting a vibratory motion to said levers toward and from the pattern-chain, by which motion the chain controls the movements of the shuttle-boxes or the heddles, substantially as described.

2. The combination, with the said levers, or their equivalent, and the mechanism for imparting the vibratory motion to them, as described, the mechanism shown, or its equivalent, so arranged as to suspend such vibration for one or more picks, substantially as described.

3. The combination, with the ratchet and pawl for revolving the pattern-chain, of the cam X upon the shaft thereof, to suspend the movements of the pattern-chain for one or more picks, substantially as described.

4. The sliding clutch J, for rotating the cranks, in combination with the reciprocating rotating clutch I, to impart a measured rotation to the cranks, substantially as described.

5. The clutch J, in combination with the fixed stops or bushings M for holding the cranks in a fixed position, substantially as described.

6. The bushings M, provided with means for circular adjustment, in combination with the clutch, substantially as described.

7. The teeth or blocks *j*, and the corresponding recesses *i*, in combination with the toothed clutches, to prevent their engagement except at certain determined points, substantially as described.

8. The combination of the two arms Q and Q^1 of the shipping device with a yielding spring connection to prevent the breaking of the mechanism, substantially as described.

9. The combination of the shipping-lever of the clutch with the vibrating pattern-lever S, substantially as described.

10. The combination of one or more continuously-reciprocating rotating clutches, having a measured circular motion, with one or more clutches which are made to engage with and disengage from the same at or near the limits of said motion, as a device for imparting an intermittent measured rotation to the cranks that move the shuttle-boxes, or to other mechanism, substantially as described.

11. The combination of the secondary sliding lever E^2 with the shuttle-box lever E, by means of the yielding catch *f*, substantially as described.

12. The chain D^2, in combination with the shuttle boxes and rods D^1 and D^3, or rods D^1 D^1, upon opposite sides of the loom, so as to give the boxes a positive motion in both directions, substantially as described.

13. The double crank for moving the shuttle-boxes, consisting, substantially, of the inner crank, the radial bar with its wrist-pin, which revolves upon the wrist pin of the crank, and the slotted disk which revolves said bar, combined and operating substantially as described.

141,263.—*Gas-Meter.*—DANIEL DE CASTRO, Mortlake, Surrey, and RICHARD BURTON, Camden Town, London, assignors to THE IMPERIAL METER COMPANY, London, England. Application filed July 7, 1873.

Gas is allowed to pass through an opening in a pipe into the upper part of the reservoir, and by displacement allows a corresponding quantity of water from the reservoir to enter the drum-case, thereby restoring the water to the desired level when becoming too low from evaporation or other cause.

Claim.—1. The combination, in wet gas-meters, of the water-reservoir *b* with the adjusted waste-water pipe *l*, and the pipe *m* having an adjustable opening for admitting gas into the water-reservoir when required, and the pipe *k* for admitting gas to the drum, arranged substantially as and for the purposes explained.

2. The flexible top and bottom of the chamber *n*, by which the height of the pipe *m* is regulated, substantially as and for the purposes described.

141,264.—*Hub-Boring Machine.*—JAMES DUNCAN and WILLIAM H. ARNOLD, Buchanan, Mich. Application filed May 5, 1873.

A wheel containing the hub which is to be bored is secured to a stationary vertical face-plate. The boring-tool is then adjusted to the center of the wheel and advanced into the hub by the action of a rack and pinion.

Claim.—1. The combination of the adjusting-jaws F and screw G with the wheel A, substantially as specified.

2. The said jaws F and screw G, mounted on a frame, I, adjustable toward and from wheel A, substantially as specified.

3. The mandrel H, reciprocating frame K, driving-belt O, and long drum P, combined and arranged substantially as specified.

141,265.—*Bolt-Cutter.*—EDWARD W. FAWCETT, RICHARD FAWCETT, and WILLIAM E. SEXTON, Salem; said EDWARD W. FAWCETT assignor to EPHRAIM S. HOLLOWAY, Columbiana, Ohio. Application filed December 5, 1872.

Claim.—1. The springs *c*, placed upon each side of the cutter, substantially as specified.

2. The combination of the frame, adjusting-handle, cutter and cutter-frame, and cam-lever, when all are combined to operate substantially as shown and described.

141,266.—*Musical Railway-Signal.*—REED A. FILKINS, Cheshire, assignor to himself and AUGUSTUS R. TYRRELL, Savoy, Mass. Application filed January 11, 1873.

A circular plate, bearing near its edge a series of steam-whistles, is pivoted in front of a series of apertures in a kind of shell or steam-chest. The escape of steam from the apertures is so regulated by valves that the rotation of the plate will produce any desired succession of sounds, or all may sound at once.

Claim.—1. The lever D, arranged in connection with the cylinder C and cap B, as specified.

2. The rotary plate E, carrying a series of steam-whistles, and applied to the shell A, as described.

141,267.—*Shutter-Worker.*—SETH R. FOSTER, St. John, Canada. Application filed June 21, 1873.

The shutters are furnished with wheels and run upon a bar extending along the entire side of the house, and are connected at the tops by a rod. The series of shutters are all operated and controlled by a weight. A single movement closes all the shutters simultaneously.

Claim.—1. The combination of the connecting-bars D, friction-wheels E, and the supporting-rails F, when used for opening and closing two or more window-shutters, substantially as described.

2. The combination of the bars D, shutters C, and the chains H, when used to open and close window-shutters, as shown.

141,268.—*Link of Endless Chains for Horse-Powers.*—ALBERT W. GRAY, Middletown, Vt., assignor to LEONIDAS GRAY, ALBERT Y. GRAY, and ALBERT W. GRAY, same place. Application filed February 26, 1873.

The links have projections attached to them to facilitate fastening them to the tread of the horse-powers.

Claim.—1. The cross-piece *c* in a link in the endless chain of horse-power and other like machines, in combination with the cog-work and cap of such links, for the uses and purposes set forth.

2. The combination of the cogs *a a* with the cap *d*, the cross-piece *c*, and the stud *f*, for the uses and purposes set forth.

141,269.—*Fire Safety-Line.*—CHARLES A. GREGORY, Montreal, Canada, assignor of one-half his right to WALTER MURSON RICE, same place. Application filed May 17, 1873.

A small box containing a windlass and cord with ball attached so as to be thrown out of the window in case of fire in the night, and afford a means for drawing up a substantial rope by which to descend. In order that the device may be readily found in an emergency it is combined with a match-box. A belaying pin accompanies the box, furnished with a strong gimlet-screw, so as to be readily screwed into the wood-work of the apartment and furnish a means of attachment for the fire-escape.

Claim.—The described device, consisting of the box A, having chamber I, windlass E, cord F, and ball K, combined and arranged as described.

141,270.—*Carpet-Lining Machine.*—JOHN R. HARRINGTON, Brooklyn, N. Y. Application filed May 5, 1873.

The cotton-flock or other fibrous material is delivered from a willow or breaker to a revolving wire-screen, thence to an endless wire carrier and between feeding-rollers to a carding-cylinder, then to a second screen and pair of feed-rollers, a finer carding-cylinder and a third screen, at which point it is carried, in the form of a continuous lap, between inclosing sheets of paper or cloth previously pasted by rotating brushes. The fabric is next delivered to pressing-rollers and a heater, then carried over a heated calender-roller and between crimping-rollers to the reciprocating folding device. Rotating clearing-brushes work upon the under side of the rotating screens, and below them is placed an endless carrier to remove the refuse.

Claim.—The combination of willow A, leader C, screens D H I, endless screen E, scratchers G K, and feed-rollers, all arranged and operating substantially as specified.

141,271.—*Folding Chair.*—BENJAMIN J. HARRISON, New York, N. Y. Application filed April 1, 1873.

At the point of intersection of each pair of legs the respective legs are lap-jointed, and secured together by a screw-bolt or by a cross-rail with right-and-left-handed screws. The upper ends of the front legs are connected to the chair-bottom by a cross-bolt or hinge.

Claim.—1. The cross-legs, recessed at the intersections, and secured by right-and-left-handed bolts and nuts, in combination with the cross-rail *c'*, that can be rotated to clamp or release the parts, substantially as set forth.

2. The cross-legs, recessed at the intersections, and secured together by a screw bolt or bolts, in combination with the chair-bottom *a*, connected to the upper ends of the front legs by a cross-bolt or hinge, substantially as set forth.

141,272.—*Combined Brake and Propelling Mechanism for Cars.*—JACOB W. HILL, Jefferson, Iowa. Application filed May 10, 1873.

In running down grades the engines operate as pumps either to retard the train or force air into receivers, from which it is allowed to pass into the ordinary valve-chests upon the throttle-valve being opened, and thence into the cylinders, the induction-valves therein being closed, when it is required as a motive power.

Claim.—The combination of the air-receivers A A, connected by pipe P, the engines B B and their valve mechanisms located at E and I, pistons J connected with axles C, the throttle-valves L, and check-valves H, all constructed and arranged as shown and described, for the purpose specified.

141,273.—*Pruning-Shears.*—HENRY C. HILLS, Pinkney, Mich., assignor to himself and WILLIAM DOLAN, same place, and GEORGE MILLS, Highland, Mich. Application filed March 17, 1873.

A circular rotating-knife is held in any fixed position required, by means of a pivoted link, the bent end of which is passed into holes in the cutter. Thus a new edge may be presented by changing the fastening-hole, and the entire edge of disk can be utilized for cutting.

Claim.—The combination of the rotary cutter C upon the lever B with the arm D, the latter being adapted to adjust the cutter so as to utilize all its surface for cutting, as described.

141,274.—*Disinfectant Compound.*—JONATHAN HILTON, New York, N. Y. Application filed May 31, 1873.

Nitric acid and oil of tar is agitated with carbonate of lime; sulphur is burned in a retort; the sulphurous acid is caused to pass through the mixture of lime, tar, and nitric acid until saturation. After settling, the fluid is separated from the solid parts, the solids are then dried and reduced to a powder.

Claim.—1. The solid disinfecting compound, composed of the ingredients and made by the process substantially as herein described.

2. The liquid disinfecting compound, produced by the ingredients and process substantially as herein described.

141,275.—*Railway-Rail Chair.*—SAMUEL HUBER, Danville, Pa. Application filed June 28, 1873.

The chair is cut away at E in wedge form directly under the ends of the rails, with a view solely to the protection of the rails from battering or splintering, in opposition to the common views of supporting the rails at this point, so as to protect the wheels of the train.

Claim.—A rail-chair having a cavity or recess, substantially as seen at E, as and for the purpose described.

141,276.—*Lathe-Chuck.*—WILLIAM JOHNSON, Lambertville, N. J. Application filed March 22, 1873.

The case A contains three worm-wheels, B, placed triangularly and at equal distances apart, and a single screw, I, to turn them; and the jaws F, pivoted to arms projected from the wheels and free to turn on their pivots, are prevented from rising by interlocking flanges, as shown.

Claim.—1. A worm-wheel, B, having a perforated arm, E, clamped to and combined with a chuck-jaw to turn therewith, in the manner described.

2. The holder E having lip and groove H extending only partially around it, in combination with a correspondingly-constructed chuck-jaw, F, to allow the jaw to be removed or attached, in the manner set forth.

3. A wheel, B, plate C, and screw-bolt D, combined with and turning on bearings in the case A, as and for the purpose described.

141,277.—*Smoke and Steam Burner.*—JOHN W. KINSMAN and ADOLPHUS EUGENE, Laramie City, Wyoming Ter. Application filed April 12, 1873.

A trough or box swinging on pivots placed longitudinally in the fire-box, having a perforated pipe at the bottom running its entire length, and a steam-pipe running on top of the grate along the walls of the furnace, in which the steam is superheated and conveyed to this perforated pipe, is filled with coal. The gases arising therefrom and the superheated steam commingle and are consumed.

Claim.—1. A pivoted fuel-holder, C, in combination with the grate B and furnace A, as and for the purpose described.

2. The steam-exhaust pipe D, arranged in relation to the pivoted drying-trough C, to discharge thereinto, as and for the purpose set forth.

3. The combination of a pivoted box or trough, C, superheating-pipe D, and distributing-pipe E, with the fire-box of a steam-boiler or a smelting-furnace, substantially as described.

141,278.—*Car-Coupling.*—GERHARD KOEB, Springfield, Ohio, assignor to himself and JACOB B. KOEB, same place. Application filed February 1, 1873.

The link is guided by the rack on the rear side of the pin.

Claim.—The bumper A having ribs a^1 and cavity C, combined with pin E having rack F and the coupling-link D, as and for the purpose described.

141,279.—*Lathe for Turning Tobacco-Pipes.*—CHARLES KRAFF, Philadelphia, Pa. Application filed May 13, 1873.

The cutting-tools are so arranged as to bore out the bowl and stem and form a portion of their outer surfaces simultaneously.

Claim.—1. The adjustably-inclined rotary shaft C and the adjustable block carrier or holder G H, when constructed and arranged in relation to each other for the purpose of enabling the attendant to adjust the two said devices to suit the required inclination to be given to the stem and of the pipe, without changing the fixed position of the block of wood in the jaws H of the said block-holder, substantially as hereinbefore set forth and described.

2. The arrangement of the inclined shaft C and its carrying-frame K 5, the weighted lever E with its slot 8, and its fulcrum-pin 15 in the adjustable supporting-slide b', the said parts being constructed and secured to the main supporting-frame of the machine, so as to operate substantially as and for the purposes hereinbefore set forth and described.

3. The arrangement of the vertical rotary shaft D and its carrying-frame L, the lever F with its adjustable supports M and 11, and the slots 10 10 in the main frame of the machine, the said parts being constructed and attached to the said main frame of the machine, substantially as and for the purposes hereinbefore set forth and described.

4. The tool or cutter-head, with its respective, distinct, and separable cutters, constructed and secured adjustably together, substantially as shown in Figs. 3 and 4 and described, for the purpose specified.

141,280.—*Steam-Whistle.*—OTTO KROMER, Sandusky, Ohio. Application filed April 8, 1873.

The column of air in the body of the pipe being caused to vibrate by steam-jet, spring-gates, within the control of the engineer, divide the pipe-body into different lengths, and thus produce various tones successively.

Claim.—In combination with the bell D the valves E, constructed and arranged to operate substantially as and for the purpose set forth.

141,281.—*Sign.*—WILLIAM LAMBERT, Geneseo, Ill. Application filed March 29, 1873.

The back of each letter or character is provided with downward-projecting lugs and a spring-jaw, to support and hold the letter in position when placed upon the rod.

Claim.—In a sectional sign, the spring jaws or arms *c*, secured to the letters D for attaching the same to a plain or notched supporting-rod, C, in combination with the hooks or clips *d*, substantially as and for the purpose set forth.

141,282.—*Reed-Organ Swell.*—JOHN R. LOMAS, New Haven, Conn., assignor to BERNARD SHOBINGER, same place. Application filed March 15, 1873.

A hinged panel, in the front of the case and right against the ordinary swell-valve, is operated by the swell-action, knee, foot or otherwise, to let the sound out at pleasure.

Claim.—1. An outside swell, C, and an ordinary swell, A, combined to operate simultaneously, in the manner and for the purpose described.

2. The swell A, having piece D, the swell C, and the lever B, combined in the particular manner and for the purpose specified.

141,283.—*Submarine Foundation.*—EDWARD MANICO, London, England, assignor to EMILE VERGNES, New Orleans, La. Application filed August 2, 1872.

A new mode of placing the cradles for submarine foundations. The cradles are wrought-iron cages of cubical form, partially filled with stones, to afford a lodgment for sand by the action of the tide. Instead of being placed side by side, as heretofore, they are placed diagonally, and secured at the corners by clamps, and the alternate recesses on the shore side are filled with additional cradles.

Claim.—1. The combination of the cradles edge to edge diagonally, substantially as and for the purpose herein before set forth.

2. The combination, with the rows of diagonally-placed cradles, of an additional cradle placed on the shore side of the row in each alternate recess, substantially as and for the purpose hereinbefore set forth.

141,284.—*Farm-Fence.*—WINFIELD S. MCKENZIE, Rockwell, Tex. Application filed April 12, 1873.

The fence is supported upon short posts, which are pivoted at their tops to the middle of the end bars of the panel so that the fence may be tilted over either way, a portable brace serving as an additional support.

Claim.—1. The short posts A and pivoted or tilting bars B for supporting a fence, whether said fence be formed of wires or other material, substantially as herein shown and described.

2. The combination of the loops L and bars K with the bars or posts that support the fence, substantially as herein shown and described.

3. The portable brace M N O P Q for strengthening the inclined fence against pressure, substantially as herein shown and described.

141,285.—*Attaching Knob to Spindle.*—FRANKLIN M. MERRIAM and JOSEPH B. MERRIAM, West Meriden, Conn. Application filed April 19, 1873.

A socket-nut is screwed upon a square spindle, and the end of the knob-shank placed in the socket of the nut and held there by a set-screw. A sleeve is placed over the nut and screw for the purpose of holding the latter in place. The rose is constructed so as to cover the sleeve and nut.

Claim.—The rose G, constructed substantially as herein shown and described, in combination with the spindle A, neck B, socket-nut E, sleeve F, and washer H, as set forth.

141,286.—*Inside Blind.*—ELLIOTT METCALF, Rome, N. Y. Application filed May 10, 1873.

The ribbons that are attached to the front and rear of the slats are attached at their upper ends to a roller that is suspended by cords to screws, rings, or eyes on the window-frame. The whole device can be lowered, or the slats can be drawn up to the roller, or the slats can be opened or closed without being drawn up, all by means of the several cords and screw-eyes or pulleys. The ribbons are fastened to the slats by being passed through two slots near each edge of each slat.

Claim.—1. A Venetian window-blind, composed of the roller B, lowering-cords *a*, adjusting-cords *c*, shifting-ribbons C attached to the roller, and to the front and rear edges of the slats D, and combined with the elevating-cords E, when the various parts are constructed and arranged as shown, to permit the blind to be lowered from the top, to be raised from the bottom, and to enable the slats to be opened or closed, as and for the purpose set forth.

2. In a Venetian blind, the shifting-ribbons C, combined with the slats D, when the ribbons pass through slots A A near the edges of the slats, as and for the purpose set forth.

141,287.—*Pen-Holder.*—JOHN S. OBENDORFF, Virginia City, Nev. Application filed June 21, 1873.

A hollow elastic sleeve or bulb is attached to the stem of a pen-holder, and, by confining a quantity of air, forms an air-cushion.

Claim.—The combination of the bulb-shaped rubber sleeve B and air-cushion *a* with the holder A, as shown and described.

141,288.—*Machine for Dressing Millstones.*—JOEL W. PARISH, McFarland's, Va. Application filed February 21, 1873.

A vertically-reciprocating pick-stock, jointed near its lower end, is arranged upon a suitable carriage with a crank-shaft, tappet, and spring for operating it. The carriage slides upon ways parallel to the radial line of the stone, and is fed backward and forward upon such ways by means of the pinions upon the carriage, operating in the racks which are arranged above and below them.

Claim.—1. The sliding platform, carrying the tool-stock, combined with a pinion of the feed-gear working between two rack-bars, in the manner and for the purpose set forth.

2. The pick *d* fastened in a socket, *e*, jointed to the pick stock at *g*, as and for the purpose specified.

141,289.—*Wrench.*—ANDREW PARTRIDGE, Springfield, Mass. Application filed March 19, 1873.

The worm-piece fits into a recess in the movable jaw, and is held in position by a collar inserted between it and the guide-piece. The worm is operated by a rod and thumb-piece.

Claim.—1. In an improved screw-wrench, a threaded worm-piece, *d*, having the ends of its threads d' made sharp and of full size to fill the recesses c' in the bar, as and for the purposes set forth.

2. The worm-piece *d*, operated by a flattened or equivalent-shaped rod, *a*, passing through a correspondingly-shaped hole, a', in combination with a collar, *c*, substantially as described.

3. The combination of the movable jaw C, worm-piece *d*, collar *c*, guide-piece *n*, rod *a*, and bar A, substantially as described.

141,290.—*Car-Coupling.*—ENOS W. PELOUBET, Newark, N. J. Application filed May 23, 1873.

The jaws are held together by a draw-bar, wedge-shaped in front, and held forward by a horizontal pin. When the cars come together, the pin being withdrawn, the lock-head L forces the jaws apart until they strike the buffer-head N, when they are forced together. The pin J is then inserted, and the coupling is securely locked.

Claim.—1. The jaws A A, operated by the curved buffer-head N, or its equivalent, substantially as and for the purpose set forth.

2. The jaws A A, in combination with the curved buffer-head N and the lock-head L, substantially as and for the purpose set forth.

3. The combination of the jaws A A, the straps *b b*, the wedge-piece D, and the draw-bar O, substantially as and for the purpose set forth.

4. The combination of the jaws A A with the draw-bar O, the pin J, and the gravitating lever K, substantially as and for the purpose set forth.

5. The combination of the jaws A A, the buffer-bar B, the draw-bar O, having wedge-piece D, and the pin J, substantially as and for the purpose set forth.

141,291.—*Burglar-Alarm.*—MICHAEL R. PERKINS, Portsmouth, N. H. Application filed April 22, 1873.

A collar upon the door-knob spindle has two inclined arms projecting from opposite sides. When the knob is turned in either direction one of these arms operates a lever connected with the gong-hammer, so as to sound an alarm.

Claim.—The combination and arrangement of the collar on the knob-shank having inclined arms *a c*, the lever *g* having outer end bent, as shown, and the dog *i* pivoted at its other end, and bell-hammer *l*, substantially as shown.

141,292.—*Wagon-Seat Fastener.*—GEORGE RUSTON, Freeport, Ill. Application filed May 16, 1873.

A hinged fastening device secures the seat to the supporting-strip of the body, and is locked in place by means of a sliding bolt.

Claim.—The combination, with the side A, the side support grooved to fit over it, and the guide-strip B, of the latch D, hinge-fastener E, and bolt *d*, as and for the purpose described.

141,293.—*Bridge-Truss.*—FREDERICK SCHWATKA, United States Army, now at North Platte, Neb. Application filed April 26, 1873.

A novel combination of the tension and compression members of a truss, with the object of improved distribution of material to secure strength with lightness. The compression-members are built up of flanged iron placed back to back, and where the greatest strength is required four flanged pieces are combined.

Claim.—1. A truss-bridge having each beam combined with two other beams traversing the width of span, and meeting in sets of three or more, as herein shown and described.

2. The beams C *k*, &c., formed of two beams, made with right-angled flanges along their side edges, and bolted back to back, substantially as shown and described.

3. The beams E *m*, &c., formed of four beams, made with right-angled flanges along their side edges, and bolted to each other in the manner herein shown and described.

141,294.—*Pneumatic-Dispatch Apparatus.*—CHARLES WILLIAM SIEMENS, Westminster, England. Application filed December 26, 1871.

The current of air in the pneumatic tube is generated by a steam-ejector, having an annular orifice for the issue of high-pressure steam located between outer and inner concentric annular orifices, through which air is drawn by the traction of the steam-jet. A rocking frame is placed in the circuit for the reception of the carrier. This frame consists of two sections of tube of the same diameter as the dispatch-tube, having planed-end surfaces formed to fit accurately the opening in the dispatch-tube without leakage, the whole arranged so that the sectional tubes can be alternately brought into position. One of the tubes is continuous with the main pipe when in position. The other, or receiver, is closed at the farther end, with the exception of perforations for the gradual escape of the air compressed by the arrival of the carrier, by which means an air-cushion is formed. A by-way is arranged for the passage of the air-current when the receiver is in place. A valve operated by the rocking frame automatically opens and closes the by-way at the proper times.

Claim.—1. A pneumatic-dispatch apparatus having, in combination, an open circuit-tube for the transmission of the carriers, one or more rocking frames for receiving and sending, and the propelling apparatus described, with concentric steam and air jets O^1 P^1 Q^1 opening into the converging and diverging passages I^2 I, substantially as described.

2. In receiving and sending apparatus for pneumatic tubes, the movable sections A^2 and F, sliding in a rocking frame between face-plates B B, and arranged to be brought alternately in line with the pneumatic tubes A^1 A^3, substantially as and for the purposes set forth.

141,295.—*Chair-Seat.*—JAMES P. SINCLAIR, Elbridge, N. Y. Application filed January 25, 1873.

The seat is composed of strips of wood having one or more strips of metal passing transversely through them, said metallic strips being secured in the opposite bars of the chair-seat frame. The side bars of the seat-frame are grooved to receive the ends of the wooden strips.

Claim.—The combination of the strips A, the bars of the frame B C, grooved upon their inner edges, and the metallic strips D, one or more passing transversely through the strips A and secured to the bars of the frame B C, with each other, substantially as herein shown and described.

141,296.—*Shaft-Coupling.*—JOSEPH M. STONE, North Andover, Mass. Application filed July 22, 1872.

The coupling is made of two halves which are recessed and held together by bolts strengthened by means of iron bands driven upon said coupling.

Claim.—The combination, with the two parts of the sleeve, of the recesses D and the band F, substantially as described.

141,297.—*Hoisting and Conveying Apparatus.*—CHARLES B. STOUGH, Monticello, Ill. Application filed June 7, 1873.

The hoisting apparatus has a crank-frame and a roller-frame, over which the chain is stretched by means of which the articles or material is conveyed. The chain passes over the rollers, which have separate shafts placed at some distance from each other to allow the passage of the hooks between them.

Claim.—1. The hoisting and conveying apparatus, consisting of frame A, roller-frames B B^1 B^2, and crank-frame D, in connection with chain C, guides E, table F, boxes G, platform H, and inclined plane L, substantially as and for the purpose described.

2. The roller-frame B, consisting of recessed blocks *a*, pieces *f f'*, connecting-piece *g*, and bolts *g'*, as described.

3. The roller-block *a*, with journals *b*, carrying-shafts *d* having rollers *e*, with projecting parts e', arranged substantially as set forth.

4. The table F, having recess *h* for passage of hook M, as set forth.

5. The crank-frame D, provided with lateral piece a', with rollers *e*, recessed lateral piece *i*, handles *n*, and fulcrum O, and carrying-shafts *g g'*, with cranks I, cog-wheels *q q'*, spur-wheel *r*, ratchet-wheel *s*, and pawl s', substantially as described.

6. The crank-frame D, having lateral piece a', with rollers *e*, as described.

7. The crank-frame D, having lateral piece *i*, with vertical pieces i^1, recessed for support i^2 of guides E, as specified.

8. The recessed guides E, having side supports i^2, arranged as described.

9. The guides E, having staple *u* and hook u' for stretching chain C, as set forth.

10. The upper roller-frame B^1, having rollers *e* and vertical pieces e^1, substantially as set forth.

11. The chain C, constructed of open links *y* and solid links y', and connected as described.

12. The link y' having lugs *z*, rollers z', and hook M, forming the hook-carriage, substantially as set forth.

13. In combination with the lower roller-frame B^2, the inclined plane L and board *w*, for the purpose described.

141,298.—*Harvester-Cutter.*—FREDERICK R. SUTTON and WILLIAM O. SUTTON, Wellington, Ill. Application filed May 24, 1873.

The rear ends of detachable ledger-plates are held in position by means of side lugs clasping the guard-fingers, and an independent pressure-bar screwed to the front edge of the finger-bar. Notches in the front ends of the plates fit corresponding projections in the fingers.

Claim.—The ledger-plates, detachably secured to the fingers by the lips E and bar F, the bar being secured to the front edge of the finger-bar by screws, and the plates being secured at the front ends, substantially as specified.

141,299.—*Screw-Cutting Machine.*—CALEB C. WALWORTH, Boston, Mass. Application filed February 27, 1873.

The feed-screw attached to the spindle works in a sliding nut, held in place, while the tool is operating, by a weighted pawl *g*, catching on a shoulder on the nut. The lever *l* is connected with the nut by a pin passing through a slot in its upper end, and carries a slide, *k*, that is thrown forward a distance equal to the length of the slot in the lever to release the pawl *g* before the nut is moved back, carrying with it the spindle.

Claim.—In combination with feed-screw and its tool-carrying spindle, the nut *f*, pawl *g*, lever *l*, and slide *k*, substantially as described.

141,300.—*File-Cutting Machine.*—ALFRED WEED, Boston, Mass. Application filed March 8, 1873.

The file-blank and its bed are fed forward by a feed-foot, P, acting against the spur last formed. The foot is pivoted to the cutter-stock A just behind the cutter, and the stock itself is pivoted to a pendent arm, *k*, that is vibrated intermittingly by a cam, A^5, on the driving-shaft.

Claim.—1. In combination with the cutter having an upward movement after the blow and rise of the hammer, the feed-foot *p*, which moves forward against the spur raised by the cutter and feeds the file, substantially as described.

2. In combination with the file-feed and cutting mechanism, the griper-pin i^3 extending out from the arm I^2 of the shaft i^2, said shaft being turned by the action of the spring w^3 produced by the pin p^2 or its equivalent, substantially as described.

3. The improvement in file-cutting machines, the same consisting of the shaft o^2, hammer *y*, arm I^2, spring d^3, cam and driving shaft i^2, cam A^5, eccentric or cam A^2, arm *k*, arm *n*, cutter-arm A, and spring *w*, combined and arranged to operate substantially as shown.

141,301.—*Current-Wheel.*—CHRISTOPH WERNER, St. Charles, Mo. Application filed April 26, 1873.

A pair of boats arranged at some distance apart, connected by frame-work and supporting a couple of revolving drums between them, whereon endless chains with a series of buckets work, one of the drums being provided with tackle for swinging it up and down, and having deflections connected with it to vary the influence of the water on the buckets according to the power required. The other drum, which is in stationary bearings, gears with a vertical drum, which is to transmit the power by a belt, and is as long as the extreme distance between high and low water to allow the boats to rise and fall and yet work the driving-belt properly.

Claim.—The boats A B, drums C D, chains E, buckets F, guards M, slotted housings J, adjusting-screws L, drum O, and the connecting-wheels N, combined and arranged substantially as specified.

141,302.—*Water-Regulator for Boilers.*—CALVIN J. WELD, Brattleborough, Vt. Application filed February 15, 1873.

Claim.—The combination, with boiler A, of the auxiliary cylinder B, connected with reservoir by a pipe, D, and provided with a float, to which is attached a stopper, which shuts the said pipe at the times and in the manner described.

141,303.—*Sewing-Machine.*—WILLIAM M. WHITING, Brooklyn, N. Y., assignor to THE PLUMMER SEWING-MACHINE COMPANY, New York, N. Y. Application filed June 21, 1873.

For sewing straw-braid, and an improvement on patent No. 79,856. The throat plate or bar for the needle is adjustable, and the point of the needle is raised or lowered so that the stitch will show more or less on the surface.

Claim.—The throat-bar 6, adjustable vertically and forming a guide to the needle, in combination with the mechanism, substantially as set forth, for presenting the material to be sewed in a bent condition to the needle, as specified.

141,304.—*Oiler for Steam-Engines.*—ALVA WOODEN, Ypsilanti, Mich. Application filed April 24, 1873.

The inlet of steam into the steam-chest lifts the spindle and valve from the lower seat, and before the valve reaches the upper

seat a small volume of steam passes into the cap, there condenses and displaces an equal volume of oil, which is raised above the cap. By opening a port to fill the cylinder with steam the pressure in the steam-chest is slightly reduced during the outflow of the steam, and the spring at the lower end of the spindle seats the valve in the lower seat, and thus the space between the two seats is filled with oil, which, when the valve is again raised, flows down the tube into the steam-chest.

Claim.—1. The cap D, provided with a seat, *f'*, in combination with the tube D provided with the seat *f*, and the spindle *b* provided with the spherical or double-faced valve *e*, substantially as and for the purpose set forth.

2. The construction and arrangement of the hollow standard A, cap B, plug C, tube D, spindle *b*, piston *c*, spring *d*, valve *e*, seat *f*, cap D', and seat *f'*, substantially as and for the purpose set forth.

141,306.—*Process of Ornamenting Glass.*—SAMUEL M. ADAMS, New York, N. Y., assignor of one-third his right to JOHN JOHNSTON, same place. Application filed June 2, 1870.

Claim.—1. Attaching temporarily with mucilage or other suitable adhesive substance metallic foil to the article to be ornamented, then producing upon such foil and surface the desired pattern by means of a stencil or guide plate and suitable cutting-tool.

2. Etching the design, so formed, by corrosion in the usual manner, all substantially as described, for the purpose set forth.

141,308.—*Device for Securing Corners of Wagon-Bodies and Seats.*—ERWIN ANDREWS, Bryan, Ohio, assignor to EDWARD L. BRADLEY and WILLIAM A. CLARK, New Haven, Conn. Application filed November 28, 1870.

The seat-corners are secured by casting a corner upon the wood, the metal running through holes in the wood.

Claim.—The corner pieces for carriage seats or bodies, consisting of soft metal cast upon the adjoining ends of the pieces that form the seat or body, the ends being suitably recessed upon their outer faces, and having holes through which the metal can flow, whereby the parts are firmly united, all as set forth.

141,307.—*Registering Steam-Gage.*—EDWARD H. ASHCROFT, Boston, Mass. Application filed February 5, 1873.

A registering-lever for operating a ratchet-wheel, so as to indicate the number of excesses of pressure reached, is adjustably attached to the toothed sector which controls the ordinary index.

Claim.—1. The lever-bar J for operating the registering-index H, and attached directly and solely to the segment-lever D, substantially as set forth and described.

2. The lever-bar J for operating the registering-index H at a prescribed limit of pressure, and provided with an adjustment, *i*, the lever and its adjustment both being attached to and carried solely by the segment-lever.

141,308.—*Hoe.*—JAMES M. BAIRD, Wheeling, W. Va., assignor to himself and RICHARD STABLEY, same place. Application filed November 24, 1871.

Attaching hoes to handles by means of a semi-tubular piece riveted to the blade and fastened to the handle by means of a ferrule. To the inside of the semi-tubular piece is secured a projection, which is embedded into the wood as the ferrule is forced into position.

Claim.—As an improved article of manufacture, the acute-angled socket A, formed of a flat arm or shank having screw-holes, and a semi-tubular portion provided with an inner projection, *a*, whereby it is adapted to be applied to cover the end of a handle and connect it with a hoe-blade in the manner specified.

141,309.—*Pump-Valve.*—WILSON BARNES, Maquoketa, Iowa. Application filed December 7, 1872.

Claim.—The poppet-valve A *a a'*, provided with end-curved legs *f*, combined with tube C, having valve-seat B, flange *d*, and taper from middle to each end, as and for the purpose described.

141,310.—*Iron Bridge.*—CHARLES BENDER, New York, N. Y., CHARLES H. LATROBE, Baltimore, Md., and CHARLES S. SMITH, St. Louis, Mo. Application filed July 7, 1873.

The skew-backs are separated from the anchorage-abutments, and the cantilevers are supported upon them by hinged connections, which permit play under thermal changes as well as variable loads. The anchorage-lines are rigid so as to afford resistance to compressive as well as tensile strains, the arch-members being hinged throughout and capable of transmitting resultants of pressure in opposite directions. A viaduct approach is inserted between the anchorage-abutments and the backs of the hinged cantilevers, and supported upon the same. These carry the anchorage-lines and help to resist the compressive strains upon the anchors.

Claim.—1. A cantilever-bridge, in which the abutments of the ribs are separated from the anchorage of the back ties or struts, and in which the cantilevers are hinged at their abutments, as herein set forth.

2. The combination of a cantilever trussed or arched bridge with a viaduct, by which the back-ties are supported or stiffened, as herein set forth.

3. An arched bridge, constructed with three hinges intermediate between the skew-backs, combined with a rigid anchorage capable of resisting compression as well as tension, or combined with piers of such weight and stability as will obviate the necessity of any other anchorage.

141,311.—*Lantern.*—LEWIS F. BEITS, Philadelphia, Pa. Application filed October 29, 1872.

The flange of the upper gallery is extended so as to form, with one guard-wire, a hinge, and, with the opposite one, a hook, thus securing the gallery to the guard. The vertical guard-wires extend down through the lower gallery and rest upon the top of the lamp-fount to relieve the connections at this point from strain. An inverted conical cup surrounds the burner to deflect currents of air therefrom.

Claim.—1. The hinge *b* and hook *d*, formed in one piece with the flange G' of the dome of the lantern, and adapted to the guard-wires H, substantially as herein described.

2. The combination, with the hinge *i* and spring-catch *j*, or other equivalent connections, of legs *k* extending between the body of the lantern and the deflector I, and resting on the top of the oil-reservoir, all substantially as specified.

141,312.—*Car-Coupling.*—ELIAS BICKELL, Milton, Pa. Application filed May 14, 1873.

The object is to render the ordinary pin and link self-coupling and self-adjusting for cars of different heights.

Claim.—1. The sliding tongue G having lip *b* at the front end, and an inclined elongated slot, *a*, through which the pin B passes that pivots the bumper in the draw-bar, substantially as and for the purposes herein set forth.

2. The curved end of the pivoted bumper A having notches *d d*, in combination with spring H with projection *e*, substantially as and for the purposes herein set forth.

3. The combination of the bumper A, pin B, draw-bar C, tongue G with slot *a* and pin *b*, the notches *d d*, and spring H with projection *e*, all substantially as and for the purposes herein set forth.

141,313.—*Curtain-Fastener.*—JOHN F. A. BLATTERLEIN, West Meriden, Conn. Application filed March 28, 1873.

An eccentric button is attached to the window-frame beyond the edge of the curtain, so that by turning the button the edge of the curtain is firmly clamped against the frame.

Claim.—The arrangement of an eccentric button on the frame or casing of a window beyond the edges of the curtain, attached to said window, substantially as and for the purpose shown and described.

141,314.—*Rotary Printing-Press.*—WILLIAM BRADWOOD and HORATIO J. HEWITT, New York, N. Y. Application filed April 16, 1873.

Both sides of the sheet are printed in succession, the first by one set of cylinders, the second by another. An endless ink-distributing apron serves to transmit ink from the fountain to a series of inking-rollers, which bear against the type-cylinder, and are so placed in a frame as to embrace a large part of the circumference of said cylinder. A stationary cutting-blade on end of cutting-table, acting in conjunction with a knife suspended from bell-crank levers, actuated by cams secured to last type-cylinder, cuts web into suitable sheets. A retaining-pad acts in conjunction with the movable knife.

Claim.—1. The endless apron *a*, arranged upon rollers mounted upon the hinged frame B, in combination with the ink-fountain *f* and a series of inking-rollers, *d*, which bear directly against the surface of the type-cylinder, substantially as herein described, for the object specified.

2. In combination with a type-cylinder and an impression-cylinder, the offset-sheet C and interchangeable or reversible rollers D E, substantially as described, for the purpose specified.

3. The draw-roller F, turning-roller G, and impression-roller T', all geared together as described, in combination with the roller *i*, cords A, and table H, substantially as described, for the purpose specified.

4. The knife K, suspended from the bell-crank levers *l l*, having arms *m m*, and operated by cams on the impression-cylinder T', in combination with each other and with the stationary knife *j*, substantially as described, for cutting the web S, as set forth.

5. The presser-pad *q*, in combination with the knife *k*, stationary cutting-blade *j*, bell-crank lever *l*, cam-disk *o*, and spring *p*, and with the web passing to said knife, substantially as described.

141,315.—*Rotary Printing-Press.*—WILLIAM BRAIDWOOD and HORATIO J. HEWITT, New York, N. Y. Application filed June 8, 1871.

The type-cylinder is constructed with furniture-rings *k l m*. The impression-cylinder is provided with a recess to receive a clamping-strip, for the purpose of retaining a tympan-sheet. With the type-cylinder and impression-cylinder of each set is combined a stripping-roller to insure the separation of the sheet.

Claim.—1. The furniture-rings *k l m*, slides A, and clamping-screws *j*, in combination with the forms and with the type-cylinder C, substantially as set forth.

2. The clamping-strips *r*, in combination with the tympan-sheet *s* of an impression-cylinder, D, substantially as described.

3. The stripping-rollers H H', in combination with the type-cylinders C C', impression-cylinders D D', and feed-roller I, substantially as set forth.

4. The feed-roller I positively geared with and in combination with the last impression-cylinder, substantially as and for the purpose set forth.

141,316.—*Apparatus for Extracting Saccharine Matter from Cane, &c.*—MARIUS S. BRINGIER, Ascension Parish, La. Application filed July 21, 1873.

The cane or other saccharine vegetable is first subjected to pressure, as in the ordinary sugar-mill, and then to subsequent treatment in accordance with the process set forth in the inventor's patent, No. 140,461, of July 1, 1873; or that portion of said process requiring the employment of digesters may be omitted, and the bagasse passed directly from the hasher to the final pressure-rollers. A cutting mechanism particularly adapted to cut bagasse is also described.

Claim.—1. The treatment of sugar-cane or other saccharine vegetable substance, for the purpose of extracting the saccharine therefrom, by first subjecting it to pressure, as in the ordinary sugar-mill, and then dividing or reducing it into small pieces, which are subjected to subsequent heating and pressure, substantially in the manner and by the means shown and described.

2. The method of extracting saccharine from sugar-cane and other vegetable saccharine substances by subjecting the same to preliminary pressure, as in the ordinary sugar-mill, followed by the process described in my Letters Patent, No. 140,461, of July 1, 1873, substantially as set forth.

3. The herein-described cutting mechanism for dividing the bagasse or other saccharine vegetable substance, the same being constructed and operating substantially as shown and specified.

141,317.—*Machine for Dressing and Crozing Barrels.*—WILLIAM BROWN, St. Louis, Mo. Application filed June 4, 1872.

The turning and crozing tools are attached to a sliding bar which is guided in its movement by an arm passing over a former having a curvature corresponding to the bulge of the barrel.

Claim.—1. The chuck, consisting essentially of the collars J K and draw-rods I, with device for operating the moving collar, substantially as set forth.

2. The combination of the tilting rest P, slider R, arm T, and guide U, substantially as and for the purpose set forth.

141,318.—*Reclining-Chair.*—GEORGE BUCHANAN, Washington, Pa. Application filed June 28, 1873.

The back legs extend to the lower side of the arm-rests, and are hinged thereto, so that when the arm-rests are released at their front ends they can be thrown up and form extensions of the back legs. The front ends of the arm-rests are provided with spring-bolts that are operated by pins passing through the upper ends of the front legs. The back is pivoted to the arm-rests, and also to the rear of the seat. The front of the seat rests loosely on a transverse round.

Claim.—1. The combination, with the chair-frame A B, of the hinged arm-rests C C, pivoted back D, and pivoted seat G, the front end of the seat being supported on the round A, all as herein set forth.

2. The spring-bolt *b* in the front end of the arm-rest C, in combination with the movable pin or bolt *d* in the leg A, for the purpose set forth.

141,319.—*Manufacture of Refined Cast-Iron.*—CHARLES BURGESS, Portsmouth, Ohio. Application filed March 21, 1873.

The furnace has a deep hearth and high bridge, and is used without a blast. The pig from the time it is melted remains at rest until jets of blue flame about the size of a candle-flame appear near the fire-bridge, when the tap-hole is opened and the metal run into shallow cast-iron molds.

Claim.—The process herein described for the manufacture of refined iron—to wit, reducing the pig to the condition of puddle upon the hearth of a reverberatory furnace separately from the fuel, then raising the heat and allowing the iron to remain in a state of rest until jets of blue flame appear, after which the charge is drawn.

141,320.—*Manufacture of Steel.*—CHARLES BURGESS, Portsmouth, Ohio, assignor to BURGESS STEEL AND IRON WORKS, same place. Application filed March 21, 1873.

The materials used are the ordinary cast-iron, and stone-coal for fuel. The iron having been brought to the state of fusion the stopper-hole is closed and the heat raised, the mass remaining at rest from five to fifteen minutes, or until blue flames appear. When the blue flames have disappeared, and the cinder begins to bubble up through the mass, the damper is closed and the mass rabbled and balled.

Claim.—The process herein described for manufacturing steel from cast-iron, in the puddling or reverberatory furnace—that is to say, exposing the mass to a high heat to burn out the impurities and partially decarbonize it; then working it with closed dampers; then reopening them for boiling, and subsequently closing them while the mass is acquiring its final spongy condition, after which it is withdrawn.

141,321.—*Polish for Stoves.*—ELI CHAMNESS, Greensburg, and JOHN VAUGHN, Chesterfield, assignors to themselves and JOHN RAYMOND, Greensburg, Ind. Application filed September 2, 1872.

Claim.—The combination of plumbago, soap, and glycerine, used substantially as and for the purposes set forth.

141,322.—*Wash-Boiler Attachment.*—CLARINDA P. CHAPMAN, Afton, Iowa. Application filed March 22, 1873.

A wash-boiler attachment constructed with a shield surrounding its bottom, with a center upright conductor for water and steam, separated by a center partition and cross partition at each end. To the center partition, at its upper end, is attached a curved cap to give direction to the water and steam for their distribution over the clothes.

Claim.—The wash-boiler attachment herein described, consisting of the bottom A, shield B, and cap G, and tube D, the bottom being provided with partition-walls *d f* h, substantially as specified.

141,323.—*Leak-Hinge.*—CHARLES B. CLARK, Buffalo, N. Y. Application filed June 23, 1873.

Double-inclined parts to avoid concussion.

Claim.—1. The inclines *a b* and plane *d* on the part B, in combination with the double inclines *e f* on the part A, substantially as and for the purposes set forth.

2. The bevel *i* on the latch C, in combination with the inclines *e f* and *a b*, substantially as and for the purpose set forth.

3. The elongated slot *j* and beveled latch C, in combination with the inclines *a b e f* and plane *d* of the parts B A, substantially as and for the purpose set forth.

141,324.—*Expansive Bit.*—WILLIAM A. CLARK, New Haven, Conn. Application filed December 5, 1872.

Claim.—An adjustable or expanding bit having its cutter B secured in a recess in its shank by means of the clamp C and screw *c*, substantially as shown and described.

141,325.—*Rotary Meter.*—ISAAC COOK, St. Louis, Mo. Application filed June 24, 1873.

Two axially-perforated diaphragms are arranged one above and the other below the wheel, and are made conical to increase the water-space vertically toward the center. The outflow-passage communicating with the upper and lower discharges is provided with means to regulate the quantity of water passing through the two passages to balance the wheel vertically. The bucket-wheel, and shaft are made of hard rubber to prevent corrosion, the upper end of the shaft bearing against the glass face to admit of its inspection and enable the proper vertical adjustment.

Claim.—1. Bucket-wheel consisting of a disk, L, and buckets *l* and shaft M, all constructed of hard rubber, as and for the purpose set forth.

2. The combination of the peripheral water-inlet B, horizontal wheel L *l* at or near the mid-height of the water-inlet, and upper and lower axial discharges *o p*, substantially as set forth.

3. The combination of the water-inlet B, wheel L *l*, and conical diaphragms O P, as set forth.

4. The combination of wheel L located at the mid-height of the water-inlet B, the outflow-passages *o p* S R, and adjusting screw or pin *s*, substantially as set forth.

5. The combination of the meter-shaft M and glass top bearing W, substantially as and for the purpose set forth.

6. The combination of water-passage B, adjustable plate H, temper-screw I, and automatic tongue h, substantially as set forth.

141,326.—*Car-Starter.*—JOSEPH CORNELL, Lind, Wis. Application filed January 18, 1873.

Claim.—In combination with the toothed wheel of a street-car, the hand-lever provided with the two pawls, when arranged as shown and described, so that the vibration of the lever causes a continuous forward strain upon the wheels.

141,327.—*Car-Mover.*—RENSSELAER A. COWELL, Cleveland, Ohio. Application filed June 18, 1873.

The head of the car-mover is cast hollow to receive the holding-dog, which is operated by a sliding bar, chain, and bolt. To the head are pivoted two staves or legs operated by the vibration of the handle, also pivoted to the head, and provided with holding-feet, formed with sharp holding-edges in the axial line of their staves.

Claim.—1. An adjustable holding-dog combined with the hollow cast head of a car-mover, substantially as described, for the purpose specified.

2. The holding-dog D, operated from the head A by means of the sliding bar C, chain N, and the operating-bolt O, substantially as described, for the purpose specified.

3. In combination with the hollow head carrying the adjustable holding-dog, the hinged plate G carrying the operating-handle, and the pivoted staves carrying the holding-feet J, substantially as described.

4. The cast-metal feet J, formed with sharp holding-edges in the axial line of their staves, substantially as described, for the purpose specified.

5. The cast-metal staff-sockets constructed with claws to embrace the tread of a railroad rail, when their rear faces are beveled to admit of their holding-edges being ground, substantially as described, for the purpose specified.

141,328.—*Cotton-Planter.*—WILLIAM J. COX and WILLIAM T. SMITH, Lilesville, N. C. Application filed June 17, 1873.

A delivering-spout, having its upper end cut in form of a lip to receive and agitate the grain, revolves in a hopper; the lower end is provided with a gear-wheel which is driven by a wheel on the main axle, so that when the drive-wheels move forward a rotary motion is given to the spout.

Claim.—The vertical seed-delivering tube *e*, cut as described at the upper end, with a lip, *i*, on one side, and operated by the gears *d b*, shaft *a*, and wheels J J, as set forth.

141,329.—*Machine for Bending Sheet Metal.*—WILLIAM F. COZENS and WILLIAM H. WIGGIN, St. Louis, Mo. Application filed October 18, 1872.

The lever-plate is provided with a concavity on its applied edge. The operator is able to change the degree of the curve without withdrawing the work from the vise. The leaf is connected to the machine by means of hooks, and can be readily detached.

Claim.—1. The leaf F provided with the concavity A, in combination with the jaws *b b'*, as described, for the purpose set forth.

2. The leaves E F having hooks *e f*, in combination with the studs *c' c'* upon the iron C, as described, for the purpose set forth.

141,330.—*Method of Coating and Ornamenting Walls and Ceilings.*—JAMES H. CRITTENDEN, Fall River, Mass. Application filed January 28, 1873.

The walls are first sized, and then flock of any or various colors, according to taste, is applied directly to said walls by compressed air or other suitable means.

Claim.—The method herein described of coating and ornamenting walls and ceilings by means of flock applied directly to the same, substantially in the manner specified, and for the purpose set forth.

141,331.—*Corpse-Cooler.*—SAVILLA H. CRUMP, Reading, Pa. Application filed April 30, 1873.

Claim.—1. A corpse-preserving case in which the boxes containing the freezing-mixture are separated by partitions from the

central chamber but are in communication therewith, substantially as described.

2. The combination, with the corpse-preserving case, of longitudinal partitions G, formed wholly or partially of glass, and separating the interior of the said case into central and side chambers, as specified.

3. The combination of the ice-boxes D, the partitions G, and the doors B in the sides of the case opposite the ice-boxes.

141,332.—*Sewing-Machine.*—CYRUS S. CUSHMAN, of Philadelphia, Pa., assignor to ROBERT D. STOOPS, same place. Application filed June 4, 1873.

The clutch controlled by the stop and operated through a system of levers from the main shaft engages the lifting-bar secured to a projection on the presser-bar and raises the presser a certain distance above the cloth, whatever may be its thickness. The two pins are secured by screw connection, and support the vibrating needle and presser-operating arms.

Claim.—1. The clutch F, in combination with the presser lifting-bar H, stop G, and tension-spring P, for elevating the presser-foot, substantially as described.

2. The pin Q having screw-thread *l*, in combination with the fulcrum-pin R having screw-stem *m*, substantially as and for the purpose set forth.

3. The combination of the lifting-bar H, having a slotted arm, *f*, the presser-foot bar L, having a neck, *g*, and arm *h*, and the stock J, having in its upper end a vertical groove, *i*, for securing the presser-foot in its lower and allowing it to be turned laterally when in its upward position, substantially as set forth.

141,333.—*Manufacture of Chlorine.*—HENRY DEACON, Lancaster county, England. Application filed July 18, 1873.

Claim.—The employment of a mixture of an inactive but accelerating substance, such as sulphate of soda, with an active substance, such as sulphate of copper, for the production of chlorine in what is known as Deacon's process for the manufacture of chlorine.

141,334.—*Bridle-Bit.*—VINCENZO COUNT DE TERGOLINA, Bernard Street, England. Application filed April 12, 1873.

Claim.—In combination with the cheek-plates *c*, the loose side levers *m*, as and for the purpose described.

141,335.—*Shifting-Rail for Carriage-Seats.*—HERRMAN DRESSEL, Springfield, Vt. Application filed July 1, 1873.

The rail can be adjusted to seats of different sizes.

Claim.—The combination of the extension-bars *a a a'*, tubular connections *b b*, and the supporting-brackets *c*, the whole adapted to the seat of a carriage, substantially in the manner shown and described.

141,336.—*Ticket Printing and Registering Apparatus.*—JOHN DYER, Chicago, Ill. Application filed May 9, 1873.

A strip-ticket, consecutively numbered and printed with the initial station, is fed automatically a distance equal to the ticket's length by a sparred cylinder at each vibration of the actuating-lever, and completed by being printed with the terminal station, the name of which is upon a die which is removable and changeable, and which also registers the printing upon a numbered strip automatically advanced, as in the former patent. The ticket thus completed is cut off by a vibrating knife.

Claim.—1. A continuous consecutively-numbered and partially-printed ticket-blank, in combination with suitable mechanism for feeding said blank forward, and for completing and severing the completed tickets, substantially as and for the purpose specified.

2. The means employed for operating the feed-roller E', consisting of the pawl G', pivoted upon and moving with the arm M, and the ratchet-wheel H'', secured to said roller and engaging with said ratchet, substantially as set forth.

3. The means employed for operating the feed-roller E'', consisting of the disk Q, pivoted upon the shaft H', the curved bar R' pivoted to said disk and to the arm M, and the pawl S' pivoted upon said disk Q', and engaging with a ratchet-wheel, H'', attached to said roller, substantially as is shown and described.

4. In combination with the feed-rollers E' and E'', provided with the notches *e''*, the detents I', provided with the spurs *i'*, and pivoted to or upon the casing A, substantially as and for the purpose specified.

5. In combination with the feed-rollers E' and E'' and detents I', provided with the lugs *i''*, the shaft L', journaled within the casing C, and provided with the arms M' and K', and the cam O', secured upon and revolving with the shaft H, substantially as and for the purpose shown.

6. The station and register dies S, consisting of the angle-plate base, provided with the type *s*, the spur *s'*, and the opening *s''*, substantially as and for the purpose set forth.

7. In combination with the die S, provided with the spur *s'* and opening *s''*, the spring-bar T, provided with the opening *t*, fitted into the face of the die-holder L, and engaging with said spur *s'*, and the spring-latch U working within the end of said die-holder, and engaging with said opening *s''*, substantially as and for the purpose shown and described.

8. In combination with the feed-rollers E' and E'', provided with the engaging studs *e'*, the springs F', partially encircling said rollers and pressing against the same, the register and ticket blanks, substantially as and for the purpose specified.

141,337.—*Hat-Stretching Machine.*—RUDOLPH EICKEMEYER, Yonkers, N. Y. Application filed July 11, 1873.

A radial sectional clamp is arranged to firmly hold the hat when interposed between the coincident radial surfaces of the sections, one of which is inside the hat and the other outside. A sectional stretcher engages with the hat in like manner, with radial arms which occupy the spaces between the radiations of the clamp. The clamp is stationary, but the stretcher is capable of being partially rotated on the axis, from which its several arms radiate. By moving the stretcher to the right or the left the several portions of the hat between the radiating holding-surfaces of the clamp are strained or stretched. A spring is arranged to secure the sections of the stretcher in proper position.

Claim.—1. In a hat-stretching machine, the combination, substantially as described, of a sectional clamp, arranged to hold an interposed hat or hat-body by means of coincident radial compressing-surfaces, with a sectional stretcher composed of radial arms provided with coincident hat-holding surfaces, arranged to engage with the hat-body at points thereon between the radiations of the clamp, and also so arranged that its several stretcher-arms, while engaged with the hat, will be capable of being laterally vibrated, as and for the purposes specified.

2. The combination, with a sectional stretcher, of a spring, which is arranged to engage therewith, substantially as described.

141,338.—*Expansible Hat-Block.*—RUDOLPH EICKEMEYER, Yonkers, N. Y. Application filed June 28, 1873.

Numerous non-pivoted block-sections are arranged around a common center, to form, as a whole, a round or oval hat-block. Each section has an interior inclined edge which engages with an interior circular head-plate, having an inclined edge which corresponds with the inclined edge of each section. The vertical play of the head-plate forces each section bodily outward radially from the center. A foot-plate is provided with a series of slots, arranged as to position so as to correspond with the arrangement of the sections. Each end of each slot is inclined to correspond with the inclined edge of the head-plate, and the bases of the sections occupy the slots and have edges which are inclined to correspond therewith, so that the said bases of the sections are forced outward or drawn inward, respectively, by the raising and the lowering of the foot-plate.

Claim.—1. An expansible hat-block composed of non-pivoted sections, which are actuated radially by one or more interior inclined planes, substantially as described.

2. The combination of the several sections of an expansible hat-block with an inclined plane, which not only advances but withdraws the sections in radial lines.

3. The combination, in an expansible hat-block, of the several sections, the foot-plate, head-plate, and operative lever, substantially as described.

4. The combination, with the size-gage, of a lever holding-hook which maintains a fixed relation to the gage-block, substantially as described.

141,339.—*Machine for Lustering Hats.*—RUDOLPH EICKEMEYER, Yonkers, N. Y. Application filed July 25, 1872.

Claim.—1. The independently-driven and rapidly-revolving lustering-wheel, and the revolving oval hat block chuck mounted on separate spindles, the positions of which are variable with relation to each other in a plane common to the longitudinal axes of both, in combination with the movable guide for controlling the chuck and the mechanism for connecting the movable guide with the axis of the lustering-wheel, substantially as described, whereby the hat-block chuck will be made to revolve in concentric or eccentric lines, respectively, in proportion as the axes of the wheel and chuck are in or out of coincidence, as and for the purposes specified.

2. The combination, substantially as described, of the oval or eccentric chuck for carrying and rotating the oval hat-block with the mechanism for controlling its eccentricity while in motion, whereby, without change in the rapidity of its rotating movement, the hat-block may be made to revolve concentrically or eccentrically, as and for the purposes specified.

3. The combination of the brim-bed G with the lustering-wheel, substantially as described, and for the purposes specified.

141,340.—*Means of Propelling Vessels.*—JAMES W. EVANS, New York, N. Y. Application filed March 1, 1873.

Open-mouthed cylinders are arranged at the stern of a vessel and have branch-pipes leading from them toward the bow, so that when the water-pistons are drawn in the water flows through the branches and joins with the main body of water aft to assist in forming a resisting medium for the pistons when they are pushed out.

Claim.—The combination of the cylinders A A, provided with branches G G, and arranged at an incline to the keel of the boat, and the pistons B B and their valves *a a*, essentially as and for the purpose set forth.

141,341.—*Stump-Extractor.*—IRA FLANDERS, Paw Paw, Mich. Application filed July 5, 1873.

Claim.—1. The combination, with the lever of a stump-extractor, of the rack-bar *b*, lever E, rods *d d* with cross-bars *i i*, and the bearing-block G, all substantially as and for the purposes herein set forth.

2. The combination of the beam A, frames B, lever C, tackles D, rack-bar *b*, lever E, rods *d i*, block G, links *f*, and chain H, all substantially as and for the purposes herein set forth.

141,342.—*Device for Reducing and Screw-Threading Rods.*—ROBERT F. FOWLER, Canton, Ohio, assignor to himself and CHAS. T. MARTINCOURT, same place. Application filed June 6, 1873.

Between two plates which form part of the cutter-head are situated four adjustable cylindrical cutters for cutting screw-threads, which are pivoted upon clamping-bolts that serve to prevent the cutters from turning, and extending from one of the plates is a guide-sleeve for directing the bar between the cutters. Reducing-cutters of a peculiar form are used interchangeably with the screw-thread cutters for reducing rods before cutting the threads.

Claim.—1. The herein-described cutter-head A B C D, consisting of the base-plate A, with guide-sleeve *a*, top clamping-plate B, axial clamping-bolts C C C inserted in spirally-arranged bolt-holes *b b b*, and thread-cutters D D D, having their thread-cutting edges arranged in different planes, so as to follow the screw-thread on the bolt or pipe, the several parts being combined and operating as herein specified.

2. The shaft-cutters F, having their cutting-edges *h i* formed as described, in combination with the cutter-head A B C, substantially as and for the purpose herein specified.

141,343.—*Steam-Engine.*—ANDREW FRASER, Virginia City, Nev. Application filed May 2, 1873.

By means of the system of valves and the arrangement of the pipes shown the steam-cylinder may be used as a pump to force air into a suitable reservoir.

Claim.—1. The steam-cylinder A A, provided with the steam-valve N and automatic air-valves H H I I, in combination with the pipes O O, valve J, and an air-receiver, substantially as described.

141,344.—*Reamer for Enlarging Oil-Wells.*—MARTIN GILLESPIE, Smith's Ferry, Pa. Application filed June 17, 1873.

A tubular centering device. The size of the original bore is placed at the top of the well, filled again with sand, and the reaming-tool is adjusted thereto, by a pin at the end, which fits into the tube of the centering device, and thus guides the cutter.

1. A reaming-tool having the cutter *b* and pin *b'*, combined with a centering device that receives said pin.

2. A centering device, C, for a reamer, made tubular.

141,345.—*Bit-Stock.*—ALBERT D. GOODELL, Miller's Falls, Mass., assignor to MILLER'S FALLS MANUFACTURING COMPANY, same place. Application filed December 16, 1872.

The jaws which clasp the shank of the tool are united by a U-shaped metal spring which enables the jaws to readily adjust themselves to shanks of different shapes.

Claim.—The self-adjusting jaws D D, and spring *c*, in combination with cylinder A and screw-sleeve C, constructed and operating substantially as and for the purpose described.

141,346.—*Animal and Insect Trap.*—WILLIAM W. HANNAH, Hudson, N. Y. Application filed May 20, 1873.

Claim.—1. The trap-doors *m*, constructed of mica, for the purpose set forth.

2. The trap-doors *m*, pivoted upon needles extending through slits or holes in the mica, substantially as described, for the purposes specified.

3. The trap-doors *m*, combined with the plate G, having supporting and protecting flanges *h* under the doors, substantially as described, for the purposes set forth.

4. The passages leading toward the bait-holder, the pivoted doors *m*, the side-flanges *i i'*, the overarching flange I, and the projecting cover I', combined and arranged substantially as and for the purposes described.

5. The inclines *f*, arranged around the trap and combined with the openings *d* and *e*, substantially as described, for the purposes set forth.

6. The combination of a single central bait-holder, H, and a single receiving-chamber, B, with a series of passages arranged above the receiving-chamber and converging toward the bait-holder, substantially as and for the purposes specified.

7. The parts I I' H *m i' h* and plate G, which fits the top of the chamber B, when said parts and plate are constructed, combined, and relatively arranged in the manner described.

141,347.—*Lathe.*—DAVID HERR, Philadelphia, Pa., assignor to HENRY D. HIRST, same place. Application filed April 5, 1873.

The lathe-spindle carries a former, which, in connection with a stationary inclined bar, guides the cutting-tools.

Claim.—1. The combination, with a former, E, of a carriage operated by the former, and provided with a series of independent cutters, B, attached to levers B', and adjustable to and from the work, substantially as set forth.

2. The combination, with the carriage, of the head A', carrying the cutter-levers, and adjustable on a vertical axis, *s*, as and for the purpose set forth.

3. The combination, substantially as described, of the said cutter-levers B' with the yielding cam-like incline *i*, and fixed projection *i'*.

4. The combination of the arm G on the carriage, the spring-rod F', and the devices described, through the medium of which the said rod may be released by the arm.

5. The combination, with the former E and arm D, of the carriage, projection *b*, and trigger *c*, substantially as and for the purpose set forth.

141,348.—*Rotary Churn.*—ELISHA A. HEWITT, Groton, Conn. Application filed February 12, 1873.

A horizontal revolving shaft having rows of curved arms, concave on their working sides; a flange from the shaft, concave on the same side, fitting closely to the inner ends of the arms; the case having abutments inclining from the center of the sides toward the ends.

Claim.—The combination of the arms C radiating from the shaft, the projecting ribs P upon opposite sides of the said shaft and in the relative position to the arms described, with diagonal ribs or abutments M M upon opposite sides of the churn, the angles of the said ribs M upon one side being the reverse of the angles of the ribs on the opposite side, all substantially as described.

141,349.—*Ejector.*—GEORGE HERBERT, Wheeling, W. Va. Application filed July 16, 1873.

A plurality of steam-nozzles and water-nozzles converging toward a central point in a chamber common to all, so as to concentrate their streams, and thus augment the aggregate effect.

Claim.—1. The improved siphon-pump herein described, having a plurality of steam-nozzles, J, and water-nozzles K, arranged so as to converge toward a given central point in the force-chamber or discharge-pipe, so as to concentrate their jets or streams, as set forth.

2. The combination of the inlet *z*, suction-chamber F, force-chamber G, perforated diaphragm I, annular steam-chest H, and nozzles J K, as specified.

141,350.—*Car-Axle Box.*—HENRY H. HILL and GEORGE M. SARGENT, Moline, Ill. Application filed April 23, 1873.

The lining is detachable, and may be replaced when worn.

Claim.—A journal-box, consisting of a malleable-iron shell, in combination with a detachable lining, B, all constructed and arranged to operate as described, whereby we are enabled to use a light shell and replace the lining at will, as set forth.

141,351.—*Photography.*—WILLIAM H. HILL, Worcester, Mass. Application filed March 7, 1873.

Claim.—A photographic plate, consisting of a sheet coated with a composition of collodion and kaolin, or equivalent opaque backing, and having a surface film solely of wax or paraffine, substantially as described.

141,352.—*Electro-Magnetic Date-Time Printer and Stamp.*—JOHN C. HINCHMAN, Summit, N. J. Application filed February 24, 1873.

A time-piece, provided with minute, hour, and calendar wheels, having raised figures and letters on their edges, arranged in line side by side, and operated from the time-piece by a pawl and armature lever of a magnet, is combined with a suitable inking and spring-plate device, so that the time and date may be at any time printed, either by a hand-pad or by the action of a second electro-magnet.

Claim.—1. In a time-printing machine, the combination of an electro-magnet, K *k*, and a time-transmitter, N O P, with printing-wheels and a lever, J, connecting with and operating said wheels.

2. A time-printing machine having the combination therein of printing devices, an electro-magnet for operating such devices, a transmitter of time thereto, and a presser operated by an electro-magnet.

3. In a time-printing machine having the combination next-above stated, and a hand-stamp arranged to be operated to make the record of time without interfering with the electro-magnetic connection, thus combining the facilities of an automatic and a hand stamp in one machine.

4. In a time-printing machine, the meridian-wheel E, having its ante and post divisions A and P arranged to operate in combination with a fixed meridian division, M, as described.

5. The hour and meridian wheels B E, operated by means of cams G G', arranged upon the axis F' of the minute-wheel F, as described.

6. The escapement-lever J with its pawls L n^2, stop n^3, and ratchet-wheels M n^1, and their stop-pawls m n, to form a positive lock to the lever, as described, in a time-printing machine.

7. The arrangement, in a time-printing machine, of the dial S and its indicating-hands upon the shaft F' of the minute-wheel, in combination with the lever J, which operates both the printing-wheels and the indicator, to determine the position of the printing-wheels for correct time printing and to indicate the required changes of the wheel for that purpose, as described.

141,353.—*Mold for Casting Stench-Traps.*—ALBERT H. HOOK, New York, N. Y., assignor to CHAS. F. HERVEY, C. C. TRACY, and WM. A. SHAW, same place. Application filed April 16, 1873.

Claim.—The herein-described apparatus for casting S and half-S lead or composition plumbers' traps in one piece, consisting of a metallic mold formed as described, in combination with a sectional metallic core, a^1 b^1 c^1, each section straight from end to end, the end sections joining the intermediate section at opposite ends thereof, and said intermediate section provided with a screw-thread, *d'*, said parts being fitted together and adapted for joint operation as herein shown and set forth.

141,354.—*Brewer's Stocking-Cask.*—JOHN JAKEL, Detroit, Mich., assignor to himself and F. LOUIS DOHMSTREICH, same place. Application filed April 8, 1873.

Sheet-iron cask, tinned on its inner surface, with a peculiar man-hole cover upon one head. The valve is so arranged as to open when the tap is screwed in, and to close when the tap is removed.

Claim.—1. The metallic stocking-cask A B C, constructed as herein described, provided with the man-hole plate B', as herein shown and set forth.

2. The bung D, provided with the angular passage *a*, and screwed into the bung-rim D', as shown and set forth.

3. The valve-cylinder E, provided with the perforated diaphragm *c*, the valve-stem *d*, and valve *f*, in combination with the faucet F provided with the perforated diaphragm *e*, as and for the purpose set forth.

141,355.—*Cotton-Scraper.*—WILLIAM JARRELL, Humboldt, Tenn. Application filed June 14, 1873.

An extension or toe piece is formed on the plow-frame extending leftward from the front standard, by which a firm seat is formed for the scraper, and its center is brought in the line of draft.

Claim.—The obliquely-extending frontward and leftward toe-piece F G H of the standard C, in combination with the scraper I and beam E, all constructed and arranged as shown and described.

141,356.—*Sash-Balance.*—GEORGE N. JOEL, New Philadelphia, Ohio. Application filed June 18, 1873.

Sliding shaft with pinion, to engage with rack on sash, with springs and slides on pinion.

Claim.—The combination of the shaft *b*, pinion *d*, toothed slides *f f*, springs *e e*, and stops *h h* and *m m*, all substantially as and for the purpose herein set forth.

141,357.—*Manufacture of Boots and Shoes.*—JOSEPH L. JOYCE, New Haven, Conn. Application filed June 18, 1873.

Claim.—1. In the manufacture of boots and shoes, the insole beveled from the lower side back toward the top, and from the upper, or so as to form a space between the edge of the insole and the upper, substantially as and for the purpose specified.

2. In combination with the insole beveled so as to form a space between the edge and upper, as described, the outsole formed with a recess or upwardly-projecting edge, substantially as and for the purpose described.

141,358.—*Paper-Making Machine.*—NICE KEELY, Philadelphia, Pa., assignor to himself and WILLIAM P. OUTERSON, Akron, Ohio. Application filed April 30, 1873.

The blanket and its adhering web of pulp pass between wire-covered straining-rollers, into which the water is expelled, and from which it is conducted by interior buckets inclined from the middle to the journal ends.

Claim.—1. The combination, in a paper-making machine, substantially in the manner described, of a straining roller or rollers with the endless blanket, for the purpose specified.

2. The within-described straining-roller, composed of a shaft having longitudinal inclined channels formed by ribs *c*, to which is attached the perforated circumference of the roller, as set forth.

141,359.—*Straw-Burning Attachment for Steam-Boilers.*—DAN. W. KELLOGG, Battle Creek, Mich., and BERNARD C. COFFIN, New York, N. Y. Application filed March 3, 1873.

The sliding front being raised, fuel, such as straw from threshing-machines, is introduced into the furnace by means of the pivoted apron. A small door is provided in said front for the introduction of ordinary fuel.

Claim.—1. The combination with the standards B B, attached to an open fire-box boiler, and the front C, sliding in said standards, of the apron G, substantially in the manner and for the purpose set forth.

2. The combination, with the sliding fire-front C, of the fire-door F, as and for the purpose set forth.

141,360.—*Bottling Liquid.*—JOHN KLEE, Dayton, Ohio. Application filed June 16, 1873.

The perforated plunger-tube has a sharpened end, which is brought down upon the stem of the stopper with sufficient force to fasten the stopper to it and hold it away from the mouth during the operation of filling, and afterward drawing it into position in the neck of the bottle.

Claim.—1. The pointed perforated tube I for filling the bottle from the bottom upward, and drawing the stopper into position for closing the bottle, substantially as shown and described.

2. The method described of drawing the stoppers into position by the plunger, substantially as specified.

141,361.—*Steam-Injector.*—ERNST KORTING, Vienna, Austria. Application filed May 23, 1873.

The steam that escapes condensation is passed into a second nozzle and then bringing it again in contact with the condensing water. An exhaust is used for withdrawing any air that may find its way into the condenser.

Claim.—1. A jet-condenser, in which all the steam is passed through a condensing-nozzle with the water-jet, and then the remaining uncondensed steam conducted into a second nozzle, and again brought in contact with the water, when constructed substantially as herein shown and described.

2. A jet-condenser having two or more condensing-nozzles, so arranged that the steam which is not condensed in the first or main nozzle can pass to the others, substantially as described and shown.

3. In combination with a jet-condenser, a jet-exhauster, constructed and applied substantially as shown, and for the purpose set forth.

141,362.—*Fence-Post Stub.*—GEORGE LAKINS, East Norwalk, Ohio. Application filed May 16, 1873.

A drive-stub formed of vertically-intersecting flanges internally notched to form a socket for the post, and connected at their upper ends by a horizontal cap-plate covering said ends, all cast in one piece to secure strength in driving and avoid joint-rusting.

Claim.—The cast-iron drive-stub for fence-posts, consisting of the vertical flanges *c*, centrally connected in their lower portion, and separated in their upper portion by the internal notches to form a socket, c^2, and the convex cap c^1 covering and connecting the upper ends of the separated portions of the flanges, all said parts being cast in one piece, substantially as specified.

141,363.—*Horse-Power.*—ZACHARIAH P. LANDRUM, Columbus, Miss. Application filed May 27, 1873.

Claim.—The combination of wheel B, bars C C′, having, respectively, step and shoulder sweep D and oblique bar E, in the manner and for the purpose described.

141,364.—*Washing Fluid.*—NATHAN W. LANE, Mendocino, Cal. Application filed March 31, 1873.

Refined potash, carbonate of potash, liquor of ammonia, bicarbonate of soda.

Claim.—A washing-fluid composed of the ingredients above enumerated, compounded in the proportions above specified.

141,365.—*Hoe.*—THOMAS B. LOCKWOOD, SMYRNA, Del. Application filed December 19, 1872.

Claim.—The hoe herein described consisting of an elongated eye made of malleable iron, with a square shoulder on its inside face, and a blade fitted to said shoulder and secured by rivets to the eye-plate, as specified.

141,366.—*Machine for Dressing the Teeth of Saws.*—JOEL LUCIA, Little Suamico, Wis. Application filed October 26, 1872.

The saw is fastened to the block E and so adjusted that the back of one tooth shall rest upon the holder C, the block *w* being raised to bear against the saw and prevent its turning. The cutter has a convex edge that operates to gouge out a portion of the metal near the point of the tooth.

Claim.—1. In a machine for forming saw-teeth, the tool a^3, armed with the under cutter *d*, in combination with the shaft a^1, eccentric a^2, upper die *c*, and adjustable block E, substantially as specified.

2. The adjustable block E, adjusting-screw F, gearing I, vertical shaft H, and hand-wheel *n*, combined substantially as specified.

3. The adjustable block L, shafts K J, and hand-wheel J′, in combination with the slotted frame A of a machine for forming saw-teeth, substantially as specified.

141,367.—*Sewing-Machine Motor.*—GEORGE W. MANSON, Auburn, Me. Application filed January 20, 1873.

Claim.—1. In a sewing-machine motor, the frame H, suspended from and turning freely upon the winding-shaft C, and carrying the pawl I, in combination with the winding-ratchet G, treadle J, and connecting-rod K, arranged to operate as described.

2. The spring O, in combination with the treadle J, and the swinging frame H arranged to maintain the treadle and winding-pawl frame in position to wind the driving-spring without loss of motion, as described.

3. The stops *s s* and spring O, in combination with the treadle J and the swinging frame H, when said stops are arranged to support the treadle and frame H in positions for use against the action of the spring O, as described.

4. The ratchet-wheels G M, having teeth constructed to receive and hold rubber bands, as described, whereby the clicking noise of the spring-pawls is avoided in winding up the power.

141,368.—*Implement for Washing Windows, &c.*—THOMAS J. MAYALL, Boston, Mass. Application filed June 28, 1873.

Claim.—The herein-described implement consisting of a tubular perforated stem fitted with a sponge, held thereon by a nut and washer of rubber, said stem being adapted to connect with a water pipe or hose, either directly or through the intermediary of a handle, as shown and set forth.

141,369.—*Apparatus for Teaching in Schools.*—MALCOLM MCVICAR, Potsdam, N. Y. Application filed April 28, 1873.

A series of slide-bars are arranged to move horizontally in the sides of a supporting-case, and to cover or uncover different sets of figures at the pleasure of the teacher. A sliding frame for holding various objects slides in ways back of the slide-bars.

Claim.—1. In apparatus for teaching in schools, the slide-frame *c*, constructed substantially as described, and adapted for presenting either cards, letter-blocks, or other objects before the opening, as specified.

2. An apparatus for teaching in schools, consisting of the frame *a*, hinged slat-frame *b*, slide-bars 1, and slide frame *c*, substantially as described.

141,370.—*Horse Hay-Rake.*—JOHN H. MEARS, Oshkosh, Wis. Application filed April 26, 1873.

The rake-head of a sulky-rake is adjusted vertically by means of arms pivoted to the frame, and the teeth adjusted horizontally by means of washers and set-screws.

Claim.—1. The castings A′′′′, riveted to the sides of the frame A supporting the stub axle, and provided with the ears *a* and *c* for supporting the swinging arms E, in which the rake-head D is pivoted, substantially as and for the purpose set forth.

2. The rake-teeth A, adjustable in its relation to the upper side of the rake-head by means of the U-shaped curvature *k*, in combination with the bolts and washers *i* and staples *z*, constructed and operating substantially as and for the purpose set forth.

141,371.—*Reverberatory Furnace.*—JOHN MORRISON, Joliet, Ill. Application filed May 8, 1873.

The arrangement of the furnaces side by side and in reverse order permits the products of combustion from either furnace to pass through the other, being admitted to the second through the fire upon the grate thereof and over the fire-bridge, insuring perfect consumption of the waste gases. The flues may be filled with fire-bricks, and act as regenerators.

Claim.—The combination of the two reversed furnaces A and B, their stacks *a* and *d*, the connecting-flues *g* and *f*, and the dampers in the said stacks and flues, all substantially as and for the purpose specified.

141,372.—*Apparatus for Heating and Ventilating Railroad Cars.*—THOMAS H. MOTT, New York, N. Y. Application filed May 2, 1873.

An outside spring left open below and arranged so that it is compressed in bringing the two sections or halves of the joint together, so that the rubber tube in sagging is free from abrasion by the spring. The coupling heads are provided with tooth-shaped guides projecting beyond the faces or ends of said heads at suitable distances apart around their peripheries, whereby the half-couplings are automatically guided.

Claim.—1. The combination of the springs D of a spiral-arched construction, or made open below with the rubber or flexible tubes B, arranged to pass within said springs, and the half-couplings or heads C carried by said springs, substantially as specified.

2. The coupling-heads C provided on their peripheries with wedge or tooth shaped guides G, arranged to project in front of the faces of said heads, essentially as described.

141,373.—*Self-Winding Watch.*—DON J. MOZART, Ann Arbor, Mich. Application filed May 14, 1873.

The winding mechanism is operated by opening and closing the case. The detent-pawl is automatically disengaged from the toothed wheel on the barrel arbor, so that the spring will not be sustained beyond a proper point of winding.

Claim.—1. The combination of the hinged part G of the outer casing, the connecting-bar E, slide I with tooth or arm J, and the wheels *f f′* having the cams *i i*, substantially as and for the purposes herein set forth.

2. The combination, with the shaft *a* and mainspring D, of the cog-wheels *f f′* with cams *i i*, and the spring-pawl A, constructed and arranged substantially as and for the purposes herein set forth.

3. The combination of the single-toothed wheel *b*, wheel *d* with flange *e*, and the rocking bar *p* with pin *s*, constructed and arranged substantially as and for the purposes herein set forth.

141,374.—*Seat or Back of Chairs.*—RICHARD W. MYERS, New York, N. Y. Application filed January 16, 1873.

The bottom or back is constructed of alternate layers of veneer and paper, glued or otherwise suitably connected together.

Claim.—A seat or back for a chair or other article of furniture for sitting or recumbent purposes, composed of alternate layers of veneer and paper, or vice versa, substantially as shown and described.

141,375.—*Plow.*—CHARLES O. NASON, Moline, Ill., assignor to DEERE & Co., same place. Application filed June 21, 1873.

Plates with a recess or socket and set-screw, for the double purpose of a clevis and an adjustable holder for the arms of the plow-wheel.

Claim.—1. The clevis jaw-plates B B, when constructed with sockets or recesses D, for the purpose specified.

2. The combination of the plates B B, having sockets D, with the gage-wheel bands F, beam A, and thumb-screw or nut C, for the purpose specified.

141,376.—*Fire-Proof Safe.*—DAVID O. PAIGE, Detroit, Mich. Application filed August 14, 1872.

Claim.—In a fire-proof safe, a door and a door-frame, when their impinging or contiguous surfaces are constructed of or from corrugated plates of wrought metal, substantially as and for the purpose specified.

141,377.—*Carriage-Top.*—WAYNE I. PECK, Carthage, N. Y. Application filed May 5, 1873.

The top frame *i* are connected by a cushion, which forms a complete back-rest.

Claim.—1. The hinged seat A, having the notched arc or hook *b* and staple *c*, for the purpose of holding the seat up while bringing the frame E in position, as set forth.

2. The carriage-top frame, composed of the sides and cushion-back K, connecting-bar D with dogs I, as described, and for the purpose set forth.

3. The top frame E, bar D, journal-boxes *a c*, arms or dogs I, socket-frames H, levers F F with hand-bar G, and springs *f*, all combined and arranged as described, and for the purpose set forth.

141,378.—*Fire-Escape.*—ABRAM PELHAM, Plymouth, Mich., assignor to himself, LAFAYETTE C. HALL, and SEBE H. FAIRMAN, same place. Application filed April 5, 1873.

The unwinding of the reel actuates the piston by means of the screw-threaded shank. The piston meets with the resistance of the water in the confined chamber, which can only escape therefrom by a narrow opening. This resistance is regulated by the screw-valve G to any required extent.

Claim.—The construction and arrangement of the frame A, reel B with its nut B′ and stud *b* projecting into the groove *a* of the threaded piston-rod D, the piston E, cylinder F provided with the passage *c* and valve G, and the cord H, substantially as and for the purpose set forth.

141,379.—*Manufacture of Glue.*—WILLIAM PLUMER, Lexington, Mass. Application filed January 20, 1873.

The cases are connected by suitable pipes to a heater or steam-chest having a series of air-pipes, whereby the air is heated before entering the drying-cases. The liquid glue is fed to the trays by a hose-pipe, and when the trays are filled the case is closed and air-currents induced by a blower or exhaust. The air, being passed over the glue in fan-shaped currents, prevents the wavy formations in the product.

Claim.—1. The combination of a series of compartments, C, provided with an air-blast and dampers for shutting off the blast from any one or more of the series, whereby either of the compartments can be emptied or replenished at will while the others are being operated on by the blast, substantially as described.

2. The combination of the drying frame or racks *m* with the supply-pipes H and the pipes I, having the narrow slits therein, arranged to deliver the air over or across the pans or racks in a fan-like form, substantially as described.

141,380.—*Machine for Shaping Piano-Keys.*—MILON PRATT, Deep River, Conn. Application filed May 23, 1873.

By the traverse of the tool-carrier C the ends of the keys are trimmed to the uniform shape required, as at K, Fig. 2.

Claim.—In combination with the bed and clamping device for holding the key, the cutter-holder C, carrying the cutter *d* and guided in its proper path, substantially as set forth, and for the purpose specified.

141,381.—*Master-Key Lock.*—ANDREW RANKIN, Philadelphia, Pa. Application filed July 2, 1873.

A lock adapted to be operated by a master-key or an ordinary key. The tumblers are provided with two gates for the reception of the bolt-stump, and with slotted openings for the reception of the pin on which they turn, so that the bolt may be unlocked by either key, and when unlocked may be locked by either key.

Claim.—A master-key lock in which some or all of the tumblers are provided with two gates, and have slotted openings adapted to the pivot-pin, as specified.

141,382.—*Door-Hanger.*—ALEXANDER K. RIDER, Walden, N. Y., assignor to GEO. C. WOOSTER, JAMES GOWDY, and ALEXANDER K. RIDER, same place. Application filed June 16, 1873.

Combination within the hanger of friction-rollers and bearing for same.

Claim.—In a hanger or carrier for sliding doors and gates, the combination of the series of friction-rollers G G and the flat bearing for the same, said rollers passing over the track E, substantially as and for the purpose herein set forth.

141,383.—*Breech-Loading Fire-Arm.*—JOSEPH RIDER, Newark, Ohio. Application filed March 15, 1873.

The extractor is hung on a hub of the breech-block eccentric to its axis to give power for starting the cartridge, while allowing of a sudden impulse for ejection by means of a spring. Also, a projection is formed on the guard-strap, so as to insure the engagement of the catch. Also, other devices indicated by the claims.

Claim.—1. The extractor *u*, in combination with the eccentric *d*, constructed and arranged to operate substantially as described.

2. In combination with the pivoted catch *a*, the projection *y* on the guard-strap, when arranged to operate as set forth.

3. The fly A, constructed and arranged to operate as described, whereby it holds the hammer while the arm is being loaded, and is disengaged therefrom when the hammer is set at full-cock.

4. The bent spring G, having its lower end split to form two springs of different lengths, and arranged as described, whereby it serves to operate the hammer with its locking-dog and catch, and also the trigger and fly, as set forth.

5. The combination of the breech-block D, provided with the shoulder *n* and eccentric *d*, the extractor provided with the shoulder *o*, incline *r*, and wedge-shaped point *u*, working in the inclined groove, and spring *j*, all constructed and arranged to operate substantially as herein described.

6. The spring-button *w*, having the screw that holds it in position formed thereon, or rigidly attached thereto, substantially as described.

141,384.—*Breech-Loading Fire-Arm.*—JOSEPH RIDER, Newark, Ohio. Application filed October 24, 1872.

Claim.—1. The extractor I, provided with the projection *a*, fitted in the recess, whereby a pivot-pin is dispensed with and the extractor made to operate as described.

2. The lever G, arranged as described in relation to the breech-piece C and the trigger T, whereby it is made to lock the trigger in the half and full-cock notches, hold the breech-piece closed, and serve as a cam or incline to operate the firing-pin retracting-lever *t*, as set forth.

3. The locking-brace E, mounted on a pivot independent from that of the hammer, and provided with a catch to engage with the hammer, in combination with the swinging breech-piece C and hammer D, all constructed and arranged to operate substantially as described.

4. The lever F, pivoted to the hammer, and arranged to have its front end bear against the independent locking-brace E, and its rear end forming the bearing for the mainspring, all constructed and arranged to operate substantially as described.

5. The arrangement of the pins A, *i*, and *g* with the button *l* and screw *y*, whereby the three pins are all held in place by means of a single screw, and all the pins still be free to turn in their bearings, substantially as described.

141,385.—*Sash-Fastener.*—AMOS C. RODGERS, Suffield, Conn., assignor to himself and JAMES A. HAMILTON, same place. Application filed May 1, 1873.

Both a frictional and positive fastening.

Claim.—A spring-slide, A, provided with a pad, *e*, for bearing against the edge of a sash, and with a projection, *f*, for locking the sash, in combination with an inclined and slotted socket, B, adapted to the slide and secured to the window-frame, all substantially as specified.

141,386.—*Device for Preventing Horses from Crowding.*—OLIVER C. ROSE, Penfield, N. Y. Application filed May 31, 1873.

A blade provided with a projecting pin. The blade is inserted through one of the loops of the tug and back-strap.

Claim.—The device herein described, consisting of the blade *a*, head *b*, and pin *c*, arranged to be inserted in the loops of the harness, as herein shown and described.

141,387.—*Electric Railway-Signal.*—DAVID ROUSSEAU, New York, N. Y., assignor to himself and WILLIAM C. SMITH, same place. Application filed February 17, 1873.

Signal rotated by weight controlled by electro-magnet. Two

circuits to magnet form different points closed by train. One closed, setting the signal, circuit is shifted by arms *f* on the signal-shaft to other closer, so as to release signal, when circuit is again shifted to setting-closer. Lamp-guard cannot be opened till weight is wound up.

Claim.—1. The signal-stem C, provided with arms or projections *b*, which lock it against the armature F both in its displayed and concealed positions, as specified.

2. The cams or projections *f* and *g* on the stem C, arranged in combination with the springs *i* and *h*, for operation in the manner set forth.

3. The signal connected metallically with one electro-magnet and alternately with one of two operating instruments, as specified.

4. A lamp-guard, I, locked to a signal apparatus so that the said guard cannot be opened without the previous winding of the signal-operating clock-work, substantially as herein described.

5. The combination of the rotary pin *r* with the lever J, hook *n*, and guard I, as set forth.

141,388.—*Cement-Pipe Mold.*—FRANKLIN I. SAGE, Springfield, Mass. Application filed June 7, 1873.

A contractible core cylinder controlled by a vertical shaft operating through suitable mechanism.

Claim.—The inner or core cylinder D, made of a single piece of sheet metal with the edges overlapping, and provided with vertical flanges *f f* and vertical bar h, pivoted at its upper end between said flanges, substantially as and for the purposes herein set forth.

2. The plate J attached to the arms *k k*, and provided with slot *i*, in combination with the pin *m* on the end of the bar h, substantially as and for the purposes herein set forth.

3. The combination of the shaft G, arms *k k* passing through slots *i i* in the cylinder, and disk H for operating the ring I surrounding the cylinder D, substantially as shown, and for the purposes set forth.

141,389.—*Fruit-Crate.*—LOUIS SELLING, Detroit, Mich. Application filed June 27, 1873.

A crate constructed from rounds connected by tenons and mortises so arranged as to operate in sections for a retransportation, after use, in small packages. The parts are of proper length to form the crate, and for use are held together by rings and bolts to secure the fruit in transit.

Claim.—The combination of the bottom A, sides B C, top D, and ends E with the rings *a* and bolts *d*, when the parts are arranged as and for the purposes set forth.

141,390.—*Table-Caster.*—CEVEDRA B. SHELDON, New York, N. Y. Application filed June 17, 1873.

Claim.—1. The combination with balls and standard of a bearing-plate, E, for the caster-holder, consisting of the inverted cup *e* with hole *e*', to bring the bottom edge of said cup on the outer side of the balls, to take the bearing-plate entirely out of contact with the bolt, and thus throw all the friction on the balls, in the manner set forth.

2. The socket *b*, enlarged so as to have a bearing on bolt only at the top, in combination with the cup *e* having a bearing on the outside of balls, but not touching bolt, to produce a minimum of sliding friction, in the manner set forth.

141,391.—*Stool.*—CEVEDRA B. SHELDON, New York, N. Y. Application filed June 17, 1873.

A ring provided with journal-arms and friction-rollers is arranged between the seat and standard, the upper end of the standard being provided with a circular groove to receive the friction-rollers.

Claim.—The ring K provided with journals *k* and friction-wheels L, arranged between seat and stand, as and for the purpose set forth.

141,392.—*Machine for Dressing Millstones.*—SAMUEL SHIVE, Forks, and DAVID SAVAGE, Orangeville, Pa.; said SAVAGE assignor of one-third his right to said SHIVE. Application filed June 3, 1873.

The pick, together with the cam-shaft for operating it, are hung in a frame-work which admits of the same being moved to any point about the millstone.

Claim.—1. The frame *c*, secured to the floor by means of the pins *c'*, and carrying the operating-shaft for communicating motion to the pick, substantially as set forth.

2. The pick 4, constructed as described, in combination with the spring 5, levers 6 6', and catch 7', substantially as shown and described.

3. The combination of the frame *c*, shaft *d*, arms *l n*, cam-shaft 2, picks 4, and the connecting belts and pulleys, substantially as shown and described.

141,393.—*Cotton-Press.*—THOMAS S. SMITH, Toomer's Station, Texas., assignor of one-half his right to JOHN P. GILDERSLEEVE, Niverville, N. Y., and JOHN W. BLAKE, Springfield, Mass. Application filed July 9, 1873.

A platform raised and lowered by a pair of arms, with adjustable levers operated by ropes attached to a revolving drum.

Claim.—The cotton-press herein described, consisting of the levers D, pivoted to the under side of the movable follower C, toggle-arms *d d* attached to shafts *d*[1] and levers D, pulley F provided with the windlass E and ratchet-wheel F', windlass G, and ropes *d*[2], all arranged and operating in the manner set forth.

141,394.—*Force-Pump.*—OSCAR SNELL, Williamsburg, Ohio, assignor to R. B. HERRON, Danville, Ind. Application filed March 22, 1873.

The sliding valve of the pump has a single port, and has imparted to it a positive movement by means of a projection on the plunger acting against two adjustable tappets on the valve-rod. The valve-seat is made detachable, and the part upon which the valve slides is raised above the common surface, and in length is shorter than the length and stroke of the valve, in order that the wear may be evenly distributed.

Claim.—In combination with the pump proper A, the detachable valve-seat N, substantially as shown and described.

141,395.—*Electric Railway Signal Apparatus.*—HENRY W. SPANG, Reading, Pa. Application filed May 11, 1872.

Geissler tube used for visual signal at night.

Claim.—1. A Geissler or vacuum coil bulb or tube illuminated by electricity, in combination with a track or railway switch circuit-closer, for general railway-signal purposes.

2. In combination with a railway-signal apparatus, a visual signal illuminated by an induced electrical current, for the purpose set forth.

141,396.—*Fog-Alarm.*—COLLINS STEVENS and GEORGE M. STEVENS, Boston, Mass. Application filed March 27, 1872.

A series of pins on a pendulum-escapement-wheel is arranged with a suitable let-off lever to regulate the period of the hammer-strokes upon the bell, while another escapement-wheel, by which the hammer is reciprocated, carries a count or pattern wheel by which the intervals between the strokes may be varied as desired.

Claim.—1. The combination of the time-disk D^2 with its pins, the latch D^3, rocker-shaft D^4, weight D^6, cam D^7, and bent lever B^6, operating, in connection with the lever B^5 and arm B^1, as a timing and stopping device for the striker.

2. The combination of the subject-matter of the first claim with the count-wheel B^3, operating substantially as described, and for the purpose set forth.

141,397.—*Sewing-Machine for Banding Hats.*—JAMES STEWART, Jr., Yonkers, N. Y. Application filed April 25, 1873.

The presser is provided with a finger-guide to bear against the brim, and is adjustable laterally on the presser-rod so as to sew the band at either edge or centrally. The gage is adjustable about the presser-bar so as to accommodate the band to any shaped crown.

Claim.—1. The presser-foot E provided with a back finger-guide, F, and adjustable in direction of its width, or transversely to the feed and relatively to the needle, substantially as specified.

2. The combination, with the transversely-adjustable presser-foot E, of the adjustable gage G, when the latter is connected with the presser-bar by a lever, H, adjustable around the axis of said bar, and by a sliding pivot, *f*, in transverse relation with the feed, essentially as and for the purposes herein described.

141,398.—*Machinery for Folding Leather.*—EDWIN B. STIMPSON, New York, N. Y. Application filed July 9, 1873.

The machine is composed of a reciprocating bed; a hinged clamp, consisting of two plates, for holding the leather in position; a tongue arranged between the two plates of the clamp, capable of being moved forward and backward for folding the leather; and a heated flat-iron, which may be vertically adjusted, so that the fold may be permanently secured.

Claim.—1. The machine for folding leather, composed of the reciprocating bed B, the holding device with its tongue I, and the iron, shaped to conform to the intended profile of the leather, and having a reciprocating movement in a plane perpendicular to that of the bed's motion, the whole combined and organized substantially as and for the purpose specified.

2. The iron C, formed with a flange, *f*, extending along its front at its bottom edge, whereby the leather is first turned up, and is afterward folded over and pressed down, substantially as herein described.

3. The combination of the socket-like shank *g* of the iron C, the screw D working therein, and its operating device, essentially as and for the purpose set forth.

4. The combination, with the lever K pivoted to the upper of the plates G G, and connected with the tongue, as described, of the supplementary lever S pivoted to the aforesaid lever, and provided with a pin to lock into the plate G just mentioned, essentially as and for the purpose set forth.

141,399.—*Shoe-Edge-Burnishing Machine.*—NATHAN C. STOW, Rockland, Me. Application filed April 7, 1873.

Claim.—The arrangement of the wheels or disks of a sole-burnishing machine, as herein described, as a consequence of which each one projects beyond the one in the rear of it for the purpose of enabling more than one person to work on each end of the machine at one and the same time, as set forth.

141,400.—*Cultivator-Tooth.*—GEORGE F. STROUD, Oshkosh, Wis., assignor to WILLIAM D. STROUD, same place. Application filed June 3, 1873.

A slip-tooth, released from working position when brought in contact with any fixed obstruction, in the manner shown in the drawing, can be replaced by a blow of the foot, without the use of a wrench or the loosening of a bolt.

Claim.—The shank B provided with the knuckle D and pin C, and the slotted and recessed plate G provided with projections F F, in combination with the drag-bar K and spring J, substantially as and for the purpose herein before set forth.

141,401.—*Machine for Forming Auger-Bits.*—JAMES SWAN, Seymour, Conn. Application filed April 10, 1873.

The moving die or former I, with operative face divided into two planes oblique to its axis and to one another, and with a slight taper to properly graduate the thickness of the spurs which it swages against the wall of the recess, is in its forward movement partly turned over by means of the inclined plane L, and a sudden supplemental movement in the same direction, when at the end of its stroke, is imparted by a cam on the driving-shaft that strikes an arm projecting laterally from the die-arbor.

Claim.—1. In a machine for forming the heads of augers, the dies B B', having the rib *a* and the enlarged recess *d* forward of the said rib, and upon which rib and within said recess the head is formed.

2. In combination with the dies B B', the die I, having a partial rotation imparted thereto as it advances toward the holding-dies, substantially as set forth.

3. In combination with the dies B B', the die I, provided with a mechanism substantially such as described, for imparting a partial rotation thereto after it has arrived at its extreme forward movement, substantially as set forth.

141,402.—*Washing-Machine.*—JAMES W. TAYLOR, Ashland, Va. Application filed June 13, 1873.

Is constructed with a square receptacle with bar or grate, center shaft, and door. The journals extend through the outer box or tub, to which a crank is attached, by which motion is imparted. The outer tub or box is constructed with cross or projecting bars in each corner to give motion to the water in its revolution. The crank is connected to a pin projecting from a plate, to which the gears are attached.

Claim.—The combination of the rack C, corner-pieces S S, bracket G, and its gearing E D, as and for the purposes set forth.

141,403.—*Nut-Lock.*—FREDERICK P. THOMPSON, Fredericktown, Canada. Application filed June 2, 1873.

A base-plate, fitted with a collar having a projecting fastening, is placed eccentrically on the bolt and under the nut. When the nut is screwed down in position the collar is turned around until the fastening device engages with a corner of the nut.

Claim.—1. The combination of the base A, provided with shoulder *a* and points *c*, with the annular plate B having fastener *b*, all being constructed and operating as set forth.

2. In combination with the base A, provided with shoulder *a* and points *c*, and annular plate B provided with fastener *b*, the eccentric axis formed by screw-bolt *c*, as shown.

141,404.—*Brick-Kiln.*—HOREA TUGBY, Woodville, England. Application filed May 6, 1873.

The heated products of combustion may be used successively in all the chambers, or they may be conveyed away to the exit-flue F through the branch flue H, with which each compartment is provided.

Claim.—1. The combination, in a kiln, of external fire-places *a*, shields *b*, arranged parallel to and and a short distance from the side walls, and perforated shields D, between which and the end walls are vertical flues communicating with horizontal flues E, substantially as set forth.

2. A kiln, consisting of a series of chambers, fire-places *a* communicating with each chamber, flues E arranged below the perforated bottoms of the chambers and forming the communications between them, and a flue, F, communicating independently with each flue E and with the chimney G, all substantially as described.

141,405.—*Paper-Folding Machine.*—GEORGE W. D. UPTON, Springfield, Mass. Application filed March 19, 1873.

Many sheets are squared against gages and folded by a reciprocating blade through a recess in the table, between one pair of two rollers into the bite of a second pair. The latter feed them through a third pair, which deliver the package to discharge-belts.

Claim.—1. In combination with the rolls D, having their bearings against the springs *g*, the reciprocating blade E, operating between said rolls, the endless aprons *c'*, and the rolls which carry the same, all constructed and operating substantially as described.

2. In combination with the endless aprons *c'* and the rolls *c* and *e*, the swinging pieces I and rolls *c'*, whereby the endless aprons may always be adjusted taut, to properly adhere to said rolls, substantially as described.

141,406.—*Belt-Pulley.*—ALVIN V. VROOMAN, Roxbury, N. Y. Application filed May 24, 1873.

Claim.—The combination of the adjustable blade D with adjustable gage G when arranged upon block or head A, as described, and for the purpose set forth.

141,407.—*Plaiting Attachment for Sewing-Machines.*—WILLIAM WALKER, Brooklyn, assignor to GEORGE H. WOOSTER, New York, N. Y.—Case B. Application filed May 15, 1873.

The "tongs" or nippers are provided with blades that engage the fabric to be plaited at both sides. The nippers have a horizontal as well as a vertical motion, and the blades grasp and release the fabric, and, as they move forward and rise by the beveled edge of the cloth-plate, the plait is formed with certainty.

Claim.—1. The tongs I arranged to vibrate horizontally and also vertically with reference to the stationary plate A, having a pendent or beveled edge, *m*, to produce the plaites or ruffles by their motion toward and along such edge *m*, substantially as described.

2. The blade *f* attached to the rock-shaft H, which turns in the vibrating frame G, in combination with the blade *g* attached to the bar h, and operated substantially as herein shown and described.

141,408.—*Attaching Knobs to Spindles.*—HENRY J. P. WHIPPLE, Meriden, Conn. Application filed June 19, 1873.

Claim.—The combination of a brake, operating on the wheels of a railway locomotive, car, or truck, with an air-reservoir, an independent steam-pump, operated by steam from the locomotive-

Claim.—The detached knob and neck D and E, in combination with the spindle A, when the said knob is provided with a screw, C, and latch *b*, and the neck constructed with one or more notches, *a*, by means of which and the said latch the knob and neck are coupled together, substantially as set forth.

141,409.—*Work-Box.*—HENRY E. WILCOX, Ilion, N. Y. Application filed March 25, 1873.

Claim.—1. The method of holding the detachable cover *a* in place by means of the molding O, arranged substantially as described.

2. The molding O having the cover *a* secured to it, and arranged in connection with the cushion C and lid E, as and for the purpose set forth.

3. In combination with the box, the drawer D, having the button or fastening *l* on the inside, substantially as and for the purpose described.

4. As a new article of manufacture, the herein-described work-box, consisting of the body A, drawer D, and lid B, with the cushion C, all arranged to operate as set forth.

141,410.—*Apparatus for Emptying Sinks and Cesspools.*—FRANCIS J. WILDENTHALER, Philadelphia, Pa. Application filed May 26, 1873.

When it is necessary to prime the pump the valve is withdrawn and the inlet-channel filled with water. The sliding valve is connected loosely to its shaft by a yoke, and is held against its seat by a spring, which permits it to lift when any hard substance becomes entangled. The form of the inlet and exit channels permits the free passage of the gases.

Claim.—1. The L-shaped inlet-channel provided with a valve, K, for priming the pump, as shown and described.

2. The valve F, combined with the yoke F^1 and spring F^2, to operate on the ports J and J', substantially as shown and described.

3. The cage O, with closed bottom, arranged to open at the top, as and for the purpose set forth.

4. The inclined channels leading upward from the highest point in the cylinder to the valve F, and, in combination with said valve, operating as set forth and described.

141,411.—*Wheel for Vehicles.*—HUGH WILLIAMS, Apple River, Ill. Application filed March 29, 1873.

An annulus having sockets for the spokes is placed on the inner portion of the hub, which forms the axle-box and inner flange.

Claim.—The hub-core cylinder A, constructed with the broad inner flange B and conical extension *a*, in combination with the annulus C, having the disk-flanges *b* and *d* and partitions *c*, substantially as and for the purpose specified.

REISSUE PATENTS.

5,502.—*Nail Extractor.*—GEORGE J. CAPEWELL, Cheshire, Conn. Patent No. 129,310, dated July 16, 1872. Application filed March 14, 1873.

The nipping-points can be driven into the wood retaining the nail by the solid rod B. The pipe A serves as a lever. The extended arm C is the fulcrum.

Claim.—A nail-extractor, provided with a movable jaw and fulcrum, in combination with a percussive device, constructed and operating substantially as shown and described.

5,503.—*Paper-Cutting Machine.*—HERVEY LAW, Chatham, N. J. Patent No. 42,200, dated April 5, 1864. Application filed February, 3, 1873.

The knife-stock is swung above the table between vertical guides and connected, by a rod, to its actuating-lever, which passes beneath the table and is pivoted to one side of the frame. To the long arm of the lever is attached a vertical rack which connects with a pinion and shaft, by which the knife is operated.

Claim.—1. The combination of the lever F with the knife and rack and pinion, substantially in the manner and for the purpose herein shown and described, or its equivalent, constructed and operated substantially as described.

2. The arrangement of the knife-stock above the table and the actuating-lever beneath the table, the latter being hung to the knife-stock at one end by a rod and to actuating mechanism at its opposite end, both connections being outside of the frame of the machine, substantially as described.

5,504.—*Steam-Power Brake Device.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa.—Patent No. 88,929, dated April 13, 1869. Application filed May 26, 1873.

Claim.—1. The combination of a brake, operating on the wheels of a railway locomotive, car, or truck, with an air-reservoir, an independent steam-pump, operated by steam from the locomotive-boiler, for charging the same, and a brake-cylinder, connected with the reservoir by suitable pipe or pipes, furnished with cocks for charging, discharging, and graduating the pressure in the brake-cylinder.

2. The combination of a brake-cylinder, operating on the wheels of a railway locomotive, car or truck, with an air-reservoir, an independent steam-pump, operated by steam from the locomotive-boiler for charging the same, a brake-cylinder, connected with the reservoir by suitable pipe or pipes, furnished with cocks for charging, discharging, and graduating the pressure in the brake-cylinder, and flexible extension pipes for connecting between cars and coupling, which, when subjected to unusual strain, are self-detaching.

3. The combination of a brake, operating on the wheels of a railway locomotive, car, or truck, with an air-reservoir, an independent steam-pump, operated by steam from the locomotive-

boiler, for charging the same, a brake-cylinder, connected with the reservoir by suitable pipe or pipes, furnished with cocks for charging, discharging, and graduating the pressure in the brake-cylinder, and a pipe or pipes extending from end to end of the car, and furnished between cars with valves which close automatically when the pipes are uncoupled.

4. Valves arranged in the adjacent ends of the coupling *f*, and guided by stems and guides, so as to open each other when the couplings *f* are united, and to close automatically when uncoupled, substantially as above set forth.

5. In atmospheric car-brake apparatus, the couplings for connecting the ends of the air-pipes between the cars, when attached to each piece by flexible connections, substantially as hereinbefore described, whereby they become automatically detached when exposed to more than the usual strain.

6. The combination of a car-brake operating on the wheels of a railroad vehicle, with an air-reservoir, a brake-cylinder, a connecting pipe or pipes from the reservoir to the brake-cylinder with flexible extensions for connecting between cars, and automatically detachable couplings on the flexible connecting-pipes, with or without valves, substantially as set forth.

7. The arrangement of the brake-lever in relation to the piston-stem of the brake-cylinder, substantially as described, whereby the brake-lever may be operated by the ordinary hand apparatus, without operating the brake-cylinder, and independently of the power-brake apparatus.

8. An auxiliary engine arranged on a locomotive, so combined with an air-pump and a feed water-pump as to operate them separately or together.

5,505.—*Steam-Power Air-Brake Device.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa.—Patent No. 117,841, dated August 8, 1871. Application filed May 26, 1873.

The power actuating through the piston-rod on the short arm of the bent lever will give a rapid throw to the rod, connecting its longer arm with the brake-lever and cause the brake-shoes to rapidly approach the wheels. As the piston and brake rod come in line the power is applied more slowly and directly. By means of the peculiar arrangement of the spring the car-brakes, when released, clear the wheels quickly and entirely. By providing male and female couplings at each end of the car they will always have the same relative arrangement if any of the cars in the train be turned end for end. The flexible connections permit those of each car to be coupled together to exclude dust when not in use.

Claim.—1. A bent lever receiving power by its shorter arm from the piston-stem and communicating the same from its longer arm to the brake-lever, arranged and combined substantially as described.

2. A spring arranged in connection with the lever in a power car-brake apparatus, so that the spring will act with a continually-increasing power in causing the brake-shoes to clear the wheels, substantially as described.

3. In a power car-brake apparatus, the arrangement of male and female pipe-couplings, with flexible connections at each end of the car, substantially as described.

4. The arrangement of two pipes at each end of each car furnished with flexible connections and suitable couplings, so that the pipes at the end of any car of the train may be coupled together, thus effectually closing both pipes.

5,506.—*Steam-Power Car-Brake Apparatus.*—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa.—Patent No. 115,667, dated June 6, 1871. Application filed May 26, 1873.

The air is exhausted from behind the piston, to assist in releasing the brakes, by means of a steam-siphon. A valve is located between the cylinder and the siphon to prevent the passage of steam into the former while a vacuum is being formed therein. By means of these devices air may be applied to one side of the piston to apply the brakes, and by exhausting the same the atmospheric pressure may be employed to relieve them.

Claim.—1. A steam or air discharging nozzle, arranged in the air-outflow pipe of a car-brake cylinder, discharging in the direction of the outflow of air from the cylinder, and in combination with such cylinder, substantially as described.

2. In combination with the subject-matter of the previous claim, a check-valve, *m*, arranged substantially as set forth.

3. In a power-brake apparatus, a brake-cylinder and piston in which air pressure is applied to one side of the piston in order to apply the brakes, and to the opposite side to release them.

5,507.—*Well-Tube.*—SAMUEL H. DICKERSON, Hudson, Mich.—Patent No. 109,699, dated March 8, 1870.—Division A. Application filed May 26, 1873.

A well-tube provided with a number of holes, around each of which is a countersink deep enough to receive a piece of wire-gauze and a cap which fits snugly in the countersinks around the holes. Each cap has a suitable opening in the center, through which the screens are seen. The wire-gauze is placed in the countersink, and the cap pressed on top and held in the countersink by friction or any other means.

Claim.—The well-tube A having countersunk holes, the screens *a a*, and caps *b b*, placed within the countersunk holes over the edges of the screens, all substantially as and for the purposes herein set forth.

5,508.—*Earth-Auger.*—SAMUEL H. DICKERSON, Hudson, Mich.—Patent No. 109,698, dated March 8, 1870.—Division B. Application filed June 24, 1872.

Claim.—The auger B, constructed as described, so as to allow the dirt to be drawn up with it, substantially as set forth.

5,509.—*Wheel for Vehicles.*—LATHROP DORMAN, Williamantic, Conn., assignor to CHARLES W. FILLMORE and JOHN R. MINER, Patent No. 64,955, dated May 21, 1867. Application filed April 19, 1873.

The shell is driven onto the wooden portion, and the spokes form arches on the outside and on the inside of the bars of the shell.

Claim.—1. The combination of the grooved wooden center A with the metal shell B, having its front and back portions connected with the single bars *f*, in the manner substantially as set forth.

2. The combination of the grooved wooden center or core A, whether with parallel or inclined sides to the groove *f*, as described; the spokes E, whether with wedges inserted as described or otherwise; and the metal-mortise shell B, said shell being constructed substantially as and for the purposes set forth.

5,510.—*Material for Distemper Painting.*—HENRY M. JOHNSTON, New York, N. Y.—Patent No. 99,967, dated February 15, 1870. Application filed July 21, 1873.

The glue or other binding material is either mixed in solution with the coloring material and then dried and pulverized, or the binding material coloring matter is prepared in separate packages. The object is to have definite and determined shades ready for use.

Claim.—The materials for distemper painting herein before described, consisting of pulverized glue or other binding substance and pigments, prepared and put up in packages, either separately or mixed, substantially as and for the purpose set forth.

5,511.—*Fence.*—ISRAEL L. LANDIS, Lancaster, Pa. Patent No. 129,837, dated July 23, 1872. Application filed June 26, 1873.

Removable panels are held between posts by pins passing through holes in end pieces of panels and the posts. By withdrawing the lower pins the lower ends of the panels will be swung out by the force of a flood of water.

Claim.—The combination of the perforated posts C, the removable fence-sections having posts B with receptacles, and the pins D passing through the perforated posts and into the receptacles, for supporting the sections and preventing the raising and lowering of the same by small animals.

5,512.—*Boat-Lowering Apparatus.*—GEORGE W. MALLORY, Mystic Bridge, Conn. Patent No. 112,930, dated March 21, 1871. Application filed July 14, 1873.

To davits arranged to and from the sides of the ship or boat hinged at its bottom for adjustment, held by lines passing through blocks connected to the deck, on the end of which the boat is suspended by block and fall, and is sustained in its position by chocks, the outside ones pivoted to the slots in the sustaining-bar, which, by dropping, the boat is released and lowered to the water by the fall and block.

Claim.—1. The davits D hinged at *e*, sufficiently inboard to allow the boat to be stowed between the hinged davits and the vessel's side, with the davits always in position on the same side of the boat, as herein specified.

2. The hinged davits D, turning on the hinges *e*, in combination with chocks F F', the outermost of which is removable, so as to avoid a necessity for hoisting the boat out of the chocks, as herein specified.

3. The guide G, secured firmly to the vessel, and combined with a hinged davit, D, arranged to transverse outboard and inboard, as herein specified.

5,513.—*Cotton-Plow.*—ZACHARIAH B. SIMS, Bonham, Tex. Patent No. 94,350, dated August 31, 1869. Application filed April 21, 1871.

The frame is nearly square in form, having a mold-board plow upon each side, and holes in the rear for the insertion of cultivator-teeth. An arched plant-protector extends from plow to plow, which can be removed at pleasure.

Claim.—1. The curved flanges K K combined with the plows G G, substantially as described.

2. The removable curved flanges K K adapted to be bolted or otherwise attached to the plows G G, substantially as set forth.

3. The plow-tooth I, in combination with the plows G G, constructed, arranged, and operating substantially as described.

4. The flanged protector *d*, in combination with the curved flanges K K, as and for the purpose specified.

5. The plows G G, in combination with the curved flanges K K and protector *d*, operating as set forth.

5,514.—*Spittoon.*—WILLIAM H. TOPHAM, Longmeadow, Mass.—Patent No. 106,094, dated August 2, 1870. Application filed January 24, 1873.

The bottom or lower part of the vessel is formed with a weight so arranged in or about said bottom that when the vessel is upset it will regain an upright position.

Claim.—1. A spittoon, or similar vessel, weighted at its bottom to insure its stability and enable it to right itself in case of being tilted, substantially as specified.

2. The arrangement of the weight between the two layers or thicknesses of material of which the bottom of the spittoon or similar vessel is composed, substantially as and for the purpose specified.

5,515.—*Car-Roof.*—JOHN C. WANDS, Nashville, Tenn.—Patent No. 136,569, dated March 4, 1873. Application filed May 3, 1873.

The rafters are made with angular upper surfaces, and are grooved to receive purline plates, the object being to lessen weight without detracting from strength.

Claim.—1. The car-roof herein described, having the wooden frame consisting of the parts A B C W, the bands E and K, the zinc sheets D, and grooved roof-boards G, the several parts being constructed and arranged substantially as and for the purpose specified.

2. In a car-roof, the central T-shaped purline F, having a depressed body and covering flanges, substantially as and for the purpose specified.

3. The combination of the purline F, roof-boards G, and frieze-boards C, constructed and arranged in a car-roof, substantially as described.

4. In a car-roof, the boards C *c*, having grooves *f* on their under sides to form drains for leakage, substantially as and for the purpose specified.

5,516.—*Paper-Folding Machine.*—ALVAH WASHBURN, Medina, Ohio.—Patent No. 133,393, dated November 26, 1872. Application filed May 1, 1873.

The folding-frames are yieldingly connected by springs to arms, vibrated by their segmental gears, engaging with levers actuated by cams on a shaft, which receives rotative movement through connection with the reciprocating bed of a printing-press.

Claim.—1. The arm P, shaft Q, and springs M V, in combination with each other and with the folding-frames, substantially as and for the purpose specified.

2. In combination with the driving or cam shaft U, the loose wheel X, pawl Y, catch Z, and rope Z', combined with the bed of a printing-press, as and for the purpose described.

3. The combination of the weighted cord X', loose wheel X, pawl Y, cam-shaft U, lever T, rack and pinions R S, catch Z, and rope Z', combined with each other, substantially as described, to operate in connection with the bed of a printing-press, as set forth.

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The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

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In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1873, by which cases are assigned for examination, governe the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of those classes.

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FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes 4,000
PRINTING; including presses, type, and printers' furniture. 2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles 1,200
FELTING and HATS; including caps, bonnets, flock, &c. 1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments) 1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs 1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)

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The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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COMMISSIONER'S DECISIONS.

WOOD *vs.* MORRIS.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Joseph Wood and the patent of William Morris, for* IMPROVEMENT IN RAILWAY FROGS.—*Decided August* 4, 1873.]

Priority awarded to an applicant who claimed a block of wood fastened between a stationary frog and the adjacent rails, and who had reduced the invention to practice, over the patentee of a special form of block to be placed between the frog and the rails, which he said incidentally in his specification might be of iron or wood, but who made no allusion to the superior qualities of wood for the purpose, and who had never used it.

Where anything is developed on an interference which renders it doubtful whether the invention is novel, the case will be remanded to the Examiner in charge, in order that, with the further light thus obtained, he may investigate the question anew.

LEGGETT, *Commissioner:*

The subject-matter in controversy is embodied in the claim of Wood, which is as follows:

"A railway frog with wood placed between the rails thereof, and fastened thereto, in the manner and for the purpose substantially as described."

The invention is applicable to that class of frogs in which the side rails and the tongue, or frog-point, are stationary. A hard-wood brace or packing, suitably molded at its edges to fit the sides of the rails, and divided so as to embrace the end of the tongue, is placed between the side rails and properly secured by vertical and lateral bolts to the bed-plate and to the side rails. The object of its employment is to give stability to the frog, and form in some measure an elastic side cushion, which enables the frog to better withstand the blows and lateral drag of the car-wheels. At the same time it diminishes the liability incident to the employment of an iron packing of breaking the flanges of the wheels.

I have no doubt there is a substantial advantage attending the use of hard wood for this purpose in a railroad frog, and that whoever first discovered the adaptation of its qualities to produce the superior results accomplished in this device, made a meritorious and patentable invention. He did not merely select the most suitable material of the kind before used, as one kind of iron rather than another, but he applied a new material, a material never before used in such connection, which may advantageously replace all kinds of iron. He has produced a new effect, and he comes within the long-settled rule that "while the properties of matter, the forces or elements of nature are common property, any man who applies them to the production of a new and useful effect in matter may claim to have been the inventor of that application" of them to produce that effect. (Curtis on Patents, p. 30.)

But the novelty of the use of wood for this purpose is denied by Morris, who does not claim it. In the brief submitted in his behalf it is stated that it may "here be understood that William Morris does not pretend to have used wood between the rails of a frog before Joseph Wood used it, but he merely claims in his patent its use in a particular way."

This, in connection with the fact that the argument is addressed mainly to the point that the alleged invention in issue is not new, and therefore not patentable, may be taken as an acquiescence in the correctness of the finding of the Examiner and the Board, that upon the evidence Wood must be held entitled to judgment of priority as to the subject-matter claimed by him.

Morris claims a combination of parts which Wood does not show, and his specification and claim contemplate the use of either wood or iron indifferently for packing. While an appeal has been formally taken upon the question of priority, the real contest now is as to whether or not wood packing was employed in railway frogs, as now claimed, prior to the date it is proven to have been adopted by the applicant. I do

not regard the evidence introduced in behalf of Morris as satisfactorily showing that it was. The rebutting testimony of Wood is sufficient to break its force as proof upon the question, so far as it might, standing alone, be regarded as having such force. The only doubt in my mind upon the question of the validity of Wood's claim is concerning the references cited in argument, but not regularly put in evidence in the case. Dempster's R. R. Eng., plate 26, and Eng. pat. No. 2,637, of 1869.

The Board did not regard these references as properly before them for consideration, and did not pass upon them. The decision of the Board awarding priority of invention to Wood is affirmed, and his application is referred to the Examiner for re-examination, in view of these references, without passing upon the question of their sufficiency further than to suggest that if Wood's claim to invention consists merely in using the ordinary means of bolts and screws to fasten the wood into the frog, it would seem to be a very thin basis on which to plant a patent.

JOHN A. MONTGOMERY.—*Extension.*

[*In the matter of the application of John A. Montgomery for the extension of Letters Patent for* IMPROVED JOURNAL AND AXLE BOXES, *granted August 2, 1859, No. 24,947.—Decided August 4, 1873.*]

LEGGETT, *Commissioner:*

The reference Resultate für Maschinenbau, plate 13, page 57, forms the only apparent objection to the grant of this extension, and the senior member of the Board regards it as fatal.

This case was referred to the Board of Examiners-in-Chief for hearing and report. The case was heard by two members of the Board, the third being absent. In their final action they fail to agree in their recommendations, making it necessary for the Commissioner in person to re-examine the testimony and arguments, which I have done carefully.

I think, however, that the Board have been somewhat misled in their investigation by attaching too much importance to the substantial forms of the boxes described in the patent and the reference. The patent is not for a spherically-formed box, nor for a movable box of spherical form, but the gist of the invention, as described and claimed in the patent, is the device which permits the spherical box to move freely in its accompanying concave bearing, yet prevent it from revolving with the shaft. The text of the principal reference makes no allusion whatever to any device for such purpose. The drawing, however, shows a device, but one substantially different and evidently impracticable. In the patent it consists of a pin on the surface of the sphere in the equatorial line, which pin plays in a slot in the concave, the slot running parallel with the shaft, allowing easy and extended motion in the direction desired, with comparatively little tendency to wear, and easily lubricated; while in the drawing of the reference the spherical surface of the box is represented as being cut away to near the shaft at the equatorial line, and the concave filled to fit. The pin to prevent the box from revolving with the shaft is in the concave, and the slot is in the box at the reduced diameter. This arrangement greatly increases the wear upon the pin and slot, as the purchase is considerably increased, yet lubrication is practically impossible, except by further invention. In the reference the motion of the box is necessarily more cramped and less satisfactory. The difference between the two is really the difference between failure and success. One is capable of use in many places where the other would evidently be impracticable.

The patent will be extended.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

THOMAS J. W. ROBERTSON *vs.* BENJAMIN B. HILL.

[*In Equity.—Before Shepley, Circuit Judge.*]

The Court will seldom hear any evidence, except on the question of infringement, upon a motion for a preliminary injunction if the patent has been sustained in three previous cases, especially if the defendant was interested in the defense of one of them.

It is no infringement of a patent for a combination which is in itself impracticable and worthless to add to the combination an element which renders it useful and valuable.

A patent for a hand-stamp is not to be impeached on the ground that the stamp cannot be made to operate successfully without an inking-ribbon, if it mentions that the stamp may be used with any suitable inking device, and such inking-ribbons were well known at the time.

This was a motion for a preliminary injunction in a suit founded on the patent of Thomas J. W. Robertson for an improvement in hand-stamps, dated September 22, 1857, extended and reissued December 12, 1871. The patent had been previously sustained in several suits. (*Robertson* vs. *Secombe Manufacturing Co.*, 3 OFF. GAZ., and others.) The motion was resisted on the ground that the invention was anticipated by a large number of English and French patents, and because the invention, as patented, was lacking in utility from the absence of any suitable device for coloring the face and type of the stamp.

[*Frederic H. Betts*, for complainant.
James B. Robb, for defendant.]

SHEPLEY, *J.:*

This is a motion for a preliminary injunction. In this case the patent has frequently been made the subject of legal investigation.

The validity of the patent has been established and confirmed in at least three cases, and under such circumstances, on a motion for a preliminary injunction, the Court very seldom hears any evidence except on the question of infringement. Under such circumstances the party, by the established rules of equity, is entitled, as a matter of course, to the preliminary injunction without a trial at law and without further trial of the cause, especially in a case like this, where the party defendant in the cause was interested in the defense of the suit and had full opportunity to test the question.

Ordinarily, therefore, in such a case, the Court, on a motion for a preliminary injunction, considers only the question of infringement, and that is the established rule of the court.

In this case, however, the Court has considered, with as much care as the time would allow, one question which has been raised by the counsel for the defendant, and which may properly be considered under the question of infringement. It is contended by the defendant that when a party has patented a combination, and that combination turns out to be useless, of no practical utility, and another party adds to that combination another element, and thereby makes the whole practically useful where there was no utility before, the party who thus adds another element to the combination, which was necessary to make the prior combination of any practical utility, is not an infringer, and that he is not entitled merely to use his improvements, requiring first a license to use the former combination, but that he may use the whole of it; and that view of the law is undoubtedly correct.

In that view of the law it is contended that there is no infringement in this case, and it is with a view to question of infringement only that the court has considered it, not deeming it necessary to go into any consideration of the question of novelty, or entertain or express any opinion on that question until the final hearing of the cause.

But considering that the right of the party depends upon the validity of the patent and the fact that that question has been adjudicated so many times, it is not the intention of the Court, in any case, upon a motion for a preliminary injunction, to express any further opinion upon the questions involved in the case, except such as are absolutely necessary to the decision of the question of infringement on the motion for a preliminary injunction.

But on an examination of the patent the court, while it believes that view of the law to be correct, cannot conceive it to be applicable to the present case.

It is contended by the defendant in this case that the combination of the plaintiff, which was the combination of a handle and a series of printing-wheels, or their equivalents, for printing dates with a fixed type-form or printing-die for dating purposes, substantially as described, had no practical utility, because without the inking-ribbon or device which the defendant has added it was of no practical use; that the wheels would clog by the ink; and it was of no practical use, and did not come into use, until the ribbon as an inking device was added to it by the defendant.

But it does not appear that Robertson, the patentee, here, has stated in his patent any combination with any inking device, but has stated that his combination could be used with any suitable inking device.

An inking device formed no part of his combination, but it could be used, he says, with any suitable inking device. Now, the testimony in the case shows very clearly that the ribbon was an inking device, which was known prior to the date of this patent—was known and in use and described in patents prior to the date of this patent. It was, therefore, one of the inking devices which the complainant had a right to use, and which he is to be considered, in the eye of the law, as having referred to as a suitable inking device in his patent.

Therefore, although it should be proved to be true, that if the plaintiff's combination were used with a common inking-pad, or by applying printers' ink with rollers in the usual way, it would so clog and interfere with the turning of the wheels that it would not be a practically useful device, still he was open to use the ribbon as a roller, which had been known and used as an inking device prior to the date of the patent.

The conclusion of the Court, therefore, is that under the present state of the proof, in view of the prior decisions in the case, the injunction must go, as prayed for.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,237.—Horizontal Wheels.—Granted to ABRAHAM ANDREWS and HARRISON KALBACH, August 30, 1859. Application filed May 28, 1873. Hearing August 13, 1873.

25,239.—Elastic Hose-Tubing.—Granted to JOHN C. BOYD, August 30, 1859. Application filed May 29, 1873. Hearing August 13, 1873.

25,309.—Nail-Machines.—Granted to DANIEL DODGE, August 30, 1859. Application filed May 31, 1873. Hearing August 13, 1873.

25,342.—Stoves.—Granted to EDWARD M. MANSUR, September 6, 1859. Application filed June 5, 1873. Hearing August 20, 1873.

25,344.—Machines for Wiring the Joints of Clothes-Pins.—Granted to ALVIN C. MASON, September 6, 1859. Application filed May 31, 1873. Hearing August 20, 1873.

25,364.—Watches.—Granted to CHARLES E. JACOT, September 6, 1859. Hearing August 20, 1873.

25,373.—Machines for Making Paper Boxes.—Granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870. Application filed June 5, 1873. Hearing August 20, 1873.

25,395.—Heels for Boots and Shoes.—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—Cotton-Scrapers.—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—Boilers and Steamers.—Granted to DANIEL R. PRENDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—Seeding-Machines.—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—Scales.—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing August 27, 1873.

25,484.—Grain-Separators.—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—Hydraulic Presses.—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—Railroad-Car Seat.—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—Lamps.—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 8 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—Tailors' Shears.—Granted to ROCHUS HERRSCH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—Bung-Hole Borer and Reamer.—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—Try-Cocks for Steam-Boilers.—Granted to JOHN F. COOK, September 20, 1859. Application filed June 18, 1873. Hearing September 3, 1873.

25,565.—Rolling-Mills.—Granted to JOHN and GEORGE FITTS, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—Bedstead-Slats.—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—Mode of Arranging Couches in Railroad Cars.—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing September 10, 1873.

25,572.—Molding Water-Traps.—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,586.—Burglar-Alarms.—Granted to ABBOTT Q. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—Steam Punching-Machines.—Granted to JOHN SPARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,640.—Steam-Boilers.—Granted to JOSEPH HARRISON, Jr. October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—Construction of Prisons.—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,673.—Machines for Lasting Boots and Shoes.—Granted to JAMES PURINTON, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,683.—Hydrants.—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,692.—Sewing-Machines.—Granted to KASIMIR VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—Skeleton Skirt.—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,726.—Hand-Machine for Wiring Blind-Rods.—Granted to ERAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,733.—Double-Friction Couplings.—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—Method of Combining Emery with Caoutchouc.—Granted to THOMAS J. MATALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—Cutting and Panning Cakes.—Granted to JOHN H. SHROTE, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—Mode of Manufacturing Barrels, &c.—Granted to GEORGE W. BARKER, October 11, 1859. Application filed July 8, 1873. Hearing September 24, 1873.

25,796.—Jacquard Machines.—Granted to AVERY BARNETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,807.—Hem-Folders.—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Hearing October 1, 1873.

25,814.—Sleeping-Cars.—Granted to JOHN DANNER, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,843.—Cultivators.—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,862.—Weeding-Hoes.—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,867.—Machines for Covering Saddle-Trees.—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

25,874.—Bronzing-Machines.—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Hearing October 8, 1873.

25,883.—Construction of Glass Coffins.—Granted to JOHN R. CANNON, October 25, 1859. Application filed July 23, 1873. Hearing October 8, 1873.

25,936.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to ISAAC R. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to NELSON SPOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Hearing October 15, 1873.

26,003.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Hearing October 15, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Hearing October 22, 1873.

26,060.—Machines for Making Box-Joints.—Granted to JAMES STIMPSON, November 8 1859. Application filed August 2, 1873. Hearing October 22, 1873.

26,069.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to WILLIAM T. VARE, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Hearing October 29, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

27,539.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 10, 1873.

30,201.—Apparatus for Freezing Liquids.—Granted to FERDINAND PHILIPPE EDOUARD CARRÉ, October 2, 1860; reissued in two divisions February 18, 1873. Patented in France August 24, 1859. Application filed May 17, 1873. Hearing August 13, 1873.

EXTENSIONS GRANTED.

25,005.—Improvement in Governor-Valves, granted to BENAIAH FITTS, August 9, 1859.

Claim.—The manner of mounting the valve substantially as herein described—that is to say, resting or supporting the valve as shown at M, and retaining it in its seat, as shown at N, for the purposes set forth.

25,014.—Improved Machine for Cutting out Wooden Ware, granted to GEORGE R. HAY, August 9, 1859.

Claim.—The rock-shaft K, in combination with the hoop-saw H, constructed and arranged as described, and operated by means of the pinion L, in the manner and for the purpose substantially as set forth.

25,036.—Improvement in Postmarking-Stamp, granted to MARCUS P. NORTON, August 9, 1859.

Claim.—The blotter J, connected or attached to the main part of any post-office postmarking-stamp for the purpose of cutting and inking, blotting, and effacing, so as to successfully cancel the frank or postage-stamp of any letter or any package at the same time and operation of marking or printing upon such letter or package the name of any post-office, the year, the month, and the day of the month, substantially as and for the purpose herein set forth.

25,070.—Improved Roof for Railway Cars, granted to A. P. WINSLOW, August 9, 1859; reissued August 8, 1865, numbered 2,050.

Claim.—1. The plates D, caps F, and grooved rafters B, when arranged substantially as herein set forth, for the purpose described.

2. Forming an air-chamber, G, between the sheeting or roof A and plates D, when arranged as herein described, for giving free circulation of air to cool the car, and at the same time allow the water, dust, &c., to pass off at the ends of said plates.

25,235.—Improvement in the Manufacture of Iron, granted to BERNARD LAUTH, August 23, 1859.

Claim.—A new article of manufacture, made by rolling iron or steel, in a cold state, for hardening and adding strength to it, without injury to its fiber, and at the same time reducing it in size, as herein set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 5, 1873.]

6,791.—Collar-Box.—ROBERT W. BETTS, New York, N. Y., assignor to himself and O. P. DORMAN, same place. Application filed April 12, 1873.

6,792.—Nubia.—HENRY BOOT, Philadelphia, Pa., assignor to THOMAS DOLAN & Co., same place. Application filed June 26, 1873.

6,793.—Bean.—GILBERT H. PRINDLE, Philadelphia, Pa. Application filed July 25, 1873.

6,794.—Bean.—GILBERT H. PRINDLE, Philadelphia, Pa. Application filed July 25, 1873.

6,795.—Sign.—HENRY B. TITUS, Brooklyn, assignor to EDWARD TODD & Co., New York, N. Y. Application filed August 1, 1873.

6,796.—Carpet.—ALEXANDER T. WEBSTER, New Brunswick, N. J., assignor to NEW BRUNSWICK CARPET COMPANY, same place.—Case A. Application filed July 26, 1873.

6,797.—Carpet.—ALEXANDER T. WEBSTER, New Brunswick, N. J., assignor to NEW BRUNSWICK CARPET COMPANY, same place.—Case B. Application filed July 26, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date August 5, 1873.]

1,393.—Whisky.—JOHN E. CASSIDY, Boston, Mass. Application filed April 8, 1872.

1,394.—Medicine.—Mrs. SARAH DE GRATH, Jersey City, N. J. Application filed June 30, 1873.

1,395.—Guano.—B. M. RHODES & Co., Baltimore, Md. Application filed July 29, 1873.

1,396.—Agricultural Fertilizers.—O. WITTICHEN, Haymarket, Va. Application filed July 29, 1873.

1,397.—Steam-Packing for Engines.—THE SILVER LAKE COMPANY, Newtonville, Mass. Application filed July 29, 1873.

1,398.—Steam-Packing for Engines.—THE SILVER LAKE COMPANY, Newtonville, Mass. Application filed July 29, 1873.

1,399.—Steam-Packing for Engines.—THE SILVER LAKE COMPANY, Newtonville, Mass. Application filed July 29, 1873.

1,400.—Solid-Braided Cords.—THE SILVER LAKE COMPANY, Newtonville, Mass. Application filed June 29, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date August 5, 1873.]

ORIGINAL PATENTS.

141,412.—Sewer-Gas Trap.—GEORGE C. ANTHONY, New York, N. Y. Application filed June 14, 1873.

The open-top box is provided with a cover having a cylinder entering the box at sufficient depth to enter the liquid, which has its upper surface level with the top of the sewer-pipe, preventing the passage of any gas arising from the sewer back into the waste-pipe.

Claim.—A sewer-gas trap, composed of an open-topped box and a cover provided with a cylinder, as described, and having pipes for the entrance and exit of fluids, arranged substantially as set forth.

141,413.—Sand-Papering Machine.—DAVID A. ARMSTRONG, Sandwich, and SHUBAEL T. ARMSTRONG, Sycamore, Ill. Application filed October 11, 1872.

The wheel H has flanges *e e* to produce a blast of air, by which the dust is conveyed away from the machine.

Claim.—1. The wheel H, when provided with the blocks *b*, in combination with disk *d*, substantially as and for the purposes set forth.

2. The metal frames *c* for the purpose of securing the sand-paper to the blocks *b*, and the blocks to the wheel, substantially as described.

3. The wheel H, when provided with the flanges *e*, in combination with the hoods, constructed and operating substantially as and for the purposes set forth.

141,414.—Toy.—JOHN JACOB ARNAUD, Boston, Mass., assignor to THOMAS E. RIDDEL, same place, assignor of one-half his right to JOHN W. RICHARDSON, Medway, Mass. Application filed May 31, 1873.

The ball, being dropped in the hole at the top, descends in a zigzag course from one inclined way to the next until, reaching the bottom, it is cast among a series of numbered cups, in one of which it will probably rest. A substitute for the cup-board is a plane-board, on which pins, to be overturned by the ball, are set.

Claim.—1. The combination of the open frame-work, composed essentially of the standards G Gx, with two or more inclined bars and the perforated platform, when all said parts are constructed and arranged substantially as described.

2. The combination of the open frame-work, inclined bars, and the platform with one or more movable pins and the ball, when constructed and arranged to operate substantially as described.

141,415.—Gas-Burner.—JAMES W. AVERILL, Newmarket, N. H. Application filed April 14, 1873.

Claim.—The burner described, consisting of the parts A C, the former provided with air-apertures, the latter with the conical gas-nozzle D, in combination with revolving perforated register-sleeve E, held between flanges *e f* on the said parts A C, when the latter are fitted together, as shown and set forth.

141,416.—Gage-Cock.—HARRY J. BAILEY, Pittsburg, Pa., assignor to BAILEY, FARRELL & Co., same place. Application filed February 3, 1873.

By means of an eccentric upon a weighted handle, a valve, whose inner surface is faced with soft metal, is pressed to its seat—the weight serving to retain it in position when seated—both the handle and valve being removable. The valve has attached to it a twisted strip of metal, which serves to clean the bore of the gage-cock upon the removal or motion of said valve.

Claim.—1. The arrangement of a cam or eccentric, E, having on its periphery a soft-metal seat, with its face operating directly against the outer open end of the barrel or bore *a* of a gage-cock, in combination with a weighted handle, substantially as set forth.

2. The combination of a cam or eccentric, E, a spindle, D, for opening and closing the bore of the gage-cock, and, affixed thereto and moved thereby, the cleaner *c*, arranged and operated substantially as set forth.

3. The combination of the cam or eccentric E, bearings *r*, seats *d*, spindle D, cleaner *c*, and weighted handle, substantially as set forth.

141,417.—Idler for Belt-Gearing.—THOMAS BELL and JOHN F. HILLERICH, Louisville, Ky. Application filed July 3, 1873.

A stationary ring with a sleeve secured to the side of hanger, so as to be independent of the shaft on which the idle pulley works, and another ring secured to the pulley having a center hub to correspond with the friction-cone, which operates the idle pulley, when required.

Claim.—The pulley B and hanger A, with its ring and flange C C, and friction-ring D, as above described, when the pulley is made to work on a ring or flange on the side of the hanger, so that both shall be independent of the shaft, in combination with the friction-cone E and lever H, by which it is operated, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

141,418.—Carpet-Stretcher.—WILLIAM A. BOLES, Shelbyville, Ind. Application filed May 9, 1873.

Two adjustable extension-bars with a cross-bar upon their ends, with points loosely attached to allow it to conform to the shape of the room, with a bar to extend its length connected by pivots, a pivoted lever to move it, thumb-screws and pawls and ratchets to move and hold it for nailing.

Claim.—The combination, in a carpet-stretcher, substantially as shown, of two adjustable extension-bars, composed of sections B C D E, secured to the ends of dental bar A, and operated by lever L, or by pawl *L'* and notched pawl P *L'*, for the purposes set forth.

141,419.—Manufacture of Manganese, Ferro-Manganese, and Spiegeleisen.—OGDEN BOLTON, Jr., Pittsburg, Pa. Application filed March 24, 1873.

This invention consists in the reduction of oxide of manganese in close boxes, at less than a melting heat, to a pure or nearly pure metallic manganese, and the utilization of such unmelted man-

gamese, either in the boxes or compressed into blooms, in the manufacture of spiegeleisen and ferro-manganese, and to counteract red-shortness in steel.

Claim.—1. The reduction of manganese in close boxes or cases in a suitable furnace at less than a melting heat, with or without introduction of iron, substantially in the manner set forth.

2. The manufacture of spiegeleisen and ferro-manganese by charging the unmelted or metallic manganese produced, as set forth, either in boxes or in blooms into pig metal previous to or after melting, substantially as in the manner set forth.

3. The charging of metallic manganese, either in cases or blooms into a bath of molten steel, substantially in the manner set forth.

141,420.—Lasting Boots and Shoes.—JOSEPH BRACKETT, Lynn, Mass. Application filed June 6, 1873.

Claim.—1. A last provided with a bottom armed with spurs or holding devices, over and upon which the edges of the upper are stretched and by which they are held whether in conjunction or not with an insole or outsole, or both, without the aid of extraneous devices, substantially as set forth.

2. The combination, with a last of otherwise ordinary or suitable construction, of a removable bottom adapted to be fitted to the bottom of the last, and provided on its outer face with a series of spurs or holding devices, substantially as and for the purposes shown and set forth.

3. In the herein-described process of lasting boots and shoes, an insole perforated with a series of small holes coinciding with the teeth or spurs on the last which confine the upper in place about such insole, substantially as and for the purposes shown and set forth.

4. For lasting purposes a plate or false bottom employed with a last, and containing a series of spurs or their equivalents for seizing hold of and retaining the upper and sole in place, substantially as and for the purposes stated.

141,421.—Water-Bowl.—BLOOMFIELD BROWER, New York, N. Y. Application filed May 9, 1873.

A water-bowl for "copying-presses" is made by dividing the cover into two parts, one raised some distance above the other, to permit the brush to come in contact with the edges and be deprived of its water.

Claim.—A water-bowl having the two parts B and D forming the cover in different planes above each other, substantially as and for the purpose set forth.

141,422.—Copying-Press Table.—BLOOMFIELD BROWER, New York, N. Y. Application filed February 7, 1873.

The slide-board, which is to hold paper or the like, is hinged so that the operator may have access to the drawer, or may extend the water-bowl without pushing in the slide. This bowl is hung in the ring of a bent-metal support, which support is pivoted to the frame of the table in such manner that it and the bowl may be moved outward when the paper is to be wetted, and then pushed under the table out of the way.

Claim.—1. The sliding board D D′, made in two parts, and hinged together, substantially as and for the purpose set forth.

2. In combination with the side frames A A, top plate B, box F, and sliding board D D′, made in two parts, the casting *m* provided with an eye, the swinging rod *n* forming a hand, and the bowl J, all substantially as and for the purposes set forth.

141,423.—Cleaning Wool on Pelts.—JAMES M. BROWN, Lynn, Mass. Application filed July 25, 1873.

Streams of water forced upon the pelt from rear to front.

Claim.—The process of washing sheep-skins by directing a stream or streams of water against the wool of the pelt, substantially as herein described.

141,424.—Clothes-Wringer Roller.—ELISHA P. H. CAPRON, Hudson, N. Y. Application filed January 30, 1873.

A wringer-roll with its journals covered with a cap, forming an outer journal of soft metal, with a flange extending to the outer surface of the roll, and projecting tenons extending from it fitted into openings in the main shaft to hold it in position, and is secured to the end of the shaft by a screw.

Claim.—The sleeve B made of Babbitt metal or similar material, provided with the tenons or projections *d*, and constructed and fitted to the roller, substantially in the manner herein shown and described, for the purposes set forth.

141,425.—Machine for Boring Hubs.—EZRA CASWELL, Lyons, N. Y., assignor of one-half his right to A. H. TOWER, same place. Application filed May 1, 1873.

A tram forms one of the devices and assists in the adjustment of the tool upon a hub.

Claim.—The tram T, hooks *h h h*, screws *s s s*, and adjusting removable plate O, in combination with the shank M, tube P, plate L, and cutter *k*, when constructed and arranged substantially as herein shown and described, and for the purposes specified.

141,426.—Stop-Gate in Water-Mains.—DEWITT C. CREGIER, Chicago, Ill. Application filed May 17, 1873.

Within the main valve a supplemental valve is provided, both operated upon the same stem, the supplemental valve rendering the operation of the main valve under pressure more feasible. A pin attached to the valve is operated by a feather, and moves an indicator showing the position of the valves.

Claim.—1. The main valve E, when provided with an interior recess or chamber, J, guides I, and impinging bar or projection K, substantially as specified.

2. The combination of the main valve E and supplemental valve F with the stem D and outer case, so as to operate both valves by a single stem, substantially as set forth.

3. The combination, in a water-gate, of the shaft H, provided with a spiral feather, with the valve E, stem D, and indicator C, substantially as specified.

4. The stuffing-box G, when attached to the case so as to form a chamber or recess, R, in combination with the stem D and ring or collar Q, substantially as and for the purposes specified.

141,427.—Removable Saw-Tooth.—JOSEPH CROOKER, St. Louis, Mo., assignor of one-half his right to JOSEPH W. BRANCH, same place. Application filed June 9, 1873.

The teeth are rounded upon the back, and the front side beveled so as to wedge tightly in the saw-plate, and are further secured by a rivet, the head of which enters a recess in the tooth.

Claim.—The combination of the tooth C beveled at C′, the slot B beveled at *b′*, and the rivet D having a flat portion or spot, *c*, all substantially as and for the purpose set forth.

141,428.—Thrashing-Machine.—JOHN CROWLEY, Sparta, Wis., assignor of one-half his right to WM. C. LEYBURN, same place. Application filed October 21, 1872.

Concave of angled grate-bars, and provided with long teeth. Picker with spiral blades for agitating straw, which is thrown onto carrier by deflecting-boards.

Claim.—1. In thrashers and separators, the concave and grate, formed of concave or angular slats B, substantially as and for the purposes set forth.

2. In combination with said concave, the peculiar arrangement of the teeth C′, as shown, and for the purposes set forth.

3. The drum G, provided with flanges L, for the purposes described.

4. In combination with said drum G, the picker-reel G′, rakes F H, and perforated floor E, arranged to operate substantially as and for the purposes specified.

5. The described thrasher and separator, wherein the cylinder A, concave C, conveying-board D, perforated floor E, rakes F H, drum G, picker-reel G′, hanging aprons I I′, and fan J, are combined and arranged to operate substantially as and for the purposes set forth, shown, and described.

141,429.—Wash-Boiler Attachment.—ENOCH DAVIS, Hanover, Ind., assignor of one-half his right to JOHN P. ARNOTT, same place. Application filed February 7, 1873.

Within a wash-boiler is placed a crate or basket formed of wire, with a wood or metal bottom, which, with its contents, may be removed.

Claim.—The crate or basket for containing the material to be washed, composed of the bottom B, rods C C, and band D, when constructed and arranged to operate substantially as shown, and for the purposes set forth.

141,430.—Reversible Knob-Latch.—BARTHEL ERNE, Pittsburg, Pa. Application filed June 12, 1873.

Claim.—The front edge-plate a^2 made in two parts, each part furnishing two adjacent sides of the bolt-hole, and one part sliding lengthwise of the bolt to permit of the reversal of the bolt, substantially in the manner and for the purposes set forth.

141,431.—Baby-Walker.—JENS ERIKSON, Madison, Wis. Application filed March 1, 1873.

Two yoke-arms adjust horizontally to circles of different diameters, and the whole yoke-frame is adjustable vertically.

Claim.—1. In a baby-walker, the combination, with the movable frame A, of the adjustable yoke-arms D, and the adjusting-screws H, substantially as set forth.

2. In combination with the yoke-arms D, adjusting-screws H, and frame A, the posts E and screws for adjusting the height of said arms, substantially as shown and described.

141,432.—Car-Coupling.—JOHN J. FRAIKIN, Fort Howard, Wis. Application filed November 4, 1872.

The coupling-hooks have projections upon which levers act to raise them, so that the cars may be coupled and uncoupled from the platform.

Claim.—The levers A, having projections E, in combination with the lever-bars C, vertical levers D and cross-bars or axles B, all constructed, arranged, and operating as described.

141,433.—Apparatus for the Manufacture of Vulcanized-Rubber Belting.—DENNIS C. GATELY, Connecticut, and JAMES B. FORSYTH, Boston, Mass. Application filed December 2, 1872.

The devices described in reissued patent No. 3,531, for vulcanizing between hollow plates heated by steam, and combined with means for stretching the belting as it is treated.

Claim.—The combination of a stretching apparatus, substantially such as described, with the two steam-chambers B B′, the whole constructed and operated substantially as described.

141,434.—Machine for Winding Bobbins.—JAMES GOODYEAR, Yonkers, N. Y. Application filed April 28, 1873.

The empty bobbins on which the sliver is wound are introduced between the disks from a receiver at the bottom of the hopper, and a supporting-pin is at the same time pushed into the bobbin from the opposite direction by the reciprocating-arms. This pin is withdrawn at the proper time by an arm, and the filled bobbin ejected into a receptacle by a vibrating ejecting-arm. The pin-operating and ejecting arms are operated from the main shaft by means of a pawl on a loose cam engaging with a ratchet on the shaft. The pawl is disengaged and the cam caused to rest by its arm coming against a stop on a slide, which supports the bobbin-pin. As the bobbin is filled it rises, and also the slide and stop, until the pawl is released from the stop and engaged by a spring with the ratchet on the shaft, which turns the cam and operates the ejecting and introducing arms.

Claim.—1. In combination, the hopper N, receiver G″, reciprocating piston I, reciprocating pin K, supporting disks or walls H H, and frictional drum E, constructed and operating together substantially in the manner described.

2. The hopper N, receiver G″, disks or walls H H, and supporting-pin K, piston I, and slides G G′, in combination with the slotted side frames, constructed and operating substantially in the manner described.

3. The cam D and arm L, combined with and operating the supporting-pin K, substantially in the manner described.

4. The mechanism for discharging the bobbin, consisting of the ejecting-arm O O′ and bar R, or the equivalents thereof, constructed and operating substantially in the manner described and specified.

5. The device for regulating the rise or filling of the bobbins, consisting of the cam-lever and pawl *c d*, ratchet *b*, and adjustable stop *a*, or equivalents, constructed and operating substantially in the manner described.

6. In combination with the hopper N, receiver G″, and disks or walls H H, the ejector O O′ for automatically discharging the filled bobbin, constructed and operating substantially in the manner described.

7. A machine for automatically winding bobbins having the following elements, namely, a hopper to receive, hold, and deliver the bobbins, a receiver to receive and hold the bobbin in position to be introduced between the supporting-disks H H, a vibrating bearing, K, to support and retain the bobbins properly during winding, a reciprocating piston or plunger, I, to deliver the bobbin on the supporting-pin, an oscillating discharger, O O′, and a vibrating lever, U T, to automatically engage the sliver with the empty bobbin, all acting together in co-operative relation, substantially in the manner described.

141,435.—Door-Check.—LEWIS GOODYEAR, Trumansberg, N. Y. Application filed May 20, 1873.

A spring-latch at top of door to prevent slamming.

Claim.—The latch A and attachments, in combination with the spring B and bent arm C, arranged as described, substantially as and for the purposes hereinbefore set forth.

141,436.—Rotary Steam-Engine.—DEXTER D. HARDY, Delavan, Ill., assignor of one-half his right to HENRY R. GREENE, same place. Application filed January 15, 1873.

Steam enters hollow shaft at one end, passes into one chamber of the drum, and thence through steam-ports into the space between the exterior of the drum and the interior of the cylinder, exerting its force upon the pistons, carrying them and the drum and exterior cylinder, with which they connect, before it, and constantly expands until it reaches the exhaust-ports. The packing-ring fits the shaft snugly, and presses against one of the cylinder-heads.

Claim.—1. The drum F having its shafts E E concentric thereto and placed eccentrically to the exterior cylinder A, and revolving in the same direction and at uniform speed.

2. The drum F, with partition *e*, cavities G H, and ports *g h*, in combination with the pistons or valves I¹ I² I³ I⁴.

3. The combination of the packing-ring J, drum F, shaft E, and cylinder A, substantially as and for the purpose set forth.

141,437.—Cemented Slate-Roofing.—AMZI G. HERRON, Buffalo, N. Y. Application filed May 3, 1873.

Upon a substratum of tarred paper or felt a coating of tar and pulverized gypsum is laid, upon which is placed a layer of roofing-slate without lapping. The joints are afterward painted.

Claim.—A roofing consisting of tarred paper or felt, tar, gypsum, or broken stone, and slabs of slate, combined and applied substantially as set forth.

141,438.—Animal-Poke.—JAMES HOPKINS, Akron, Ohio. Application filed December 6, 1872.

Claim.—The wire-spring E, coiled around the pivotal pin B, and extending back under the bolt or pin F to the stang-head D, through which it is projected by said bow-pin F, in combination with the bow A and stang C, as and for the purpose set forth.

141,439.—Oyster-Dredge.—WILLIAM C. HORNYAGER and MAURICE FITZ GIBBON, New York, N. Y. Application filed December 20, 1872.

A swival-jointed arm or crane fits into a socket in the deck, and extends to the side of the vessel. Upon the outer end is a pulley, over which is carried a rope connecting the dredge to a windlass. The dredge consists of a chain-bag attached to the peculiarly-shaped dredge-frame, the bottom of which bag opens, and is held together when closed by a belt. Withdrawal of the belt discharges the contents of the dredge.

Claim.—1. An oyster-dredge constructed substantially as herein described, and having an opening and closing device at the bottom for discharging the oysters, as and for the purposes hereinbefore described.

2. The combination of windlass A, Fig. 1, and swival-jointed arm or lever B, Fig. 1.

3. The combination of windlass A, swival-jointed lever B, and dredge C, substantially as and for the uses and purposes hereinbefore set forth.

141,440.—Spindle-Bolster for Spinning-Machines.—BARTON H. JENKS, Bridesburg, Pa.—Case A. Application filed May 2, 1873.

The spring holds the bolster with an elastic pressure, allowing it to move in its socket following the spindle, while the latter finds its center of gravity. The screw regulates the pressure of the spring.

Claim.—1. The spring *g*, in combination with the necked bolster, which is supported upon, and is laterally movable in, its rail, substantially as described.

2. The adjusting-screw C, combined with the spring *g* and the loose-necked bolster A, substantially as described.

141,441.—Spindle-Bolster for Spinning-Machines.—BARTON H. JENKS, Bridesburg, Pa.—Case C. Application filed May 2, 1873.

The bushing or sleeve is made loose in the bolster-shell, and prevented from turning by a pin in the latter entering a groove in the former.

Claim.—The sleeve B for encircling the spindle, constructed and applied within the cylindric bolster-shell, so that it shall form a close-fitting upper guide and bearing for the spindle, and yet have sufficient lateral movement in any direction within the bolster-shell to permit the spindle to find its center of gravity, and at the same time shall be positively restrained from revolving with said spindle, all as herein described and set forth.

141,442.—Apparatus for the Manufacture of Starch.—THOMSON KINGSFORD, Oswego, N. Y. Application filed July 15, 1873.

Claim.—The starch-drying apparatus, consisting of an absorbent slab or table, which receives the starch to be dried and abstracts its moisture by absorption, said slab or table being itself dried by artificial heat applied to its lower surface, in the manner set forth.

141,443.—Bee-Hive.—DAVID LATCHAW, Barkeyville, Pa. Application filed November 6, 1872.

Pivoted strips at the bee-entrance are set to guide the bees in and out, and moths to a prison at one end of the hive, where are removable supplemental frames. Woven-wire cylinders form avenues from the outer entrance to the prison, and decoy-apertures serve to lead marauding bees from the hive to said prison.

Claim.—1. In a bee-hive, a comb-frame provided with a supplemental removable comb-guide, substantially as herein before described.

2. In a bee-hive, the combination of the guide-strips *a a′* pivoted in the bee-entrance, a prison-box arranged at one side of the comb-frames and provided with apertures in its under side, and a passage-way leading thereto, all as shown and described.

3. The prison-box provided with wire cylinders, forming continuations of its entrance-apertures, as and for the purpose specified.

4. The combination, with the guide-strips and prison-box, of the front frame provided with the aperture in the bottom, whereby robbers seeking to escape from the brood-chamber may be led into the prison-box, as set forth.

5. The entrance-blocks S provided with wings, as specified, in combination with the guide-strips, as and for the purpose specified.

141,444.—Organ-Coupler.—RAPHAEL E. LETTON, Quincy, Ill., assignor of one-half his right to LUCIUS M. LOCKE, same place. Application filed May 7, 1873.

Organ with coupler for doubling the notes, to operate by means of a knee-swell or by stops.

Claim.—1. The hinged platform A A′ provided with the pins *n*, and wires B having the arms *b d* arranged as shown, in combination with the inclines *m*, feet *i*, standards A, rods *g* secured to the stops P and R, when said parts are constructed and arranged to operate substantially as shown and described.

2. The hinged platforms A A′ provided with the pins *o*, and wires B having the arms *b d* arranged as shown, in combination with the slide E having the inclines N, the lever I, rod L, and knee-swell M, when said parts are constructed and arranged to operate substantially as shown and described.

141,445.—Car-Coupling.—IRA B. LEWIS, Albion, Mich., assignor to himself and CORNELIUS VAN WYCK, same place. Application filed March 17, 1873.

The draw-bar has devices for automatically connecting, which are secured to it by means of the coupling-pin, and may be easily removed.

Claim.—The frame C, adapted to fit an ordinary draw-head, and be secured thereto by the coupling-pin B, the frame having the shaft *a*, spring *b*, hook D, bell-crank E, lever F, quadrant G, and fillet *c*, substantially as and for the purpose set forth.

141,446.—Carpet-Stretcher.—JAMES LINDSAY, New York, N. Y. Application filed May 7, 1873.

Two elongated griping-jaws having shanks pivoted together and combined with a guide-stud and lever, so that the jaws will automatically open and close. A bearing is also so arranged that the jaws may be forcibly closed to grasp the carpet by the outward movement of the lever.

Claim.—1. The combination, with the elongated griping-jaws A B, of the shanks D C, pivoted together as described, of the

toggle-joint, the lever F having a sliding movement, and its inner end forming a part of the toggle-joint, and the steel or transverse pin g, substantially as and for the purpose specified.

2. The combination, with the shanks, pivoted together and carrying the elongated jaws, of the toggle-joint, the lever F having a sliding movement, and its inner end forming a part of the toggle-joint, and the bearing f, the whole arranged substantially as and for the purpose specified.

141,447.—Bale-Band Stretcher.—FRANCIS M. LOGUE, Sartaria, Miss. Application filed July 17, 1873.

Claim.—The lever A and arm C, when forked and notched, as shown, and combined with the crank B, as herein described, and for the purpose specified.

141,448.—Machine for Rossing Bark.—LEANDER BAKER, (administrator of JAMES MARTIN, deceased,) and GEORGE W. WILSON, Merced, Mich. Application filed May 17, 1873.

A rotating cutter removes the inner portion of the bark, which is carried from the machine by a traveling apron, while another similar apron carries off the outer and coarser portion.

Claim.—The machine described, having the press-roller I, connecting-rod L, and weighted lever K, in combination with the cutter C and traveling belts M P, as described.

141,449.—Apparatus for Pitching Casks, Barrels, &c.—GUSTAVUS MEYER and JOCHN DICK, Quincy, Ill. Application filed June 19, 1873.

Two concave rollers, one divided at its center and capable of reverse motion, are mounted upon parallel shafts, one of which is provided with movable eccentric bearings for regulating the distance between the shafts. One section of the compound roller is provided with clutches at each end and mounted loosely upon the shaft. The barrel is placed endwise upon the concavities of the roller, which being disengaged and rotated the barrel is revolved upon its longitudinal axis, and upon the sections being engaged an end-over-end motion is given to the cask.

Claim.—1. The section O having clutches at each end mounted loosely upon a shaft and having an endwise movement, as and for the purposes shown and described.

2. The section O, in combination with the section P, substantially as shown and described.

3. The roller composed of the sections O and P, in combination with the roller r for the purpose of rotating a cask or similar vessel in the plane of its vertical axis, substantially as shown and described.

4. The combination of the sections O and P, capable of reverse motion, and roller r for the purpose of rotating a cask or similar vessel upon the axis of its cylinder, substantially as shown and described.

5. The combination of the sections O and P and roller r operating horizontally, substantially as shown and described.

6. The combination of the sections O and P, rollers B and r, substantially as shown and described.

7. The milled eccentric-bearings A, substantially as shown and described.

8. The elongated slot l, in combination with the box e, substantially as shown and described.

9. The combination of the eccentric-bearings A, slot l, and box e, substantially as shown and described.

10. The shaft r, screw s, in combination with the draw-rods t and shaft Z, substantially as shown and described.

11. The combination of the pulley-wheel b, bar c, lever f, slotted standard d, and movable shaft Z, for the uses and purposes substantially as shown and described.

12. Two or more rollers, either concave or cylindrical, working in a horizontal position for rotating a cask, substantially as shown and described.

141,450.—Printer's Furniture.—HARLAN P. MONTAGUE, Belchertown, Mass. Application filed December 21, 1872.

Claim.—The pieces C having a solid middle equal to the shortest side of the smallest form and slotted from said middle outward to each end, as and for the purpose described.

141,451.—Apparatus for Sausage-Stuffing and other Purposes.—JAMES A. MOORE, Bethlehem, Pa., assignor of one-half his right to ALFRED J. MOORE, same place. Application filed March 8, 1873.

Piston tilts out of the way of cylinder when withdrawn therefrom.

Claim.—1. The tilting piston-rod h, arranged and operating substantially as and for the purpose herein specified.

2. A sausage-stuffer and lard-press, composed substantially of a bench, A, cylinders D G H, piston C with its rack i and tilting-rod h, and driving-gearing, substantially as herein specified.

141,452.—Coal-Stove Grate.—SAMUEL G. MORRISON, Williamsport, Pa. Application filed June 7, 1873.

Claim.—The movable flanged collar or ring c, in combination with the horizontally-rotating grate A, substantially as and for the purpose described.

141,453.—Folding-Table.—PATRICK MUNDS, East Hampton, Mass. Application filed February 3, 1873.

At each end of the table-top are hinged the leg-frames. Said frames are made adjustable in height by means of operating-sleeves, screws, and nuts arranged in the standards of said frames. A hinged brace hooks into the nuts on each standard, and keeps the nuts from turning and the leg-frames from folding together.

Claim.—The relative arrangement, with a table-top, of the legs, when constructed substantially as shown and described, and of operating sleeves T T, screws W W, and nuts V V, for the purpose of enabling the height of the top to be altered at will, and having, in connection with them, the removable brace K, for the purpose of locking the nuts V V when in place.

141,454.—Check-Valve.—JOHN H. NAYLOR, Buffalo, N. Y. Application filed March 28, 1873.

The valve, seat, and cage are held in place by a screw-lid on the chamber. The stop-cock shuts off communication with the boiler, allowing the valve to be removed.

Claim.—1. The combination and arrangement of the cylinder A, screw-cover B, removable valve-seat C, cage D, and valve E, for the purpose and substantially as herein set forth.

2. The combination and arrangement of the cylinder A, screw-cover B, removable valve-seat C, cage D, and valve E with the stop-cock G, for the purpose and substantially as herein described.

141,455.—Explosive Compound.—ALFRED NOBEL, Hamburg, Germany, assignor to THE GIANT-POWDER COMPANY and THE ATLANTIC GIANT-POWDER COMPANY, San Francisco, Cal. Application filed June 4, 1873.

Claim.—The composition of matter hereinbefore set forth, consisting of nitrate of soda and resin, or their equivalents, with or without sulphur, mixed with nitro-glycerine, as a new explosive compound, substantially as hereinbefore described.

141,456.—Folding-Chair.—PATRICK W. NOLAN, New York, N. Y., assignor of one-half his right to J. H. CAMPBELL, Willimantic, Conn. Application filed April 8, 1873.

To a base-plate are secured two uprights or frame pieces, having vertical and angular slots to receive the pivots connected to the sliding back, folding arms, or folding seat. When the seat is in position for use the arms are extended and the back is inclined, but when the seat is folded the arms are also folded, and the back assumes a vertical position and slides down in the grooved uprights.

Claim.—1. The pivoted sliding back D, in combination with the slotted upright side standards B, substantially as and for the purpose described.

2. The folding seat, provided with angular or curved straps, in combination with the sliding pivoted back, substantially as described.

3. The folding arms, in combination with the pivoted sliding back, substantially as described.

4. The combination of the pivoted seat C, folding arms E, and pivoted sliding back D, substantially as and for the purpose described.

5. The standards or uprights B, provided with the vertical and angular slots b b^1, in combination with the folding seat C and pivoted back D, substantially as and for the purpose described.

6. The shields or guards G, in combination with the standards B, for covering the projecting curved or angular ends of the seat-straps C', as described.

141,457.—Folding-Chair.—PATRICK W. NOLAN, New York, N. Y., assignor of one-half his right to J. H. CAMPBELL, Willimantic, Conn. Application filed June 25, 1873.

A single pivoted arm is arranged between two pivoted seats, so that while either of the seats is unfolded the arm remains unfolded also. The seats are also connected with the backs by means of curved slotted straps on the seats and pins on the backs, and when the seat is folded up the back is brought to a perpendicular position. When the seat is unfolded the back is inclined to the proper position.

Claim.—1. A single pivoted or folding arm between two adjoining seats, in combination with independent cams, or an equivalent device, on the adjacent sides or straps of said seats for operating said arm, substantially as described.

2. The combination of the pivoted back with the pivoted seat, provided with curved slotted straps or plates, whereby a positive movement is imparted to the back in both directions by the movement of the seat, and also to the seat by the movement of the back, substantially as described.

3. The slotted cam-shaped straps B', in combination with the pivoted back and arm for operating said back and arm, substantially as described.

141,458.—Iron Bridge.—JACOB D. PIERCE, Columbia, Mo. Application filed June 17, 1872.

The bridge is sustained by cables anchored to the foundation and passing over trestle-supports. The central suspensory space is thus diminished in width, and the road-way is carried over this portion upon raised trestle-work. The bridge thus has a wave-line contour.

Claim.—1. The arrangement of one of the chords of a bridge in three reversed curves to act alternately as a top and bottom chord, and the extension of the same in full line at tangent to anchorage, as the of the main or primary features of seating or upholding the bridge.

2. The application of cables to the support of the center of bridges by passing them over arches combined with trusses in place of upright towers.

3. The combination of upright and suspended arches with three trusses in the organization of one span of a bridge, and all without the aid of towers, substantially as and for the purpose described.

141,459.—Manufacture of Leather.—GEORGE RAWLE, Bristol, and WILLIAM N. EVANS, Bedminster, England. Application filed April 16, 1873.

Claim.—Coating the grain side of skins or hides with a protecting coating of grease and oil, or other coating capable of protecting such grain side from the action of tannin liquor, and subsequently submitting the skins so prepared to the action of tannin liquor in a tan-pit, substantially as herein described.

141,460.—Screw-Cutting Machine.—HENRY O. REED, Boston, Mass. Application filed May 16, 1873.

The face-plate carries two circular die-holders, in the periphery of which the screw-cutting dies are fastened. The bolt is advanced by means of a lever pivoted to the rear of the clamp, in the end of which a spring-pawl is fitted to operate against a rack on the side of the bed.

Claim.—1. The castings F and G, in combination with the small steel pieces, the set-screws, the pins a a, and the die-plate D, as above described.

2. The lever K having for its fulcrum the sliding spring-pawl L, bearing in a rack in the bed A, in combination with the head I and jaws H H mounted in ways in the bed A, and with the die-plate D bearing a cutting-tool, so that the screw or nut held in the jaws may be forced against the cutting-tool by the lever, all substantially as described.

141,461.—Device for Locking Drawers.—LOUIS RENKER, Hoboken, N. J. Application filed May 19, 1873.

A rod which, by a series of cams, locks or unlocks all the drawers in a bureau or desk at one operation.

Claim.—The slide-rods C C', provided with the cam-projections E, lock-projections D D, and springs w w, in combination with a lock-drawer, B, and notched drawers B' B', to be fastened thereby, arranged and operating substantially as and for the purpose herein specified.

141,462.—Cultivator.—RICHARD B. ROBBINS, Adrian, Mich. Application filed December 30, 1872.

Anchor-shaped hooks are provided pendent from the axle-tree for holding the cultivator-beams from the ground, and securing them by automatic action.

Claim.—The anchor-shaped pendent hooks e, in combination with the staples f, when used in a lateral-moving cultivator, substantially as described.

141,463.—Running-Gear of Vehicles.—LUCIUS R. ROSEBROOK, Harmon, Ill. Application filed April 19, 1873.

Mode of connecting the head-blocks of vehicles to their front axles, whereby a free ball-and-socket movement is allowed, and fifth-wheels and king-bolts dispensed with.

Claim.—The double-jointed brace E, connected to an eye-piece, A, on the reach-plate, and to a pivot-screw, a', on a plate, a, in combination with the ball e and socket-plates g g, substantially as described.

141,464.—Sugar-Cane Coverer.—FREDERIC ROY, Parish of St. Bernard, La. Application filed April 5, 1873.

Two pairs of scrapers are secured to the frame, by which the earth from each side is thrown into the trench and a ridge formed, which is made uniform and pressed by a following plow and roller, the latter being adjustable in height. By means of a bent axle and lever the covering devices are raised from the ground at will.

Claim.—1. The combination of the frame A with the mold-boards E E, regulator or leveler F, together with its vertically-adjustable frame F', its roller F'', standards g g, and vertical screws G G G G, substantially as described and shown, and for the purpose set forth.

2. The combination of the wheels and axle B', lever C', handle D, runners H H', screws J J, oscillating cross-piece I with fore-wheels B B with their mountings, all constructed and operating together substantially as described and shown, and for the purposes set forth.

141,465.—Vent-Gimlet.—HIRAM S. RUMSEY, Binghamton, N. Y. Application filed March 8, 1873.

Claim.—The vent-gimlet described, consisting essentially of a single tube, A, of equal diameter throughout, provided with a stop-cock, D, gimlet-point B, and tapering screw-thread c, as described, for the purpose set forth.

141,466.—Corn-Harvester.—ALEXANDER SCOTT, Rochester, N. Y. Application filed May 14, 1873.

Shear-cutters are opened by star-shaped or cam-wheels to receive the standing stalks, and closed for cutting by springs.

Claim.—1. The receiving-platform C operated by the point g, latch d, and cord n, or its equivalent, in the manner shown and described, for the purposes set forth.

2. The movable cutters D and D', connected as described, and arranged so as to be opened by a cord or its equivalent, and closed by a spring or otherwise instantaneously, for the purposes set forth.

141,467.—Frame for Vertical Engines.—GEORGE B. SIMSON, Buffalo, N. Y. Application filed March 22, 1873.

Claim.—The vertical engine-frame, cast in two pieces or halves, each half comprising the standards A A', bed-plate B, permanent tubes C C, and having the yoke F connected therewith, the whole arranged and constructed substantially as hereinbefore specified.

141,468.—Reed-Organ.—JOHN A. SMITH, Erie, Pa. Application filed October 23, 1872.

Claim.—1. In combination, with the stops of a reed-organ, a series of stop-actuating devices, arranged to be severally operated by a movement of the knee, substantially as and for the purposes described.

2. The front rail D, in combination with the plunger E, as shown, and for the purposes mentioned.

3. The combination of the plunger E, knee-piece A, and lever B, constructed and operating together, substantially as and for the purposes mentioned.

4. The plunger E, constructed as described, in combination with the lever B and spring c, as and for the purposes mentioned.

5. The register F, in combination with the plunger E, and front rail D, as shown and described.

141,469.—Organ-Stop Action.—JOHN A. SMITH, Erie, Pa. Application filed October 29, 1872.

Finger-stop handles or push-knobs are arranged with a pawl, notch, and springs, in connection with an alternate on-and-off indicator by consecutive pressures of the same finger-knob.

Claim.—1. The stop-keys D D' D'', connected with the stops of the organ by plungers, pawls, springs, levers, to cause like movements on the said stop-keys to produce opposite results upon the stops, substantially as set forth.

2. The plunger E, in combination with the plunger F, as shown and described.

3. The plunger E and pawl m, in combination with the plunger F and catch-pawl c, as shown and described.

4. The plunger E and pawl m, in combination with the spring g and catch-pawl c, as shown and described.

5. The stop-key D, D', or D'', in combination with the plunger E, as shown and described.

6. The movable tablet P, covering and displaying alternately the fixed tablet O, said device being in conjunction with the name of the stop, substantially as shown and described.

141,470.—Beat-Detaching Apparatus.—SAMUEL SHEDEN, Brooklyn, N. Y. Application filed July 9, 1873.

To the upright standard is firmly attached a plate provided with a slot, through which the end of the operating-lever passes, so that, should the bolt upon which the lever is fulcrumed break, the lever would still be retained in position.

Claim.—The standard 1, eye 2, plate 4 having the slot 5, in combination with the operating-lever 6 and plug 7, substantially as shown and described.

141,471.—Stop-Cock.—E. FRANK SPAULDING, Cambridgeport, Mass. Application filed April 26, 1873.

When the first disk has reached its lowest point the farther descent of the other operates a cam, which forces the disks in place.

Claim.—In a valve, substantially as described, the combination of the disks G G', the wedge c', and ribs A A, constructed and arranged for conjoint operation, as specified.

141,472.—Seeding-Machine.—HENRY CHARLES STEPHENS, Glenville, Ohio. Application filed June 9, 1873.

The frame is supported upon a center wheel, which acts through a series of pins, to move the agitator in the seed-box situated upon the front end of the frame. A hollow tooth conveys the seed to the furrow, which it opens, and the seed is covered by scrapers on the rear of the opener.

Claim.—1. The combination of the frame A, roller B, seed-box D, hollow standard E, point or share F, and scraper G, in the manner as and for the purpose set forth.

2. The agitator, consisting of the frame I and cord H, in combination with the seed-box D, arm J, spring K, and pins c of the roller B, substantially in the manner as and for the purpose specified.

141,473.—Bushing for Faucet-Holes.—SAMUEL R. THOMPSON, Portsmouth, N. H. Application filed April 15, 1873.

The neck of the faucet is held in position by the angular projection of a wooden plug screwed within the ordinary metallic bushing, admitting of the ready insertion and withdrawal of the faucet.

Claim.—1. A bushing, c, constructed and arranged, as described, so as to hold and allow the yielding in any direction and permit the ready release of a faucet, substantially as specified.

2. The combination of a bushing, c, and a casing, b, constructed and arranged as described, and for the purposes specified.

141,474.—Car-Starter for Street-Railways.—MORTON TOULMIN, New Orleans, La., assignor of one-fourth his right to O. F. CAWTHON, Mobile, Ala. Application filed May 27, 1873.

Within the segmental wheel is eccentrically journaled a smaller friction-wheel, which is forced against and turns the axle, power being applied to turn the segmental wheel.

Claim.—1. The combination of the segmental wheel F, which is greater than a quadrant, with the eccentric-wheel I, spring E, pin O, and wheel K, substantially as and for the purpose set forth.

2. The combination of the sleeve having the wheel K, journals S S, lugs G G, with the segmental wheel F, substantially as and for the purpose set forth.

3. The combination of the spring E, to operate on the pin O and eccentric I, with the wheel K, substantially in the manner and for the purposes set forth.

141,475.—Carpenter's Gage.—JUSTUS A. TRAUT, New Britain, Conn., assignor to THE STANLEY RULE AND LEVEL COMPANY, same place. Application filed November 16, 1872.

The scribe-pin is inserted in holes in the slit, which is clamped by a screw.

Claim.—As an article of manufacture, the carpenter's gage herein described, composed of the bar *a*, head *b*, slit *c*, gage pin or pins *c'*, and fastening-screw *f*, all arranged as and for the purpose set forth.

141,476.—Window-Mirror.—HERMANN VOSS and HERMANN P. BRANDT, Davenport, Iowa. Application filed June 23, 1873.

Claim.—The window-mirror, consisting of the box or frame A and the mirrors *a a a' a'*, the mirrors *a a* diverging outwardly or toward the outer end *b*, and being in vertical planes, while the mirrors *a' a'* diverge upwardly and outwardly at angles which will reflect objects directly beneath the window in which the mirror is placed into the room, all substantially as herein described.

141,477.—Wrench.—SAMUEL W. WAKEFIELD, Keokuk, Iowa. Application filed May 16, 1873.

Claim.—The wrench A B having tapered slot C, with the large end of the slot toward the handle and the other end D, closed, and the side *d* serrated, substantially as shown and described.

141,478.—Chimney or Globe Holder.—RUFUS WRIGHT and JAMES H. RACE, Brooklyn, N. Y. Application filed May 13, 1873.

Claim.—The lamp-chimney or globe securer, consisting of a single metallic clip embracing the gallery-frame, so constructed, substantially as described, that without alteration of the parts it may be attached to any open-ring gallery.

141,479.—Sawing-Machine.—PETER M. ANDRIOT, Oxford, Ohio. Application filed April 21, 1873.

Locking devices are provided for the wheels upon which the machine rests, which prevent their rotation when the machine is in use.

Claim.—The bars 7, constructed as described, and used for locking the wheels, substantially as set forth.

141,480.—Churn.—ESAU ARCHER, Davisville, W. Va. Application filed April 12, 1873.

Claim.—The combination of the crank fly-wheel G, short horizontal shaft F, bevel gear-wheels H I, short vertical shaft J, sleeve K, stationary bevel-gear wheel M, lug-plate N, shaft O, cranks P, bow or stirrup Q, and bevel-gear wheel R, with each other, to give a rotary movement and an up-and-down movement to the dasher-shaft, substantially as herein shown and described.

141,481.—Insect-Powder Gun.—WILLIAM HENRY BALL, Brooklyn, N. Y. Application filed April 19, 1873.

By compressing the flexible box the powder is ejected.

Claim.—A combined package and gun for insect-powder, composed of a hollow cylinder, A, of paper, wood, or other material, and a flexible tube, E, the box A having a hopper or other perforated bottom, C, and the flexible tube E having an ejecting-nozzle, substantially as specified.

141,482.—Water-Closet for Vessels.—WILLIAM BISHOP, Brooklyn, N. Y. Application filed July 19, 1873.

The supply-water pump and soil-pump are connected to and operated by the same lever, washing the closet simultaneously with the withdrawing of the contents previous to projecting the same out through the vessel.

Claim.—The water-pump *b* operated by the lever *c*, in combination with the pump *d* that removes the contents of the closet and discharges the same, substantially as set forth.

141,483.—Manufacture of Friction-Matches.—CHARLES F. BONHACK, New York, N. Y. Application filed June 28, 1873.

Stirrers in a paste-chamber, which is inclosed within a water-chamber, convey the paste to a roller, from whence it is transferred by contact to a bundle of matches resting on a guide-roller. A gage determines the thickness of paste on the roller and scrapes waste paste from the ends of the roller. A scraper for removing paste from the transfer-roller is provided with pins to arrest the stray pieces of broken matches.

Claim.—1. The combination of paste-receptacle A, water-bath B, covers C, transferring-roller D, stirrer E E', gage H, scraper I, and guide-roller F, forming the match-dipping machine, substantially as and for the purpose described.

2. The adjustable gage H, having side extensions *f* for scraping paste-drippings on the roller ends, as described.

3. The scraper I, having upright pins or teeth *g* for taking the pieces of broken matches and passing the paste between them into receptacles A, as set forth.

141,484.—Shirt-Collar Fastener.—GEORGE W. BRIENTNALL, Lancaster, Pa. Application filed August 8, 1872.

Claim.—As a new article of manufacture, the fastener for paper or other removable collars, consisting of an elastic band or cord provided with a button at each end, substantially as and for the purpose set forth.

141,485.—Coal-Hod.—JOHN H. BROWN, Lynn, Mass. Application filed April 1, 1873.

The spout or front slides in slots or otherwise, and is operated by the handles so as to be raised or lowered.

Claim.—The combination of the extension-spout B with the hod A, operating as described, and for the purpose set forth.

141,486.—Packing-Box for Paper-Folding Machines.—CYRUS CHAMBERS, Jr., Philadelphia, Pa. Application filed May 10, 1873.

One side is adjustable so that it may accommodate differently-sized folded sheets and be set longitudinally at such an angle as to cause a diminution of frictional bearing of the springs of the back board. This back board and the plunger are adjustable, to meet the size of the trough. The folded sheet drops into the vertical slot I, is fed forward by the plunger, and the bends given its edges in passing the cleats are straightened by being forced against the angular rear edges of the cleats as the plunger retreats, being returned by the elasticity of the accumulated pile.

Claim.—1. The adjustable side B', united to the bottom board A of the packing-box of a folding-machine by means of set-screws passing through the slots *s* in the bottom board, substantially in the manner and for the purpose specified.

2. The plunger D, made adjustable as to its width by means of the slats *d d* united to the side bars *e f*, and sliding upon one another in the manner substantially as set forth.

3. The sliding back board C, made adjustable as to its width by the sliding slats *k m*, and provided with the frictional springs S S, as and for the purpose stated.

4. The inclined faces of the cleats K K, forming the acute angles *a a*, for the purpose of straightening out the folded sheet in the manner described.

141,487.—Machine for Folding, Cutting, and Trimming Paper.—CYRUS CHAMBERS, Jr., Philadelphia, Pa. Application filed May 8, 1873.

Circular cutters with angular teeth attached to one of each pair of folding-rollers run in grooves in the other. They are clamped between rings of rubber which, bearing against the periphery of the rollers, receive motion therefrom and hold the paper distended over the grooves. The teeth are beveled on one side, and cutting on both their angles, and from one side only, insure clean cuts on the binding edges. The waste is cleared from the grooves by fingers. The cutters slide freely on their shafts, and, together with the clearers and rollers, adjust simultaneously longitudinally.

Claim.—1. The combination, with the cutter G, of the rubber-actuating disks H H', arranged and operating in the manner and for the purpose described.

2. The angular or inclined arrangement of the cutter-teeth as distinguished from teeth radially arranged, as and for the purpose set forth.

3. The cutter G, whether having inclined, angular, or radial teeth, dressed on a bevel on one side of the cutter-plate, as described and represented, for the purpose specified.

4. The arrangement of the cutter loosely on a stud projecting from the frame, as described, for the purpose of enabling it to accommodate itself to the longitudinal adjustments of the folding-rollers, as stated.

5. The arrangement, in combination with the grooves in which the circular cutters work, of adjustable clearing-fingers to keep said grooves free from chips or shreds of paper, as set forth.

141,488.—Machine for Folding, Pasting, and Inserting Paper.—CYRUS CHAMBERS, Jr., Philadelphia, Pa. Application filed June 11, 1873.

The "outsect" sheet (sixteen pages) has a line of paste deposited on the line of its back fold which is parallel with that of its first fold, (by mechanism of a kindred application.) The sheet is then folded in its center by the first folding-blade, guided to the second folder by tapes, folded and given a line of paste inside on the line of its last fold from a paste-box, S, and carried by tapes under the last folding-rolls, where it rests. The "insect" sheet (eight pages) is folded on a table at right angles to the other, where, as its first fold is made, a paste-roller, C', deposits paste on its back folding-line. As it is carried forward to a position under the last folding-rollers 4 4 it receives paste from box S' on its last folding-line. This insect thus lies under the outsect, both receiving the last fold by the upwardly-rising blade D, the folded being guided by curved rods up over one roll, 4, and down between it and a roll, 5, and delivered.

Claim.—1. The supplemental attachment, consisting of the folding-blade B' with its paste-cup C', the grooved rollers 3 3, and paste-box S', arranged and operated as described, in combination with a two-sheet folding and pasting machine, for the purpose of folding and pasting the inset ready to be delivered to the last folding device and folded within and pasted to the outset, all substantially in the manner set forth.

2. The paste-cup C', constructed as described, and attached to the folding-blade by means of the adjustable spindle, in the manner and for the purpose specified.

3. The combination of the spindle, slide, screw, and arm with the folding-blade of a paper-folding machine, in the manner and for the purpose described.

141,489.—Paper-Folding Machine.—CYRUS CHAMBERS, Jr., and WILLIAM MENDHAM, Philadelphia, Pa., assignors to EDWIN CHAMBERS and CYRUS CHAMBERS, Jr., same place.—Case A. Application filed May 13, 1873.

One from a bank of sheets on feed-table is adjusted with its side against gages and its front edge on stops which vibrate into recesses in griping-roller as the drop-roll falls upon it. It passes between rolls, being creased by a blade of one into the bite of grippers upon the other, and, thus held, is guided around by rods. The forward end is directed out between rods *s* and *t* by fingers V, vibrated from out of recesses in F into its path, and retracted in time to allow its griped crease to pass upward into the bite of rolls F and I to form the first fold, when the gripers release it. The doubled sheet is carried on tapes under rods *r* to the second and succeeding folders.

Claim.—1. In combination with the hinged feed-table B', the divided adjustable guide C C', constructed and operating as described.

2. The spring-gripers *f*, constructed as set forth, and attached to the cylinder F in the manner and for the purpose stated.

3. The compound cam Q, consisting of two disks having independent and combined adjustments, in combination with the drop-roller and the guide-fingers V and the mechanism for operating them, as and for the purposes described.

4. The guide-fingers V, operating as and for the purpose specified.

5. The elastic creasing-blade *g*, in combination with the recess in roller F for creasing the paper while on the run, as set forth.

6. The cylinder F, composed of separate disks or rollers placed on a common shaft, E, at suitable distances apart, in combination with the vibrating fingers V, arranged and operating in the manner described.

7. The wires Z Z placed above a pair of folding-rollers and on either side of the folding-blade, as and for the purpose specified.

141,490.—Paper-Folding Machine.—CYRUS CHAMBERS, Jr., and WILLIAM MENDHAM, Philadelphia, Pa., assignors to EDWIN CHAMBERS and CYRUS CHAMBERS, Jr., same place.—Case B. Application filed May 13, 1873.

As the sheet with duplicate printed matter receives its first fold it is divided centrally by circular knives, the two halves being delivered, supported by rods, to overlie the rollers D D' and E E', through which they are simultaneously forced to form their second folds. The folded sheet from rolls D is carried by the usual tapes over rolls I I', receives its last fold, is delivered and packed. The folded sheet from rolls E is carried by tapes over and between rolls D to the last folding-rolls I, thus following the first to the packing-box. When the sheet receives but two folds it is delivered into a receiving-box standing parallel with the packing-trough, which receives the sheet, swings into a plane at right angles to the trough, and drops it from off a fixed supporting-bed into the trough, where it is packed. A rearward continuation of this fixed bed is a hinged plate, which may be depressed at will to eject the sheet and permit its being packed.

Claim.—1. In a folding-machine by which the printed sheet is cut in two parts, as described, the combination and arrangement for correlated action of the rollers E E' with their blade F, the rollers D D' with their blade C, the rollers I I' with their blade K, the carrying-tapes *t*, and the guide-bars G, all constructed, timed, and operated substantially in the manner and for the purpose specified.

2. The turning-frame Q, constructed as described, and operated by the reciprocation of the plunger to receive the folded sheet from the rolls, and deliver it in proper position for packing into the packing-trough, as set forth.

3. The drop *h*, constructed and located as described, and operated by the treadle Z, for the purpose of throwing out an imperfect sheet before it reaches the packing-trough, as specified.

141,491.—Packing Device for Paper-Folding Machines.—COOPER CLARK, New York, N. Y., assignor to CYRUS CHAMBERS, Jr., and EDWIN CHAMBERS, Philadelphia, Pa. Application filed May 10, 1873.

The limp and damp folded sheet, dropping into the vertical slots *s*, is forced forward, by the inclined plunger C, against the spring-seated inclined retiring head B, while the front of the pile is supported against the inclined stops K.

Claim.—1. In combination with the packing-box of a folding-machine, the inclined reciprocating plunger C, constructed and operating as described.

2. The inclined back board B, made as described, for conjoint operation with the plunger C in the packing-box of a folding-machine, in the manner and for the purpose specified.

3. The inclined catches K, having the same inclination to the packing-trough as the plunger and back board, and operating to hold the packed sheets at that angle, as specified.

141,492.—Passenger-Register.—SYLVESTER L. COOPER, Lewistown, Pa., assignor of two-thirds his right to JOHN LOCK and ROBERT N. WILLIAMS, same place. Application filed May 19, 1873.

A passenger-register for full and half fares connected with a step mechanism by which the weights of the different kinds of fares are regulated.

Claim.—1. The step *b*, in combination with the triangular blocks *c*, substantially as set forth, compelling the passengers to place their weight upon the center of the steps, the legs *d*, and levers *e*, as described.

2. In combination with the movable step of a passenger-register, the levers *e* and adjustable weight *f*, for the purpose set forth.

3. A passenger-register for fares and half-fares, in combination with a step mechanism, by which the relative weight of fares may be regulated, substantially as shown.

141,493.—Stamp for Crushing Ores.—GEORGE D. CROCKER, San Francisco, Cal. Application filed April 14, 1873.

The stamp-rods, having flexible connection, operate through guide-rollers which allow the rebound of the stamp.

Claim.—The combination of the flexible spring connections D with the friction-wheel guides *b b*, in a quartz-mill, when the several parts are constructed and arranged substantially as and for the purpose set forth.

141,494.—Cotton-Bale Tie.—WILLIAM CROSS, Galveston, Tex. Application filed May 24, 1873.

S-shaped bar, through the bent parts of which the band, with projections thereon, passes.

Claim.—The S-shaped bar A B B, and the cross-bars E, combined with the band D in the manner and for the purpose described.

141,495.—Fly-Trap.—ANDREW J. DAVIS, Hartford, Mich. Application filed June 21, 1873.

A trap constructed with a cylindrical cage with a cover, a bottom within a basin having openings for the insects covered with a conical formed cap, and an opening at its top for the insects to pass into the cylinder, which is separated at this point by another basin through which the cone passes, which serves to form another apartment, and is hinged to the base, for clearing the trap of the insects caught, and has no other means of egress for them.

Claim.—1. The double fly-trap, consisting of cage A, with cover C, handle D, entrance-cones *c*, and basin E, connected to the lower chamber B, having cone F and basin E', substantially as specified.

2. The basin E, having central aperture for lower cone F resting on the rim *f* of the lower chamber B, and secured thereto by sliding bolts *g* and eyes *g'*, as shown and described.

141,496.—Loom-Picking Stick-Check.—ROBERT DAVIS, Lawrence, Mass., assignor to himself and PARKER C. KIRK, same place. Application filed June 25, 1873.

To hold the picking-stick in its outer position, so as to prevent its rebounding when struck by the shuttle, a spring friction-bar is pivoted to the bottom of the lay under the shuttle-box and so placed as to bear against the side of the stick in its outward movement, and on the opposite side of the lay-bottom, and parallel with the slot in which the stick moves, is placed a fixed friction-bar, adjustable laterally that it may be moved inwardly from time to time as it becomes worn.

Claim.—In combination with the picker-staff B, the race-beam A provided with the adjustable bar F, and the friction-brake D with its spring E, all operating together as specified.

141,497.—Farm-Gate.—EDWARD B. DECKER, Carrollton, Ill. Application filed January 18, 1873.

This is hinged and latched as other gates. One or more of the lower rails are pivoted at the hinge-end, and, being plural, connected by a link near the latch-end, at which end these bars rest in a slot out of which they pass in a curved movement to be held up by a link held by the same pivot that holds a gravitating-latch which prevents animals from lifting the bars.

Claim.—In combination with the vertical cross-bar D, rigidly connected with the upper bars of the gate, the pivoted latch H, and the lower bars (one or more) pivoted to the cross-bar C and resting at their front ends in slots of the said bar D, as shown and described.

141,498.—Scaffold-Support.—RICHARD A. EDMONSTON, Georgetown, D. C. Application filed January 28, 1873.

The "putlogs" rest transversely upon the curved projecting portion of the support, and by their weight constrict the scaffold-pole, at the same time pressing the beveled edges *b b* into its substance, rendering slipping impossible.

Claim.—A scaffold-crab, constructed for use and operation substantially as shown and described.

141,499.—Fence-Post.—HOSEA O. ELMER, Sand Bank, N. Y. Application filed February 21, 1873.

A post of angle-iron, (crucial,) having an expanded iron plate near its base, and socketed into a wooden block, said block having an iron band around its upper end, and being thoroughly incased in cement or artificial stone, said plate serving as a cap.

Claim.—A fence-post having its upper part of iron, its lower of iron, wood, and cement of artificial stone, and provided with the intermediate cap F, as and for the purpose described.

141,500.—Manufacture of Illuminating-Gas.—WILLIAM ELMER, New York, N. Y. Application filed November 22, 1872.

Claim.—The process herein described of manufacturing illuminating-gas by first distilling the gas-stock in one retort at a comparatively low heat, then decomposing the resulting distillates into hydrogen and carbonic oxide in a separate retort at a high heat—not less than 2,000° Fahrenheit—and then causing the resulting gases, immediately before leaving the said highly-heated retort, to pass over or through crude coal, or its equivalent, deposited for the purpose therein and near the point of exit of the gas, whereby the inflammable but non-illuminating gases generated under the said high heat take up and combine with themselves, while under the action of such heat, a portion of carbon, thereby converting them into useful illuminating-gas, substantially as described.

141,501.—Packing and Carrying Device for Paper-Folding Machines.—WASHINGTON FARRINGTON, Brooklyn, N. Y., assignor to CYRUS CHAMBERS, Jr., and EDWIN CHAMBERS, Philadelphia, Pa. Application filed May 7, 1873.

The packing-trough has a supplemental bottom which may be lifted with the accumulated folded sheets upon it to remove them to the finishing-table.

Claim.—In combination with the packing-trough of a paper-folding machine, a removable slatted tray or false bottom, made substantially as described, for the purpose specified.

141,502.—Terret and Martingale Ring.—JOHN GERAGHTY, Jersey City, N. J. Application filed April 19, 1873.

Claim.—An improved harness-trimming for martingale and terret rings, consisting of the frame B, ratchet A, and pawl C, combined and arranged as and for the purpose specified.

141,503.—Treating Cotton-Seed Oil to Render it Drying.—HENRY GOLDMAN, New York, N. Y. Application filed May 17, 1873.

Dissolve five pounds of bichromate of potassa in water, twenty gallons; heat to boiling and add one hundred gallons cotton-seed oil and agitate; then draw off into another vessel and add, under agitation, five pounds aqua regia diluted with twenty gallons of water, continuing the agitation; then allow to settle, draw off, and mix with five pounds oil of vitriol diluted with ten gallons of water under agitation.

Claim.—The process for converting cotton-seed oil into a drying-oil, substantially as herein described.

141,504.—Silvered-Glass Door-Knob.—JOHN W. HAINES, Cambridgeport, Mass. Application filed March 18, 1873.

Claim.—The within-described process of silvering and backing up the silver lining of glass door-knobs by filling the shell with cement, so as to exclude the air and protect the silver from oxidation, substantially as shown and described.

141,505.—Window-Fastener.—WILLIAM A. HAWTHORN and EDGAR E. SCOTT, Carson City, Nev. Application filed June 6, 1873.

Claim.—In combination with the rod D, notched as shown, the bar H, with its thumb-piece and shoulder, and the spring I, for the purpose of locking the sash at any point, substantially as herein described.

141,506.—Casting Steel Ingots.—JAMES A. HOLMES, Philadelphia, Pa. Application filed December 10, 1872.

Claim.—1. The production of ingots of cast-steel by the process described, namely, melting the steel in a crucible which is hermetically sealed, and then permitting the steel to cool in the crucible, from which the ingot is removed, as set forth.

2. A crucible made with one side detachable, substantially as and for the purpose set forth.

3. A crucible made with detachable linings, substantially as and for the purpose specified.

141,507.—Grain-Binder.—ALBERT S. HOYT, Winona, Minn. Application filed October 10, 1872.

A segmental gear-wheel, provided with eccentric cams on each of its faces, serves to operate at the proper moment the devices for holding and cutting the cord, and for tying the knot.

Claim.—1. In a grain-binder, the bevel-wheel h provided with segmental gear adapted to the pinion i to operate the spindle B, in combination with the cam g, rod I, nippers D, and the cam f and rods a b and carriers c, all arranged to operate substantially in the manner and for the purpose described.

2. In a grain-binder, the gear-wheel k provided with a cam or cams, l, in combination with the pin H, rod y, and holding and cutting device G, all arranged to operate in the manner herein described.

3. In a grain-binder, the hollow spindle B, its plug F and nippers D, and rod I and its pin m, with or without the reacting spring w, all constructed, arranged, and operated substantially as and for the purpose set forth.

141,508.—Cooking-Stove.—WILLIAM W. KARSHNER, Aubrey, Kan. Application filed May 10, 1873.

Dampers and flues are so arranged that heat may be directed to the top or bottom of the stove without heating the opposite part, or it may be directed to both parts at the same time, or to the chimney, without heating either the top or bottom.

Claim.—The arrangement of the dampers E F I in connection with the opening in the rear end of the lined fire-chamber, the openings in the top of said lined fire-chamber, the space between the top of the stove and the top of the fire-chamber, the flue J, and flue H, substantially as herein shown and described.

141,509.—Horseshoe.—ALBERT LEACH, Lynn, Mass. Application filed May 15, 1873.

A shoe provided with detachable calks. The calk is made in two parts and recessed to fit a tenon on the shoe, the two-part calk being secured together by a screw.

Claim.—1. A horseshoe having tenons b provided with sockets A, adapted to receive and hold the correspondingly tongued and recessed divided calks E, substantially as described.

2. The calk E constructed of two parts, e e, connected by the screw f, and provided with the recess f and tongues g, in combination with the tenon b having the sockets A, substantially as and for the purpose specified.

141,510.—Reed-Organ.—RAPHAEL E. LETTON, Quincy, Ill. Application filed May 8, 1873.

By placing the valve-opening nearer one set of reeds than the other the quality of tone of one set is varied, increasing the resources of the instrument.

Claim.—The reed-board A C provided with the slots D and F, the valve e, and reeds N and N', when said parts are constructed, combined, and arranged substantially as and for the purpose described.

141,511.—Tool for Seating Bung-Bushes.—LOMAX LITTLEJOHN, New York, N. Y. Application filed July 12, 1873.

This implement bevels the bung-hole and countersinks it for the reception of the bush.

Claim.—The tapering hollow body A, having a recess and slot to receive the knife B, the flange C provided with projections c^1 c^2 to receive the cutters D E, the rigid ball F, and handle G, said parts being constructed and operating, in connection with each other, as herein fully described.

141,512.—Compound for Destroying Insects, &c.—JOHN B. LUNBECK, Leon, Iowa. Application filed June 28, 1873.

Pine tar, soft soap, tobacco juice, strong alkali, unslaked lime, dry ashes, oil of tansy.

Claim.—The above-described compound for destroying insects, worms, and grubs, and protecting fruit and other trees, composed and applied substantially as set forth.

141,513.—Elevator for Passengers and Freight.—SAMUEL NASH, Cambridge, Mass. Application filed May 29, 1873.

Power is applied by a geared crank-shaft, the gearing meshing into gearing on a drum, which in turn meshes into the gearing of a drum above it, all arranged in a stationary frame, and each drum having secured to it one end of a cord, which passes around four pulleys in the upper part of the main frame and around one pulley attached to the cross-piece of the cage or car moving between upright posts in the said frame, so that as it unwinds upon one drum it winds on the other.

Claim.—1. The drums d and e provided with gear-wheels d' and e', and the shaft f having gear f', as arranged and combined with the cord g, the pulleys b b, b' b', and c, substantially as shown and described.

2. The frame A provided with the pulleys b b b' b', and the movable frame a a, &c., having a pulley, c, in combination with the frame B, provided with drums d and e having gear-wheels d' and e', and the shaft f with its gear f', and the cord g, the whole being arranged, combined, and constructed substantially as herein shown and described.

141,514.—Pump.—JOHN WOLFORD and ROBERT CONNER, Knightsville, Ind. Application filed January 9, 1873.

The cylinder of the pump is attached to the curb by bifurcated adjustable braces, by means of which the height of the cylinder in the well may be varied.

Claim.—The bifurcated detachable and adjustable braces P P' in combination with the cylinder A and curb N, all constructed and arranged as set forth.

141,515.—Railway Rail.—WILLIAM PECKHAM, Middletown, R. I. Application filed May 7, 1873.

A dovetailed groove is formed in the base of the rail throughout its entire length, into which a bar of corresponding form is inserted, with the object of maintaining the parts in position in case the rail should be broken across.

Claim.—The rail A provided with the dovetailed groove a and protection-bar B arranged in it, as and for the purpose specified.

141,516.—Toy Money-Box.—HENRY W. PROUTY, Boston, Mass. Application filed May 26, 1873.

The door rotates upon vertical central bearings. The toy-cashier is arranged to be at the window when the door is open, but to disappear when the money has been received and the door sprung to again. The money is, by the same movement, deposited in the vault to the rear.

Claim.—1. In a toy savings-bank, constructed substantially as described, the combination, with the case A, of the door D, when hinged or pivoted thereto, in manner as set forth.

2. In a toy savings-bank, the combination, with the case A, of the door D, window E, and counter F, substantially as described.

3. In a toy savings-bank, the combination of the counter F and door D with the case A, when the door is hung as described and provided with means for actuating it, substantially as and for the purpose set forth.

4. The combination of the door, hung as described, and its actuating-spring, the counter F, and vault B provided with an opening, b, the whole being arranged to operate together in manner as set forth.

5. In combination with the pivoted door D, the counter F, provided with the flanges c c, as and for the purpose set forth.

6. In combination with the door, hung as described, and provided with a window and means of reversal, as specified, mechanism, substantially as stated, for bringing the cashier at his post at the window when the bank is open, and away therefrom when the bank is closed.

141,517.—Feed-Water Heater and Purifier.—SAMUEL J. SADLER and HENRY VOLMAR, Cleveland, Ohio. Application filed February 21, 1873.

The lower part of the case is divided into two parts by a diagonal plate. The upper one is designed to receive the sediment which the water, in passing over the corrugated plates, has parted with, which is blown off through cork, the water passing through the vertical pipe into the lower part, from which it is taken by the pump.

Claim.—The reservoir divided in two compartments by the diagonal dividing-plate I and connected by the communicating-pipe K, arranged substantially as specified.

141,518.—Composition Filling for Painters.—RICHARD SHARP, Pittsburg, Pa. Application filed June 14, 1873.

Claim.—A rough-stuff compound to follow paint, formed of pumice-stone, applied in connection with white lead, japan, and varnish, as described.

141,519.—Seal-Lock.—THOMAS SLAIGHT, Newark, N. J. Application filed November 13, 1872.

The seal-holding device is locked in position by means of an arm on the dog or bolt that secures the hasp.

Claim.—In a seal-padlock, a combination of devices consisting of a front plate, G, provided with a recess, A, an escutcheon, B, having a hook-clutch, d, a seal-holding device, D c c, and a lug, O, attached thereto, substantially as described, and an arm, E, of a lock-hook, F, whereby, through the medium of said hook-clutch d, the escutcheon B is securely locked, in the manner substantially as described, for the purposes set forth.

141,520.—Brick-Yard Shed.—ROBERT A. SMITH, Newburyport, Mass. Application filed June 25, 1873.

The sheds are composed of the end frames, the clap-boarding, and the roof-doors, which cover the spaces in which the bricks are stacked while drying. The doors are to be opened in good weather and closed in bad weather.

Claim.—The protection-shed composed of the two frames H H, the clapboardings I, and the roof-doors K, constructed and arranged substantially as represented and described.

141,521.—Valve-Register.—JESSE W. STARR, Camden, N. J. Application filed April 10, 1873.

Claim.—1. The combination, with a valve moving longitudinally in a casing or frame and a threaded stem operating said valve, of a spur-wheel fast upon the valve-stem, a spur-wheel of different pitch attached to an index-plate and loose on said stem, and a spur-pinion meshing into both the spur-wheels, these members being combined for joint operation, substantially as and for the purpose set forth.

2. The combination of a valve-stem, a hand-wheel pointer fast thereon, and an index-plate loose thereon, and differential gearing to operate the index-plate, substantially as and for the purpose set forth.

141,522.—Paint-Brush.—AMASA S. THOMPSON, Little Falls, Minn., assignor to himself and LOUIS VASALY, same place. Application filed January 25, 1873.

A paint-brush with its handle constructed with an opening, into which is introduced an India-rubber egg-shaped reservoir for the paint, which is drawn, by the aid of its valves, through a connecting India-rubber pipe, and by the pressure of the hand in using it the brush is supplied with paint through a pipe extending downward from it.

Claim.—The combination of a brush, B, pump or syringe, E, a handle, C, and tube F, substantially as shown and described.

141,523.—Buffing-Mandrel.—NATHANIEL S. THOMPSON, Augusta, Me. Application filed April 1, 1873.

A wooden roller having an abrasive covering is divided longitudinally. The shaft is made in sections, and the device when closed is secured by the nuts, as shown.

Claim.—The combination of the sectional shaft C D C' D' with the blocks E E' and nuts N N, substantially as described, and for the purpose set forth.

141,524.—Separator for Cleaning Grain.—GRANT B. TURNER, Cuyahoga Falls, Ohio. Application filed April 30, 1873.

Grain passed over screens falls into a chute, through which it is drawn, and thence into a rotating screen, through which a blast is also drawn.

Claim.—1. The rolling screen G, composed of an exterior imperforate, except as at f, and interior perforated jacket, with space between, and perforate and imperforate ribs w h, for agitating and scouring grain, substantially as and for the purposes set forth.

2. In combination with the series of shaking-riddles and the rolling-screen, the suction-fan and the air-passages C D, the air to supply the fan and form the blast being drawn through the rolling-screen, as and for the purpose described.

141,525.—Composition for Water-Proofing Wall-Paper.—CORNELIUS VAN HERWERDEN, Williamsburg, N. Y., assignor to himself and CORNELIUS JANSEN, same place. Application filed May 31, 1873.

White soap dissolved in warm water, and add, when dissolved, white wax and isinglass.

Claim.—The composition formed of the ingredients in the proportions and manner substantially as herein set forth and described.

141,526.—Threshing-Machine.—WILLARD VERRILL, Elwood, N. J. Application filed April 12, 1873.

Vibrating beater-shaft carrying two sets of flails.

Claim.—The vibratory beaters J J pivoted intermediately across the endless carrying-belt C, as and for the purpose described.

141,527.—Straw-Cutter.—THOMAS WEBB, Elyria, Ohio. Application filed November 9, 1872.

The lower stationary and upper vibrating roller are covered by a concave-convex frame, slender arms from which descend into slots and bear upon the gudgeons of the upper wheel, and are held by extensible latches, the rear end of said frame forming a guide under which the straw enters, the other end descending lower and folding inwardly, so as to make a spring-pressure upon the straw near to the cutter. A horizontal bar, pivoted at the cutter-end, carries a cogged connecting gear-wheel under the control of the left hand of the operator, by which the feed may be stopped without stopping the cutting-wheel.

Claim.—1. The cover K, having arms working in vertical guide-slots of the trough, and engaging with the straps i i, so that it may move with the roller F, and provided at its front end with a convex yielding or spring-bearing plate, as described, for the purpose specified.

2. The combination, with the feed-rollers and their train of gear-wheels g, and with the driving-shaft E and its gear-wheel l, of the wheel j and the lever H, all as shown and described, for the purpose specified.

141,528.—Flooring-Clamp.—SYLVANUS B. WOOD, WILLIAM S. TERRY, ROBERT Y. H. TERRY, and ALONZO W. TERRY, Hamburg, Ark. Application filed April 26, 1873.

The block B, with a tongue or groove to correspond with the edge of the board, is adjusted to the proper height. The cruciform and variable clamp E combines with the set-brace F to sustain the instrument in position on the joist.

Claim.—An improved flooring-clamp, composed of the lever A, block B, arm C, flanged nut E, pointed arm F, strengthening-brace G, slotted flange or disk H, and stop-pin I, said parts being constructed, arranged, and operating substantially as herein shown and described, and for the purpose set forth.

141,529.—Alloy.—HOWELL W. WRIGHT, Glastenbury, Conn., assignor to ALBERT CHAPMAN, same place. Application filed December 30, 1872.

One part of copper to three or four of zinc. The zinc is melted in a crucible covered with pulverised charcoal to exclude the air, raised to the temperature at which copper melts, and the copper then added in thin sheets. The copper may be previously treated by melting and the addition of soda-ash.

Claim.—The process of producing an alloy of zinc with copper, or other metal or metals, which melt at a higher temperature than zinc, by first melting the zinc and then carrying it under a carbonaceous flux to the melting-point of the more infusible metal or metals, and then adding such other metal or metals, the whole being done substantially in the manner and for the purpose described.

141,530.—Alloy of Nickel, Zinc, and Copper.—HOWELL W. WRIGHT, Glastenbury, Conn., assignor to ALBERT CHAPMAN, same place. Application filed February 25, 1873.

Produced by melting the zinc while covered with powdered charcoal. When heated a trifle above the melting-point of copper nickel is added in small strips or pieces, and heat continued till the whole is melted, when the alloy is cast into ingots, the charcoal forming a coating.

Claim.—An alloy of copper, nickel, and zinc in about the proportions specified.

141,531.—Spark-Arrester.—MICHAEL ZECH, Pittsburg, Pa. Application filed May 17, 1873.

Claim.—A spark-arrester, consisting of the contracted top B, inverted dome F, perforated flange H, annular partition I, disk K, and flange M, arranged substantially as shown and described.

141,532.—Fence.—GEORGE ALBRO, Columbus, Pa. Application filed March 18, 1873.

A flat iron post has its upper end bent over to support a cap-rail, and at its base a transverse sill of same material set edgewise. Panels are secured to the posts by bolts passing through side strips, and can be swung down upon the ground between the posts and top rail by releasing top bolt.

Claim.—1. A fence-post constructed of flat or band iron, having its top bent over to form a horizontal flange, and its sill-piece arranged edgewise to the ground and transversely to the fence, substantially as described, for the purpose specified.

2. In combination with the fence-posts A and fixed cap or top rail D, the fence-panel E F, arranged to swing down upon the pivots a', as herein described, for the purpose specified.

141,533.—Plow.—THOMAS G. ANDREWS and ANDREWS RIVERS, Barnesville, Ga. Application filed May 17, 1873.

Plow-plate detachably secured to standard by shouldered lever pivoted in the slotted standard, and secured to the beam by sliding clasp.

Claim.—The lever-brace D, pivoted at its rear end to the slotted lower end of the standard C, secured at its forward end detachably to the beam A, and provided with a shoulder or pin for securing the plow-plate F detachably to said standard C, substantially as herein shown and described.

141,534.—Yarn Take-Up and Tension Device for Knitting-Machines.—HORACE L. ARNOLD, Ottawa, Ill. Application filed January 28, 1873.

The buckle-finger is a loosely-swinging piece that bears upon and grips the yarn between the bobbin and the spring take-up lever, on the rear side of which are cam surfaces, one of which

acts against and raises the fingers so as to allow yarn to be drawn from the bobbin when the tension thereon depresses the lever, and the other of which performs the same function when the lever is at its highest point, so that threading up may be facilitated.

Claim.—1. The combination of the take-up lever, segment-gear, and spring-rack, substantially as described.

2. The combination of the take-up lever provided with the cam-surface *a* and the buckle-finger, connected substantially as described, whereby the depression of the lever will remove the finger from the yarn and result in an even and regular delivery from the bobbin, as and for the purposes specified.

3. The combination of the spring take-up lever, provided with the cam-surface *f*, with the buckle-finger, arranged substantially as described, whereby the elevation of the take-up lever will throw the finger from the yarn, as and for the purposes specified.

4. The combination of a buckle-finger having an independent griping action, and arranged to bear upon the yarn on its way from the bobbin, with a spring take-up lever arranged to control the finger, substantially as described, whereby a desirable degree of tension on the yarn between the needles and the finger may be regularly and evenly maintained, as and for the purposes specified.

5. The combination of the graduating-screw with the take-up lever, segment-gear, rack, and actuating-spring, whereby the spring force of the take-up lever may be varied, as and for the purpose specified.

141,535.—Metallic Plane.—JOHN A. RAINES, New York, N. Y., assignor of one-half his right to JAMES BARKER, same place. Application filed July 2, 1873.

By interchange of various devices and substitution of different bits, several planes are formed with the same foundation of stock, handles, and gages.

Claim.—The herein-before-described plane, when constructed in the manner and for the purpose substantially as specified.

141,536.—Sleeve or Patch for Stopping Leaks in Hose.—JOHN F. BELLEMERE and FRANCIS R. FLEER, Reading, Pa. Application filed July 7, 1873.

Claim.—1. The sleeve or patch B having the internal lips or flaps C so arranged that when the patch is applied to a hose said flaps shall encircle the same and make a water-tight joint when subjected to a pressure from the inside, substantially as described.

2. The hose-patch, consisting of the tube B, made of leather or other flexible material, and provided with the internal lips or flaps C, arranged substantially as shown and described.

141,537.—Self-Operating Switch.—ADOLPH BOUCHARD, New Orleans, La. Application filed April 5, 1873.

Claim.—The T-shaped arms F and G rigidly secured to the front and rear platforms of the car at angles to the line of motion, in combination with the movable frog-point, so that the switch may be opened for the passage of the car and automatically replaced after said passage, substantially in the manner specified.

141,538.—Planting-Machine.—JOHN M. BRIGHT and ELIAS STANDT, Berryville, Pa. Application filed March 15, 1873.

A grain-drill with double hopper, for drilling or sowing wheat or large grain and timothy or grass seed at the same time.

Claim.—1. The compound receptacle E, consisting of two sets of hoppers, *b d*, of equal length, communicating through a series of openings, *e*, each provided with a valve, *f*, as set forth.

2. The combination of the reciprocating arms *j* and fixed rods K, arranged and operating so as to distribute the grain, as set forth.

3. The combination, with the slotted plates M M′, placed one above the other, of the double crank-shaft *h*, operating both plates, as set forth.

4. The receptacle F provided with a series of rods or plungers, *l*, adapted to the openings *m* in the bottom of the said receptacle, and connected to the hinged lid of the latter so as to be simultaneously operated by the reciprocation of the same, substantially as herein described.

141,539.—Billiard-Table.—GEORGE BUNTIN, Boston, Mass. Application filed May 21, 1873.

The metal bed-plates, preferably three to a table, are numerously perforated, and the holes countersunk underneath. Plastic cement is then applied to the plate and forced down to form heads upon the plaster projected through the plate-holes, and the top beveled off as usual. There is also special construction of the frame, legs, and top plates.

Claim.—1. A billiard-table, the bed of which is composed of a cast-iron plate or plates, combined with cement or plaster, substantially in the manner described.

2. The within-described billiard-table bed, composed of cast-iron plates having cells on its upper surface and countersunk holes at the bottom for retaining the cement packed in the cells, all as set forth.

3. A billiard-table frame, consisting of the side-beams A and A′, end beams B and B′, constructed for receiving detachable legs and intermediate beams, all as described.

4. The cast-iron cement-packed beds of a billiard-table, combined with and secured to a cast frame, substantially in the manner described.

5. The combination, substantially as described, of leveling-screws *s* and *t* with the bed and frame of the table.

141,540.—Steam Vacuum-Pump.—WILLIAM BURDON, Brooklyn, N. Y.—*Ante*. Application filed December 9, 1872.

The exhaust steam is admitted into successive water-chambers by rotating valves, which are operated by a shaft having a series of wipers that open and close the valves in succession. The steam, after forcing the water of the chambers, is condensed by a spray-jet, and thereby a vacuum is created, by which the water again fills the chambers.

Claim.—The combination, with the exhaust-pipe of a steam-engine, of three or more steam vacuum-pumps, each having a separate steam-inlet valve, and a valve-operating shaft, organized substantially as herein described, to operate the several valves in succession, as and for the purpose herein set forth.

141,541.—Chimney-Cowl.—JOHN BURGT, Powhatan Point, Ohio. Application filed May 1, 1873.

Claim.—As a new article of manufacture, the within-described chimney-cap, consisting of pipes A and cover B, having a smoke-escape passage between them, the openings D and radial wings G, and having hinged thereto the coupled doors E, the whole constructed and combined as set forth.

141,542.—Machine for Painting Barrels, Casks, &c.—WILLIAM BURNET and GEORGE B. FISHER, Chicago, Ill. Application filed July 21, 1873.

Consists in an automatic barrel-painting machine, to be operated by steam or otherwise, whereby an indefinite number of barrels, being introduced into the machine, will be each held until ready to be fed to the painting device, and will then, by its own weight, roll to its place, be then arrested and revolved on its imaginary axis until painted, and then automatically discharged from the machine.

Claim.—1. A cloth-covered or flexible-surfaced roller having an appropriate configuration for and as a means for applying a coat of paint or other material directly to the periphery of a barrel or cask.

2. In combination with a cloth-covered or flexible-surfaced roller adapted for applying a coat of paint or other material to the surface of a barrel or similar article, one or more cloth-covered or flexible-surfaced rollers dipping into a vessel, and conveying the paint or other material therefrom to such painting-roller.

3. In a barrel-painting or surfacing-machine, a roller having a concave surface adapted to fit the periphery of a barrel, substantially as described, and as shown at E.

4. The combination of one or more barrel-shaped rollers, C, for taking up the paint or other liquid or semi-liquid with a concaved roller for receiving the material from it, and depositing it directly upon the surface of a barrel or cask.

5. In a machine for painting or surfacing barrels or casks, inclined feed and guide rails, substantially as described, whereby the article shall, by the mere force of gravity, be fed into and discharged from the machine.

6. The inclined guiding and feed rails provided with movable stops to hold back a barrel prior to feeding it to the painting roller, substantially as and for the purpose described.

7. In combination with the inclined discharging-rails, a swing-frame operating to prevent the advance of the barrel while being painted or coated, but permitting it to be freely revolved while so held back.

8. The swing-frames provided with a stop or stops to limit its descent so as to hold the barrel to proper position, substantially as and for the purpose described.

9. In combination with the swing-frame, friction disks or wheels, substantially as and for the purpose described.

10. The combination, with the lever-stops H, of the described link-and-lever connections or their equivalents, whereby both stops may be simultaneously withdrawn from the tracks of the rails.

11. The described means or their equivalent for automatically lifting the swing-frame at the desired period of time.

12. The described means or their equivalent for automatically operating the lever-stops H.

13. The combination of the means for operating the swing-frame with the means for operating the lever-stops, the combination being substantially as described.

14. The mode of operation or method herein described, of surface covering or painting a cask or barrel, the same consisting in retaining it over and upon the surfacing-roller, upon which it loosely rests by means of a device in front, which checks its advance and yet permits it to be revolved by the frictional contact of such surfacing-roller.

15. The combination, in a machine for applying paint or other liquid or semi-liquid material to a barrel or cask, of a paint-delivering roller, inclined feed and delivery rails, and a swing-frame to hold back the article till painted.

16. The combination, with a paint-delivering or surfacing-roller, of the inclined rails and stops and the swing-frame.

17. The combination of the trough, the lower and upper covered rollers, the inclined rails, stops to hold back an unpainted barrel, and a swing-frame to hold back a barrel while being painted, substantially as and for the purpose described.

141,543.—Condenser for the Manufacture of Illuminating-Gas.—PETER T. BURTIS, Chicago, Ill., assignor of one-half his right to ELIAS T. WATKINS, same place. Application filed July 3, 1873.

The tarry deposits fall into the trough in the bottom of the condenser and are carried by the traveling scraper into one or other of the wells, from whence they can be removed without interrupting the work. The wells are filled with water to a point above where they communicate with the condenser, to prevent the escape of gas.

Claim.—1. The washer B or condenser having the trough A, substantially as and for the purpose specified.

2. The well I, in combination with the washer B or condenser, and communicating directly therewith by means of the opening *a*, substantially as and for the purpose specified.

3. The combination of the washer B or condenser, the well I, and scraper C, all constructed and operating substantially as and for the purposes specified.

141,544.—Paint Compound.—CHARLES CAMPBELL, New York, N. Y. Application filed July 19, 1873.

Bicarbonate of soda, borax, and water, mixed with oxide of zinc, linseed-oil, benzine.

Claim.—A paint compound which is produced by combining the solution described with the pigment, oil, and benzine, in the proportions and manner as and for the purpose set forth.

141,545.—Machine for Boring Blind-Stiles.—ANDREW B. CARLIN, Camden, N. J. Application filed June 4, 1873.

Two stiles are bored at the same time, being automatically fed forward.

Claim.—1. The swivel-bars K K, in combination with the center rib *d* of the carriage H and the gage-bars J J, for the adjustment of the latter to the width of the stiles to be bored, substantially as described.

2. The combination of the sliding bar E, carrying the pawl F, with the carriage H having a toothed rack G, pitman D, and the crank-shaft C for giving the forward movement to the carriage, substantially as set forth.

3. The combination of the pawl F having a shoulder, *e*, sliding bar E, spring-bolt V, and rack G with the carriage H having a tripping-pin *c*, substantially as and for the purpose specified.

4. The combination of the lever X, spring-bolt V, pawl F, and rack G, substantially and for the purpose set forth.

5. The combination of the cam *b*, weight *g*′, sliding bar S having a stop, *o*, levers R R, sliding plates Q Q with the bit-shafts P P for giving a reciprocating movement to the latter, substantially as set forth.

6. The sliding bar T, spring *v*, hinged lever U having a shoulder, *t*, and sliding bar S with the carriage H, for throwing the stop *o* out of line with the cam *b* to arrest the sliding movement of the bit-shafts P P, substantially as described.

141,546.—Disinfecting-Powder.—HENRY G. DAYTON, Maysville, Ky. Application filed July 11, 1873.

Claim.—The combination of powdered marble and white sand, as described, to form a base for the distillate of coal-tar, substantially as and for the purpose specified.

141,547.—Canvas Stretching and Protecting Frame.—ALBERT DICKERMAN, Boston, Mass. Application filed December 12, 1872.

Claim.—1. The combination of the teeth B with the movable bar C and hooks E, for stretching the canvas, substantially as set forth.

2. The combination of the slots *o o*, pins *b b*, and spring-catch *g*, for adjusting the protecting curtains F and I, as set forth and described.

141,548.—Sectional Adjustable Slotted Cam.—FREDERICK D. ELDERFIELD, St. Louis, Mo. Application filed May 13, 1873.

Claim.—1. The combination of two sections of a cam, B B, the screw-bolts E E E, and the bolt-nuts K K K, substantially as described.

2. The check-disks C C, as described.

3. The combination of the check-screws F F F with the bolt-nuts K K K, substantially as specified.

4. The combination of set-screws *i i*, acting upon the loose key D, as specified.

5. The combination of the cap H, the shoulder L, and the shaft-nut G, substantially as specified.

141,549.—Box-Scraper.—CHARLES ELLIS, GEORGE W. ELLIS, and JOHN D. ELLIS, Philadelphia, Pa. Application filed June 20, 1873.

The blade A is fastened by bolts, which screw into the blade, having a threaded jam-nut, D, to prevent working loose.

Claim.—An improved box-scraper, consisting of the stock B having shanks *b b* projecting therefrom at, or nearly at, a right angle thereto, with a scraper-blade, A, having laterally-extended ends *a a* secured to the inner side of a projection, *b*², of the stock by screws C fitting screw-threaded holes in the scraper-blade, as and for the purpose specified.

141,550.—Boot and Shoe Tree and Stretcher.—THOMAS R. EVANS, Philadelphia, Pa. Application filed June 19, 1873.

Improvement on Patent No. 119,131.

Claim.—1. The tree or last, consisting of a fixed and a movable section arranged to revolve, as described, in combination with the swiveled screw-rod E, wedge-bar D, and operating-nut, and hand-wheel *d* F, as set forth.

2. The combination, substantially as described, of a scale and pointer with the operating screw-rod E of a boot and shoe stretcher, for the purpose specified.

141,551.—Hoisting Apparatus.—FRANKLIN FARRELL, Ansonia, Conn. Application filed January 22, 1873.

Claim.—The combination of a chain having alternate long and short links and a chain-wheel, A, adapted to said chain, and having radial teeth *c*, which enter the spaces between the short links, as set forth.

141,552.—Machine for Bending Shafts.—ALLEN J. FRIEMER, Toledo, Ohio. Application filed January 14, 1873.

The shaft is bent on the former D, which, with its strap R retaining the shaft, is removed by slipping the hinge-joint at Q.

Claim.—The described arrangement of double strap H I K, extension R S, separable hinge Q *g*, upsetting device L M N, convex block D *d d*′ *d*″, and suitable clamp-loops with screws or wedges, the whole constituting a combined bending and setting apparatus, as set forth.

141,553.—Ice-Shaving Machine.—JAMES D. FREEMAN, Abbeville, Ala., assignor to himself and JAMES GILLESPIE, same place. Application filed June 28, 1873.

A lever with a plate on its under surface is attached to an adjustable plate, and is used to press the ice down onto a cylinder provided with blades and operated by a crank.

Claim.—The combination of the hoppers A, base-plate B, knife-cylinder C D, crank J, holding-plate E, lever F, adjusting-plate G, and clamp H-I with each other, substantially as herein shown and described.

141,554.—Apparatus for Treating and Aging Spirituous Liquors.—GEORGE GOEWEY, Philadelphia, Pa. Application filed June 14, 1872.

Improvement on patent No. 91,840, June 29, 1869. The vapors escaping from the several closed vessels are condensed in the globes, the condensation falling back, the uncondensed vapor escaping. The supplemental pipe from the air-conduit to the first closed vessel equalizes the pressure throughout the apparatus.

Claim.—1. The spirit-condensing apparatus composed of an interior vessel, *w*, an inclosing or exterior vessel, *y*, and an intervening air-space, A, between said vessels, in combination with means for the ingress and egress to and from said space of a forced current of air, substantially as set forth.

2. Pipe *t* or equivalent means for connecting the air-conduit A with the liquor-pan *a*, to facilitate the flow of the liquor from the said pan into the pan *a*¹, substantially as set forth.

141,555.—Glove-Fastening.—CHARLES H. HALL, Trenton, N. J., and ROBERT KNOTT, Brooklyn, N. Y. Application filed March 15, 1873.

The notches upon the bar afford means for properly adjusting the fastening.

Claim.—A glove-fastening, comprising the notched bar A hinged to a clip, C, fastened to the part D of the glove, and the notched hook B in a clip, H, fastened to the part I of the glove, all combined and arranged substantially as specified.

141,556.—Weighing-Scales.—SANDY HARRIS, Philadelphia, Pa. Application filed May 13, 1873.

A series of pins, projecting laterally from the scale-beam, is arranged to be in line with a similar series of stationary pins secured to the frame. A set of perforated weights, sliding on the said pins, can be transferred to and from the scale-beam pins only when the beam is at an exact balance.

Claim.—1. The beam C, having the lateral pins *d* projecting at intervals of different distances in a direct line from the fulcrum, in combination with the fixed rack D, having the corresponding pins and the sliding weights *d*′, substantially as shown and described.

2. Laterally-shifting balancing-weights, in combination with weight-scales having a fulcrum-beam adapted to receive said weights at different intervals of its length, substantially as and for the purpose specified.

141,557.—Middlings-Purifier.—AUSTIN HERR, Georgetown, D. C. Application filed June 16, 1873.

A rotating fan traveling back and forth under the screens keeps the meshes clear and loosens the mass of middlings, throwing the light particles of bran and dust to the upper surface, from which they are drawn off through the air-passages and flue by a suction-blast. The middlings, falling through the screens on endless partitions, are discharged respectively on the heads of the screens below, while the tailings pass off the ends of the screens into suitable discharge-spouts. The endless partitions also keep the air from passing up through the series of screens.

Claim.—1. The combination, with a purifying or separating screen, of a rotating fan having a reciprocating motion, in contact or nearly so with the under side of said screen, substantially as specified.

2. The combination, in a middlings purifier or separator, of the screens E E′ E″, arranged one above another, with the endless-partition bands H, substantially as shown and described, and for the purpose specified.

3. The combination, with the screens E E′ E″, arranged one above another, and the endless-partition bands H, of the series of alternate hoppers F and flat draft-boards G transversely arranged, as specified.

4. The combination, with a shaker or screen, of the reciprocating frame carrying an open fan, the stud *c*, pivoted arm *d*, endless cord *g*, pulleys *f*, and slide-ways A, substantially as specified.

5. In a middlings-purifier, the combination, with the draft-case A and the series of alternate hoppers F and draft-boards G, of the flue Z and draft-passages *m m* and partitions H between the screens, substantially as specified.

6. The combination, with the pulleys *k* and endless cord *m*′, of the pulleys *a* and traveling fan K, substantially as specified.

141,558.—Means of Elevating and Depressing Propellers.—SAMUEL G. HILL, Muscatine, Iowa, assignor of one-half his right to PATRICK YORK, St. Louis, Mo. Application filed March 18, 1873.

By this arrangement wheels, which are attached to one end of a frame pivoted near its center, are counterbalanced, or nearly so, by the weight of the steam-cylinders located on the other end. Thus less power is required to raise or lower the wheels according to depth of immersion required.

Claim.—The arrangement of the steam cylinder or cylinders B and stern paddle-wheel D on opposite ends of the rocking beams C, which are pivoted intermediately of their length, so as to vibrate as described, for the purpose set forth.

141,559.—Corn-Sheller.—EDWIN L. HUTCHINSON, Auburn, N. Y. Application filed March 18, 1873.

Cone with alternating teeth revolves the ears underneath a plate held down by a spring.

Claim.—1. The guide-bar C having the standard *g*, for the purposes herein set forth.

2. The combination, with the spring R arranged to control the concave or plate B, of the central supporting-piece S, piece T, and adjusting-screw *x*, substantially as set forth.

141,560.—Brick-Machine.—DONALD J. IRWIN and HENRY S. LANGDON, Noble, Ill. Application filed June 14, 1873.

A brick-machine in which the plunger is connected by curved arms to a horizontal bar operated by an eccentric; horizontally-reciprocating knife provided with supports fitting into clutches, the knife secured to and moving in slide-bars.

Claim.—1. In combination with the horizontal bar *k*, to which the plunger is connected, the vertical slides L and eccentrics M, substantially as and for the purposes herein set forth.

2. The knife or trimmer A provided with arms *i i*, substantially as and for the purposes herein set forth.

3. In combination with the arms *i i* on the knife A, the clutches *m m*, for the purposes herein set forth.

4. The cut-off bar *n* and knockers or bumpers *o o* operating in combination with the knife A and its arms *i i*, substantially as and for the purposes herein set forth.

5. The combination, with the knife A and its supporting-bar *k*, of the horizontal slide-bars N N and eccentrics M M, substantially as and for the purposes herein set forth.

141,561.—Cover for Sewing-Machine Tables.—HENRY JESSEN, Long Island City, N. Y. Application filed July 1, 1873.

The flexible top of the cover is fastened at one end to a cross-bar extending from one of the circular ends to the other. The opposite end of the flexible top is connected to the under side of the table-top by an elastic cord or spring. The circular ends of the cover are provided with slots, in which work pins projecting from the ends of the table-top, and on these pins the cover revolves; a pin also projects from the inner side of the circular ends and engages in a groove on the end of the table-top. On one side of the table-top is hinged a narrow shelf, which locks the extension-leaves in position when the cover is turned down to the side of the table.

Claim.—1. In combination with the flexible cover C, connected to and operated by pivoted end pieces, as described, the locking-leaf O, substantially as set forth.

2. A flexible cover for sewing-machines and other tables operated by a cam-motion, substantially as herein described, and for the purposes set forth.

3. In combination with the flexible cover C connected to and operated by pivoted end pieces, as described, the cam-groove D and pin I, and the guide-slot *i* and pin *e*, substantially as set forth.

141,562.—Machine for Manufacturing Plug-Tobacco.—JOHN L. JONES, Oxford, N. C. Application filed January 27, 1873.

The tobacco-leaves are laid in a trough, which is placed between two adjustable guide-bars, the leaves resting upon a plate having slots, and beneath another plate having knives, which sink through the layer of tobacco into the said slots, dividing it into plugs. A traversing roller, having shoulders to rest upon the sides of the box, gives the desired pressure, being placed in vertically-movable bearings in a horizontally-moving carriage.

Claim.—1. The combination of the trough C, slotted plate *a*, and the plate *b* with knives *d*, substantially as and for the purposes herein set forth.

2. The wheel D provided with shoulders or flanges *f f*, and placed in up-and-down movable boxes in a horizontally moving frame or carriage, for the purposes herein set forth.

141,563.—Machine for Cleaning and Repairing Tobacco-Leaves.—JOHN L. JONES, Oxford, N. C. Application filed January 27, 1873.

The leaves are passed between rollers having alternate flat and concave surfaces to crush the stems; then between another pair of rollers having knives and brushes, whereby the flattened stems are cut into narrow strips, and the leaf is brushed. Guides prevent the leaf from adhering to the pressing-rollers, and scrapers clean the cutting-rollers.

Claim.—1. The rollers C C', constructed, as described, with alternate flat surfaces *f f* and concave surfaces *h h*, for the purposes herein set forth.

2. The rollers G G, constructed, as described, with brushes *k k*, knives *m m*, and grooves *i i*, substantially as and for the purposes herein set forth.

3. A machine for preparing tobacco-leaves in which the stem is crushed or flattened in the leaf and split, and the leaf brushed, all in one operation, substantially as herein set forth.

4. The combination of the rollers C C', pockets or boxes *n n'*, rollers G G with brushes and knives, guides *p p*, scrapers *s s*, and combs *t t*, all substantially as and for the purposes herein set forth.

141,564.—Sheave.—PATRICK KAVANAGH, Canarsie, N. Y. Application filed May 22, 1873.

Claim.—The improved sheave herein described, constructed with the perforated plates B B, pivot-pins *a*, rollers *c*, flanged sleeve C, and sheave-block A, said pins respectively passing through the rollers, and rigidly attached to one plate only, and said rollers being held and operated between the flanges of said sleeve or collar, as shown and described.

141,565.—Trace-Buckle.—JOHN KENNEDY, Osage Mission, Kans., assignor to himself and JOHN MOFFIT, same place. Application filed March 22, 1873.

The rear end of the tongue-plate is slotted to allow of limited movement longitudinally, and is pivoted through the slots to lugs on the buckle-frame. The lugs are recessed angularly to correspond with coincident angles on the tongue-plate, thus forming a lock when the strap is engaged.

Claim.—A trace-buckle, consisting of the looped plate A provided with lugs C C, and the tongue-plate B provided at one end with tongue D and at the other end with a slot and angular projections, the slot to receive the pivot-pin and the projections to fit correspondingly-shaped recesses in the lugs, as and for the purpose specified.

141,566.—Railway Cattle-Guard.—THEODORE D. KLINE, Opelika, Ala. Application filed June 28, 1873.

A grating of boards placed shutterwise between the tracks of a railway to prevent cattle from passing up the track.

Claim.—The cattle-guard, consisting of the longitudinal beams C and the stationary horizontal parallel inclined boards D D' transversely arranged thereon in such a manner that they incline downward from both ends toward the center, substantially as specified.

141,567.—Washing-Machine.—JOHN H. KOOKER, Pekin, Ill. Application filed March 8, 1873.

Claim.—In a washing-machine, the combination of the shaft B provided with the arms C and pinion D, the rack-bar E provided with the slotted stud *b*, and the hand-lever, having its lower end arranged to work in the slotted stud, as shown.

141,568.—Thimble-Skein for Vehicle-Wheels.—JOHN LAHMAN, Panora, Iowa. Application filed May 17, 1873.

Claim.—The thimble-skein A having at each end a number of semi-tubular recesses running lengthwise of the skein, and extending around the bottom and sides only, leaving the top smooth at both ends, and having inserted in the recesses the tapering rollers *a a*, substantially as shown and described.

141,569.—Hemp-Brake.—WILLIAM S. LAWRENCE, Winchester, Ky. Application filed April 26, 1873.

Improvement on patent of April 9, 1872, in which two pitmen connected with one crank operate two alternately-operating brakes, the same mechanism operating reels at the sides of the frame.

Claim.—1. The combination of the double crank G, the pitman *i*, the walking-beam I, the pitman *i'*, the brake K, the crank-plate H, the wrist-pin *h*, the pitman *l*, the walking-beam L, the pitman *l'*, and the brake M, substantially as specified.

2. The reels O O and P P, in combination with the operating mechanism of a hemp-brake, substantially as herein specified, and for the purpose mentioned.

141,570.—Securing Wheels to Axles.—ROBERT J. LESSOR and JOHN B. SHAMBO, Brandon, Vt. Application filed March 15, 1873.

To hold the wheel on the axle, and to permit of its ready removal, and to exclude sand from the box.

Claim.—1. The hook-lever H, in combination with the axle D, hub A, and grooved projecting end of the axle-box B, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the sand band or cap J with the axle D, hub A, hook-lever H, and grooved projecting end of the axle-box B, substantially as herein shown and described, and for the purpose set forth.

141,571.—Apparatus for Charging Liquids with Carbonic Acid.—JOHN MATTHEWS, New York, N. Y. Application filed July 17, 1873.

The agitator has non-metallic beaters and a shaft of stiff metal incased in a sleeve of tin or other innocuous metal which will resist wear and prevent it being ground off. A step having a bushing of rubber, in which the incased lower end of the shaft revolves, is secured to the lower end of the fountain.

Claim.—1. The improved apparatus herein described for mixing carbonic acid with liquids, consisting of an agitator having non-metallic beaters and shaft incased, substantially as set forth.

2. The shaft-casing, composed of the sleeves, beaters, and washers, combined and arranged as set forth.

3. The step D and bushing *d*, in combination with the shaft B, provided with the foot *m*, so as to protect the lower bearing-surfaces, as described.

141,572.—Saw-Swage.—ANDREW J. MCCOLLUM and GEORGE D. EMERY, Indianapolis, Ind. Application filed March 8, 1873.

A bifurcated arm pivoted to the stock and a binding-screw for drawing the arm sections against the sides of the saw.

Claim.—1. The guide-arms C connected at their upper ends by a back, D, and pivoted to the stock A of the swage A B, substantially as herein shown and described, and for the purpose set forth.

2. The combination of the set-screw E with the guide C D pivoted to the stock A of the swage A B, substantially as herein shown and described, and for the purpose set forth.

141,573.—Sponge-Cup.—WILLIAM MCCONNELL, Philadelphia, Pa. Application filed July 11, 1873.

The sponge is passed through a rigid band which rests upon the water-cup, and may thus be handled without soiling the fingers.

Claim.—A pen-wiper in which a reversible sponge-holding band, A, is adapted to and combined with a water-vessel, B, substantially as and for the purpose described.

141,574.—Smoke-Burning Furnace.—CORNELIUS MCGINNIS and WILLIAM NAYLOR, Chicago, Ill. Application filed April 21, 1873.

An adjustable door through which air passes over the fire, impinging against an inclined deflector which directs it against the fire. Hot air is supplied from a close chamber under the fire-grate through a perforated bridge above the level of the fire, which commingles with the product of combustion and consumes the smoke.

Claim.—The combination of the adjustable door and draft-flue, constructed and arranged as set forth, and combined with the deflector C and bridge-wall M, substantially as described, and for the purpose set forth.

141,575.—Bobbin.—THOMAS G. MCLAUGHLIN, Glen Riddle, Pa. Application filed May 28, 1873.

Claim.—The ring cast in the driving-head of a bobbin, and provided with projections for consolidating said ring with the wood of the bobbin, as specified.

141,576.—Hemmer for Sewing-Machines.—ALFRED MCMILLAN, Cincinnati, Ohio. Application filed June 21, 1873.

The slide is connected with the large scroll, and adjustable laterally thereon. For wide hems it occupies a position at the right of the small edge-turning scroll, and for narrow ones it is moved to the left out of the way, and the small scroll is moved toward the right.

Claim.—The hemmer herein described, consisting of the slotted plate A, slotted scroll B, arm D, scroll C, and adjustable guide G, attached to scroll B, all constructed and operating as described.

141,577.—Door-Check.—JOHN A. MCNAIR, Olathe, Kans. Application filed June 26, 1873.

Claim.—The combination of gravitating metallic bolt C, the metallic case A firmly attached to the door, and the metallic bracket-catch F G attached to a wall or partition, and provided with an India-rubber bumper fastened into the end of said bracket under the catch, all constructed and arranged substantially in the manner and for the purposes hereinbefore shown and described.

141,578.—Steam-Generator.—THOMAS E. MCNEILL and RUFUS N. PRATT, New York, N. Y. Application filed September 21, 1872.

Claim.—The jacket E, having its outer flue or chimney communication at or near its bottom, in combination with the bent tubes D, the fire-box, and the cylinder A, substantially as herein shown and described.

141,579.—Metallic Rope-Clamp.—AIMÉ MÉHU, Paris, France. Application filed March 15, 1873.

Claim.—1. A metallic lashing, consisting of a clamp composed of two sections, A A', having slotted or bent arms to receive keys C C, and adapted to be readily applied to and removed from the overlaid portion of a loop, substantially as specified.

2. The combination of the clamps B, keys *c c*, and wires *b*, as specified.

141,580.—Glove-Fastener.—LOUIS MEYERS, New York, N. Y., assignor to himself and JACOB ADLER, same place. Application filed June 16, 1873.

Claim.—The glove-fastener, consisting of a cord, B, which is fastened with both ends to one flap of the glove and drawn through holes in the other flap to operate in combination with the button or holder *c*, as set forth.

141,581.—Match-Box.—ADOLPH MEYERSTEIN, New York City, assignor to E. B. FITCH & SON, Peekskill, N. Y. Application filed June 25, 1873.

The match-box is secured to a back, which has projections adapted to receive a lamp-bracket.

Claim.—The arrangement, in relation to each other, substantially as described, on the same bracket-back, of the lamp bracket socket or sockets B B, and the match-safe C.

141,582.—Cider-Mill.—NATHANIEL R. MILLER, Canaan Center, Ohio. Application filed April 30, 1873.

Claim.—1. The hopper T, provided with the vibrating partition W, in combination with the feed-box U, having the grinding-cylinder *b* therein, substantially as and for the purpose specified.

2. The press-block 10, in combination with the turning table Q, substantially as and for the purpose specified.

3. The herein-described pressing mechanism, consisting of the swinging plunger K, walking-beam A hung in pivot-clasp I, connecting-rod J, with rounded end bearing on lever-seats P, and hand-lever L, in combination with the frame A B, the whole being arranged to act on the grindings in the straining-tube supported from the sill-pieces A A, substantially for the purpose specified.

4. A cider-mill combining in its construction the following essential features, viz., a feed-box with grinding-cylinder, hopper with vibrating partition, turning table for the support of the straining-tube, stationary table with outer rim and press-block, and two pressing devices, each consisting of a swinging plunger, walking-beam, and hand-lever, the several parts being so combined as to allow of the continuous operation of the grinding and pressing processes, substantially as and for the purpose specified.

141,583.—Shovel-Plow.—JOHN J. MITCHELL, Livingston, Ala. Application filed April 12, 1873.

The two sections of the plow are connected by loose joints or links, so that one shovel may be lifted over an obstruction without disturbing the other.

Claim.—The double-shovel-plow-frame, consisting of the standard A, the adjustable angular braces *c*, the handles K adjustable on said braces by means of the clamp *w v*, and the adjustable link connections *k k'*, substantially as specified.

141,584.—Portable Fence.—ALANSON MOSHER, Canton, Mo. Application filed April 2, 1873.

Claim.—The fence-panels A A, provided at their adjacent ends with inclined braces *a* and united and supported by the notched stakes *d d* and key *f*, as shown and described.

141,585.—Explosive Compound.—JOHAN H. NORRBIN and JOHAN OHLSON, Stockholm, Sweden, assignors to ALARIK LINDBECK, same place. Application filed October 4, 1872.

Claim.—An explosive compound, consisting of nitrate or nitrite of ammonia and a fulminate, as set forth.

141,586.—Magazine for Stoves.—JOHN R. PAINTER, Reading, Pa., assignor to ORR, PAINTER & CO. Application filed May 15, 1873.

The rib *a* coincides with the notch *n*, and locks the parts A and B together.

Claim.—The combination described of the upper portion B of the magazine, its lugs *b b*, and rib *a*, with the lower portion A and its notched flange *a*.

141,587.—Pump-Valve.—WILLIAM PAINTER, Baltimore, Md., assignor of one-half his right to LEWIS R. KEIZER, same place. Application filed June 23, 1873.

Solid matter of less area than the bearing surfaces or of less area than the opening of the valve, but of indefinite length, can be pumped from the cesspool. The braces prevent the flaps from being drawn through the valve-port.

Claim.—1. A valve provided with a flexible valve-flap, having an extensive superficial area, and arranged so that its face will engage in close contact with a coincident face of a corresponding area, in a plane practically at right angles to the plane of the valve-opening, substantially as and for the purposes specified.

2. A valve composed of flexible valve-flaps provided with extensive superficial areas and with coincident faces, which are arranged to engage in close contact with each other, in a plane practically at right angles to the plane of the valve-opening, substantially as and for the purposes specified.

3. In combination with a flap-valve, the stiffeners or braces F F, arranged at the base to prevent collapsing, substantially as described.

141,588.—Fish-Trap.—SAMUEL PAVONARIUS and CHARLES C. MICHTLER, Philadelphia, Pa. Application filed May 17, 1873.

A shallow cylinder has its bottom covered with netting. A hoop covered also with netting forms the top of the trap. This hoop has a hinge upon two opposite sides of the center, so that half the hoop can be opened to allow entrance of the fish. This movable half hoop is held open by a hook on its rim engaging with a spring inside the cylinder. To a bait-line attached to this spring and arranged across the opening, the bait is affixed, disturbing which the fish disengages the spring, and the half hoop is sprung over to inclose it.

Claim.—The fish-trap, consisting of the cylindrical frame A, the rod B, the springs *b b*, the semicircular trap-door C, the hook *c*, the spring D, bait-strings *d*, and suitable net-work, substantially as specified.

141,589.—Loom-Shedding Mechanism.—EDWARD REDFEARN, Philadelphia, Pa. Application filed June 3, 1873.

To lessen the friction between the warp-thread on the shedding movement, the heddles are raised consecutively instead of simultaneously, by means of compound eccentric pulleys, to which the leaves of heddles are suspended.

Claim.—The combination, substantially as described, of compound eccentric pulleys E E', with leaves of heddles suspended from and controlled in their movements by the said pulleys, substantially as and for the purpose specified.

141,590.—Magazine Fire-Arm.—JOSEPH RIDER, Newark, Ohio. Application filed April 14, 1873.

The magazine-tube is pivoted to the under side of the barrel, and swings bodily away therefrom to facilitate charging.

Claim.—1. A magazine-gun having its magazine or cartridge-holder B hinged or pivoted to the arm, substantially as described, whereby the magazine is opened by swinging it bodily away from the arm so as to expose its open end, as set forth.

2. The magazine B, pivoted to the slide *c*, the latter being fitted in a dovetailed groove, and the stop *d*, all arranged to operate substantially as described.

141,591.—Trunk-Lid Supports.—ANTONY V. ROMADKA, Milwaukee, Wis., assignor to ROMADKA BROTHERS, same place. Application filed January 21, 1873.

Claim.—The combination of the rod C attached to the trunk-cover with the rod E attached to the body, the two being hinged together so as to leave a projecting arm to act as a stop, substantially as described.

141,592.—Feed-Water Regulator.—JOHN B. ROOT, New York, N. Y. Application filed January 4, 1873.

Upon the falling of the water in the boiler below the ordinary level, steam enters the drum and forces the water therein through pipe into the case, below the flexible diaphragm, and by raising the latter, through its stem, the valve of water-supply pipe is operated.

Claim.—The combination of the drum and case with connecting-pipes opening at the top and bottom of the drum and case, respectively, and the diaphragm and its spindle, substantially as described.

141,593.—Machine for Chucking and Revolving Tubes, &c.—JOHN B. ROOT, New York, N. Y. Application filed January 4, 1873.

In the end of a hollow revolving cylinder are pivoted three toggle-jaws, held forward by springs, to hold the rod or pipe while revolving. An inner cylinder, through which the rod is introduced, has on its end a beveled ring that operates, when thrown forward against lugs on the side of the clamping-jaws, to throw them open and release the rod.

Claim.—1. The combination of the revolving axis B, pulley A, clutch mechanism, and sliding cylinder H, when operating in connection with a screw-thread or other cutter in such manner that the tube or bar can be adjusted longitudinally without stopping the machine, as herein shown and described.

2. The combination of the sliding cylinder H provided with a beveled head, J, with the clutch mechanism described, as and for the purpose set forth.

141,594.—Boiler-Furnace.—JOHN B. ROOT, New York, N. Y. Application filed January 15, 1873.

Has a retort perforated on its upper side, cylindrical or other form, placed within the fire-box and over the fire, whereby the carbon and other gases are extracted. The coke is pushed down upon a grate to burn.

Claim.—1. A boiler or other furnace, provided with retorts having internal outlets for the gas and coke, for containing bituminous coal, from which gases are freed and ignited to increase the heat in the furnace, and the coke from which is consumed in said furnace, as herein described.

2. A perforated retort having both ends open, in which bituminous coal is burned, as described, in combination with a boiler or other furnace, as and for the purpose set forth.

3. A retort constructed with a portion of its under side cut away, and with perforations and gate and plate, in the manner and for the purpose described.

4. The combination of the hereinbefore-described retort, with a furnace provided with inclined grate-bars, as and for the purpose described.

141,595.—Spice-Box.—JOSEPH SEARS, Chicago, Ill. Application filed February 1, 1873.

The top and cap plate are made with corresponding corrugations or ribs and depressions, so as to keep them in close contact, and the cap-plate has a longitudinal movement upon or beneath the box-top.

Claim.—The combination of a box-top and cap-plate, swaged or stamped together with corresponding corrugations, or ribs and depressions, to keep them in close contact, the cap-plate having a sliding movement upon or beneath the box-top, substantially as herein set forth.

141,596.—Veneer-Cutter.—JOHN N. SEIB, Boston, Mass. Application filed May 10, 1873.

The knife-carriage is moved back and the knife carried clear of the log, when the stay-log begins its return-stroke. When it begins its forward stroke the carriage is moved forward faster to enable the knife to cut the veneer. A steadying-roller is held in contact with the log by the action of the knife-carriage, and is always held firmly up to it, and imparts motion likewise to the cut-off knife to sever the sheets.

Claim.—1. In combination with the knife-carriage and the reciprocating stay-leg of a veneer-cutting machine, a feed mechanism which carries the knife-carriage back when the stay-log recedes and forward when the stay-log advances, substantially as shown and described.

2. The combination of the adjusting-disk r^1 and stop-pawls r^{10} with the feed-wheel r^9, feed-pawl r^{10}, screw-rods s^1, and knife-carriage E of a veneer-cutter, substantially as set forth.

3. The combination of slides n^3, cords p^3, and said adjusting-screws p^2 with the knife-carriage E and roller m^2, substantially as shown and described.

141,597.—Harvester.—JOSEPH H. SHERMAN, York, Pa., assignor of one-half his right to Adam R. REESE, Phillipsburg, N. J. Application filed November 23, 1872.

The operator, by a hand-lever, simultaneously lifts and rocks the finger-bar and platform.

Claim.—1. In a harvesting-machine having a hinged grain-platform, which is free to rise and fall at its outer end independently of the main frame, and which is supported at its outer or grain side by carrying-wheels, a lever connected with the platform, substantially as described, for enabling the operator to simultaneously lift the inner or stubble side of the platform, and to rock or tilt it upon the outer carrying or grain-wheel.

2. In combination with the drag-bar D, the rear brace D^2 connecting the standard D^1 with the heel end of the drag-bar, substantially as and for the purpose described.

3. The pivoted seat-support N′, in combination with the swivel-block O for adjusting the seat, substantially as described.

141,598.—Steering Apparatus for Vessels.—AMIE SIBENTHAL, Vevay, Ind., assignor to himself and F. R. DUFOUR, same place. Application filed June 21, 1873.

The tiller is pivoted at its rear end to the rudder-post, and at its forward end it is connected to a rope which traverses over a vertical arch, and is attached to the drum of the steering-wheel. Thus the tiller has the horizontal and lateral motion of the rudder-post, but is regulated in its speed by its relative position on the arch, and by this means a differential compensating movement is attained by which the greatest rapidity is given to the tiller when the least power is required, and vice versa.

Claim.—In combination with wheel A, rope B, and arch D, or its equivalent, the tiller E, arm G, hinge connection *g* *i*, and rudder-post F, constituting the steering apparatus, substantially as set forth, for the purposes described.

141,599.—Valve for Steam and Vacuum Pumps.—ALONZO J. SIMMONS, Indianapolis, Ind. Application filed May 10, 1873.

When used as a steam-valve with double cylinders it is moved by the pressure in one cylinder, the water in the other having been forced out by the steam. When employed as a hydraulic or discharging-valve an aperture is made through its center to permit a quantity of water to enter the cylinder from which the water has just been expelled to condense the steam therein.

Claim.—The cylindrical casing A having end ports B B and side port D, and the cylindrical valve G having ports *b b*, and enlarged central head E in chamber C, with or without the aperture, constructed substantially as and for the purposes herein set forth.

141,600.—Combined Fountain and Pump.—JOSEPH J. SINK, Philadelphia, Pa. Application filed November 16, 1872.

Claim.—1. A combined fountain and pump in which a hollow rod, G, is made to serve the twofold purpose of a piston-rod and a pipe for conveying fluid under pressure from the supply-reservoir to to the discharge-nozzle, substantially as described.

2. The combination of the piston, its valve *b* opening downward, the hollow tube G, and openings furnishing a continuous communication of the tube with the space below the piston.

3. The reservoir A, barrel D, and valve *a*, in combination with the piston F and its valve *b*, so arranged as to open downward and to strike and operate the valve *a*, as set forth.

4. The barrel D, communicating with a reservoir for containing water and air under pressure, and provided with a flange, *f*, in combination with a piston-rod and its pin *e*, arranged as set forth.

141,601.—Damper and Ventilator.—JOHN L. SKINNER, Amboy, Ill. Application filed May 31, 1873.

A pipe, having circular opening to correspond with that of the vertical flue, fits within the horizontal flue. It may be used as a damper and a cleaner, and by withdrawing it partially the stove-pipe is converted into a ventilating flue.

Claim.—The pipe B, constructed as described, with the knob C and circular opening *b*, in combination with the pipe A *a*, arranged and operated substantially as and for the purpose set forth.

141,602.—End-Gate for Wagons.—ROBERT SMILLIE and CHARLES H. BROOKS, Virden, Ill. Application filed May 7, 1873.

The hinged section of the side of the body is unfastened by unscrewing the fastening-rod, and the pressure of the load in the wagon forces outward the end-gate.

Claim.—1. The wagon-body A having the rear end *d* of its side hinged to swing outward, and provided with the fixed cleat *a*, so that the pressure of the gate tends to turn it outward, as set forth.

2. In combination with the wagon-body, having its side *d* hinged and provided with the cleat *a*, the rod C passing through and holding the hinged portion, as shown.

141,603.—Breech-Loading Fire-Arm.—DEXTER SMITH and JOSEPH C. MARSHALL, Springfield, Mass.; said MARSHALL assignor to said SMITH. Application filed August 30, 1872.

Claim.—1. The combination of the locking-brace *c*′, having the projection *m* thereon, with the trigger A and tumbler *x*, all substantially as and for the purpose herein described.

2. The locking-brace *c*′, provided with the projection *m*, whereby the said brace is secured in position beneath the breech-block by the nose of the trigger, substantially as described.

141,604.—Railway Telegraph.—JAMES G. SMITH, Boston, Mass., assignor to himself and JAMES W. BROWN, same place. Application filed March 28, 1873.

Two wires in sections, one having battery connections at terminals. Sections end in a circuit-changer through which corresponding wires in adjacent sections are normally connected. Third wire controls circuit-changer by current from battery in train. Arm carrying three fingers insulated from each other, one for each wire, projects from car. Train entering section operates circuit-changer so that a circuit is formed from one wire through one finger to instrument on train, thence by another finger to second wire. All the trains and stations on a line may be included in one circuit.

Claim.—1. A railway telegraph, substantially as described, or a telegraph system for railways, in which, by means of an arm projecting from a car of each moving (or stationary) train, and connected with a telegraph instrument upon said car, connection is or may be made between said instrument and the wire or wires of a line parallel with the railway, and with all of the trains upon the track.

2. A line having the sections of wires *d c* connected to transmit the electric current substantially as described, the wires being normally connected, and having their direct connections changed for connection with the instrument upon the train.

3. In combination with the wires *d c*, the third wire *n*, bars *p q*, and instruments *u*, arranged substantially as shown and described.

4. The battery *g*, finger *j*, wires *n*, and bars *p q* for effecting the change of the armature *v*, substantially as described.

5. The wires *d c*, fingers *l m*, instrument A, battery *g*, finger *j*, wires *n*, bars *p q*, instruments *u*, and their various connections, arranged and operating substantially as described.

6. In combination with a line formed in sections, an instrument connected with each section to change the circuit, substantially as or for the purpose described.

7. In combination with the instrument A and battery *g*, an arm, *i*, having extended from it the respective branches or fingers *l m j*, which fingers are insulated from each other, and are respectively connected with the instrument and battery, substantially as shown and described.

141,605.—Package for Fruit.—DAVID SNEDEKER, New York, N. Y. Application filed June 25, 1873.

The ordinary box for receiving the fruit is inclosed in an outer ornamental package, made of willow or other light material. The top of the package is cut through on three sides to form a hinged lid. A slotted handle is attached to the ends of the box, so that it can be used as a handle, or as a fastening to hold the lid down.

Claim.—The package B for holding and carrying fruit or other articles provided with a lid, G, and sliding handle E combined together, substantially as described, and adapted to the box A, as set forth.

141,606.—Fertilizing Attachment to Seed-Sowers.—HENRY SPRINGER, Brady, Mich. Application filed October 11, 1872.

The frame of the machine and single bearing-wheel are similar to those of a common wheelbarrow. The seed and fertilizing boxes are mounted upon the frame, and the reciprocating motion of the feeding devices are communicated from the bearing-wheel by means of a band passing over a pulley on said wheel, and bell-crank with connecting-rods.

Claim.—The fertilizer-distributing attachment to seed-sowing machines herein described, consisting of the V-shaped box K, serrated bar L, connecting-bar N, and bell-crank E, arranged upon the frame in front of the seed-sowing-box, and operated by the power that actuates the sower, all constructed and arranged substantially as specified.

141,607.—Fire-Extinguisher.—DANIEL J. TAPLEY, Danvers, Mass. Application filed March 29, 1873.

A pump in connection with a siphon empties the acid-receptacle of its contents and mixes it with the solution in the cylinder by a propeller-screw revolving in a vertical perforated cylinder in the bottom of the extinguisher, also preventing the undissolved alkali from settling and clogging the pipe. An alarm-bell is operated by the pumping mechanism. By suitable pipes in connection with a three-way cock, gas or the solution may be used.

Claim.—1. The combination, with the tank and acid-chamber I, of the siphon D and air-pump H arranged in the tank and operated from the outside, in the manner and for the purpose described.

2. The combination, with the pump-operating mechanism, of the spring-bold lever that strikes the gong, and causes the latter to be sounded whenever acid is admitted to the tank.

3. The pump and siphon D fixed to the chamber I, as described, so that the latter may be removed by simply drawing out the piston-rod and detaching its fastening-bolts.

4. The combination, with the acid-chamber I and the acid-discharging apparatus, essentially as herein described, of the connecting-rod G, substantially as and for the purpose set forth.

5. The removable acid-chamber I having the pipe E and siphon-pump attached thereto, and arranged as described.

6. The hollow cylinder Q, in combination with the propeller-screw F and tank X for giving direction to the current, substantially as herein shown and described.

7. The combination of the branch pipe M opening into the gas-space of the tank X with the main pipe C E S, substantially as herein shown and described.

141,608.—Car-Brake.—JAMES TEMPLE, Mooresburg, Pa., assignor, by mesne assignments, to himself and DANL. J. ROTE, same place. Application filed May 9, 1873.

The brake-shoes of the rear wheels are tightened by the downward or forward movement of the front shoes by means of the brake mechanism.

Claim.—1. A longitudinally-sliding bar arranged, in relation to the wheels, as shown, and carrying arc-shaped brake or friction shoes applied to correspondingly-shaped portions of the bar, the bar being fitted to slide in hanger E at one end, and connected to the arm *f* or crank-shaft F at the other, the various parts being combined and arranged to operate in the manner set forth.

2. The sliding shoe-bar fitted in a slotted guide-hanger, to enable the same to be vertically adjusted, to counteract the effects of wear upon the shoes and wheels, as herein set forth.

141,609.—Life-Boat.—WILLIAM A. VAIL, Clinton, Conn. Application filed July 9, 1873.

Attaching to the outside of the hull of a life-boat a sheet-metal extension, flaring outward toward the top, which, by heightening the boat, lessens its liability to upset, and also prevents the waves breaking from over its sides.

Claim.—The detachable beam-extension for life-boats, made in the form and applied in the manner herein shown and described.

141,610.—Plaiting Attachment for Sewing-Machines.—WILLIAM WALKER, Brooklyn, assignor to GEORGE H. WOOSTER, New York, N. Y.—Case A. Application filed May 15, 1873.

The nippers are closed against the fabric when they move forward to form the plait; and as the nippers are opened the blade rises and the nippers move forward, and bend the fabric upward to insure correct formation of the plait.

Claim.—1. The reciprocating or vibrating nippers I, arranged in combination with the work-plate A of a sewing-machine and with the vertically-movable blade J, to form the plaits in the fabric before the same arrives on top of said plate A, as set forth.

2. The jaw *g* of the nippers, hinged to the holder H of the lower jaw *f*, and provided with the projecting arm A *j* to receive, by means of the rotary cam *d* bearing against the arm *j*, the independent oscillating movement above such lower jaw, as specified.

3. The vertically-movable wedge or blade J, interposed between the reciprocating nippers I and the plate A of the sewing-machine, substantially as and for the purpose herein shown and described.

141,611.—Sewing-Machine.—WILLIAM V. WALKER, Dresserville, N. Y. Application filed July 15, 1873.

Two cutters, placed one upon the other, have pitmen, connected by a pivoted lever, and operated by a zigzag groove on the inner periphery of the drive-wheel.

Claim.—The combination, with the two knives or cutter-bars G G, of the rods *b b*, lever H, rollers *i i*, and the zigzag groove *a* formed on the inside of a projecting rim on the driving-wheel D, all substantially as and for the purposes herein set forth.

141,612.—Chuck for Holding Pipe-Fittings.—MATHIAS WALTY, Buffalo, N. Y. Application filed May 14, 1873.

The chuck-bearing D is pivoted in one of the arms, and has on its under surface grooves formed at right angles, into one of which a lever, situated in a recess in the arm, and pressed up by a spring, is forced, to retain the chuck in position.

Claim.—1. The combination, with the supporting-arm B and spring-locking lever F *h*, of the recessed and pivoted chuck-bearing D and removable chucks C C, substantially as and the purpose hereinbefore set forth.

2. The combination, with the supporting-arm B and pivoted chuck-bearing D, provided with locking-grooves *f* on its under side, of the spring-locking lever F *h*, arranged in a recess in the face of the arm B contiguous to the chuck-bearing, substantially as hereinbefore set forth.

141,613.—Millstone-Pick.—THOMAS R. WAY, Springfield, Ohio. Application filed April 5, 1873.

A right-angled body so constructed that one arm receives the cutting-blade and the other the handle, which is attached to the upper end of this body so that the weight may be below. The outer face of the upper arm is flat, and provided with side flanges or lips, extending beyond the edges of the blade to prevent lateral motion. Between these flanges is pivoted a cam-lever, under which is mounted an arched spring-plate provided at its upper end with ears which fit into notches in the flanges and hold the plate in place. There is a stud on the flat face of the upper arm, under the upper end of the spring-plate, which fits into the blade and keeps it from moving endwise.

Claim.—1. The head or body A provided with the stud F, in combination with the blade B and cam-lever D, or equivalent fastening device.

2. The head A provided with the stud F and cam-lever D, in combination with the blade B and spring-plate E, substantially as shown and described.

3. A millstone-pick having its handle attached at or near the upper end of the head or body, in order that the weight may be below the handle, as and for the purpose described.

4. In combination with the body or holder, constructed as described, the double-ended reversible blade provided with a series of holes or recesses to receive the fastening-stud.

141,614.—Oscillating Berth for Vessels.—BERNHARD WINKEN, New York, N. Y. Application filed May 15, 1873.

Claim.—The rock-shaft *f*, lever *e*, and rod *d*, in combination with the balance-pendulum D, swinging berth C, and oscillating frame B, substantially as set forth.

141,615.—Can for Oils.—F. CORTEZ WILSON, Chicago, Ill., assignor to himself and JOHN G. EVENDEN, same place. Application filed June 27, 1873.

The stationary half of the cover is soldered to the inside of the can a little below its upper edge, and an inclined flange continues in the same line around the other half of the can, forming a groove for the revolving half of the cover. The revolving cover is held between a collar and a beveled washer at the apex of the dome, and may be made in two parts.

Claim.—1. In an oil-tank having a conical top or dome, a vertical guard or track around the upper edge of the body or cover to receive the sliding portion of the top or dome, substantially as described, for the purpose specified.

2. The vertical guard, strengthened by the top wire, and formed by soldering the dome to the inside of the tank or cover rim, a suitable distance below the edge, substantially as described.

3. The tank A, having a groove around its upper edge formed by the projecting edge D, the stationary portion B of the dome, and the flange H, substantially as described, for the purpose specified.

4. The sliding door or cover C, for the top or dome, pivoted to the apex of the latter by the beveled washer F, collar E, and the screw and knob, substantially as described.

141,616.—Water-Wheel.—ABRAHAM N. WOLF, Allentown, Pa. Application filed June 17, 1873.

The gates and water-guides are placed between the two horizontal parallel rings, the guides swinging on bolts or pins. There are also double water-guards, forming tapering water-passages, and provided with joints, of rubber or other suitable elastic material, at the point where the water-guides strike them when the gates are closed, thereby forming a water-tight joint.

Claim.—1. The gates G G and water-guides J J, placed between the two horizontal parallel rings H H, and the guides swinging on bolts or pins *a a*, substantially as and for the purposes herein set forth.

2. The double water-guards E E, forming tapering water-passages D D, and provided with joints *b*, of rubber or other suitable elastic material, substantially as and for the purposes herein set forth.

3. The combination, with the wheel A, of the water-guards E with joints *b*, rings H, gates G, and swinging water-guides J, substantially as and for the purposes herein set forth.

REISSUE PATENTS.

5,517.—Machine for Making Glass Buttons.—HENRY BOCK, New York city, assignor to WILLIAM W. MCFARLAN, Brooklyn, N. Y.—Patent No. 46,330, dated February 14, 1865. Application filed May 15, 1873.

Slot in presser to receive and hold metallic eye of button; gas flame under mold to keep mold at a high temperature.

Claim.—1. In a press for making buttons of plastic material, a plunger or presser having a slot or recess, *n*, for the purposes specified.

2. The combination of a die for giving shape to a button with a presser having a slot or recess, *n*, for the purposes specified.

3. A die and presser for molding plastic material, in combination with the heating devices, substantially and for the purposes described.

5,518.—Pen and Pencil Case.—CHARLES H. DOWNES, Hudson City, N. J.—Patent No. 107,672, dated September 27, 1870. Application filed June 24, 1873.

The extension-tube is so arranged that the handle may be extended without moving the pencil-holder when the pen is to be used; or, by turning the extension-tube to the right before withdrawing it the pencil-holder will be extended.

Claim.—1. The combination of a spindle or pencil-holder, A B, and a revolving spirally-slotted barrel, C, with a short slotted fixed guiding-tube, G, and a slotted extension-tube, Q, substantially as described, for the purpose specified.

2. The combination of a spindle or pencil-holder, A B, and a revolving spirally-slotted base, C, constructed and arranged, substantially as specified, with the short slotted fixed guiding-tube G, as described.

3. The spindle A B having stud D thereon, tube C having spiral slots E F, short slotted tube G, slotted extension-tube Q combined with case P, tube M having slot N, slide K, and pin L, all constructed and arranged with respect to each other, as specified.

5,519.—Printing-Telegraph.—THOMAS A. EDISON, Newark, N. J., assignor, by mesne assignments, to THE GOLD AND STOCK TELEGRAPH COMPANY, New York city.—Patent No. 91,547, dated June 22, 1869; reissue No. 4,166, dated October 25, 1870. Application filed June 19, 1873.

Printing and type-wheel magnets arranged in same circuit with a polarized electro-magnet acting to shunt either, the circuits being so arranged, however, that if the switch-magnet fails to act the continuity of the circuit is preserved.

Claim.—1. A printing-telegraph instrument with the printing and type-wheel magnets in the metallic circuit forming part of the main line, and a shunt-switch operated by electro-magnetism to divert the current from the type-wheel magnet while the printing is effected, substantially as set forth.

2. A separate magnet in the main line to cut out, by a switch and shunt connection, either the printing or the type-wheel magnets, substantially as set forth.

3. In a printing-telegraph instrument, three electro-magnets within the metallic circuit forming part of the main line, and a shunt-switch operated by magnetism, whereby the current is diverted or short-circuited from one magnet by the movement of the switch, substantially as set forth.

4. Two or more printing-telegraph instruments placed in one main circuit, and operated simultaneously by pulsations of electricity, the type-wheel being set by pulsations of one polarity, and the printing being effected by pulsations of the opposite polarity, substantially as set forth.

5. Two or more printing-telegraph instruments placed in one main circuit, with all the electro-magnets in metallic connection with that circuit, so that the entire circuits remain unbroken, in combination with shunts and switches actuated by magnetism to direct the current principally through the printing-magnets when the impression is to be made, substantially as set forth.

5,520.—Hominy-Mill.—THEODORE HUDNUT, Terre Haute, Ind.—Patent No. 122,172, dated December 26, 1871. Application filed March 22, 1873.

Curved blades, secured between curved arms, attached to shaft.

Claim.—1. The combination of the shaft B, plates E, lugs F, arms I, blades G, and the collars D, all substantially as specified.

2. The combination of the blades G, lugs F, and arms I, for securing the blades to the shaft and plates, substantially as specified.

3. The holders I for the blades G, having the curved form described.

4. Cutters for a hominy-mill, consisting of curved holders I and blades G, combined and arranged relatively to the shaft, as specified.

5,521.—Spindle for Spinning-Machines.—BARTON H. JENKS, Bridesburg, Pa.—Patent No. 134,067, dated December 17, 1872. Application filed July 5, 1873.

An improvement in that class of spindles which have flat or reduced parts to be engaged by check-pieces extending across the lower part of the bore of the bobbin, and consists in forming such flat or reduced parts on a button made separate from and applied to the spindle, and so as to be embraced entirely within the lower end of the bobbin when applied.

Claim.—A tubular button with an engaging-surface, substantially as described, and made separate from and so applied to a spindle of a spinning-frame that it occupies a position and interlocks with a corresponding surface within the lower end of the bobbin, substantially as and for the purpose set forth.

5,522.—Billiard-Cue.—HERVEY PLATTS, Ithaca, N. Y.—Patent No. 139,519, dated June 3, 1873. Application filed July 26, 1873.

A ferrule, flush with the end of the wood portion of the cue, is used, and is made of lead, zinc, or some non-elastic material. The tip is fastened to the cue by driving it forcibly onto the rough projecting points, which prevent rotary motion of the tip upon the stick.

Claim.—1. A billiard-cue having several rough or barbed projecting from its end, adapted to hold the tip, and for the purpose substantially as specified.

2. The combination, with a billiard-cue, of the soft-metal or non-elastic tip-band *c*, substantially as specified.

5,523.—Printing-Telegraph.—FRANK L. POPE, Elizabeth, and THOMAS A. EDISON, Newark, N. J., assignors, by mesne assignments, to THE GOLD AND STOCK TELEGRAPH COMPANY, New York city.—Patent No. 103,924, dated June 7, 1870. Application filed June 19, 1873.

Type and printing magnets in same circuit. Type-wheel revolving, printing-magnet is shunted by A and *z*. Wheel set-shunt is broken by *x*, and printing-magnet becomes active. Unison-magnet in same circuit, thrown into action by reverse current, shunts both type and printing magnets. All circuits arranged so that if either unison-magnet or shunt *w x* fail to act the continuity of the circuit is still preserved.

Claim.—1. In a printing-telegraph instrument, the arrangement of two electro-magnets in the same electrical circuit, one being employed to rotate the type-wheel and the other to actuate the printing mechanism, when the action of the latter is controlled by that of the former by means of a branch or short circuit and a mechanical cut-off, or its equivalent, constructed and operated substantially as described.

2. An improved cut-off, termed an electrical-unison cut-off, whereby, at a given point in the revolution of a ratchet or type wheel, a shunt or branch circuit may be brought into action, and the electrical current diverted from the electro-magnet controlling the movement of the said ratchet or type wheel, so that the said movement may be arrested at each given point, the same being constructed and operated substantially as specified.

3. The electro-magnet R R′ and soft-iron bar T, in combination with a polarized-steel bar, *n s*, so arranged that said steel bar will be in magnetic contact with the said soft-iron bar, substantially as herein specified.

4. The bar M, feeder N or N′, spurs *q* or *q*′, bed-plates O or O′, combined, arranged, and operating substantially as described, and for the purposes specified.

5. The combination of the lever E, pawls F and F′, stops S and J, and ratchet-wheel G, arranged and operating substantially as described.

6. The combination of the pawl F, stop S, and ratchet-wheel G, substantially as and for the purposes specified.

7. The electro-magnet R R′, soft-iron bar T, and polarized-steel bar *n s*, in combination with the spring *t*, insulated collar *v*, and pin or stud *w*, in the manner described, and for the purposes specified.

8. The combination, with an electro-magnet in a telegraphic-printing apparatus, of a type-wheel whose periphery is provided with integral numbers, so arranged upon said type-wheel that fractions of numbers may be printed upon the paper, thereby decreasing the number of characters upon the type-wheel and insuring great rapidity in recording, substantially as herein shown and described.

9. In a printing-telegraph, a type-wheel provided with letters, figures, or characters, which are arranged in two different lines around the periphery of said wheel, and in such manner that the said letters, figures, or characters in the one line shall be opposite blank spaces in the other line, substantially as herein specified.

10. A printing-telegraph instrument with the metallic circuit of the main line passing through both the type-wheel and the printing electro-magnets, in combination with a shunt circuit or switch that operates to energize the printing-magnet during a pause after the type-wheel has been set.

5,524.—Steam-Generator.—JOHN B. ROOT, New York, N. Y., assignor, by mesne assignments, of one-third interest to THOMAS C. M. PATON.—Patent No. 74,146, dated February 4, 1868; reissue No. 4,062, dated July 26, 1870; reissue No. 4,690, dated January 2, 1872. Application filed May 20, 1873.

Each tube acts as an independent small boiler, which, being set in an inclined position, permits the steam generated to pass freely to its upper end. To prevent foaming, the passages leading from the tubes into the head connecting any two of them are made of less transverse area than the transverse area of the hollow space or chamber in the head connecting them.

Claim.—1. The combination and arrangement of a series of inclined boiler-tubes of uniform diameter, a corresponding set of perforated heads for the lower ends of said tubes, and a corresponding set of perforated heads for the upper ends of said tubes, in such manner that a connected conduit for water is formed at the lower ends of the set of boiler-tubes, and a connected obstructed conduit composed of a series of alternate chambers and passages of less transverse area than the said chambers, is formed at the upper ends of the said tubes for the passage of the steam from their interiors to the upper part of the boiler.

2. A water-tube boiler constructed of a series of inclined water-tubes which are of uniform diameter throughout their length, and are provided with a series of heads, and are combined in such manner that the upper ends of said tubes and the connections between them form an obstructed passage of alternate constructions and enlargements.

5,525.—Pump for Oil-Wells.—JOHN B. ROOT, New York, N. Y., assignor, by mesne assignments, to ALEXANDER S. HILL, HARRISON H. NOYES, and HARVEY M. HASKELL, Pleasantville, Pa.—Patent No. 47,224, dated April 11, 1865. Application filed May 17, 1873.

The tube is composed of staves bound around with iron bands. The pump-rod passes through a yoke firmly secured to the pump-cylinder, which fits snugly within the lower length of the tube. To draw up the cylinder without disturbing the tube, the pump-rod is raised until the piston is brought in contact with the yoke, when the cylinder is dislodged and all brought up together.

Claim.—1. The pump-tube A, composed of wooden staves and surrounding bands of metal, constructed and arranged substantially as described.

2. In combination with a tube for oil-wells, the detachable pump-cylinder, arranged to operate substantially as described, whereby the latter can be withdrawn and replaced without removing the tubing of the well, as and for the purposes set forth.

3. The combination of the tube A, cylinder B, and packing-rings *d*, substantially as described.

4. The piston or valve rod D, connected to the pump-cylinder B, substantially as described, whereby the rod has sufficient motion to operate the pump, and when drawn up will remove the cylinder with it, as herein set forth.

5,526.—Thread Show-Case.—AURELIUS STEWART, Chicago, Ill.—Patent No. 79,033, dated June 16, 1868. Application filed May 17, 1873.

The case is provided with parallel rows of apartments having inclined bottoms, and open in front, and provided with a stop thereat. The fronts of the partitions and ends are cut out in the arc-form to allow the individual spools to be easily removed.

Claim.—1. A spool-case, provided with parallel rows of apartments for each kind of thread or silk, having inclined bottoms, and open in front and provided with a stop thereat, so that the different kinds of article shall be exhibited to the eye, in the manner described.

2. The parallel apartments of a spool show-case, bottom inclined, to enable the successive spools to be fed forward by gravity, in the manner set forth.

3. The combination, in a spool-case, of partitions and ends, pared away in the arc-form to allow the individual spools to be removed, in the manner specified.

5,527.—Window Screen and Shutters.—BENJAMIN J. WILLIAMS, Philadelphia, Pa.—Patent No. 103,900, dated May 10, 1870.—Division A. Application filed July 8, 1873.

A combined screen and shutter having an overlapping bead all around the opening for excluding all light when the shutter-slats are closed.

Claim.—In an inside blind or door having movable slats, wire screens attached in rabbets made in the stiles and rails of the blind, in combination with beads or moldings made wider than the rabbets, substantially as and for the purposes set forth.

5,528.—Blind-Slat Operator.—BENJAMIN J. WILLIAMS, Philadelphia, Pa.—Patent No. 103,900, dated May 10, 1870.—Division B. Application filed July 5, 1873.

Claim.—In combination with the movable slats of a blind or slat-door, the center lever C, movable parallel slides B B, and pivotal guide-rods *d*, all arranged upon the rail and inclosed by plate D, the slot *c* being left between the plate and rail for the lever to work in, substantially as set forth.

5,529.—Seed-Dropper.—FRANK W. YOUNG, Holden, Mo.—Patent No. 135,743, dated February 11, 1873. Application filed June 25, 1873.

Beneath a hopper, and upon a board containing a single escape-hole, revolves, intermittingly, by means of a pair of spring-pawls, an annular disk, in the inner edge of which semicircular seed-cups are formed, into the open sides of which project the concave ends of radial piston-arms, slotted at their inner ends and pivoted loosely through the cam-slots to a centrally-pivoted adjusting-disk. By turning slightly the central disk, the pivots, working in the cam-slots, move the radial piston-arms outwardly or inwardly, to vary the size of the seed-cups, which stop successively over the seed-escape hole at each stroke of the pawl.

Claim.—1. The slotted and pivoted arms D D, when used in connection with a rotating dropping-wheel, substantially as and for the purpose set forth.

2. The combination of the slotted pivoted arms D D with disk E, substantially as and for the purpose set forth.

3. The slotted pivoted arms D D and pivoted disk E, in combination with the pivoted wheel C, provided with dropping-holes *c*¹, substantially as described, and for the purpose set forth.

4. The reciprocating slide F, pawls G H, dropping-wheel C, disk E, and arms D D, all constructed and combined to operate substantially in the manner and for the purpose herein described.

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All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

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COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks) 6,500
SEWING-MACHINES and attachments 2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes 4,000
PRINTING; including presses, type, and printers' furniture. 2,500
CARRIAGE-WHEELS; including hubs, spokes, tires, and axles 1,200
FELTING and HATS; including caps, bonnets, flock, &c. 1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments) 1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs 1,400
CARRIAGES and WAGONS; (excepting wheels, hubs, and axles) (in progress.)

BOUND VOLUMES OF PATENTS.

The Office is now prepared to furnish to subscribers the monthly volumes of patents at $125.00 per annum, bound in half-sheep.

In these volumes the specifications are in full, the type of the same size as the printed patents and records; the drawings are in full, but are one-half the size (linear) of those attached to the patents and bound up for record; the illustrations are four on a page, but *fac-similes* of the originals, with the headings and signatures.

The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 200 of drawings; total of each volume about 1,000 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,000 pages per month: 9,000 pages of specifications, 3,120 pages of drawings—12,720 pages.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited and the invention therein described will become public property, as against the applicant thereafter, unless he shall make a new application within two years from the date of notice of the original allowance.

OFFICIAL GAZETTE

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COMMISSIONER'S DECISIONS.

JOHN B. WICKERSHAM.—*Extension.*

[*In the matter of the application of John B. Wickersham for the extension of Letters Patent No. 25,166, dated August 16, 1859, granted to him and Henry Jenkins, since deceased, as joint inventors of* IRON FENCE.—*Decided August* 11, 1873.]

The extension of a patent issued to two joint inventors will be denied if one of them has since deceased, and his representative not only refuses to join in the application, but protests against its being allowed.

A patent issued to two joint inventors cannot, it seems, be extended upon the several application of one of them.

LEGGETT, *Commissioner:*

This is a case where one of the joint inventors petitions for the extension of a patent, while the representative of the other not only refuses to join in the petition, but protests against the extension.

As to the right of the survivor to make this petition alone and receive the extension, the two members of the Board of Appeals are divided; consequently it becomes the duty of the Commissioner, notwithstanding the case has been referred to the Board for report, to examine this question himself.

Section 63 of the patent act provides that the patentee, meaning the inventor, shall petition for extension when the same is desired. The attorney for the applicant rests upon the use of the singular here as authority for one joint inventor appearing in the application without the other. I cannot see the force of this argument. In a case taken to the courts, as reported in Law's Digest, page 453, the judge used this language: "One of two or more joint inventors is not *the* inventor according to the statute." In legal signification, John B. Wickersham is no more the patentee or inventor than would be John Doe or Richard Roe, and I cannot see how he has any more right to make an application for an extension in this case than any other person would have.

It may be a hardship in Mr. Wickersham's case, but it is one of those hardships to which joint ownership is liable, and from which it is not always the province of the law to grant full relief.

Mrs. Jenkins, administratrix of Henry Jenkins, evidently regards it as her interest to object to this extension. She has a reason, it seems, for so doing. Her husband was the sole inventor of an analogous invention which probably is deemed by her as sufficiently covering the matter of this patent to make it for her interest that this patent should be out of the way. She has a right in this case, as elsewhere, to consult her own interest, and certainly, in the absence of a law providing for the extension of a patent upon the application of one joint inventor, the Government would not be warranted in forcing upon her an extension which she does not desire.

For these reasons, if there were no others, the extension must be refused.

BARKER AND MACK.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of George E. Barker and Stephen F. Mack for* FIRE EXTINGUISHER.—*Decided August* 7, 1873.]

PRACTICE UNDER RULE 44.

There is no legitimate combination between the reservoir of a fire-extinguisher and the fluid it is intended to contain, unless they are especially adapted to each other.

Unless the Examiner in charge has acted upon an amendment, no appeal can be taken from him to the Commissioner under the 44th rule.

Upon an application for the reissue of a patent for a fire-extinguisher no amendment should be allowed which introduces the formulas for preparing the fluid to be used when there was no indication of the formulas in the original.

A claim for a peculiar fluid to be used in a fire-extinguisher cannot be embraced in a patent for the instrument, but it must be covered by a separate patent.

LEGGETT, *Commissioner:*

This matter comes up irregularly, as it purports to be an appeal under rule 44, and at the same time it contains an amendment.

As the Commissioner cannot act upon the amendments until they have been acted upon and rejected by

the Examiner, it is difficult to see how he can act upon the appeal at all.

The applicant should first submit his amendments to the Examiner for action, and after he has become satisfied himself with the form of his claims, he may take an interlocutory appeal to the Commissioner in person if the Examiner, for any reason, declines to examine the case upon its merits.

As he has not refused to examine the claims set forth in the amendment of July 29, no appeal could properly lie. I have, however, looked into the substance and form of the claims in this amendment, and I find that the same objections which the Examiner raised to the previous claims would be equally valid against these. I have no doubt whatever that the Examiner was correct in refusing to admit the amendment which introduced the formulas for making the fluid, as no indication of such formulas was in the original application. It is certainly new matter, and should be stricken out. If, however, these formulas had been found in the original application, yet as they are entirely distinct from the mechanism claimed, the Examiner should have required their erasure from the application. If they were new the applicant should have been required to divide and claim them separately.

In reference to the combination claims, the Examiner is correct. There is not the remotest quality of patentable combination between the fluid in this case and the reservoir in which it is placed. The fact that two things may come in contact and be used together does not necessarily constitute a patentable combination. This has been decided over and over again so often by commissioners and courts that discussion upon it is not necessary. The machine for throwing a fluid upon a fire, if new, would be patentable, but to make a combination between the mechanism and some particular kind of fluid would be impossible, unless the machine was especially adapted to that special fluid and the fluid to the machine, and even then the propriety of a combination claim would be very doubtful.

The action of the Examiner is fully sustained. Instead of being open to criticism, as made by the applicant's attorney, his action in the case indicates thorough intelligence upon the subject-matter of the application, a very just and appreciative examination of the case, a fair treatment of the application in all its stages, and a very commendable amount of patience with the applicant's attorney.

B. S. BAKER.—*Appeal.*

[*Appeal from the Primary Examiner in the matter of the application of B. S. Baker for a patent for* WEINGERS.—*Decided August* 14, 1873.]

A claim should not be allowed for a combination of elements, no one of which is novel in itself or produces any new effect upon the action of either of the others.

To render a combination legitimate the constituent parts must produce some new operation in consequence of their being so arranged together, or some one of them must be novel in itself, and render the whole capable of producing a new result.

HODGES, *Acting Commissioner:*

Some confusion has arisen in this case in consequence of not keeping in view the distinction between the two classes of combinations which are now sanctioned by law. In the one long recognized the elements may be every one of them old and well known, but as they are joined together they operate mutually upon one another, and each one modifies the action of the rest so that a result is produced which was unknown before. To render this combination legitimate, it is essential that each constituent part should perform some new function of which it was previously incapable.

The other combination is where several devices are brought together, but produces no new operation by that means, yet the combination embraces some element which is new in itself and gives the whole a new effect, and it is thereby rendered patentable. The patentability of such a combination has only become recognized within a few years, but now seems well established. (*Lee* vs. *Blandy*, 2 Fish., 89, 93; *Sugar Refinery* vs. *Mathieson*, Id. 600, 605; *Gallahue* vs. *Butterfield*, 2 OFF. GAZ., 645, 647.)

There is no such co-operation or mutual effect of the several mechanisms specified in the several claims in this case as renders any combination of them legitimate. There is none between the roller-frame and its parts on the one hand, and the table and its parts on the other. The table would operate with any other frame just as it does with this, and the roller-frame with any other table as with this. The same remark will apply to the drip-board which is embraced in several claims, and which will serve just as well in any other roller-frame or on any other table. If these several devices are old, not one of the claims covers a patentable combination.

If any of the elements are new, however, that will require a different consideration. From the correspondence it may be inferred that the Examiner in charge was disposed, for instance, to concede the novelty of the roller-frame. If indeed he finds that to be new, then all the claims but the fourth are patentable, since they all embrace it. They are needlessly multiplied, and some of them should be stricken out. The fourth claim is entirely indefensible, unless the drip-board or table is new, since the peculiar roller-frame described is not included.

As the ultimate disposition of the several claims depends on the novelty of the elements enumerated, which has not been determined, the case is remanded to the Primary Examiner, who will be governed by the principles herein asserted. He will allow no claims which do not embrace some new feature, since the combinations possess no merit as such, and he will restrict them in number at his discretion. As there is not probably more than one new feature in the machine, no occasion can well arise for requiring a division of the application.

MARCUS P. NORTON.—*Extension.*

[*In the matter of the application of Marcus P. Norton for the extension of Letters Patent No.* 25,036, *granted to him August* 2, 1859, *for a* POSTMARKING-STAMP.—*Decided August* 7, 1873.]

If an invention is an obvious one and sure to be devised in a short time, the first one to produce it does not seem to be entitled to the same remuneration for it, however great the benefits resulting from it, as the inventor of an improvement less likely to be discovered.

An applicant for an extension will not be required to erase from his specification the description of an invention which he uses but does not claim, at the demand of a remonstrant who has a patent for the invention, and who apprehends that the applicant may set up a title to it on a reissue. The applicant has a right to have the question tried on an interference.

REPORT OF THE BOARD OF EXAMINERS-IN-CHIEF—PRACTICE UNDER SECTION 10, ACT OF 1871.

"*To the Hon. Commissioner of Patents:*

"We respectfully report as follows, viz.:

"The report of the Examiner establishes the novelty of the invention satisfactorily, and the references which have been given by the contestants on this point entirely fail of impeaching it.

"It consists merely in so attaching a canceling-stamp to a hand post-office stamp that the operator can with a single stroke deface the stamp by which the postage is paid, and mark the letter with the name of the office and date. Both the canceling-stamp and marking-stamp are old, and it would seem to be an achievement of very slight merit to unite them. From the correspondence it appears, nevertheless, that the Government officials had been for some time engaged in finding some instrument that would effect such a result, and did not succeed until the one in question was produced. It was immediately adopted and put in extensive use in the post-offices throughout the country. So great a diminution of labor was thereby effected that the saving to the Government is estimated by its officers at several hundred thousand dollars. Its value and importance are fully made out as abundantly sufficient to warrant the extension. Perhaps one consideration should be brought to notice in this connection. The invention is so obvious a one, and was so sure to come to light soon, that the one who first happened to produce it should not have the same credit or receive the same reward as if it had been more difficult to devise. This point is not deemed very material in this case after all, as the applicant has been insufficiently remunerated, even on the supposition that his discovery does not involve much ingenuity.

"There can be no question as to his diligence. The Government was his only customer. They took it up, and the extent to which it was introduced was entirely at the control of the officers, who in fact employed it largely.

"The opposition made by T. J. W. Robertson is founded entirely upon the apprehension that as Norton's specification describes quite nearly a marking-stamp for which he has a patent, Norton may hereafter endeavor to claim it upon a reissue of the extended patent and involve him in litigation. If that part of the specification were erased, he is willing to withdraw his opposition. We apprehend that this is not the proper occasion to try the question who is the inventor of the stamp, neither should Norton be required to surrender his claim without such a trial. Even if the amendment he proposes were made, it would not give the remonstrant effectual relief. Nothing which can be done now can prevent Norton from seeking a reissue upon the model or drawings of his case, or even the specification as originally presented. The extension should not be refused upon this ground.

"The interest of the applicant in his invention has been assigned and reassigned a number of times, and to what extent the renewed term is embraced is not easy to settle, nor in whom the title now is. But at the hearing an assignment from Ransfords and Low of one-half their interest in the renewed term to the petitioner was filed and recorded. If the former assignments embraced the renewed term, they were the undoubted owners of one-half of it, so that the applicant's interest in it becomes clear. There are other conveyances of an interest in it for the benefit of his family, but the effect of these depends on circumstances which are not known, and they are therefore passed over.

"Upon a consideration of the entire case we recommend the extension.

"S. H. HODGES,
"R. L. B. CLARKE,
"*Examiners-in-Chief.*"

The foregoing report is approved, and the patent will be extended.

M. D. LEGGETT,
Commissioner of Patents.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,395.—Heels for Boots and Shoes.—Granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,434.—Cotton-Scrapers.—Granted to JONATHAN H. MITCHELL, September 13, 1859. Application filed June 10, 1873. Hearing August 27, 1873.

25,442.—Boilers and Steamers.—Granted to DANIEL R. PRENDLE, September 13, 1859. Application filed June 13, 1873. Hearing August 27, 1873.

25,443.—Seeding-Machines.—Granted to SILAS G. RANDALL, September 13, 1859; reissued May 25, 1869. Application filed June 11, 1873. Hearing August 27, 1873.

25,473.—Scales.—Granted to ANDREW TURNBULL, September 13, 1859. Application filed May 31, 1873. Hearing August 27, 1873.

25,484.—Grain-Separators.—Granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—Hydraulic Presses.—Granted to M. H. CLARK, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—Railroad-Car Seat.—Granted to ELI WHEELER, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—Lamps.—Granted to HALVOR HALVORSON, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—Tailors' Shears.—Granted to ROCHUS HERRICH, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,519.—Bung-Hole Borer and Reamer.—Granted to JOSIAH KIRBY, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—Try-Cocks for Steam-Boilers.—Granted to JOHN F. COOK, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—Rolling-Mills.—Granted to JOHN and GEORGE WHITE, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—Bedstead-Slats.—Granted to TYLER HOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—Mode of Arranging Couches in Railroad Cars.—Granted to EDWARD C. KNIGHT, September 27, 1859. Application filed May 31, 1873. Hearing September 10, 1873.

25,572.—Holding Water-Traps.—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,593.—Burglar-Alarms.—Granted to ABBOTT Q. ROSS, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,668.—Steam Punching-Machines.—Granted to JOHN STARROW, September 27, 1859. Application filed June 26, 1873. Hearing September 16, 1873.

25,649.—Steam-Boilers.—Granted to JOSEPH HARRISON, Jr. October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—Construction of Prisms.—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,673.—Machines for Lasting Boots and Shoes.—Granted to JAMES PUMERTON, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,683.—Hydrants.—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,692.—Sewing-Machines.—Granted to KASIMIR VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—Skeleton Skirt.—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,726.—Hand-Machine for Wiring Blind-Rods.—Granted to BIRAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,733.—Double-Friction Couplings.—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—Method of Combining Emery with Caoutchouc.—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—Cutting and Panning Cakes.—Granted to JOHN H. SHROTS, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—Mode of Manufacturing Barrels, &c.—Granted to GEORGE W. BARKER, October 11, 1859. Application filed July 8, 1873. Hearing September 24, 1873.

25,796.—Jacquard Machines.—Granted to AVERY BARRETT, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,807.—Hem-Folders.—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Hearing October 1, 1873.

25,814.—Sleeping-Cars.—Granted to JOHN DANNER, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,843.—Cultivators.—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,869.—Weeding-Hoes.—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,867.—Machines for Covering Saddle-Trees.—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

25,874.—Browning-Machines.—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Hearing October 8, 1873.

25,883.—Construction of Glass Coffins.—Granted to JOHN R. CARSON, October 25, 1859. Application filed July 23, 1873. Hearing October 8, 1873.

25,936.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to NELSON SPOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Hearing October 15, 1873.

26,003.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Hearing October 15, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Hearing October 22, 1873.

26,060.—Machines for Making Box-Joints.—Granted to JAMES STIMPSON, November 8, 1859. Application filed August 2, 1873. Hearing October 22, 1873.

26,069.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to CYRUS CHAMBERS, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Hearing October 29, 1873.

26,128.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 25, 1861. Application filed August 11, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to EDWARD WEBB, November 15, 1859. Application filed August 18, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WRIGHT, November 15, 1859. Application filed August 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Hearing November 5, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Hearing November 12, 1873.

26,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Hearing November 12, 1873.

27,339.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 29, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

25,115.—Improvement in Self-Acting Wagon-Brakes, granted to BENJAMIN S. HEALEY, August 16, 1859.

Claim.—1. The combination of a forked pole, arranged substantially as described, with the hounds, whereby the pole is free to slide in its forks and operate the brakes without moving the forks backward in the hounds.

2. In combination with brakes pivoted to a fixed bar, as described, the brake-blocks, arranged and connected with the brakes, as set forth, whereby the friction of the wheels on the blocks draws the brakes toward and causes them to press with greater force against the wheels.

25,143.—Improvement in Weighing-Scales, granted to FRANCIS M. STRONG and THOMAS ROSS, August 16, 1859.

Claim.—1. The arrangement of the bars C D of the larger platform E, as shown, to wit, one lever crossing the other at about right angles, so that the knife-edged bearings *b* of the foot-pieces *c* of one lever will be at right angles to those of the other, and the lateral movement of the foot-pieces on the bearings prevented.

2. Attaching the arms E E of the levers C D, either separately or when connected, direct to the beam G, and having the bar I of the scoop or smaller platform H rest on knife-edged bearings *h h* on the beam, substantially as and for the purpose set forth.

25,149.—Improvement in Blanks for Shoe-Pegs, granted to B. F. STUYVESANT, August 16, 1859.

Claim.—A blank or strip of shoe-pegs cut around the log, substantially as described.

25,167.—Improved Mode of Lighting Gas by Electricity, granted to ARCHELAUS WILSON, August 16, 1859, (JULIA H. WILSON, administratrix.)

Claim.—1. Combining with a gas or other burner metallic points approaching but not coming in contact with each other, substantially as described, in combination with the inductive apparatus, substantially as described, for the purpose of effecting ignition by means of the electric discharge or spark, as specified.

2. Combining with the galvanic battery an inductive apparatus or coil metallic points and an electro-magnet, for the purposes specified, and substantially as herein described.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 12, 1873.]

6,798.—Stamp Pad and Rack.—GEORGE K. COOK, New York, N. Y. Application filed June 17, 1873.

6,799.—Cake-Holders.—GEORGE GILL, Taunton, Mass., assignor to REED and BARTON, same place. Application filed June 25, 1873.

6,800.—Clock-Cases.—JOHN F. MANN and HENRY MANN, Brooklyn, E. D., N. Y. Application filed July 17, 1873.

6,801.—Advertising-Desk.—CHARLES W. ARMSTRONG, Detroit, Mich. Application filed June 27, 1873.

6,802.—Tea-Service.—GEORGE GILL, Taunton, Mass., assignor to REED & BARTON, same place. Application filed June 25, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date August 12, 1873.]

1,401.—Patterns of Paper, Cloth, &c.—THE DOMESTIC SEWING-MACHINE COMPANY, New York, N. Y. Application filed July 29, 1873.

"'Domestic,' in conjunction with the words 'Paper Patterns,' or 'Patterns.'"

1,403.—Dress-Patterns.—THE DOMESTIC SEWING-MACHINE COMPANY, New York, N. Y. Application filed July 29, 1873.

"'Paper Fashions.'"

1,403.—Medicine.—T. S. FELLOWS and J. R. SMITH, Wells, Minn. Application filed July 5, 1873.

"'Gopher State Oil.'"

1,404.—Paints and Colors.—MCCLOSKEY, BRO. & Co., Philadelphia, Pa. Application filed July 31, 1873.

"a human arm, the hand of which grasps a brush."

1,405.—Alpacas and Mohairs.—MOORE, TINGUE & Co., New York, N. Y. Application filed March 8, 1873.

"three crows perched on the branches of a tree, printed in black ink."

1,406.—Metallic Paint.—PRINCE'S METALLIC PAINT COMPANY, New York, N. Y. Application filed July 28, 1873.

"an eagle standing on a stump inclosed by a triangle of wide bars, whereon the words 'Eagle Metallic Paint' are printed; also, three stars, one near the apex of each angle."

1,407.—Shoes.—GEORGE A. REYNOLDS, Utica, N. Y. Application filed June 30, 1873.

"the letters 'G. A. R.' and the word 'Best,' below such monogram."

1,408.—Hams, Shoulders, Bacon, &c.—WILLIAM J. RIEMAN & SON, Baltimore, Md. Application filed June 16, 1873.

"an orange, with a short stem and leaves attached."

1,409.—Medicated Liquor.—MICHEL VERGNOLE, New Orleans, La. Application filed April 14, 1873.

"'Bitter des Arabes. Perfectionné de sidi Mahomet, (Ulttes,) Breveté, S. G. D. G. Fleurat, Proprietor. Transferred to M. Vergnole.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date August 12, 1873.]

ORIGINAL PATENTS.

141,617.—Ventilating Railroad Cars.—JOSHUA G. ALLEN, Philadelphia, Pa. Application filed October 11, 1872.

Claim.—1. The exhaust-flue A extending horizontally along the side of the car, above the floor, and provided with an upright portion extending through the roof, when provided with the series of openings opposite or between the seats, as shown and described.

2. In combination with the horizontal exhaust-flue A, arranged as shown and described, the lateral branches *c* extending lengthwise against the under side of the seats, and opening into the central aisle near the floor, as shown and described.

3. The combination of the exhaust-flue A and the hot-air flue B, when arranged parallel with each other along the side of the car, above the floor, and provided with the series of openings, as and for the purposes set forth.

4. The combination of the exhaust flues *c* extending lengthwise under the car-seats with the inverted troughs *d* secured to their under sides or immediately below them, to receive the incoming heated air.

141,618.—Trussed-Spring Bolster for Railroad Cars. JAMES ANDERSON, Wilmington, N. C., assignor of one-half his right to W. J. CALAIS and WM. H. JAMES, same place. Application filed May 1, 1873.

The body-bolster yields vertically beneath the car-frame.

Claim.—In combination with the trussed-spring car-body bolster B, the springs A, or their equivalents, the spring-seats *g*, and stirrups *f*, as and for the purpose set forth.

141,619.—Oil-Can.—JAMES E. AULD, Buffalo, N. Y. Application filed January 22, 1873.

Claim.—The combination of the oiler A having the movable spout B, the lamp C, and cover D, constructed substantially as hereinbefore set forth.

141,620.—Distributing Apparatus for Garden-Hose, Syringes, &c.—SAMUEL BARTON, Jr., London, England. Application filed September 6, 1872.

Claim.—A revolving socket or circular box fitted with different jets and arranged so as to turn partially on a fixed conical or other plug on the end of the hand-pipe, substantially as hereinbefore described.

141,621.—Heating-Drum.—JOSEPH R. BARTLETT, Boston, Mass. Application filed May 3, 1873.

Claim.—In combination with a range or its equivalent, the air-chamber *d*, with its cold-air inlet *e*, hot-air pipe *f*, and the bent pipe *g g g* leading from the smoke-stack *a* to the chimney *h*, and provided with the dampers *i*, *k*, and *l*, as and for the purpose set forth.

141,622.—Baling-Press.—HENRY W. BAUMANN, Memphis, Tenn. Application filed August 10, 1872.

Claim.—1. The combination, in a baling-press, of a follower, toggle-levers, a right-and-left-hand screw, the cross-head, and a platform suspended from the cross-head so that the operator can travel up or down with the screw and operate it with greater facility, substantially as described.

2. The combination, in a baling-press, of a right-and-left-hand screw, the double toggle-levers, the follower, and the slotted guide attached at its base rigidly to the follower, and guided trim by an elongated pivot of the toggle-levers, which it straddles, all these parts being constructed and combined to operate substantially as described.

141,623.—Tucker for Sewing-Machines.—JOSEPH H. BEAN, Cincinnati, Ohio. Application filed March 25, 1873.

The tuck last sewn is received and guided in the vertical space formed by bending the end of the gage-plate. This plate is adjustable on the base-plate, provided with two slots to adapt it to various machines.

Claim.—The tucker described, consisting of the plate A with slots *a a*, flange a^2, and extension a^3, and gage-plate B with bent portion *b*, combined as described, for the purpose set forth.

141,624.—Magazine Fire-Arm.—Joseph H. Bean, Cincinnati, Ohio. Application filed December 27, 1872.

Cartridge-carrier block drawn down by slotted link, sliding bar and finger-piece thrown up in the act of cocking by the tumbler, acting as a cam, against the sliding bar and securely held in place by a vertical stud or brace.

1. The combination of the cartridge carrier-block, constructed substantially as described, with the intermediate mechanism for drawing it down and the independent mechanism for moving it up, substantially as described.

2. The combination of the block C, the slotted lever *c*, connecting-rod c^2, and supporting-block D, as described.

141,625.—Mode of Making Axle-Clips.—Henry M. Bercher, West Meriden, Conn. Application filed March 3, 1873.

Dies successively reduce a short section of a flat rectangular bar of metal to the form of a finished clip.

Claim.—The process herein described for forging coach-axle clips, which consists in reducing the metal in the manner described into the succession of forms herein set forth.

141,626.—Tucker for Sewing-Machines.—Francis W. Brown, Cincinnati, Ohio. Application filed July 19, 1873.

Improvement on patent No. 132,235. The folding hook that receives and guides the edge of the tuck being stitched is formed and projects from near the center of the adjustable plate. The upper plate with hook at outer end guides the tuck previously sewn, and both plates are sustained above the cloth-plate by the tucker-plate.

Claim.—1. The main tucker-plate A, composed of the elevated plate *a'* and holding-plate *a* provided with slot *a a'*, and constructed as and for the purpose herein set forth.

2. The adjustable plate C C′ provided with the folding hook *c*, and constructed substantially as herein set forth.

3. The plate C C′ *c*, in combination with the main slotted plate A, substantially as herein set forth.

4. The combination of plate A with the plates B and C C′ *c*, constructed substantially as herein set forth.

141,627.—Platform-Scale.—Joseph Betson, Quincy, Ill. Application filed April 11, 1873.

The double arms of a transmitting-lever beneath the platform are made adjustable with reference to each other by means of a slot and screw-bolts.

Claim.—The transmitting-lever F, constructed substantially as described, in combination with the arm F′, when adjustable with relation to each other, by means of the slot f^1 and bolts f^2, substantially as and for the purpose specified.

141,628.—Stopper for Bottles Containing Inflammable Liquids, &c.—Louis G. Chaput, New York, N. Y., assignor to R. Howe & Co., same place. Application filed June 11, 1873.

Claim.—The vessel A having a screw-neck to receive the nipple B having a conical mouth-piece, the upper thread or terminus of the screw-neck forming a seat for the spring D, as shown, in combination with each other and with the valve C having the seat B and nipple *c*, all constructed and arranged as herein shown, for the purpose specified.

141,629.—Machine for Punching Metal.—John Clark, Haverstraw, N. Y. Application filed March 28, 1873.

Claim.—1. In a machine for punching or perforating, the combination of the device C for holding the punches, the punches *p*, and the wedge-shaped raising and lowering apparatus described.

2. The improved machine described for punching or perforating, having a frame, A, die-plate E, punch-guide D, punch-lifter C, punches *p*, and the wedge-shaped raising and lowering device with its handle, substantially as described, and for the purposes set forth.

141,630.—Self-Closing Cock.—Mifford S. Clark, New York, N. Y., assignor to Charles Harrison, same place. Application filed April 24, 1873.

Water flows into the inner chamber through depressions in the plug. As the plug enters said chamber again the egress is stopped, and the water is forced out of the chamber through a small opening which allows the valve to close slowly.

Claim.—1. In a self-closing cock, the inner cylinder *a*, provided with the lateral aperture *f* and with the reciprocating piston or plunger *c*, and arranged in relation to the valve-shell X, substantially in the manner described, and for the purpose set forth.

2. The combination of the lateral opening *f*, the annular groove f^1, and the outlet f^2 with the cylinder *a*, the reciprocating piston or plug *c*, and the packing-ring *b*, substantially as described.

3. The partly tapered or corrugated plug *c*, in combination with the variable chamber of a self-closing cock, substantially as described.

141,631.—Life-Preserving Garment.—Elizabeth R. Cogswell, New York, N. Y. Application filed June 11, 1873.

The flaps *d*, stuffed with cork or its equivalent, are flexibly connected to the garment, as that when not in use as a life-preserver they will depend from the waist; but when the wearer springs into the water they will automatically rise and form floats under the arms.

Claim.—The combination, with the cork-stuffed jacket, made as described, of the floats *d*, having flexible connection therewith, and arranged to operate in the manner set forth, for the purpose specified.

141,632.—Lawn or Garden Sprinkler.—Henry E. Cooke, Cleveland, Ohio. Application filed July 2, 1873.

The hose-pipe is supported by a staff or rod set perpendicularly in the ground. The flexible hose on the end of the hose-pipe is smaller than the leading-hose, and is caused to straighten out by the force of the water passing through it, and flops over from one side to the other, whereby the water is thrown about in various directions and distributed over the ground.

Claim.—The combination and arrangement of the small hose C, tip E, staff F, and ring G, (either with or without the pipe B,) with the hose A, as and for the purpose set forth.

141,633.—Hog-Trap.—Thomas Darby, Duncan, Ill. Application filed May 23, 1873.

Two bars, pivoted at their lower ends, are acted upon by a lever having pins which engage with the upper inclined or cam-shaped portions of the bars, shutting or opening them simultaneously for holding or releasing the animal.

Claim.—The cam-shaped or inclined boards A and T, lever H, and guide-boards C, D, and E, in combination with the timbers B, F, G, and I, substantially as and for the purpose hereinbefore set forth.

141,634.—Smoke-Bell for Gasaliers.—Charles Deave, New York, N. Y., assignor to Archer and Pancoast Manufacturing Company, same place. Application filed July 19, 1873.

A smoke-bell has openings in its side and perpendicular to the circumference of its base. Above each opening and projecting from its highest side is a deflecting-plate which diverts heat and smoke from the gasalier. Deflecting-disks, more or less conical, are suspended above the smoke-bell.

Claim.—1. A concavo-convex smoke-bell for gas-burners, consisting of the body A, apertures B B, and deflecting-shutters C C, one or more, substantially as herein specified.

2. The combination, with the smoke-bell A provided with the apertures B and plates C, one or more, of the deflecting-disks D D, substantially as herein specified.

3. The combination, with the smoke-bell A provided with the apertures D D and plates C C, one or more, of the conical deflector E, substantially as herein specified.

141,635.—Car-Coupling.—Phillip H. Decker and Nelson Lee, Chicago, Ill. Application filed May 5, 1873.

The links are held by horizontal bolts and are capable of being "set" vertical, so that the concussion caused by the meeting of the draw-heads will tilt them over into place in the opposite draw-head. The pins are operated by an upright lever and a spring.

Claim.—The buffers E having open mortises G G, and links I arranged to set vertically and horizontally, in combination with levers B, rack L, pins J H, and spring C, as set forth.

141,636.—Device for Baling Hay.—Levi Doty, Frankfort, Ill. Application filed June 25, 1873.

The hoop is held in position upon the bale in order to facilitate the nailing or securing the end thereto.

Claim.—The combination of the levers *s* and *v*, pawl *s*, and forked point *i*, constructed, operating, and arranged, as and for the purpose set forth.

141,637.—Sieve for Grain-Separators.—Elihu Doud, Oshkosh, Wis. Application filed July 1, 1873.

Sieve adjusted in shoe to vary force of blast thereon.

Claim.—The step-shaped sieve or sieve-frame D, combined with and adjustably secured in the shoe C, substantially as and for the purposes described.

141,638.—Blacking-Brush.—William S. Fickett, Rochester, N. Y. Application filed November 30, 1872.

A blacking-brush with a holder or clamp on its back, and a slot and set-screw, that boxes of various sizes may be held upon it for use.

Claim.—The adjustable clamping-standard D in this class of brushes, in combination with the brush A and blacking-box C, as and for the purposes set forth.

141,639.—Ironing-Table.—James H. Frank, of Ilion, N. Y., assignor to Sceva S. Phillips and Alonzo E. Vosburgh, same place. Application filed March 12, 1873.

Claim.—The ironing-table, consisting of the legs K L, brace G, and hinged or pivoted top A provided with the cleats E and F, constructed and arranged as shown and described.

141,640.—Fastener for the Meeting-Rails of Sashes.—Myron Gee, Oakland, Cal. Application filed June 13, 1873.

Claim.—1. The bolt B having the concentric grooves E and O, and the slot G operating in connection with the pin P, when constructed and arranged substantially in the manner and for the purposes set forth.

2. The combination and arrangement of the bolt B having the grooves E and O, and slot G operating in connection with the pin P, the thumb-piece C, the case A, and catch K covering the mullion of a window-sash, the whole being constructed and operated substantially in the manner and for the purposes set forth.

141,641.—Roll for Rolling Wagon-Hub Bands.—John Glass, Pittsburg, Pa., assignor to Wilson, Glass & Company, same place. Application filed May 19, 1873.

Claim.—A pair of rolls, *a*, one of which is plain and the other is provided with a groove, *b*, of the shape shown, for producing the blank *c*, substantially as described.

141,642.—Machinery for Goring Shoe-Uppers.—Asahel J. Goodwin, Brookline, Mass. Application filed April 11, 1873.

Improvement on patent No. 133,703. The guide-pattern is so constructed that it may be increased or diminished in width at either end, so as to vary the angular position of its opposite edges; is also provided with grooves at opposite edges to receive what is termed size slips. The table is furnished with adjustable slides and elastic lever gages for determining the position of the gore; also a lining-gage holder.

Claim.—1. The guide-pattern E, having its parts *b c* connected by slotted arms *f f* and clamp-screws *e e*, arranged as and for the purpose substantially as specified.

2. The guide-pattern E, provided with the size slip-receiving grooves *d d*, arranged in it as set forth.

3. The table A, provided with the slides C C and the elastic lever-gages D D, all constructed, arranged, and applied together substantially as specified.

4. The combination of the lining gage and holder F with the table A, of a machine for goring shoes.

5. The combination of the lever L, the draft-line *u*, and carrier G of the lining gage and holder F.

6. The combination of the lever-clamp K, the carrier G, the lining gage and holder F, the lever L, and the draft-line *u*.

7. The combination of the lever H, (supported and provided with adjustments, as described,) the gage-carrier G, the lever L, and the clamp K, the said carrier being or to be furnished with the draft-line *u* and retraction-spring *t*, and the whole being arranged substantially in manner and to operate as explained.

8. The combination of the adjustable stop or collar *s* with the arm *s* and gage-carrier G.

9. The combination of the lap-holder N with the lining gage and holder F.

10. The combination of the adjustable stop *b'*, the stud *d'*, and the movable dog P with the lap-holder N, combined with the lining gage and holder F, as set forth.

11. The combination and arrangement of the screw *s'* and the rail *z* with the lever H, combined with the lining-gage carrier G.

141,643.—Dish-Drainer.—Warren H. Gould, Manchester, N. H. Application filed June 14, 1873.

Claim.—A dish-drainer attachment for wash-pans, consisting of a wire frame bent so as to be adapted to the vessel and extending over a part thereof, and which will permit the water to drip from the dishes when placed therein, substantially as and for the purpose described.

141,644.—Music-Leaf Turner.—Norman P. Hall, Janesville, Wis. Application filed May 13, 1873.

Claim.—1. The combination of the compound latch F, to allow the arms to pass in going down and to hold them until released, with the combination-lever attachment and key G, substantially as and for the purpose hereinbefore set forth.

2. In combination with the revolving arms B, the horizontal springs E, attached as described, adjustable fingers C, rests H, guides I, compound latch E, and combination lever and key G, all constructed and arranged substantially as and for the purpose hereinbefore set forth.

141,645.—Pattern for Pipe-Elbows.—John King Home, Almonte, Canada. Application filed January 24, 1873.

Claim.—1. An adjustable elbow-pattern to describe the required sweep or miter previous to being formed into sections, and which, when united at the miter-joints, form a pipe-elbow of any required bevel.

2. The pivot C, so placed as to give the exact sweep or curve of the edges C C to scribe the large and small end of the elbow to be made.

3. The sector-plates A B, having a series of scales, as set forth, pivoted together at the point C, and provided with a slot, D, and screw E, or other suitable fastenings, substantially as and for that purpose set forth.

141,646.—Brick-Machine.—Dav. J. Hunter, Boston, Mass., assignor to Isaac Ames, same place. Application filed June 26, 1873.

Carriage elevated to top plane of mold receives the brick. Pulling lever C lowers carriage, advances mold, embracing bricks, and throws forward plunger, pressing brick against back piece. At same time carriage is carried forward over oil-reservoir. Reversing motion of lever brings forward carriage, withdraws mold and plunger, and elevates carriage and brick.

Claim.—1. In combination with the reciprocating mold, reciprocating plunger received and partly supported in said mold, and stationary mold-bottom, toward and away from which said mold and plunger move, as set forth, a carrier, reciprocating vertically, to take the brick from or deliver it to the mold, in accordance with the direction of its movement, and horizontally reciprocated in its lowest position to allow the mold to close upon the stationary bottom, said movements being timed with relation to those of the mold and plunger, substantially as shown and set forth.

2. The combination of a mold, reciprocating in a horizontal plane, and a carrier reciprocating in a vertical and horizontal plane, to lower a brick to the mouth of the mold, and subsequently receive and elevate the brick therefrom, substantially as and for the purposes stated.

3. The mold-bottom, composed of the two wedge-shaped pieces X Y, united by a connecting and tightening rod, A, and nut B, and adjustable one on the other, substantially as and for the purposes set forth.

4. The combination of the vertically-reciprocating carrier with the lubricating-chamber and devices whereby, during the movement of said carrier, the lubricant may be taken from said chamber and delivered to those parts with which the carrier is brought in contact, substantially as shown and set forth.

5. The rollers D′ D′, as combined with the carriage Q and chamber C″, substantially as and for the purposes stated.

6. The combination of the jointed levers K and T, crank O, and bar C, with carrier Q and mold H, said parts being constructed and arranged together for joint operation, substantially as and for the purposes stated.

7. The combination of crank O, pawl G, levers K T, and rod R, with plunger E, mold H, and carrier Q, under the arrangement and for operation as shown and set forth.

141,647.—Sash-Lifter.—Hiram Kingsbury, Rochester, N. Y. Application filed March 31, 1873.

A circular conical socket, with turned-down flanges, cast or struck up from sheet metal, a single screw through the center serving to attach it to the stiles or vertical bars of a window-sash.

Claim.—As a new article of manufacture, the circular sash-lifter C constructed, with flanges turned down as shown and described, to be applied to the stiles or vertical bars of the sash, and used substantially in the manner and for the purposes set forth.

141,648.—Car-Coupling.—Antoin Langhellier, Concord, N. H. Application filed October 2, 1872.

The link B has attached to it on one side a pawl, *a'*, which, when the link is raised, is caught by a spring-catch, D, and held until the draw-head is struck by the draw-head of the approaching car, when it carries the pawl back of said spring-catch, and the link is allowed to fall.

Claim.—The combination of the link B, having the pawl *a'*, spring D, spring A′, chain H, lever C, and cross-bar E, with a draw-head, A, all arranged to operate in the manner and for the purpose specified.

141,649.—Cherry-Stoner.—John S. Lash, Philadelphia, Pa. Application filed January 31, 1873.

Claim.—1. The vibrating plate D operated upon by a spring, in combination with the cylinder A, constructed substantially as and for the purpose set forth.

2. The cylinder A having spiral ribs or worms and longitudinal serrations or indentations on part of its surface, constructed substantially as described, and for the purpose designated.

3. The construction of the plates I, P, R, U, and M, and manner of attaching them together by means of the screw-bolt G to form the casing B, substantially as shown and described, and for the purpose shown and described.

4. The cam C, in combination with the cylinder A, plate M, vibrating plate D, and spring E, constructed and operated substantially as described, and for the purposes set forth.

141,650.—Apparatus for Feeding Fuel to Furnaces.—Charles P. Leavitt, Newark, N. J. Application filed September 14, 1872.

Claim.—1. The plug C, in combination with the pipe P, the piston *p*, the vessel A, and piece B, substantially as described, and for the purpose set forth.

2. Combination of the piece B with the vessel A, substantially as described, and for the purpose set forth.

141,651.—Horseshoer's Rest.—Joshua Legg, Rushville, N. Y. Application filed August 19, 1871.

Claim.—A horseshoer's rest, made with three legs united at their upper ends, forming a rest on their top smaller than the inner circle of the horseshoe, substantially as specified.

141,652.—Wheel for Vehicles.—Obed Look, Bridgeport, Conn. Application filed August 12, 1872.

The hub is metallic, and the recesses, re-enforce, and thimble are eccentric to the axle-box.

Claim.—1. The combination of the recessed hub B, the axle-box A having re-enforce D cast on it, the adjustable thimble D′, the center of the circumference of the re-enforce and the thimble being eccentric to that of the box A, all substantially as set forth.

2. The combination and arrangement of the recessed open hub B, the box A having re-enforce D, the adjustable thimble D′, and securing-nut C, all substantially as described, and for the purpose specified.

141,653.—Truck for Carrying Safes, &c.—Frederick Luehmann and Carl Rohbl, Chicago, Ill. Application filed June 2, 1873.

The truck has two rollers, one of which has a spur-gear, which engages with a toothed track when it is desired to carry a load up a steep incline. The front roller is arranged to turn on a turn-table which has friction-rollers around its outer edge, and also a segmental rack, into which meshes a worm-gear of a rod, actuated by a crank situated at one end of the truck.

Claim.—1. The combination of the platform A, roller B, worm-gear *b* to travel on the sectional rack platform C, shaft *d*, worm *e*, crank *f*, shafts D D^1 D^2, gears and pinions 1 2 3 4, roller E, frame

F, turn-table G having the toothed segment c and rollers A, the shaft b, crank i, and worm f, arranged to operate substantially as and for the purposes set forth.

2. The combination of the shaft m, pinions n, yokes r r, shaft o, worm o', crank p, levers H H, racks s, and tie-rods I with the platform A, substantially as and for the purposes set forth.

141,654.—Manufacture of Gun-Cotton.—SAMUEL JOSEPH MACKIE, Westminster, England. Application filed May 29, 1873.

Claim.—1. The improvement in the art of manufacturing gun-cotton, consisting of the following operations, viz: The treatment of vegetable fiber with acids, so as to transform it into gun-cotton, the crushing of the fiber so as to destroy its capillary structure and reduce it to an impalpable mass, and the granulation of the said mass, all substantially as before set forth.

2. The improvement in the art of manufacturing dry gun-cotton, consisting of the following operations, viz: The production of the gun-cotton in a moist condition, and the drying of it in vacuo, all substantially as before set forth.

141,655.—Thill-Coupling.—PAUL L. MALTHIE, Ramapo, N. Y. Application filed July 25, 1872.

Claim.—1. The combination of the cap or cover E, composed of a leather or equivalent strip, f, and metallic ears g, with the socket B, substantially as shown and described.

2. The combination of the thill-irons A, having T or cross shaped ends, with the socket B, bearing D, and cap E having ears g, substantially as shown and described.

141,656.—Vertical Steam-Boiler.—CASSIUS M. MILLER, Phelps, N. Y. Application filed March 31, 1873.

By dropping the central portion of the boiler the tubes are constantly covered with water, thus preventing their burning out; an unbroken fire-surface is produced by means of annular space, and an annular deflection of the current by means of combustion-tubes.

Claim.—1. In combination with the central water-space C and annular combustion-chamber G, and water-space N, the water-circulation tubes D, for the purposes set forth.

2. The combustion-tubes F, in combination with the annular steam-dome B and annular water-space N, substantially as and for the purposes set forth.

3. The arrangement of the annular steam-dome B and combustion-flues F with relation to the annular water-space N and central water-chamber C, with its combustion-flues E, substantially in the manner and for the purposes set forth.

141,657.—Boring-Machine.—ROBERT O. MOORHOUSE and S. LLOYD WIEGAND, Philadelphia, Pa.; said WIEGAND assignor to said MOORHOUSE. Application filed April 11, 1873.

A screw operates a worm-wheel on the boring-bar. The feed-wheel crank may be adjusted to give a quick feed by fastening it to the wheel on the feed-screw by a sliding pin or bolt, dispensing with intermediate gear-wheel. The device is centered in the rear end of a closed cylinder by means of a step with sliding extension arms.

Claim.—1. The combination of the internal gear and pinion with the feeding-screw, as shown and described.

2. The frame E', worm-wheel and screw, and plate D combined, as shown and described.

3. The step F with the sliding bars, oblique bars, and nuts for simultaneously expanding the same, as described and shown.

141,658.—Machine for Washing Photographs.—LUTHER V. MOULTON, Beaver Dam, Wis. Application filed February 10, 1873.

Claim.—1. The combination of the pipe c with the cylinder e and case a, substantially as and for the purpose specified.

2. The combination of the wheels c c with the bars e e e e and notting f, substantially as and for the purpose specified.

141,659.—Hub for Carriage-Wheels.—PATRICK MURPHY, South Amesbury, Mass. Application filed March 18, 1872.

The bands are intended to protect the hub from splitting while being mortised, as well as afterward, and the enlargement at the middle of the hub is to afford support to the spokes.

Claim.—The combination of the shells A A', having projections a' a', with the wood B, constructed as set forth.

141,660.—Steering Apparatus.—JOHN MYERS, Jersey City, N. J. Application filed April 23, 1873.

A double screw, operated by an ordinary steering-wheel, acts simultaneously upon two nut-bars, D and D', which bars have upon their under surfaces lugs which play into slots formed in the S-shaped cam-levers on the rudder-head. The bars, by approaching and receding from each other, act upon the cam-levers, and, through the medium of the lugs and slots, give a reciprocating rotary motion to the rudder-head.

Claim.—1. A double screw, N N, acting simultaneously upon two nuts, D D', (with their ends supported and guided by rods K K,) in combination with the bolts n n n n and cam-levers I I', as substantially described and set forth in the specification.

2. A cast-iron rudder-head, with its recess f f, in combination with its cam I', for the purpose herein specified.

3. The lugs J J, in combination with the cast-iron rudder-head F, braces and rod a a, as substantially described, and for the purpose herein specified.

4. The casting g g g g, with its end recesses, in combination with its elastic substance x, bolt-heads o o o o, as described, and for the purpose specified.

141,661.—Carriage-Bolt.—ISAAC NEWTON, Cleveland, Ohio. Application filed May 22, 1873.

To increase the binding effect of the bolt when inserted, projections are formed on the face of the square portion, immediately under the head.

Claim.—The herein-described bolt, having projections or feathers a on the sides thereof, directly under the head, in the manner as described, and for the purpose specified.

141,662.—Reclining-Chair.—GEORGE C. PAINE, Boston, Mass. Application filed January 9, 1873.

The seat is pivoted to the legs at its back edge and connected to the legs at its front by link-joints. The back of the chair extends below the seat, and is connected to the pivot of the legs by slotted bars. The arms are slotted, and are connected with the leg-rest, and have a connection with the front part of the legs by means of notched bars. The bars of the leg-rest connecting with the slotted arms are pivoted to the front of the seat, and have a foot-rest hinged at their lower ends, held in position by slotted bars engaging with a catch on the bars of the leg-frame.

Claim.—1. Combination of the seat, supported by the legs A A, the back, constructed as shown, having its frame extended below the seat and connected to the pivot of the legs by the slotted bars z, and the leg-rest, constructed and arranged as shown, the whole being arranged to fold together for transportation, substantially as set forth.

2. In combination with the above, the slotted arm G, notched bar H, and leg w, arranged substantially as set forth.

3. The foot-rest M, provided with the slotted bar S, arranged to retain and support the foot-rest, in combination with the catch s, or its equivalent, substantially as set forth.

141,663.—Bobbin-Winder for Sewing-Machines.—THOMAS PEDDEN, Middletown, Conn. Application filed February 28, 1873.

The axle of the thread guide is provided with spring-arms that sustain a segmental rack, which is moved in opposite directions by a pinion on a shaft moved from the bobbin-shaft. When the pinion reaches an end tooth of the rack one of the spring-arms strikes a second spring, which holds the last pin of the rack in contact with this pinion, thus moving the rack to the opposite side of the pinion, when the motion of the rack is reversed.

Claim.—1. The combination of the section-gear d^3, provided with spring-arms d^5 attached to the shaft e, and the pinion d, when constructed and operating substantially as set forth.

2. The combination of the section-gear d^3, having spring-arms d^5 running to the shaft e, the pinion d, and the spring f, when constructed, arranged, and designed to operate substantially as set forth.

3. The combination of the bobbin-shaft b^1, having the pinion c, the gear c^1 fast upon the shaft c^2, the pinion d, the section gear d^3 set upon the shaft e, and the guide-arm e^2, all constructed, arranged, and designed to operate substantially as and for the purpose set forth.

141,664.—Earth-Auger.—CHARLES D. PIERCE, Lawrence, Kan. Application filed June 30, 1873.

Claim.—The earth-auger, consisting of the open-sided, tapered, twisted pods A A provided with the inclined knives or cutters C C having the inner corners e e the lowest and in advance, and having the outer corners f f farther from the center than any other portion of the auger, substantially as specified.

141,665.—Metallic Column.—JOHN L. PIPER, Pittsburg, Pa. Application filed July 15, 1873.

A panel of the hollow column is made removable to afford access to the interior for painting and repairs, and when in place contributes to the strength of the column.

Claim.—A hollow metallic post, column, strut, or girder having a removable panel or section, constructed substantially as set forth.

141,666.—Glass-Furnace.—ANTOINE POCHERON, Paris, France, assignor to EDWIN CANNINGTON. Application filed May 29, 1873.

Sides and bottom of tank and sides of fire-places have tubes which deliver air heated therein under grates. False arch thrown over fire-places to protect arch. Chimney surmounts tank.

Claim.—1. The combination, in glass-furnaces, of the following parts, viz.: The tank for holding the glass, the fire-places arranged externally to the said tank, the air-passages in the walls of the tank, the arch surmounting the tank, and perforated with working-holes, and the chimney inclosing the said arch and receiving the products of combustion from the working-holes, all substantially as before set forth.

2. The combination of the following parts, viz.: The tank for holding the glass, the fire-places arranged externally to said tank, the air-passages in the walls of the said fire-places, the internal arches of the said fire-places, the arch surmounting the said tank, and perforated with working-holes, and the chimney inclosing the said arch, all substantially as before set forth.

141,667.—Steam-Hammer.—DAVID R. QUICK and GEORGE A. GARDNER, New York, N. Y. Application filed August 31, 1872.

The piston, which is attached to the hammer, slides in the working-cylinder, operated in an outer cylinder by suitable parts above and below. Steam being admitted moves the working-cylinder, in which are arranged parts that admit air through the upper open end of said cylinder, which forms a cushion for the piston.

Claim.—1. The combination, substantially as herein shown and described, of the external motor-cylinder D, the contained working-cylinder B, forming the piston of the said cylinder D, and the internal striking-piston A, for the purpose specified.

2. The arrangement, substantially as herein shown and set forth, of the ports or passages b of the working-cylinder B, with reference to the piston A and external cylinder D, for the purpose specified.

141,668.—Harvester-Rake.—AMOS RANK, Salem, Ohio. Application filed May 4, 1871.

An adjustable stop slides on the coupling-arm, and by striking against the rake-standard limits its inward movement as the outer end of the finger-bar is lifted.

Claim.—The combination of the shoe, the rake-standard, the coupling-arm, and the adjustable stop thereon, all these members operating in combination, as set forth, to prevent the rake from striking the driving-wheel and to make the joint rigid in one direction.

141,669.—Wagon-Bed Lifter.—DAVID ROOD, Mount Eric, Ill., assignor of one-half his right to FLETCHER EMLEY, Franklin, Ohio. Application filed May 19, 1873.

The main frame supports a roller, around which are wound ropes for raising and lowering by means of ratchet and lever. A spring and pawl engage with the ratchet, successively operated by motion of the lever backward and forward. The pawl may be thrown out of gear by raising a small rod attached to the main frame, and the spring may be prevented from engaging with the ratchet by a small lever attached to the main lever.

Claim.—In the device for raising and lowering a wagon bed or frame or other bodies, the combination of frame, roller, ratchet and pawl, spring, lever, and ropes, substantially as herein set forth, and for the purpose specified.

141,670.—Process of Gilding on Glass.—VALENTIN SCHWARZENBACH, Berne, Switzerland. Application filed March 3, 1873.

Dissolve pure gold in nitro-muriatic acid and evaporate in salt-water bath till it crystallizes. After filtration the solution is ready for use. The solution is then rendered alkaline by soda-lye of mean strength. The glass to be gilded is disposed horizontally on another surface of glass separate from it about three millimeters; then alcohol is added to the solution. The liquid is then poured between the two glasses and left to stand two or three hours. The upper gilt plate is then removed, washed, and varnished.

Claim.—The process of gilding on glass, in the manner and for the purposes substantially as described.

141,671.—Gimlet-Handle.—HENRY S. SHEPARDSON, Shelburne, Mass. Application filed May 22, 1873.

The handle is flattened so as to afford a larger surface for the action of the finger and thumb of the operator.

Claim.—A flattened metallic gimlet-handle, A, constructed substantially as shown and described.

141,672.—Circular-Saw Mill.—EDWARD H. STEARNS, Erie, Pa. Application filed March 26, 1873.

The reversing-gear is so arranged that the same movement which disengages the friction-wheels applies a brake to retard further motion.

Claim.—1. The rocking-shaft d, attached to the frame A of the machine, with a crank d^2, and rod d^1, connected directly to and in combination with the swinging arm c, which carries the end of the rag-shaft B, substantially as set forth.

2. The combination of rocking-shaft d with crank and rod connections, both to the swinging arm c and to the cam-shaft e, whereby the rag-wheel is shifted and the brake applied to it simultaneously by a single throw of the shaft d, substantially as described.

3. The brake S, made with a series of boxes of suitable form for receiving a series of wooden blocks, such blocks constituting the rubber, and being adjustable by set-screws r^2, substantially as set forth.

4. The combination of the spring g^1, the cam-shaft e carrying the bead e^2, and the brake S carrying the bead s^1, constructed substantially as described, with reference to Figs. 4 and 5.

5. The combination of the sliding carriage w, adjustable guides n n^1, and detachable rubber blocks q^1 q^2, substantially as set forth.

141,673.—Wick-Raiser.—JOHN STRASZER, St. Louis, Mo. Application filed June 30, 1873.

The wick is raised by the revolution of a cylindrical collar placed within the wick-tube on either side of the wick, having one or more spiral and flanged sections free at one end and acting as springs to clutch the wick, and attached by arms from its inner side to a rod within it and parallel to its axis, to which the hand-wheel is applied.

Claim.—1. The collar E F, provided with spring sections or wings e, having spiral ribs or flanges e', which act directly on the wick, substantially as set forth.

2. The combination of the collar E F, wings e, and spiral ribs e' with the barrels A B, collar G, arms f, and rod H, as and for the purpose set forth.

141,674.—Bell for Sleigh-Shafts.—AUGUSTUS E. TAYLOR, New Britain, Conn. Application filed March 24, 1873.

Claim.—1. The metallic shaft-strap A, recessed crosswise, for attaching bells to sleigh-shafts, substantially as described.

2. The eyes e d, formed of a single piece of metal and passing through the bell at two points, thereby encircling the tongue, a portion of the bell, and the strap, substantially as described.

141,675.—Colter-Clasp.—CHARLES H. THOMAS, Coeyville, N. Y. Application filed March 17, 1873.

The colter-clasp is pivoted loosely on the bolt, which is kept in rigid position by a partial thread which screws firmly into the beam. The angle of the clasp may be changed by moving the wedge-blocks.

Claim.—In connection with a plow-beam, the combination of the bend a, partial thread-bolt b, blocks f f, and perforated colter g, all constructed and operating as and for the purposes set forth.

141,676.—Grain-Separator.—WILL E. TURNER, Neosho Falls, Kans. Application filed March 15, 1873.

A vertical cylinder with openings arranged to produce a whirling blast of air, for the purpose of more thoroughly separating the wheat from the chaff.

Claim.—The hollow cylinder P, having spirally-arranged slots in the lower part, combined with spout O, to produce a whirling blast, in the manner and for the purpose described.

141,677.—Nursery-Gate.—EDWARD A. TUTTLE, Brooklyn, N. Y. Application filed December 30, 1872.

Claim.—A nursery-gate, made adjustable by means of slats and screws with inclined surfaces on the uprights H H, in combination with slides I I having inclines, so that when the gate is forced down it will be tightened, substantially as and for the purpose described.

141,678.—Machinery for Burnishing the Heels of Boots and Shoes.—ISAAC VAN NOUHUIS, Albany, N. Y. Application filed January 28, 1873.

A worm, mounted upon the shaft which gives intermittent reciprocating motion to the burnisher, meshes into a worm-wheel, and, by means of a pitman-rod and intermediate gearing, gives corresponding movement to the heel of the boot or shoe.

Claim.—1. The combination of the worm O and worm-wheel P with the bevel-wheel M and pinion K, having an arm, A, when used for giving motion to the shoe during the operation of burnishing the heel, as and for the purpose herein set forth.

2. The combination of the sliding block E and burnisher F, having a lip, f^2, with the rocker f^1 and springs f^6 and f^7, when arranged to operate as herein specified.

3. The combination of the automatic reciprocating burnisher F, having a lip, f^2, with the rocker f^1 and spring f^7, when arranged to operate as herein described.

4. The combination of the sliding block E with the burnisher F and rocker f^1, as herein described, and for the purpose set forth.

141,679.—Die for Making Blanks for King-Bolts.—FREDERICK VAN PATTEN, Auburn, N. Y., assignor, by mesne assignments, to himself and E. D. CLAFF, same place.—C. Application filed February 28, 1873.

The dies leave pins along the line of parting and a web between the horns.

Claim.—The dies 3 and 4, constructed and applied for producing the blank, Fig. 5, from which, by trimming, the king-bolt blank, Figs. 6 and 7, is produced, all substantially as set forth.

141,680.—Die for the Manufacture of Clip King-Bolts.—FREDERICK VAN PATTEN, Auburn, N. Y., assignor, by mesne assignments, to himself and E. D. CLAFF, same place.—D. Application filed February 28, 1873.

A series of dies in die-block A, for drawing out and molding the stem, the shoulder, neck, and other parts having been formed by other dies, and other dies C to spread out the limbs of the clip and to mold the wings at the junction of the limbs.

Claim.—1. The die for centering and reducing the stems of clip king-bolts, recessed and constructed as represented by Fig. 1.

2. The combination of the die sections C C and C' with the centering and truing die A, substantially as and for the purposes described.

141,681.—Die for Swaging Clip King-Bolt Blanks.—FREDERICK VAN PATTEN, Auburn, N. Y., assignor, by mesne assignments, to himself and E. D. CLAFF, same place.—E. Application filed February 28, 1873.

The dies are intended to swage a blank to a shape suited to other dies and operations, (described in other patents,) which ultimately fashion it into a king-bolt. The part designed for the horns of the bolt is made trough-like, in order that, when compressed into the other die, it shall with certainty fill out the corners and insure equality of mass in the two horns in which it is to be divided.

Claim.—1. A die, F 4 y, for forging a bar of metal into a blank for a clip king-bolt, substantially as described.

2. A die, E E', for holding and bulging the part C of the blank, substantially as described.

3. The combination of the die F 4 with the die E E', substantially as described.

4. The adaptation of part C of the blank to dies in which it is to be subsequently struck up, and so as to insure the filling out of the corners, with the least possible surplus of metal, by reducing it to the concavo-convex or bulging form described and shown.

141,680.—Die for the Manufacture of Fifth-Wheel Blanks.—FREDERICK VAN PATTEN, Auburn, N. Y., assignor, by mesne assignments, to himself and E. D. CLAFF, same place.—F. Application filed February 28, 1873.

The first pair of dies swages a rectangular bar into a blank of particular shape; the second pair molds this blank into the body and limbs of the wheel-head, leaving surplus metal as fins; and the third pair bends the limbs to the proper shape.

Claim.—1. The die-sections A, recessed as described, to produce the blank of Fig. 3 with fins *a*, as specified.

2. The dies shown by Figs. 8 and 9, for producing the primary blank Fig. 2, from which the blank Fig. 3 is produced, as set forth.

3. The combination of the dies shown by Figs. 1, 5, 6, 8, and 9, as and for the purpose herein described.

141,683.—Machine for Milling Fifth-Wheels of Vehicles.—FREDERICK VAN PATTEN, Auburn, N. Y., assignor, by mesne assignments, to himself and E. D. CLAFF, same place. Application filed March 17, 1873.

A blank fifth-wheel is clamped upon a sliding table, with the projections for the flanges at its ends standing upward and in line with the rotating milling-tools. The article is carried under the mills, which cut the projections, leaving each with two finished flanges in true line with each other.

Claim.—1. The adjustable wheel-rest E, provided with internal supports and external supports and a central pivot, which latter coincides with the axis of the wheel when confined in place, in combination with a movable carriage, F, and a milling-wheel, *b'*, substantially as and for the purposes described.

2. The combination, with the fifth-wheel rest E, carriage F, and milling-tool *b'*, of the milling-tools *c'*, substantially as described.

141,684.—Horse Hay-Rake.—JOSEPH H. WALKER, Grand Rapids, Mich. Application filed January 13, 1873.

An L-shaped hand-lever, having a moving fulcrum, is used to lock the rake in its raking and also in its elevated position.

Claim.—1. The hand-lever L, with flexure O, movable fulcrum *g*, link *i*, stationary link and stop S, guide D, and link F, in combination with head A and arm E, all constructed and operating substantially as set forth.

2. The hand-lever L, with its flexure O and movable fulcrum *g*, link *i*, and stationary link and stop S.

141,685.—Valve Device for Fluid-Brakes.—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed May 24, 1873.

Air entering above the piston depresses the same, which, through pin and cross-bar, opens the lower valve, permitting the air from the cylinder to escape, while the middle valve is closed and the air above the piston passes through grooves and ports into the central chamber, and thence to supplementary tank. As soon as it attains a pressure in the tank equal to that above the piston a spring raises the latter, the lower valve is closed and the middle valve raised, which permits the air to enter the cylinder and put on the brake.

Claim.—1. The piston *c c'*, having separate and independently-operating connections to, and in combination with, a charging-valve *a*, and discharging-valve A^1, whereby the discharging-valve shall be closed at or before the opening of the charging-valve, substantially as set forth.

2. The pin *c'*, cross-bar *e*, and stem *g*, in combination with the piston *c c'*, valves *a* and A^1, and plug *o*, arranged substantially as set forth.

141,686.—Feed-Bag for Horses.—THOMAS ADAMS, Jersey City, N. J. Application filed February 11, 1873.

The feed-bag, so constructed that it can be adjusted to fit any horse.

Claim.—1. A feed-bag, with a hopper at the back part separated from the forward portion of the feed-bag by the partition *c*, at the bottom of which is an opening for the feed, substantially as set forth.

2. A feed-bag with an opening at the front, and with the sides *b b* connected together, substantially as and for the purposes set forth.

141,687.—Fire-Upsetting Machine.—DURBIN L. BADLEY, Afton, Iowa. Application filed June 14, 1873.

The upsetting force is imparted by an eccentric on shaft *b*, revolving in a stirrup that projects downward from plate C.

Claim.—The improved tire-shrinker, consisting of frame A, base-block B, sliding plate C, and stationary plate D, which carry blocks G and segmental blocks G' with arms *m*, lever *n*, disk H, shaft *b*, eccentric *d*, and lever E, substantially as and for the purpose described.

141,688.—Milk and Cream Cooler.—HENRY C. BALDWIN, North Walcott, Vt. Application filed July 19, 1873.

Water circulates around a vessel having a flange on its bottom that fits into an annular perforated flange on the bottom of the outer vessel. The inner vessel is held stationary by the flange on its bottom and by hooks reaching from the outer vessel, and it has a conical-shaped top provided with ventilators to allow a free circulation of air.

Claim.—The combination of the outer vessel A, provided with a spout, E, pipes C and D, perforated ring-flange F, and hooks J, the inner vessel G provided with the ring-flange H and ball J, and the cover K provided with two or more ventilators, L, with each other, substantially as herein shown and described.

141,689.—Making Artificial Marble.—CHARLES F. BARKER, Boston, Mass. Application filed July 17, 1873.

Claim.—1. In a process for making artificial stone, the combination of salt, gum Arabic, and gum Senegal, for tempering gypsum, substantially as and for the purposes set forth.

2. An artificial stone made of calcined gypsum, alum, and copperas, substantially as described.

141,690.—Name-Fastener.—THOMAS L. BOOKER, Shady Grove, Va., assignor to himself and E. H. BOOKER, Donaldsonville, S. C. Application filed May 31, 1873.

Claim.—A fastening for hames formed by the combination of clips B, band C, and bolts D D', substantially as shown and described.

141,691.—Combined Hook and Hasp.—BENJAMIN H. BROOKS, New Haven, Conn. Application filed July 16, 1873.

Claim.—The hasp A, having a tongue, *a*, formed upon one or both sides of the slot, C, substantially as and for the purpose described.

141,692.—Rotary Churn.—WILLIAM H. BUNCH, Windsor, N. C. Application filed May 24, 1873.

A vertical revolving dasher-staff carries a flat perforated dasher in the lower part of the churn. From the under side of the lid descend stationary concave plates to nearly touch the dasher.

Claim.—The perforated wings or dashers E E curved upon one side and suspended vertically from the removable cover D, in combination with the dasher F arranged to rotate in the space below them, all as and for the purpose specified.

141,693.—Channeling-Machine for Boots and Shoes.—ALVIN E. CHICKERING and HENRY B. TUTTLE, Albany, N. Y. Application filed March 24, 1873.

Claim.—1. For starting up and turning over the flap of the channels of the soles of boots and shoes, the combination of the plow *c* and molding curved surfaces *s* with the plate A, substantially as shown and set forth.

2. For starting up, turning over, and pressing down the flap of the channels of the soles of boots and shoes, the combination of the plow *c* and molding-carving surface *s* with the pressing-roller B, substantially as shown and set forth.

141,694.—Drill-Rod Coupling.—ROBERT A. CLARK, Petrolia City, Pa. Application filed February 1, 1873.

When the sleeve is passed over the point of junction of the outer screw-thread in the two rods the contrary pitch of the inner thread prevents the rods from turning and becoming disengaged.

Claim.—The sections A B connected together by a part of one screwing into a socket of the other, and a sleeve on both screwing against a collar on one, the threads being reversed as to the pitch, substantially as specified.

141,695.—Harvester-Rake.—SAMUEL CLEVENGER, Vibbard, Mo. Application filed July 5, 1873.

Cog-sectors on the two faces of a supporting-wheel, by means of rack and pinions, operate the rake periodically.

Claim.—The slide D, the toothed bar E, the slide-rod F, the guide I, the rake-head G *g' g''*, the bar H, the pin J, the two shafts K, the four gear-wheels L M, and the two segments of gear-wheels N, in combination with each other and with the frame, platform, and drive-wheel of a harvester, substantially as herein shown and described.

141,696.—Fire-Proof Shutter.—JOHN B. CORNELL, New York, N. Y. Application filed July 5, 1873.

Claim.—The two plane-faced plates *a b*, combined with one intermediate zigzag plate, *c*, presenting alternately to each of them a small plane surface, against which they rest, and by which they admit of being conveniently fastened together, in the manner described.

141,697.—Screw-Valve.—PHILIP CORRIGAN, New York, N. Y. Application filed July 5, 1873.

By removing an internal nut, made in sections, the valve may be ground to its seat, which being accomplished the parts are replaced.

Claim.—The nut F made in sections and provided with lugs *f'* having screw-threads cut in their outer surfaces, in combination with the screw *e'* of the valve-stem C, the cap-nut D, and the body of the valve, substantially as herein shown and described.

141,698.—Harness.—ENOCH COVERT, Farmer Village, N. Y. Application filed November 14, 1872.

Claim.—The combination of the semi-tubular metal plate C with ears *a a*, screws *d d*, and under plate D, all substantially as and for the purposes herein set forth.

141,699.—Axle-Box and Sleeve for Vehicle-Wheels.—WILLIAM H. COWELL, Columbus, Ohio. Application filed April 19, 1873.

The interior of the pipe-box is chambered for the lubricant. The box is cast on a chill.

Claim.—The recessed sleeve D E and the rabbeted collar F combined with the pipe-box H, adapted to revolve on the sleeve,

while the sleeve itself is adapted to revolve on the axle, as and for the purpose described.

141,700.—Wagon-Jack.—NELSON CRANDALL, Wooster, Ohio. Application filed June 26, 1873.

Claim.—1. A lifting-jack composed of a stand, A, slotted lifting-bar E, lever H, and roller and pin, as shown and described.

2. In combination with the bar E beveled on its lower end, as shown, the lever H pivoted at I, and co-operating therewith, as shown and described.

141,701.—Rolling-Mill for Sheet Metal.—EVAN H. DAVIS, Pittsburg, Pa. Application filed May 14, 1873.

The lower rolls are driven by power applied to them severally, and the upper and intermediate rolls are driven by frictional contact with them or with the sheet of metal. The guides are so constructed as to pass the sheet underneath the intermediate rolls, and the shearing-rolls at the extremity of the series trim the edges of the sheet as it emerges.

Claim.—1. The combination of a series of pairs of rollers, arranged with gradually-increasing pressure, and intermediate rollers E, arranged between the pairs of rollers and resting upon the bottom rollers of the adjoining pairs, substantially as and for the purposes herein set forth.

2. The stationary guides *f f* and the yielding guides *h h*, arranged in connection with the intermediate rollers E E, substantially as and for the purposes herein set forth.

3. The combination of a series of pairs of rollers, C D, intermediate rollers E E, stationary guides *f*, yielding guides *h*, shafts *m*, and cutters or shears H, all constructed and arranged as described, to roll a single sheet of metal complete and trim the edges by once passing through the mill, as herein set forth.

141,702.—Circular-Saw Guard.—OSCAR A. DEAN, Bethel, Vt. Application filed June 21, 1873.

The saw-guard is adjustably attached to the gage upon the saw-table.

Claim.—1. In combination with a circular saw, a guard consisting of the slotted guard-bar G and the slotted guard J, arranged substantially as shown and described, for the purposes set forth.

2. The guard formed as above described, in combination with the gage D.

3. The vertical plate M, in combination with the guard-bars G and J, substantially as shown and described.

141,703.—Pneumatic Oiler.—CHARLES E. DECKER, Chicago, Ill. Application filed November 29, 1872.

Claim.—1. In combination with a self-feeding oiler, a valve device for admitting a regulated quantity of air to the oil to govern the flow, substantially as specified.

2. The air-supplying tube K, so arranged that the air will pass up through the oil, thereby indicating the flow of oil, in combination with the glass-chambered self-oiler, substantially as specified.

3. The combination of the valve-seat F, tube E, air-pipe K, rod L, ball M, and tube B *m*, substantially as and for the purpose specified.

4. The passage-way H, having aperture A, in connection with the channel *g* entering the air-valve, substantially as and for the purpose specified.

141,704.—Carriage.—HENRI E. DELESSERT, Paris, France. Application filed March 21, 1873.

Claim.—1. The combination and arrangement of a brougham or carriage, substantially as before described, the body of which extends down in the rear of the rear axle, and with the door opening at the rear, the principal seat being directly over the said rear axle.

2. The arrangement of the springs, the lower sweeps of which resting on the hind axle, one on each side of the carriage, and the upper sweeps being suspended to a transverse-kneed bar which passes under the seat of the carriage, as described.

141,705.—Plow.—WILLIAM DONNELLY, Calverton, N. Y. Application filed July 19, 1873.

An adjustable plate is attached to the rear end of the mold-board of a plow, which opens a trench for planting. In a subsequent furrow the plate-crank is replaced by another having several plates for covering.

Claim.—The crank E, provided with one or more plates, G, and secured adjustably by a set-screw, F, to a bar, D, attached to the mold-board of a plow, substantially as herein shown and described.

141,706.—Rope-Clamp.—WILLIAM H. DOWNING, Shamburg, Pa., assignor of one-half his right to BENJAMIN MARSHALL, same place. Application filed June 19, 1873.

The arrangement of the open nut and set-screw admits of the vertical adjustment of the screw *b*, while, by means of the adjustable rope-clamp attached to the screw by the swivel attachment, the rope can be taken up or let out.

Claim.—The described arrangement and combination of the fixed open nut *a*, screw *b*, hand-wheel *c*, or its equivalent, and swivel *d*, the hand-wheel being fixed upon the screw below the nut, and the swivel below the hand-wheel, substantially as set forth.

2. The described cable-clamp, consisting of the jaw *e* with its lugs or pins *f f*, the jaw *e'* with its lugs or pins *f' f'*, and the slotted hook-clasp *g* with its hooked ends *h h* and set-screw *k*, said clasp being arranged upon and embracing the jaw *e* and hooking over the lugs or pins upon the jaw *e'*, the whole constructed and operating substantially as and for the purposes set forth.

141,707.—Cultivator.—RUFUS A. FISH, Worcester, Mass. Application filed January 3, 1873.

The teeth are secured to the frame by means of metallic sockets bolted to the side of the beams, the teeth being held in the sockets by keys and pins. The beams are adjusted in regard to width by means of notched segments and held in place by a tapering pin passing through flanges.

Claim.—1. In combination with the cultivator-frame, the independent metallic socket C, tooth D, and wedge for holding the tooth in said socket, as set forth.

2. The socket C and pin or key F, in combination with the tooth D, formed with a slot to engage said key, and the wedge, or its equivalent, substantially as shown and set forth.

3. The combination, with the notched expanding-beam, of the holder G and pin H, substantially as shown and set forth.

141,708.—Valve for Artesian Wells, &c.—JOSEPH FLEMING, Shamburg, Pa. Application filed July 12, 1873.

The case in which the ball-valve is arranged is screwed to the pipes for elevating the water, oil, &c., and is provided with right-angled transverse openings below the valve-seat to clear out the sand, &c., and prevent the valve from clogging.

Claim.—1. The combination of the cylinder A having the screw P, tubes T T, hollow screw S for the reception of the valve-case and valve V, and the receptacle R attached by the screw Q, all constructed and arranged substantially as shown and described.

2. The cylinder A, provided with the tubes T T and screw P, in combination with the hollow screw S, forming the valve-case for valve V, constructed and arranged substantially as shown and described.

141,709.—Churn.—ANDREW W. FUQUA, Sandford, Ind. Application filed May 24, 1873.

The dash-rod within the churn is broad and flat. Upon its lower end it carries a broader hollow cylinder closed at top and open at bottom. This cylinder has flaps cut from its side and bent outward, but concave in front.

Claim.—A churn-dash consisting of the rod *a*, hollow cylinder *c* provided with beaters *d*, and openings *e*, operating together as described.

141,710.—Rotary Steam-Engine.—SAMUEL GIBSON, York, Pa., assignor of his right to HIRAM YOUNG, same place. Application filed June 20, 1873.

In one side of the valve is a recess, from which a passage leads to a semicircular groove in the cylinder-head, which admits steam. The steam forces the valve out before it escapes into the cylinder and operates the wheel.

Claim.—1. The valves D D, provided each with a recess, *f*, and passage *e*, and placed in slots in the wheel C, as described, and operated by the live steam through the passage *b*, substantially as and for the purposes herein set forth.

2. The combination, in a rotary engine, of the steam-inlet passage *a* and the curved passage or cut-off *b* in the cylinder-head A with the wheel C and its valves D D, whereby the steam is caused to operate upon the valves before it enters the casing, substantially as set forth.

3. The combination of the casing A with inlet B, passage *a*, groove *b*, and exhaust A, slotted wheel C, and valves D D, having recesses *f* and passages *e*, all constructed and arranged, substantially as and for the purposes herein set forth.

141,711.—Machine for Heading Bolts.—CHARLES HALL, New York, N. Y. Application filed February 7, 1873.

Claim.—1. In a bolt-heading machine, the combination, substantially as herein set forth, of a pair of jaws provided with dies, an upsetting-header, and the side hammers, arranged in such manner that they are moved toward and from the face of the dies in a longitudinal direction, to form the bolt-head, and then to allow it to drop, as set forth.

2. In a bolt-heading machine, the combination, substantially as herein set forth, of a pair of jaws, a cutting-shear, and a detaining-lever, arranged to operate substantially as set forth.

3. In a bolt-heading machine, the combination, substantially as herein set forth, of a pair of holding-dies, the cutting-shear, and the detaining-lever, with the non-revolving upsetting-shaft and side hammers, all arranged to operate substantially as set forth.

4. In a bolt-heading machine, the combination, substantially as herein set forth, of a pair of holding-dies and a cut-off shear with the side hammers, arranged to shape the head of the bolt by blows at right angles to its axis, and also to reciprocate longitudinally toward and from the face of said dies, for the purposes set forth.

141,712.—Machinery for Burnishing the Heels of Boots and Shoes.—LORENZO P. HAWKINS, Lynn, Mass., assignor to MORGAN & DORR, same place. Application filed June 7, 1873.

Claim.—A reducing or abrading wheel for heel-covering machines, provided with a tire or exterior annular band of vulcanized rubber having an exterior surface or periphery of a contour adapted to the shape of the heel to be scoured, and covered by a webbing or fibrous jacket to receive the coating of abrading material, substantially as and for the purposes shown and set forth.

141,713.—Feeder for Printing-Presses.—FREDERICK L. HEUGHES, Rochester, N. Y. Application filed June 24, 1872.

Grippers, mounted in a metallic apron, take the sheet from the feed-table and carry it before two vertically-arranged platens, where it is printed. The intermittent motion is from a reciprocating rack through a loose rachet-pinion and its pawl.

Claim.—The combination, in a printing-press, of two or more platens, H H', arranged in the same vertical, or nearly vertical, line, and the revolving griper-bands B, operating substantially as described.

141,714.—Knob-Latch.—AUGUST HEYER, Terre Haute, Ind. Application filed April 12, 1873.

The knob-spindle is provided with two wedge-shaped projections, which act upon the extension-piece of the latch-bolt in such manner that, by pushing or pulling the knob, the bolt will be withdrawn.

Claim.—The rectangular guide-piece *d*, and the extension piece K of the bolt embracing the spindle E, and the straight guide-piece *b* in combination therewith, all as shown and described.

141,715.—Wheel for Vehicles.—PHILANDER C. HOUSE, West Randolph, Vt. Application filed March 15, 1873.

A double set of spokes with separate hubs, arranged so that a spoke can be taken out and renewed without disturbing the others.

Claim.—The combination of the axle-nut K, the hub-ring B having the peculiarly-shaped mortise, and the thimble tee or clip G having the socket I, for the purpose of easily applying and removing the spoke, all as set forth.

141,716.—Tree-Protector.—GEORGE H. HUME, Paola, Kansas, assignor to L. C. CHITTENDEN, GEO. H. HUME, and CHAS. W. CARR, same place. Application filed June 14, 1873.

Claim.—The tree-protector, provided with the downwardly-projecting tongues or spurs *d*, formed by being cut from the sheet-metal plate *c*, as shown and described.

141,717.—Feeding-Elevator for Corn-Shellers.—PETER KAUFMAN, Hudson, Ill. Application filed April 5, 1873.

Elevator-chain composed of alternate wire and plate links, the plate-links provided with forks for carrying the ears of corn to the machine.

Claim.—A link for endless elevator-chains made of a single metallic plate, E, turned outward to form the fork H H, as and for the purpose described.

141,718.—Hose-Coupling.—JOSIAH W. KENNEDY, St. Louis, Mo. Application filed July 16, 1873.

The tube section is first introduced inside the hose; the sleeve is then slipped over the hose and the nut screwed on the end of the tube-section, clamping the hose firmly against its raised rim by forcing the sleeve forward.

Claim.—1. The internal tube section A, having raised A-shaped rim *a* and screw-threaded portion *a'*, in combination with the nut A, and sleeve C having flaring end *c*, as and for the purpose set forth.

2. The combination and arrangement of the tube section A, having raised rim *a* and screw-threaded portion *a'*, with the nut A', collar C *c*, friction-ring *d*, and coupling-sleeve D, as and for the purpose set forth.

141,719.—Advertising-Lantern.—SOL. KUH, Jefferson, Iowa. Application filed February 8, 1873.

Claim.—An advertising-lantern shaped as a prism, the sides of which are composed of two or more rows of changeable glass plates, of the same height, and of a width the multiple of which constitutes the exact width of one of the sides, the said glass plates being separately provided with the letters of the alphabet or other advertising mediums, substantially as shown and described.

141,720.—Loom Let-off Mechanism.—JOHN M. LINSCOTT, Buxton, Me. Application filed June 26, 1873.

The friction-bands at each end of the warp-beam are attached each to a horizontal lever, carrying a supplemental lever pivoted to it and held in position by an adjustable loop. The inner ends of the supplemental levers are connected by links to the short arm of a blade-spring lever, the long arm of said lever embracing in its forked end a screw-nut on a vertical screw-rod. By means of a cog-wheel on the warp-beam, a tripping-lever, actuated by the cogs or teppets, and operating a ratchet on the top of the screw-rod, the said rod is rotated with the warp-beam, which rotation carries the nut downward, thereby gradually lessening the tension on the spring-lever, and, consequently, the tension of the friction-straps on the warp-beam.

Claim.—1. The combination of the yarn-beam *b*, having the rolls *c*, with the friction-bands *d*, the levers *f* A, links *i q*, spring *t*, nut *n*, and the rotating screw-rod *o*, as set forth.

2. In combination with the beam *b*, rolls *c*, friction-bands *d*, levers *f* A, spring *t*, vertical rotating screw-rod *o*, and nut *n*, the tipping-lever *u*, cog-wheel *l*, vertical bar *v'*, ratchet-wheel *x*, ratchet *z*, frame *y*, piece *a'*, frame *d'*, and spring *g'*, as herein set forth.

141,721.—Whiffletree-Hook.—MAGNUS MATSON, Quincy, Ill., assignor of one-half his right to JNO. H. SUNDERMANN, same place. Application filed April 4, 1873.

Claim.—The combination of the hook G, ferrule B, and C-shaped spring H, the hook being seated in the slot E and having its inner end connected with the spring, substantially as and for the purpose specified.

141,722.—Adjustable Treadle for Sewing-Machines, &c.—JOSEPH MCEVOY, Brooklyn, N. Y. Application filed March 15, 1873.

Claim.—1. The treadle-pivot C, mounted in the slots D, curved upon the arc of a circle, described from the axis of the crank-shaft, as shown and described, for the purpose specified.

2. The treadle pivot-rod, cranked so as to adjust the treadle as to height, and provided with binding-nuts for clamping it to the frame, substantially as specified.

3. The combination of a notched rest, M, with the cranked treadle pivot-rod C, substantially as specified.

141,723.—Corn-Planter.—WILLIAM MULL, Rantoul, Ill. Application filed April 19, 1873.

A revolving geared driving-axle is universally jointed at a short distance from the wheels, to enable the wheels to be lifted by levers while turning, to stop the dropping of seed, or to accommodate themselves to uneven surfaces; the loose ends of the axle are braced by rods to the front part of the frame, and the weight of the machine is supported by runners, which open the ground for the seed; a gear upon the axle drives a shaft and a disk, which has an eccentric slot to receive a pivot upon the link-rod, which works the seed-slide; a jerking motion is thus imparted by a spring at each revolution.

Claim.—1. The combination of the revolving axle J, universally jointed at L L, with the pivoted braces M M, to enable the wheels to be raised or to accommodate themselves to uneven ground, without allowing the end sections to get out of alignment with the middle section, in the manner described.

2. The lever P, levers O O, and rods N N, combined with the end sections of a jointed revolving axle, as described, to allow the wheels to be raised for turning, or to cause the dropping of seed to cease.

3. The combination, with the link-rod E and dropper-slide C, of the slotted disk or crank-wheel F and the slide-spring D, to drop the seed in the manner specified.

141,724.—Door-Fastener.—HENRY ORCUTT, Amherst, Wis. Application filed June 14, 1873.

Claim.—The combination of the semicircular notched or perforated bar and a weighted latch, B, with a door, substantially as described.

141,725.—Machinery for Beetling Woven Fabrics.—JOHN PATTERSON, Belfast, Ireland. Application filed January 15, 1873.

Three beams have their bearings in two disks, which, with their axis, may be rotated, to bring either beam adjacent to the stampers, and at the same time place a beam, containing cloth previously beetled, in position for the unwinding of the cloth. The beam containing the cloth which is being beetled receives both an endwise and rotary motion from the shaft that operates the stampers, by means of the devices enumerated in the second clause of claim.

Claim.—1. The shaft C, box B, vertical screws D, eccentrics C^1 C^1, sliding blocks C^2, springs F, stampers E, beams G G^1 G^2, and disks H H keyed to the trunnion I, combined as described.

2. The worm-wheels J and K, shafts C and L, pinion M, wheel N, shaft O, bevel-wheel P, wheel Q, shaft R, grooved boss U, flanged pinion S, and wheel T keyed to the axle of the beam G, all combined and operating together as and for the purposes described.

141,726.—Spring Bed-Bottom.—JAMES POLLITT, Edon, Ohio. Application filed December 21, 1872.

Side rows of springs have loops that fit through the cross-slats and are held by straps, while a central row of springs has loops which clasp the slat in the center.

Claim.—1. The springs C, provided at their upper ends with loops *a* that fit mortises in the cross-slats B, in combination with said cross-slats B, strap D, and head and foot pieces, arranged as and for the purpose specified.

2. The combination of the central row of springs having loop *b* to receive and hold the cross-slats B at the center with the side row of springs C, the cross-slats B, and straps D, all arranged as and for the purpose specified.

141,727.—Hat-Tip Lining.—WILLIAM H. M. PYE, Brooklyn, N. Y. Application filed May 6, 1873.

Claim.—1. A hat-tip lining made of two or more sections of fabric united at the edges by a strip of material and fusible adhesive substance, substantially as set forth.

2. A hat-tip lining ornamented by a strip of paper affixed by fusible adhesive material, substantially as set forth.

141,728.—Balance Slide-Valve.—SAMUEL REID, Chicago, Ill. Application filed May 26, 1873.

A hollow ring is placed in a recess between the saddle-plate and the valve, the expansion of the steam within the ring holding it firmly against the adjacent parts.

Claim.—The hollow ring C, having a slot, *d*, extending around it, in combination with the valve A and saddle-plate D, all constructed substantially as and for the purposes specified.

141,729.—Buckle.—AI B. SHAW, Medford, assignor to MARTIN W. CARR, Somerville, and HIRAM W. BROOKS, Cambridge, Mass. Application filed July 21, 1873.

Claim.—The above-described buckle, consisting of the crimped frame *a a'*, and the blunt tongue *b b'*, constructed and arranged substantially as and for the purpose hereinbefore set forth.

141,730.—Grain and Seed Drill.—JACOB H. SHERMER, Wilmington, Del. Application filed June 6, 1873.

Claim.—1. The triangular-shaped shovel B and cutter D, cast in one piece with the boot A, substantially for the purposes herein set forth.

2. The curved screw-rod *a*, cast in the boot A, and having the bell-shaped seed-distributer G adjustably fixed to its lower end, substantially as herein set forth.

141,731.—Meat-Chopper.—ALBERT R. SILVER, Salem, Ohio, assignor of one-half his right to JOHN DEMING, same place. Application filed May 21, 1873.

A cylindrical block and surrounding hopper are revolved by a suitable gear-connection beneath, in which train of gearing a sprocket-wheel serves to arrest the revolving movement intermittingly, so that a pause shall occur simultaneously with the fall of the knives, the knives or choppers ascending and descending by direct connection with the beat main shaft.

Claim.—1. The combination of the block 7, provided with circular rack 6, sprocket and side sprocket-wheels 4 and 2, and crank-shaft *d*, arranged and operating so as to give the hopper an intermittent motion.

2. The screw-nut 9 upon the top of the knife-shaft, having a loose sleeve extending beneath over the thread and following the knife down, substantially as set forth.

3. The combination of the crank-shaft *d*, pitman *c*, knife-shaft *g* provided with knives, and block 7 operated by suitable gearing, substantially as shown and described.

141,732.—Manufacture of Illuminating-Gas from Petroleum, &c.—ROLAND H. SMITH, Pittsburg, Pa. Application filed June 4, 1873.

The stove is hinged together, and contains a retort having a central aperture communicating with the stove-pipe, which is provided with a sliding sleeve to permit adjustment of the pipe. A scraper for cleaning out one of the pipes that carries gas to the washer passes through a plug at the junction of the two pipes.

Claim.—1. The retort D D', constructed as described, with central aperture *d*, and having its two parts connected by means of a lead seal, substantially as and for the purposes herein set forth.

2. The stove A B, hinged together at *a*, and containing within it the retort D D', in combination with the stove-pipe C, having movable sleeve C', all substantially as and for the purposes herein set forth.

3. In combination with the connection P, the plug O, rod N, and scraper M, constructed and arranged substantially as and for the purposes herein set forth.

141,733.—Mode of Opening and Closing the Doors of Vehicles.—SAMUEL SMITH, Halesworth, Great Britain. Application filed January 16, 1873.

By means of levers or handles, cords, wires, or rods are operated to open or close the door.

Claim.—The combination of the various parts described, when used for the purpose of making communication between the door and driving-seats of carriages, as herein set forth.

141,734.—Machine for Making Chains.—LOUIS SOUTHER, Springfield, Ill. Application filed July 12, 1873.

Two pivoted arms, operated vertically by cams and toward each other by sliding over a ring, receive the blank on their upper ends and press it upward around the mandrel, in which position it is seized by two lips (which are pressed together by two horizontally-sliding heads, also acting as supports to the mandrel,) and held in position to receive the action of the upper die, which bends it over the top of the mandrel. The upper die, in welding, presses the joint on the mandrel, and the lips, pressed together by the sliding heads, give the lateral pressure. The lips, after the welding is performed, are turned one-quarter of a revolution by means of a spiral groove in a head or sleeve to which they are attached, and hold the finished link in position to receive another blank.

Claim.—1. The four gear-wheels C, the cams D L M W W B', and arms E K O V V A', constructed and combined with the large driving gear-wheel B, for giving motion to the operating mechanism, substantially as herein shown and described.

2. The fingers F, operated by the guide-ring I and the former H, in combination with the arms E and A', the cams D B', and gear-wheels C B, for bending the bar to form the link, substantially as herein shown and described.

3. The die J, lips S, and heads U, in combination with the former H, the arms K V V, cams L W W, and gear-wheels C B, for welding the open end of the link, substantially as herein shown and described.

4. The locking-bar T, spirally slotted or grooved sleeve R, arm O, and cam N, in combination with the lips S, to cause said lips to hold the completed link and turn it into position to receive the bar for the next link, substantially as herein shown and described.

141,735.—Heel-Breasting Machinery.—VIVIAN K. SPEAR, Lynn, Mass. Application filed June 24, 1873.

Claim.—1. In a heel-breasting machine, the combination with the vertical breasting-knife, placed over the jack in the plane of the heel to be operated on, of a jack arranged to support the shoe with its sole uppermost, and in substantially a horizontal plane, and an upright jack bar or support adapted to rise and fall, to carry the jack to and from the knife, and to move in a horizontal plane to vary the position of the work with respect to the knife, substantially as shown and set forth.

2. In heel-breasting machinery, the combination of a jack capable of vertical and horizontal play, and a knife-carrier capable of horizontal swiveling movements, substantially as and for the purposes stated.

3. The combination, with the knife-stock and its swinging or pivoted carrier or crane, of the vertically-yielding knife gage or guard, carried by said crane, and arranged and operating in connection with the knife, substantially as shown and set forth.

4. In combination, a jack susceptible of vertical and horizontal play, a knife stock or carrier susceptible of horizontal swiveling movements, and a gage or guard applied adjustably to said carrier and with respect to the knife, substantially as and for the purposes stated.

141,736.—Log-Turner.—ESAU TARRANT, Muskegon, Mich. Application filed May 10, 1873.

The segment of a toothed wheel is so arranged that when rotated in one direction it shall roll a log from the log-deck of a saw-mill onto the saw-carriage, and when the motion is reversed will turn the log upon the carriage.

Claim.—1. The segment D, cog-toothed at F, and supported in the side pieces of the log-deck A, in combination with the said log-deck and the pinion G, as and for the purpose specified.

2. The segment D, cog-toothed and spiked at F 3, respectively, and journaled in the upper ends of bars I, with the outer ends of the axle of the segment resting in curved slots in the side pieces of the log-deck, in combination with said slots, the log-deck A, the bars I, and pinion G, as and for the purpose specified.

141,737.—Coal-Sifter.—LEWIS TIBBETTS, Augusta, Me., assignor of one-half his right to JOSEPH H. CLARK, same place. Application filed May 15, 1873.

Claim.—The coal-sifter herein shown and described, composed of an ash-box, A, mounted on rockers *c c*, and provided with removable slats *c c*, sprung into angular recesses *b* near the top of the box, and having a removable sieve, B, made of such size as to be placed within the box A when not in use by removing the slats *c c*, so that the sifter shall occupy less space, as specified.

141,738.—Ice-Cream Freezer.—ELIJAH B. TILDEN, Prairie City, Iowa. Application filed February 15, 1873.

Consists in combining, arranging, and co-operating an ice-holder, cream-holder, scraper, and beater in such a manner that during the operation the beater will be locked to the cream-holder and move therewith, while the scraper is at the same time held stationary in the revolving cream-holder.

Claim.—1. The locking-bar C, in combination with the ice-holder A and cream-holder B, substantially as described, and for the purpose specified.

2. The locking-bar C, in combination with the tube-key *b* and scraper *a*, substantially as described, and for the purpose specified.

3. The locking-bar C, tube-key *b*, and scraper *a*, in combination with the beater *c d*, having a series of cutters, 1, 2, 3, and 4, substantially as described, and for the purpose specified.

4. The coupling device *f* and *g* and pivot A, in combination with the beater *c d*, substantially as described, and for the purpose specified.

141,739.—Log-Turner.—JOHN TORRENT, Muskegon, Mich. Application filed January 29, 1873.

The toothed bar, which rolls the logs, is jointed in the middle, which allows the upper portion to oscillate and follow the log as it rolls, while the lower part reciprocates perpendicularly.

Claim.—1. The toothed bar, the bottom of which is pivoted to an upright reciprocating shaft, as described.

2. The combination of the inclined ways provided with a stop, A, the toothed bar, the upright shaft, and the chain led through a sheave and operated by a cylindrical shaft, as described.

141,740.—Clothes-Pin.—VINCENT D. URSO and BENJAMIN CHARLES, Evansville, Ind. Application filed May 7, 1873.

Claim.—1. In combination with a clothes-pin having two jaws forced together by a single spring, a rubber tooth inserted in one jaw, and fitting in a recess in the other, substantially for the purposes herein set forth.

2. The within-described clothes-pin, consisting of the jaws A A with handles B B, the spring C, hole *d*, rubber tooth A, and recess *i*, all constructed and arranged substantially as and for the purposes herein set forth.

141,741.—Mechanical Power.—CORNELIUS VAN DERZEE, Albany, N. Y., assignor of two-thirds his right to DAVID DORRHUS and DAVID H. MATHIAS, same place. Application filed July 23, 1873.

A rocking-chair has its rockers extended, and a vertical frame attached to their ends. Said frame is connected with the chair by levers operated by the weight of the operator and hand levers. With the rise and fall of the chair reciprocatory motion is communicated to any device requiring such motion.

Claim.—1. The combination of the extended ends B of the rocker, vertical standards or gallows E, and foot-lever C with the chair A, substantially as and for the purpose set forth.

2. The handled lever F and pitman G, in combination with the supporting-bar D and foot-lever F, substantially as and for the purpose set forth.

3. The connecting-bar H, in combination with the lever F, chair A, and the gallows E, substantially as and for the purpose set forth.

4. The combination of the rollers a with the supporting-bar D, foot-lever C, and chair A, substantially as and for the purpose set forth.

5. The combination of the spring I with the lever F and the rocker B, substantially as and for the purpose set forth.

141,742.—Paper-Folding Machine.—ALVAH WASHBURN, Medina, Ohio. Application filed May 1, 1873.

A sliding bent plate forms a continuation of the folding rib on the fly, being moved backward to clear its hinge and forward to insure a complete fold. The carrying-arm of the fly is a spring, to compensate for an excess of motion.

Claim.—The sliding creasing-blade H, combined with the stationary creasing-rib and folding fly or flies of a paper-folding machine, as and for the purpose specified.

141,743.—Button-Fastening.—ELONZO S. WHEELER, Westport, Conn., assignor to himself and JONATHAN E. WHEELER, same place. Application filed April 10, 1873.

Claim.—In combination with a tubular rivet, substantially such as described, the head D, formed from two disks, n r, when the said disk n is formed with teeth t more or less in number, substantially as and for the purpose specified.

141,744.—Cutter-Head.—DANIEL C. ALLEN, Concord, N. H. Application filed July 31, 1873.

The cutters are placed upon spindles and secured between collars upon the arbor by means of a fixed shoulder formed thereon, and a screw-thread and corresponding nut.

Claim.—The combination of the adjustable cutters with the holding-collars, nut, and spindle, all the parts being constructed, arranged, and operating as specified.

141,745.—Hollow Auger.—GEORGE F. ALMY, Delphos, assignor to himself and H. M. CLARK, Toledo, Ohio. Application filed July 10, 1872.

Claim.—A hollow auger cut in a series of spring-sections A A, each section having a suitable knife or cutter, in combination with a ring, D, placed around the outside of the sections, and its inner edge made in oval form, all substantially as and for the purposes herein set forth.

141,746.—Steam-Generator and Apparatus for Rendering Fats.—VALERIUS D. ANDERSON, Springfield, Ohio. Application filed May 14, 1873.

A steam-generator is provided with two sets of heads and two sets of tubes, one of the series of tubes ending in a manifold, while the other series end separately in a neck, both of which combine to form a steam-space. Slides are provided to vary the course of the products of combustion. A kettle for rendering animal-fat is arranged above the boiler, under which is a superheating steam-chamber, the products of combustion passing around the kettle without impinging on it.

Claim.—1. The upright cylindrical body a, provided with the two necks b, in combination with the heads c, each provided with several tubes, d, and the vertical tube or manifold e, having the outer ends of all the tubes d connected thereto, as shown.

2. The combination of a steam-generator, a kettle heated by steam therefrom, and a jacketing or flue arranged to conduct the waste products of combustion from the generator around or through the kettle in such manner as to superheat the steam while in the kettle.

3. In combination with the steam-generator, the hollow-walled kettle G, surrounded by the casing p, through which the waste products of combustion are conducted from the generator, as shown.

4. In combination with the generator having the heads c, tubes d, and tubes or manifolds e, the sections consisting of tubes f, long tube or manifold g, and short tubes or manifolds h, constructed and arranged as shown.

5. In combination with the steam-generator, constructed as shown and described, the plates o, arranged as and for the purpose set forth.

141,747.—Outlet-Valve for Water-Tanks.—JASPER ARMSTRONG, St. Joseph, and DANFORTH CHENEY, Brookfield, Mo. Application filed July 7, 1873.

The valve is provided upon its upper surface with a slotted boss, through which the operating-lever passes and is pivoted. The valve-seat consists of a ring of rubber adapted to fit into rabbets in a holder, and held in position by a covering-plate, which last is firmly secured to the bottom of the tank by bolts.

Claim.—1. The holder A, provided with the central opening B and rabbets C and D, and the valve-seat E when fitted to or within said rabbet D, when said parts are combined with each other and with the covering-plate G, substantially as and for the purpose specified.

2. The valve L, provided with the boss M and slot m, in combination with the operating-lever N and pivoted bearing-pin Q, substantially as and for the purpose shown.

141,748.—Sheet-Metal Bucket.—WILLIAM AUSTIN, Philadelphia, Pa. Application filed February 17, 1873.

A sheet-metal bucket supported on an open flange so that the bottom may freeze equally with the sides, and corrugated to allow it to expand when the contents are frozen.

Claim.—A bucket having its body composed of corrugated sheet metal, and having an open flange or support below the bottom, substantially as described.

141,749.—Machine for Making Buttons.—JEAN FELIX BAPTEROSSES, Paris, France. Application filed September 25, 1872.

Dies for corresponding faces are affixed to upper and lower die-plates. Material is introduced into holes of a central plate. Die-plates are then brought together, molding buttons in holes of central plate, which is lifted with upper die-plate, and a sheet-metal tray, having chambers corresponding to perforations in central plate, is introduced beneath it to receive the formed buttons for the kiln. Suitable devices are used intermediately to pierce buttons or prepare them for shanks.

Claim.—1. The combination, substantially as described, of the sliding piece G carrying the upper dies P, the movable middle piece I, and the fixed lower dies P'.

2. The middle plate I and the lower dies P', combined and arranged, in respect to each other, to permit the introduction between them of a receiver or receivers for the buttons, as described.

3. The combination of the standards T with the sliding piece G, its spring-boxes R, and the movable middle plate I, all substantially as specified.

4. The combination of the punches of the upper die with rods f, to which an independent sliding movement, through the said punches, is imparted, substantially as and for the purpose specified.

5. The combination of the punches of the upper die with screw-rods Y, to which a combined rotary and longitudinal movement, through the said punches, is imparted, substantially as and for the purpose specified.

141,750.—Portable Fence.—GUSTAV F. BECHER, Brooklyn, N. Y. Application filed June 6, 1873.

Eyebolts are pivoted to the sides of a lazy-tong fence, through which stakes are inserted which enter the ground.

Claim.—The pivoted eye-bolts a c, secured to the side of a series of lazy-tongs, A, in combination with the stakes B, substantially as and for the purpose specified.

141,751.—Spindle-Bolster for Spinning-Machines.—JOHN BRIERNHEAD, Mansfield, Mass. Application filed May 7, 1873.

The bolster has lateral play in its sockets. The screws of the first clause of claim prevent it being raised, and the set-screw of the second clause prevents it turning.

Claim.—1. The spindle-bolster, having its shank constructed with a diameter less than that of its rail-socket, and the two provided with connection-screws b d, all being arranged substantially as specified.

2. The spindle-bolster, having its shank provided with the recess c, and constructed with a diameter less than that of its rail-socket, and connected therewith by male and female screws, as described, and having a screw, f, applied to such recess and the rail, in the manner and for the purpose specified.

141,752.—Dredging-Machine.—ALBERT BOSCHKE, San Francisco, Cal. Application filed March 11, 1872.

A rotary floating wheel is attached, by means of a pivoted frame, to a barge, the frame and wheel being counterbalanced by weights attached to a rope which passes over suitable pulleys and is secured to the frame. Buckets armed with rotary cutters are arranged in a spiral line around the face of the wheel, and the wheel is adjusted to the proper depth for dredging by admitting water to water-tight compartments within it. The bottoms of the buckets are provided with gratings and water-reservoirs beneath to prevent the adhesion of the earth to the buckets. The earth is deposited on an inclined chute and slides down into the barge, from whence it is taken, by a transverse carrying-wheel, to a lateral chute having a bottom composed of trap-doors, by means of which the soil can be deposited as desired to form a levee on the bank.

Claim.—1. The floating wheel W, adjustable in its immersion by water-ballast admitted through the opening C, provided with dredging-buckets G G, arranged around its face in a spiral form, in combination with the counterbalance-weights Q Q, engine E, and connecting-gearing M M, s c, g g i t, and X, substantially as and for the purpose hereinbefore set forth.

2. The elevator-wheel D, furnished with buckets L L for cutting the soil, in combination with the chute S', distributing drop-doors T T, engine E, forward and reversing gear M', h h, l l, v, and X X', substantially as and for the purpose hereinbefore set forth.

3. The projections s s on the floating wheel W, which actuate the spokes of the wheel K K, drum J, and chains C C, for the automatic movement of the barge B, substantially as and for the purpose hereinbefore set forth.

4. The dredging-buckets G G, provided with grate-bottoms inclosing water-reservoirs, arranged around the floating-wheel W, in the manner described, substantially as and for the purpose hereinbefore set forth.

141,753.—Cotton-Planter.—ROBERT E. BOWEN, George's Creek, S. C. Application filed June 17, 1873.

A seed-hopper having a shaker-spout suspended from the bottom by means of flexible connection and arms, which give the spout an up-and-down shaking motion by coming in contact with pegs secured near the periphery of a front wheel. To the shaker is attached a rod for adjusting the arms in and out of gear.

Claim.—The combination, with the spout D, suspended from the hopper A, and provided with arms e, of the cross-bar e', arranged between said spout and the toothed wheel, and the adjusting-rod extending back to the handles F, all as shown and described, to operate as specified.

141,754.—Spike-Machine.—WILLIAM A. D. BOWMAN, Poughkeepsie, N. Y. Application filed January 29, 1873.

Connected to the griping-lever is a stirrup in which the fulcrum-pin of the bending-lever is adjustable by a screw.

Claim.—In a spike-machine of the character specified, a bender, G, which is adjusted vertically with reference to the griping-die C, substantially as and for the purpose set forth.

141,755.—Electric Apparatus for Signaling Between Railway Trains.—ROBERT K. BOYLE, New York, N. Y. Application filed July 1, 1873.

Line-wire divided into sections; polarized switches normally breaking circuit at ends of sections; battery and alarm on train. Train closes circuit to switch, causing switch to close circuit at one end; a train approaching causes switch at other end to close circuit; alarm then sounds on both trains.

Claim.—The polarized switch D, situated between the poles of two electro-magnets, C C', in combination with insulated anvils f f' on the side of a railroad track, and with an audible or visible signal and keys g h h', or their equivalents, attached to a locomotive, the whole constructed and operating substantially as shown and described.

141,756.—Car-Coupling.—RICHARD B. BUCKNER, Gilroy, Cal. Application filed March 21, 1873.

One bumper has a flaring mouth, the lower portion of which is cut away. The draw-bar is pivoted on a crank-rod in the other bumper, and is weighted at its rear end so as to be held horizontally. When the two bumpers come together the front end of the draw-bar is depressed until it passes beneath the cavity of the opposite bumper, when it rises and is held therein until its rear end is elevated, by means of a crank, to uncouple.

Claim.—1. The bumper B with its suspended draw-bar D, having the engaging head i and weight j, in combination with the bumper B' with its semicircular slotted mouth having inclined slides and slot o, the reverse side of which has a cavity or socket, s, for holding the hook or head i of the draw-bar, substantially as and for the purpose above described.

2. The draw-bar D, suspended upon the crank-shaft g, and having the overbalancing weight j to be operated by the crank-shaft f and lever n, substantially as and for the purpose above described.

141,757.—Elevated Wire-Way.—CARLOS E. W. BURNETT, Valparaiso, Chili. Application filed June 6, 1873.

The rope is supported by hubs placed in pairs, with interlocking arms which permit the suspensory-bar to pass without impediment. The rope is grasped by a griping device composed of toggle-levers, which release their hold when the load is slightly lifted by impinging on an inclined plane.

Claim.—1. The arrangement of the frames A A B with their horizontally-revolving rope-supports G f, substantially as and for the purpose above described.

2. The revolving hubs G G, with their interlocking angularly-attached arms f f, substantially as and for the purpose above described.

3. The bolts C C, with their heads d, in combination with the hub G and cap-plate h, substantially as and for the purpose above described.

4. The pendent rod or bar p, with its crossed lever-arms r r and gripers s s, by which the cars are attached to the rope, substantially as above described.

5. The bar p, with its crossed lever-arms r r and gripers s s, in combination with an inclined plane, whereby I am enabled to automatically detach the cars, substantially as above described.

141,758.—Dash-Board.—JOHN S. CAMPBELL, Bridgeport, Conn. Application filed February 17, 1873.

Claim.—The dash-board consisting of the metal frame or plate A and the India-rubber filling B, which is secured to the frame by vulcanization, all as set forth.

141,759.—Turbine Water-Wheel.—ELISHA P. H. CAPRON, Hudson, N. Y., assignor to THE CAPRON WATER-WHEEL COMPANY, same place. Application filed December 17, 1872.

Means are provided for attaching and securing the buckets to the disks, so that while the said buckets are detachable, and may be separately removed and replaced, they are firmly secured in position when in use.

Claim.—1. A detachable bucket or float of a turbine water-wheel, constructed as described and shown, being provided with the recess a, groove b, and slots d, for the purposes herein set forth.

2. The bucket B, constructed as shown and described, in combination with the bolt c and disks A A, the latter being provided with the fillets f f f and projections, as and for the purposes set forth.

141,760.—Machine for Filling Twist-Drills.—SIMON W. CARD, Mansfield, Mass., assignor to himself and JOHN BRIERNHEAD, same place. Application filed April 30, 1873.

A sliding bolt on the frame may be made to look either of the wheels B C. The former wheel being held to the spiral groove and the latter to the straight groove, with wheel C locked, spindle A will move forward when screw G is turned, but will not rotate, while if wheel B be locked, both rotary and longitudinal motion will be imparted to spindle A.

Claim.—1. The combination of the shaft or spindle A, the straight and helical grooves a b, the notched wheels B C, the studs f g, and the slide-bolt E, all constructed, arranged, and applied together, and to the bracket D, substantially in the manner and to operate as set forth.

2. In combination with the shaft or spindle A, helical grooves a b, the notched wheels B C, the stud f g, and the slide-bolt E, the work-supporter K, applied to the support-rail F, as set forth.

3. In combination with the shaft or spindle A, the straight and helical grooves a b, the notched wheels B C, the stud f g, and slide-bolt E, the feeding-screw G, the support-rail F, and work-supporter K, all arranged essentially in manner and to operate as specified.

141,761.—Sawing-Machine.—THOMAS H. CARROLL, Erie, Pa. Application filed July 12, 1873.

The gage and movable saws are adjusted by means of levers attached to sliding bearings.

Claim.—1. The sliding sleeve and collar c', having grooves l l, in combination with the box e e''', having the lining of metal e'', when constructed to operate in the manner described.

2. The combination of the revolving and sliding sleeve and collar c' carrying saw C', box e e''' having arm e' and eye D', and hand-lever E, with the guide-rod D, substantially as and for the purposes described.

3. The pivoted and slotted sliding sleeve f, having arm f' and gage-rod F, in combination with the transverse guide-rod g, substantially as and for the purposes described.

4. In a machine for sawing planks or boards into strips, the sliding saw C', the fixed saw C, the horizontally-adjustable gage F, and single carrying-rollers G, when constructed and arranged with relation to each other, and operating in the manner substantially as described.

141,762.—Air-Compressor or Blower.—LORENZO CHASE, Portland, Me., assignor of one-half his right to CHARLES W. CAHOON, same place. Application filed July 16, 1873.

The air being forced from one of the compartments by the direct action of steam, the steam is condensed by a jet of water, and a vacuum is formed which is instantly filled, through a valve opening inward, by outside air. This action is repeated alternately in each compartment, the steam and water valves operating, through suitable connections, by the piston-rod of the pump, which supplies the condensing-jet.

Claim.—1. The combination of two or more air-chambers, provided with suitable openings and apparatus for the automatic and alternate admission of steam and water, and for the admission and emission of air, substantially as and for the purpose specified.

2. The construction and relative arrangement of the air-chambers A and B, air-ports H and K, steam-ports d, and water-pipes O and e, substantially as and for the purpose shown.

3. The hereinbefore-described apparatus, as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose set forth.

141,763.—Lamp.—ROBERT CHRISTY, Mansfield Valley, Pa. Application filed June 27, 1873.

The oil-reservoir is formed of several vertical hollow cylinders arranged around a similar central cylinder containing the burner, all of the cylinders communicating at their extremities with an upper and a lower oil-chamber.

Claim.—A lamp for burning hydrocarbon and other oils, composed of an upper and lower chamber, a central vertical tube provided with openings i i at its upper and lower ends, and a series of exterior tubes, whereby the oil is separated into a number of small columns surrounded by atmospheric air, substantially as described, for the purpose specified.

141,764.—Coating Canvas to Form Tarpaulins.—CYRUS COBB, Charlestown, Mass. Application filed May 13, 1873.

Black paint mixed with linseed oil, red lead, litharge, beeswax, boiled; black paint, red lead, litharge, spirits turpentine, boiled.

Claim.—The preparation of burlaps or canvas, or other suitable fabric, substantially as herein described, for the purpose specified.

141,765.—Heating-Stove.—LEVI R. COMSTOCK, Baltimore, Md. Application filed January 18, 1873.

The inner hot-air chamber being brought in contact with the outer cylinder at two points forms with it the two crescent-shaped flues E F. The flues K pass through the hot-air chamber from top to bottom.

Claim.—1. The arrangement of the elliptical inner hot-air chamber E within the outer casing D, so that its sides shall touch the inner wall of said casing, dividing the space between into the crescent-shaped flues E and F, substantially as specified.

2. The combination, with the broad flues E F G L, of the dipping-flues K, the hot-air chamber, and the exterior case, substantially as specified.

141,766.—Solar Compass.—HENRY O. COOK, New York, N. Y., assignor to MARINE VARIOMETER COMPANY, same place. Application filed June 23, 1870.

An adjustable compass-card, suspended in gimbals and heavily loaded, is provided with an inclined index or gnomon for determining the solar meridian by the shadow-mark.

Claim.—The weighted box A, hung as described, the dial-plate B, and gnomon C, combined, when constructed and arranged as shown and set forth.

141,767.—Wrench.—MOSES G. CRANE, Newton, Mass. Application filed March 24, 1873.

Claim.—The wrench constructed as described—that is, with its two bars a b curved in the arc of a circle and arranged to slide

upon each other throughout their entire inner curves, each having a right-angled and an obtuse-angled jaw, the two being held together by straps and operated by a screw-thread in the inner face of one and by screw pivoted in the body of the other.

141,768.—Loom-Shedding Mechanism.—GEORGE CROMPTON, Worcester, Mass. Application filed November 11, 1872.

The lifter and depresser bar and the evener-bar are pivoted to rocking arms, which are actuated by a reciprocating slide-rod through an intermediate link and bell-crank lever. To enable the lifter and depresser bar to yield, it is arranged to slide under spring-levers. To enable all the warps to be raised at once, the lifter and depresser bar is raised out of engagement with the lower jacks by means of a shaft carrying eccentrics and provided with a handle. The shaft which operates the pattern-cylinder is in two parts, connected by a sliding clutch and wheel, by which means the cylinder can be disconnected from the driving-gear, and this operation also removes the detainer-roll from the notches of the wheel on the cylinder-shaft.

Claim.—1. The link A, in combination with the rockers i^1 and bell-crank lever g, and reciprocating slide-rod f, substantially as shown and described.

2. The arms or levers p^2 and springs r^2, substantially as shown and described, in combination with the lifter and depresser bar t^2.

3. The shaft s^2, eccentrics t^2, and arms u^2, or their equivalents, for raising the lifter and depresser bar, substantially as shown and described.

4. The shaft p provided with the clutch q^1 and crown-wheel, combined with the sliding clutch, its shaft and gear-wheel, the pattern-cylinder, and the two-armed shaft u v, the arm v acting against the wheel x of the pattern-cylinder, and all operating as described.

141,769.—Locomotive Ash-Pan Cleaner.—ASA O. DENIO, Wilmington, Del. Application filed April 26, 1873.

A jet of water is employed to extinguish the fire in the ash-pan and expel accumulation of ashes therein.

Claim.—The combination described, with a locomotive ash-pan, of a nozzle directed to the pan, attached to the boiler and to a cock communicating with the water-space of the boiler, all substantially as and for the purpose set forth.

141,770.—Base-Burning Stove.—WILLIAM DOYLE, Albany, N. Y. Application filed May 28, 1873.

Claim.—1. A faucet or revolving valve, A, suspended within the lower part G of a fuel-reservoir, B, and having solid or imperforate walls, so as to form a flue-space, *b*, as herein shown and set forth.

2. A fuel-reservoir, B, provided with one or more descending gas-flues, *a a*, communicating, near the lower part of said reservoir, with cold-air-induction flues *c c*, flue *b*, and valve A.

141,771.—Stove.—BERNARD DÜRRSTOCK, Cincinnati, Ohio. Application filed June 7, 1873.

When the grate rests upon the upper lugs the fire is in more immediate contact with the top of the stove and can be used for cooking. When it rests upon the lower lugs the stove is better adapted for heating the room, and by means of the vertically-sliding door and the removable blower may be used either as an open or closed stove.

Claim.—In the stove A, B, C, D, and F, the combination of the lugs f f', vertically-shiftable grate I, sliding door J, detachable blower K, guides L l' l, and retaining device M f', whereby the apparatus is rendered capable of being used either as an open-front or closed stove, or as a cook-stove, substantially as herein described and set forth.

141,772.—Circuit for Automatic or Chemical Telegraphs.—THOMAS A. EDISON, Newark, N. J. Application filed November 9, 1872.

Part of main current shunted through branch circuit. Effect of extra line current neutralized by extra current from local battery A, regulated by rheostat *l*.

Claim.—The rheostat *l* applied to the battery A in the local circuit to regulate the action thereof, in combination with the rheostat f in the branch circuit, and the receiving instrument in the main circuit, substantially as and for the purposes set forth.

141,773.—Circuit for Automatic Telegraphs.—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C. Application filed January 15, 1873.

Line kept statically charged by the main battery, whose circuit is made and broken with immense rapidity by a pulsator, resistance being such that these currents do not affect receiver; transmitter in shunt around the resistance. Receiver has two or more pens in circuits having shunts containing magnets of varying size. Water resistance used to divide current passing to a looped-in station.

Claim.—1. The resistance *b* and transmitting-instrument *d*, arranged in connection with the line, the battery *a*, and the rapid circuit-breaker *c*, as and for the purposes set forth.

2. Two or more styluses or pens connected with the main line and with shunt-circuits, in which are differing magnets for operation upon the chemical-receiving paper, as set forth.

3. The vessel of liquid receiving the two ends of the shunt-circuit and the two ends of the main line to vary the strength of the shunt-circuit according to the relative positions of such circuit ends, as set forth.

141,774.—Chemical Telegraph.—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C. Application filed March 13, 1873.

Paper wet by chemical solution, by siphon just before reaching electrodes, which are both upon the surface of the paper; current passing across instead of through it.

Claim.—The circuit-points or electrodes *c c*, connected with the wires *l l* and applied at each side of the line of chemical solution upon the surface of the paper, substantially as set forth.

141,775.—Perforator for Automatic Telegraphs.—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C. Application filed March 13, 1873.

Each punch actuated by an electro-magnet. Key closes circuit to electro-magnets necessary to perforate any character at once.

Claim.—A group of punches for perforating telegraphic paper, actuated by a separate electro-magnet to each punch, in combination with the circuit-bars *l* and a range of finger-keys, for selecting the circuits that are to be closed to perforate the paper in accordance with the character upon the key, substantially as set forth.

141,776.—Circuit for Automatic Telegraphs.—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C. Application filed January 15, 1873.

Claim.—The use of an opposition or secondary battery of weak power at one or more points, to act in the main line in opposition to the pulsations from the transmitting instrument, to free the main line of surplus or static electricity, substantially as set forth.

141,777.—Relay-Magnet.—THOMAS A. EDISON, Newark, N. J., assignor to himself and GEORGE HARRINGTON, Washington, D. C. Application filed March 13, 1873.

Relay contact-points close circuit in a liquid. As these points are withdrawn an increasing tension is thrown into circuit by resistance of liquid, thus avoiding spark and oxidation.

Claim.—The adjustable contact-points acting within a liquid, in combination with the helix, armature, and spring of a sounder or relay, as set forth.

141,778.—Coking-Furnace.—HENRY ENGELMANN, Salt Lake City, Utah Ter.—A. Application filed December 6, 1872.

Claim.—1. The peculiar shape of the coking-ovens A, combining small width and great height with considerable length, as specified.

2. The combination, with the narrow and high ovens A, of the vertical heating-flues C, provided in the walls between these ovens, constituting, in fact, as many different heating-furnaces, substantially as and for the purpose specified.

3. The combination, with the narrow, high, and long ovens A, heated in the specified manner, of a valve or equivalent means of throttling or stopping the outflow of gases from the material subjected to coking, whereby the retention of the gases long enough to secure the most efficient deposition of carbon therefrom is provided for, substantially as herein described.

4. The arrangement, with reference to the heating-flues C in the intervening walls of the coking-ovens A, of the openings C of the gas-passages E, and the openings *f* of the air-conduits G, substantially as and for the purpose specified.

5. The arrangement, with reference to the vertical heating-flues C provided in the walls B of the coking-ovens A, of the outlet-flues I and the outlets J, the outlet-flues being divided centrally at *m''*, and the outlets provided at opposite ends of the furnace, substantially as and for the purpose herein set forth.

141,779.—Coking-Furnace.—HENRY ENGELMANN, Salt Lake City, Utah Ter.—B. Application filed December 6, 1872.

Claim.—1. The conduits H, of constantly-diminishing transverse area in proportion as the number of flues E diminishes, whereby the supply of gaseous fuel, flame, or hot products of combustion, as the case may be, is uniformly distributed to the flues to heat the coking-ovens, substantially as herein set forth.

2. The combination, with the conduits H leading to the flues E, of the air-inlets *c*, air-passages *d*, and openings *a'*, substantially as and for the purpose specified.

3. The combination of the canal J with the conduits H, constructed as described, and leading to the flues E, substantially as and for the purpose specified.

4. The combination, with the flues E of the coking-ovens, of the draft-passages G increasing in transverse area as they approach the centrally-located uptake I, substantially as and for the purpose specified.

5. The combination, with the coking-ovens, constructed and proportioned as described, of the openings *m'*, substantially as and for the purpose specified.

141,780.—Fire-Grate.—WILLIAM H. FARRIS, Cairo, Ill. Application filed May 31, 1873.

Each bar is hollow and made in one piece, the back being turned up. A bolt, having a conical nut at each end, passes through all the bars and holds them together. A rubber and soft metal packing is used between the bars.

Claim.—1. The grate-bars A, constructed as shown, provided with plane horizontal upper surfaces and having at the rear end of each a bearing-lug, *a'*, substantially as and for the purpose specified.

2. In combination with the bearing-faces F and G, the rubber gasket H and soft-metal gasket A, substantially as and for the purpose shown.

3. The means employed for securing together the grate-bars, consisting of the rods I passing through openings *b* and *c* and through the pipes K and K', and provided upon their threaded ends with conical nuts *i*, which fit into corresponding seats in said pipes, substantially as specified.

4. The grate-bars A and A, constructed as shown, provided with the bearing-faces F and G combined to form a whole by means of the rods I and nuts *i*, and connected to or with a boiler by the pipes K and K', substantially as and for the purpose set forth.

141,781.—Refrigerator.—SIMON M. FORT, Syracuse, N. Y. Application filed June 28, 1873.

Two drawers are placed in the center of the refrigerator, one above the other, each provided with an overflow-pipe and a faucet. The lower drawer receives drippings from ice and overflow water from the upper drawer.

Claim.—1. The drawers G and G', constructed and arranged as described, and adapted for the uses set forth.

2. The lower drawer G', constructed as described, and provided with outlet-pipe H and faucet g^1, and so placed in the refrigerator as to receive and contain the cold water from the melting ice, in the manner set forth.

3. The refrigerator A B C D, provided with ice-box, cooling-closet and drawers, chambers or water-boxes G and G', substantially as set forth.

4. In a refrigerator, one or more drawers or compartments, G and G', each provided with an overflow-pipe and faucet, substantially as and for the purposes set forth.

141,782.—Ornamental Window-Glass.—CARL FREDERICI, New York, N. Y., assignor of one-half his right to EDWARD B. GRANT, same place. Application filed February 21, 1873.

Claim.—As a new article of manufacture, a pane of glass composed of two plates united, each of a different color, having etched or cut upon their inner sides similar designs that register with each other, the design on one plate being a cameo, *c*, and that on the other an intaglio, *b*, substantially as and for the purpose described.

141,783.—Thrashing-Machine.—PETER GEISER, Waynesborough, Pa. Application filed June 26, 1872.

Fan-arms beveled so as not to interfere with blast. Stirring-rods attached to reciprocating-shaft to keep throat and shoe clean.

Claim.—1. In combination with the shoe and reciprocating rod E^1, rods E^2, arranged to operate substantially as set forth.

2. The twisted or beveled arms which carry the fan-blades, arranged to operate substantially as set forth.

3. In combination with the tailing-shoe, constructed substantially as set forth, the additional dividing-shelf D'.

4. In combination with the trunk-bottom and rakes, stirring-rods E, substantially as set forth.

5. In combination with the shoe H and tailing-shoe D and knockers, the set-screw F for regulating the action of the former, substantially as set forth.

141,784.—Folding-Chair.—KASPAR GEISLER, New York, N. Y., assignor to himself and JOHN LEATORA, same place. Application July 14, 1873.

Claim.—A folding-chair having a pivoted seat, A, connected by a hinge, *b*, with the back D, from which pins *d d* project into the grooves *e* of the side supports B, substantially as herein shown and described.

141,785.—Apparatus for Navigating the Air.—THOMAS GREEN, New York, N. Y. Application filed July 15, 1873.

Hollow bars form frame-work of machine. Outside the frame are bearings for propeller-shaft, which crosses frame at right angles and carries feathering blades at each end.

Claim.—1. The shaft F, the pivoted rods G, the frames H and A, and the floats or vanes I, when constructed and combined to operate in the manner and for the purpose substantially as specified.

2. In combination with the vane-rods G, provided with the pins *g*, the disk or collar K, secured upon the shaft F, and the segmental disk L, attached to or upon the bearing D, substantially as and for the purpose shown.

3. The main or supporting frame, when its parts are constructed and combined in the manner and for the purpose substantially as set forth.

4. In combination with the main or supporting frame, the pivoted wheel-frame M M and ss, provided with the rollers R and the bar S, pivoted to or upon the rear end of said frame, substantially as and for the purpose shown and described.

141,786.—Cultivator.—JONATHAN M. GUSTIN, Wilmington, Ohio. Application filed January 26, 1873.

The axle-tree has two crank-arms, which carry a shaft to which the plow-beams are attached. Pairs of corrugated plates admit of the shifting of this bar or shaft to a higher or lower position.

Claim.—1. The yielding beam-supporters, consisting of the bent plates M, swiveled to the beam E, and holding the adjustable screw-rods N and springs O, substantially as and for the purpose specified.

2. The yielding beam-supporter, consisting of the bent plate M', hinged to a swiveled horizontal shank, and holding the adjustable screw-rod N and spring O, substantially as and for the purpose specified.

3. The adjustable arched or bent brace H, constructed and arranged as shown and described, in combination with the axle A, axle-arms C, and clutch-plates B B', substantially as and for the purpose specified.

4. The adjustable and removable cast G G^1, loop G^2, and rack G^3 combined, substantially as and for the purpose set forth.

5. The axle A and axle-arms C, in combination with the clutch-plates B B', bolts b^2, and the combined walking and riding cultivator herein described.

141,787.—Hose-Pipe Nozzle.—FRANK E. HALL, Boston, Mass. Application filed July 16, 1873.

The three-way cock has its outlets arranged in the same circumferential line in relation to the passage in the eduction-pipe, thus enabling the water to be thrown at the same time both from the sprinkler and tube, or from either.

Claim.—The described hose-pipe nozzle, having, in combination with the nozzle-pipe C, perforated chamber D E and eduction-pipe G, the three-way cock F, having its outlets all arranged in the same annular or circumferential line, and in relation to passages leading to the pipe G and chamber D E, as set forth, whereby the water may be thrown at the same time both from the sprinkler and from the tube, as well as from either alone.

141,788.—Sign.—JAMES HARRISON, New York, N. Y. Application filed July 1, 1873.

Transparent material with raised letters or figures, the body or ground-work rendered opaque upon its rear side, while the letters or figures remain transparent and are ornamented upon their faces with buttons of same material.

Claim.—The letters or figures of a sign made of a transparent material, with the protuberances *a a*, with or without the shoulder C, the ground portion of said letters or figures being covered with the material *b*, substantially as herein shown, for the purpose specified.

141,789.—Coffee-Roaster.—THEODORE HERRMANN, Mattoon, Ill. Application filed May 26, 1873.

Claim.—1. The combination, in a coffee-roaster, of the heating-cylinder E, the inner wire or perforated cylinder F, and the stirring or shifting wings J, substantially as described.

2. The wire cylinder F, supported and braced within the outer cylinder by the annular flanges H and the tie-plates I, as described.

3. The annular guards or shield flanges K of the open base A, in combination with a revolving cylinder, as and for the purpose set forth.

4. The elevated ends P of the case, in combination with the removable cylinder and the removable chute Q, as and for the purpose set forth.

141,790.—Hydraulic Railroad-Car Brake.—WILLIAM M. HENDERSON, Philadelphia, Pa. Application filed April 4, 1873.

Water of condensation returned to tank before cooling. Springs between piston and brake moderate shock of sudden motion.

Claim.—1. The three-branched cock or valve A, combined with a water-tank, a steam-boiler, and hydraulic brake-operating cylinders, so that in one adjustment of the cock A the brake-cylinders B may fill or empty from the tank, and in the other adjustment of said cock the pressure within the boiler is transmitted to the fluid operating the brake-pistons, substantially in the manner set forth and described.

3. The three-branched cock or valve A, combined with a water-tank, a steam-boiler, and hydraulic brake-operating cylinders, with the springs E interposed between the brake-shoes, and the pistons operating the same by pressure of an inelastic fluid, substantially as herein described and set forth.

141,791.—Sewing-Machine.—WILLIAM HIBBINS and JAMES D. MOORE, Grinnell, Iowa. Application filed May 24, 1873.

The feed is produced by a four-motioned serrated presser supported in a cylindrical head arranged to turn about the needle-bar. The adjustable end lever attached to the lifting-lever that operates the cone is adapted to regulate the length of the feed.

1. The feed-bar H, with the serrated presser-foot A, the handle A^1, the controlling-arm A^2, the projection A^3, in combination with the cone E^1 with the flanged head e^1, the levers E^2 I, and the springs h^1, e^2, P, and A^4, substantially as described.

2. The combination, with the feeding-foot, of the lifting-lever E^2 and the pivoted adjustable end lever E^3, having the slot e^3 and set-screw e^4, substantially as specified.

3. The tension device fastened to the needle-arm C, consisting of the movable spring-case T, having the diametrical guide-eyes *t'*, spring R, set-screw *t*, and pressure-plate S S', arranged and operating substantially as shown and described.

141,792.—Organ Free Reed.—HERBERT E. HODGSON, Knoxville, Tenn. Application filed May 3, 1873.

To furnish, in connection with reed-sets of the ordinary material, a different quality of tone.

Claim.—In cabinet organs and other musical instruments similar in character, the free reed herein described, the same being made of wood or other elastic non-metallic material, substantially as set forth, for the purpose specified.

141,793.—Match-Box.—JOHN HOLTZ, Baltimore, Md., assignor of one-half his right to EDWIN HIGGINS, same place. Application filed June 11, 1873.

The match-stubs are placed on an inclined slat affixed to the side of the base, and pass, through corresponding horizontal slots in the side of the base and end of the drawer, into the drawer.

Claim.—1. In combination with the slotted base of the match-safe, the slotted sliding drawer C, into which the stubs may be placed without opening the said drawer, as set forth.

2. The plate *c'*, in combination with the entrance-slot of the base of the match-safe and the inclosed slotted drawer, as shown.

141,794.—Wrench.—WILLIAM JOHNSON, Milwaukee, Wis. Application filed November 16, 1872.

Plug for bung-hole of a cask is made tapering, and a pivoted eccentric arranged in a longitudinal groove. This eccentric is brought in contact with the interior portion of the bushing and presses tightly when the wrench is turned.

Claim.—The combination of the tapering plug A, eccentric B, and its shaft C, substantially as described.

141,795.—Corn-Sheller.—JOHN B. JOHNSON, Alma, Ill. Application filed June 21, 1873.

A spring guide and holder for the corn-ears, and a revolving and self-feeding corn-sheller.

Claim.—1. A corn-sheller composed of the revolving paring and feeding springs H and the stationary clamping-springs I, constructed and arranged substantially as specified.

2. In a corn-sheller, the combination of the paring and feeding springs H, the lugs *f*, and the plate F, constructed and arranged substantially as specified.

3. In a corn-sheller, the springs H with the paring-knife A and twisted heel *h'*, substantially as specified.

141,796.—Knitting-Holder.—HANNAH P. JOY, South Berwick Junction, Me. Application filed May 24, 1873.

Claim.—A knitting-holder, consisting of the tube 1 provided with slot 2 through which the work projects, and a suitable cap or holding device, 4, substantially as shown and described.

141,797.—Manufacture of Boots and Shoes.—CHARLES A. KEITH, Danvers, assignor to GORDON MCKAY, trustee, Boston, Mass. Application filed June 23, 1873.

The upper is lasted to the insole at the toe and crimped over the remaining perimeter. The outsole is tacked on, the last removed, and the unlasted portion of the upper withdrawn from between the insole and outsole. The shoe is then sewed upon a straight-post sewing-machine, being bent at the toe under the needle, and the crimped and unlasted portion fed into position as the work progresses.

Claim.—The improvement in the manufacture of boots and shoes, consisting in the method of lasting and uniting together the inner and outer soles and upper, substantially as described.

141,798.—Steam-Generator.—WILLIAM E. KELLY, New Brunswick, N. J. Application filed May 2, 1873.

Water carried into main chamber below the plates in tubes is collected by pockets and carried back above them. Construction permits expansion and contraction.

Claim.—1. The combination of the pockets E extending across the chamber A, the partition-plates D, and the tubes B, substantially as shown and described.

2. The partition-plates D, constructed with shoulders *f* at their forward ends, in front of the tubes B, within which said plates fit, in combination with the recesses *e* in the back edges of the pockets, essentially as specified.

141,799.—Sectional Steam-Generator.—WILLIAM E. KELLY, New Brunswick, N. J. Application filed May 2, 1873.

Circulation is maintained by passing the water from the front portion of the vertically-divided chamber through secondary tubes to the return-chamber, and them through main tubes to the rear portion of the divided chamber. The division of the return-chamber permits the easy removal from the tubes.

Claim.—1. The chamber A A', constructed with partitions B *d* and tubular connections *e e*, in combination with the tubes C D, substantially as and for the purpose herein specified.

2. The independent hook connections to the several couplets of tubes, composed of half or partial boxes E F, provided with passages *g*, and secured at their meeting faces by an outside clamp, essentially as described.

141,800.—Mechanical Movement.—LEDYARD V. LOWIS, Sun Prairie, Wis. Application filed July 18, 1873.

A two-throw cranked axle, connected by two connecting-rods to double toggle-jointed levers, one end of the levers being stationary, while the other is attached to a slide to which the pitman is secured.

Claim.—1. The combination of the double-cranked axle, connecting-rods, toggle-levers, and slide, when combined substantially as set forth.

2. A mechanical movement in which the parts are combined and arranged to operate substantially as shown and described.

141,801.—Lamp-Extinguisher.—WILLIAM D. LINDSLEY, Waltham, Mass., assignor to himself and EZRA V. SHIVELY, same place, and L. E. HEDGES, Frederick, Md. Application filed May 20, 1873.

The arms by which the snuffers are operated pass through a staple on the back, then bend at right angles and pass through both snuffer-cup and spring, and are riveted down upon the inside.

Claim.—The arm D, having the end turned at right angles, passed through both spring and extinguisher, and riveted down in front, as and for the purpose set forth.

141,802.—Paint.—JOHN LUCAS, Gibbsborough, N. J., assignor to himself and WILLIAM HENRY LUCAS, Philadelphia, Pa. Application filed November 29, 1872.

Claim.—A paint vehicle consisting of linseed-oil, heated as set forth, combined with gum and acetate of lead.

141,803.—Loom-Shuttle.—THOMAS K. MCINTYRE, Salem, Mass., assignor to HIRAM A. PEASLEE and JAMES R. ARNOLD, same place. Application filed May 16, 1873.

To prevent injury from the pin on which the head of the spindle turns, it is permanently fixed on the body of the shuttle by means of a plug driven into one or both ends of the orifice which receives it, the pin being made shorter than the orifice. To remove the spindle without removing the pin the head is notched or slotted, and, when placed upon the pin, the head is held in position by a blade-spring, the end of which serves also as a stop when the spindle is raised to remove or receive a cop. A down-stop holds the spindle in position when it is within the body of the shuttle.

Claim.—1. In the loom-shuttle the spindle-shank *i*, and notched head *b*, the pin or pivot *a*, and the spring *d*, constructed and arranged substantially as represented, whereby the spring not only performs the functions of protecting the head and notch from filaments and dust, and of retaining the head upon the pin, or preventing it from getting off such in any of the positions of the spindle, but serves as an up-stop to the shank *i* of the spindle B.

2. With the spindle head provided with the bearing-notch, as described, the pivot-pin hole, carried either wholly or partially through the body of the shuttle, in combination with the pivot-pin fixed in such hole by one or two plugs, all being substantially as specified.

141,804.—Line-Loop.—DUNCAN MCMILLAN, Osage, Iowa. Application filed March 19, 1873.

Claim.—The loop C, consisting of the frames *a b d*, bar A, and hook *i*, constructed specifically as described, and for the purpose set forth.

141,805.—Steam and Air Brake for Railway-Cars.—CHARLES E. MOORE, Boston, and MARTIN L. WYMAN, Melrose, assignors to C. A. KIELGREEN, Boston, Mass. Application filed February 14, 1873.

The pump-cylinder is supported directly upon or over the axle, and held by a link-connection. The trunk-piston is connected and operated by an eccentric upon the axle. Suitable pipes and valves in valve-boxes admit the compressed air and allow it to escape.

Claim.—1. In combination with the car-truck, the pump cylinder supported directly upon or with respect to the axle, and held by the link-connection, substantially as shown and described.

2. In combination with the pump-cylinder, the trunk-piston *l*, connected to and operated by the eccentric upon the axle, substantially as shown and described.

3. In combination with the air-compressing pump and the pipe *q*, the pipe *r* and the valve-box *r*, the pipe *v* conducting the compressed air into the car, and the pipe *y* leading the air either to the cylinder for operating the cylinder-piston or to the pipe *v*, by means of the valve operated by the link *s*, brake-rod *t*, and lever *u*, substantially as shown and described.

141,806.—Shade-Holder.—THOMAS MORAN, New York, N. Y. Application filed May 23, 1873.

The shade-supporters are adjustable upon the arms by means of an endless screw engaging in a rack upon the upper edge of the arms. A spring within the slot of the supports permits an approximate adjustment without employing the endless screw.

Claim.—The combination of the toothed racks on the arms B, the endless screws D on the supporters C, and the springs E, essentially as and for the purpose described.

141,807.—Submerged Pump.—JAMES A. MORRELL and JOHN BREWER, New York, N. Y. Application filed June 28, 1873.

The piston-rods are made adjustable by connecting-rods with screw-threads on their ends, adjustably secured to the working lever by screw-nuts, the other ends clamped upon the piston-rods The pump-cylinder has an external surrounding casing, having side perforation acting both as a support and a strainer.

Claim.—1. In combination with a base, A, into which the pump-cylinders are bored, and which receive the water from the bottom, an external enveloping casing, M, perforated only on the sides, so as to serve as a screen, and also as a support for the cylinders B B, which is suspended within it upon its flanges, substantially as set forth.

2. The combination of the adjustable connecting-rods G^1 G^2, clamps G G, or their equivalents, piston-rods F F, and an operating-lever, H, substantially as and for the purpose set forth.

3. The combination of the adjustable connecting-rods G^1 G^2, pistop-rods F F, toothed rods D D, and their intermediate pinion, or their equivalents, and the pistons C C, substantially as and for the purpose set forth.

141,808.—Road-Scraper.—JOHN MORTON, Cincinnati, Ohio, assignor to himself and GEORGE S. HUNTINGTON. Application filed May 15, 1873.

A swinging or tilting frame is attached to the cart, and at the rear end of the frame is pivoted a scraper, which is composed of two parts hinged together so as to permit it to adapt itself to the surface of the street. The scraper can be oscillated on its pivots, its movement being limited by suitable stops. When the scraper is full it is raised by tilting the frame, and the dirt is emptied into the cart.

Claim.—1. In combination with the cart A B B', the swinging frame C C' and scraper E, operating substantially in the manner and for the purpose described.

2. The combination of cart A B B', frame C C', scraper E, and brush I, operating substantially as and for the purpose described.

3. The scraper E, when made in two parts, hinged together, substantially as and for the purpose specified.

4. In combination with the swinging frame C C' of the cart, the scraper E, when pivoted at *d d'* to oscillate, and provided with stops H *e*, substantially as and for the purpose specified.

141,809.—Hand-Press for Jelly.—JAMES M. NEWTON, Dayton, Ky., assignor to DANIEL D. MARTIN and JOHN ENGLISH. Application filed June 12, 1873.

A perforated cylinder is fitted interiorly with a pressure-head and hand-screw.

Claim.—1. The combination of perforated cylinder A, central screw C, follower D, and handle E, operating substantially as and for the purpose specified.

2. The handle E, when composed of two parts, E *e*, with the grain of the wood at right angles to each other, substantially as and for the purpose described.

141,810.—Nail.—BARAK T. NICHOLS, Roselle, N. J. Application filed July 5, 1873.

Claim.—A nail or spike formed of sheet metal, and grooved, ridged, or corrugated longitudinally to stiffen it, substantially as herein described, as a new article of manufacture.

141,811.—Reefing Fore and Aft Sails.—LAWRENCE NORDEN, Philadelphia, Pa. Application filed January 24, 1873.

Claim.—The combination, substantially as described, with a fore and aft sail and mast, of brails *a* for reefing the said sail against the mast from the deck of the vessel.

141,812.—Non-Conducting Tablet, Platform, or Mat.—HENRY L. PALMER, New York, N. Y., assignor of one-half his right to CHARLES C. SKILTON, same place. Application filed July 10, 1873.

Claim.—1. In a tablet, platform, or mat, a body composed of veneers or thin sheets of wood, and a sheet of metal placed thereon, with its edge turned under the same to secure the body and sheet of metal together, as and for the purpose specified.

2. In a tablet, platform, or mat, a body composed of veneers or thin sheets of wood glued or otherwise secured to each other, and a sheet of metal placed thereon, surrounded by and attached to a bead, border, or molding of wood, substantially in the manner shown.

141,813.—Draft-Equalizer.—JOHN PARKER, Pontiac, assignor of one-half his right to JAMES A. HUBBS, Cato, Mich. Application filed June 21, 1873.

Claim.—1. The three-horse whiffletree, consisting of the two short whiffletrees pivoted to the eccentric evener, substantially as described, for the purpose specified.

2. The single and double draft-chains, arranged to operate in connection with the whiffletree, in the manner described, for the purpose specified.

3. The chafing-plates I, in combination with the whiffletrees and pulley-straps, substantially as described, for the purpose specified.

141,814.—Check-Rein Retainer.—CHARLES H. PERRIN, New York, assignor to SAMUEL E. TOMPKINS, Sing Sing, N. Y. Application filed March 8, 1873.

Claim.—An elastic check-rein guard, constructed as described, and applied to the ordinary check-hook bolt, for the purpose set forth.

141,815.—Balanced Valve for Stand-Pipes.—JOHN N. POAGE, Cincinnati, Ohio. Application filed May 30, 1873.

Water enters the branch pipe through a cylindrically-balanced valve, passing up the stand-pipe to an outlet. The lower end of the stand-pipe is provided with a valve-seat, to which the valve fits. Within this valve is a secondary, or relief valve, allowing the water remaining in the stand-pipe to pass off to the waste-pipe when the main valve is closed.

Claim.—1. The valve-box B, casing C', stand-pipe D, valve-seat section E, and valve G, when constructed and combined to operate substantially as and for the purpose specified.

2. The valve G and valve-seat section E, when constructed and combined with the valve-box B and casing C', substantially as and for the purpose shown.

3. The valve G, provided with the opening *g''*, the casing C', the seat-section E, the operating-rod H, the tube I, and the relief-valve K, when constructed as shown, and combined with each other substantially as and for the purpose set forth.

141,816.—Device for Centering Barrel-Heads.—JOHN J. RALYA, Cleveland, Ohio. Application filed September 26, 1872.

A circular plate is provided with a central point and a radially-adjustable marking-tool.

Claim.—The templet A, having at four or more equidistant points the dimensions of a barrel-head, provided with a central marking-point, *b*, and with or without a center, D, at one point of its periphery, substantially as and for the purpose specified.

141,817.—Lathe-Chuck.—CHARLES H. REED, Danbury, Conn. Application filed July 11, 1873.

The jaws C C' C' are simultaneously moved in a radial direction by the revolution of a single right-and left-hand screw cut on the shaft D, which shaft passes through the yoke-piece E, and is secured in suitable bearings formed in the chuck-case.

Claim.—The combination of the jaws C C' C' with the shaft D, having right and left hand screw-threads, as described, and the yoke-piece E, all connected, substantially as set forth, to produce a three-jawed chuck, attached by a single right and left hand screw.

141,818.—Bee-Hive.—DAVID RICK, Richfield, Ill. Application filed November 2, 1872.

Claim.—A bee-hive lined with liquid or natural slate, substantially as and for the purposes specified.

141,819.—Composition for Cleaning Glass, Silver-Ware, &c.—WILLIAM H. ROOSEVELT, Rochester, assignor to himself, DANIEL J. STRAGUE, and CHAS. E. BLANCHETT, Buffalo, N. Y. Application filed June 5, 1873.

Paris white, English red lead, glycerine, and borax mixed with warm water to the consistency of dough; kneaded, and dried or baked in cakes.

Claim.—The composition for cleaning glass, plated or silver ware, and other articles, compounded of the ingredients and in the proportions substantially as hereinbefore set forth.

141,820.—Pane for Sky-Lights.—OSCAR F. SAUNDERS, Corning, N. Y. Application filed March 27, 1873.

Claim.—Panes of glass for hot-houses, sky-lights, and the like, having their meeting edges at one or both ends turned over toward the body of the pane next adjacent, substantially as herein set forth, for the purpose specified.

141,821.—Base-Burning Fire-Place Stove.—SAMUEL E. SEXTON, Baltimore, Md. Application filed May 14, 1873.

Claim.—1. The conical or dome shaped magazine-top D', having in its inclined face a feed-opening surrounded or flanked by externally-projecting flanges G to stiffen the edges and facilitate feeding, all substantially as set forth.

2. The combination of the feed-door E, having flanges on its inner face, with the feed-opening in the inclined face of the magazine-top flanked by externally-projecting flanges G, all as herein described.

141,822.—Stereoscope.—LORENZO D. SIBLEY, Chicago, Ill. Application filed September 21, 1872.

The eye-glasses are attached to a swinging frame, so as to be readily turned to either side of the box. The stereoscopic views are successively brought into position by an inclined rotating knob or handle suitably toothed to engage with loops on the ends of the wire-frames holding the pictures.

Claim.—1. The button C, provided with the teeth *g* and arranged in an inclined position, in combination with the loops or arms *e* of the wires *d*, as and for the purpose specified.

2. The clasps *e*, arranged as described, and each provided with arms attached to two contiguous wires, *d*, whereby the series of wires are hinged together and the pictures or cards supported, as set forth.

3. The lens-frame D, pivoted by arms E to the box or frame B, so that it can be swung to either side, as set forth.

141,823.—Vapor-Burner.—THOMAS SIMMONS, Halifax, Canada, assignor of one-half his right to ALBERT CLEMEN and CHARLES T. CLEMEN, same place. Application filed June 9, 1873.

Claim.—The burner A', having the chamber D above the outlets F and the notched rings H I below said outlets, and provided with the air-inductor G, fitting over said rings, substantially as and for the purpose shown and described.

141,824.—Watch-Maker's Lathe-Chuck.—JOHN STARK, Waltham, Mass. Application filed June 25, 1873.

The chuck is fastened to the lathe-arbor by a clamp-screw through a hole in the back of the chuck, which is of greater diameter than the screw, to permit adjustment or centering of chuck. A greater bearing surface is afforded between the arbor and chuck by a conical frustum placed loosely on the clamp-screw and bearing against the chuck-back and arbor-sleeve.

Claim.—1. The clamp-screw D, arranged and combined with the chuck C, having its cap *a* provided with the hole *d*, larger in diameter than the screw-shank, all being for use with the watch-lathe arbor and its back screw, as explained.

2. The friction-spring *f* and clamp-screw D, arranged and combined with the chuck C, as specified, and for use with the latter and the lathe-arbor and back screw, as set forth.

3. The conic frustum E, separate from the chuck clamp-screw D, combined therewith and with the lathe-arbor, substantially as described.

141,825.—Fire-Extinguisher.—JOHN H. STEDMAN, Cincinnati, Ohio, assignor of one-half his right to LLOYD CANADAY, Albany, N. Y. Application filed June 23, 1873.

The heads are concave and supported against a bead or flange. The upper head has an opening closed by a screw-plug having weighted handles, so that when unscrewed the handles will tip it over edgewise. Two or more solid tubes and two or more tubes to receive the packages of bicarbonate of soda communicate with the interior of the extinguisher, so that it may be recharged.

Claim.—1. A fire-extinguisher provided with separate and independent acid-tubes C, and valves *f* or their equivalents, allowing the introduction of successive charges of acid, as set forth.

2. In combination with the extinguisher having the acid-tubes C, as set forth, tubes or receivers D to hold the charges of bicarbonate of soda, as set forth.

3. A fire-extinguisher having concave heads *a*, bearing under heads or flanges *b* on the body, as shown.

141,826.—Water-Wheel.—BRADFORD STETSON, Fitchburg, Mass. Application filed February 7, 1873.

The step is supplied with water under pressure, so that the spindle, in effect, turns on a thin film of water, which is constantly supplied to it. There is also a filtering mechanism, by means of which only clear water can reach the step, thus avoiding the necessity of accumulations of foreign matter getting to the step and destroying the usefulness of the wheel.

Claim.—1. A water-wheel having, in combination with the pipe *f*, the filter-cylinder f^2, substantially as described.

2. A water-wheel having, in combination with the step *f* and the central passage *r*, the passage r^2 leading to the chamber r^3, substantially as shown and described.

3. In combination with the wheel *m* and space k^2 above it, the relief-pipe P, operating substantially as described.

4. In combination with the curb-supporting ring or plate, the hemispherical dome p^3, formed and applied substantially as shown and described.

141,827.—Windmill.—SAMUEL F. STOWE, Providence, R. I., assignor of one-half his right to SAMUEL G. THIPPE, same place. Application filed May 31, 1873.

The revolutions of the windmill-shaft are regulated by halving the fans and hinging the same longitudinally to the arms of the shaft, and by keeping them in position by spring-power attached to the shaft and revolving with it, and so constructed that they may be worked with more or less resistance to the direct force of the wind by moving the said spring-power closer to or farther from the fans.

Claim.—1. The combination of a windmill-shaft with the revolving disks I, hub J, spring-cases H, springs G, disks *g*, and tension-chains i^2, arranged substantially for the purpose mentioned.

2. The combination of the sliding hub J, the yoke K, and the screws L, whereby the regulation of the tension-chains is effected in the direction of the axis of the windmill-shaft.

3. The combination, with a windmill-shaft and halved and hinged fans T, of the return-levers l^2, chains i^2, and tension-devices H, arranged as and for the purpose mentioned.

4. The front support of a windmill-shaft, consisting of the wheel F, the side bearings s^1 s^2, and rollers *s s* as circumferential bearings, as specified.

5. In combination with the adjustable tension devices, the halved swinging wings and the device for manipulating the same, consisting of the gear-wheels M on the screw L, the intermediate gear N, wheel *e*, and sprocket-wheel O, with the hand-rope P and weighted pulley *p*, substantially as specified.

141,828.—Crozing and Chamfering Plane.—ALLEN M. STRATTEN, Ladoga, Ind. Application filed March 22, 1873.

The tool is placed with the part B resting upon the ends of the staves of which the vessel is composed, the part A being within the same; a circular movement is then given to the tool, when one of its knives chamfers and the other crozes the staves.

Claim.—The combination of the stock A E F, fence-board B, and bits C and G, when constructed and arranged as herein described to perform the chamfering and crozing operations simultaneously, as explained.

141,829.—Blacking for Leather.—ABNER D. STRONG, Ashtabula, Ohio. Application filed May 28, 1873.

Claim.—Blacking composed of paraffine held in a suitable solvent, and lamp-black compounded therewith, substantially in the manner and for the purposes specified.

141,830.—Pipe-Coupling.—ALBERT C. SWEETLAND, North Attleborough, Mass. Application filed July 23, 1873.

A centrally-projecting hub on the coupling enables the turning of the slip-joint, and disconnecting it by hammering on the hub in the opposite direction. Beads are formed on each side of the hub to prevent the pipe coming in contact with its shoulder.

Claim.—A slip-joint coupling for connecting the sections of any metallic pipe, constructed with the hub or disk *b* and beads *a c*, substantially as set forth.

141,831.—Purifying Sugar, Molasses, and Saccharine Juices.—JEAN M. O. TAMIN, New York, N. Y. Application filed June 16, 1873.

Claim.—1. The process of purifying sugar, molasses, and saccharine juices by the use of soluble metallic silicofluorides, substantially as herein described.

2. The process of regenerating the primitive metallic silicofluoride used in the purification of sugar or saccharine juices, as set forth.

3. The combination of the ammoniacal water, sulphates, or phosphates with the residuum of regeneration or of filtration of the purifying process, for the purpose of producing a manure, as set forth.

141,832.—Manufacture of Chocolate.—JEAN M. O. TAMIN, New York, N. Y. Application filed June 23, 1873.

Claim.—In the manufacture of chocolate into cakes or pieces, the combination therewith of tea, substantially as described.

141,833.—Key-Hole Guard.—WARREN H. TAYLOR, Stamford, Conn. Application filed January 25, 1873.

Claim.—The stop-key having a stationary tooth or projection which enters a notch in the shell of the lock, said stop-key being inserted in the key-hole from the inside, and preventing the insertion of the key from the outside, substantially as herein set forth.

141,834.—Post-Office Letter-Box.—WARREN H. TAYLOR, Stamford, Conn. Application filed January 25, 1873.

One of the ribs of the door-frame is beveled so that the glass may slide over it, sufficient play therefor being provided by the rubber washers.

Claim.—The combination, in a door for post-office letter-boxes, of a beveled rib or beveled pins with a pane of glass and elastic washers or springs, as and for the purposes described.

141,835.—Harness-Pad Tree.—WILLIAM H. TAYLOR, Baldwinsville, N. Y. Application filed June 3, 1873.

Claim.—The combination of pads *b b*, constructed as described, with jockey-plates A A′, grooved to receive the back-strap, and hinged to the yoke, substantially as set forth.

141,836.—Knitting-Machine.—ORMON TWOMBLY, Ashland, N. H. Application filed May 16, 1873.

The needles point outwardly from the center of a stationary radially-grooved disk, and are reciprocated by a rotating cam-grooved disk, being prevented from rising, as they move in and out, by a flange on the cam-disk entering a circular groove in the needle disk or wheel. Rotating spur-wheels press the work back into proper position on the stems of the needles.

Claim.—The shaft A, radially and circularly grooved needle-wheel C, cam-wheel D, flange *i*, and the spur-wheels F G, yarn-guide H, bobbin-carrier I, and tension-wire K, all arranged, combined, constructed, and operating, in connection with a series of knitting-needles, substantially as described.

141,837.—Apparatus for Tempering Steel Plates and Similar Articles.—HERMAN URBAN, Cincinnati, Ohio. Application filed February 24, 1873.

Two boxes or chambers, placed parallel, are perforated on their adjacent sides, and have guides and brackets which support the plate vertically when lowered into place between them by means of tackle. From the tank, in which the perforated boxes are placed, a pump returns the waste-water to the elevated reservoir.

Claim.—1. A tempering apparatus consisting essentially of two or more perforated receptacles, between which the heated plate is temporarily placed and subjected upon both of its sides to the action of jets of water or brine, which are simultaneously ejected under pressure from said perforated receptacles, substantially as herein explained.

2. The combination of tank A, boxes or chambers C C′ D *d*, guides G G′, support H, pipes I I′ J J′ i^2 j^2, reservoir K, valve-operating device M N N′ O O′ R, and pump U, or equivalent devices, for the object herein stated.

141,838.—Top-Plate for Cooking-Stoves.—JOHN VAN, Cincinnati, Ohio. Application filed June 14, 1873.

Claim.—A top-plate for a stove or range, having cast solidly to its under side the hollow stiffening piece or rib B having one or more inlets in the cooler portion of the fire-space and one or more outlets in the hotter portion of the same, substantially as and for the purpose set forth.

141,839.—Valve-Cock.—JAMES WALSH, Philadelphia, Pa. Application filed May 14, 1873.

In a valve, the stem of which is capable of a rotary movement only, an indicator is arranged to rise or fall according to the position of the valve relatively to its seat, by the action of a coiled wire within threads cut upon said stem.

Claim.—The combination, in a valve-cock, of a spindle, A, having a rotary movement only, and a pointer, F, connected to the spindle, so that on the rotation of the latter the pointer will follow the movements of the valve, substantially as specified.

141,840.—Hay and Grain Loader.—WINFORD JAMES WEBBER, Hollister, Cal. Application filed March 29, 1873.

An adjustable derrick, which can be lengthened or shortened, secured to the side of the wagon, and having a wheel at the bottom, which runs on the ground and transmits power to a hoisting-pulley on the same shaft.

Claim.—1. The posts D and E, with their guiding-straps C and F, and the rack and pinion J and I, constructed to elevate either post, substantially as and for the purpose herein described.

2. The traction-wheel L, with its pulley M, and the strap N, for the purpose of raising and lowering the fork P, and operating substantially as herein described.

3. The hinged arm H and the bent lever S, with its binding-block T and rack U, for holding the load suspended, substantially as herein described.

4. A loading device consisting of the sliding posts D and E, with the adjustable traction-wheel L and pulley M, strap N, fork P, and holding device T, constructed to operate substantially as and for the purpose herein described.

141,841.—Window-Blind.—MASON C. WELD, Closter, N. J. Application filed January 17, 1873.

Claim.—1. Blind-slats constructed with two leaves hinged together at their proximate edges, substantially as and for the purposes set forth.

2. Blind-slats composed of two leaves hinged together, in combination with an independent adjusting rod and lever, or their equivalent, for each set of leaves, so as to give them an independent adjustment, substantially as and for the purposes set forth.

141,842.—Fruit-Box.—CHARLES W. WESTON, San Francisco, Cal. Application filed April 21, 1873.

One piece of material is arranged to form the box, with the parts secured by tarsing up the ends and passing the upper portion of it through a slot and secured by a nail. On the corners of the box is a metallic band, through which a tongue is cut which passes through the upper band outside and is clinched for its support.

Claim.—1. The corner flaps *f*, provided with slots *g*, in combination with the outside middle flap *b* with its tongue *h*, substantially as and for the purpose above described.

2. The corner metal strip *j* having the point *e*, in combination with the wooden binding-strips *p*, substantially as and for the purpose above described.

141,843.—Machinery for Finishing the Sole-Edges of Boots and Shoes.—HENRY F. WHEELER, Boston, Mass. Application filed May 6, 1873.

The jack-carrier is secured to a sliding plate, which has intermittent horizontal and semi-rotative movement communicated to it by means of a shaft which rotates within and with a sleeve, the sleeve being locked at intervals to give the horizontal or sliding motion.

Claim.—1. In combination with the sliding jack-plate *f* and guide-plate *d* and rotating shaft *h*, the friction-sleeve *c*, and the mechanism for automatically and intermittently locking and unlocking the sleeve *c* and shaft *h*, to effect the respective movements of the jack-plate, substantially as described.

2. In combination, the sleeve *c*, flange *c*, and its groove *s* and notches *v*, the shaft-collar *t* and its key *q*, and the roll s^2 and spring *j*, all operating together substantially as shown and described.

3. The arms p^2 s^2, jointed at c^2, and the link b^2, in combination with the jack-plate *f*, substantially as shown and described.

4. In combination with the shaft *h* and sleeve *c*, the spring-presser cap *o*, worm-wheel *k*, and worm-gear *l*, and shaft *m*, arranged and operating substantially as shown and described.

5. In combination with the mechanism for imparting motion to the jack-plate, the sliding shaft *m*, loose pulleys d^2 d^3, with notches f^3, and clutch-collar f^2, with teeth g^2 h^2, all substantially as shown and described.

141,844.—Cap and Spoon for Mustard Bottles.—HIRAM J. WHITE, Boston, Mass., assignor to himself and A. B. HILL, same place. Application filed April 5, 1873.

The cap or cover for a mustard-bottle has a steel enameled spoon attached to it by a spring, and may be detached at pleasure.

Claim.—The combination, with the cap *a* of a mustard-bottle, &c., of a spoon, *c*, having the spring *d*, substantially as shown and described.

141,845.—Mode of Lubricating Pistons in Rotary Steam-Engines.—STERLING W. WICKES, Seneca Falls, N. Y., assignor to H. C. STUBBY, same place. Application filed June 19, 1873.

The cams or pistons in rotary steam-engines are lubricated by the application of oil directly to the sides of the cam.

Claim.—1. The oil-pump A, the horizontal pipes B B, with the openings C C, when the several parts are combined in rotary steam-engines, substantially as and for the purposes herein before described.

2. The combination, in rotary steam-engines, of the pipes B B and the stop-cocks D D, substantially as and for the purposes herein before specified.

141,846.—Car-Coupling.—JOSEPH WILCOX, Canton, Pa. Application filed February 28, 1873.

Three springs and a tube are applied to a draw-head with the pin and link in common use, the object being to hold the link in position and provide an automatic coupling.

Claim.—The spring E, attached to the front part of the draw-head, extending backward and resting upon the link C, in combination with the springs D D, having the flanges *a a*, and pin B, all constructed and arranged for operation as set forth.

REISSUE PATENTS.

5,530.—Plow.—GILLUM SHELTON, Normal, Ill.—Patent No. 127,650, dated June 4, 1872. Application filed July 7, 1873.

The upper portion of the plow-standard is bifurcated and secured to the beam by two bolts. A supplementary bolt passes from the sole to the beam in a recess in the rear of the standard. The upper part of the standard is longer than usual, so as to give a high position to the beam, and the standard is thick and rounded to avoid clogging.

Claim.—In combination with the beam C and mold-board B, the elongated standard A, having a broad rounded and polished front edge, a seat and lugs, *a a*, for the attachment of the mold-board, and its upper end having two arms, *d d*, and a bolt or bar, D, substantially as and for the purpose specified.

5,531.—Windmill.—HARRIET W. WHEELER, executrix, and WILLIAM H. WHEELER, Beloit, Wis., assignee of one-third interest of LEONARD H. WHEELER, deceased.—Patent No. 69,674, dated September 10, 1867.—Divis'on A. Application filed March 17, 1873.

A small side vane and a pivoted tail-vane are arranged at right angles to each other upon the turn-table. The tail-vane is weighted and prevented, by stops, from swinging in more than one direction. When the wind blows with great force the side vane causes the tail-vane to be brought into the wind, and, the latter overcoming the resistance of the weights, the tail-vane yields, and the wheel is carried out of the wind, the wheel and the tail-vane standing parallel to each other. As the wind dies away, the weight acts to pull the tail-vane back into its original position, thereby bringing the wheel again into the wind.

Claim.—1. A windmill having a single flexible tale-vane or rudder, combined with the wind-wheel, substantially as described.

2. A side vane or wind-gage, arranged to project laterally beyond one side of the vertical axis, between the pivoted point thereof and the wind-wheel, substantially as described.

3. The arrangement of the pitman and the operating-cords of the rudder to pass down through the vertical tubular axis of the wind-wheel, and to be held therein out of contact with each other by one or more perforated plates, arranged within said tubular axis, substantially as specified.

4. The stops O V, in combination with the vane or rudder and the head of the vertical axis of the wind-wheel, substantially as described, and for the purposes specified.

5. A windmill constructed with a pivoted or swinging main vane or rudder, and a side vane or wind-gage projecting laterally beyond the axis of the vertically-rotating wind-wheel, substantially as described, for the purposes specified.

5,532.—Cultivator and Plow Combined.—LEWIS R. WRIGHT, Schenectady, N. Y.—Patent No. 81,054, dated August 11, 1868. Application filed May 21, 1873.

Claim.—1. The double mold-board B and C, so hinged and connected together that the main part of said mold-board B may be elevated or depressed at will, according to the height of furrow desired to be cut, substantially as hereinbefore described and set forth.

2. The hinging of the sections of the mold-board C and C′ to the center standard E′, whereby a lateral motion may be given to the mold-boards B and B′ to regulate the width of furrow to be cut, substantially in the manner and for the purposes more fully hereinbefore described and set forth.

3. The slotted arms or their equivalents D D, in combination with the mold-boards B and B′, substantially in the manner as and for the purposes herein described and set forth.

4. The curved reversible tooth H, with concave sides, the front surface of which is nearly flat, as and for the purposes set forth.

5,533.—Paper-Folding Machine.—CYRUS CHAMBERS, Jr., Philadelphia, Pa.—Patent No. 26,090, dated November 15, 1859. Application filed June 30, 1873.

The paper is fed against vibrating guides directly to the folding-rollers; the drop-roller G then falls, the paper passes between the carrying-roller and the upper folding-roller, and is pushed into the bite of the folding-rollers by the eccentrically-hung knife, which follows the periphery of the upper folding-roller around until opposite the entrance between the two. That the edge of the paper may not adhere to the upper folding-roller, this is provided with curved bars in grooves on its surface. The sheet next passes between tapes and rods in different planes, that it may be corrugated to insure its more accurate adjustment at the proper point, and against a stop; is then pushed by another knife into the bite of other folding-rollers, from which it is conveyed by rods, and is finally dropped upon the packing-gate, which, operating in connection with a slide, T, packs the folded sheets upon their edges in the box.

Claim.—1. A drop-roller, co operating by direct contact with one of the folding-rollers in feeding in the sheet, as specified.

2. The grooved folding-roller H, in combination with the vibrating guides 2 2 attached to the rock-shaft F, for the purpose of registering by a positively-acting mechanism the forward edge of the sheet as it enters the machine, as specified.

3. The curved bars 3, arranged to project beyond the surface of the folding-roller, for the purpose of raising or bearing off the sheet from the folding-roller, as set forth and shown.

4. The folding-blade J hung on eccentrics and moving in an arc around one of the folding-rollers, as and for the purpose specified.

5. The combination of the tapes, rods, and stops, arranged in the manner described, for the purpose of corrugating the sheet and presenting it properly to the action of the folding-blade, as set forth.

6. The bent bars 13 and 22, in combination with the folding-rollers grooved to receive their curved ends, for the purpose of turning or conducting the paper, in the manner stated.

7. The combination of the bent bars with the straight bars and adjustable stop, arranged substantially in the manner described.

8. The combination of the bent bars with the tapes and stop, for the purpose specified.

9. The combination of the oscillating gate with the packing-box, provided with a yielding slide, and having the rear edge of its bottom board rounded, in the manner and for the purpose set forth.

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Furnace, coking, H. Engelmann	61	141,779
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Harvester rake, A. Rank	74	141,668
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Log turner, J. Torrent	130	141,739
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Loom shedding mechanism, G. Crompton	95	141,768
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Pipe coupling, A. C. Sweetland	167	141,830
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Sash lifter, E. Kingsbury	94	141,647
Saw guard, circular, O. A. Dean	131	141,702
Saw mill, circular, E. H. Stearns	130	141,672
Sawing machine, T. H. Carroll	130	141,761
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Sewing machine, Hirons and Moore	134	141,791
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Sewing machine tucker, J. H. Bean	134	141,623
Sewing machine tucker, F. W. Brown	134	141,695
Sewing machines, &c., adjustable treadle for, J. McEvoy	134	141,722

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Steering apparatus, J. Myers	137	141,660
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Stove, base burning fire-place, S. B. Sexton	154	141,821
Stove, heating, L. R. Comstock	154	141,765
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Telegraphs, circuit for automatic, T. A. Edison	50	141,776
Telegraphs, circuit for automatic or chemical, T. A. Edison	50	141,772
Telegraphs, perforator for automatic, T. A. Edison	50	141,775
Thill coupling, P. L. Maltbie	31	141,655
Thrashing machine, P. Geiser	150	141,783
Tire upsetting machine, D. L. Badley	60	141,687
Trap, hog, T. Darby	144	141,633
Tree protector, G. H. Hume	63	141,716
Truck for carrying safes, &c., Luchmann and Beehl	31	141,653
Valve, balance slide, S. Reid	152	141,728
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Windmill, L. H. Wheeler, (reissue)	110	5,531
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Wrench, W. Johnson	100	141,794

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Young, H., assignee	141,710

TO CORRESPONDENTS.

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OFFICIAL GAZETTE

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COMMISSIONER'S DECISIONS.

BENJAMIN S. CASTLE.—*Appeal.*

[*In the matter of the application of Benjamin S. Castle for patent for* APPARATUS FOR FILING AND SETTING SAWS.—*Decided August* 27, 1873.]

APPEAL FROM THE DECISION OF THE PRIMARY EXAMINER.

A claim for saw-filing clamps and saw-setting tools, arranged independently upon a portable bench, held not to cover a combination of tools or machines.

Such an assemblage of parts also held not to constitute a single patentable article or "kit," because the mere convenient assemblage of different and independent devices upon the same platform does not constitute invention.

An assemblage of distinctive individual parts which is less than a combination of them falls short of invention.

The relative functions of parts are to be kept in view in questions of this nature.

The difference between a mere unpatentable assemblage of parts and a combination of them, in a legal sense, illustrated.

LEGGETT, *Commissioner:*

This invention is described as a "kit" for filing and setting saws. It consists of filing-clamps and setting-clamps attached to the same plank or bed, which is portable, so that the so-called "kit" or bench of tools may be set down and used wherever desired. The first claim is as follows:

"The saw filing and setting kit, consisting of the bench A, filing-clamp B, setting-plate D, clamp E, and the setting-tool F, arranged in one portable apparatus, substantially as specified."

The other three claims cover the specific construction of the setting machinery.

The Examiner says: "The applicant may claim the whole in one application, as is done in the first clause of claim, but he cannot be allowed to include independent improvements in the individual machines in the same grant." This decision proceeds upon a rule of practice correct in the abstract, and it would be sound if the first claim were a valid one. But that is exceedingly doubtful. It is not a claim for a combination of machines operating together to produce some useful result. It comprehends two distinct and independent tools, entirely disconnected in their objects and functions, merely placed for convenience upon the same bed or bench. They have no common purpose to effect. They are not to be used in conjunction in any sense, and have no different relation to each other when placed upon the opposite ends of the same portable work-bench from that they have when placed upon separate benches. Filing and setting saws are distinct and independent operations, as much as making and using saws, and they are in no way connected by this device. A saw often needs filing when it does not need setting, and *vice versa*.

It is clear that applicant has not produced a combination of tools or machines. Neither has he invented a "kit," as he supposes. The mere convenient assemblage of different and independent devices upon the same platform does not constitute invention. An assemblage of distinctive individual devices which is less than a combination of them always falls short of invention. Calling them by an individual name does not help the matter. The relative functions of parts are always to be kept in view in questions of this nature. It is possible the same elements in one situation is a "kit," owing to the conjoining of their functions, may constitute a patentable combination, and in another situation, although their individual functions as such are the same, they will not. For instance, to illustrate—perhaps by making an invention—suppose a receptacle for holding apples to be pared, a paring-machine, and a common four-bladed hollow-axled quartering and coring knife, all to be conveniently placed upon the same portable plank or bench, to perform their respective functions independently in the ordinary way. Here would be the parallel of applicant's "kit" perhaps, but as clearly as in his case no patentable invention. But suppose I should place the receptacle for holding the apples above the parer, making a hopper of it, connect it by a chute with the fork of the parer, and by suitable

mechanism cause the apples to descend successively and automatically present themselves in proper position to be automatically forced upon the fork, and should also contrive that at the proper moment, when the apple was pared, it should be automatically pushed off the fork onto the quartering and coring knife—all this, through proper gearing, to be accomplished by simply turning the paring-machine—then I would have a combination of these elements. The knife, the parer, and the receptacle for the apples would be so conjoined in their functions as to present invention in their assemblage.

Applicant's "kit," as such, exhibits no invention, and this is the objection the Examiner should have made.

The first claim having been admitted to be a proper one, an approval of his decision requiring a division would impliedly commit the Office in favor of this claim in a new application, and would be unjust to the applicant.

The decision of the Examiner is therefore disapproved, and he will examine the case upon its merits in the light of the above suggestions.

F. P. E. CARRÉ.—*Extension.*

[*In the matter of the application of F. P. E. Carré for the extension of the Letters Patent for* APPARATUS FOR FREEZING LIQUIDS, *granted to him October 2, 1860, (patented in France August 24, 1859,) and reissued in two divisions, February 18, 1873.—Decided August 23, 1873.*

The extension of the patent for forming ice, granted to F. P. E. Carré, August 23, 1859, refused, it appearing that the process and machine claimed in the reissues of the patent had been in all essential particulars described in a prior printed publication.

In an application for the extension of a patent it is not sufficient, in order to establish the value or importance of the invention, to show that of a more extensive process and a larger machine in which the invention was embodied.

REPORT OF THE BOARD OF EXAMINERS IN CHIEF, UNDER SECTION 10, ACT OF 1871.

"*To the Hon. Commissioner of Patents:*

"We respectfully report as follows:

"The extension of this patent is opposed mainly on the ground of lack of novelty in the devices as originally patented, the English patent of Perkins, of 1834, and the prior inventions of Twining, (the adverse party in this case,) as set forth in his English patent of 1850 and American patent of 1853, and the experiments of Faraday, as described in the 'Philosophical Transactions of the Royal Society of London' for the year 1823, being urged as anticipations of all that Carré described in his original specification.

"The original patent of Carré, of which the patents which are the subjects of this application are reissues, contained a description of three modes or plans of producing cold, differing from each other in essential respects, but not all equally amplified or illustrated. The first, and that most fully treated and occupying most of the illustration, was that in which the required cold was produced by the vaporization of a suitable material, such as ether, sulphuret of carbon, &c., through exhaustion effected by mechanical means, such as a pump. The pump was of such construction as to exhaust on the one side and condense on the other at the same time. The ether or equivalent substance was drawn through or from the vessel in which the freezing process was to be effected by its rapid vaporization under exhaustion, and by the reverse stroke of the pump the vapor was driven into another receptacle, where, under the combined action of cooling and the pressure exerted by the pump, it was condensed and fit to be again applied to use. A further prominent feature was the construction of the tank in which the cooling or freezing process took place. That was an air-tight vessel through or from which the material to be vaporized was drawn. This was provided with re-entrant receptacles projecting down near the bottom of the tank and opening outward on the top. Into these were set the vessels containing the water to be frozen, fitted loosely to the receptacles and kept in direct communication with their sides by means of a non-congealable liquid or some equivalent means. There were other features not necessary to be mentioned here.

"Substantially the whole of this appears, as is alleged by the opposition, to have been anticipated either by the Perkins patent or that of Twining, and, with a third plan in which the energy of centrifugal force was to be used, was all relinquished and omitted in the reissued patents of February of the present year. These two patents relate exclusively to what was the second leading feature of Carré's original patent. They include that numbered 5,287, the devices, and that numbered 5,288 the process, by which cold can be produced by means of the vapor of ammonia and some liquid capable, at comparatively low temperature, of absorbing it in large quantities and of yielding it again upon the application of heat. This apparatus is simply to take the place of the mechanical action of the pump. What was described in the original application upon this head, and the only matter now contained in the existing patents, is substantially this. The principles of the machine and process is stated in substantially the terms which were used to describe the experiment of Faraday, cited by the opposition.

"A bent tube of V-shape, inverted, contains in the closed end chloride of silver saturated with ammonia-gas. The tube is cleared of air by slightly warming the chloride, and the other end hermetically sealed. Now if the end containing the chloride be heated, while the other end is kept in cold water, the vapor of ammonia will be driven over and condensed in the cold end by the cold and its own pressure. Then if the end containing the condensed ammonia be placed in a cylindrical vessel of small capacity containing water, and the heated end containing the chloride of silver be cooled, the absorptive action of the chloride will vaporize the ammonia, which, in the process of vaporization, takes the caloric necessary for the vapor from the surrounding water, which is thus frozen. It is upon the principle thus illustrated that Carré constructs the machine described and shown in the patents under consideration.

"But that machine is a very slight amplification of Faraday's tube. The end of the tube which is to contain the absorbent is enlarged, and has shelves to hold the liquid in shallow quantities, and thus facilitate evaporation. The other end is also enlarged, and has also, or may have, shelves.

"The operation is precisely the same as that described by Faraday. It operates, of course, intermittently, and is capable of producing ice only in small quantities. It lacks the essential elements, before referred to as described in the original patent, to make it a continuous machine, such as is of any practical use. In fact it is understood to constitute but a very small part of the continuously-operating machine as made and used by Carré or his assignees.

"Considering the device simply as shown and described in the reissued patents, it does not appear to be of any great value. There is no evidence that it has been introduced into use to any considerable extent, and applicant claims to have received only a very small sum from its manufacture and sale.

"But it is not upon this simple intermittent machine that applicant relies. All his estimates of the value of his invention and its importance to the public, and all the profits attributed to its use, are based upon its use in what is called an 'industrial' or continuous machine. These are the only machines used in the country. [Applicant states that some nineteen (19) of them are in use in this country, capable of producing in the aggregate 282,480 pounds of ice in twenty-four hours.] Now these are machines consisting of many parts and no little complication. Without discussing all the details of the machine, it is sufficient, for an understanding of the relation which the machine shown in the reissued patents of Carré bears to that which is used in the practical production of ice, to point out the following particulars:

"The vapor, after being expelled from the absorbent by heat, is conducted to a condensing apparatus, where, by the exterior application of cold water and its own pressure, it is condensed. Thence it is conducted to the tank, where it is vaporized and the cold produced practically applied to form ice. Thence it is carried on and by other apparatus condensed and returned to the absorbent, completing a continuous circuit. The construction of the freezing-vessel is peculiar and essential to the practical operation of the machine.

"Yet all these elements, and others hardly less essential, have no other representatives in the patents of Carré than the bent tube with its enlarged ends with the shelves or the simple substitute shown in Fig. 2. The difference may be seen at a glance by comparing Fig. 1 of Carré's original patent, or the drawing of Twining, or Exhibit 'G' of Twining, with the figures in Carré's reissues. Yet all these elements enumerated are essential to the continuous machine, and were old when Carré took out his patent.

"So he has really done no more than substitute for the exhausting and condensing pump of Twining and of Perkins the principle made known and illustrated by Faraday, and so far as appears in those patents, so far as he has set forth to the public, he has applied it only to the simple intermittent machine so like the bent tube. At most, in practice he has substituted the absorbent and heat for the mechanical means. Now for this he has received from the public more than sixty-five thousand dollars ($65,000.)

"Considering the clear and ingenious experiment of Faraday, the basis from which the applicant started, and the small advance he has made and disclosed to the public in these patents, the sum appears to us an ample compensation.

"Bearing in mind that there is no proof that he either in this patent or at any subsequent time himself applied the process or the apparatus to a continuous machine, in which it alone is of any practical value, so far as appears, it does not seem just that he should be allowed longer to oppose the monopoly of this one necessary element to the use by the public, or by prior or subsequent inventors, of the other elements equally necessary but equally needing this.

It might be well mentioned here that the original invention of Carré on this point was so narrow that the broad claims made in the reissues, and which cover the use of the invention in the continuous apparatus, cover also (with the exception of the second of No. 2,287) the bent tube and the use of it, as described in the printed publication so long prior to applicant's invention.

"Applicant's interest in the extended term would be one-third of the proceeds. It is satisfactorily shown that the continuous machines in use in this country embody applicant's invention, and produce ice at New Orleans at $5.00 per ton less than the natural ice, and that in these latitudes a great saving is undoubtedly effected. It is shown that they have been quite extensively introduced, the number of machines and the amount of ice produced having been previously given. No objection appears on these points, but for the reason stated above we are constrained to advise against the extension.

"ELLIS SPEAR,
"S. H. HODGES,
"*Examiners-in-Chief.*"

This report is approved and the extension is refused.

M. D. LEGGETT,
Commissioner of Patents.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF KENTUCKY.

WENDELL R. KING *vs.* THE LOUISVILLE CEMENT COMPANY.

The unauthorized use of a combination which operates upon the same principle with one that is patented is an infringement of the patent, although in the place of some of the constituent devices others are substituted which were known to be the equivalents of them when the patent was issued.

A screw which is rotated in a stationary nut by means of a spur-wheel upon the screw-gearing with another, and which is thereby made to move longitudinally, is but the equivalent of one to which, while it is prevented from turning, a like movement is imparted by a nut made to rotate upon it by means of a pulley placed upon the nut and belted to a drum.

BALLARD, *J.*:

This is a suit in equity, by which the complainant seeks to enjoin the defendant from infringing certain letters patent granted to complainant by the United States, for an "improvement in baling-presses," and also to recover of the defendant all gains and profits realized by it from the unlawful making, using, and vending of said improvement.

The defendant, by its answer, does not question the validity of the plaintiff's patent, but denies the infringement. And it also denies that it has ever made any machine of the kind referred to in the bill, except the one which it is using, or that it has sold any whatever.

The complainant in his specifications declares that his "invention consists in the arrangement in one apparatus of two presses, which are operated alternately by a single screw in such manner that turning the screw in one direction to compress the bale in one compartment of the press retracts the follower and releases the bale in the other compartment thereof, so that said bale may be readily removed as desired, thus by said simultaneous and alternating action avoiding all loss of time in operating the press."

The machine is provided with two boxes, constructed in all respects alike, having lids opening upward for placing in the boxes hair or other material to be pressed and for removing the bale when pressed. When the press is being operated the lids are fastened down by means of clamps, pins, or other suitable means. A screw is arranged between the boxes, one end extending into one box and the other into the other box, and each end of the screw is provided with a follower which moves against and away from the bale alternately. The screw is supported by passing through cross-pieces and through collars, through which it has a free longitudinal sliding motion, but is kept from turning by projections which enter a slot extending horizontally on the screw from one end to the other. There is a nut arranged on the screw, and on this nut are keyed two cog-wheels, one small the other large. The nut is turned by turning either of these cog-wheels, and when the nut is turned the screw moves laterally without turning. In order to turn these cog-wheels and operate the machine, there is a countershaft, supported in bearings on standards, which is supplied with two cog-wheels, one large and one small, so arranged that the small one engages with the large cog-wheel on the nut, and the large one with the small one, but they do not both engage at the same time. This shaft is made adjustable in its bearings, so that either of the cog-wheels arranged on it may be brought into gear. When the process of compression is commenced, the hair in the box being loose, but little power is required, and rapidity of motion is desired, but when the compression has proceeded to a given point increased power is desired and slowness of motion. To accomplish these results, the large wheel on the countershaft is first thrown into gear with the small wheel on the nut, when the turning of the wheels causes the screw to move in the direction of its axis rapidly, and the bale in one box to be released and the loose hair in the other to be compressed with corresponding rapidity. After the compression is carried to a point when increased power is required, the countershaft is moved so that its small wheel is thrown into gear with the large wheel on the nut, and the process of the compression is completed. The screw is made to move alternately in the direction of each box by turning the countershaft in different directions, and being, as before stated, provided with a follower at each end, it will be readily seen how, while one bale is being compressed in one box, the compressed bale in the other box is being released, and how, by having a double train of gearing, speed can be exchanged for power and power for speed, as desired.

The complainant does not claim any of the separate parts of this machine. He claims only the combination of the gearing with the screw and the boxes, when constructed and operating substantially as described.

The machine used by the defendant, like that of complainant's, is provided with two boxes, a screw between and extending into both boxes, and a gearing by which the slow and rapid motion is obtained.

The same result substantially is accomplished by each machine, but in the defendant's machine the screw, instead of sliding first in the direction of one box and then in the direction of the other, revolves. And this is accomplished by having nuts or female screws firmly secured on the inner heads of both boxes, and by suitable gearing. The gearing consists in a small wheel fastened firmly to a blank space on the screw, which is connected by means of a belt with a large drum or wheel, and a large wheel provided with spokes like a pilot-wheel, which is also firmly attached to the blank space on the screw. When the rapid motion is required at the beginning of the compression the large wheel or drum is geared to the small wheel on the screw, and when increased power is required the large wheel is used.

Now it occurs to me as obvious that the large wheel or drum, geared by means of the belt to the small wheel, in defendant's machine, is nothing but a mechanical equivalent for the large wheel geared to the small wheel in complainant's machine, and that the large pilot-wheel in defendant's machine is a substantial mechanical equivalent for the small wheel geared to the large wheel in complainant's machine. The drum, belt, and small wheel of defendant's machine, operating in conjunction, perform precisely the same function as the large wheel, cogs, and small wheel of complainant's machine, and in fact involve the same mechanical powers. So, also, the large pilot-wheel of the defendant's machine performs the same mechanical functions as the large wheel operated by the small wheel in complainant's machine. The mechanical power in each is the same. Increased power being desired, the mechanical device employed in each machine to accomplish the result is a lever of increased length. It certainly can make no difference that in the one case the power is applied directly to the end of the lever, and in the other that it is applied to the same point by means of appropriate gearing. Nor can I perceive any difference between the mechanical function performed by the screw in one machine and that performed by it in the other, or any substantial difference in the mode of operation. In each machine the screw moves in the line of its axis alternately toward the boxes, and though in the one machine it revolves and in the other slides, I cannot see that this makes any mechanical difference. In the one it revolves because the wheel to which the power is applied is firmly attached to the screw, and the screw works and moves in and through nuts which are stationary. In the other it is prevented from revolving by means of projections into a slot on the screw, but the screw works and moves because it is operated upon by a nut which revolves. There is not a particle more of apparent or real difference between these mechanical devices than may be seen by the operating of a screw with a single nut. If the nut be held stationary and the screw turned the screw will move through the nut and project beyond. On the other hand, if the screw be held stationary and the nut turned, the nut will move and cause the screw to project beyond it precisely as it did before. The result is the same, and the mechanical operation is the same in each case.

It is hardly necessary to add that the mechanical powers employed in both of the machines have been long known, and that it was hardly necessary to prove what the testimony, however, does establish, that it would occur to the merest tyro in mechanics that a substitution of the gearing employed in defendant's machine for the gearing employed in complainant's would enable him to accomplish the same results which complainants do. As he would substitute strictly mechanical equivalents, it is obvious he would produce the same results, and by an operation really similar, though somewhat disguised.

The question then is—the complainant's patent being admitted to be valid, though it is for a combination—can the defendant avoid the charge of infringement by substituting, in lieu of some of the parts of the combination, well known mechanical equivalents? I am quite sure that he cannot, either on principle or authority.

It is not to be disputed that the inventor of an ordinary machine is, by his letters patent, protected against all mere formal alterations and against the substitution of mere mechanical equivalents. Why should not the inventor of a mere combination receive the same protection? If he cannot, then will his patent not be worth the parchment on which it is written. If no one can be held to infringe a patent for a combination unless he uses all the parts of the combination and the same identical machinery as that of the patentee, then will no patent for a combination ever be infringed, for certainly no one capable of operating a machine could be incapable of adopting some formal alteration in the machinery, or of substituting mechanical equivalents. No one infringes a patent for a combination who does not employ all the ingredients of the combination, but if he employs all the ingredients or adopts mere formal alterations or substitutes for one ingredient, another, which was well known at the date of the patent as a proper substitute for the one withdrawn and which performs substantially the same function as the one withdrawn, he does infringe. In the case of *James Rees* vs. *Wm. L. Gould*, reported in the 2d Official Gazette of the U. S. Patent Office, 624, and also to be reported, I suppose, in 15 Wallace, the Supreme Court say: "*Bona fide* inventors of a combination are as much entitled to equivalents as the inventors of other patentable improvements, by which is meant that a patentee in such a case may substitute another ingredient for any one of the ingredients of his invention, if the ingredient substituted performs the same function as the one omitted, and was well known at the date of his patent as a proper substitute for the one omitted in the patented combination." * * "And it is clear that an alteration in a patented combination which merely substitutes another old ingredient for one of the ingredients in a patented combination is an infringement of the patent, if the substitute performs the same function and was well known at the date of the patent as a proper substitute for the omitted ingredient." This authority, it seems to me, is entirely conclusive of this case, and it is hardly worth while to refer to other decisions, but the opinion of the same court in the case of *Seymour* vs. *Osborne*, 11 Wallace, 555, and of Judge Sawyer, of the Circuit Court of the United States for the district of California, in the case of *Carter* vs. *Baker*, 4 Fisher, 404, may be consulted.

I have not examined minutely the testimony of the experts produced by the respective parties in this case, because I do not ordinarily attach much importance to the opinions of witnesses so produced—I find them generally advocates of the party producing them—and I have rarely ever derived any assistance from any expert who was not summoned and examined on the suggestion of the court itself. But in this case I have not referred to their testimony, chiefly because the nature of the complainant's invention and of the operation of both his and the defendant's machines is so easily understood that assistance has not been needed.

Being of the opinion that the machine used by defendant is clearly an infringement of complainant's patent, I shall direct a perpetual injunction and give a decree for costs, but as complainant has offered no proof touching the damages, and as they must be small, I shall direct no inquiry concerning them.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,484.—Grain-Separators.—Granted to Jonathan L. Booth, September 20, 1859; reissued September 25, 1860, and November 29, 1864. Application filed June 14, 1873. Hearing September 3, 1873.

25,488.—Hydraulic Presses.—Granted to M. H. Clark, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,499.—Railroad-Car Seat.—Granted to Eli Wheeler, September 20, 1859. Application filed June 17, 1873. Hearing September, 3, 1873.

25,506.—Lamps.—Granted to Halvor Halvorson, September 20, 1859; reissued June 6 and December 5, 1871. Application filed June 6, 1873. Hearing September 3, 1873.

25,508.—Tailers' Shears.—Granted to Rochus Henrich, September 20, 1859. Application filed June 20, 1873. Hearing September 3, 1873.

25,512.—Bung-Hole Borer and Reamer.—Granted to Josiah Kirby, September 20, 1859. Application filed June 19, 1873. Hearing September 3, 1873.

25,544.—Try-Cocks for Steam-Boilers.—Granted to John F. Cook, September 20, 1859. Application filed June 10, 1873. Hearing September 3, 1873.

25,565.—Rolling-Mills.—Granted to John and George Fritz, September 27, 1859. Application filed June 27, 1873. Hearing September 10, 1873.

25,569.—Bedstead-Slats.—Granted to Tyler Howe, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,570.—Mode of Arranging Couches in Railroad Cars.—Granted to Edward C. Knight, September 27, 1859. Application filed May 31, 1873. Hearing September 10, 1873.

25,572.—Molding Water-Traps.—Granted to James Allen Lown, September 27, 1859. Application filed June 24, 1873. Hearing September 10, 1873.

25,586.—Burglar-Alarms.—Granted to Abbott Q. Ross, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,588.—Steam Punching-Machines.—Granted to John Sparrow, September 27, 1859. Application filed June 26, 1873. Hearing September 10, 1873.

25,648.—Steam-Boilers.—Granted to Joseph Harrison, Jr. October 4, 1859. Application filed June 26, 1873. Hearing September 17, 1873.

25,669.—Construction of Prisms.—Granted to Edwin May, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,670.—Machines for Lasting Boots and Shoes.—Granted to James Purinton, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,682.—Hydrants.—Granted to Charles L. Stacy, October 4, 1859; reissued June 6, 1865. Application filed June 26, 1873. Hearing September 17, 1873.

25,692.—Sewing-Machines.—Granted to Kasimir Vogel, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—Skeleton Skirt.—Granted to James Draper, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,726.—Head-Machine for Wiring Blind-Rods.—Granted to Ezra C. Davis, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,733.—Double-Friction Couplings.—Granted to Joshua Hendy, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—Method of Combining Emery with Caoutchouc.—Granted to Thomas J. Mayall, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—Cutting and Panning Cakes.—Granted to John H. Simons, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—Mode of Manufacturing Barrels, &c.—Granted to George W. Barker, October 11, 1859. Application filed July 9, 1873. Hearing September 24, 1873.

25,786.—Jacquard Machines.—Granted to Avery Barrett, October 18, 1859. Application filed June 30, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to Ephraim Ball, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,807.—Hame-Folders.—Granted to Leverett Clark, October 18, 1859. Application filed July 19, 1873. Hearing October 1, 1873.

25,814.—Sleeping-Cars.—Granted to John Danner, October 18, 1859. Application filed July 12, 1873. Hearing October 1, 1873.

25,842.—Cultivators.—Granted to Thomas McQuiston, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Hearing October 1, 1873.

25,869.—Weeding-Hoes.—Granted to James M. Adams, October 18, 1859. Application filed July 18, 1873. Hearing October 1, 1873.

25,887.—Machines for Covering Saddle-Trees.—Granted to John Maclure, October 18, 1859. Application filed July 14, 1873. Hearing October 1, 1873.

25,974.—Browning-Machines.—Granted to George H. Babcock, October 25, 1859. Application filed July 25, 1873. Hearing October 8, 1873.

25,982.—Construction of Glass Coffins.—Granted to John R. Cannon, October 25, 1859. Application filed July 23, 1873. Hearing October 8, 1873.

25,986.—Cut-Off Valves of Steam-Engines.—Granted to Edward B. Ahrens, November 1, 1859. Application filed August 1, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to Isaac E. Palmer, November 1, 1859; reissued September 9, 1863, April 11, 1865, and December 6, 1868. Application filed July 26, 1873. Hearing October 15, 1873.

25,994.—Bit-Stocks.—Granted to Nelson Stowford, November 1, 1859; reissued April 23, 1867. Application filed July 22, 1873. Hearing October 15, 1873.

26,002.—Telegraphic Machines.—Granted to George M. Pumyea, November 1, 1859. Application filed July 30, 1873. Hearing October 15, 1873.

26,026.—Manufacture of Gas.—Granted to Leonard D. Gale, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to Leonard D. Gale, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Hearing October 22, 1873.

26,066.—Machines for Making Box-Joints.—Granted to James Stimpson, November 8 1859. Application filed August 2, 1873. Hearing October 22, 1873.

26,069.—Sleeping-Cars.—Granted to John Danner, November 8, 1859. Application filed August 4, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to John T. Butler, November 15, 1859. Application filed August 7, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to Cyrus Chambers, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to Moses G. Farmer, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Hearing October 29, 1873.

26,128.—Billiard-Table Cushions.—Granted to George D. Sharp, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to William T. Vare, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to Edward Wiebe, November 15, 1859. Application filed August 16, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to William Wright, November 15, 1859. Application filed August 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to Darius Wellington, November 15, 1859. Application filed August 11, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to William L. Williams, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to Dennis C. Gately, November 22, 1859. Application filed August 16, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to Dennis C. Gately, November 22, 1859. Application filed August 16, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to John B. Palser and Gardiner Howland, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Hearing November 5, 1873.

26,243.—Water-Closet Basins.—Granted to William Boch, Sr., November 29, 1859. Application filed June 10, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to Thomas J. Mayall, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Hearing November 12, 1873.

26,291.—Molding for Metal Casting.—Granted to John P. Broadmeadow, November 29, 1859. Application filed August 15, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to Newman Silverthorn, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Hearing November 12, 1873.

26,364.—Top-Props for Carriages.—Granted to George Cook and Hannibal I. Kimball, December 27, 1859. Application filed August 23, 1873. Hearing December 10, 1873.

27,539.—Manufacture of Gun-Barrels.—Granted to James H. Burton, March 29, 1860, and antedated to September 29, 1859; reissued December 24, 1871. Application filed July 1, 1873. Hearing September 10, 1873.

EXTENSIONS GRANTED.

25,183.—Improvement in Nail-Machines, granted to Daniel Dodge, August 22, 1859.

Claim.—1. A griper having a reciprocating movement toward and from forging on pointing mechanism, and opening automatically at the outer extremity of its stroke, so as to allow the introduction, feeding forward, or removal of the rod while it is in this position, but holding the rod fast at every other stage of its operation and while in any other position, substantially as herein described.

2. In combination with a so operating griper, the employment of a gage and a cutter or cutters, operating in the within-described order of succession with respect to each other and to the griper.

25,191.—Machine for Making Paper Bags, granted to William Goodale, August 23, 1859.

Claim.—1. The pasting apparatus, consisting of the roller G fitted to work in an opening in the bottom of a paste-box, the spring K or its equivalent, and the adjustable stopper e, all combined to operate substantially as herein described.

2. The combination of the continuously-revolving measuring-rollers I I′, and the intermittently-revolving feed-rollers J J′, operating substantially as and for the purpose herein described.

3. The drop E′, operating in combination with the cutter B and the feed-rollers, substantially as and for the purpose herein specified.

4. Folding the paper around a plate, q, or flat piece of any material narrower than the bag itself, or of the same width as, but shorter than, the bag itself, substantially as herein specified.

5. The folders E E′, applied and operating in combination with the inclined planes l l′ at the sides of the folding-table C, substantially as and for the purpose herein set forth.

6. The combination, with the folding-table and with a plate, Q, narrower than the bag, to fold the bag upon, of one or more movable inclined planes, F, and crossing-blades U, operating substantially as herein described.

7. The drop Z, applied and operating substantially as and for the purpose herein described.

8. The bar 21, applied to the vibrating roller-frame, and operating in combination with the knock-off s, substantially as and for the purpose herein set forth.

25,199.—Improvement in Feeding Paper to Printing-Presses, granted to Richard M. Hoe, August 23, 1859; reissued June 29, 1871, numbered 4,689.

Claim.—1. The combination of the feeding mechanism, cutting apparatus, and the printing-machine, or their equivalents in the said combination, for feeding the paper from a roll to a printing-machine, and cutting or partially cutting it into sheets as it passes along to be printed, substantially as set forth and specified.

2. Constructing the cutter so as to leave the several sheets united in certain places, substantially as described, in combination with the conducting-tapes, or the equivalents thereof, as described, so that the conducting-tapes may pass around the cylinder, substantially as described and set forth.

3. The combination of the cutting-cylinder and the grooved cylinder, or the equivalents thereof, of the two pressure-rollers, or their equivalents, for keeping the sheet distended, substantially as described and specified.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 19, 1873.]

6,803.—Band-Saw Frame.—Labon M. Collins, Lebanon, N. H. Application filed April 11, 1873.

6,804.—Glass Goblets.—John H. Hobbs, Wheeling, W. Va. Application filed March 8, 1873.

6,805.—Glass Dish.—John H. Hobbs, Wheeling, W. Va. Application filed October 10, 1872.

6,806.—Seal-Presses.—Charles A. Mathiesen and John C. Schrader, New York, N. Y. Application filed August 7, 1873.

6,807.—Safety-Stirrup.—Rufus Reniff, Bloomington, Ill. Application filed April 19, 1873.

6,808.—Gauntlet.—James F. Travis, New York, N. Y.—A. Application filed August 4, 1873.

6,809.—Gas-Bracket.—James F. Travis, New York, N. Y.—B. Application filed August 4, 1873.

6,810.—Oil-Cloth.—Joseph Barrett, New York, N. Y., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa. Application filed August 6, 1873.

6,811.—Carpet.—John Donnan, Philadelphia, Pa., assignor to Donnan, Mayhin & Co., same place. Application filed August 6, 1873.

6,812.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—A. Application filed August 8, 1873.

6,813.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—C. Application filed August 8, 1873.

6,814.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—F. Application filed August 8, 1873.

6,815.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—G. Application filed August 8, 1873.

6,816.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—E. Application filed August 8, 1873.

6,817.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—B. Application filed August 8, 1873.

6,818.—Oil-Cloth.—James Hutchison, Newark, N. J., assignor to Thomas Potter, Sons & Co., Philadelphia, Pa.—D. Application filed August 8, 1873.

6,819.—Carpet.—Charles A. Righter, Philadelphia, Pa., assignor to Donnan, Mayhin & Co., same place. Application filed August 8, 1873.

6,820.—Carpet.—Charles A. Righter, Philadelphia, Pa., assignor to Donnan, Mayhin & Co., same place. Application filed August 8, 1873.

6,821.—Carpet.—Charles A. Righter, Philadelphia, Pa., assignor to Donnan, Mayhin & Co., same place. Application filed August 8, 1873.

6,822.—Carpet.—Charles A. Righter, Philadelphia, Pa., assignor to Donnan, Mayhin & Co., same place. Application filed August 8, 1873.

6,823.—Carpet.—Charles A. Righter, Philadelphia, Pa., assignor to Donnan, Mayhin & Co., same place. Application filed August 8, 1873.

6,824.—Carpet.—John T. Webster, Philadelphia, Pa., assignor to John and James Dobson, same place. Application filed August 1, 1873.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date August 19, 1873.]

1,410.—Cotton-Gins.—The Gullett Gin Manufacturing Company, Amite City, La. Application filed July 5, 1873.

"The word 'Magnolia,' together with the figure of one or more magnolia flowers or buds."

1,411.—Fertilizers.—Moses J. Solomons, Savannah, Ga. Application filed July 19, 1873.

"'M. J. S.,' in a monogram having the word 'Solomons' above, the word 'Rowland' separated in two syllables, one of which is placed on each side, and the word 'Compound' below."

1,412.—Packed Oysters, Fruits, and Vegetables.—Wentz & Barndollar, Baltimore, Md. Application filed July 12, 1873.

"a Maltese cross, having the word 'Trade-Mark' on the upper and lower limbs, and the letters 'W. B.' on the left and right hand limbs, respectively, and the figure '2' in the center. These are printed in black or dark ink over a striped base of lighter color."

1,413.—Selected Nails.—John Coyne, Pittsburg, Pa. Application filed August 5, 1873.

"the words 'Coyne's Alpha Selected' and the figure of a nail arranged inside the outline of a shield."

1,414.—Fancy and other Dry-Goods.—Ed. Flahland & Co., Paris, France. Application filed August 1, 1873.

"'O and A.'"

1,415.—Fancy and other Dry-Goods.—Ed. Flahland & Co., Paris, France. Application filed August 1, 1873.

"a crown supporting a lion."

1,416.—Wines, Liquors, Beer, Mineral Waters, &c.—Seymour McCullagh, London, England. Application filed August 5, 1873.

"a red cross, and in the center thereof the initials 'McC.,' in a diamond."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date August 19, 1873.]

ORIGINAL PATENTS.

141,847.—Firkin.—CLARK ALVORD, Westford, Wis. Application filed March 17, 1873.

A firkin constructed in form of a cylinder, with heads or ends of wood which project outside of it to receive bolts, and has grooves in which the cylinder is fitted, and a close package is formed.

Claim.—The cylinder *a*, heads *c*, and rods *i*, or their equivalents, substantially as described.

141,848.—Fertilizer.—ALBERT F. ANDREWS, New Haven, Conn., assignor to ALFRED EDWARDS and ALBERT F. ANDREWS, same place. Application filed March 19, 1873.

Chloride of calcium and salt are added to tank-stuff, after which pulverized unslaked lime is added in the proportion of one of lime to three of tank-stuff. The mass is raised to about 300° Fahrenheit by artificial heat, and thoroughly agitated by a mechanical mixer.

Claim.—1. The within-described treatment of tank-stuff and analogous matter with unslaked lime, and agitation in a power mixer, substantially as herein set forth.

2. The utilization of animal fertilizers by treating with artificial heat, in connection with a liberal quantity of unslaked lime, and agitation in a power mixer, as specified.

3. The treatment of animal fertilizers with chloride of sodium or chloride of calcium, in connection with unslaked lime and heat, with agitation, as herein specified.

141,849.—Dressmaker's Marking and Cutting Gage.—MARY BLAUVELT, Ithaca, N. Y. Application filed April 28, 1873.

A gage rod or scale provided with an adjustable slide and cross-arm carries at its extremity a marking-wheel, over which a chalk-holder is fixed for supplying the marking material to the wheel as it is moved over the fabric.

Claim.—1. The gage *a*, in combination with the cutting or marking wheel *c* and an adjustable slide, *i*, substantially as described.

2. The chalk-holder *g*, in combination with the marking-wheel *c*, substantially as set forth.

3. The slide *i*, wheels *l*, and rod *a*, substantially as specified.

141,850.—Washing-Machine.—BENJAMIN W. BOWEN, Greenville, Pa. Application filed July 5, 1873.

U shaped springs are pivoted between the cross-bars and are combined with hook-rods that are hung on the upper roller. Small transversely-grooved rollers are placed under the upper roller.

Claim.—1. The U-shaped springs H, arranged in connection with the bars A and hook-rods G, substantially as herein shown and described, and for the purposes set forth.

2. The combination of the bars A, uprights B, shaft C, fluted roller D, crank E, small transversely-grooved rollers F, hook-bars G, and springs H with each other, substantially as herein shown and described, and for the purpose set forth.

141,851.—Horse Hay-Fork.—SAMUEL B. BOWERS, Stockton, Cal. Application filed June 3, 1873.

A shield or hood is placed on the tine side of the cross-head to receive the lower end of a vertical locking-lever and locking-bolt, which are operated by a spring and trip-rope.

Claim.—The mechanical device for locking the fork in position for loading and liberating the same, consisting of the arm D, socket E, catch F, spring *f*, and dog *d*, all combined and arranged to operate substantially in the manner as herein shown and described, for the purposes set forth.

141,852.—Machine for Edging Lumber.—WILLIAM G. Caldwell, Three Rivers, Mich., assignor to THREE RIVERS MANUFACTURING COMPANY, same place. Application filed May 19, 1873.

The feed-rolls are heated to prevent the adhesion to their surface of gum, snow, or ice, and the movable saws are adjustable independently of each other or all together.

Claim.—1. A hollow shaft or sleeve, in combination with one or more shafts passing through it and devices for shifting the saws back and forth, whom the said shafts are connected and operated all together or independently of each other, substantially as shown and described.

2. The shafts *b c*, each provided with a pinion, in combination with the wheel *e*, crank *g*, and devices for shifting the saws, the shafts being arranged to operate together or independently, substantially as set forth.

3. The wheel *e*, crank *g*, and spring-handle, provided with a projection for catching in the holes *l*, when arranged to operate the shafts *b c*, substantially as specified.

4. A corrugated hollow feed-roller, 3, heated by steam or hot air, substantially as described.

141,853.—Drying and Disintegrating Animal Matters.—CHARLES C. COX, Hartford, Conn. Application filed April 17, 1873.

Mixes with animal matter from five to ten per cent. of unslaked lime and puts the mixture in a drying apparatus for about ten minutes, then adds from two to five per cent. of sulphuric acid and continues the drying process until the compound is reduced to a dry, easily pulverized mass.

Claim.—The process for drying and disintegrating animal matters herein set forth.

141,854.—Panier.—JULIA S. COLBY, New York, N. Y. Application filed January 13, 1872.

Circular springs are placed under the hoops at the waistband to form a bustle. The front of the skirt is open, and at its edges are attached flaps or wings which regulate the distension of the hoops.

Claim.—In combination with the wires comprising a bustle or skirt, as herein described, the wings *d d*, circular springs *g g*, rods or braces *i i* and *j j*, all constructed and arranged substantially as herein shown and described.

141,855.—Brick-Machine.—WILLIAM COLE, Milan, Tenn. Application filed November 16, 1872.

A "feeder" pushes the clay into the press-box as it descends from the hopper, where it is compressed in the molds between the plunger and pressure-platform H, raised by eccentrics, after which the surplus clay is scraped off by the cutter M.

Claim.—The combination and arrangement of the hopper B, plunger G, molds F, platform H, cams K, pedal K', feeder D, cutter M, pitmen E and L connected to the rock-shaft E', provided with the arm C', substantially as specified.

141,856.—Car-Lamp.—JAMES E. CROSS, Adrian, Mich. Application filed June 7, 1873.

Claim.—An open globe and lamp supporting bracket, B C, for allowing access through it to a wick-adjusting device, substantially as described.

141,857.—Screw-Driver.—JOSEPH H. DAVIS, Livingston county, Mo. Application filed July 8, 1873.

By the clamps E having bent ends *d* near the handle screws can be inserted and withdrawn by the use of one hand only.

Claim.—The clamps E, provided with the hooks *d*, and so contracted by the guide D as to be operable by the hand grasping the handle B, in combination with the pivot-stand F and springs *m*, when arranged upon the blade A, substantially as shown and described.

141,858.—Straw-Conveyer for Thrashing-Machines.—CHARLES D. DECKER, Bonus, Ill. Application filed February 24, 1873.

Connected with a vibrating shaker an inclined removable slotted extension or tail-piece, and a chute underneath the slots to deliver the grain out of the way of the falling straw.

Claim.—1. The inclined extension or tail-piece C, provided with the slatted bottom, in combination with the vibrating shaker or straw-carrier, substantially as and for the purpose described.

2. The removable inclined slatted extension or tail-piece C, provided with the inclined bottom or chute-board F, constructed and operating substantially as described.

141,859.—Railroad-Car Truck.—GEORGE DIXON, Toronto, Canada. Application filed July 28, 1873.

The center of gravity of the trunk is lowered to a point limited only by the diameter of the wheels on the truck.

Claim.—1. In combination with the rigid frame A of a car-truck supported intermediate of the diameter of the wheels of the truck, the bolster B', shoes d^3, elliptic springs *d d*, shoes d^3, links *e e*, and bars *f*, arranged and operating substantially as described.

2. In a car-truck, the combination of the rigid frame A composed of side frames A', and cross-beams *a* with a bolster, B', shoes d^3, elliptic springs *d d*, shoes d^3, links *e e*, and bars *f*, arranged and constructed to operate substantially as described.

141,860.—Sectional Folding-Frame for Boats.—WILLIAM M. DUCKER, Brooklyn, N. Y. Application filed August 4, 1873.

Folds in three sections by hinging the side supports, to which the covering is attached, its sides supported by ribs attached to the folding bottom or keel by staples. For adjustment, the two center ones held in position by the extended arms or brace to which the row-lock is attached and the bottom or keel attached to the bow and stern by brackets.

Claim.—The frame or skeleton of a boat constructed of sectional side pieces *a* and *g*, and keel-piece B, in combination with the ribs *f*, bow-piece D, stern-piece C, constructed and operating substantially as described, and for the purposes set forth.

141,861.—Manufacture of Watch-Case Centers.—JOHN C. DUNNER, Cincinnati, Ohio. Application filed April 18, 1873.

A bar or plate is first cast, and from this an annular ring is punched which is afterward operated upon in a lathe by special tools to finish both the inner and outer surfaces of the watch-center.

Claim.—The process of manufacturing watch-case centers by casting the metal in the form of a homogeneous flat bar, and by the successive punching and turning operations, all as herein specified.

141,862.—Machine for Making Paper-Bags.—GEORGE DUNHAM, Unionville, Conn. Application filed December 2, 1872.

Sheets pasted on one edge are fed onto a table by reciprocating clamp-bars, where a former (on an intermittingly-moving wheel-frame) carries it down through an opening. The projecting edges of the sheet are folded upon the top of the former by side folders. At the next rotary movement of the former the end of the tube thereon is folded against its end by a series of folders and pasting-plungers, and, as the former moves on the finished end is preserved against radial rollers until the former arrives opposite two vibrating revolving endless aprons, which at the proper time are moved apart and a blade reciprocated between, against the end of the former. A plunger moves out of the former, stripping the bag off, which is supported between it and the blade, and delivers the bag between the aprons. The plunger now collapses by the action of pressing-plates, which, separating, allow the belts to move and feed out the completed bag.

Claim.—1. The radially-arranged rolls I' for preserving the folded end of the bag in its folded form while passing to its position to be removed from the machine, substantially as set forth.

2. As a means of operating the folding-plates f^2 the rod *d*, provided with projections i' and i^2 and *h* and h^1, said rod sliding within the frame O, and the curved pieces i^3 upon said folding-plates, substantially as described.

3. The combination of the rod *d* with the moving frame O, and the arms *f* pivoted thereto, substantially as described.

4. In combination with the moving frame O and the folding-plates f^2, the reciprocating blade V, substantially as set forth.

5. The endless aprons L^1 and L^2, carried by rolls having a stationary bearing at one end, and over rolls which move apart at the other end, substantially as described.

6. The combination of the vibrating endless aprons L^1 and L^2, with the longitudinally-moving frame O, substantially as set forth.

7. The combination of the vibrating endless aprons L^1 and L^2 and frame O, with the folding-plates f^2, and reciprocating blade V, substantially as described.

8. The spring *n*, in combination with the curved piece f^3, as a means of preventing the folding-plate f^2 from swinging open too far, substantially as set forth.

9. The combination of the rotating disk A^4, formers A^5, and the mechanism for removing the bag from the formers, substantially as herein described.

10. The frame O, provided with folding-plates and arranged to move longitudinally within the former, substantially as and for the purpose herein described.

11. The combination of the arms *f* with the reciprocating blade V, operating substantially as and for the purpose herein described.

12. The combination of the arms *f*, reciprocating blade V, and vibrating endless aprons L^1, substantially as herein set forth.

13. A series of formers, A^5, equidistant from each other, revolving around a common center and having a hinged or folding end, substantially as described.

14. The hinged or folding end former A^6, in combination with the blade V, substantially as described.

141,863.—Harvester.—JOHN H. ELWARD, St. Paul, Minn. Application filed March 13, 1873.

The coupling-frame and shoe are made rigid with the main frame, but capable of vertical adjustment.

Claim.—1. The cutter or coupling frame K K', provided with the brace K^2 and and shoe L, rigidly connected with the frame A A', but made capable of vertical adjustment, substantially as described.

2. The fixed or stationary shoe L, provided with boxes or bearings for the crank-shaft N, and made capable of adjustment, as described, in combination with the jointed tumbling-shaft E and finger bar or head *m*, hinged to and turning upon the journals of the crank-shaft, as described.

141,864.—Harvester.—JOHN H. ELWARD, Polo, Ill. Application filed December 27, 1871.

The cut grain falls upon a horizontal endless apron which carries it to the elevating-apron, and by the latter is carried to the binders, who stand upon a platform which is provided with openings to allow the loose grain to fall through, when it is gathered by a receptacle provided for that purpose.

Claim.—1. In combination with the binders' platform, provided with openings, the pouch H^1, or supplemental grain-receptacle, adapted to receive the shattered grain from the platform and protect it against injury from the feet of the binders.

2. The combination, substantially as described, of the elevating apparatus and binders' platform with the grain guard, made in two or more hinged sections, whereby ready access is afforded to the gearing and under side of the elevator.

3. In combination with a removable gear plank or frame, the main-driving and gear wheel A, provided with two concentric gears and two crank-shafts, the forward one being inclined and driven at a high speed for mowing, the rear shaft being driven at a lower speed for reaping, these parts being arranged substantially as described, whereby the gearing is adapted to be used for both reaping and mowing.

141,865.—Harvester.—JOHN H. ELWARD, St. Paul, Minn. Application filed February 14, 1873.

The elevating-apron is provided on its lower side with a continuous shield, between which and the compressing and clearing rods the grain is carried and dropped upon a stationary binders' attachment, which is surrounded by a curved receptacle.

Claim.—1. The combination of the continuous shield H, elevator-rakes *g g'*, and spring-rods *k*, arranged and operating substantially as described.

2. The shield H H^1 H^2, extending from the horizontal apron to and terminating in the grain-receptacle I, substantially as and for the purpose set forth.

3. The combination of the shield H, rakes *g g'*, spring-rods *k*, receiving-fingers *i*, and receptacle I, substantially as and for the purpose set forth.

4. The binders' support, composed of the overhanging pivoted arms M, saddle-bars N, stirrups or saddles O, and stirrup-bars P, substantially as and for the purpose described.

5. The binders' support, as recited in the last-preceding clause of claim, in combination with the canvas receptacle surrounding or inclosing said support, substantially as described.

6. The reciprocating sickle-lever plate *q*, arranged and operating substantially as described.

141,866.—Harvester.—JOHN H. ELWARD, St. Paul, Minn. Application filed May 26, 1873.

The cut grain is carried by the elevating-apron to the binders' table or to the secondary elevating-apron, by which it is discharged into a receptacle.

Claim.—1. The roller J', in combination with the yielding spring-board J, substantially as and for the purposes set forth.

2. The lifting-roller K, in combination with the spring-board J, substantially as and for the purpose set forth.

3. The lifting-roller K, mounted in pivotal bearings on the seat-support, substantially as and for the purpose set forth.

4. The discharging-roller D, provided with hubs or rings *d*, in combination with the notched slats of the elevator-apron, substantially as and for the purpose set forth.

5. The arrangement of the secondary-elevating and discharging apron C^2 in the described relation to the shield E and shattered grain-receptacle F, substantially as and for the purpose set forth.

141,867.—Harvester.—JOHN H. ELWARD, St. Paul, Minn. Application filed March 13, 1873.

The grain-platform is provided with lifting and sliding bars, whereby the grain is carried to the elevating apparatus.

Claim.—1. The binders' stand I and grain-receptacle I', separated by the partition H, substantially as and for the purpose set forth.

2. The lifting and reciprocating rake-bars *j'*, connected with the parallel bars *j*, and operated by the means and substantially as described.

141,868.—Harvester.—JOHN H. ELWARD, St. Paul, Minn., assignor to ST. PAUL HARVESTER WORKS, same place. Application filed March 13, 1873.

The shipping-lever is operated by a spring to engage the pinion with the driving-shaft, and a stop limiting the throw of said lever, to prevent constant pressure and friction between the shipping-lever and pinion.

Claim.—1. The combination, with the pinion or shipping clutch of a harvesting-machine, of the fork or lever F and spring H for holding the pinion engaged with its shaft in the forward movement of the machine, and at the same time permitting its disengagement in backing, and the stop *g* for relieving the pinion when thus engaged from the friction due to the tension of the spring, as described.

2. The combination of shaft D, pinion E, lever F, spring H, stop *g*, rod I, nuts *i i'*, lever J, and spring H', substantially as and for the purposes set forth.

141,869.—Spark-Arrester.—WILLIAM D. FARRAND, New York, N. Y. Application filed July 2, 1873.

Smoke and non-consumed products of combustion ascend a curved flue and empty into a laterally enlarged chamber, from whence they are driven into a water reservoir by force of the exhaust-steam, thence out through two side flues. The water is prevented from being forced out by two guards at the contracted mouth of the reservoir.

Claim.—1. The combination of the smoke-flue B with the laterally-enlarged central chamber C, substantially as and for the purpose herein set forth.

2. The combination, with each other, of the smoke-flue B, the laterally enlarged central chamber C, the guard-plates A A, and the water-tank E, substantially as and for the purpose herein set forth.

3. The combination of the smoke-flue B with the laterally-enlarged central chamber C and the discharging-tubes F F, substantially as and for the purpose herein set forth.

141,870.—Boiler-Furnace.—SAMUEL A. FORD, Chicago, Ill. Application filed May 23, 1873.

Air passes through the hot-air chamber located between the perforated deflected chamber and the boiler, and commingles with the products of combustion as they pass through said deflected chamber.

Claim.—The hot-air chamber C, and deflected perforated chamber D, in combination with the air-pipes E, steam-pipes F and G, arranged substantially as specified and shown, and for the purpose set forth.

141,871.—Screw-Propeller.—DAVID FREED, Philadelphia, Pa. Application filed June 11, 1873.

A flange is arranged at the extremity of the blades, at an obtuse angle to their plane.

Claim.—The concavo-convex angular furrow circularly on the verge of the propeller-blades, the concavity being on the forward

propelling-surface of the blades, and the convexity on the backward propelling-surface thereof, thereby giving propelling advantage by reason of the rush of the water thrown by centrifugal action against the grooved angular surfaces on the verge of the blades, substantially as set forth.

141,872.—Ballot-Box.—JACOB GAMBER, near Petersburg, Pa. Application filed June 4, 1873.

Votes by balls, which, being dropped into the hopper, the first platform is reciprocated, (by means of the crank and gearing,) receiving one of the balls in each opening and retaining them until they pass over the opening in the stationary platform, when they fall into the drawer, and the alarm-bell is struck by mechanism connected with the crank.

Claim.—1. The combination and arrangement, within a box, of a hopper, W, and a sliding platform, F, and stationary platform H, having, respectively, the perforations *g h* to allow the balls dropped into the hopper to pass to the drawer beneath, substantially in the manner and for the purpose set forth.

2. In combination with the cogged gearing M N, ratchet-wheel O, pawl P, connecting-rods L with the bar K, the foot V on the vertical connection with K, to operate the levers T U and hammer of the bell R, in the manner and for the purpose set forth.

141,873.—Coach-Pad for Harness.—ALGERNON GILLIAM, Pittsburg, Pa. Application filed May 29, 1873.

Claim.—The pad-strap B, having formed within it an elongated slot or depression, *a*, to receive the bur or nut E, without any other mode or means of fastening such nut, in combination with the pad-tree A and terret F, the whole constructed and arranged in the manner and for the purpose herein described.

141,874.—Bolt for Safe-Doors, &c.—WILLIAM HALL, Brookline, Mass. Application filed June 16, 1873.

A series of triangular-headed bolts is arranged in the corners of the door, and wedge-shaped bolts interposed between them so as to form a protection entirely around the door when the bolts are thrown out.

Claim.—1. A series of triangular-headed corner bolts, C, in combination with the wedge-shaped bolts D, so as to form a protection entirely around the door of a safe or vault, substantially as and for the purpose set forth.

2. The bolts C D, with their inclined joints *m*, operated together so as to prevent them from separating when thrown out, substantially as described.

3. A safe or vault door provided with triangular-headed bolts C, constructed as described, and thrown out from two or more of its corners, substantially as and for the purpose set forth.

141,875.—Three-Horse Equalizer.—THOMAS HOADLEY, Tonica, Ill. Application filed May 9, 1873.

Claim.—In a three-horse equalizer, the combination of the central draft-lever C, pivoted to the tongue A, straps *g g*, levers D E, bar B, and tongue A, substantially as and for the purpose described.

141,876.—Combination Lock.—AUSTIN D. HOFFMAN, Chicago, Ill., assignor, by mesne assignments, of part interest to NATHAN FRIEDMAN and ABRAHAM LIEBENSTEIN, same place.—B. Application filed March 21, 1873.

An adjustable graduated disk is loosely mounted on the operating spindle, and confined between a collar on the spindle and the knob, the latter being longitudinally adjustable on the spindle by means of a screw, for the purpose of releasing and readjusting the graduated disk when it is desired to change the combination. The head of the screw that secures the knob to the spindle is arranged in a depression in the face of the knob, so that a seal may be applied to the depression, and thus secure the screw.

Claim.—1. In a combination tumbler-lock, the adjustable graduated disk H, loosely mounted on the spindle F and arranged between the collar *d* and the knob I, the said collar being rigid on the said spindle, and the knob I being longitudinally adjustable on the spindle and attached thereto by means of a screw arranged in a depression in the face of the knob, and entering the end of the spindle, all substantially as and for the purposes specified.

2. In a combination tumbler-lock, the latch or bolt K, provided with a lifting-arm extending through the case, and having its outer end made hook-shaped, and its inner end constructed and arranged to engage the tumbler-notches, substantially as shown and described, and for the purposes set forth.

141,877.—Nut and Bolt Fastening.—PHINEAS F. KING, St. Louis, Mo. Application filed May 19, 1873.

Claim.—1. Two half-bolts, provided with nuts, and arranged to operate in opposite directions with relation to each other, as and for the purpose set forth.

2. The combination of the parts A A', having heads *a a'*, nuts B B', as and for the purpose set forth.

141,878.—Process for Preserving Milk.—LOUIS F. KIECHNOVER, Union Hill, New Jersey, assignor, by mesne assignments, to JAMES E. WHEELER. Application filed February 10, 1873.

Claim.—The process herein described for preserving milk, consisting in the gradual raising of the temperature of the milk, before it has cooled after milking the cow, from its natural temperature to between one hundred and sixty degrees (160°) and one hundred and seventy degrees (170°) of Fahrenheit's thermometer, and the continued subjection of the milk to that temperature for a longer or shorter period, according to the length of time it is desired to preserve the milk.

141,879.—Wire Tie for Baling Hay, &c.—GEORGE L. LAUGHLAND, New York, N. Y. Application filed August 2, 1873.

Claim.—1. A wire tie for baling hay and similar substance, composed of a bright or unannealed wire band, the ends of which are upset, riveted, or enlarged at opposite ends of a holder, constructed and operating substantially as herein described, and for the purpose set forth.

2. As a new article of manufacture, for baling hay, wires or wire rods cut into suitable lengths, and their ends upset or enlarged, and ready to be united to holders without twisting, as described and represented.

141,880.—Smoothing-Iron.—AUSTIN S. MANN, Pittsburg, Pa. Application filed June 3, 1873.

From each end of the handle descends a shank, having at its extremity a horizontal pivot, which, by the flexibility of the shanks, can be made to spring into a front and rear depression in the ironing-block, for the purpose of reversing its upper and under faces. A shield between the block and the handle has also the function of holding the pivots to the block.

Claim.—1. The ironing-block A and its handle, constructed and connected together as described, in combination with a tie, D, arranged on a line intermediate between the handle proper and the top of the iron, substantially as specified.

2. A reversible ironing-block, A, of wedge-shaped form, and its handle, constructed and connected together as described, in combination with a tie, D, arranged in an inclined position on a line intermediate between the handle proper and the iron, substantially as and for the purpose specified.

3. A seal-iron in which the ironing-block A and the handle are constructed and connected together as described, in combination with a tie, D, composed of a plate of sheet metal, and arranged on a line intermediate between the handle proper and the iron, substantially as specified.

141,881.—Plow.—JAMES MARR, Simcoe, Canada. Application filed March 14, 1873.

Self-holding plow; balance-wheel in rear and wheel in front to gage furrow to uniform width.

Claim.—1. The combined axle and lever *a*, constructed in one piece, bent and arranged as described, and attached to the beam A by the hanger *b*, in combination with the wheel D and rack *d*, as hereinbefore specified.

2. In a self-holding plow, the upright *e*, carrying the holding-wheel E and attached to the slotted arm *f*, substantially as and for the purpose described.

141,882.—Mold for Ice-Cream, Jellies, &c.—EDGAR M. MAY, Fond du Lac, Wis. Application filed February 8, 1873.

Claim.—In a mold for ices, &c., the cups B B attached to the pivoted bars A A, and provided with the filling-openings *b*, substantially as shown and described.

141,883.—Reversible Knob-Latch.—CHRISTOPHER MOODY, Toronto, Canada, assignor to WILLIAM GRIFFITH, same place. Application filed February 10, 1873.

Claim.—The combination, with the knobs H, levers I, and a lever, A, of a lock, the double-ended reversible bolt C, (provided with lugs J,) pivoted pawl D, and sliding block G, all arranged, constructed, and operating substantially as shown and described.

141,884.—Horse Hay-Rake.—BEN MOSES, Ithaca, N. Y.—Case A. Application filed March 6, 1873.

A sliding stop arranged on the presser-bar, and operated by a spring and levers, engages with a supporting-wheel by which the rake is raised and the accumulated hay discharged.

Claim.—1. The whiffletree-bar *b* with its adjustment at *a*, in combination with stop *b'*, as and for the purpose described.

2. The combination of foot-lever *e*, connected with the angled part of piece *g*, and the stop *i* holding the bars *d* and teeth to the ground.

3. The stop *i* with its spring-arm *i''*, in combination with the plate *j*, as and for the purpose set forth.

4. The angled part or lever *g* fast to the axle of the rake-frame, and with three connections, one to the foot-lever, another to the stop, and the other to the slide *m*.

5. The slide *m* with head *m'*, its spring *o*, and snap lock *p*, in combination with the catch-wheel *n* and lever *l*, rod *k*, angled lever *g*, rod *f*, and foot-piece *e*, as set forth.

6. The snap-lock *p* and stop for the notch *n'* in the slide *m* and trip-screw bolt *r*, in combination with the levers *l* and *g*, rods *k* and *f*, and foot-piece *e*, as set forth.

7. The lever *l* arranged on the left-hand brace of the rake-head, with a slot in one end and a swivel in the other.

8. The set-screw arranged in the seat-rod *r* for tilting the snap *p*.

141,885.—Apparatus for Oiling, Testing, and Washing Fire-Engine Hose.—PERSON NOYES, Lowell, Mass. Application filed February 26, 1873.

An inclined trough is connected with a pump and tank, so that water or oil may be forced through or into the hose for cleaning oiling, or testing it, as desired. The pipe to which the hose is connected has a supplemental pipe through which the surplus oil can be returned to the tank.

Claim.—1. The inclined trough H, in combination with the tank A and pump B, with a pipe, M, as described, all arranged and operating in the manner and for the purpose specified.

2. The method or process, substantially as herein described, of oiling fire-engine hose, viz., by filling the hose with oiling material, and by pressure applied to force the oil into or through the leather, as set forth.

141,886.—Gas Apparatus for Railway Cars.—JAMES B. OLNEY, Brooklyn, N. Y. Application filed July 22, 1873.

Claim.—1. A gas apparatus suitable for lighting railroad cars, composed of a strong vessel for holding compressed air, an automatic valve or governor for discharging the air under uniform pressure, and a carbureting apparatus, all substantially as described.

2. The air-receiver D and governor E, having an automatic valve between them, in combination with a carbureting-chamber for operating in close connection with one or more vapor-burners, the whole mounted upon a railway car, substantially as described, for the purpose specified.

141,887.—Table-Leaf Support.—EDWIN W. PERRIN, Portland, Oreg., assignor of one-half his right to W. RO. WELDON, Solano County, Cal. Application filed December 16, 1872.

To the side frame of the table is attached a rod working in bearings, to which is attached, at the end of the table, a segment, and, near the center of the table, a lever, which has, at its upper end, a cross-head working in groove guides attached to the under side of the leaf. To the end of the table is pivoted a weighted pawl, which is pressed into the notches of the segment on the rod by a suitable spring.

Claim.—The pawls D, the gears A, the rods E, and levers F, together with the cross-heads H and grooved guides G, so attached and arranged as to act as supports to table leaves.

141,888.—Bellows.—WILLIAM PILCHER, Chicago, Ill. Application filed November 25, 1872.

Pockets or receptacles for weights are attached to the inside of the top of the bellows and provided with covers, so that the weights are less liable to be tampered with as when they are attached to the outside.

Claim.—A bellows when provided with one or more receptacles for weights, or with weights located within the bellows, substantially as and for the purposes specified.

141,889.—Soldering-Furnace.—WILLIAM S. POTWIN, Chicago, Ill. Application filed February 10, 1873.

Claim.—In a soldering-pot, the combination, construction, and arrangement of one or more tool-receiving chambers, F, fire-pot E, grate E', opening G, and damper G', all substantially as shown and described, and for the purposes set forth.

141,890.—Furnace Grate-Bar.—ALONZO RAWSON, Des Moines, Iowa. Application filed June 23, 1873.

An air-reservoir communicates with hollow bars by means of a sliding perforated top and pendent slide. When solid bars are used communication is established through the perforations in the top slide between the reservoir and furnace.

Claim.—1. The open box-reservoir A B and sliding cover and duplex register C D, when combined and operated with hollow grate-bars, substantially as described, and for the purposes specified.

2. The box-reservoir A B and sliding cover C, when combined and operated with hollow or solid grate-bars, in the manner described, and for the purposes specified.

141,891.—Grate for Stoves and Furnaces.—JEREMIAH J. RICHARDSON, Brooklyn, N. Y. Application filed March 3, 1873.

Claim.—1. The conical grate center E, solid-faced and radially-ribbed, and having a central aperture, *e*, as set forth.

2. The combination, with the perforated grate-center E, of the hollow center pivot D, adapted to communicate shaking motion to the said grate-center, and to conduct air to the aperture therein, as explained.

3. The combination with the supporting-bridge B, with flat ends resting on suitable seats *a a* in the ring A, and with a central socket, the grate E F pivoted to the said bridge, and the rest *j* to permit the tipping of the grate forward for dumping, but prevent it tipping backward, all substantially as set forth.

4. The compound grate constructed, as herein described, with a ribbed center, E, and with an annular external portion, F, constructed with angular bars, the said parts being adapted for either independent or simultaneous shaking, and for dumping in connection, all substantially as described.

141,892.—Earth-Auger.—WILLIAM H. SALTER, Corning, Iowa, assignor of one-half his right to JAMES M. CAMPBELL. Application filed June 25, 1873.

The skeleton frame is connected to the tube which slides on the shaft, and is coupled with it by means of a spring and notch. The hinged sections D E are attached to the frame to form the bucket. When the bucket is full it is drawn up on the shaft and emptied, and then returned to its work.

Claim.—1. The shoulder *a* and spring *b* combined with the shaft A, substantially as described, and for the purposes specified.

2. The skeleton frame B B B' B', carrying cutters 1 2 3, the tube C, and hinged sections of a bucket, D D and E E, when combined and operated substantially as described, and for the purposes specified.

3. The roller *f*, when mounted in a loop and combined and operated with the rope or chain *g*, shaft A, and tube C, substantially as described, and for the purposes specified.

141,893.—Pipe-Coupling.—LEVI T. SCOFIELD, Cleveland, Ohio. Application filed June 23, 1873.

A long tapering coupling, diminishing in size from left to right, receives pipes, having their ends which enter the coupling of slightly-tapering form and provided with screw-threads, the other ends of the pipes entering the sleeves of an ordinary coupling.

Claim.—The combination of the two parts B and C with the parts A D E, substantially as described.

141,894.—Shuttle for Sewing-Machines.—JEROME B. SACON, Bridgeport, Conn. Application filed July 25, 1873.

One side of the frame is rounded to prevent abrasion of the thread, and the other is notched and grooved to properly guide it. The frame carries the tension-plates and also forked projections for securing the bobbin in place.

Claim.—The pivoted frame B, having its side portions constructed as described, and provided with the forked projections *b* and tension devices C *c*, when combined with a shuttle, as and for the purposes herein set forth.

141,895.—Car-Coupling.—FREDERICK J. SEYBOLD, Chicago, Ill. Application filed January 9, 1873.

The link striking the lever in front raises the lower end of the lever, which passes through the slot in the pin and raises the pin; the link passes under the pin, the pin drops, and the coupling is completed.

Claim.—The combination, in a draw-head, A, of an angular lever, D, with a pin, C, having an angular slot, B, substantially as described, and for the purpose set forth.

141,896.—Apparatus for Closing Doors.—HENRY F. SHAW, West Roxbury, Mass. Application filed December 27, 1872.

Claim.—In an apparatus for automatically closing doors, the combination of the cylinder C and the weighted piston D, provided with the flexible cup-packing *a*, fitted to slide freely therein, and connected to the door in a suitable manner, when constructed and arranged to close the door by the force of gravity, and prevent the acceleration of the motion of the weight in its descent by the gradual escape of the air from the chamber below the weight, substantially as herein set forth and described.

141,897.—Compound for Paint.—FREDERICK A. STALL, Boston, Mass. Application filed August 4, 1873.

Mixture of tar, asphaltum, silicate of soda, dead-oil, ground slate or equivalent, plumbago, gum dammar or equivalent, lime, coal-ashes, rosin-oil. Heat slowly, stirring constantly.

Claim.—The improved paints, prepared in the manner and of the materials substantially as described.

141,898.—Electric Annunciator.—ALBERT STORER, Cleveland, Ohio. Application filed April 7, 1873.

An armature concealing a number is centrally pivoted between poles of magnet, and is attracted thereby on closure of circuit, swinging from a vertical to horizontal position. In so swinging the armature closes a local circuit, locking itself into position. Breaking this circuit restores armature to position, thus avoiding need of special devices therefor.

Claim.—1. An electro-magnetic annunciator, having the armature C centrally pivoted at a point between the poles of the magnet, in the manner described, so as to assume a horizontal position when acted upon for the purpose of indicating the locality from whence operated, as set forth.

2. The armature C, arranged and operating as described, provided with a pin, E, in combination with spring-arm F and post G, so as to transfer the current from the main to a local circuit, for the purpose of retaining the armature in its horizontal position until said local circuit shall be broken.

141,899.—Hook for Hanging Tobacco.—HENRY N. STILSON, Portland, Conn. Application filed April 16, 1873.

The hanger is formed into a hook to fit upon and project horizontally from the lath, and has a flat spear-point, the projections of which extend laterally. The point is forced through and afterward turned in the stalk so that the spear-point will prevent dislodgement.

Claim.—A tobacco-hook, having one of its legs, as *b'*, inclined, as shown, and having a laterally-expanded spear-point, *b''*, all constructed and designed for use upon a lath, substantially as described.

141,900.—Automatic Gate.—JOSEPH E. STONE, Newton Brook, Canada. Application filed July 24, 1873.

Claim.—The combination, with a tilting gate such as herein described, of the balance-levers *g g*, supported in stirrups *h'*, suspended from a cross-bar, *i*, and provided with chains or ropes *g'*, connecting-rods *f*, and looped chains *c'*, all arranged, constructed, and operated substantially as shown and described.

141,901.—Clamp for Thill-Couplings.—MARTIN TAYLOR, Hartford, Conn. Application filed May 29, 1873.

Claim.—The combination of the box *c*, having the shoulder *c'* fitted to take hold of the beak of a thill-shackle, the rod *b*, provided with the claw *c*, fitted to embrace the end of the thill-strap, and the hand-wheel *d*, the whole constructed, arranged, and designed for operation and use substantially as described.

141,902.—Pitman.—OSCAR F. THOMAS, Barnes' Corners, assignor to himself, ARNOLD C. HUGHES, Rodman, and ANDREW J. GLASURE, Pinckney, N. Y. Application filed November 8, 1872.

Claim.—The combination of the rod A and adjustable piece D, having conical points C C', with the nut F and collar G, when constructed and arranged to operate as and for the purpose herein specified.

141,903.—Potato-Digger.—SAMUEL W. TYLER, Troy, N. Y. Application filed August 6, 1873.

A thin blade cuts beneath the hills, and the potatoes are separated by sectional diggers, which follow in the rear of the blade.

Claim.—1. A narrow slicing-blade, A, which serves as a gage, in combination with sectional diggers, which are arranged to follow, substantially as described.

2. An entering-blade for potato-digging machines which is made to tilt independently of the draft device while being drawn along through the soil, in combination with controlling handles, substantially as described.

3. Rotary diggers which consist of bent arms extending from a central hub, and are arranged to dig potatoes by bringing the convex or highest side of the arms in contact with the earth and potatoes, substantially as described.

141,904.—Sash-Holder.—THEOPHILUS WEAVER, Harrisburg, Pa., assignor to HENRY C. DEMINO, same place. Application filed April 26, 1873.

A sliding friction-plate, slotted in double inclines, and having a double-inclined toothed rack—all formed of one piece—is attached to side of the sash. On this plate works a rotating lever having a toothed crown and suitable handle. A single screw passing through both attaches the device and serves as a fulcrum for the lever.

Claim.—A sash-holder, consisting of the double-inclined toothed rack M N and the slotted plate A C B V in one piece, and the rotating lever W G provided with the toothed crown R G R and handle W S, all constructed, arranged, and operating as shown and described, and for the purpose set forth.

141,905.—Vehicle.—EUGENE D. WELLER, Lima, N. Y. Application filed June 28, 1873.

The axles are centrally elevated or arched. The reaches are jointed and vertically adjustable, and the springs are arched longitudinally.

Claim.—1. A vehicle having its reaches attached to the rear axle or bolster and front bolster, and jointed together between said axle and bolster, in combination with longitudinal springs which support said jointed reaches, substantially as described.

2. The braces G or G', arranged, as described, in front and rear parts of the running-gear, the latter containing raised and jointed reaches, substantially as described.

3. The arrangement of the spring-supporting links below the front and rear extremities of the reach-sections, substantially as described.

4. The reach-sections D D, sustained by springs S S at or near the middle of their length by means of the brackets K K, said sections being jointed substantially as described.

5. Wedges w and packing c, applied between the central extremities of the jointed reaches D and a block, F, said wedges being adjusted substantially as described.

6. The combination of jointed reaches and longitudinal springs, which are centrally raised at their extremities, the springs being depressed below the reaches, and connected to axle and bolster, substantially as described.

141,906.—Cant-Hook.—REUBEN WHITTIER, Oshkosh, Wis., assignor of one-half his right to RICHARD HACKETT, same place. Application filed February 1, 1872.

Claim.—The flexible cant-hook B, when constructed with joints having a limited movement, substantially as shown and described.

141,907.—Loom.—JOHN ZÜRCHER, Lancaster, Pa. Application filed June 18, 1873.

The improvement relates to the class of looms known as swivel-looms for ornamenting fabrics. The shuttles are arranged in a series upon a reciprocating stitching-frame, and each consists of a metal plate carrying a perpendicular bobbin and moving in a groove in a plate fixed upon the frame, being held in said groove by flat springs, which bear upon the top of the shuttle-plate. The shuttles are passed from one shuttle-guide to another and back by vibrating fingers pivoted to the stitching-frame and operated by a shifting rail.

Claim.—The arrangement of the grooved shuttle-guides H, springs E E', fingers F f, held under or between the strips o o' P, with pivot-pins p on the stitching-bar B, in combination with the shifting rail A and lever R, substantially in the manner shown, and for the purpose described.

141,908.—Boot-Heel Screw.—WILLIAM ACKERMAN, Flint, Mich. Application filed February 1, 1873.

Claim.—A heel-screw for boots and shoes, having the conical form, threaded point, and channeled sides, as shown in Fig. 1 of drawing, and for the purpose described.

141,909.—Reversible Rotary Steam-Engine.—ORWIN ADAMS, Black Hawk, Colorado Ter. Application filed March 8, 1873.

Circular and elliptical guides are arranged in the sides of the case, and adjustable from without to operate the sliding yoked piston, so that the exhaust steam may freely escape around the edge of the pistons as soon as they have completed their stroke. The balanced poppet cut-off valve is operated by a cam on the shaft of the oscillating valve, and a dog, pivoted ball-crank lever, and spring. As the valve opens the steam is caught and locked by a catch or tappet attached to the lever.

Claim.—1. The circular guide L and the elliptical guide M, in combination with the slides K, yokes J, pistons I, drum H, and cylinder or case N, substantially as herein shown and described.

2. In combination with the valve-stem X, the spring A', bell-crank lever V, dog T, trip-bar U, and reciprocating rod Q, as specified.

141,910.—Fish-Hook.—BENJAMIN F. ALLEN, Boston, Mass. Application filed July 10, 1873.

Claim.—The fish-hook A, provided with the quadruple beads W X Z Y, substantially as herein described and shown.

141,911.—Ferry-Bridge.—CARROLL J. ATKINS, Louisiana, Mo. Application filed July 19, 1873.

Claim.—1. The combination of an incline, F, on the bow of a ferry-boat with a bridge, A, arranged to swing down at the front edge as low as the deck of the boat at low water, substantially as specified.

2. The combination of projections H on the boat and counterpart notches G on the bridge, to align the rails on the boat and the bridge automatically when they come together, substantially as specified.

141,912.—Furnace for Smelting Ores.—EDWARD BALBACH, Jr., Newark, N. J. Application filed June 30, 1873.

Claim.—A furnace for smelting ores or other purposes, having its bottom and sides surrounded by a trough or troughs of running water, substantially as and for the purposes herein set forth and described.

141,913.—Land-Marker.—GEORGE W. BETTS, Shadeville, Ohio. Application filed June 7, 1873.

A frame mounted on wheels. To the front cross-bar is secured the marker or plow-beams; from the center of the beams arms project upward, which are secured to arms pivoted to the front cross-beam, and extend back and between uprights secured on the rear part of the frame. The markers are adjusted by means of a foot-lever.

Claim.—The combination, with the lever-frame F F H, the treadle I K, and plow-beams D, connected with the former by bars E, of the sliding bar O, working between uprights P, and the vertical pivoted lever M, as shown and described.

141,914.—Apparatus for Treating Cane-Juice with Sulphur Fumes.—WILLIAM G. BILLIU, Thibodeaux, La. Application filed January 11, 1873.

Claim.—1. A series of heating-wheels, C, arranged on the same shaft and separated by partitions D, in case A, in combination with the spray-receiving table F, which passes the juice successively to each wheel, from one end of the case to the other, and finally out at D, as set forth.

2. The combination of the return-spout G', having a perforated bottom at one end only, with the first heater-wheel C, and the compartment in which it revolves, as and for the purpose specified.

141,915.—Micrometer-Gage.—ANTOINE BONNAZ, Paris, France. Application filed May 9, 1873.

The head of the micrometer-screw and its graduated sleeve are connected to the screw by a swivel with interposed friction-washer, for the purpose of giving uniformity of contact pressure.

Claim.—1. The washer M having the springs m m m and the swivel-screw G applied as a connection between the parts C D and knob E in the manner described, to cause them to rotate together until the article is reached, when the screw and socket may stop while the knob continues.

2. The combination, with vertically-rotated stationary nut or socket a and a stationary support, B, of the screw C and knob E connected by friction, substantially as and for the purpose set forth.

141,916.—Earth-Boring Machine.—JOSEPH BURNS, Anamosa, Iowa. Application filed April 12, 1873.

The screw-shaped cutting-blade is loose on the square shaft, upon which it is adjusted by a set-screw, so as to expose more or less of the centering point. A screw-shaped carrier rests upon the cutting-blade, and is also movable. The boring-shaft is actuated by vibrating levers driven from a continuously-rotating shaft by cranks and links, and having spring-pawls which engage with a ratchet-wheel upon the boring-shaft, so as to be reversible and rotate it in either direction at pleasure.

Claim.—1. The three-part auger, consisting of the square-shanked centering-bit B, the spiral cutting-blade C, adapted to be adjusted relatively to the centering-bit, and the spiral carrier D, resting upon and continuous with the blade C, all substantially as described.

2. The vibrating levers E E, provided with carrying-pawls S S, and pivoted loosely on auger-shaft, in combination with the ratchet-nut T, as and for the purpose described.

141,917.—Grain-Sieve.—LOREN D. CARPENTER, Buffalo Grove, Iowa. Application filed June 21, 1873.

The short grain passes through, while the long grain is retained.

Claim.—An improved grain-sieve formed of the pieces a, arranged to incline and overlap, and bent up at their lower edges, and perforated with holes c at or near the angle, as shown and described, whereby a series of inclined troughs with perforated bottoms are formed, as set forth.

141,918.—Crib.—WARD B. CARPENTER, West Topsham, Vt. Application filed May 31, 1873.

Claim.—1. A cradle or crib, provided with sectional pivoted rockers to adapt the cradle to be converted into a stationary crib or vice versa, by simply elevating or depressing said rockers, as herein shown and described.

2. The combination, with the cradle A having recessed head and foot boards, of the slides C pivoted to the adjacent ends of the rockers B B, as shown and described, whereby said slides are adapted to be adjusted vertically by means of a suitable device attached to the cradle.

3. In combination with the pivoted rockers B and adjustable slides C, the shaft h eccentric f, connecting-rod g, and handle or crank e, as and for the purpose specified.

141,919.—Hoisting-Jack.—JOHN H. CHURCHILL, Cross River, N. Y. Application filed July 26, 1873.

A bell-crank lever with treadle, which acts by means of an intermediate connecting-rod and weighted link on a sliding rack, guided between a frame.

Claim.—The hoisting-jack consisting of frame A with upright pillars C, in combination with bell-crank lever D, intermediate rod E, weighted link F, and sliding rack G, all arranged and operated substantially as and for the purpose described.

141,920.—Can for Oil, &c.—JONAH R. COLE, Morrisania, N. Y. Application filed June 27, 1873.

The side of the spout extends beyond the metal cylinder so that all the oil in the cylinder can flow freely out. A part of the wood casing is removed in order that the metal loop, at its upper end, and the spout of the can may be soldered together.

Claim.—1. The pouring-spout and cork-holding thimble, applied to the sheet-metal can so that the thimble projects beyond the side of the can, as and for the purposes set forth.

2. The sheet-metal can, with the pouring-spout and cork-holding thimble projecting at one side, in combination with the notched wooden case and the hoop t that surrounds the case and spout, as set forth.

141,921.—Clothes-Line Holder.—WILLIAM COOKE, New York, N. Y. Application filed June 28, 1873.

A cleat, attached by screws, has two vertical prongs at top and one at bottom, with a buckle between. Two lines may be attached by passing each through the buckle and around one of the prongs.

Claim.—The within-described clothes-line holder, consisting of the body A with hook B, fork C having its prongs bent outward and then inward, and the buckle E, all constructed and arranged substantially as and for the purposes herein set forth.

141,922.—Machine for Feeding Wire to Hammer-Dies.—WILLIAM H. DAYTON, Wolcottville, Conn., assignor to "EXCELSIOR NEEDLE CO.," same place. Application filed March 21, 1873.

The hopper that contains the short sections of wire rises and falls, to permit the feeding-jaws to automatically draw a single section therefrom. The jaws feed the section between reducing-dies and slightly reciprocate it while there. An elastic bearing, between the cam that feeds the jaws forward and their table, prevents a rigid grasp on the section when had between the dies and while under their operation.

Claim.—1. A pair of jaws opened and closed to grasp a blank, and moved back and forth in line of the blank, in combination with the rubber spring 11 or other yielding material interposed between the jaws and their actuating mechanism, substantially as set forth.

2. A hopper to which a rising-and-falling motion is communicated, in combination with a pair of jaws that are reciprocated to draw the blank out of the hopper, and then carry the same forward into the reducing-dies, substantially as set forth.

3. The cam t, arm t', shaft v, arm u, adjusting-screw 24, and stop w, in combination with the hopper s and attaching-screw 25, for moving and adjusting such hopper, as set forth.

4. The wedge 7 and its cam w, pinion 9, rack p, slotted lever w', and cam w^2, in combination with the jaws g, for closing such jaws and holding the blank during the movement of such jaws, substantially as set forth.

141,923.—Fluting-Machine.—EDWARD M. DENT, New York, N. Y. Application filed May 17, 1873.

The pressure-springs pass through the frame so the roller can be raised without contracting them. The tongue is a guide to prevent lateral vibration of the roller. The wheel which imparts motion to the roller is an independent shaft which couples with the roller.

Claim.—1. The pressure-springs J, arranged to extend through frame K and bear against bar D, substantially as specified.

2. The rotating rod F, pin M, and spiral cam-slot H, combined with frame K and bar D, for raising and lowering the latter, substantially as specified.

3. The combination, with springs C, arranged as described in the first clause of the claim, of devices for raising bar D, and forcing and holding it down, substantially as described in the second clause.

4. The frame K and cap O, when constructed and combined in the manner described, to form the cam-slot.

5. The combination of the slotted extension Q of the bearing-plate E with the tongue P of the frame K, substantially as specified.

6. In a fluting-machine geared with an independent driving-crank, the wheel T and its shaft S fitted rigidly together, and the shaft coupled with the fluted roller, substantially as specified.

141,924.—Washing-Machine.—DENNIS B. DORSEY, Chittenden, Me., assignor of one-half his right to JOHN DE SHA, same place. Application filed April 25, 1873.

Is constructed with uprights or sides with a center corrugated roll, its upper side covered with a bed of small rolls secured and held in position by a cross-bar, over which is another pivoted at one end. Connected to the upright or side is a lever pivoted to it, resting upon the cross-bar, by which and by the coiled spring the tension of the rolls is regulated.

Claim.—The cylinder D, rollers H, blocks F, tie I, lever K, and spring L, in combination with the lever M, for the uses and purposes shown and described.

141,925.—Automatic Gate.—JOHN S. FOIT, Kenton, Ohio. Application filed May 5, 1873.

The gate is hinged at its upper rear end to hinge-post, with its lower rear end resting on a triangular plate pivoted to the hinge-post, from which extend, in opposite directions, horizontal rods operated by vertical levers pivoted to side posts. An additional vertical lever is pivoted to an inner side post, and also at its bottom to one of the horizontal rods, having a pivoted rod at its top connecting with the top of the gate.

Claim.—The combination of the centrally-pivoted levers F and I and the connecting-rods E K with the swinging plate D and gate C, said gate being pivoted on the plate, as shown and described, to operate as specified.

141,926.—Suspender.—BENJAMIN J. GREELY, Boston, Mass. Application filed June 7, 1873.

A safety-pin, bent from a piece of wire, is attached to the end of the suspender-strap, for pinning it to a waistband.

Claim.—1. The safety-pin A, when constructed substantially as herein shown.

2. The combination of the safety-pins A and suspender-straps B, in the manner described.

141,927.—Annunciator.—CHARLES H. GREENLEAF, Franconia, N. H. Application filed April 28, 1873.

The annunciator is provided with indicating-faces on opposite sides, the sliding bars for representing the numbers as desired extending entirely through, so that a knob when depressed on one side will cause the knob on the opposite end of the bar to be protruded. The usual arrangement is made for connecting all the bars with a bell, and for allowing them to be all restored to place simultaneously or each one separately.

Claim.—The combination of two dials or faces on opposite sides of the annunciator, with a series of sliding bars, D, actuated by springs, whereby the movement of a bar will indicate the number of a room on both dials simultaneously, substantially as and for the purpose described.

141,928.—Foot-Power Apparatus.—EBENEZER HARDING and HENRY HARDING, Delavan, Minn. Application filed July 5, 1873.

Claim.—The combination of a foot-treadle, crank-shaft, balance-wheel, transmitting and converting lever, and connecting-rod, the transmitting-lever being connected at one end to a fixed bar, and at the other end to the machine to be driven, and the connections of said rod with said fixed bar and with the connecting-rod by which it is worked being variable, substantially as specified.

141,929.—Sheet-Metal Roofing.—EDWARD C. HEISLER and FREDERICK W. MATTHIESSEN, La Salle, Ill. Application filed July 26, 1873.

Claim.—The fine corrugation of sheet-zinc and other sheet metal used in the construction of roofs, eaves-troughs, gutters, and similar articles, arranged in the direction crosswise to the pitch of the roof; also crosswise to the length direction of the gutter, substantially in the manner and for the purpose specified.

141,930.—Mallet.—ALBERT HOLBROOK, Providence, R. I. Application filed June 14, 1873.

The body of the mallet, made of metal, has a screw-socket at each end, in which is screwed a coiled raw-hide hammer-head.

Claim.—As a new and improved article of manufacture, a hammer constructed as shown and described, and for the purposes set forth.

141,931.—Fly-Trap.—JESSE R. JOHNSON, Benton Harbor, Mich. Application filed March 29, 1873.

A dish-shaped base, with an elevated plate, having openings and covered ways; above these a perforated cone, a tube, and two inverted cones; and on supports above these a pedestaled vessel and a sliding cover; within that a rod and cover for the tube.

Claim.—1. The raised part B, in connection with plate A and the short covered ways N, in combination with the supports u u and cup H, as constructed and arranged.

2. The obtuse cone D, the small reversed cone E, the tube or pipe F, and the small reversed cone E E, the supports G G, the cup or vessel H, the movable bottom I, the ball or handle J, the

cover K, and the small movable cover L, and also the springs M, to be constructed substantially as described, and for the purposes herein before set forth.

141,932.—Machine for Making Taper Tubes.—THOMAS J. JONES and JOHN T. JONES, Sharon, Pa. Application filed June 28, 1873.

A clamp secures the plate to the bending-mandrel when the bending-plates, operated by its lever, comes down to cause the plate to assume the shape of the mandrel. In welding the tube is placed on a mandrel and both are drawn into holder, leaving only the joint exposed, when the carriage upon which they are supported is passed under the welding-roller.

Claim.—1. The combination of the bending-mandrel A, clamp F, the bending-lever J, bending-plate H, and a ratchet and pawl or other holding devices, substantially as specified.

2. The combination of the movable holder or clamp L, welding-mandrel K, welding-roller N, or its equivalent, and means for operating the carriage and roller, substantially as specified.

3. The combination, in a machine for bending and welding taper tubes, of the bending-mandrel A, lever I, and plate H with the bending-mandrel K, movable holder L, and welding roller N, substantially as herein described.

141,933.—Lamp.—JOHN KIRBY, Jr., Adrian, Mich. Application filed July 5, 1873.

An improvement in hanging-lamps which have a detachable filling-reservoir. In clamping the upper or filling reservoir to a supporting-ring affixed to the lower ends of brackets depending from the ceiling, and also to the upper ends of posts depending from the lower ends of the brackets, lugs on the reservoir work through notches in the ring.

Claim.—1. The reservoir J provided with lugs M, in combination with the ring K having notches, as described, and supported by brackets L, formed on the posts D of the hangers, all as shown and described.

2. The combination of the secondary bottom W, screw V', and stopper V with the permanent reservoir A, substantially as specified.

141,934.—Tool-Receptacle.—LEVI L. LAMB, Chelsea, Mass., assignor to himself and SEWELL K. LOVEWELL, same place. Application filed May 5, 1873.

A cylindrical case, A, containing a block, B, supported on a spring, which block has a row of holes passing downward from its upper surface for the reception of bits. A cover-plate, D, with corresponding holes, and a rotatable intermediate plate, C, with like perforations. The bits are dropped in the holes in block B, and the latter is then depressed until the tools descend below plate C, when plate C is turned to bring its holes out of coincidence with the ends of the tools.

Claim.—The die-block B *f*, movable on guide *e* and spring supported in case A, the squared rotary stem *i* swiveled in die-block, the squarely-apertured, perforated, and spring-supported plate D, and the perforated top D, combined as and for the purpose described.

141,935.—Glass-Furnace.—WILLIAM LEIGHTON, Jr., Wheeling, W. Va. Application filed March 26, 1873.

Introduces blast into fire-place. Blast-pipe passes through space between cupola and hood, so that blast is heated.

Claim.—In combination with a glass-furnace, the blast-pipe E, passing through the hood and leading into the air-chamber, for conveying a heated blast to the furnace, substantially as specified.

141,936.—Furnace-Grate.—WILLIAM B. LE VAN, Philadelphia, Pa. Application filed May 5, 1873.

Four segments, provided with a series of bars and air-spaces, are united by means of downwardly-projecting lugs. A series of removable central bars are arranged to rest upon bearing-surfaces and to afford support for the fuel, and air-spaces for the maintenance of combustion, such bars being made removable in order that new ones may be substituted as fast as any burn out.

Claim.—1. In a circular grate for furnaces, the combination of four segments, A A A' A', each provided with a series of bars and air-spaces, and united by the downwardly-projecting lugs *a'*, with the series of removable central bars B, these members being combined so as to provide bearing-surfaces for the fuel and air-spaces to support combustion throughout the whole extent of the grate, as set forth.

2. The combination, with the segments, of bearing-bars so arranged as to provide air-spaces between themselves and the segments, substantially as set forth.

141,937.—Fire-Place.—WILLIAM LOSEE, Owensborough, Ky. Application filed May 5, 1873.

Claim.—1. The screw-rod E, secured in the front plate F and passing through the swiveled nut D, connected to the hinged part C of the grate back, as and for the purpose specified.

2. The stationary removable parts G H of the grate, connected by hook side bars K, and the oscillating bottom part I, pivoted in said bars so as to balance, as shown and described.

141,938.—Harvester.—SIMEON LUCE, Syracuse, N. Y., assignor to WILLIAM WALLACE, same place. Application filed April 10, 1873.

The main frame is made tubular, in which the driving-shaft and its journal-bearing are placed.

Claim.—1. The adjustable journal-bearings *c'* and *e e*, constructed and arranged as described, combining the bevel-wheel shaft *c*' and the main shaft *b* with the harvester-frame, substantially as and for the purposes set forth.

2. The combination of the lever *d* with the rear end of the pole by means of the arms *g* and *h* and their shaft connection, substantially as specified.

141,939.—Saw.—VALENTINE LUPPERT and PETER ST. PIERRE, Williamsport, Pa. Application filed September 5, 1872.

Claim.—The saw described, provided with the series of teeth *a a* and the reversed teeth *a' a'*, the latter being located at the extreme lower end of the cutting portion, as and for the purpose described.

141,940.—Turning-Lathe.—JUSTUS P. LUTHER, Berlin, Wis. Application filed April 6, 1873.

The material rests upon a vertically-adjustable bed, and is cut into the required shape by cutters secured in a rotating disk.

Claim.—The construction and arrangement of the frame A, cross-head B, shaft C, disk D provided with cutters *d*, the wedge E, rest F, chuck I, and crank J, substantially as and for the purpose set forth.

141,941.—Umbrella.—JOHN MCAULIVER, New York, N. Y. Application filed March 8, 1873.

The lap or "middle bit" for connecting umbrella-ribs and stretchers.

Claim.—The combination, with ribs A, of the sheet-metal strip, having a double lap, D, at each end, and an intermediate space, E, which entirely closes said rib, as shown and described.

141,942.—Mold or Box for Brick-Presses.—JOHN MCKENNA, Cambria, Pa. Application filed July 26, 1873.

A steel-faced brick-mold, so constructed that, when the steel facing is unevenly worn, it may be trued up and the mold adjusted to its original size.

Claim.—An improved press-box, formed of the separate side pieces A having transverse grooves formed upon the inner sides of their ends, the end pieces B having tenons formed upon their ends, the clamping-bolts C, and the thin metallic packing-strips D, substantially as herein shown and described.

141,943.—Lithographic Stone.—GEORGE H. MOORE, Norwich, Conn., and LOUIS RAGOZE, Washington, D. C.; said MOORE assignor of his right to ESTELLE C. MOORE, Norwich, Conn. Application filed January 11, 1873.

Saws the natural lithographic stones into slabs, (too thin to use in the press by themselves,) and embeds them in a base or backing of artificial stone.

Claim.—A lithographic stone composed of one or more slabs of natural lithographic stone permanently embedded in, or united by or to, a body, base, or back formed of an artificial-stone composition, substantially as herein described, and for the purpose specified.

141,944.—Apparatus for Preserving Beer on Draft.—JOHN W. MOORE, Bellefonte, Pa., assignor to himself and P. GRAY MEEK, same place. Application filed April 19, 1873.

Introduces air into flexible bag in barrel, to take the place of liquid drawn out.

Claim.—1. The two sets of valves I and J, the arms K, connecting-rod L, and lever M, in combination with the bellows H, pipe E, and bag C, substantially as herein shown and described, and for the purposes set forth.

2. The perforated pipe N, in combination with the hollow bung B, and bag C, substantially as herein shown and described, and for the purposes set forth.

141,945.—Metallic Lathing.—TIMOTHY O'CALLAHAN, Boston, Mass. Application filed May 5, 1873.

Claim.—As a new article of manufacture, a metallic sheet or plate for covering ceilings, the same being provided with projections or studs *a*, cast or formed with it, as shown and described.

141,946.—Steam-Trap.—E. LAMSON PERKINS, JOSEPH H. MOULTON, and CHARLES E. SAWYER, Boston, Mass. Application filed March 22, 1871.

Claim.—A steam-trap composed of a wooden frame or side pieces, E E, the braces or guides K, expanding tube A, and adjustable wood valve-seat, as described.

141,947.—Mortar-Mixer.—CHARLES PIERCE, Portland, Mich., assignor to himself and ALMERON PIERCE, same place. Application filed May 8, 1873.

A mortar-mixing machine provided with a beater-shaft, slaking-cylinder, revolving screen, and an adjustable discharge-spout, concaved at its lower end, against which revolves a grinding-wheel, the spout receding as an obstruction passes between it and the wheel.

Claim.—1. In a machine of substantially the described construction, the combination of the screw F, the beaters E, the grinding-wheel H, and the adjustable spout and spring *c*, as described.

2. The adjustable spout, in combination with the grinding-wheel, substantially as described.

141,948.—Machine for Making Chair and Basket Splints.—JOHN B. POE, Worthington, Ind., assignor to himself and JOHN F. ALLISON, same place. Application filed April 12, 1873.

The material is first passed through a gang of circular saws, which are partially immersed in water, and the strips produced by this operation are again divided by a reciprocating saw.

Claim.—1. The combination, with rotary cutters F, of the subjacent water-vessel L, to prevent the cutters from being gummed, in the manner described.

2. The combination, with reciprocating cutter P, of the plates Q R S T, applied as and for the purpose set forth.

141,949.—Millstone-Dressing Machine.—LEWIS RANDOLPH, Jeffersville, Ill. Application filed April 14, 1873.

The end of the guide-bar nearest the eye of the stone is depressed to any required degree by set-screws.

Claim.—The guide-bar L, as constructed as to be adjustable horizontally, substantially as and for the purposes described.

141,950.—Stopper for Bottles.—LAWRENCE RHOADES, Providence, R. I., assignor of one-half his right to WILLIAM E. CLARKE, same place. Application filed July 24, 1873.

A button is held over the opening in the cork by a strip of rubber attached thereto and passing through said opening, the other end secured between the cork and glass. The button is pushed back and the hole in the cork left free, the thumb remaining upon the button while the powder is being sprinkled upon the brush.

Claim.—The device herein described, consisting of the button *a* with its elastic spring, in combination with the cork and bottle, the whole constructed and operating in the manner substantially as described.

141,951.—Wheel-Plow.—LIONEL W. RICHARDSON, Roscoe, Ill. Application filed May 31, 1873.

A bent axle-tree is mounted on wheels, one of which is vertically adjustable. The plow-beam is swiveled at its middle portion to highest section of the axle-tree, and, by means of a catch-lever, can be elevated above the ground.

Claim.—1. The combination of the sleeves F, pivoted rods G, clamp H I, and draft-rod K, with the arched or bent axle A and plow-beam J, substantially as herein shown and described.

2. The combination of the bent lever Q and swivel connecting-rod R with the arched or bent axle A, and the clamp H I, pivoted connecting-rods G, and sleeves F, substantially as herein shown and described.

141,952.—Whip-Socket Fastener.—WILLIAM W. RICHARDSON, Ypsilanti, Mich. Application filed March 17, 1873.

The strap, which is fastened around the outside of the dash-rail, is made of elastic material, the ends of the strap being strengthened by metal eyelets; the object being to adapt the fastener to different-sized dash-rails.

Claim.—1. The combination of the elastic strap C with the rigid jaw B, substantially as described, and for the purposes specified.

2. In fastenings for whip-sockets, the elastic strap C having plates *a*, the latter being punched so as to form an eyelet, *b*, in said strap, for the purposes set forth.

141,953.—Whip-Socket Fastening.—WILLIAM W. RICHARDSON, Ypsilanti, Mich., assignor to himself and WILLIAM A. RICHARDSON, same place. Application filed February 6, 1873.

Made of a single strip of steel, its jaws tempered, and secured to the dash-rail by means of a key.

Claim.—1. In combination with a whip socket or holder, and the dash-rod of a vehicle, the clasp A, embracing and conforming to the outline of said socket and rod, substantially as and for the purposes set forth.

2. The small spring-clasp *d*, or other equivalent device, to secure the clasp A in place, and in combination with it, substantially as specified.

141,954.—Extension-Table.—CHRISTIAN RIEGER, Morrisania, N. Y. Application filed May 17, 1873.

The extension-rails are connected together by pivoted strips, and when extended are held in position by a button on each side. Under the stationary part of the table is a drawer having on its rear edge a spring-catch that, when the the extension-rails are folded, engages with a lip on the rail of the extension-frame.

Claim.—The side and extension rails, the buttons G, the drawer J, and the catches L K, combined as and for the purpose described.

141,955.—Portable Steam-Engine.—REINHARD SCHEIDLER and JOHN H. MCNAMAR, Newark, Ohio. Application filed May 16, 1873.

By the peculiar arrangement of the heater space is economized, and water can be drained therefrom when the engine is stopped, to prevent freezing in winter.

Claim.—The inclined heater J, arranged substantially as and for the purpose described.

141,956.—Crimping-Clamp.—PHILIP A. SCHOELLHORN, Buffalo, N. Y. Application filed May 13, 1873.

The lateral arms afford a means of opening the jaws by compressing them between the thumb and fingers.

Claim.—The combination of the screw D, block or wedge C, tongues B B having lateral arms or projections E E, and the jaws *a a* having holes F F, substantially as shown and described.

141,957.—Pole for Vehicles.—HENRY SCHMIDT, Albany, N. Y. Application filed June 14, 1873.

A trot-bar designed to keep the horses "head and head" while traveling, and to assist a horse that has stumbled in recovering himself.

Claim.—A trotting-bar formed of the two parts A B, the double connecting-nut C, the knobs D, the slotted or grooved sleeves E, the tongue F, the collar G, the swiveled bow H, the rein-bars I, and the ornaments J K, constructed and combined substantially as herein shown and described.

141,958.—Steering Apparatus.—CHARLES A. SEAVEY, Hodgdon's Mills, Me. Application filed May 24, 1873.

Two rack-bars are arranged upon opposite sides of a pinion and engage therewith. These rack bars are attached by sliding connections to a cross-head on the top of the rudder-post, and the rudder is operated through the medium of the rack-bars by rotating the pinion.

Claim.—The combination of the blocks S S working in slots of the yoke P, the rack-bars O O, the spur-gear M, and the shafts B K and their connections, as shown and described, operating as specified.

141,959.—Sawing-Machine.—WILLIAM H. SHUGART, New Garden, Ind. Application filed May 31, 1873.

The saw is reciprocated by means of a lever attached to a segmental gear, acting upon a pinion, which in turn operates the crank to which the saw is attached.

Claim.—The frame A, provided with the segmental gear B, pinion C, and crank G, in combination with the saw E and its operating and guiding mechanism, substantially as specified.

141,960.—Plow.—PATRICK H. STARKE, Richmond, Va. Application filed July 11, 1873.

Parts of the plow are so formed as to be capable of being cast in a two-parted flask. The plow-point is made wedge-shaped, with a tenon having parallel sides extending into a mortise formed by cavities in the land-side and mold-board, and it is held in place by a stud upon the share, entering a cavity in the side of the point.

Claim.—1. The standard R, with beveled side A, bottom B, projection *g*, and swell *f*, as and for the purpose described.

2. The front piece K, with flange *d'*, fork *c*, recess *c'*, sides D *d''*, and flattened surface *d'''*, as and for the purpose set forth.

3. The front piece K, flange *d'*, fork *c*, recess *c'*, sides D *d''*, and flattened surface *d'''*, in combination with flange b and lugs *d e* on standard R, as and for the purpose set forth.

4. The mold-board C, with beveled flange E and flange *e''*, as and for the purpose set forth.

5. The mortise formed by combining the standard, front piece, and mold-board, substantially as shown and described.

6. In a plow, the combination of standard, front piece, and mold-board, each having the form substantially as shown and described.

7. The single wedge-shape plow-point H, provided with a tenon, *a*, and having a groove, G, on each of its two sides, running parallel to the length of the tenon and terminating so as to leave a space between it and the shoulder, in order to fasten the point by means of the share, as set forth.

141,961.—Medical Compound or Piles Liniment.—PETER H. STEINMANSON, Chico, Cal. Application filed April 28, 1873.

Green Jamestown leaves, night-shade, (leaves and all,) elder-bark. Cover with water and boil three days, after which press and strain the juice and boil, adding rusty-bacon grease, sweet-oil, flour sulphur. The whole is then boiled until the water is evaporated.

Claim.—An ointment for the cure of piles composed of the ingredients above enumerated, in about the proportions specified.

141,962.—Device for Preventing Horses from Cribbing.—ALEXANDER STILWELL, Dwaar's Kill, N. Y. Application filed May 31, 1873.

Claim.—1. A device for preventing horses from cribbing, formed of a frame, A D C, bent or elbow lever E, provided with spurs, and a lever, F, arranged substantially as shown and described.

2. The cross N or its equivalent, in combination with the lever F and the guards M M, as and for the purposes described.

3. The combination of the lever F and the cross N with the points H or their equivalent, substantially as and for the purposes described.

141,963.—Veneer Keg.—GEORGE W. SWAN, San Francisco, Cal. Application filed June 18, 1873.

The keg is made of one or more thicknesses of veneer and covered with cloth, the whole united by a cement.

Claim.—As a new article of manufacture, the keg herein shown and described.

141,964.—Plow-Coupling.—THOMAS L. TERRASSON, Paris, Tex. Application filed July 5, 1873.

An extra rod is united with the coupling-rods above and below the angles to strengthen them.

Claim.—The bent bars A, strengthened at their bends by the extra rods *a'*, provided at their lower ends with swiveled clamp-

log-plates B and set-screws C, and at their upper ends with the eyes a^2, slides E, and notches to receive the key D, substantially as herein shown and described.

141,965.—Wheel and Axle for Harvesters.—BENJAMIN G. TURNER, Fremont, Neb. Application filed April 19, 1873.

The wheels are held in place on the axles by adjustable washers, and revolve with the axles. The axles are hollow, open at the ends, and thimble-skeins are cast on them.

Claim.—1. The wheels B B of a header, arranged centrally on hollow axles A A with open ends, between adjustable washers *d d*, the axles having the thimble-skein *e* cast thereon, and arranged to revolve with the wheels in boxes C D attached to beams *b c* of the machine, the whole constructed, combined, and adapted for the purposes substantially as shown and set forth.

2. The adjustable scraper *c*, with arms attached and arranged one on each side of the wheel, in combination with its pivotal or axial support, and the shoe F having beveled shoulders *h*, substantially as set forth.

141,966.—Telegraph-Sounder.—HENRY VAN HOEVENBERGH, Brooklyn, N. Y. Application filed May 9, 1873.

Loose core pivoted at one end to bow *a* plays at other end between end of bow and stop *l*.

Claim.—1. The loose core *c*, hinged to the stationary bow *a* and vibrating between the bow *a* and stop *l*, substantially as set forth.

2. An electro-magnetic sounding-instrument made with a loose core within the helix, substantially as set forth.

3. An electro-magnetic sounding-instrument made with a core that is raised by magnetism and drops by gravity, substantially as set forth.

141,967.—Adjustable Pulley for Gas-Machines, &c.—EDWIN F. VAN HOUTEN, Newark, N. J., assignor of one-half his right to SAMUEL T. TATE, Brooklyn, N. Y. Application filed March 26, 1873.

The bar to which the pulleys are attached is carried by a wheel from one end to the other of a curved bar, arranged above the spool so that the cord is kept in a perpendicular position as it is wound.

Claim.—In combination with the spool E of a gas or other machine, the adjustable bar A, provided with the wheel C and pulleys *a a*, when operating substantially as and for the purposes herein set forth.

141,968.—Apparatus for Carbureting Air.—EDWIN F. VAN HOUTEN, Newark, N. J., assignor of one-half his right to SAMUEL T. TATE, Brooklyn, N. Y. Application filed March 26, 1873.

The vessel containing gasoline is composed of two cylinders, and has within it a bell-shaped float suspended over a cylinder, through which the air to be carbureted passes. A steam-coil in the bottom heats the fluid.

Claim.—1. In an air-carbureting machine, a floating air distributer, E, constructed with an upper chamber, *b*, side pipes *c c*, and air-chamber K, in the manner substantially as described, and for the purposes set forth.

2. The floating air-distributer E, as above described and claimed, in combination with air-pipe F and cylinders A and B, the whole constructed substantially as described, and for the purposes set forth.

3. In an air-carbureting machine, a hot-water or steam-chamber, D, situated in the bottom thereof, in combination with circulating-pipes G *f* extending into the oil-chamber of said machine, each constructed substantially as described, and for the purposes set forth.

141,969.—Log-Turner.—CHARLES VAN VLECK, Sidney, Mich. Application filed July 26, 1873.

A system of adjustable levers, sustained in position by weights, is used to assist the chain and hook in rolling the log upon the carriage.

Claim.—1. In combination with the driven shaft *b*, the chain or rope A, overplane H, shaft *f* with its lifters and pulley, and weight J, for the double purpose of first raising up the inclines *c* to receive the turned-over log, and then to return them into a position out of the way, as described and represented.

2. In combination with the shaft *b*, turned in opposite directions at different times, as stated, the chain or rope *i*, beam-lever *j*, and chain or rope *k* with its hook *w*, as and for the purpose described and represented.

141,970.—Harvester.—WILLIAM WALLACE, Syracuse, N. Y. Application filed April 10, 1873.

The drag-bar is supported by, and allowed to rise and fall on, a quadrant attached to the outer end of the main axle.

Claim.—The sleeve *c*, drag-bar *d* having the bead thereon, and quadrant *g*, against which the drag-bar and bead bear, constructed, arranged, and combined substantially as and for the purposes herein described.

141,971.—Advertising-Lamp.—FRANCISCO R. WARNER, Paris, FRANCE. Application filed November 14, 1872.

A frame, having detachable transparent windows, is adjusted upon a post by means of set-screws and the central tube, which passes vertically through the frame.

Claim.—The lamp-post advertising medium herein described, consisting of the skeleton frame B, glass plates C, central tube E, set-screws *a*, and post A, as set forth.

141,972.—Machinery for Pulling Wool.—JULES WATTEAU, Antwerp, Belgium. Application filed October 28, 1872.

Improvement on patent No. 121,505, of December 5, 1871. The skin is secured upon a drum by means of spring-catches, and, as the drum revolves, the skin is presented to the action of a series of spiral plates attached to a revolving shaft, removing the wool. The fleece, falling upon a table, is rolled up by means of paddle-shaped wings attached to the shaft L.

Claim.—1. The feed-table B, drum B, provided with catches *c*, shaft D, with spiral plates *e*, endless table H, and paddle-shaft L, combined and arranged substantially as described, to pull and roll up the fleece of a sheep-skin.

2. The endless tables E and H, drum B, provided with an automatically-operating catch, and a shaft with striking-plates to pull and preserve entire the fleece of a sheep-skin, substantially as described.

3. The shaft L with its paddle-shaped wings to roll the fleece brought against it by the table, substantially as described.

141,973.—Air-Gas Machine.—PELAG WERSI, Newark, N. J. Application filed June 7, 1873.

The object is to connect a series of ball-blowers with mechanism in such a manner that they will give a steady and uniform stream of air to a carburetor.

Claim.—1. The combination, with a series of topless chambers, A, of a series of bottomless chambers, B, that successively move into the former at the times, in the manner and for the purpose described.

2. An air-pipe, L, having upwardly-opening valve J, connected, as described, with chambers A B, as and for the purpose set forth.

141,974.—Steam-Generator.—HARRY P. WRIGHT, Bonaparte, Iowa. Application filed June 21, 1873.

By this arrangement the products of combustion not only pass through the fire-tubes in the boiler, but also through secondary flues arranged on each side thereof, before entering the smoke-stack.

Claim.—The combination, with a steam-generator, of the secondary return-flues D, arranged by the sides of the generator, in the masonry setting, and connected with the flues C and the passage to the chimney, substantially as specified.

141,975.—Sawing-Machine.—ALLEN XANDER, Slatington, Pa. Application filed June 7, 1873.

Adjustable slides are placed upon the under side of the table.

Claim.—The combination of the adjustable boards S T with the table F and the saw, substantially as specified.

141,976.—Wood-Grinding Machine for Making Pulp.—SÖREN B. ZIMMER, Elkhart, Ind. Application filed June 21, 1873.

The blocks of wood are held under spring-pressure in boxes, which revolve in contact with the beveled face of a stationary grindstone, being lubricated by water from a pipe passing through the pen-stock.

Claim.—1. The combination of the bevel-faced stationary stone A, rotating jointed arms D, boxes E, and springs G, substantially as specified.

2. The arrangement of the pen-stock I and water-pipes J K with the stone, substantially as specified.

141,977.—Machine for Pointing Wire.—FRANK H. AIKIN, Franklin, N. H. Application filed March 15, 1873.

A hammer-die on reciprocating slide E, and a corresponding anvil-die on the frame, and a blank-holder, K, rotated by means of belt P, and that is capable of endwise movement.

Claim.—1. The combination with dies, one reciprocating and one fixed, of the grooved blank-holder K and shell H, having a pin entering the slot in the blank-holder, substantially as and for the purpose specified.

2. The shaft C, cam-block D, spring G, reciprocating slide E, and friction-roll M, with dies attached, one to the slide, and the other to the bed, vertically beneath it, in combination with the grooved blank-holder K and shell H, all arranged, constructed, and operated as set forth.

141,978.—Chuck.—THOMAS R. ALMOND, Fitchburg, Mass. Application filed July 2, 1873.

The jaws are crescent-shape in cross-section, and are guided in correspondingly-shaped grooves in the sleeve by pins entering through the sleeve into spiral grooves on opposite sides of each jaw, said spiral grooves being straighter near the ends of the jaws to give more power when griping large bits.

Claim.—1. The improved drill-chuck, consisting of a shell, A, partly-cylindrical jaws C C, adjusting-screw B, and of the pins *e* to fit the spiral grooves *d*, substantially as herein shown and described.

2. A spiral groove, *d*, for the jaw of a drill-chuck, when made straighter toward the outer and more spiral toward the inner end, substantially as described.

3. The arrangement of the two pins *e* in the shell A to bear against and enter opposite sides of the same jaw C, substantially as described.

141,979.—Railway Rail.—WILLIAM W. ALTER, St. Louis, Mo. Application filed April 16, 1873.

Claim.—The lower member A, having bent flange *a*, and beveled flange *a'*, in combination with the upper member B, having one side of its base *b* beveled, and the bolts C, having inclined heads *c*, all arranged substantially as and for the purpose set forth.

141,980.—Nut and Bolt Fastenings.—JOHN T. ANTRIM, Smith's Ferry, Pa., and WILLIAM J. SLOAN, Liverpool township, Columbiana county, Ohio. Application filed April 5, 1873.

Claim.—The sheet-metal keeper *c* having an eye, *d*, and straps ends *c'* to bear against the sides of the nut, arranged on the bolt under the nut, and secured by the bolt *f* in the slot of the bolt, substantially as set forth.

141,981.—Bobbin-Holder for Sewing-Machines.—WILLIAM F. BARNES, JOHN BARNES, and PETER MESICK, Rockford, Ill. Application filed May 13, 1873.

Claim.—1. The portable bobbin-holder A for sewing-machines, consisting of the body, formed substantially as described, and provided with holes *d*, arranged as shown, to and for the purpose set forth.

2. The combination of the bobbin-holder A, constructed as described, with the needle-cushion *c*, substantially as specified.

3. The combination of the bobbin-holder A with the pin-cushion B, substantially as described.

4. The combination of the bobbin-holder A with the emery cushion E, substantially as described.

5. The combination of the bobbin-holder A with the emery slab or needle-grinder C, substantially as described.

6. The combination of the bobbin-holder A with the emery slab C and pin or stud *c*, substantially as described.

7. The combination of a bobbin-holder, needle-cushion, needle-grinder, and pin-cushion, and pin or stud *c*, in a single device, substantially as and for the purpose described.

141,982.—Rotary Valve and Cut-Off.—WARREN S. BARTLE, Newark, N. Y. Application filed June 25, 1873.

The valve has two inlet-ports opposite each other, and two exhausts arranged the same way; the ports in the seat correspond with those in the valve; opposite ports lead to the same end of the cylinder. The spindle slides in the valve-stem.

Claim.—The combination of the valve-seat B with ports *b b* and *b' b'* and passages *b² b²*, the valve D with ports *d d* and *d' d'*, the stem E, spindle I, and chest G with inlet H and outlet G, all constructed and arranged substantially as and for the purposes herein set forth.

141,983.—Machinery for Burnishing the Sole-Edges of Boots and Shoes.—JOSHUA BRADLEY and JOSHUA BRADLEY, Jr., Lynn, Mass., assignors of one-half their right to GEO. W. KERRY, same place.—Case A. Application filed January 23, 1873.

Claim.—The combination, in a jack or holder for a boot or shoe edging machine, of the stud U, binding-slide V, and pawl W, mounted on a pivoted rest, all constructed and capable of being operated as described, and for the purposes set forth.

141,984.—Machine for Burnishing the Edges of Boot and Shoe Soles.—JOSHUA BRADLEY and JOSHUA BRADLEY, Jr., Lynn, Mass., assignors of one half their right to GEORGE W. KERRY, same place.—Case B. Application filed January 23, 1873.

A forked arm, which supports the burnishing-tool, is attached to a sliding rack-bar, which engages a toothed pinion, from which it receives longitudinal reciprocating motion. The jack-head is composed of two flanged disks, one of which is secured firmly to the axis, while the other is allowed to rotate upon the axis, but may be held in a fixed position by a sliding bolt.

Claim.—1. The head B, having the handle C and bracket F, carrying the burnishing-tool A, in the manner described, in combination with the rack E, pinion D, and arms G H, substantially as and for the purpose specified.

2. The crank-wheel Q, rod P, rack O, and pinion N, in combination with the shaft K and arms G H, arranged as described, for operating the head B, carrying the burnishing-tool A, substantially as set forth.

3. The jack or support for boots or shoes composed of the two disks to form the head, with the stud 7 and 8 and sliding bolt 9, as described, and for the purposes set forth.

4. The tapering tongue 11, in combination with the sliding bolt 9, as described, and for the purposes set forth.

141,985.—Sewing-Machine Table.—JOSEPH BENNOR, Philadelphia, Pa., assignor to NEHEMIT D. STOOPS and JOHN B. MYERS, same place. Application filed July 9, 1873.

Between the belts and the table-top springs are interposed that serve to hold the belts either in a drawn or closed position. When the belts are drawn out to support the cover the notch near the end of each belt engages with the acute edge of the leg on the cover. The legs are made adjustable by being inclined lengthwise, and also slotted to receive the attaching-screws.

Claim.—1. The belts C C, having notches *d d d' d'* and *g g* in their upper edges, in combination with the sockets D D, having slots *s* in their upper sides, and lips *e* at their front ends, the springs E E, eye-plates F F, and legs G G, substantially in the manner and for the purpose above set forth.

2. The adjustable inclined legs G G, in combination with the cover B and belts C C, having notches *g g*, substantially in the manner and for the purposes above described.

141,986.—Bearing for Shafts.—CHARLES BEEB, Lower Merion township, Montgomery county, and WILLIAM H. SUTLEMEMER, Harrisburg, Pa. Application filed August 1, 1873.

Claim.—1. The combination of the rod or journal B, center bearing or packing A, central recessed casing D, and screw-plug F, substantially as and for the purpose described.

2. The combination, with the case D, the packing A, and ring F, of the washer H, for the purpose described.

3. The curving of the surfaces *s s* of the wedge-shaped sectional bearing, or of the interior of the casing, or of both, for the purpose set forth.

141,987.—Sewing-Machine.—HELEN A. BLANCHARD, Boston, Mass. Application filed June 19, 1873.

Machine adapted for producing the button-hole stitch. The usual four-motioned feeding device works in a slide operated by a pawl that receives its motion from an arm on the end of a vibrating lever.

Claim.—1. The pawl D, turning on an arbor, G, and provided with the tongue *d²* and notches *d'* at its lower end, and the lug *d* at its upper end, the latter engaging with and operating the slide E of the feed-bar M, and combined with and operated by the arm B, substantially as described.

2. The lever A, provided with the pivoted arm B and interposed spring C, said arm being so arranged as to impinge alternately against the notched sides of the pawl D and confine the latter, thereby operating the slide E and feed-bar M, substantially as described, for the purpose specified.

3. The lever A, provided with the pivoted arm B and interposed spring C, in combination with the screw I, substantially as described.

4. The combination of the screw K, frame H, pawl D, slide E, and feed-bar M, all arranged and operating substantially as and for the purposes specified.

5. The combination of the spring A, frame H, screw I, arm B, pawl D, and slide E, all arranged and operating substantially as described.

141,988.—Corn-Cultivator.—NOAH G. BEAUMS, Mesa, Ohio. Application filed May 14, 1873.

Claim.—The combination of the beams L, plates *k k*, bell *s*, braces *f f*, stirrup *h*, and rod *m*, for making a joint and adjustable connection for the front end of the beams, as is herein set forth.

141,989.—Hinge.—ETIENNE BOILEAU, St. Louis, Mo. Application filed July 26, 1871.

The pintle-base has an upper surface of a somewhat conical shape, and affords inclines in several directions. The pintle itself projects from the forward part of this base near its middle, so that a space is left between the pintle and the attaching-leaf. The female part of the hinge has cam-surfaces, which are prolonged in the form of horns, which allow an extended movement of the gate and allow it to close automatically from any point.

Claim.—The pintle-base *l l*, constructed with an upper surface in convex conoidal form, inclined in both directions from an apex or ridge in rear of the pintle *m*, which latter projects upward from the forward margin of the base, leaving a space between the said pintle and the attaching-leaf of the hinge, in combination with the socket-piece, having concave cam-surfaces projecting in front of the pintle-base when the hinge is closed, and prolonged in the form of horns *f*, to allow an extended movement and permit the gate to close automatically from any point, all as herein described.

141,990.—Device for Setting Saw-Teeth.—GEORGE W. BUSSEN, Cincinnati, Ohio, assignor to J. A. FAY & CO., same place. Application filed May 20, 1873.

The two jaws G' carry at their upper ends a pair of bits and die-blocks, both adjustable, that operate simultaneously upon two teeth of the saw, which is clamped and held by the lower faces of the opposite die-blocks. The saw is held between the vibrating jaws by spring-clamps, and when under the setting-dies rests on a stub projecting from a bar that connects the holding-jaws. A vibrating arm, carrying an adjustable pawl, operates to feed the saw along after the teeth have been set.

Claim.—1. A saw-setting machine consisting, essentially, of the bearing B, driving-shaft C, cams E E' *e e'*, springs V V', and vibrating jaws F F' *f f'*, whose upper ends carry two pairs of bits, H H', and beveled die-blocks J J', occupying parallel planes at the pitch distance apart, for operating simultaneously and in opposite directions upon two contiguous teeth of a saw, as herein described and set forth.

2. In combination with the simultaneously-vibrating jaws F F', the bits H H' and beveled die-blocks J J', together with their adjusting and retaining devices G G', *g g'*, I I', and K K', substantially as explained.

3. The combination of the vertically-adjustable vises L L' M and bearing-bar N *n*, or equivalent devices, as and for the object stated.

4. The combination of the eccentric D and adjustable feeding mechanism O *o* P *p* Q *q* R S T, as herein described and set forth.

141,991.—Car-Coupling.—DANIEL C. CAMERER, Martinsburg, Pa. Application filed February 14, 1873.

The links are pivoted to boxes which slide in the draw-head against suitable springs. One draw-head has an inclined flange on its upper side, which receives and forces back the pin-bolt for on the other when the cars come together. Then the coupling is automatic.

Claim.—1. The links C C, pivoted to sliding boxes E E, the draw-heads A B, coupling-pin D, and the springs G G, all combined for operation as set forth.

2. In combination with the pivoted links C C and holder M, the sliding boxes E E, springs G G, and draw-heads A B, as and for the purpose specified.

141,992.—Apparatus for Shrinking Metal Bands.—WILLIAM CARR, Logansport, Ind., assignor to KELSEY BROWN, same place. Application filed April 16, 1873.

The open end of the box is slightly tapered to receive the tapering segmental pieces C, in the inner faces of which shoulders are formed to receive the band. The segments, when forced into the box, act like a number of wedges to compress the metal.

Claim.—1. The tapering sections C, forming a hollow sectional ring, and having shoulders *e* on the inner faces, in combination with the box A, tapering on its inner face, substantially as and for the purpose set forth.

2. The spring F and head D, in combination with the sections C C and body A, substantially as and for the purpose set forth.

141,993.—Hemmer for Sewing-Machines.—FRANK CASWELL, Moline, Ill. Application filed June 25, 1873.

The scroll is secured to the adjustable guide-plate by means of the flange, and the projecting arm supports the spring-plate for smoothing the hem.

Claim.—The combination of the casting A, with flange *b* and arm C, double-scroll hemmer B, constructed as described, with flange *d*, bends *f e*, guards *f*, and wire *r*, and the spring-plate D, all substantially as and for the purposes herein set forth.

141,994.—Preserve-Can.—JOHN K. CHACE, Brooklyn, assignor to HENRY J. JOHNSON, New York, N. Y. Application filed April 12, 1873.

One end of the body of the can is made with a groove and the other end with a tongue, so that when joined a channel is formed for the solder.

Claim.—1. The body A, formed with the tongue and groove *a b*, as herein set forth, and for the purpose specified.

2. The combination, with the soft-metal ring C and outward bead B, with free edge *d* turned inwardly, forming the space *c*, of the lid F, with channeled rim embracing the free edge *d*, and the edge of the rim entering the space *c*, substantially as and for the purposes specified.

3. The inward bead G, in combination with a flanged flat bottom, substantially as and for the purpose set forth.

141,995.—Construction of Roads.—EDWIN CHADWICK, East Sheen, Mortlake, England. Application filed October 2, 1872.

A hard and continuous track for the wheels is formed of a fine asphaltic cement, while the portion traveled upon by the horses is of coarser material.

Claim.—The construction of a road or way with continuous jointless tracks of asphalt, or analogous material, laid in a concrete bed, in combination with horse-tracks and other parts of the road of other material, substantially as herein specified.

141,996.—Sewing-Machine Motor.—BENJAMIN C. CHAMBERS, Shady Plain, Pa. Application filed July 23, 1873.

During the operation of the motor the spring is continuously wound by the operators by means of the stirrups, which have pawl attachment, the latter engaging with and rotating the ratchets, one of which is firmly secured to each end of the gear and spring-shaft.

Claim.—The combination, with a sewing-machine motor, constructed substantially as shown, of a pair of ratchets arranged, respectively, at opposite ends of the power-shaft, and a pair of stirrups, having straps to hold the feet, and provided with springdogs to turn the ratchets and produce a continuous revolution of the power-shaft, as described.

141,997.—Machinery for Finishing the Sole-Edges of Boots and Shoes.—CHARLES M. CHASE, Boston, Mass., assignor to FREDERICK CURTIS, same place. Application filed April 29, 1873.

The jack-carriage, attached to the face of a disk, is provided with semi-rotative as well as horizontal or sliding movement, that the cutting-edge of the sole may be presented to the finishing-tool. The operative-tool is suspended from a curved bar, which is attached to the frame of the machine and disposed above the working parts thereof.

Claim.—1. In combination, the disk or head E, the jack-carriage *f* with its arms *i i*, the plate *k*, and the lever *l*, substantially as and for purposes stated.

2. In combination with a disk or head and a jack-carriage sliding transversely thereupon, a trimming or cutting tool suspended above such head and carriage by means of a rod and spring, as herein shown and explained, the same being substantially as and for purposes stated.

3. The operative tool suspended from a curved bar or gooseneck which is attached to the frame of the machine, and disposed above the working parts thereof, substantially as and for purposes stated.

4. The combination of the tool *a'*, tilting block *d'*, gimbal *f'*, shank or rod *h'*, and spring *l'*, the whole being suspended above the jack, and from or by a suitable support, substantially as and for purposes stated.

5. As a means of effecting the traverse of the jack-carriage upon the disk or head E, the two-armed lever *l*, actuated by the drum F and its wiper-stud *p*, substantially as and for purposes stated.

6. The drum F, with its continuous or annular rack *a*, segmental rack *b*, and stud *p*, in combination with head E, jack-carriage *f*, and lever *l*, substantially as and for purposes stated.

7. In combination, the drum F and its segmental rack *b*, and the pawl or dog *p'*, substantially as and for purposes stated.

8. The sliding bars *r r*, playing within the head E, and connected with the jack-carriage by the levers *u u*, and operating substantially as and for purposes stated.

141,998.—Borer for Sampling Cotton.—EDWIN A. CLARK, Jackson, Tenn. Application filed July 22, 1873.

The shank A is inserted in the bale by the end C being placed under the end of the bale and by using the handle D as a lever. The shank A is withdrawn by the reverse motion of the lever.

Claim.—The combination of the handle C D with ears B B and the auger A pivoted between said ears, all constructed and arranged substantially as and for the purposes herein set forth.

141,999.—Hay-Tedder.—THOMAS J. CLARK and GEORGE M. CLARK, Higganum, Conn. Application filed March 25, 1873.

A short tube, flattened and perforated, is placed transversely on the lower end of the tine-handles as a means of holding the adjacent ends of the tines.

Claim.—The combination of the handle *a*, the sleeve *c* open at the ends and sides, the two fork-tines, and the bolt *f* with a conical or wedge-shaped head, the whole constructed, arranged, and designed for use, substantially as described.

142,000.—Men's Drawers.—EUGENE L. CLOSSE, Cleveland, Ohio. Application filed April 28, 1873.

The drawers are adjustable to different-sized persons.

Claim.—As a new article of manufacture, the drawers herein described, provided with the waistband B and facing C cut in one piece, reaching down to the crotch, with a central seam cut curved so as to give fullness to the left leg and stomach, said band extending across the front to engage with a buckle for securing the garment, one button being used half-way down from the waist to close the front.

142,001.—Cotton-Bale Tie.—FREDERIC COOK, New Orleans, La. Application filed July 16, 1873.

Claim.—1. The bale-tie constructed substantially as shown and described.

2. The combination of the double notches in the straight band with the looped band end and a strengthening-plate riveted on said straight end.

3. A bale-tie constructed so that when the looped end of the band enters a side notch in the straight end the bent end of the loop enters simultaneously a second side notch, and is locked by pressure against the straight band, or by the strengthening-plate riveted on it.

142,002.—Legislative Voting Apparatus.—JAMES A. CRISWELL, Mifflintown, Pa. Application filed December 21, 1872.

The ballots, after being carried to the indicating spring-scales, where their respective aggregates are registered, are brought up to the clerk's desk by a suitable elevator, and a distributing-desk is used for restoring the numbered or marked ballots to their respective holders.

Claim.—1. The elevator D and connections, in combination with the vote-registering apparatus, substantially as specified.

2. The improved distributing-desk, having the drawers A and distributing-tubes B, substantially as and for the purpose specified.

142,003.—Reel for Ovens.—ALEXANDER CRUMBIE, Brooklyn, N. Y. Application filed April 25, 1873.

A wire rope is used. Notches in the wheels prevent the rope from slipping, and keep the pans at equal distances apart.

Claim.—1. The connecting device consisting of the transversely-attached sockets *e h*, clamping-piece G, and set-screws E, or their equivalents, in combination with the endless band A and rod D, substantially as and for the purpose herein specified.

2. The wheels B B, constructed with double flanges, notched as described, in combination with the sockets *e h*, substantially as and for the purpose herein set forth.

142,004.—Pump-Piston.—WILLIAM C. CULBERTSON, Girard, Pa. Application filed March 10, 1873.

On the down-stroke of the piston the shoulder d^1 and slot *s*, in combination with the plug B and washers G H, arranged and operating substantially as shown and described.

142,005.—Pendulum-Level.—ADRIEN CHARLES LOUIS DELSARTE, Paris, France. Application filed August 31, 1872.

A multiplying-gear is introduced between the pendulum or plumb and the index for enlarging the range of the latter; and to prevent play a loose wheel, in gear with the pinion of the index, is counterpoised or loaded so as to exert a slight pressure in one direction.

Claim.—A wheel, D', provided with a counterweight, *d'*, and fitted loose on the spindle *n* of the wheel D, and for the purpose of causing the indentations of the wheel D constantly to act to the full extent of their power on those of the pinion *r* in order to insure the exactness of the indications of the index E.

142,006.—Steam Cloth-Press.—JOHN DENNIS and CHARLES H. WESTON, Lowell, Mass. Application filed June 26, 1873.

Claim.—The arrangement of the chain G, spoked wheel D', guide-shaft H, and hand-power J d I, all as shown and described, and for the purposes herein set forth.

142,007.—Reciprocating Churn-Dasher.—TIMOTHY EARLE, Valley Falls, R. I. Application filed March 26, 1873.

In a churn which forces air into the cream through a hollow dasher-rod, the valve at the top of the rod is arranged to be fixed in an inoperative position after the butter has been formed.

Claim.—The combination with the hollow dasher-handle G, the cap and valve C and D, arranged substantially as described, and for the purpose set forth.

142,008.—Apparatus for Steaming Grain.—JOHN H. EBERT and EZEKIEL PITTS, Decatur, Ill. Application filed March 18, 1873.

Wheat subjected to jets of steam to heat and dampen it while passing through a cylinder to the grinding-stones.

Claim.—The device for steaming and dampening wheat, consisting of the cylinder A provided with the tunnels B C, bar E, shaft F, dedectors G G', steam-pipe H, rose I, and valve J, constructed, arranged, and operating substantially as shown and set forth.

142,009.—Machine for Dressing Millstones.—WILLIAM FARROW, Alexandria, Ill. Application filed July, 11, 1873.

A tappet on the crank-shaped shaft of the main frame engages with the teeth of the wheel on the shaft of the reciprocating frame parallel to the main driving-shaft so that each revolution of the latter forces an advance of the said wheel's shaft; on the end of shaft a pinion engaging with a rack-bar on the main frame, thus driving the pick-holder, which is attached to the reciprocating frame, forward till the end of the rack-bar is reached by the pinion, when a reverse motion of the crank takes place, and this operation is repeated.

Claim.—1. The reciprocating frame C, when arranged to operate with the stationary frame A, by means of shafts D and E and H, pinions *s s*, rack-bars B, and pulleys *c'* and *h*, substantially as described, and for the purpose specified.

2. The pick K, shaft L, pitman N, and crank-shaft H, when combined and arranged to operate substantially as described, and for the purpose specified.

3. The bar R, when arranged to operate with the shaft L, and with the transverse shaft M, substantially as described, and for the purpose specified.

142,010.—Clamp.—LAWRENCE FEELY, Rochester, N. Y. Application filed June 20, 1873.

Claim.—1. In a clamp for putting together chairs, the combination of the head-block D, follower C, rest G, gage-bar I, bed J, saddles H H H^1, endless screws E E, and gear-wheels 1 2 3, arranged and operating substantially as described.

2. The block *f*, cross-bar *i*, and rest G, in combination with the follower C, head-block D, saddles H H H^1, gage-bar I, and bed J, substantially as and for the purpose specified.

3. The combination of the clamp N, arm O, cross-bar L, clamp-bar M, and hand-screws *p p t*, operating as described.

142,011.—Side Bar for Vehicles.—FRANCIS L. FLOWERS, Tarrytown, N. Y. Application filed December 16, 1872.

Claim.—The spring-bar, consisting of the wooden sections A and A, central whalebone strip B, and steel bottom strip C, constructed and combined by means of the encircling spiral wire D, substantially as and for the purpose specified.

142,012.—Till-Alarm.—GEORGE L. GEIGER, Philadelphia, Pa. Application filed May 13, 1873.

A series of reversible tumblers, swinging upon sliding carriages, is so arranged with the operating-keys as to secure the drawer and ring an alarm-bell unless manipulated in a known order. The locking-plate is arranged to be held out of action by a sliding bolt on its under side, when desired.

Claim.—1. The combination, with a drawer, of a series of tumblers, each secured to and sliding with a slide, and a locking-plate or lever, D, as set forth.

2. The locking-plate or lever D, having pivots *i* adapted to slots in the lock-case, a projection, *k*, bearing upon the tumblers and a spring or springs, *m*, arranged between the said pivots and projection, upon either of which the said plate may be turned as a fulcrum, as set forth.

3. The combination, with the said locking-plate or lever D, of a sliding bolt, *e*, adapted to an opening in the lock-case or drawer, as set forth.

4. The combination, with each of the slides B, of a reversible tumbler, A, adjustable, as set forth.

5. The tumblers A, constructed, substantially as described, with parallel edges *g g* and beveled edges *h h*; and pivoted to standards *f* of the slides so as to be capable of reversal thereon, as set forth.

6. The combination, with the reversible tumblers, of spring-retaining arms f^2, adapted to notches in the opposite ends of the said tumblers, as specified.

142,013.—Sewing-Machine.—EBENEZER A. GOODELL, Philadelphia, Pa. Application filed November 16, 1872.

A pin on the needle-bar, actuating connecting-rod, enters a slot in the arm of the looper, and rocks the looper on its revolving crank axle to properly enter and discharge the loop about the bobbin confined in a stationary case. The sides of the case and holder are open to allow the removal of the bobbin alone, it being held in position by a spring. The feed consists of an L-shaped bar, having the short arm serrated and the end of the long arm attached to the bed-plate. A bar pivoted to the feed-bar is adjustable by means of a set-screw, and the position of the outer end of this bar with reference to the cam governs the extent of the feed.

Claim.—1. The revolving hook-keeper M pivoted to the crank-wrist K, and connected by slotted arm R and pin or screw S with the needle-actuating connecting-rod L, operated directly from the same crank, as and for the purpose herein set forth.

2. In combination with the subject-matter of the preceding clause, the case A' supporting the double-convex stationary bobbin-holder, and provided with an opening to permit the independent removal of the bobbin, as set forth.

3. The pivoted bar W and adjusting-screw X, in combination with the feed-bar U and a rotary actuating-cam, substantially as set forth.

142,014.—Centering Device for Lathes.—HARVEY GRAY, Bristol, Conn., assignor to NATIONAL WATER-WHEEL COMPANY, same place. Application filed March 17, 1873.

Claim.—The centering roller-tool *b c*, in combination with the tool-carriage and its feed-screw, and adapted for operating upon the loosely-clamped work for bringing the work central upon the face-plate of the lathe, all substantially as and for the purpose described.

142,015.—Machine for Raising Panels.—FRANCIS D. GREEN, Williamsport, Pa. Application filed May 14, 1873.

The rabbet on each side of the board is cut at the same operation, and a guide-bar, L, supports the lower rabbet as the panel moves over the bed.

Claim.—The combination of the main frame A and its stationary revolving cutters C C, the adjustable holder G with cutters J, vertical screw-rod H, adjustable feed-table E with adjustable guide L, and vertical screw-rods H' H', all constructed and operated substantially as set forth.

142,016.—Eaves-Trough Fastening.—WILLIAM H. HAMMOND, SYRACUSE, Mo. Application filed July 12, 1873.

Claim.—The combination, with the eaves-trough sections A A, of the strap B, having its ends *b d* bent as described, the spike C, and strap D, all arranged substantially as and for the purposes herein set forth.

142,017.—Self-Braking Lowering and Hoisting Apparatus.—WALTER HART, Philadelphia, Pa. Application filed July 11, 1873.

The draft-rope passes around a pulley on the upper arm of the lever, the lower curved arm of which forces the draft-rope against the base-plate, and thus the movement is arrested.

Claim.—1. A hoisting and lowering apparatus in which the weight of the load is caused to apply a brake to the draft rope or ropes, through the medium of a lever or levers, substantially as herein described.

2. In a hoisting and lowering apparatus, the combination, substantially as described, of a brake-lever, J, arranged to bear upon and stop the movement of a draft rope or ropes, with a lever or levers, A, actuated by the said draft rope or ropes and transmitting movement through a rock-shaft, G, arm L, and link K to the said brake-lever.

3. The combination of the said brake-lever J with the pedestal E, its recess *d*, guides *f f*, and separator *g*, all substantially as specified.

4. The combination, substantially as described, of geared capstans H and H', of equal diameter, with the two draft-ropes X and X' of a hoisting and lowering apparatus, for the purposes specified.

5. The combination, substantially as described, of the foot-lever D with the rock-shaft and its appliances and the brake-lever J.

6. A hoisting and lowering apparatus, in which are combined upon a suitable frame a rock-shaft, G, levers A A', arm L, link K, brake-lever J, pedestal and guides E, and geared capstans H and H', all substantially as herein described.

142,018.—Machine for Bending and Twisting Metal Bars.—SAMUEL HOLMES, Philadelphia, Pa. Application filed October 24, 1872.

Two blocks, at a fixed distance apart, are adjustable to and from the squeezer A by two screws connected by gearing. The squeezer having a limited and uniform reciprocal movement, the degree of curvature to be given the bar depends on the nearness or remoteness of the blocks. Two levers, one at each side of the machine, suspended by their rounded heads, in sockets, have slots in their ends corresponding in shape to the bar to be twisted, and are vibrated in opposite directions to twist a bar placed in these slots—the one by a stirrup that connects its lower end to an eccentric, and the other by a screw connected to its lower end.

Claim.—1. The two arms K L, both working in sockets k^1, with a suitable clamping device, *m*, or with one arm only working in a socket and the other fixed, the two arms being so arranged in relation to each other that one is capable of a motion independent of the other for the purpose of twisting an iron bar, as herein described.

2. The notches *m*, arranged centrally within the disks k^2 k^2 for clamping the bar to be twisted, as herein described.

3. The combination of the socketed arms K L, the adjusting-link N, and the thrusting-block n^1, operating as herein described.

4. The combination of the arms K L and the spring-bar K', operating as and for the purpose herein set forth.

5. The combination of the pinion R, the rack r^6 arranged to adjust the arm I, as herein described.

6. The combination of the adjustable blocks E E, the screws F F acting in unison, and the squeezer A, operating as herein described.

7. The arrangement of the shaft C, thrusting-block c^1, and arm L, in combination with the squeezer A and adjustable blocks E E, so that the said shaft operates both the bending and twisting mechanisms.

142,019.—Machine for Cutting, Rubbing, and Drilling Stone.—PATRICK H. HOPKINS, Brooklyn, N. Y. Application filed June 16, 1873.

The stationary supporting-frame is provided with an adjustable guide-frame for giving any desired outline to the edges or molding to be formed on the stone. A vertically-adjustable sleeve is arranged on the tool-holder, which sleeve, during the process of working the stone, moves along the above-named guides; while for operating it is raised out of the way of said guides by means of a pin and curved slot.

Claim.—1. The vertically-adjustable sleeve N fitted around the cylindrical grooved projection O of the frame I, and embracing the lower part of the shaft J, substantially in the manner described.

2. The guide-frame B, composed of slotted rods or bars, and arranged on a machine for cutting, rubbing, or drilling stone around the jointed tool-holder, substantially as specified.

142,020.—Railway-Rail Joint.—JOHN L. HUDSON, Cumming, Ga. Application filed June 25, 1873.

Claim.—The combination of the rails A A, with flanges B B on their under sides, the grooved chair D, and curved plates C C, all constructed and arranged substantially as and for the purposes herein set forth.

142,021.—Dumping-Car.—JOHN HUGHES, New Berne, N. C. Application filed August 9, 1873.

To the bottom and the ends of the body of the dumping-car rollers are secured, which move upon inclined ways secured to the truck. The body is moved to either side of the truck by means of a central shaft, to the ends of which a pulley is secured, and around which a cord or chain is wound, its ends secured to the rollers of the body. By turning the shaft in either direction the body is dumped and held in place by means of the cords.

Claim.—1. The ways *c*, having the horizontal plane 4, recesses *g*, and inclined planes *i*, substantially as set forth.

2. The combination of the ways *c*, having the recesses *g* and inclined planes *v*, arranged relatively to each substantially as shown.

3. The combination of the shaft 6, pulleys 7, cord 8, and pulleys 9, and rollers *a*, substantially as specified.

4. The truck *c*, having the inclined planes *v* formed upon its ends, recessed and beveled ways *e*, body *c*, provided with rollers *a* 2, shaft 6, pulleys 7 9, and cord or chain 8, substantially as shown and described.

142,022.—Middlings-Purifier.—ANDREW HUNTER and CHARLES E. WHITCOMB, Quincy, Ill. Application filed July 2, 1873.

The first suction-fan removes the moisture and cools the middlings before entering the compartment where the blast-fan is used. The blast-fan removes the fine fuzzy particles and light brown specks. The middlings or tailings, as they pass into the third compartment, are acted upon by the second suction-fan, where a heavy current of air is required to remove the heavy brown particles.

Claim.—In a machine for purifying middlings, the two suction-fans and a blast-fan, combined with a screen and feed-tube, the fans operating in distinct and separate compartments, and independently of each other, substantially as set forth.

142,023.—Middlings-Purifier.—ANDREW HUNTER and CHARLES E. WHITCOMB, Quincy, Ill. Application filed June 16, 1873.

Blast-fan operating first on the fine, and the suction on the tailings containing the coarse middlings, as they pass over the screen in the separate compartments. Feed-trough spreads the middlings evenly on upper end of screen. Oscillating rods or agitators, operating upon under side of bolting-cloth or supporting-wire, agitate the middlings as they pass over the screen.

Claim.—1. In a machine for purifying middlings, a blast and suction combined with a screen, the currents of air therefrom acting in separate and independent compartments, substantially as set forth.

2. The agitators arranged to oscillate beneath the screen for the purpose of striking transverse blows upon the under side of the screen or bolt covering, substantially as described.

3. The vibrating feed-trough, constructed with a perforated bottom, and with the front side E lower than the outer side F, substantially as described, and for the purpose specified.

142,024.—Sewing-Machine Table.—EDWIN A. JEFFERY, Jersey City, N. J. Application filed July 2, 1873.

A pendulous bracket is journaled in a bearing affixed to the table, and has on its upper and outer face a cross-head that enters a slotted hollow arm attached to the cover. The lower part of the bracket engages with a second eye on the cover. The cross-head is arranged at right angles with the bracket, so that the bracket has to assume a horizontal position to enter the cross-head, when the bracket is dropped to a perpendicular position and locked.

Claim.—The pendulous bracket C, journaled in a bearing, *d*, affixed to the table A, and provided with the cross-head I, in combination with the eyes G G', arranged and operating substantially as and for the purpose set forth.

142,025.—Pantaloon-Stretcher.—LOUIS KALTENBACHER, Louisville, Ky. Application filed June 25, 1873.

Claim.—1. The combination of the several devices hereinbefore described for stretching the legs of pantaloons, consisting of the table-frame A with its sliding top B, lever C, knob-screw D, and catch E, stationary top F with its clamp G, racks H H, pinions I I, and crank J with the ratchet and catch K, pinions L L, and racks M M for operating the sliding cover, with the ratchet and catch N N and crank O, and the slides P P and jaws Q Q, when constructed and arranged to operate substantially as and for the purpose set forth.

2. The combination of the devices for shaping the legs, as hereinbefore described, consisting of the grooved bars R R and expansion-wedges S S, when constructed and arranged to operate substantially as and for the purpose hereinbefore set forth.

142,026.—Seams for Leather-Work.—CHARLES KENISTON, Somerville, assignor to himself and WILLIAM BUTTERFIELD, Boston, Mass. Application filed June 26, 1873.

The seam is formed of staples beveled upon their inner faces so as to spread when driven, thus forming, substantially, a continuous metal stitch.

Claim.—Leather-work, the parts of which are united by metal fastenings, formed and inserted substantially as shown and described.

142,027.—Automatic Regulating-Valves.—GEORGE L. KITSON, Philadelphia, Pa., assignor to himself and GEORGE W. CARR, same place. Application filed June 28, 1873.

The steam is caused to enter the chest in the same direction in which the valve moves, and to enter and escape from the chamber in which the valve operates from opposite sides.

Claim.—1. The automatic regulating-valve G, combined with a chest to which steam is admitted in the same direction as that in which the valve moves, all substantially as and for the purpose described.

2. The automatic regulating-valve G, operating within a cylinder or chamber, F, to which steam is admitted from opposite sides, and from opposite sides of which steam escapes, as set forth.

3. The automatic regulating-valve G, so combined with a cylinder or chamber, and inlet and outlet passages, that during the operation of the valve the outlet-passages will be closed, while the inlet-passages permit a pressure of steam beneath the valve, as set forth.

142,028.—Pump.—THEODOR C. H. KRAUS, Fishkill, N. Y. Application filed July 23, 1873.

Globe-shape shell contains two valve-chambers.

Claim.—The spherical shell A, containing in its interior the cylinder B, valve-chamber C D, supply and discharge chambers E F, and valves c c^1 c^2 c^3, to which access can be had by means of screw-plugs *g*, all constructed in the manner and for the purpose substantially as shown and described.

142,029.—Machinery for Trimming the Sole-Edges of Boots and Shoes.—RICHARD C. LAMBART, Quincy, Mass., assignor to THE SHOE MACHINERY MANUFACTURING COMPANY. Application filed July 10, 1873.

The shoe is jacked upon a stationary guide-pattern or former, and held in position by a suitable clamp. The cutter-stock, provided with universal motion, is mounted upon a sliding block attached to a band or chain, which passes around pulleys—one at each end of the stationary guide-pattern.

Claim.—1. The combination and arrangement, substantially as shown and described, of the stationary last-holding block *j* with its guide-rail *c*, and the movable cutter-carriage *n* with its guide and cutter mechanism.

2. In combination with the stationary block *j*, the clamping-arm a^3, and its roll b^3, and the vertical slide d^3, to which said arm is pivoted, and from which the last-pin c^6 extends.

3. In combination with the cutter-carriage *n*, the stationary guide-rails *m* and the mechanism for imparting to the carriage a continuous and combined rectilinear and rotative movement, substantially as described.

4. In combination with the carriage *n*, the slide *r*, spring *s*, post *t*, spring h^3, roll *z*, cutter *c*, and flange *y*, the whole arranged to operate substantially as shown and described.

142,030.—Railroad-Rail Joint.—WILLIAM D. LINDSLEY, Wathena, Kans., assignor to himself, EZRA V. SHIVELY, same place, and L. E. HEDGES, Frederick, Md. Application filed May 20, 1873.

Claim.—The fish-plate B, having solid flanged base *b* that fits the excised part of the inside base-flange of rail, and rests with offset b^1 upon the shoulder a^2 of rail, in the manner and for the purpose described.

142,031.—Horse Hay-Rake.—CHARLES M. LUPKIN and CHARLES G. ALLEN, Barre, Mass. Application filed May 26, 1873.

A sulky-rake, having the rake-head pivoted to and in front of the axle, is provided with a gravitating pawl to lock the rake-head to the wheel, for the purpose of raising the teeth for dumping the hay.

Claim.—1. The lever M, provided with the curved arms *g g'*, foot-rest *h*, and stirrup P, pivoted to legs on the foot-board H, and having lifting-springs *e e'*, in combination with the connecting-lever N and slotted arm Q of the rake-head, all adapted to hold the rake in operative position, and also release the same and throw it forward into position to engage the dumping mechanism, substantially as described.

2. The shields S S', connected with one end of the head and stripper-bar of a horse-rake, and formed with an inner nave, *s*, inclined ledge *s'*, step *s''*, and inclined plane or segmental flange *y*, substantially as described, for the purpose specified.

3. The weighted pawl *w*, provided with the roller *n*, in combination with ratchet *r* and flange *y*, all arranged and operating substantially as described.

4. The ratchet-wheel *x*, adapted to receive and be released from the pawl *w*, and provided with a spring-pawl, *x'*, so arranged as to engage with the ratchet-wheel *x* on the wheel-hub, and prevent the backward turning of the ratchet-wheel *x* when dumping the rake by the horse, and to allow the same to revolve when the rake is dumped by the driver, or raised for backing or other purposes, substantially as described.

5. The spring-bearings F, bolted to the rake-head and provided with seams *f*, adapted to secure the bent ends of the teeth I, in combination with springs G, the latter being clamped to the rake-head and hooked around the teeth in such manner as to allow the teeth to turn slightly in the seams, substantially as described, for the purpose specified.

142,032.—Cant-Hook.—EDWARD MANSFIELD, Orono, Me. Application filed March 15, 1873.

Claim.—A cant-dog, constructed as herein described, to wit, having a ferrule, *a*, with lips *b b* thereon, and an opening, *f*, between them, in combination with a corresponding opening or hollow, *g*, in the handle and the hook *c*, so that the inner or hinged end of said hook *c* when in place shall project into the hollow *g* of the handle, all arranged substantially as and for the purposes set forth.

142,033.—Machine for Notching Shingle-Bands.—CHARLES E. MCGREGORY, East Corinth, Me. Application filed May 22, 1873.

A hollow rotating cutter is provided with notching-knives, which project inward and cut the notches in the end of the binder when it is inserted in the cutter and pressed up against them.

Claim.—A notching-machine in which the stick is presented to the cutters by being first inserted within a recessed cutter-head, and afterward presented vertically to the action of the knives or cutters, substantially in the manner herein set forth and specified.

142,034.—Spoke-Machine.—ALEXANDER MCNEILE, London, England. Application filed July 2, 1873.

The rotating cutters have both a vertical and horizontal movement controlled by suitable guides.

Claim.—1. The swinging frames b^2 b^3, with the spindles c^1, provided with cutters *c c*, having edges partly straight and partly curved, as shown, in combination with the pattern-rollers *i i'*, as and for the purposes herein set forth, so that by causing the said pattern-rollers to bear against a traveling pattern, A, the corresponding cutters *c c*, while in rapid rotation, may be raised, lowered, or otherwise acted upon independently, and a compound motion imparted to them, in order to cause them to cut away the wood to the desired shape, as above described.

2. The arrangement, substantially as herein described, of the rotary cutters *c c*, the pattern-rollers *i i*, their spindles i^2, and the traveling pattern A, whose figure in one direction is that of a horizontal section of the form to be produced, and in the other is composed of such gradients as correspond to the varying sections of that form, whereby the pattern-rollers are caused to so act as to cause the cutters to present different portions of their cutting-edges at different points or stages of the cutting operation, substantially as and for the purpose herein set forth.

3. Arranging in one and the same machine a series or pairs of vertically-rotating cutters of irregular shape, and mounted in swinging-frames, and provided with pattern-rollers, as and for the purpose herein set forth, in combination with a movable pattern capable of traveling longitudinally to and fro in the machine, the whole being so combined and arranged that each rotary cutter, being under the control of the pattern-rollers, shall act only on a given portion of the piece of wood, and so that by the combined operation of all the cutters the piece of wood shall be reduced to the desired shape and form, as above shown and described.

142,035.—Water-Heater.—ISRAEL S. MEAD, Blue Earth City, Minn. Application filed May 14, 1873.

Claim.—As a new article of manufacture, an annular domestic heater, adapted to be applied to and removed from the exterior of a stove-pipe, or the exterior of the drum of a stove, such heater being constructed of annular plates b^1 b^2 connected together by plates *d e*, the plate *d* being provided with apertures d^2 d^3, cap or cover d^4, and pipe d^1, and the external pipe b^1 having applied thereto a gage, *f*, and tap *g*, all arranged and constructed substantially as shown and described.

142,036.—Saw-Hanging.—JOSEPH E. MERRITT, Bangor, Me. Application filed June 2, 1873.

An oblong opening is cut in each end of the saw, which is strengthened by plates having an opening corresponding with that in the saw, and provided with serrations upon one side, into which the hanging-straps hook.

Claim.—In a saw, the transverse plate *b c*, provided with notches *d*, whereby the straps are made adjustable, substantially as set forth and shown.

142,037.—Match-Plane.—CHARLES G. MILLER, New Britain, Conn., assignor to OLIVER S. JUDD and CHARLES BLAKESLEE, same place. Application filed March 12, 1873.

A metallic plane having an arch to span the throat, which forms an abutment for the adjusting-screw to regulate the bit.

Claim.—The combination of the body *a*, having the cross-cut for the iron open at one side, and the arch a^2, spanning the cross-cut and forming a buttress for the adjusting-screw, and also a part of the handle, all of cast-metal, in one piece, substantially as described, and for the purposes set forth.

142,038.—Mode of Recovering and Regenerating Steam in Motive-Power Engines.—FRANÇOIS MAURICE HIPPOLYTE MOTARD, Paris, France. Application filed November 16, 1872.

The live steam admitted from the dome of the boiler passes in a jet beyond the mouth of the suction-pipe, by which the exhaust steam is drawn from the cylinder. The two kinds of steam combined pass through a second nozzle, perforated for the admission of water which mingles with them, and all pass through the expanding tube to the delivery-pipe, the latter being controlled by a check-valve.

Claim.—In combination with the chamber A, above the boiler and the dome C, the herein-described apparatus for producing the fluid current arranged between the said dome and chamber, the said apparatus consisting of the pipe *a*, nozzle *c*, smoking-tube *f*, taper tube *c*, pipe *h*, expanding tube *f*, pipe *l*, and check-valve *k*.

142,039.—Self-Reclining Chair.—GEORGES NIEDERSON, West Mount Vernon, N. Y. Application filed June 25, 1873.

The lower ends of the pivoted back are provided with pins or projections, on which rests the rear end of the seat, which is hinged at its front end.

Claim.—1. A chair provided with a pivoted back and a seat hinged at its front end, with the rear end of the seat resting loosely on the supports on the lower end of the back, substantially as and for the purpose set forth.

2. The pivoted chair-back G, provided with the legs *m m* and projecting pins *n n*, which constitute the supports for the hinged seat, as specified.

142,040.—Grain-Binder.—ALEXANDER PHILLIPPI, St. Louis, Mo. Application filed April 21, 1873.

The grain is carried by elevating-aprons to a receiver, whence it is dropped upon a sliding frame between compressing-fingers operated by the feet of the binder. The bands are formed of twine supplied from a spool, and are tied by hand.

Claim.—1. A sliding binding-frame, D, carrying finger devices *d* d^1, shafts d^2 d^3, pinions d^4, arm E, lever E^1, crank-shaft *e*, chain e^1, crib C, rope *f*, stirrup F, all combined to operate as and for the purpose set forth.

2. The frame D, fingers *d* d^1, shafts d^2 d^3, pinions d^4, arm E, lever E^1, rope *f*, pulley-shafts f^1 f^2, stirrups F F^1, when arranged to operate as and for the purpose set forth.

3. The combination of the crib C, chain e^1, crank-shaft *e*, lever E^1, arm E, pinions d^4, shafts d^2 d^3, fingers *d* d^1, rope *f*, pulley-shafts f^1 f^2, and stirrups F F^1, as and for the purpose set forth.

142,041.—Meter for Driving Machinery.—ALFRED E. PROCTOR, Boston, Mass., assignor to JOSEPH PROCTOR, same place. Application filed March 21, 1873.

Claim.—In combination with the interior frame or plates *a b*, and train of gears embraced therein, the outer plates *c d*, constructed and arranged substantially as and for the purposes set forth.

142,042.—Sewing-Machine.—WILLIAM A. RATER and WILLIAM S. LINCOLN, Boston, Mass. Application filed July 22, 1873.

Improvement on patent No. 137,007. The cutter is attached to a machine arranged to sew together the ends of pieces of cloth, and it is operated automatically to cut the thread connecting adjacent pieces.

Claim.—In a sewing-machine, the lever G, pivoted to the post H, and carrying the cutter F, all combined and operated in the manner and for the purpose specified.

142,043.—Button-Fastening.—CHARLES H. REID, Danbury, Conn. Application filed July 16, 1873.

Claim.—The cloth C, formed with looper-neck *a* and the points *b b*, disposed as described, to form a fastening for eye-shanked buttons.

142,044.—Machine for Forging Horseshoe-Nails.—FRANCIS HENRY RICHARDS, New Britain, Conn. Application filed September 14, 1872.

The four hammers work in pairs, and the distance of their stroke toward the common center is adjusted or controlled by means of their fulcrums, which are eccentric prolongations of shafts that project from each side of the plate, and are connected in such a manner that when one shaft is turned all are turned, and in the same direction and degree, thus throwing the hammer-faces toward or from the center, as required.

Claim.—1. In forging-machines, the lever K carrying the forging-tools at one end and at the other end connected to the operat-

ag mechanism, substantially as described, and intermediate or their length hung upon the fulcrums b, so constructed as to be changed, as herein shown, for the purpose specified.

2. The combination, substantially as described, with a forging-machine adapted for forging horseshoe nails from a continuous blank, of forging-tools formed as shown, so as to forge the shank of the nail to a taper and to taper off the nail-head at its striking end, as herein set forth.

3. The shafts L, forming the fulcrums for the forging-tools, when said shafts L are connected together by rods N for simultaneous operation, substantially as described.

4. The forging-tools connected through rods I to eccentrics J of shaft F, in combination with fulcrum-shafts L, connected together by rods N, substantially as and for the purpose specified.

142,045.—Centrifugal Clothes-Wringer.—HENRY ROSAMYER, Jr., Rochester, Pa. Application filed June 14, 1873.

A tub provided with an inner basket or receptacle for the clothes, to which motion is imparted by a shaft and crank, having on its end a friction-wheel formed to be brought in contact with the outer shaft of the basket, by which motion is given to it, and its tendency to regulate its motion by an upright having a spring attached to it and controlled by a thumb-screw. To the center of the bottom of the tub leaders or springs are attached, having on their ends caps to receive the bottom of the legs of the machine.

Claim.—The combination of the tub A, provided with feet B, strips C, and cups D, with the basket A', driving friction-wheels h and k, shaft l, flexible strip P, and set-screw s, all constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

142,046.—Cooling and Purifying Air in Breweries, Packing-Houses, and other Buildings.—LOUIS SCHULER, Philadelphia, Pa. Application filed August 14, 1873.

By means of a fan or other pressure-blower air is forced into a tightly-closed box or chamber provided with partitions attached above and below alternately. From the cooling-chamber the air is distributed to different apartments to be cooled, and is drawn out of them by the blower and returned to the refrigerator to be again cooled and purified.

Claim.—1. The combination of a closed cooling-chamber, a pressure-blast apparatus, and a double system of flues or pipes provided with valves, so as to distribute cold air and return it to the blast apparatus to be recooled and purified, substantially as set forth.

2. The refrigerating or cooling chamber B, provided with partitions m m m and tight-fitting covers e e, substantially as described.

3. The cooling-chamber B, in combination with the reservoir I, as and for the purpose described.

4. The process herein described for cooling and purifying air in buildings and apartments, the same consisting in compressing it in contact with ice or a freezing-mixture, distributing and recollecting it by a system of flues and a pressure-blast apparatus, all substantially as and for the purpose set forth.

142,047.—Steering Apparatus.—HENRY F. SHAW, West Roxbury, Mass. Application filed March 19, 1873.

The alleged invention is for a combination of parts the construction of which allows the worms e and e' to slide toward or from each other by means of an elastic substance interposed between them, by which the rudder may be relieved from strain caused by the sudden shocks of a sea.

Claim.—In combination with the internal gear C, the spur-pinions H and H', the worm-wheels G and G', and the shaft E, the right and left hand worms e and e', constructed separately and fitted to slide toward or from each other upon said shaft in the direction of its length, and compelled to revolve therewith by means of a spline or its equivalent, and having the springs d, d', and d² arranged relatively to said worms and shaft, and to operate substantially as described, for the purpose specified.

142,048.—Cutter-Head.—ALBERT H. SHERMAN, Arcadia, N. Y. Application filed August 7, 1873.

A flexible straight-edged cutting-blade is fastened to the warped surface of a cylinder-head, thus giving a spiral-edged cutter.

Claim.—A flexible knife or cutter converted from a flexible flat knife by means of a spiral surface on the cutter-head and a corresponding surface on a cap or confining plate, substantially as described, for the object specified.

142,049.—Dumping-Wagon.—DANIEL D. SMITH, Louisville, Ky., assignor of one-half his right to CYRENE SMITH, same place. Application filed April 3, 1873.

The timbers under each side of the bed are made in two parts with hinge in the center. On the rear bounds are slides, which work on guides attached to or formed on the front timbers B B, by which means the bed is kept straight while being backed over the rollers on the hind axle.

Claim.—The combination of the timbers B B' hinged together, the front part B fastened to the fifth-wheel, the rear part B' secured to the box A, slides b b pivoted on the rear bounds E E, and the guides d d formed on or attached to the parts B B, all substantially as and for the purposes herein set forth.

142,050.—Carriage-Top.—JOHN H. SNYDER, Rockford, Ill., assignor to THOS. B. GAULT and HARRISON SMITH, same place. Application filed June 13, 1873.

To obviate sagging in the top-cover.

Claim.—The folding brace B B' B², in combination with the worm-screw D, arranged to operate substantially as described.

142,051.—Self-Venting Bung.—CHARLES F. SPENCER, Cleveland, Ohio. Application filed March 6, 1873.

A disk, made of steam-packing, to resist the action of steam when the barrels are cleaned is confined by a staple to the lower end of the passage through the bung. This disk is caused to fold on each side of the staple when the faucet is opened, whereby air is admitted to the barrel to aid the discharge of its contents.

Claim.—The bung A, having the central channel or passage C and recess D, in combination with the elastic steam-packing valve F, secured in position against its seat by the staple G, all constructed and arranged substantially as and for the purpose specified.

142,052.—Rolling-Mill.—WILLIAM H. STEPHENS, Evansville, and GEORGE B. F. COOPER, New Albany, Ind. Application filed January 30, 1873.

The improvement is in mechanism for turning the bar over after it has left one pair of rolls and before it has entered the succeeding pair,—namely, two rolls, B, to support the bar and carry it forward, and between them a hollow journaled guide, D, with a long upright arm, to the extremity of which is attached a chain that leads to a winding-drum, G, that is automatically put in rotation through a system of levers and a clutch by the bar itself as it slides upon and depresses an inclined table, d, in front of the next succeeding pair of rolls. Weighted levers return the parts to their normal position after the passage of each successive bar.

Claim.—1. The plate d, having an attached lever, I, and the clutch J, with their connecting devices, in combination with the winding-drum G, the chain b, the lever F, the pendent weight g and the weight or weighted lever K, essentially as and for the purposes herein set forth.

2. The combination, with the turn-over box D, its attached lever F, and the clutch J, of the lever L, the clutch p, the free or loose drum G, the weighted lever r, and the revolving shaft H, substantially as specified.

3. The positively-driven carrying-rollers B B, in combination with the turn-over box D and drawing or compression rolls A A' A², essentially as herein described.

142,053.—Mowing-Machine.—WILLIAM S. STONE, New Philadelphia, Ohio. Application filed January 3, 1873.

A grooved and flanged plate, fitted upon and strengthening a corner of the main frame, serves also as a means of connecting tongue therewith.

Claim.—The tongue-plate C, provided with the grooves b, d, and e, substantially as and for the purposes herein set forth.

142,054.—Manufacture of Hydraulic Hose.—EDWIN A. STREET, South Orange, N. J. Application filed June 18, 1873.

Improvement on patent No. 136,867; consists in vulcanising, instead of cementing, the welt-piece over the inside of the seam.

Claim.—A hose having the inner surface of the seam covered by a strip vulcanised thereto, substantially as described.

142,055.—Harrow.—WILLIAM D. SUMMERS, Hopkinsville, Ky. Application filed July 5, 1873.

Claim.—The within-described convertible implement, consisting of a permanent triangular harrow and a separable one of similar shape, whose side beams may be rigidly coupled to the side beams of the permanent one, and maintained in their proper position by the removable brace O, the handles of the permanent harrow serving for the enlarged triangular-shaped harrow thus formed, substantially as shown and described.

142,056.—Tile Roofing.—DANIEL SWAIN, Dover, N. H. Application filed April 19, 1873.

The tile, formed of sand and cement, is flat upon its under side and trough-shaped above. The joints are covered with inverted semi-conical tiles in the ordinary manner, and formed of the same material. The ridge is surmounted with a tile of double slope, formed to fit the part protected.

Claim.—1. In a roofing, the plates A A, molded from sand and cement, and formed with flat bases and concave upper surfaces, as shown, in combination with the semicircular shields D, all applied substantially as herein described, and for the purpose specified.

2. The angular roofing-plates E, with their angular covering-tubes F, substantially as described.

142,057.—Bell-Pull.—AMOS L. SWAN, Cherry Valley, N. Y. Application filed May 1, 1873.

A swivel-jointed door-bell pull adjustably connected to the mortise-crank.

Claim.—The combination of the swivel-jointed bell-pull, the sliding adjustable block H with set-screw P, the connecting-link N, and crank-lever O, operating substantially as specified.

142,058.—Market-Wagon.—JOHN TAMKINS, Sr., Conklin, N. Y. Application filed June 5, 1873.

The top is removable, and designed for market-wagons to exclude dust, flies, sun-rays, &c.

Claim.—A wagon-top consisting of the cover, having the front and rear drop-curtains as side drops, the bows of one of which are slanted to support the back of the seat, the side-boards having water-tables, seat-supports, and supporting-arms, the swinging end-gate having a jointed support, and the partition to close the opening under the seat, the whole combined and adapted to be applied to a wagon-body having an end-gate and folding step, or to an ordinary wagon-body, all substantially as set forth.

142,059.—Car-Coupling.—JAMES TEMPLE, Moorefield, Pa., assignor of one-half his right to DANIEL J. ROTE, same place. Application filed June 25, 1873.

Spring-gates support the coupling-pin and guide the coupling-link in its entrance into the draw-head, the height at which the link shall be held being regulated by a spring-plate in the rear part of the draw-head.

Claim.—The combination of the draw-head A A', the spring-gates E, which operate as a support for the coupling-link D and to eject it from the draw-head, the coupling-pin F, guiding-yoke F', and the angular guard H, the whole arranged to operate as set forth.

142,060.—Condenser.—HORACE A. TOWNE, Hannibal, Mo. Application filed June 24, 1873.

A flat pipe is connected with the exhaust-pipe of an engine, and wound spirally around a central axis or air-pipe, which communicates with the air at one end and with a reservoir for holding the condensed water at the other. A valve is provided in the central pipe to regulate the admission of air to said reservoir.

Claim.—1. A condenser composed of a flat pipe coiled spirally around a vertical axis within a water-reservoir, substantially as and for the purpose specified.

2. In combination with the steam-pipe of a condenser, a vertical air-pipe, connected therewith at its lower end, and uninclosed at the upper end, substantially as and for the purpose shown.

3. In combination with the air-pipe D, communicating with and extending upward from the condenser-pipe E, the valve I, pivoted within said air-pipe, substantially as and for the purpose set forth.

4. The relative arrangement of the condenser A and E, the reservoir C, and the air-pipe D, substantially as and for the purpose shown and described.

142,061.—Plowman's Boot.—AARON G. WALKER and SAMUEL BROWN, Worcester, Mass. Application filed June 26, 1873.

The parts forming the upper of a plowman's boot are cut in the form shown, so that when united the boot will be wide at the ankle-joint and narrow at the top of the leg.

Claim.—A plowman's boot, the edges d, e, p, k, m, and n of the parts A, B, and C of which are cut in the peculiar form and stitched together, as shown and described, and for the purposes set forth.

142,062.—Railroad-Car.—JOHN C. WANDS, Nashville, Tenn. Application filed April 22, 1873.

To prevent falling between the cars in passing from the top of one to the top of another as they stand together.

Claim.—The foot-piece B and the rail D, raised on a bracket, C e e, applied together upon the top of cars, as and for the purpose described.

142,063.—Removing Vegetable Fiber from Felted Fabrics.—JOHN T. WARING, Yonkers, N. Y. Application filed April 9, 1873.

Subjects the fabric to a bath of sulphuric acid of from 6° to 12° Baumé, subsequently neutralizing the acid remaining in the fabric by a suitable alkali.

Claim.—The process, substantially as herein described, of treating felted or woven woolen cloths after the same have been formed or hardened, and before dyeing, at any stage in the process of felting or fulling, or between any two stages thereof, or after the felting or fulling is completed, by exposing the same to an acid solution and afterward removing the acid from the fabric, for the purpose or purposes herein set forth.

142,064.—Dyeing Felt Hats and Caps.—JOHN T. WARING, Yonkers, N. Y. Application filed March 15, 1873.

A hat-body, made of vegetable and animal fibers mixed, is subjected to an acid bath to neutralize the vegetable matter, so that all its fibers will dye an even color.

Claim.—The process, substantially as herein described, of treating the hat or cap body after the same has been formed, and before dyeing, at any stage in the process of felting, or between any two stages thereof, or after the felting is completed, by exposing the same to an acid solution, and afterward removing the acid from said body, for the purpose or purposes herein set forth.

142,065.—Fire-Proof Cotton-Lint Room.—RUFUS R. WARREN, Raleigh, N. Y. Application filed July 14, 1873.

The cotton passing through the gin is delivered into a lint-room, the ceiling of which is suspended so that when the cotton takes fire the ceiling can be let down by a windlass to extinguish the fire.

Claim.—1. A lint-room having a ceiling or cover arranged so that it may be lowered at will and raised again, substantially as described, and for the purpose specified.

2. In an apparatus for smothering fires in lint-rooms, the combination of the rods b b with the cross-bars or plate c c, movable cover B, windlass E, and rope D, substantially as shown and described, for the purpose specified.

142,066.—Game-Board.—GEORGE WENTZ, Cincinnati, Ohio. Application filed June 16, 1873.

A journaled disk, provided with a series of numbers on its face, is caused to revolve beneath a pointer or other fixed indicator, by means of a vibrating lever carrying a pivoted toothed rack or segment which engages with a pinion on the dial-shaft, said lever being vibrated at the will of the operator by the inflation of a bellows supplied with air from a hollow rubber ball whenever the same is compressed.

Claim.—1. In combination with the pinion c' of the disk C, the toothed segment E, pivoted upon and working with the pivoted lever D, substantially as and for the purpose specified.

2. The disk C, pinion c', lever D, segment E, springs d' and F, detent G, bellows H, tube I, hollow flexible ball K, and rod L, when constructed and combined to operate substantially as and for the purpose shown.

3. The hereinbefore-described device as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose set forth.

142,067.—Lamp-Extinguisher.—FRANKLIN C. WIREMAN, New York, N. Y. Application filed June 25, 1873.

A float rests on the fuel of the lamp and descends as consumption proceeds. To the upright stem of the float a vertical rod is adjusted. When the descending float and rod have reached any point determined by their adjustment the rod releases a trigger and permits a spring to throw up a short tube inclosing the wick-tube until a cap worked by another spring may close over the flame.

Claim.—1. The self-extinguishing lamp, containing the float G, slide I, trigger L, and arm h of the extinguishing attachment, all parts being arranged substantially as herein shown and described.

2. The slide I, provided with a notch or bend, p, for alternately holding and releasing the trigger L, and made adjustable on the stem H of the float G, substantially as described.

3. The vessel A, connected by the tube t with the vessel F, the latter being arranged to contain, and combined with, the float G for extinguishing the light in the burner that is supported on A, substantially as described.

4. The combination of a wick-tube slide or extinguisher with the spring g, pinion h, and spindle d, whereby the extinguisher is made self-acting, as set forth.

142,068.—Furnace-Grate.—JAMES WITHINGTON, Bloomsburg, Pa. Application filed March 29, 1873.

The grate-blocks are placed on bars, the lower ends being connected by a reach-rod, by means of which they are vibrated.

Claim.—The triangular grate-block C, pivoted at about its middle portion, and having the convex upper surface or edge c, acute angle e, and the concave converging side edges d terminating at their lower ends, substantially as shown and described.

142,069.—Portable Stock-Shed.—DANIEL H. YERKES, Danville, Ky. Application filed March 21, 1873.

The roof and sides are removable, the rack adjustable, and a front apron also adjustable.

Claim.—A portable stock-shed, composed of the back sections A, top sections C, posts D, adjustable rack E, and adjustable apron G, all constructed, arranged, and combined together substantially in the manner and for the purposes herein set forth.

142,070.—Die for Forming Hammers.—JONATHAN YERKES, Philadelphia, Pa., assignor to YERKES & PLUMB, same place. Application filed July 16, 1873.

Claim.—The dies A A for the manufacture of hammers, constructed and operating as herein set forth.

REISSUE PATENTS.

5,534.—Hanging Lamp.—GEORGE BOHNER, Chicago, Ill.—Patent No. 126,254, dated April 30, 1872. Application filed June 30, 1873.

A lamp is so suspended that the weight of the shade balances it, and it may be raised or lowered by lowering or lifting the shade.

Claim.—1. The supporting-ring B, provided with the guide-bars C and guide-eyes c c, or tube C', as and for the purpose set forth.

2. The shade A, ring B, guide-bar C, with their guide-eyes c c or equivalent, the bar D, sheaves b, socket F, lamp G, rods H, and chains I when constructed, arranged, and operating as and for the purposes specified.

5,535.—Molding-Machine.—HEZEKIAH B. SMITH, Smithville, N. J.—Patent No. 99,894, dated July 6, 1858; extended seven years. Application filed June 7, 1873.

The revolving cutter is provided with an adjustable counterbalance, and the vertical adjustment of the table is controlled by a single screw.

Claim.—1. The combination of the cutter-head, the adjustable cutter, the screw counter-balance, and the set-screw for securing the same in position, substantially as set forth.

2. In a molding-machine, the combination of a vertically-moving feed-table or platen, L, the screw I for raising and lowering the table, acting thereon at or near its center, and guides or ways Q Q upon the frame of the machine, upon which the table moves, these members being combined for joint operation so that the table shall maintain a horizontal position under all circumstances, substantially as set forth.

5,536.—Sawing-Machine for Edging Lumber.—ESAU TANEANT, Muskegon, Mich.—Patent No. 66,013, dated August 20, 1867. Application filed August 7, 1873.

The frame of the machine carries two spiked feed-rolls placed in the front and rear of the saws, which act as guides, causing the lumber to pass through the machine in a direct longitudinal line, it being retained in contact with the feed-rolls by a self-adjusting pressure-roll.

Claim.—The adjustable pressure-roll E, in combination with the toothed guide-rolls D D and circular saws C, all being constructed and arranged substantially as and for the purposes herein set forth.

5,537.—Tea-Kettle Spout.—JAMES ASH, Sterling, Ill.—Patent No. 123,215, dated January 30, 1872. Application filed April 26, 1873.

The blank is made of one piece of sheet metal, cut and bent to form a spout with a single seam, and united to the body of the kettle by overlap seams.

Claim.—1. A sheet-metal kettle-spout blank, consisting of the shoulders *a' a'* and wings *b b*, and having an incision cut in the body thereof at the junction of said shoulders and wings, substantially as shown and described.

2. A sheet-metal kettle-spout consisting of the shoulders *a' a'*, united together as shown and described, and the wings *b b* formed to correspond to the circumference of the kettle, substantially as specified.

3. A sheet-metal kettle having its spout provided with wings *b*, bent outward from the angle, and secured to the body by seams along the outer edge of the wings, as specified.

5,538.—Harvester.—ORSON BILLINGS, Elyria, Ohio.—Patent No. 33,691, dated November 12, 1861. Application filed May 7, 1873.

The finger-bar is pivoted to lateral braces, the front of which is independently hinged and is strengthened by a longitudinal brace, to which the hand-lever is attached, for the purpose of changing the inclination of the points of the cutters.

Claim.—1. The front end of the shoe K of the finger-bar hinged to the adjustable brace-bar M, and combined with the pendent P and lever Q, as described, for the purpose of regulating the height of the front ends of the fingers *c*, as set forth.

2. A lateral brace jointed to and supporting the rear end of the shoe, combined with an independently-jointed lateral brace-bar supporting said shoe at its front end, so as to permit the points of the fingers to move above or below their plane of advance, as described.

3. A lateral brace jointed to and supporting the rear end of the shoe, combined with an independent lateral brace-bar jointed to the main frame and to the front end of said shoe, and a longitudinal brace to support said independent brace against longitudinal strains, substantially for the purpose set forth.

4. The arrangement of the spring-lever R, relatively with the lever S and finger-bar L, as shown and described, whereby the weight of the outer part of the finger-bar and sickle is counterbalanced, or nearly so, and whereby said finger-bar and sickle may be raised bodily, when required, in order to pass over obstructions.

5. The arrangement of the crank-axle E of the track-wheel C, segment G, and spring H, substantially as and for the purpose specified.

5,539.—Machine for Punching the Lifts of Boots and Shoes.—GEORGE W. ELLIS, Lynn, Mass., assignor, by mesne assignments, to JAMES W. BROOKS, trustee. Patent No. 41,037, dated December 22, 1863; reissue No. 5,094, dated August 6, 1872. Application filed August 11, 1873.

Claim.—1. In combination with mechanism for securing heel-lifts together, or for punching in assembled heel-lifts nail-receiving holes, mechanism for forming upon the heel-blank a gage guide or index for determining the position of the blank in a machine for driving the nails or trimming the curved edge of the heel.

2. A heel-blank having a gage register or guide for positioning the blank in a heel nailing or trimming machine, substantially as described.

3. In a machine for uniting or punching an assemblage of heel-lifts, a guide or a flange, E, for placing the lifts, substantially as shown and described.

4. Awls or punches operating to form the nail-holes, when acting in unison with drivers for inserting the nails to unite the lifts, substantially as described.

5. In combination with mechanism, substantially as described, for punching in assembled heel-lifts nail-receiving holes, a receptacle for receiving the assembled lifts, which acts to determine the position of said lifts in relation to each other.

6. In combination with mechanism, substantially as described, for punching in assembled heel-lifts nail-receiving holes, a receptacle for receiving said lifts, which acts to determine their position in relation to the punching mechanism.

7. In a machine for pricking heel and shoe heels, the combination of a tapering receptacle to contain the assembled lifts and a set of awls or punches operating through a series of holes in the plate that forms the smaller end of the receptacle, so as to prick the heel from the bottom thereof toward the top.

8. In combination with a guide for placing the heel or blank, a cutter, G, for cutting the breast or front of the heel, substantially as described.

5,540.—Anchor for Securing Cores.—ZADOCK ELLIS, Philadelphia, Pa. Patent No. 98,676, dated January 11, 1870. Application filed June 23, 1873.

The anchor is driven through the various layers directly against the spindle of the core, whereby the core is firmly held in place.

Claim.—The anchor A, constructed substantially as described, and capable of being driven through the various layers against the barrel of the core, so as to hold down the core, in the manner set forth.

5,541.—Dumping-Car.—JOHN HUGHES, New Berne, N. C. Patent No. 140,779, dated July 15, 1873. Application filed August 9, 1873.

The body is supported upon rollers, which travel upon inclined ways secured on the ends of the truck. A guard attached to the way prevents the car-body from falling off the truck.

Claim.—1. The truck C D, having the horizontal way *d*, with ends inclined downward, upon which the rollers travel which support the body, in combination with a guard or other device for holding the body of the truck, substantially as set forth.

2. The car A, having the wheels E secured to each end, in combination with the truck C D, having the ways *d* with inclined ends formed upon its top, and guard L, substantially as shown and described.

3. The castings G, arranged around the axles, substantially as specified.

4. In a dumping-car, the slotted brake H, in combination with the lever J, arranged so as to prevent lateral play of the car, substantially as shown.

5,542.—Seed-Planter.—BENJAMIN KUHNS, Dayton, Ohio. Patent No. 85,455, dated December 29, 1868. Application filed June 20, 1873.

The seed-cups are made spiral for half their length, and straight the other half. The gears for changing the rate of feed are cone-pinions cast in one piece, and are adjusted to the leading wheel by a shifting-lever.

Claim.—1. The rollers D, constructed with pockets formed by fixed heads *d*², and intermediate partitions formed by ribs, part spiral and part straight, substantially as set forth.

2. In a grain-drill, in combination with the shaft D', carrying the seed-distributing wheels and a shaft, B', parallel thereto, and rotated by one of the carrying-wheels, intermediate mechanism adjustable without removal from the machine for communicating a variable movement to the grain-distributing wheels, while the speed at which the machine is moved forward is unchanged.

3. In combination with the spur-wheel on the hub or axle and the spur-wheel on the seed-roller, an intermediate set of pinions concentric with one another, so as to form a cone spur-pinion, so arranged as to give a variable speed by shifting the wheels in relation to one another, substantially as set forth.

4. The combination of the cone-wheel, the oscillating arm, and sliding pinion, arranged, in relation to one another, substantially as set forth.

5. The combination of the shifting-lever H, the sliding pinion G, and cone-pinion F with the feed mechanism of a grain-drill, substantially as set forth.

5,543.—Pump-Rod Attachment.—HENRY H. LOCKE, Pleasantville, Pa., assignor to DOUGLAS BLY, Rochester, N. Y. Patent No. 103,632, dated May 31, 1870; reissue No. 4,662, dated December 26, 1871. Application filed August 9, 1873.

The cross-head, which forms the pivotal bearing, and the clamping-head are connected by an intermediate tubular piece. The clamping-head is formed with a shouldered socket for the reception of the clamping-bolt. The bolt has a slot through which the pump-rod passes, and a screw-thread on one end for the tightening-nut.

Claim.—1. A pump-rod attachment consisting of a cross-head, A, which forms the pivotal bearing, and a clamping-head, D, which forms the point of attachment for the pump-rod, when said parts are distinct from each other, and are connected by an intermediate part, E.

2. The clamping-bolt C, having a transverse opening or passage, *c*, in combination with a clamping-head, D, for the purpose of allowing the adjustment and producing the clamping of a pump-rod.

5,544.—Water-Tank for Railways.—JOHN MORTON, Cincinnati, Ohio, assignor, by mesne assignments, to THE MCGOWAN PUMP COMPANY. Patent No. 62,416, dated April 2, 1867; reissue No. 4,543, dated September 5, 1871.—Case A. Application filed March 8, 1873.

The delivery-pipe is both hinged and swiveled to the supply-pipe, so that the former may have a vertical movement as well as a movement from side to side.

Claim.—1. In a water-tank for railways, a supply and delivery pipe combined by means of a swivel-bearing and a hinged or jointed connection, by means of which said delivery-pipe may pass from a vertical to a horizontal position, and may be moved laterally in a horizontal plane without changing the relative positions of its inner end and the contiguous or bearing end of said supply-pipe, substantially as and for the purpose specified.

2. In combination with the supply and delivery pipes C and G, respectively, the stud or swivel bearing E, and hinged or jointed connection F, when arranged with their axes at right angles with each other, substantially as and for the purpose shown.

3. In a railway water-tank, a fixed supply and delivery pipe with its hinged swiveled connection, having the contiguous ends of their elbows so constructed that when said pipes are in a horizontal position their said ends fit together, to one containing the other, substantially as and for the purposes set forth.

5,545.—Water-Tank for Railways.—JOHN MORTON, Cincinnati, Ohio, assignor, by mesne assignments, to THE MCGOWAN PUMP COMPANY. Patent No. 63,418, dated April 2, 1867; reissue No. 4,542, dated September 5, 1871.—Case C. Application filed March 8, 1873.

To the front end of the supply-pipe is a hinged a delivery-pipe made in two sections, as at b, slide one over the other. A rod attached to one section passes through an eye attached to the other, the end of the rod being turned up to prevent the displacement of the outer section.

Claim.—In a water-tank, a delivery-pipe made longitudinally extensible, substantially as and for the purpose specified.

5,546.—King-Bolt for Railway-Car Trucks.—SAMUEL W. MURRAY and BENJAMIN P. LAMARSH, Milton, Pa. Patent No. 114,028, dated April 25, 1871. Application filed June 16, 1873.

A headless king-bolt is supported upon a bearing beneath the bolster. By this arrangement the car-body may be raised from the truck without disturbing the king-bolt.

Claim.—1. The king-bolt C, formed without a collar or head and supported at its lower end upon a seat secured beneath the truck-bolster, for connecting together the bolster of the car-body and the truck, substantially as described, for the purpose specified.

2. The truck and body bolster A B, having bearing-plates A' B', in combination with the headless king-bolt C, supported upon a bearing secured beneath the bolster A, substantially as described.

3. The bolster A, having a supporting-bearing, D, in combination with the headless king-bolt C and car-body bolster B, substantially as described.

4. The saddle D, forming a truss-bridge for the braces E, and having a central opening, *i*, for the passage of the king-bolt, and constructed with a stirrup, K, for the latter to rest upon, substantially as shown and described, and for the purpose set forth.

5,547.—Cultivator.—ARTHUR C. SMITH, Fayetteville, N. C. Patent No. 120,113, dated October 17, 1871. Application filed July 12, 1873.

A cotton-scraper combined with a cultivator.

Claim.—1. In combination with the plow-beams D D and their handles E' E', connected by rod I with sleeve *i*, the diagonal braces A^5 A^5, passing from the rear ends of the plow-beams to and through the handle of the plow on the other side, and adjusted by nuts A^5 A^6, substantially as and for the purposes herein set forth.

2. The combination of the land-marker L' adapted to slide along the pivoted arm L, and rendered adjustable by means of the arms N N and adjusting-plate *n*, with the stirrup K, cord *m*, and post L', all arranged and operating as described.

5,548.—Machine for Making Match-Sticks.—FREDERICK ZAHN, Philadelphia, Pa. Patent No. 136,893, dated March 18, 1873. Application filed May 15, 1873.

The sticks after being cut drop into a winnower.

Claim.—1. The transverse plate or butting-block H and its cross-bar I, in combination with the match-stick cutters G, substantially for the purpose shown and described.

2. The winnower J, in connection with a match-stick machine, for the purpose shown and described.

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The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 300 of drawings; total of each volume about 1,000 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,000 pages per month: 9,000 pages of specifications, 3,120 pages of drawings—12,720 pages.

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DIGEST OF FOREIGN PATENT LAWS.*

AUSTRIA-HUNGARY.

BY A. H. MOURSEY, OF THE BRITISH LEGATION AT VIENNA.

On the establishment of the dual system of government in Austria-Hungary, it was decided by a special agreement between the Ministers of Hungary and Cisleithania that the Imperial Decree of August 15, 1858, in which the law and practice with regard to inventions are fully explained, should remain in force throughout the whole Empire.

In accordance with the terms of this agreement, the Cisleithanian and Hungarian Ministers of Commerce submit to mutual approval the inventions for which they intend granting patents, and subsequently to such approval each Ministry issues patents, bearing identical dates, for its respective division of the Empire.

Thus, an inventor, desirous of securing an exclusive right to his invention in Austria-Hungary, must provide himself with two patents. These are, however, granted on a single application, addressed, at the choice of the applicant, either to the Cisleithanian or Hungarian Ministry of Commerce, and on one payment of the fees.

The patents thus issued are likewise valid in the principality of Lichtenstein.

In the laws of Austria-Hungary inventions are claimed under three heads, and defined as follows:

1. *Discoveries*—*i. e.*, the introduction of the methods of production hitherto unknown in the country, and the resuscitation of methods once known but now forgotten and lost.

2. *Inventions*—*i. e.*, the creation of a new object by new means, or a new object by means already known, and of a known object by other means than those used for its production.

3. *Ameliorations*—*i. e.*, any addition to an existing invention which improves the quality or reduces the price of the product of such invention.

Each of these classes of inventions is considered new, provided it is unknown in the Empire either in practice or in a printed book or document accessible to the public.

All inventions must have for their object either—

A new industrial production; or

A new means of production; or

A new method of production.

And subject to the above conditions, patents can be granted to their owners irrespective of their nationality.

To this general rule there are four exceptions:

1. Patents are not granted for inventions which affect the preparation of food, drink, and medicine, nor for those which cannot be used without injury to the interests of the State, the public health, morality, and safety.

2. A foreign invention can only be patented in Austria-Hungary on condition that it is still patented abroad, and a patent for such invention can only be granted to the foreign patentee or the possessor of his rights in it.

3. Patents for ameliorations are granted for the part ameliorated, not for the whole invention.

4. Patents are not granted for the discovery of scientific principles, unless the latter are actually brought to bear upon production.

One patent is never granted for two or more inventions, except in cases where both or all of them are to be used in the production of one and the same object.

Applications for patents must be addressed to the competent authorities, political authorities of the district, or provincial governors, (*statthalterien*,) accompanied by the requisite fee, or a certificate of this deposit of the same, and by a detailed description of the inven-

*The British Government, through its foreign legations, has secured digests of the patent laws of nearly or quite all countries that possess an salient provisions for inventions. These digests are as well prepared, and are of as much interest to inventors, as to justify their publication in the ORIGINAL GAZETTE.

tion, as well as by models and drawings, if necessary, in such detail that a professional man can, on the expiration of the patent, construct it therefrom.

The application must be made by the proprietor of the invention himself, or his duly accredited agent, (if by the latter, his mandate must be produced,) and must state:—

A. The full name, profession, and domicile of the applicant. If the latter lives abroad, similar information must be given relative to his agent in the empire; and if the invention is to be used by others than the inventor, their names, domicile, and profession must likewise be stated. If the invention is a foreign one, the original patent, or a certified copy of it, must be inclosed.

B. The title of the invention.

C. The number of years for which the patent is demanded. This number cannot exceed fifteen without the special consent of the emperor; or, if the invention is already patented abroad, the expiration of the patent there granted.

D. Whether or not secrecy is desired.

The taxes on patents, for natives and foreigners indiscriminately, are as follows:

	fl.	kr.	
For the first five years	100	10	= $48 73
For the second five years	200	20	= 97 44
For the third five years	400	40	= 194 88
For fifteen years	700	70	= 341 04

These taxes must be paid or deposited in the hands of the government officials previous to the issue of the patent. They are only returned in cases where patents are canceled on public grounds.

On receipt of an application the district authorities, after seeing that it is properly drawn up and signed, that it is accompanied by the proper inclosures, and that provision has been made for the payment of the taxes, must mark on the envelope the day and hour of its presentation, give a receipt to the applicant, and forward the application at once (within three days, at the latest) to the provincial governor.

From this day and hour the priority of right to the invention belongs to the applicant.

The provincial governor must see that the subject of the application is one for which a patent can be granted, and that the proper forms have been observed. Should he decide that the subject is not patentable he must return it to the applicant; but the latter can appeal from his decision to the Ministry of Commerce. If the proper forms have not been complied with he must return the application and fix a date for its re-presentation.

If in due form the provincial governor must forward it to the Ministry of Commerce, which is alone authorized to open the sealed description of the invention.

Should the Ministry find that the description tallies with the invention, and that all the other legal forms have been complied with, it issues the patent at once, without examining the question of the utility or novelty of the invention. No responsibility attaches to the Ministry on the latter account, and the applicant must alone bear the consequences of any encroachment on the rights of others.

Should the description of the invention be incorrect, or its subject not patentable, the documents are returned to the applicant for correction, or as being useless, according to the circumstances.

The exercise of patents is subject to the interests of public health, and may be limited or prohibited accordingly.

Once issued, the patent is immediately entered in a register at the Ministry of Commerce, where all drawings and models of patented inventions are kept.

These archives are accessible to all comers, who, except when secrecy has been requested by the inventor, can take copies of their contents.

A monthly report, describing the patents registered during each month, is made by the keeper of the archives to the Ministry of Commerce, who forwards copies of it to the provincial authorities.

An annual report of the same tenor is published, and descriptions of useful inventions of which the patents have expired are likewise from time to time published for the public use.

A patent secures to the patentee the exclusive use of his invention for the number of years mentioned in the application.

He is thereby authorized to take all requisite measures for working his invention and selling its products, and to empower others to work it for him. He may dispose of his patent as he likes, by sale, testament, lease, &c., and obtain foreign patents for his invention.

The rights conferred by a patent for an amelioration are restricted to the part ameliorated.

Patentees can procure for one or more years the renewal of patents originally granted for less than fifteen years, by making the application to that effect, accompanied by the original patent and the necessary fee to the Ministry of Commerce, which must at once notify the renewal to the public.

Patents become invalid—

1. In consequence of being canceled on the following grounds:

(*a.*) When all the legal requirements have not been complied with in obtaining them.

(*b.*) On proof being given that the invention in question was not new at the time at which the patent was issued, or that it was introduced from abroad without the consent of the foreign patentees.

(*c.*) On proof being given by a patentee that the invention is identical with one for which a patent has already been granted.

(*d.*) As being injurious to the public interests.

2. By lapsing.

(*a.*) When the patentee fails to make use of his patent for one year from the date of its issue; or, later, allows two consecutive years to elapse without working his invention.

(*b.*) On the expiration of the term for which the patent was granted or renewed.

(*c.*) In consequence of a voluntary renunciation of the rights conferred by a patent.

As soon as patents are declared invalid their subjects become public property.

All cessions and testamentary disposal of patents must be notified to the proper authorities, and made known to the public by the Ministry of Commerce.

The encroachments on patented rights are—

(*a.*) The imitation or counterfeiting of the products of a patented invention, even when such imitation or counterfeiting results from the possession of a subsequent or partially identical patent.

(*b.*) The importation for sale of counterfeit products of a home invention.

(*c.*) The sale, exhibition, or storage of such products.

A first encroachment on a registered patent, a second one on a secret patent, is punishable with a fine, varying from $12 16 to $486; and on non-payment of the same, by one day's arrest for every $2 24 of the fine imposed, and by confiscation of the machinery, tools, &c. The fine is paid into the pauper fund of the place where the encroachment was made.

Should a patentee, whose rights have been encroached upon, be unwilling to prosecute, he may apply for a rule prohibiting further counterfaction or sale and ordering the exportation of imported counterfeits.

In all actions relative to patents the original description of the invention given by the patentee is the sole evidence of its nature.

The Ministry of Commerce is alone competent to decide on the invalidity or lapsing of patents.

In cases of encroachment, the political authorities of the district are competent in the first instance. Appeals may be made from their decisions to the provincial authorities, and finally to the Ministry of Commerce.

These authorities may at once order an examination of the subject in dispute, and, if necessary, its immediate confiscation.

RESOLUTIONS OF THE PATENT CONGRESS.*

VIENNA, AUSTRIA, AUGUST 5–10.

I. The protection of invention should be guaranteed by the laws of all civilized nations, under the condition of a complete publication of the same, because—

(*a.*) The sense of the right among civilized nations demands the legal protection of intellectual work.

(*b.*) This protection affords the only practical and effective means of introducing new technical ideas without loss of time, and in a reliable manner, to the general knowledge of the public.

(*c.*) The protection of invention renders the labor of the inventor remunerative, and induces thereby competent men to devote time and means to the introduction and practical application of new and useful technical methods and improvements, and attract capital from abroad, which, in the absence of patent protection, will find means of secure investment elsewhere.

(*d.*) By the obligatory complete publication of the patented invention the great sacrifice of time and of money, which the technical application would otherwise impose upon the industry of all countries, will be considerably lessened.

(*e.*) By the protection of invention the secrecy of manufacture, which is one of the greatest enemies of industrial progress, will lose its chief support.

(*f.*) Great injury will be inflicted upon countries which have no national patent laws by the native inventive talent emigrating to more congenial countries, where their labor is legally protected.

(*g.*) Experience shows that the holder of a patent will make the most effectual exertions for a speedy introduction of his invention.

II. An effective and useful patent law should be based on the following principles:

(*a.*) Only the inventor himself or his legal representatives should be entitled to a patent. A patent should not be refused to a foreigner. It is advisable in carrying out this principle to introduce a system of preliminary examination.

(*b.*) A patent should be granted either for a term of fifteen years or be permitted to be extended to such a term.

(*c.*) Simultaneously with the issue of a patent, a complete publication of the same should take place, rendering the technical application of the invention possible.

(*d.*) The expense of obtaining a patent should be moderate, but, in the interest of the inventor, a progressive scale of fees should be established, enabling him to abandon, when convenient, a useless patent.

(*e.*) Facilities should be given, by a well-organized patent office, to obtain in an easy manner the specification of a patent, as well as to ascertain what patents are still in force.

(*f.*) It is advisable to establish legal rules, according to which the patentee may be induced, in cases in which the public interest should require it, to allow the use of his invention to all suitable applicants for an adequate compensation.

(*g.*) The non-application of an invention in one country shall not involve the forfeiture of the patent if the patented invention has been carried into practice at all, and if it has been rendered possible for the inhabitants of such country to purchase and make use of the invention.

In all other respects, and particularly as regards the proceedings in the granting of patents, the congress refers to the English, American, and Belgian patent laws and the draft of a patent law for Germany by the Society of German Engineers.

III. Considering the great differences in patent legislation and the altered international commercial relations, the necessity of reform is evident, and it is of pressing moment that governments should endeavor to bring about an international understanding upon patent protection as soon as possible.

IV. The congress empowers the preparatory committee to continue the work commenced by this first international congress, and to use all their influence that the principles adopted be made known as widely as possible and carried into practice.

The committee is likewise authorized to endeavor to bring about an exchange of opinions on the subject, and to call from time to time meetings and conferences of the friends of patent protection.

To this end the Preparatory Committee is hereby appointed to act as a permanent Executive Committee, with power to add other members to their number and to appoint the time and place for the next meeting of the congress, in case such a meeting should be considered necessary for the promotion of the results achieved.

*This congress turned out to be little more than a convention of friends of patents for inventions. It proved to be entirely unofficial.

COMMISSIONER'S DECISIONS.

THOMAS J. MAYALL—*Appeal.*

[*In the matter of the application of Thomas J. Mayall for patent for* IMPROVEMENT IN PACKING.—*Decided August 20, 1873.*]

APPEAL FROM THE DECISION OF THE PRIMARY EXAMINER.

Before the propriety of a division of an application can be determined it is essential that claims be presented the significance of which is not a matter of doubt.

Every claim should be so drawn as to plainly indicate the nature of the invention sought to be covered by it, whether it is an improvement in an "art" or in a "manufacture," &c. There is no middle ground, such as the use of a thing upon which which a claim can rest. A claim for the "employment" of canvas, therefore, held to be nondescript in character and indefensible.

A claim for a manufacture must rest upon the novelty of the thing itself without reference to the "art" or process employed in its production. The two, as features of invention, are distinct, and must be respectively and independently novel in order to be patentable.

In a claim for a product a recital of the method of constructing it is a circuitous way of indicating its nature, tends to obscure the claim, and is not a proper limitation of it.

LEGGETT, *Commissioner:*

The applicant sets out that he has invented "certain new and useful improvements in the manufacture of packing" for pistons, steam-joints, &c., "composed in the main of canvas or other woven fabric."

To prepare his fabric he coats one or both sides of it with bees-wax or other lubricant, in a manner to thoroughly saturate it, and then treats it with a rubber solution. His object is, first, that layers of the material thus prepared, when placed together to form packing, shall adhere to one another; and, second, that the lubricant shall be held in the fabric by the rubber, and prevented from being given off too freely.

To make packing of this prepared fabric he cuts it parallel with the warp or weft threads into strips, which he winds spirally upon a mandrel, so that each succeeding strip shall break joints with the preceding. A tube of packing is thus obtained, the fabric of which is bias, and which may be cut into packing-rings. Assuming their novelty, here would seem to be four distinct features of invention, although this is not, at present, a question for decision. First, a method or improvement in the "art" of preparing fabric for making packing; second, a prepared fabric as a "manufacture" or product for making packing, (or for whatever other use it may be adapted to;) third, a method or improvement in the "art" of making packing, (applicable to any suitable fabric or material;) and, fourth, a packing as a "manufacture" or product, formed in tubes or rings of bias adhering layers, having the quality of retaining a contained lubricant, as specified.

The three following claims have been made in this application which the Examiner holds should be divided:

"1. The employment in the manufacture of packing of canvas, or other suitable woven fabric, treated first with bees-wax or other lubricant, and then with rubber solution, substantially as and for the purposes described.

"2. The manufacture of packing from strips of canvas, or other woven fabric, suitably treated, wound spirally upon a mandrel in successive, opposite, and independent layers, the tube thus produced being divided into packing-rings substantially in herein described and illustrated in the accompanying drawings.

"3. Packing composed of canvas strips, preliminarily treated with bees-wax or other lubricant, followed by rubber solution, as described, and then wound spirally in successive, opposite, concentric layers on a suitable mandrel or form, substantially as and for the purposes shown and set forth."

Before the propriety of a division of an application can be determined, it is essential that claims be presented the significance of which is not a matter of doubt. The Examiner remarks the ambiguity of the first claim, and, upon consideration of it, very properly concludes that the more reason appears for regarding it as a claim for a product. This the applicant denies, and says it is the use of prepared canvas which he claims. Very true. But that was obvious before, and is precisely what creates the ambiguity. What is signified by a claim for the use of a device?

There are but two heads under which either invention here shown can be comprehended—an improvement in an "art" or in a "manufacture." Each invention must clearly appear to be one or the other. There is no middle ground, such as the use of a thing, upon which a claim can rest. Every claim must be so drawn as to plainly indicate what kind of invention is sought to be covered, whether an improvement in an "art" or in a "manufacture," whether a process or a product. There is certainly nothing in the language of the first claim to indicate with any certainty that it covers a process. The fact is, it is purely nondescript in character, and wholly indefensible. But if it should be held to cover a product, then the first and third claims cover the same product, and, as the Examiner suggests, there is an objectionable duplication of claims which, as a preliminary step, should have been corrected.

The second claim, although it is not entirely postponous on account of the use of the word "manufacture" in the first line, seems to cover the third feature of invention pointed out above, viz.: The improvement in the "art" of forming, or the mode of proceeding to form, packing from prepared canvas. The latter part of the claim is in no sense a limitation of it, and only tends to obscure its real significance. The packing is as complete before being sized—that is, cut into rings of the requisite width—as it is afterward. That is a mere fitting of it to a particular place, and nothing more. It does not enter into the method of making it or form one of the characteristics of the packing itself. Sometimes, in fact, a tube, properly speaking, rather than a ring is required.

The third claim covers a packing. It indirectly indicates its nature, however, by reference to the method or methods employed in its construction, instead of directly setting out the characteristics of the completed packing itself. This is objectionable, because a claim for a manufacture or product must rest upon the novelty of the product, without reference to the "art" employed in its production. The two, as features of invention, no matter where claimed, are always distinct, and must be respectively and independently novel in order to be patentable.

The question of the patentability of one is entirely separate from the question of the patentability of the other.

The manufacture or product complete in itself, and new in its individual qualities and characteristics, and not merely in its plan of production, is what the claim should clearly and only specify. It is a fallacy to suppose, as this claim seems to imply, that an article is ever patentable merely because produced by a certain mode of proceeding. It is only patentable because it is itself a new thing.

A reference to a method, therefore, in a claim for a product, is a circuitous way of indicating what the product claimed is. It tends to obscure such a claim, and is not a proper limitation of it. All this is matter for preliminary correction.

I think the Examiner was premature in requiring a division while the claims remained so defective—especially as the first, over which a dispute has now arisen, which, perhaps, was to be anticipated, is indefinite as to what invention it comprehends.

The case is therefore returned to him, and he is directed to require such amendments as are necessary to render the claims clear and definite in their significance, when it will not be difficult, probably, to determine whether or not a division is necessary.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,565.—Rolling-Mills.—Granted to JOHN and GEORGE FRITH, September 27, 1859. Application filed June 27, 1873. Hearing September 16, 1873.

25,569.—Reducing Gluten.—Granted to THOMAS HOWE, September 27, 1859. Application filed June 28, 1873. Hearing September 16, 1873.

25,570.—Mode of Arranging Couches in Railroad Cars.—Granted to ROWLAND C. KINNEY, September 27, 1859. Application filed May 26, 1873. Hearing September 10, 1873.

25,572.—Molding Water-Traps.—Granted to JAMES ALLEN LOWE, September 27, 1859. Application filed June 28, 1873. Hearing September 10, 1873.

25,586.—Burglar-Alarms.—Granted to ARNOTT Q. HOW, September 27, 1859. Application filed June 28, 1873. Hearing September 10, 1873.

25,595.—Steam Punching-Machines.—Granted to JOHN SPARROW, September 27, 1859. Application filed June 28, 1873. Hearing September 10, 1873.

25,640.—Steam-Boilers.—Granted to JOSEPH HAMMOND, Jr. October 4, 1859. Application filed June 28, 1873. Hearing September 17, 1873.

25,692.—Construction of Prisms.—Granted to EDWIN MAY, October 4, 1859. Application filed June 28, 1873. Hearing September 17, 1873.

25,698.—Machines for Lasting Boots and Shoes.—Granted to JAMES PUSHTON, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,699.—Skylights.—Granted to CHARLES L. STAUT, October 4, 1859; reissued June 6, 1865. Application filed June 28, 1873. Hearing September 17, 1873.

25,699.—Sewing-Machines.—Granted to KASPER VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—Skeleton Skirt.—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,725.—Hand-Machine for Wiring Blind-Rods.—Granted to BRIAN C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,732.—Double-Friction Couplings.—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—Method of Combining Hardy with Caoutchouc.—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 14, 1873. Hearing September 24, 1873.

25,767.—Cutting and Pressing Cutlery.—Granted to JOHN H. SHOOTS, October 11, 1859. Application filed July 15, 1873. Hearing September 24, 1873.

25,784.—Blade of Hinged Knife, &c.—Granted to GEORGE W. BARBER, October 11, 1859. Application filed July 9, 1873. Hearing September 24, 1873.

25,795.—Jacquard Machines.—Granted to AVERY RAMSEY, October 11, 1859. Application filed June 28, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to BENJAMIN HALL, October 11, 1859. Application filed July 12, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,807.—Steam-Feeders.—Granted to LAWRENCE GLASS, October 11, 1859. Application filed July 12, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,814.—Sleeping-Cars.—Granted to JOHN RAMSEY, October 11, 1859. Application filed July 12, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,843.—Cultivators.—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,860.—Weeding-Hoes.—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 12, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,867.—Machines for Covering Saddle-Trees.—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,874.—Steaming-Machines.—Granted to GILBERT H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,883.—Construction of Glass Coffins.—Granted to JOHN R. CARSON, October 25, 1859. Application filed July 23, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,905.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,976.—Saddle-Blocks.—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 9, 1862, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to HIRAM STOCKTON, November 1, 1859; reissued April 25, 1867. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,022.—Telegraphic Machines.—Granted to GARDNER M. PERLEY, November 1, 1859. Application filed July 29, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 5, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,029.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 5, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,060.—Machines for Making Box-Joints.—Granted to JAMES SUMPTER, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,063.—Sleeping-Cars.—Granted to JOHN DANIELS, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to CYRUS CRANDELL, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,126.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1872. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,135.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,136.—Medes of Advertising.—Granted to EDWARD WIBER, November 15, 1859. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,139.—Pumps.—Granted to WILLIAM WISNER, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

96,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

96,178.—Shirking Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

96,208.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDNER HOWLAND, November 29, 1859; and reissued July 2, 1867. Application filed August 26, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

96,242.—Water-Closet Bushes.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 16, 1873. Testimony closes October 29, 1873. Hearing November 12, 1873.

96,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

96,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. PERRY, November 29, 1859. Application filed August 20, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

96,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 28, 1873. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

96,281.—Molding for Metal Casting.—Granted to JOHN P. BROADSHADOW, November 29, 1859. Application filed August 13, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

96,297.—Nursing-Bottles.—Granted to FRANCIS J. LA FORGE, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

96,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 29, 1873. Hearing November 12, 1873.

96,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

96,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KENDALL, December 27, 1859. Application filed August 29, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

97,532.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURNS, March 29, 1869, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

25,269.—Improvement in Nail-Machines, granted to DANIEL DODGE, August 30, 1859.

Claim.—1. The combination of an anvil, B, and fixed die C, or other equivalent fixed surfaces, a roller, E, hammer F G, and a vibrating guide, I, the whole operating substantially as herein described.

2. The operation of a hammer in combination with the roller E and anvil B, by means of an eccentric on the roller-shaft and a universal joint at the connection of the hammer with the connecting-rod of the eccentric, substantially as herein described.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date August 26, 1873.]

6,825.—Saw-Frame.—THOMAS S. DENTON and HENRY DENTON, 2d, Philadelphia, Pa., assignors to themselves and HENRY DENTON & SONS, same place. Application filed August 1, 1873. Term of patent 7 years.

6,826.—Muff.—MORITZ GROSS and BERNHARD B. ZIPPERT, New York, N. Y. Application filed June 26, 1873. Term of patent 3½ years.

6,827.—Lady's Fur Collar.—MORITZ GROSS and BERNHARD B. ZIPPERT, New York, N. Y. Application filed June 26, 1873. Term of patent 3½ years.

6,828.—Chair.—SAMUEL HAYWARD, Boston, Mass. Application filed June 30, 1873. Term of patent 3½ years.

6,829.—Material for Gored Skirts.—JOHN ANDERSON, New York, N. Y. Application filed June 23, 1873. Term of patent 14 years.

6,830.—Paper-Clip.—THOMAS ORTON, Chicago, Ill. Application filed June 21, 1873. Term of patent 14 years.

6,831.—Stove.—WILLIAM D. SOUTHARD, New York, N. Y. Application filed June 26, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date August 26, 1873.]

1,417.—Kaleidoscope.—C. G. BUSH & Co., Providence, R. I. Application filed August 6, 1873.

"a representation of a parlor-kaleidoscope."

1,418.—Seeds, Bulbs, Vines, and Cuttings.—CHASE BROTHERS & WOODWARD, Rochester, N. Y., and Augusta, Me. Application filed July 25, 1873.

An old man sowing seeds, and the words "Chase Brothers and Woodward."

1,419.—Spices, Mustard, Soda, and Cream of Tartar.—E. R. DURKEE & Co., New York, N. Y. Application filed July 12, 1873.

"'Challenge.'"

1,420.—Carpets, Drugget, Rugs, and Mats.—JOSEPH EDWARD HUGHES, Kidderminster, England. Application filed July 26, 1873.

"a lion rampant on a crown and the word 'English' above the lion."

1,421.—Pepsin.—LILLY AND PERLAN, Evansville, Ind. Application filed August 4, 1873.

"'Arcanite.'"

1,422.—Liniment.—WILLIAM H. RAINEY, Brunswick, Ga. Application filed August 6, 1873.

"a telegraph line with four posts, the words 'Trade-Mark' immediately over telegraph line, the word 'Lightning' on left of telegraph line, the word 'Relief' on right."

1,423.—Wines and Liquors.—OTTO SCHLOSSER, New York, N. Y. Application filed May 20, 1873.

"a crescent, inscribed with the word 'Crescent' and a vignette of Ceres surrounded by the products of harvest."

1,424.—Castor-Oil Pills.—WILLIAM SCRUTON, New York, N. Y. Application filed August 9, 1873.

"'U. S.' and an eagle on a shield."

1,425.—Celery Sauce.—HENRY, NOBLE & Co., Pittsburg, Pa. Application filed August 16, 1873.

"'Celebrated Celery Sauce' and a figure of the celery plant."

1,426.—Horse-Radish.—HENRY, NOBLE, AND COMPANY, Pittsburg, Pa. Application filed August 16, 1873.

"'Strictly Pure Horse-Radish' and the figure of a horse-radish plant and root."

1,427.—Rye Whisky.—THOMAS L. HYDE, Washington, D. C. Application filed August 20, 1873.

"'Old Stag Whisky.'"

1,428.—Alpaca.—WILLIAM B. LEWIS, New York, N. Y. Application filed August 23, 1873.

"a horse mounted by a jockey, and the word 'Cremorne.'"

1,429.—Gas-Machine.—F. W. OEHLDT & Co., Newark, N. J. Application filed July 12, 1873.

"'Star Gas-Machine.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date August 26, 1873.]

ORIGINAL PATENTS.

142,071.—Sauce for Food.—ANSELMO P. AGRESTA, New York, and ANTONIO MEUCCI, Clifton, N. Y. Application filed July 9, 1873.

Meat, of good quality, one hundred pounds; salt pork, one-fourth pound; fresh tomatoes, eight pounds; finely-cut carrot, eight pounds; finely-divided celery, eight pounds; onions, four pounds; gelatine, one-fourth pound; salt, one-half pound; pepper, one ounce. Mix well and brown over a slow fire. When brown, add warm water and boil until thoroughly cooked.

Claim.—The sauce prepared and preserved in the manner and of the materials herein set forth.

142,072.—Croquet-Wicket Driver.—EDWIN A. BARKER, Providence, R. I. Application filed May 14, 1873.

For driving into and removing from the ground the ordinary curved or round-top croquet-arches.

Claim.—1. A croquet-wicket driver, constructed substantially in the manner described, for the purpose specified.

2. In combination with a croquet-wicket driver, the prolonged legs to operate as a gage, substantially as described.

3. A wicket-driver provided with the hooks E for withdrawing the wicket, substantially as described.

142,073.—Packing for Show Cases.—GEORGE G. RATH, New York, N. Y. Application filed June 9, 1873.

Two or more cases are arranged in telescopic form, on which are wound fringes for exhibition, and closed for transportation.

Claim.—The combination of two, three, or more boxes, A B C, provided with projecting flanges on each end, and operating similar to a telescope, substantially as and for the purpose hereinbefore set forth.

142,074.—Plow.—JAMES F. BENTON, Penn Yan, N. Y. Application filed December 5, 1872.

A common plow is provided with a supplemental sole, which is pivoted in a slot in the rear end of the land-side and adjusted at the forward end by an oblique slot to govern the pitch of the plow.

Claim.—The adjustable sole B, when pivoted to the rear end of the land-side and secured by the slotted strap, as described.

142,075.—Playing-Card.—HANNATY BULLIVAN, Boston, Mass. Application filed January 22, 1873.

The designs upon playing-cards are here printed small, and in the center of the card, with fortune-telling sentences ranged about the margin.

Claim.—1. A playing-card bearing the two signs above described, and adapted, as explained, not only for use in playing the more common games, but also the game of fortune-telling by cards.

2. The arrangement of the two signs above described, the one in the middle portion of the face of the card, and the other in the margin, formed substantially as above described.

142,076.—Buckle.—JULIUS M. BORCHARDT, New York, N. Y., assignor to MORIZ ARNEMO, same place. Application filed March 10, 1873.

Claim.—1. The bow A, rigidly secured to the chord B, forming with it collars or bearings, as and for the purposes described.

2. The combination of the bow A and the chord B with the loop and tongue wire C D D, substantially as described, and for the purpose set forth.

142,077.—Table-Hinge.—ELIAS C. BOSSERT, Middletown, Pa., assignor of one-half his right to SOLOMON C. BOSSERT, same place. Application filed December 9, 1872.

The stationary part of the hinge has two parallel flanges projecting downward, and a pin from one flange to the other. The movable part of the hinge has an arm with stop or projection and hook, so arranged that the stop will engage with the cross-bar when the leaf is raised, and the hook will catch on the cross-bar and support the leaf when lowered.

Claim.—1. The combination of the pin or cross-bar *c* of the stationary part C with the open hook *d* of the movable part D of a hinge, substantially as and for the purpose herein specified.

2. The combination of the pin or cross-bar *c* of the stationary part with a hook, stop, or projection on the arm of the movable part of the hinge, substantially as and for the purpose herein specified.

3. The combination of the depression *g* in the upper side of the movable part, and a hook, stop, or projection on the arm, with the pin or cross-bar *c* of the stationary part of the hinge, substantially as and for the purpose herein specified.

142,078.—Heating-Stove.—RICHARD H. BROWN, Linneus, Mo. Application filed April 28, 1873.

The saddle is raised above the top of the stove sufficiently to form a chamber thereunder. Upon an extension, at one side of the saddle, the pipe is attached, allowing room for heating-drum or other article.

Claim.—The stove A, the bottom fire D, the exit-flue E, extension F, opening J, damper K, saddle G, and extension H, combined, constructed, arranged, and operating substantially as described and shown.

142,079.—Heating-Stove.—RICHARD H. BROWN, Linneus, Mo. Application filed March 8, 1873.

The draft enters near the longitudinal center of the stove. The products of combustion may divide and pass down either of the end flues.

Claim.—1. The combination of the stove-body A, plate B, flues C *b* D, and dampers *d* and *e*, all constructed and arranged substantially as shown and specified.

2. The combination of the stove-body A, elbow W, drum R, diaphragm G, opening *g*, pipe *m*, and dampers S and *s*, substantially as shown and specified.

3. A heating-stove combining in its construction the body A, plate B, flues C *b* D, elbow W, drum R, diaphragm G, opening *g*, pipe *m*, and dampers *d*, *e*, and S, the various parts being constructed and arranged substantially as shown and specified.

142,080.—Reservoir Cooking-Stove.—RICHARD H. BROWN, Linneus, Mo. Application filed April 28, 1873.

Claim.—In a cooking-stove, a hot-water reservoir arranged at the forward end of the stove under the hearth-plate thereof, and over or upon the extended side and bottom plates of the stove, the top of the reservoir being the said projecting hearth-plate, the bottom being the top of the chamber or flue space formed by the said extension of the side and bottom plates, and the rear wall of the reservoir being the front plate of the oven, substantially as shown and specified.

142,081.—Automatic Fan.—JOHN D. BUSH, Hyten, Ala. Application filed March 18, 1873.

Claim.—Vibrating suspended shafts G, carrying fans or fly-brushes, and composed, respectively, of jointed sections and sliding-slides *g*, in combination with jointed supports S, substantially as and for the purposes described.

142,082.—Telegraph-Pole.—JOSEPH L. CHAPMAN, Philadelphia, Pa., assignor of two-thirds his right to JOHN C. STOCKTON and JAMES WATSON, same place. Application filed March 1, 1873.

Four uprights of angle-iron are secured in the ground to a bed-plate. Said uprights incline inwardly toward their tops, where they clamp the cross-bars, and are united to each other by horizontal tie-rods, which also form a means for climbing the pole.

Claim.—The combination, in a telegraph-pole, of the four bars of angle-iron A A A A, provided with flanged feet at the lower ends for securing them to the base-plate B, connected by rods E E, and arranged at the upper portion to receive the cross-pieces C C C, substantially as herein shown and described.

142,083.—Flour-Bolt.—DAVID T. CROAT and HENRY BIGH, Cedar Falls, Iowa. Application filed April 14, 1873.

The series of spiral ribs, arranged on the inside of the bolt at regular intervals, support the cloth, and allow the flour, middlings, or meal to pass through.

Claim.—In a round mill-bolt or separator, the bolting-cloth supported directly upon a series of spiral ribs, substantially as specified.

142,084.—Gang-Plow.—RUDOLPH CORETH, West Belleville, Ill. Application filed June 21, 1873.

The plow-frame, when released from front supports, revolves, lifting the plows out of the ground and making a complete revolution. The carriage-frame is mounted on a crooked axle having bearings in standard-cranks, and supported in front by clutches.

Claim.—1. The standard-cranks F F, mounted on the crooked axle D', applied to the standards E E on frame A A, and having combined with them the gears *f f* and the devices for operating these gears, substantially as described.

2. The clutch *s*, applied to a rock-shaft, r, having a hand-lever, G, on it, in combination with the revolving frame, carrying coulter-plows, F, and a crooked axle, D', constructed in front end of the way of said frame, substantially as described.

3. The standards E, pendulated and provided with adjustable stop-pins *p*, in combination with the standard cranks and their

guide, and with lifting-arms b' on a turning plow-frame, substantially as described.

142,095.—Hitching Attachment.—EUGENE CROCKERELL, AUGUSTUS TELMAR, and EDWARD L. VANDERBURG, San Francisco, Cal. Application filed March 29, 1873.

Claim.—The hook-head top and loop attachments, constructed as follows: The movable loop L, either loose or forming part of the top I, provided with screw b and plate g or nut n, in combination with the adjustable ring R, in connection with the hook-head top I, substantially as and for the purpose hereinbefore set forth.

142,096.—Milking-Tube.—JOHN H. DEERING, Milwaukee, Wis., assignor to MCCORMICK, STEVENS & Co., same place. Application filed May 13, 1873.

Claim.—The composition of the several ingredients and the mode of manufacturing the brick, substantially as described.

142,097.—Apparatus for Renovating Velvet, &c.—MARY J. DEWEY and JAMES T. DEWEY, West Troy, N. Y., assignees of one-third their right to HARRIET MARIA DEWEY, same place. Application filed March 3, 1873.

Claim.—The combination of the vertical inspirator-pipes with the steam-chamber and the horizontally-perforated top, substantially as and for the purpose specified.

142,098.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination of the steam-generator A, having the annular flue a, the steam-chamber C having the perforated top d, tube-receiving plate e, tubes g, two-way valve-pipe F, and vaporizing-passage A, with or without the diameter H, substantially as described.

142,099.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination of the adjustable cover or covers I, having the tube or tubes g g, and cylinder, having k with the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,100.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,101.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,102.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,103.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,104.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,105.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,106.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,107.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,108.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,109.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,110.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,111.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,112.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,113.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,114.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,115.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,116.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,117.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,118.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,119.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,120.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,121.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,122.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,123.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,124.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,125.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,126.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,127.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,128.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,129.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,130.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,131.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,132.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,133.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,134.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,135.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,136.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,137.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,138.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,139.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,140.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,141.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,142.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,143.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,144.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,145.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,146.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,147.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,148.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,149.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,150.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,151.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,152.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,153.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,154.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,155.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,156.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,157.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,158.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,159.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,160.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,161.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,162.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,163.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,164.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,165.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,166.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,167.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,168.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,169.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,170.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,171.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,172.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,173.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,174.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,175.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,176.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,177.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,178.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,179.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,180.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,181.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,182.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,183.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,184.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,185.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,186.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,187.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,188.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,189.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,190.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,191.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,192.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,193.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,194.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,195.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,196.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,197.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,198.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,199.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,200.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,201.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,202.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,203.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,204.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,205.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,206.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,207.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,208.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,209.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,210.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,211.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,212.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,213.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,214.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,215.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,216.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,217.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,218.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,219.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,220.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,221.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,222.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,223.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,224.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,225.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,226.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,227.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,228.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,229.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,230.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,231.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,232.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,233.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,234.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,235.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-chamber C, having the perforated top d, and tube or tubes g g, substantially as described.

142,236.—Steam-Generator.—ALONZO S. GEAR, Boston, Mass. Application filed May 1, 1873.

Claim.—The combination, with the steam-generator A, having the annular flue a, the steam-ch

142,111.—Mowing-Machine.—WILLIAM A. KIRBY, Auburn, N. Y., assignor to himself and DAVID M. OSBORNE, same place. Application filed March 21, 1873.

A shoe cast with the main frame has inner projections, to which the inner end of the finger-bar is pivoted; said projections also serve as guides to a pendulum which supports the inner end of the cutter.

Claim.—1. The main frame, constructed as set forth, having the shoe a rigid part thereof, and having points of support for the pole, the lifting-lever, and the hinged finger-bar, substantially as described and represented.

2. The combination of the main frame, the finger-bar hinged to the main frame, the cutters, the hanger, pitman, and the guides, as and for the purpose described and represented.

142,112.—Wood-Screw.—AUSTIN S. LADD and CYRUS N. CORNING, Concord, N. H. Application filed April 22, 1873.

German twist-bit combined with thread of screw.

Claim.—As a new article of manufacture, a wood-screw provided with the cutter *b*, groove *c*, and point *a*, combined and operating as shown.

142,113.—Plow-Scraper.—HIRAM LEACH, Camanche, Iowa. Application filed July 9, 1873.

The land-side is hinged at the rear of the plow-point, so that the adjustment of the angle of the mold-board with the land-side always leaves the point and mold-board in a rigid and continuous line. The adjustment is effected by overlapping perforated braces secured by bolts and nuts.

Claim.—1. The arrangement of the hinged joint C at the heel of the plow-point B, in combination with the adjustable land-side A, substantially as described and shown.

2. The combination of the adjustable land-side A, plow-point B, hinged joint C, braces D D, and mold-board E, all arranged substantially as described and shown.

142,114.—Brick-Machine.—JOHN N. MCLEAN and JOSEPH BENNOR, Philadelphia, Pa. Application filed July 12, 1873.

Horizontal mold-wheel and beaters to impact the clay at each intermission of the revolution; also, a grooved support for the pulleys to pass through and rest upon at the moment of receiving the blows, and depending arms to remove the bricks.

Claim.—1. A horizontal mold-table having its molds arranged equidistant from each other, and in the same relative positions to the center, in combination with a series of hammers arranged to correspond as set forth, so that each mold can receive the different hammers in turn.

2. In combination with the mold-table C and its spur-wheel I, and with the hammers M connected to the levers N, the wheel I provided with the teeth or ribs *g* and the pins *f*, whereby the table is given an intermittent movement, and the hammers operated at the proper intervals, as set forth.

3. In combination with the sliding mold-bottoms, supported on rollers, the grooved support H, arranged to sustain the bottoms and relieve the rollers from the blows of the hammers, as set forth.

4. In combination with the mold-wheel, the open-bottomed case L, extending outward from the bottom of the pug-mill, substantially as described, to insure the fitting of the molds, as set forth.

5. The case L, in combination with the mold-table and the hammer M, arranged to strike through the end of the case, to force the clay into the molds, as set forth.

6. The mold-wheel, in combination with the cylindrical head P, provided with spiral blades for dressing and finishing the upper face of the bricks, as set forth.

7. The rocking-frame S, provided with the depending arms *m*, *n*, and *o*, and with the sliding rod *s*, in combination with the cams *r* and *u*, when arranged to operate as described, for the purpose of removing the brick.

8. The shaft, provided with the head P at one end and the brush R at its opposite end, in combination with the horizontally-rotating mold-wheel, as herein set forth.

142,115.—Horse-Power.—EPHRAIM G. MCMILLAN, Berlin, Ohio. Application filed November 30, 1872.

Claim.—The section A, provided with the central depression F, with vertical rollers G and balls H, in combination with the step I and section B, the several parts being constructed and arranged for operation substantially as and for the purpose specified.

142,116.—Machine for Splitting Wood.—ROBERT MURRAY, New Castle, Del. Application filed August 7, 1873.

Reciprocating knives traverse the boxes in which the material is held, and split the wood from the top.

Claim.—1. The combination of the geared cog-wheels O O with the pivoted head-blocks R R, shaft or guide-rod S, bar U, sliding knife-blocks V V, and the engaged arms, knives, or cutters T T, substantially as and for the purposes hereinbefore set forth.

2. The combination, with the geared cog-wheels O O, pivoted head-blocks R R, shaft or guide-rod S, bar U, sliding knife-blocks V V, and the engaged arms, knives, or cutters T T, of the feed-table F, ratchet-bar H, ratchets I and J, driving-pawl M, and holding-pawl N, levers K and Q, and the rod L, substantially as and for the purposes hereinbefore mentioned and set forth.

142,117.—Composition for Coating Wood and Iron.—E. FREEMAN PRENTISS, Philadelphia, Pa. Application filed July 28, 1873.

Claim.—The composition consisting of a solution of gum shellac mixed with the oxide of iron, plumbago, lamp-black, and verdigris or Brunswick green, substantially as and for the purpose specified.

142,118.—Stocking-Supporter.—EVA K. RAND, Boston, Mass. Application filed June 12, 1873.

Claim.—1. The stocking-supporter composed of the waist-band A, the four buckles *a a a a*, the two straps B B, the rings D D, and the straps C C, provided with the buckles *b b b b*, all arranged and applied together as shown and described.

2. The four buckles *f f f f*, the straps S S, and the waist-band A, all arranged and applied together as shown and explained.

142,119.—Machine for Separating Cockle, &c., from Wheat.—GEORGE H. RICH, Geneva, Ill. Application filed February 4, 1873.

The grain is fed into a revolving inclined perforated cylinder at one end and passes out at the other, while the cockle-berries and small seed separated therefrom pass through the perforations, and are carried off by the endless apron held up closely against the outside of the cylinder.

Claim.—1. The perforated cylinder A, constructed substantially as described, in combination with the endless apron B, substantially as and for the purpose specified.

2. The chamber E, into which project the mouth or mouths *a* of the cylinder, in combination with said cylinder, provided with the internal inclined feeding-vanes *b b'*, or their equivalents, substantially as specified.

142,120.—Cock for Controlling Discharge Through Two Pipes.—JOHN RICHARDSON and THOMAS D. RICHARDSON, New York, N. Y. Application filed November 16, 1872.

The relative amount of discharge is regulated by the conical plug, the passages therein being cut of axial line. The positive amount is controlled by a central spindle within the plug.

Claim.—1. The herein-described cock, having its barrel provided with the passages *a* and *b*, and its plug provided with the throats *c* and *d*, when arranged substantially as shown and described, whereby the relative discharge through the two openings may be varied, as set forth.

2. In combination with a cock constructed substantially as herein described, the central spindle C, for regulating the size of both throats.

142,121.—Machine for Sawing Wood.—IVER G. RIEGSTAD, Decorah, Iowa. Application filed June 28, 1873.

A reciprocating saw so arranged as to operate by the foot or hand of the operator, through the medium of a crank and treadle.

Claim.—1. The horizontal lever E, in combination with the fly-wheel D, shaft *d*, crank *d'*, reciprocating rod *e*, connecting-rod *g*, and slide *h*, for operating the saw-frame F, substantially as and for the purpose set forth.

2. In combination with the mechanism E, D, *d*, *d'*, *e*, *g*, and *h*, the saw-frame F pivoted to the slide *h*, which imparts to it a reciprocating motion, guided by the lateral guide *i* or its equivalent, substantially as and for the purpose set forth.

3. The mechanism for lifting the saw-frame F, consisting of the bar G and projection *l*, in combination with the L-shaped lever H, arranged and operating substantially as and for the purpose set forth.

142,122.—Cock.—H. SCHUYLER ROES, Chicago, Ill. Application filed January 8, 1873.

A supplemental valve attached to the rod of main valve closes the cock while packing is renewed.

Claim.—The stem S provided with valves V and W, in combination with the eccentric crank C, screw-shank D, and chamber A, substantially as and for the purpose set forth.

142,123.—Pump.—EDWARD G. RUSSELL, Ravenna, Ohio. Application filed May 28, 1873.

The brake is attached to the piston-rod by a link, and the latter is connected to the standard by an arm, to insure true vertical motion of the rod and plunger.

Claim.—The link E and arm F, in combination with the handle C and rod B, in the manner as and for the purpose set forth.

142,124.—Registering Ballot-Box.—JAMES S. SAVAGE, Kingston, N. H. Application filed July 11, 1873.

The vote is received between two rollers, one of which carries an inked canceling-stamp for marking the vote or ballot, and is revolved by a crank, once for each vote. A tripping-lever, operated by the printing-roller, moves one tooth of a counting-register at each revolution, for indicating the whole number of votes entered.

Claim.—In combination with a ballot-box, one or more graduated dials, I K L, provided with an index, S, and operated by the revolution of the printing or canceling cylinder D, substantially as and for the purpose set forth.

142,125.—Process of Ornamenting Glass.—CHARLES SCHUSSLER, New York, N. Y. Application filed March 6, 1873.

Attaches silver or other leaf to transfer-paper; then prints design in colors directly on the leaf; then cements the leaf to the inside of the glass; and finally removes the paper by saturation, in the usual manner.

Claim.—The process of preparing and applying transfer ornamental designs to glass, substantially in the manner herein described, for the purpose set forth.

142,126.—Fishing-Rod Holder.—FREDERICK SENEUR, Mount Sterling, Ky. Application filed April 24, 1873.

To fasten into the bank to sustain the rod.

Claim.—A fishing-rod holder, consisting of the tubes A and B, in combination with the stake C, substantially as described.

142,127.—Rein-Guide for Vehicles.—ALPHEUS D. SMITH, Grafton, Ohio. Application filed February 17, 1873.

Claim.—The rein-guard B, applied to the shafts A, substantially in the manner shown and set forth.

142,128.—Pressure-Gage.—GEORGE SEWELL, Brooklyn, assignor to WILLIAM KING PHILLIPS, New York, N. Y. Application filed December 17, 1872.

The steam-pressure, acting on a mercury-chamber, transmits through a differential piston its fluctuations to a short mercury column, the indication being given on a circular dial by means of a rotating index in gear with the piston. Provision is made to prevent the escape of the mercury through any change in the position of the gage.

Claim.—1. Mercury A, amalgam *c*, air-space *c'*, and differential pistons *f g*, in combination with the arm *i* and rod *j*, substantially as herein described, for the purpose of imparting motion to mechanism, whereby the pressure of steam may be indicated.

2. The floating valve *b*, arranged substantially as described, in combination with the chambers *c*, for the purpose set forth.

3. The chamber *c*, with its plug *p* and passages *r r r*, constructed and arranged substantially as shown and described, to retain the mercury but allow communication with the atmosphere.

4. The strand of yarn or other fibrous material through the tube *e*, substantially as and for the purpose herein described.

142,129.—Car-Roof.—JACOB B. SLICHTER, Chicago, Ill. Application filed April 12, 1873.

The V-shaped rib is made of elastic material, and the end-plates are L-shaped.

Claim.—In combination with the felting C C', elastic rib B and V-shaped strip D, the angle-plates E F G and cement H, all arranged substantially as and for the purpose specified.

142,130.—Fire-Proof Roofing-Cement.—JACOB B. SLICHTER, Chicago, Ill. Application filed June 24, 1873.

Asphaltum, one hundred pounds; residuum-oil, six gallons; water-glass, nine gallons; oxide of iron, forty-five pounds; ground soap-stone, forty pounds. Heated, mixed, and applied to felt.

Claim.—The fire-proof roofing-cement composed of the ingredients specified, and mixed in or about the proportions as described.

142,131.—Circuit-Closer for Railway-Signaling Apparatus.—HENRY W. SPANG, Reading, Pa. Application filed April 1, 1873.

Conducting-wires brought to metal plates, insulated from each other on a base; circuit completed by a roller, connected to track-lever, being lifted onto the conductors and metallically connecting them.

Claim.—1. The combination, in a circuit-closer to be operated by a lever or a lever and a spring presser-bar, as set forth, of an insulated foundation, with metallic conducting-pieces arranged thereon, and metallic roller or rollers for electrically connecting the same, substantially as set forth.

2. The metallic rails or conductors O O^1 O^2 or O^3 O^4 O^5 O^6, in combination with the insulating-plate N, the guide rod P, the sleeve Q, the roller-head R, and the roller R', as and for the purpose shown and described.

3. The combination of the electro-magnets T^1 T^1 T^2 T^2, the armature-lever U, the armatures U^1 U^2, and the springs V^1 V^2, substantially as and for the purpose shown and described.

142,132.—Weather-Threshold.—JAMES P. STARK, Morrisonville, Ill., assignor of one-half his right to JAMES F. SIMPSON, same place. Application filed May 26, 1873.

The threshold is covered by an angular metallic strip, fitted and hinged thereto, which is raised against the beveled edge of the door as it closes, by a curved projection carried on a concave metallic plate affixed to the lower edge of the door.

Claim.—In combination with a hinged weather-strip, *d*, and a cam-shaped device, A, a plate, *f*, adapted to be affixed to a door, which, when so applied, shall present an internal curved flange the whole width of the door, substantially as shown and described.

142,133.—Cutter-Head for Drilling-Machines.—EDWARD WEICKE, Philadelphia, Pa. Application filed June 18, 1873.

The cutters are fastened by the stirrups E to the face of the carriers B, sliding in slots in the head A, and adjusted toward or from the center by screws B' working through the ends of the head, and held in the carriers by screws *c* setting into an annular groove formed in the end of the screw.

Claim.—The cutter-head A, in combination with the carrier B, flanged cap C, bolt *c*, adjusting-screw B', tool D, and the stirrup E, as and for the purpose shown and described.

142,134.—Lantern.—WILLIAM WESTLAKE, Chicago, Ill. Application filed July 28, 1873.

Globes of differing size are held firmly in place by screwing down upon them a metallic collar fitting into the head of the lantern, and supported with pins, which work in diagonal slots in the lantern-head.

Claim.—The globe-holder C, provided with the pins or lugs *b b'*, in combination with the dome A, provided with inclined slots *a*, substantially as and for the purpose specified.

142,135.—Car-Replacer.—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed February 7, 1873.

The hinged apron B' drops upon the ground and forms an inclined plane for the ascent of the wheel from either side.

Claim.—The hinged apron B', in combination with the V-shaped flanged replacer, substantially as described.

142,136.—Plow.—EDWARD WIARD, Louisville, Ky., assignor to BENJAMIN F. AVERY, same place. Application filed July 19, 1873.

Peculiar devices for bracing and strengthening.

Claim.—1. The brace-rods *c c*, extending from the clevis-bolt *b* to a bolt, *j*, and connected by braces *k k* to the beam-handle D', said brace-rods and connecting-rods being spread, substantially as described.

2. The clasps *n n*, constructed with lips and tubes, as described, and secured to the beam-handle D' by means of a bolt to which the rods *k k* are attached, substantially as described.

3. The flanged clamps *d d*, constructed with tubes d^2 d^2, and confined at the bend of the beam A by means of a bolt, *j*, to which the rear ends of the truss-rods *c c* are connected, substantially as described.

4. The brace g^2, bent at g^3 and g^4, and connected to the mold-board, the standard, and the beam-handle, substantially as described.

5. The spreader-brace g^1, connected to the handle D D', and having bolted to it the mold-board B, substantially as described.

142,137.—Machine for Driving Brush-Handles.—JOHN AMES, Jr., Lansingburg, N. Y. Application filed July 19, 1873.

The handle is held between two blocks notched at their inner ends, and their outer ends are hinged to two inclined arms that are pivoted to bolts, adjustably attached to the sides of the frame. To the bed of the frame is attached a slotted tube, in the slots of which slides a cross-bar attached to an encircling ring. From projecting lugs on said ring extend upward cords that connect with the bow-spring; the handle rests on said cross-bar, and the spring allows the cross-bar to descend as the handle is driven down.

Claim.—1. The notched and hinged blocks M, the hinged and pivoted arms N, and adjustable bolts O, in combination with the slotted frame C and the driver L, for holding the brush-handle while being driven, substantially as herein shown and described.

2. The guide U, cords V, and spring Y, in combination with the slotted tube T and driver L, for holding the brush-handle while being driven, substantially as herein shown and described.

142,138.—Shingle-Machine.—ALANSON ANDERSON, Chadwick's Mills, N. Y. Application filed July 5, 1873.

Two vibrating bolt-carriages are so arranged as to present the shingle-bolts alternately to the opposite sides of the saw.

Claim.—1. In a shingle-sawing machine, the combination, with the block-holding frames C, pivoted to the frame at b^2, and rigidly connected with the slotted levers *k*, of the crank-shafts *f f g g*, and the mechanism for rotating said shafts, all constructed and arranged as shown and described, whereby a vibratory movement is imparted to the said frames alternately, as set forth.

2. The combination of the slide-piece *l*, provided with pin P, and slotted elbow-lever *m*, with the pivoted horizontally-vibrating frame C, the fixed lug O, and the tilting platform D, all constructed and arranged as shown and described.

142,139.—Harvester-Rake.—JOSEPH K. AUGSPURGER, Trenton, Ohio. Application filed April 2, 1873.

A vertical post, attached to a horizontal beam over the rear of a rectangular platform, has attached to its lower pendent end a revolving plate, which has slots and flanges, by means of which the rake is guided in its movements over the platform.

Claim.—The construction and arrangement of the shaft *c*, slotted crank-plate E, the diagonal bar G secured thereto, the levers H H', wrists *i i'*, cams K L M, the bracket C, standard *g*, rod D, rake E, with its pin A projecting through the slot *f* of the crank-plate, and pivoting it to the bar F, and the links I I', with relation to the girt *b* and platform A, substantially as and for the purpose set forth.

142,140.—Ventilator.—JOHN BALLOU, Boston, Mass. Application filed April 26, 1873.

A revolving frame in the form of a cross, having attached thereto plates of wire-gauze and plates of glass, so that whatever position of the ventilator the light is never excluded.

Claim.—The improved revolving ventilator formed of the perforated plates *d d* and glass plates, attached to the frame *a* at right angles to each other, and radiating from the axis terminating in the pivots *b b*, as shown and described.

142,141.—Fire-Escape.—PETER W. BARNES, Albany, N. Y. Application filed July 26, 1873.

A folding platform forming the cover of a box placed beneath a window, which, in case of fire, can be unfolded and made a safe

means of exit in connection with a rope-ladder contained within the box. The platform or balcony is surrounded by folding railings, and is held securely in position by spring-arms I having the steps K. Descent is made through the opening *g*.

Claim.—The hinged plates E F G, the hinged railings H, the pivoted arms I, the springs J, steps K, and catches L, with each other and the box C D, to adapt them for use, substantially as herein shown and described.

142,142.—Car-Coupling.—LUMAN D. BENNETT, Willimantic, Conn. Application filed April 26, 1873.

The coupling is designed to be automatic.

Claim.—An improved car-coupling formed by the combination of the sliding slotted block C, coiled spring D, U-shaped pin F, lever G, sliding block H, and the draw-head A, substantially as herein shown and described.

142,143.—Pipe-Tongs.—JAMES R. BROWN, Cambridgeport, Mass., assignor to himself and HAREN P. HUNTOON, same place. Application filed March 15, 1873.

The bolt that forms the pivot is connected to the toothed lever, and is supported at two points by passing through the yoke.

Claim.—In pipe-tongs, the yoke E, the screw D, (whether single or double, as set forth,) the fulcrum-pin C, the toothed lever B, and the slotted and hooked lever A, constructed, arranged, and combined substantially as specified.

142,144.—Bake-Pan.—WILLIAM B. CHAMBERLIN, Westfield, N. J. Application filed May 5, 1873.

Claim.—The case K, slotted at M, ribbed at N, and apertured at O, in combination with a baking or roasting apparatus, as and for the purpose described.

142,145.—Spring Rocking-Chair.—FRANKLIN CHICHESTER, Milwaukee, Wis. Application filed June 14, 1873.

The plate-springs that form the rockers for the chair are continued at the rear of the seat up to about the center of the back, said back being pivoted to the rear ends of the adjustable arms.

Claim.—The plate-springs B B, attached to the front of seat at G, to the rear at H, and to the middle of back D, in the manner and for the purpose described.

142,146.—Grate-Bar.—GEORGE H. CLARKE, Brooklyn, N. Y. Application filed July 15, 1873.

A center or supporting bar constructed with projections on both sides, forming a dovetail, into which the side bars are locked longitudinally, thereby forming a set.

Claim.—In combination with the bar B, provided with the lugs *a a* and longitudinally-locking lugs *b b*, the bar A, provided with the locking-lugs *c c* and stops *d d*, constructed and operating substantially as described and specified.

142,147.—Fruit-Drier.—ISAAC B. COTTRELL, Bridgeville, Del. Application filed May 19, 1873.

Substances to be dried are placed on an endless belt of netting, which carries them over a furnace. An air-chamber is interposed between the furnace and endless belt to prevent burning. Ventilation is controlled by valves and pivoted slats.

Claim.—The hot-air chamber D, provided with pivoted slats *d d* and valves *e e*, and having the endless netting H passing through it, in combination with the furnace A having air-chamber *f*, the flue B, and chimney C, all constructed and arranged substantially as and for the purposes herein set forth.

142,148.—Fruit-Crate.—DANIEL CRANE, Saginaw, Mich., assignor to himself and CHARLES A. LEE, same place. Application filed June 28, 1873.

Slats are strung together at their ends and middle by strands of wire or cord passed over and under and twisted between them, the whole passed around disks or barrel-heads at both ends, and the end slats hooked together.

Claim.—The combination, with a series of staves arranged in grooves of heads B, of the flexible binders C and gripers E, as and for the purpose described.

142,149.—Wooding-Hoe.—HENRY S. CROSSLAND, Dresden, Tex. Application filed May 17, 1873.

Claim.—A hoe-blade, A, formed with an inclined forward or cutting edge, substantially as herein shown and described.

142,150.—Railroad Water-Crane.—HENRY S. CUSHERLEY and DAVID MANN, Bloomington, Ill. Application filed June 14, 1873.

The valve is operated by a screw supported on the outside of the delivery-pipe, and connected to a pinion which gears in a rack-bar formed on the valve-rod.

Claim.—1. A railroad water-crane consisting of the column B, interior tube D, rack H, pinion P, arm Q, bar S, screw R, valve-chamber I, valve E, and valve-rod G, arranged to operate substantially as shown and described.

2. The screw R, in combination with the rack and pinion H P, rod G, and valve E, for the purposes described.

142,151.—Arithmetical Frame.—EDWIN T. CURTIS, Calumet, Mich. Application filed May 17, 1873.

Bands with figures upon them are interwoven to form a regular warp-and-woof lattice. Each band of the said warp and woof has its ends fastened to make an endless band, and can be slipped, respectively, in a horizontal or vertical direction, so as to bring new figures into view.

Claim.—1. The means described for combining numbers for arithmetical instruction, consisting of the endless movable bands interwoven to form a lattice, upon which the said numbers appear, substantially as set forth.

2. In a number-lattice, constructed substantially in the manner described, the movable stripe E, either blank or having the arithmetical signs upon them, for separating said numbers into arithmetical examples, substantially as described and shown.

3. The combination of the wires D, carrying the movable beads, with the frame C and number-lattice, as and for the purpose set forth.

142,152.—Rotary Puddling, Melting, and Heating Furnace.—SAMUEL DANKS, Cincinnati, Ohio. Application filed May 1, 1873.

Claim.—1. The cylinder of a rotating puddling, heating, or melting furnace, constructed of separate staves *b* with hollow ribs and wrought-iron bars cast in the said ribs, substantially as herein set forth, for the purpose specified.

2. The end rings b^2 for securing the said staves, constructed in one piece with the end plates b^3, as shown in Fig. 2, or secured to the said end plates by bolts or rivets, as shown in Fig. 4^a, for the purpose specified.

3. The fixed rings *c h i*, Fig. 2, in combination with the channel for keeping them constantly supplied with water or other cooling fluid, substantially as herein set forth.

4. The fire-brick, or its equivalent, and the lining or felting compound, described herein, for protecting the interior of the shiftable piece *g*, in combination with the shelves g^2 in the interior of said shiftable piece, for the purposes described.

5. The adjustable props *j*, or their equivalents, constructed to be used in combination with the said shiftable piece, substantially as herein set forth, for the purpose specified.

6. In combination with the rotating cylinder *b*, the adjustable blocks or brackets *m'* carrying the rollers, substantially as herein set forth, for the purpose specified.

142,153.—Diamond Millstone-Dressing Machine.—FREDERIC S. DAVENPORT, Jerseyville, Ill. Application filed May 21, 1873.

The sliding plate and sliding bar, both provided with guiding-slots, and fitted with guide-blocks pivoted to the bed-plate beneath, are pivoted or hinged together by means of a slotted plate fitted with a fastening-screw, so that they may move unitedly, and admit of horizontal angular adjustment to each other. The sliding plate has a sliding block at one edge, on which the diamond-holder moves.

Claim.—1. The sliding plate B and sliding bar C, provided with the guiding-slots *b b'*, the said parts being hinged or pivoted together for united operation, substantially as and for the purpose specified.

2. The diamond-holder F, pivoted to the sliding block T, in combination with the adjusting-screw O.

3. The diamond millstone-dressing machine producing the curvilinear motion described by means of two straight guide-slots made so as to admit of horizontal angular adjustment to each other, for the purpose specified, the said guide-slots being arranged either in the sliding parts B and C or in the bed-plate A.

142,154.—Sawing-Machine.—JAMES EACHUS, Contesville, Pa. Application filed February 23, 1872.

A sawing-machine table is so arranged as to run on tracks placed at right angles to each other.

Claim.—The combination of shaft D, shaft F, saws S S S and C C C, carriage A, and frame E, for the purpose of cutting binders' and box-makers' paper, substantially as shown and described.

142,155.—Gas-Regulator.—CHARLES H. EDWARDS, Chicago, Ill., assignor to LEVI C. BOYINGTON, same place. Application filed May 17, 1873.

The diaphragm is clamped between the hemispheres of which the casing is composed, and consists of a disk of hair-cloth, upon each side of which is a thin layer of cotton. The whole is held in place by disks of fine wire-cloth. A metallic plate rests upon the diaphragm, from which a governing-weight is suspended.

Claim.—1. The combination and arrangement, in a gas-regulator, of the diaphragms D, layer E, and weighted valve G, all substantially as and for the purposes specified.

2. The combination and arrangement, in a gas-regulator, of the diaphragms D D and F, layers E E, and weighted valve G, all substantially as and for the purposes specified.

3. As a new article of manufacture, a gas-regulator consisting of the parts A' and A'', diaphragms D, layer E, and weighted valve G, all constructed and arranged together, substantially as shown and described, and for the purposes set forth.

142,156.—Picture-Hanger.—FRANKLIN W. ELY, Du Luth, Minn. Application filed March 1, 1873.

The web is attached to the frame at two points, one near the top of the frame, and the other below the center. The web is double at the lower point, and passes through a metal slide having two slots. One part of the web extends to the supporting-ring and the other part connects with the upper portion of the frame.

Claim.—The web B, end-fastened at C D, passing double through slots or plate G, and then separating, the one part I going straight to point D, while the other part H is elongated and connected with the ringed wall-cord F, as and for the purpose described.

142,157.—Implement for Uncapping, Capping, and Charging Cartridges.—WILLIAM M. FOWLER, Brooklyn, N. Y. Application filed April 3, 1873.

Claim.—1. The combination of the perforations a^7 a^7, formed in the bearing-flanges a^6 a^6 of the shank A, with the coinciding perforation d^2 formed in one arm of the compound lever D D', for the purpose specified.

2. The combination of the shank A, provided with the forming-channel a^5 and gage-stud a^4, and the crimping-roller F, having an annular convex surface, *f*, with the compound lever D D', constructed, arranged, and operating substantially as described, and for the purpose specified.

3. In combination with the compound lever D D' and shank A, the trimming-knife attachment K, for the purpose specified.

142,158.—Rice-Cleaner.—DAVID L. GEER, Lake City, Fla. Application filed May 5, 1873.

A bulge in the case near the top forms a cavity, into which the grain is forced by the upwardly-moving blades employed for agitating the grain, where the removal of the hull is finished.

Claim.—1. The blades F F, each spirally-arranged on shaft at opposite ends, on opposite sides, and turned in opposite directions to throw the grain upward, backward, and forward, in the manner described.

2. The combination, with spiral grain-gathering blades F, of the cylinder A having the bulge C, as and for the purpose set forth.

142,159.—Hoe.—JACOB H. GOULD, Rutland, Ohio, assignor of two-thirds his right to HORACE HOLT, same place. Application filed July 25, 1873.

Claim.—The recessed blade 1, in combination with the eye 2 having the brace 5, and transverse slots 3 to receive the edges of the recess in the blade, substantially as shown and described.

142,160.—Check-Runner.—JOHN HAGGERTY, Corry, Pa. Application filed August 12, 1872.

Claim.—In combination with a check-runner having a base-block, B, provided with pins or projections, a screw and washer, as described, whereby the runner may be attached to the head-piece of a bridle, as set forth.

142,161.—Rubber Sole for Boots and Shoes.—DANIEL E. HAYWARD, Malden, Mass. Application filed April 8, 1872.

Claim.—1. A sole formed of a vulcanizable compound of rubber and vulcanized on its lower surface, as above described.

2. The method above described of manufacturing boots and shoes of rubber, consisting in vulcanizing the lower surface of the sole before applying it to the upper, and uniting the sole so formed to the upper by vulcanizing them together, all as and for the purposes above described.

142,162.—Candlestick.—SAMUEL D. HILL, Downieville, Cal. Application filed May 24, 1873.

The candle-socket is made in two parts, held together by a band-spring.

Claim.—The socket E having detachable part E', to be adjusted to candle by spring *e* having slot *g* and lug *g'*, as described.

142,163.—Chuck.—ELI HORTON, Windsor Locks, Conn. Application filed July 26, 1873.

A chuck-jaw having a raised seat on its face and a groove at the junction of the face and biting portion to admit of accurate grinding.

Claim.—As an improvement in chucks, the jaws B, which grips the work placed between them, provided with raised seats *a* on the face part of the same and grooves *b* for rounding off the corners of the face and bite parts, to hold the work perfectly true, and allow the accurate grinding of seats *a*, substantially as set forth.

142,164.—Griddle.—SAMUEL KENNEDY, Allegheny City, Pa. Application filed December 31, 1872.

The upper surface is imperforate. A flange, entirely surrounding the griddle, and provided with a damper, depends from the edge.

Claim.—As an article of manufacture, a griddle having flange B, with adjustable damper C, arranged as and for the purpose described.

142,165.—Chandelier-Center.—JOSEPH KINTZ, West Meriden, Conn., assignor to himself and P. J. CLARK, same place. Application filed May 31, 1873.

A concavity in the lower part of the chandelier-center and a nut upon the stem prevent the separation of the parts during adjustment. The arms have each two projections, the upper one having a hook which bears upon the depending interior flange of the upper section, and the lower one a beveled edge, against which the lower section wedges. The center rod is prevented from turning by a pin, which passes through it and fits in notched projections upon the bar across the center ring or section.

Claim.—1. The combination and arrangement of the parts A, B, and C, knob W, nut V, and the rod D of the chandelier-center, in such manner that the part A can be lowered away from parts B and C sufficiently to introduce and remove the arms without being removed from the rod D; also, so that said part A will be retained when the knob is removed from the rod.

2. The arms E, secured to the center by the upward-projecting hook at the upper side and the inward-projecting hook on the under side, substantially as specified.

3. The arrangement of the notch I in the lower edge of ring B for the hook H, in combination with the upper hook and its fastening devices, substantially as specified.

4. The arrangement of the projecting flange D on the under side of the upper part of the center, in combination with the hooks K and ring B, substantially as specified.

5. The rod D, secured to the center by the pin M and notches *a* in the bar L, to prevent turning by the nuts, substantially as specified.

142,166.—Steam-Whistle.—OTTO KROMER, Sandusky, Ohio. Application filed April 2, 1873.

The bell consists of a fixed open cylinder and a slightly-larger cylinder closed at one end, which slides over the first. This makes a sounding-tube, the length of which may be varied, thus giving different tones.

Claim.—1. The combination of the bell C and rod D with the bell B, the bell C being adapted to slide into the bell B, as described.

2. A telescopic whistle wherein the bowl A and bells B and C are constructed and arranged to operate substantially as and for the purposes set forth.

142,167.—Steam-Engine Governor.—ANDERS MATSON, Quincy, Ill. Application filed June 21, 1873.

Upon a too-rapid motion of the engine, or the breaking of the governor-belt the valve is closed by means of the arms on the valve-rod and its top, in contact with which the arms rotate.

Claim.—1. The weighted lever J, and hook K in combination therewith and with the valve-rod, as and for the purposes described.

2. The arms R R, connected with the valve-rod, in combination with the balls N N and levers O O', as and for the purposes described.

142,168.—Mold for Earthen Pipes.—PETER MCINTYRE, Hartford, Conn. Application filed July 16, 1872.

A hollow core made in longitudinal sections, the base being moved downward and away from the core in order to release the foot of the core-sections.

Claim.—The combination of a casing for forming the exterior of the pipe, the table *d*, a hollow core made in longitudinal sections, the cap *f*, and the core-bar *e*, arranged to support the core while a pipe is rammed up, and to move downward and away from the core, in order to release the foot of the core-sections, all constructed and arranged substantially as and for the purposes described.

142,169.—Head-Band.—DANIEL MCKINNON, Wappinger's Falls, N. Y., assignor to ELIAS BROWN, same place. Application filed June 21, 1873.

Claim.—An ornamental head-band provided with hooked teeth, substantially as herein shown and described.

142,170.—Seed-Separator.—FRANK C. MILLER, Blue Earth City, Minn. Application filed May 31, 1873.

A small perforated cylinder within the large one, which first receives the grain and separates the large matters the grain passing through the perforations into the large cylinder.

Claim.—The small perforated cylinder E, suspended by rods F and bearing against the inner side of cylinder A, so as to derive its rotary motion therefrom, as shown and described.

142,171.—Harvester-Rake.—THOMAS MURPHY, Pine Bluffs, Wis. Application filed June 3, 1873.

The rake is raised and lowered, and made to sweep the platform, by means of connections with horizontally-traveling belts passing around pulleys upon vertical shafts.

Claim.—1. The rake K, pivoted in the head O and raised and lowered by the intermittently-revolving crank S, connected by a rod, *p*, with the arm R' of the rake, as and for the purposes set forth.

2. The endless chains I I', carrying the bars N N', in combination with the head O, rod P, and crank S, for the purposes herein set forth.

3. The combination of the platform B, tilting gate C, rake K, endless chains I' I', bars N N', head O, rod P, and crank S all constructed and arranged to operate substantially as and for the purposes herein set forth.

142,172.—Stamp-Mill for Ores.—GILES S. OLIN, Deer Lodge, Montana Ter. Application filed June 21, 1873.

Variable speed and height are given to the stamps by decreasing the size of the pulleys attached to each lower shaft and by reducing the lift of each lower stamp.

Claim.—1. A quartz-crusher, having the stamps driven from a single shaft and with variable speed, substantially as shown and described.

2. A quartz-crusher, having stamps moving with variable speed and raised to variable heights, substantially as shown and described.

142,173.—Machine for Gumming Saws.—SANFORD P. OLNEY, Detroit, Mich. Application filed May 8, 1873.

The swinging arm L, carrying at one end the emery-wheel and at the other a balance-weight, is sleeved onto the counter-shaft I, journaled in the yoke G, the lower part of which forms a hinge-joint with the plate F, turning on a pivot in the vertical sleeve E. This arrangement allows the emery-wheel to be adjusted either horizontally, vertically, or at an intermediate angle.

Claim.—1. The frame A, table B, driving-shaft C, driving-pulley D, standard E, bearing F, yoke G, eye-bolt H, counter-shaft I, pulley J, cord K, arm L, arbor C, pulleys O O′, and belt P, combined and arranged substantially as and for the purposes set forth.

2. The counter-weight M, constructed as described, in combination with the arm L, as shown and set forth.

3. The combination of the slotted segment R and standard S with the guide-arc T pivoted thereto, as and for the purpose described.

142,174.—Automatic Fire-Escape for Safes.—IRA PARKE, Mineral Point, Mo. Application filed March 12, 1873.

Claim.—1. A platform supporting the safe on wheels, and suspended on a pivot at one end, and an explosive or combustible cord or other device at the other end, in combination with a door in the wall of the building and fastening devices therefor, arranged so that the falling of the platform will release the fastenings and cause the door to open, substantially as specified.

2. The said door arranged to constitute a continuation of the track for the safe-truck when open, substantially as specified.

3. The combination of the bolt I, door K, and the platform, substantially as specified.

4. The combination of the catches J with the platform A and door K, substantially as specified.

142,175.—Revolving Fire-Arms.—WILLIAM H. PHILIP, Brooklyn, N. Y. Application filed June 7, 1873.

Claim.—1. The combination of the sliding pawl-bar and a series of pawls with a series of cylinders connected by a stud-pin, J L, and each having a groove, O′, for its pawl arranged in such manner that, when one cylinder is exhausted, it sets the next one in motion, and then itself ceases to rotate, substantially as described.

2. The pawl-bar K, hammer M, and pawls N, combined with the series of cylinders, substantially as specified.

142,176.—Device for Dressing Saw-Teeth.—WILLIAM ROWE, Westerville, Ohio. Application filed June 14, 1873.

The saw is placed in a longitudinal recess in the bed A and held in place by clamp-screws, the end of a tooth resting on an anvil-block, E, held in place in a lateral recess in the bed by a wedge-pin driven in by the side. The point of the tooth resting on the anvil-block is dressed in the usual manner.

Claim.—1. The improved machine for dressing the teeth of circular saws, consisting of clamp A with handle B, set-screws *d*, steel anvil E, and wedge piece *e*, substantially as and for the purposes described.

2. The improved clamp A, having longitudinal recess *a* for saw, and lateral recess *f* for anvil E, as set forth.

142,177.—Reel for Skeining Silk.—ROBERT SIMON, New York, N. Y. Application filed June 23, 1873.

The strands are crossed between alternate pairs of arms on the reel by the thread-guides, which are also traversed back and forth at each revolution of the wheel, to lay the strands in parallel lines between other pairs of arms, the reel-bars being notched to receive the first layer of strands.

Claim.—1. The combination, with a crossing traverse-guide, of mechanism, substantially as described, for shifting it forward and backward to lay the threads side by side throughout the width of the skein, substantially as specified.

2. The combination, in a reel having a crossing traverse-guide, of bars or arms A, provided with notches or grooves B or their equivalent, and mechanism for shifting the guide forward and backward to lay the threads side by side, substantially as specified.

142,178.—Water-Cooler.—THOMAS SMITH, Brooklyn, N. Y. Application filed August 4, 1873.

Claim.—In combination with a water-cooler having a central ice-chamber, B, the liquid-receptacle C provided with an inclined bottom, *a*, and indentation *b*, and having a faucet, *e*, and opening *f*, substantially as and for the purposes described.

142,179.—Railway-Rail.—ROBERT STEEL, Philadelphia, Pa., assignor of one-half his right to JOHN S. RICHARDS and HENRY S. RICHARDS, same place. Application filed July 16, 1873.

A piece of metal, the fiber of which runs transversely, is welded onto the ends of the ordinary rail, to obviate brooming or splitting.

Claim.—A street or other railway-rail having welded to the ends thereof pieces of metal, the fiber of which is at right angles to that of the rail.

142,180.—Steam-Boiler.—CHARLES STEWART, Worcester, Mass., assignor of one-half his right to WILLIAM ALLEN, same place. Application filed July 1, 1873.

The steam is taken by a pipe from the scum-collector, and in its passage it draws the scum into the collector, which is blown off through a cock provided for such purpose.

Claim.—1. The combination, with a steam-boiler, of a scum-collecting chamber connected with the steam-supply pipe, and communicating with the interior of the boiler by openings arranged partly above and partly below the line of water-level, substantially for the purpose set forth.

2. The combination, with the boiler A and steam-supply pipe F, of the scum-collecting chamber C, provided with lateral openings *c*, blow-off cock D, and hand-hole and cap E, substantially as and for the purpose set forth.

142,181.—Low-Water Indicator and Alarm.—FREDERIC STRANGE, Detroit, Mich. Application filed February 16, 1873.

A float with an elongated lower open end, and hollow tube with valve upon it, seating in a chamber above the boiler and connected to an alarm. Connected to the hollow tube is a lever and weight for balancing the float.

Claim.—The vessel D, with open tube D′ attached to the tube E, having valve *b*, in combination with a lever having a counter-balancing weight, substantially as described.

142,182.—Railway-Rail.—JOHN H. WALES, Marlborough, and HENRY S. CUSHMAN, Milford, Mass. Application filed July 16, 1873.

Claim.—The rails *a*, having the recesses *c c* formed in their ends and provided with corresponding projections, so as to overlap and interlock and form a continuous rail, substantially as set forth.

142,183.—Hydraulic Motor.—WILLIAM WALTER, Arkada, Washington Ter. Application filed June 7, 1873.

A vertical cistern and cistern-valve balanced by a weighted lever, so that on floating the water rushes into a horizontal pipe and trough filled with water. The forward motion of the water, in connection with the closing of the cistern-valve, produces a forward motion of the piston-valve at the closed end of the horizontal pipe, which is connected suitably to the machinery to be driven by it.

Claim.—1. The hydraulic motor, consisting of pipe B, in trough A, cistern C, valve E, weighted lever F, piston-valve D, and standards G and H, operated substantially as and for the purpose described.

2. The cistern C, having funnel-shaped entrance *d* for water from flume *e*, guide-rod *h*, and ring *g* at lower end, as set forth.

3. The pipe B, with wider and narrower ends *a b*, and piston-valve D at end *a*, as set forth.

4. The lever F, having spring extension *i* and weight W at one end, and valve E arranged at the other end within the cistern C, as shown and described.

142,184.—Grain-Drier.—RICHARD J. WILLIAMS, Ottumwa, Iowa. Application filed May 5, 1873.

The chambers D and E being subdivided by the partitions *c*, different varieties may be treated simultaneously.

Claim.—1. The apparatus for drying and steaming grain, consisting of receiving-chamber B, heating-chamber C, steam-chamber D, discharging-chamber E, and the tubes F perforated within the chamber D, arranged and operated substantially as and for the purposes described.

2. The connecting-tubes F having that portion within the chamber D perforated for the admission of steam to dampen the grain, as specified.

3. The discharging chamber E having the exit-pipes *f* arranged to correspond with the compartments of the steam-chamber to separate varieties of grain having husks of different textures, substantially as and for the purpose specified.

142,185.—Steam-Bathing Apparatus.—WILLIAM WOLFF, New York, N. Y. Application filed February 20, 1873.

The tub has a double bottom to form a water-reservoir. A pump connected to the reservoir supplies the telescopic tubes. A perforated bottom is placed above the reservoir for the escape of waste water. The cover or inclosure is made of material that may be folded together in the tub after use. A portable steam-generator is connected, through pipes, to the tub, so that it may be placed inside of the tub when not in use.

Claim.—A portable Russian steam-bathing apparatus, consisting of the tub B with water-tight bottoms C and D and perforated bottom or floor F, inlet and outlet pipes A and *m*, the hand force-pump E, and telescopic pipes *b b* and *c c*, and water-roses *d* and *e*, cover G with the string *k*, in combination with the steam-generating apparatus H and pipe *l*, substantially as and for the purpose hereinbefore set forth.

142,186.—Flux for Smelting Ores.—SAMUEL D. YOUNG, Elizabethtown, Ill. Application filed July 5, 1873.

Claim.—As an improved flux for iron, the calcined fluor-spar hereinbefore described.

142,187.—Stalk-Cutter.—VANVLET ASHLEY and JOHN W. WEAVER, Morrison, Ill. Application filed June 28, 1873.

A rectangular frame is mounted upon a pair of wheels in front and a roller near the rear end. A pair of standards rises from the forward end of the frame, to which are pivoted the frames of the cutting-knives. These are raised by cam-pins on the ends of the roller, and fall to the ground by their own gravity.

Claim.—1. In a stalk-cutter, a drop-knife, hinged to the frame by which it is carried, substantially as and for the purpose specified.

2. The combination of the frames E, carrying hinged or oscillating knives, cams H, and revolving studs I, substantially as and for the purpose specified.

3. A series of knife-frames, E, longitudinally adjustable with reference to one another, substantially as and for the purpose specified.

4. The combination of the guide-rods N, crushing-roller C, knife-frames E provided with oscillating knives, cams H, and revolving studs I, substantially as specified.

142,188.—Bobbin-Winding Machine.—WILLIAM ATKINSON, Philadelphia, Pa., assignor to THOMAS WOOD, same place. Application filed February 17, 1873.

The stop is arranged to suddenly arrest the descent of the counter-arm, causing a jerk that frees the tangled yarn.

Claim.—1. The lever *a*, formed with a curved counter-arm, *a′*, in combination with the fulcrum-pin *b* and stop *f*, substantially as and for the purposes set forth.

2. The combination and arrangement of the rail *h*, standards *l e*, bearing *k*, pin *b*, lever *a*, bent counter-arm *a′*, barrels *d d*, and pins *s c′*, substantially as and for the purposes explained.

142,189.—Lamp-Chandelier.—JOHN AULBACH, West Meriden, Conn., assignor of one-half his right to AUGUST PERGAMANN, same place. Application filed July 30, 1873.

A tube depends from the ceiling. A helical spring inside of the tube rests on a collar affixed to the lower end of the tube, and is covered at its upper end by the head of a rod, to whose lower end the lamp-bracket is affixed. By pulling down the lamp-bracket the helical spring is compressed. A set-screw holds the lamps in position.

Claim.—In a lamp-chandelier, the combination of the tube A, the rod C within the tube provided with a head, *a*, the socket D at the lower end of the tube provided with the adjusting device *d*, and the spring E around the said rod within the tube, between the head and the socket D, substantially as and for the purpose described.

142,190.—Thermoscope.—GEORGE F. BARKER, New Haven, Conn., and ALFRED M. MAYER, Hoboken, N. J. Application filed September 14, 1872.

The double iodides of mercury and copper or of mercury and silver, or similar compounds having the property of temporarily changing color when exposed to a certain temperature, are painted on cards or suitable strips, and applied to places where it is desirable that a definite limit of temperature should be readily ascertained.

Claim.—A thermoscope consisting of the application, to points where excessive or required heat is desired to be detected or indicated, of a substance or compound which will by heat change its color, and immediately on the reduction of the temperature return to its original color, either with or without intervening material, substantially as set forth.

142,191.—Refrigerator.—ALFRED RAINDELL, New York, N. Y. Application filed August 7, 1873.

The ice-reservoir is supported, and revolves together with the shelves on a tube leading from it, on rollers at its upper end, which move over a rail on the top wall of refrigerator. An air-chamber around the ice-reservoir receives cold air through perforations in its top and conveys it to the shelves through perforated pipes that support the outer edges of the shelves.

Claim.—1. The revolving ice-chamber C and shelves F, connected together substantially as described, whereby the same can be removed as an entirety out of the case A, as and for the purpose specified.

2. The revolving ice-reservoir C, supporting the shelves F, and air-tubes G, in combination with each other and with the case A, substantially as described, for the purpose specified.

3. The combination, with the ice-reservoir C, of rollers or wheels K, arranged to run upon the top of the refrigerator A, substantially as described.

4. The air-space H, having openings *h* in its wall, so as to communicate with the interior of the ice-reservoir, and provided with perforated air-tubes G, that extend downward into the refrigerator A, substantially as described.

142,192.—Self-Closing Faucet.—WALLACE H. BATE, Charlestown, Mass. Application filed June 9, 1873.

A sleeve is fastened to the spindle, and has two radial projections, in which friction-wheels are placed, which bear on a cam on the screw-cap when the stem is turned, causing it to open the valve.

Claim.—The sleeve E, having one or more arms, D, provided with one or more friction-rolls, C, in combination with one or more inclines, *a b c d*, spindle G, spring I, and a device for connecting the sleeve with the spindle, constructed and operating substantially in the manner and for the purpose set forth.

142,193.—Belt and Rivet Machine.—NAPOLEON BEAUREGARD, San Francisco, Cal. Application filed June 18, 1873.

The cutter and its inclined sliding frame, the guide-way in which they operate, and the tappet (on the transverse shaft) which operates them are adjustable to suit dies of different lengths. After the cutter has passed across the face of the dies and cut off the blank it remains as anvil until the header has performed its function.

Claim.—The adjustable inclined way or guide *b*, with its horizontal portion *d*, the slotted sliding frame E, and cutter *r*, in combination with the transverse shaft *v*, adjustable arm T, fixed crank-arm T′, and cam *f* on the main driving-shaft, substantially as and for the purpose set forth.

142,194.—Piano-Forte.—WILLIAM W. BENNETT, Jersey City, N. J. Application filed January 8, 1873.

A bridge, fast to the iron frame at its ends only, has attached to its under side agraffes in sets of different lengths.

Claim.—1. The wrest-plank bridges M, the sound-board bridges D, and the hitching-blocks or points E, made in separate pieces of different heights, and combined and arranged substantially as and for the purpose shown and described.

2. The combination of the suspension-bridge A with the agraffes B, made of different lengths, or the plates C used in lieu thereof, when constructed and arranged with respect to the metal frame, substantially as and for the purpose shown and described.

142,195.—Coffee-Pot.—WILLIAM S. BLANCHARD and EPHRAIM KETCHUM, Factory Point, Vt. Application filed June 14, 1873.

The conical chamber conveys the liquid which has passed through the ground coffee to the center of the lower portion of the pot, whence it rises in the chamber around the cone and passes up through the spouts.

Claim.—1. In a steeper and drencher, the steeping-cup B, suction-chamber C, perforated plates, spouts A, flannel disk *n*, ledge *s*, and packing-ring *v*, arranged and operating substantially as specified.

2. The steeper consisting of the herb-chamber B, having a perforated bottom, *b*, a depending suction-chamber, C, in the form of an inverted cone open at the apex, the side spouts A rising from the upper portion or base of said cone into the chamber, and the dedecting-plate *e* extending across said chamber over said spouts, substantially as specified.

142,196.—Steam-Boiler for Warming Buildings.—GEORGE W. BLAKE, Brooklyn, N. Y. Application filed May 23, 1873.

Claim.—1. The lower section I′ of the magazine, having an attached surrounding water-chamber, J, both made separate and distinct from the upper portion of the boiler, and said water-chamber being provided with one or more openings to establish communication with the water-space of the boiler, substantially as specified.

2. The sectionally-constructed magazine I I′ and water-chamber J, in combination with the communicating annular steam and water sections E F G H K and the bolts F, essentially as herein shown and described.

3. The annular water-sections G H, constructed to form central fuel reservoir or magazine sections, and provided with water sockets or sleeves connecting them with each other, and with water-sections above and below them, substantially as specified.

142,197.—Fanning-Mill.—LORENZO M. BOARDMAN, Ottawa, Minn. Application filed March 12, 1873.

Screen made in two parts, so that it may be used as a continuous long one or as two short ones. Grain discharged from the upper section into a spout arranged transversely thereto, and receiving a longitudinal vibration from an arm attached to the shaker.

Claim.—1. The screen E, having its upper end or section hinged and arranged to drop down when constructed and arranged to operate as shown and described.

2. In combination with the screen E, the transverse spout I, operated by the rigid depending arm *m*, attached to the shoe or shaker C, as shown and described.

142,198.—Windmill.—HARRY H. BODWELL and EPHRAIM A. ATWOOD, San Francisco, Cal. Application filed July 31, 1873.

The vane is adjusted at any desired angle by two segmental bevel-gears, one of which is secured to the turn-table; the other is mounted on a wrist-pin projecting from the shoe, and is provided with a weighted lever.

Claim.—1. The bevel-gears E and C, mounted, respectively, upon the shoe and the wheel-support of a windmill, having a swinging tail, together with the operating-lever F and the cord or equivalent connection H, substantially as and for the purpose herein described.

2. The bevel-gear E, turning upon a wrist-pin projecting from the side of the shoe of the swinging tail E, and provided with the lever F and the weight G, for the purpose of turning the gear E and throwing the tail to an angle with the wheel-axis by operating upon the stationary gear C upon the wheel-support, substantially as herein described.

3. The locking device consisting of the pin J, with its operating lever or spring K upon the wheel-support and the plate M, with its perforations *n*, secured to the shoe of the tail E, substantially as and for the purpose described.

4. The cord O, in combination with the pin J, with its operating lever or spring K, and the perforated plate M, for the purpose of unlocking the device and allowing the tail to turn, substantially as herein described.

142,199.—Manufacturing White Lead.—ERNST A. BOEHME, St. Louis, Mo. Application filed April 12, 1873.

Claim.—1. Pig-lead converted into a granular state to produce the acetate of lead herein described, and for the purpose set forth.

2. Combining with the acetate of lead at one and the same time oil of vitriol, sal-soda, and ammonia, as and for the purpose set forth.

142,200.—Apparatus for Emptying Cellars, Water-Closets, &c.—REINHOLD BOEHLER, Brooklyn, assignor of one-half his right to JAKOB FUCHS, New York, N. Y. Application filed June 6, 1873.

Steam passes from a boiler into the vacuum vessel, into which water is sprinkled. The flow of air from the vacuum vessel into the boiler-furnace can be cut off by a stop-cock in the pipe that connects the vessel and furnace.

Claim.—1. The reservoir E, pipe M, stop-cock N, and sprinkler F, arranged in connection with vessel C, substantially as and for the purpose set forth.

2. The arrangement of pipes M and J, stop-cocks K L N with vessel C and boiler A, substantially as and for the purpose set forth.

3. The arrangement herein described of boiler A, vessel C, and pipes J Q O M, for the purpose set forth.

142,201.—Metallic Column.—SEMI BRANDEIS, Philadelphia, Pa., assignor to himself, JONATHAN R. JONES, and SAMUEL T. BENNER, same place. Application filed July 25, 1873.

Claim.—A tubular column composed of two or more metallic segment-plates, rolled or bent into such shape as, when united, to present the cross-section herein shown and described—to wit, a central circle, ellipse, or polygon, having a series of segments of circles or polygons symmetrically disposed around its periphery, substantially as set forth.

142,202.—Billiard-Table.—ADAM BRAUN and FRIEDRICK BRAUN, Buffalo, N. Y. Application filed May 31, 1873.

Claim.—The frame of a billiard-table consisting of an inner upright railing, D, by which the weight of the bed is supported, and an outer beveled or cove-shaped casing, E, substantially as shown and described.

142,203.—Boot and Shoe Heel.—MELLEN FRAY, Newton, Mass. Application filed July 18, 1873.

Claim.—1. A boot or shoe heel, provided with a dovetail-shaped recess formed in the forward part of the upper surface, substantially as described, for the purpose specified.

2. In the manufacture of boots or shoes, an outer sole shortened at the heel, when said sole and heel are secured together to resist separation in the direction of the length of the shoe by dovetailing a portion of the rear end of the sole into the upper surface of the heel, substantially as described.

142,204.—Locomotive Head-Light.—JOSEPH BRIGGS, WILLIAM H. BRIGGS, and ARTHUR E. BRIGGS, Newport, Ky. Application filed January 29, 1873.

A hollow bolt with vertical oil-passage secures the reservoir and lamp necks together. The reservoir is secured to its neck by a similar bolt. Inside the reservoir, and surrounding the connecting-bolt, is a hollow perforated post, used to prevent collapse of the top and bottom in assembling the parts.

Claim.—1. The combination of the shouldered and internally screw-threaded part *h* a and perforated part *h'* of the neck with the tubular tightening-bolt I, substantially as specified.

2. In combination with the burner *e*, connecting-neck H, and reservoir D of a locomotive head-light, the perforated b lt R and post S, connecting and operated substantially as and for the purpose specified.

142,205.—Tooth-Plugger.—THOMAS L. BUCKINGHAM, Philadelphia, Pa. Application filed February 27, 1873.

The inner end of the ram is of elastic metal, and is provided with an offset or shoulder, against which projections from an operating-wheel impinge and carry the end of the ram upward for some distance and then let it off, when it is forced against the plugger by a spring. A set-screw regulates the force of the blow, and a worm-wheel upon the rotated shaft operates the wheel which carries the projections.

Claim.—1. In a tooth-plugging instrument, the combination of the ram with its elastic end *b*, and shoulder *m* with a wheel, A, or its equivalent, having a projection or projections adapted to the ram-shoulder *m*.

2. The combination of the above with the set-screw *d* or its equivalent.

3. The combination of the tubular stem D and its ram B, the wheel A and its projection *m*, and the worm *e* on a shaft *f*, arranged parallel to the said tubular stem, all substantially as set forth.

142,206.—Lubricating-Journal.—GEORGE A. CHAPMAN, Woonsocket, R. I., assignor to WOONSOCKET MACHINE COMPANY, same place. Application filed May 3, 1873.

Claim.—A removable oil-cup, E, with a journal-bearing having the inverted oil-elevating tube d^2 and vacuum chamber d^3, substantially as specified.

142,207.—Gaged Butter Cutter and Lifter.—THEODORE E. COLBURN, Cleveland, Ohio. Application filed June 7, 1873.

A sheet-metal cylinder is forced vertically into the solid butter. A follower within this cylinder has a rod ascending up into the tubular handle of the cylinder, where it is set to any desired depth by means of a pin-guide moving in a vertical slot with side notches. A fine wire across the mouth of the cylinder cuts the cake of butter when the follower rests upon the top and the cylinder is revolved.

Claim.—The cylinder A, wire cut-off B, hollow handle C, bail D, follower E, rod F, and gage G, when constructed, combined, and operating substantially as and for the purpose set forth.

142,208.—Apple-Butter Stirrer.—GEORGE W. COLLINS, West Lebanon, Pa. Application filed June 5, 1873.

To the top of a suitable vessel hinged covers are attached by a cross-piece and clamps. On the cross-piece is secured a shaft and gearing that revolve stirrers within the vessel.

Claim.—The combination of the arms *a*, provided with the corn-husk scrapers *c*, shafts *b* and *d*, wheel *e*, spring *e*, crank-shaft *h*, pinion *h*, and cross-piece L, all operating together as and for the purpose described.

142,209.—Car-Coupling.—JOHN CREST, Tiffin, Ohio. Application filed April 16, 1873.

The hook is held down by a spiral spring resting in a countersink on its upper side, and is raised either by a rod passing up through it and the spring, or by a cam operating upon an inclined surface in the bottom of the draw-head.

Claim.—1. The catch-bar B, having at about the middle thereof a countersunk hole, the countersunk being at the top, in combination with spiral spring C and lift-rod D, which passes through the catch-bar, and has bearing supports in the top and bottom of the draw-bar, as and for the purpose specified.

2. The combination of the vertical rod D, cam G, and spirally-inclined surface G' in the draw-head with the catch-bar B, as and for the purpose specified.

142,210.—Table-Hinge.—WILLIAM F. DALY, Peru, Ind., assignor of one-half his right to EDWIN D. OLIN, same place.—Case B. Application filed June 28, 1873.

Claim.—1. A hinge, the leaves A and B of which are provided with fixed and rigid segmental arms, in combination with an independent lock-bolt, with or without a spring, substantially as specified.

2. The combination, with the leaves A and B having segmental arms C and D, of the sliding bar F carrying the bolt E, and spiral spring G, substantially as specified.

142,211.—Thill-Coupling.—GEORGE R. DAVIS, Kingston, Mich. Application filed June 13, 1873.

The spring has a pin at its front end for locking the shackle-bar, which is prevented from vertical movement by the ledge and spring.

Claim.—1. The clip-plate A having an overhanging ledge, G, and studs E E, in combination with the slotted shackle-bar H having curved recesses F F on the sides of its reduced portion, all substantially as shown, for the purpose specified.

2. In combination with the detachable shackle-bar H and clip-plate A, the spring-rod K having a pin, I, at its front end, all substantially as described.

142,212.—Shirt-Front.—THOMAS M. DENHAM, New Bedford, Mass. Application filed July 17, 1873.

The unattached portion of the bosom allows it to bend freely at that point to avoid rumpling.

Claim.—A shirt-front without stiffening or lining, having the portion A B unattached to the body of the shirt, leaving a space between the bosom and said body, substantially as described, and for the purpose set forth.

142,213.—Paper-File.—P. WILLIAM DERHAM, New York, N. Y. Application filed August 19, 1873.

To preserve letters, documents, and the like without folding.

Claim.—The hereinbefore-described paper-file, consisting of the sides A and B, the back C, the edges D, F, and F, and the flaps E, G, and G, when said parts are constructed and combined in the manner and for the purpose substantially as specified.

142,214.—Combined Fender and Ash-Sifter.—WILLIAM C. DOBBINS, Zanesville, Ohio. Application filed July 28, 1873.

The ash-sifting attachment consists of a plate imperforate in front and grated in the rear. The grated portion is placed under the fire and receives the coals which fall from the fire-grate, while allowing the ashes to fall through. The sifter, to which the fender is immovably attached, can be lifted to throw the coals back upon the fire.

Claim.—The ash-sifting attachment B, combined with fender *d* and hearth-plate A, as and for the purpose specified.

142,215.—Nut-Lock.—H. WILLIAM DOPP, Buffalo, assignor of two-thirds his right to FERNANDO C. CANDEE, New York, N. Y. Application filed January 8, 1873.

The nut is screwed home and the post inserted in the mortised washer. A slight backward movement of the nut brings the corner in contact with the upward projection of the post, and covers the horizontal projection.

Claim.—In a nut-locking device the combination of a nut-washer with a post, B, constructed as described, and inserted in a hole of said washer after the nut is screwed up, and secured in place by a slight backward movement of the nut, substantially as described, and for the purpose set forth.

142,216.—Flame for Cutting Cigar-Lighters.—WILLIAM H. DRIPS, Cincinnati, Ohio. Application filed June 24, 1873.

The frame A is provided with a ledge, *a*, at one end to catch against a table or counter.

Claim.—As a new article of manufacture, the tool for cutting cigar-lighters, substantially as described.

142,217.—Filter.—JONAS B. ELLIS, Washington, D. C. Application filed July 17, 1873.

A cylinder of sand and clay baked is secured within another cylinder or case by means of heads having openings which communicate with water-pipes provided with suitable valves. The water is filtered by flowing from either the outer cylinder through and into the inner cylinder, or through the inner cylinder into the outer; or it may flow through the inner cylinder without being filtered, if desired.

Claim.—The outer case A and inner cylinder D, the latter constructed of a composition of sand and clay baked and burned,

and the heads or lids B B', having openings *d f* and *d' f'*, the whole being constructed, combined, and arranged to operate substantially as described.

142,218.—Earth-Auger.—STEPHEN EMERY, Cumberland, Me. Application filed May 3, 1873.

Two upright flat plates placed opposite each other, and two rings which connect the plates at top and bottom. The spaces between the flat plates are filled with curved plates, which are held to the bottom ring by catches and secured to the boring-bar at the top by loops on the bar passing through slots in the plates and keys inserted in the loops. A vertical center is attached to the bottom ring to cut the wall of the well or hole.

Claim.—1. The plates D and E, and rings B and C, constituting the frame of an auger, substantially as specified.

2. The auger-bit F with cutting-edge *f* and hole *f'*, and cutter G with vertical edge *g*, arranged substantially as specified.

3. The sheets H I, hasps *h i*, slots K K, wedges *k k*, eye-hooks *a c*, and bar A, combined and arranged substantially as specified.

142,219.—Car-Coupling.—JOHN M. ENOS, St. Joseph, Mich. Application filed May 21, 1873.

Spring-buffers to keep the coupled cars apart as far as the link will allow.

Claim.—1. The draw-head B, buffer C, draw-bar D, springs E F, and stirrup I, constructed and arranged to operate substantially as and for the purposes set forth.

2. The combination of the draw-head B, buffer C, draw-bar D, springs E F, and stirrup I, with the plates *a a'*, stops *b b'*, strap *d*, pin *c*, and slits A, substantially in the manner and for the purpose set forth.

3. The combination, with the slotted draw-head B, buffer C, stirrup I, and spring E, of the pin G, having the notch *f* and stop *g*, as set forth.

142,220.—Press.—RICHARD EMMONS, New York, N. Y., assignor to UNITED POWER-PRESS COMPANY. Application filed August 8, 1873.

Claim.—The disks *b b* or *b' b'*, having projecting hubs, and arranged loosely upon the endless screw H, and contiguous to the standard E or B B, and retained in place by stops, in combination with the toggle-levers F, traveling-nuts G, and follower, all constructed and arranged as herein shown and described.

142,221.—Apparatus for Washing Coal, Ore, &c.—MAXIMILIEN EVRARD, St. Etienne, (Loire,) France. Application filed March 21, 1873.

The washing-table is hermetically packed, so that it can remain stationary or rise and fall, being operated through a rod terminating in a piston inclosed within a cylinder located centrally of the receiving-vessel, forming a hydraulic lifter. Coal is charged through a grating which segregates the lumps, onto a washing-table, the water-level, raised by admission of steam to space above water in connecting-reservoir, floating off the dust. Then a jigging process is conducted by intermittent jets of steam, and the table gradually raised to discharge the several grades. A pipe, extending above and below the table, equalizes atmospheric pressure, avoiding a vacuum.

Claim.—1. The apparatus herein described for washing coal, minerals, &c., consisting of the receiving-vessel A and table B operated from a cylinder, D, the receiver G, float R, and a steam-generator, all connecting and operating substantially as set forth.

2. The combination of the washing-table B and hydraulic lifter, substantially as and for the purpose specified.

142,222.—Hitching-Machine.—JOHN W. FAUVER, Augusta county, Va. Application filed June 27, 1873.

A rotary spade is attached, by means of an arm, to the rotating axle of a carriage, so that at each revolution of the axle the spade cuts a slice of earth from the ditch, along the side of which the carriage travels. The spade has a reciprocating movement in the end of the arm, and, by means of gearing connecting with stationary segmental cogs on the frame of the carriage, the position is alternately changed during each revolution of the axle, so as to cause it to enter the earth properly, and to relieve itself of the slice of soil after it has passed above the level of the ditch, the earth being thrown to one side of the ditch. A spring-scraper is attached to the machine to clean the earth from the spade at each revolution.

Claim.—1. The combination of the hinged spade-arm B, spring V, arm S, and inclined surface T of the cam C, substantially as and for the purpose set forth.

2. The combination of the oscillating spade G, cams C and D, pulleys L and M, chain-band M, and wheels I and K, as set forth.

3. The combination, with the reversible spade G, of the spring-blade X, substantially as and for the purpose set forth.

142,223.—Signal-Lantern.—HENRY B. FERNALD, Washington, D. C. Application filed September 17, 1872.

The lantern-body, having sides of variously-colored glass, is inserted into its metallic case from the top, and secured thereto by a removable annular cap surrounding it. The metallic case screens the light on two opposite sides; and the lantern-body, being rotated within the case from the bottom, exposes a colored light on the open sides.

Claim.—1. The lantern A, having the ring D extending vertically downward from its lower end, and provided on its inside with the flange I for supporting the lamp, in combination with the case B, having the ring E extending downward from its lower end, and inclosing and protecting the ring D and the lamp, all these parts being arranged substantially as described.

2. The case E, combined with the detachable top H, in the manner specified.

142,224.—Pneumatic Signal Apparatus.—WILLIAM FOSTER, Jr., New York, N. Y. Application filed April 30, 1872.

A spring-alarm mechanism is arranged, when wound up, to be released or tripped by a detent-arm, operated by a bulb or expanding chamber at the end of a pneumatic tube. The pressure of the chamber on the transmitting-lever is regulated by a screw-nut on its connecting-link.

Claim.—The combination of the tripping or unlocking mechanism, constructed as described, signal-gearing, and adjusting nut *n*, spring-lever L, pneumatic valve H, and disk O, substantially as set forth, and for the purpose specified.

142,225.—Revolving Chimney-Top.—CHARLES L. GARFIELD, Albany, N. Y. Application filed May 6, 1873.

Within the smoke-pipe is arranged an air-pipe intended to be connected with a flue or pipe that is placed within the chimney, and communicates with the several rooms of a house to receive the impure air therefrom. The air-pipe and smoke-flue discharge in the same direction. A wind-passage in the upper part of the top facilitates the discharge of air and smoke.

Claim.—1. The combination, in a revolving chimney-top, of a smoke-passage, A, and an air-passage J, for ventilating purposes, discharging in the direction of the wind, substantially as herein described.

2. The flat wind-passage K, extending in width across the revolving top in its upper part, so as to leave unobstructed the entire width of the top for one or more flue passages discharging beneath the same, as herein set forth.

3. The combination, in a revolving chimney-top, of a smoke-passage, A, an air-passage, J, a wind-passage, K, and a discharge-orifice, I, common to all, substantially as herein shown and described.

4. The swivel-joint *s t*, formed and arranged substantially as set forth, in combination with the base-collar C, spindle E, and the revolving top proper, for the purpose specified.

142,226.—Car-Coupling.—EZRA N. GIFFORD, Cleveland, Ohio, assignor to himself, THEODORE B. STEVENS, and FRANCIS A. BRADY, same place. Application filed May 5, 1873.

The catch is guided and limited in its movement by a bolt which fits in a right-angled groove in one side of it. The link, striking the curved face of the catch, raises and forces it back, and passes under and beyond it, when it falls into the link, and coupling is effected.

Claim.—The catch-plate C, provided with the right-angled side slot or groove c^2 and a right-angled shoulder, c^3, in its forward edge, in combination with the short cross-bolt D and the draw-head A, whereby said plate is held in place when the cars are coupled and guided in its movements when being withdrawn, as set forth.

142,227.—Friction-Clutch.—JOHN J. GRANT, Greenfield, Mass. Application filed April 23, 1873.

Rigidly attached to the shaft, upon which the pulley-wheel runs loosely, is the collar or carrier, to which are fitted segmental friction-drivers, which slide in grooves cut for their reception. The said friction-drivers are retained in position and prevented from flying outward by means of spiral springs, which are fitted in recesses of cylindrical shape, cut for their reception, and screw-bolts, which compress and control the said spiral springs.

Claim.—1. In combination with the segmental friction-drivers D, sliding in grooves cut for their reception in the collar C, the spiral springs E, arranged in a recess cut for their reception in the said drivers, and the screw-bolts F, all operating together as and for the purposes described.

2. The shaft B, adjustable collar I, levers H, clutch K, drivers D, provided with projections *d*, collar C, and pulley A, all combined and operating as described.

142,228.—Water-Wheel.—ELISHA HACKETT, Ulysses, Pa. Application filed May 13, 1873.

The buckets of the upper wheel are end-curved and provided with inwardly and downwardly dipping flanges to keep the water from the sides of the case and direct it to the wheel beneath, which causes it to turn by the resulting force. Both wheels are provided with gears which work in pinions of different sizes on the same shaft.

Claim.—1. The buckets C end-curved at *c*, and provided with an inwardly and rearwardly dipping flange, *c'*, as and for the purpose specified.

2. The backwardly-curved working-faces *k* of wheel K, combined with the flares *c'* of bucket C, forming an oblique cavity running out near the hub D, as and for the purpose specified.

3. The combination of two water-wheels, one placed above the other, both revolving about the same center, and each provided with its own crown-wheel, of the unequal pinions *e f*, arranged and operating on the same shaft E', as and for the purpose set forth.

142,229.—Carriage-Window.—JOHN HENDERS, (for himself and as administrator of EDWARD KRUGER, deceased,) St. Louis, Mo. Application filed March 26, 1873.

The sash slides vertically between side guides, which also slide vertically in the body of the door. On the sash are lugs which catch against lugs on the side guides, and cause them to be drawn upward with the sash. The side guides consist each of two angle pieces, one of which is pivoted to the other so as to allow the necessary tilting outward of the bottom of the sash to engage with the lip on the top of the door.

Claim.—1. The combination of the carriage-door-lifting standards F, pivoted guides E, and sash D, all substantially as set forth.

2. In combination with the sliding guides or standards E F, sash D, and door B, the spring-catches G, substantially as and for the purpose set forth.

142,229.—Car-Coupling.—JOHN HIEBS, West Manayunk, Pa., assignor to himself and JOHN J. FOX, same place. Application filed March 25, 1873.

When the coupling-bar is introduced into the mouth of the draw-head it passes through the upper enlarged portion therein, and strikes and pushes back the pivoted retaining-dog, and then falls into position. Uncoupling is effected by means of a sliding frame, which, when raised, may be held in position by a pivoted lever engaging in a notch in its upper side.

Claim.—1. The pivoted dog E, attached to and sliding with the frame D, and acting as a retainer for the coupling-bar, as specified.

2. The combination, substantially as described, of the retaining-lever I with the sliding frame D, having a notch, *i*, substantially as and for the purpose described.

142,231.—Harvester.—PLINY F. HODGES, Macedon, Ohio, assignor of nine-twelfths his right to EDWIN RAYLINS, JAMES O. BROWN, and FRANCIS T. LOMONT, same place. Application filed March 19, 1873.

The cut grain that falls upon the endless-apron platform is carried to the elevator, by which it is delivered in the receptacle attached to the elevator-frame in convenient reach of the binders.

Claim.—1. An adjustable grain-receiver, M, pivoted to the elevator-frame, and adapted to permit the relative movement of the platform and main frame on their connecting-joints, as described.

2. The combination, with the elevator-sprocs H^2 K^2, operating as described, of the upper guide or deflecting roller L, substantially as and for the purpose set forth.

3. The binders' tables mounted on the main frame, the hinged platform and elevator-frame, the grain-receiver, and the driver's seat, arranged relatively to each other and to the main frame and driving-wheels, substantially as described.

4. The binders' tables mounted upon supports on the main frame, in combination with the hinged platform and elevator-frame and pivoted grain-receiver attached to said elevator-frame, substantially as described.

142,232.—Canvas-Stretcher.—HENRY W. HOLLY, Brooklyn, N. Y. Application filed January 15, 1873.

In connection with a rigid inner frame is a sectionally-constructed expanding and contracting outer frame operated by interposed springs, to which outer frame the canvas is secured, and which arrangement admits of the close fit of a back board to the inner frame and steady retention of the same during all adjustments of the outer frame.

Claim.—1. The combination of a rigid or unbroken inner frame with a sectional or expanding and contracting outer frame and springs interposed between the two frames, substantially as and for the purposes herein set forth.

2. The combination of the dowels *b* and springs *d* with the rigid or unbroken inner frame A and sectionally-constructed outer frame B B, essentially as herein described.

142,233.—Skein and Box for Vehicle-Wheels.—NATHAN L. HOLMES, Fond du Lac, Wis., assignor of one-half of his right to C. E. DE GROAT, same place. Application filed May 10, 1872.

The bearing-surfaces are parallel, lubrication is automatic, and dirt is excluded.

Claim.—The box D, formed with bearing-surfaces *d d*, inclined or conical recess d^2, and shoulder d^3, in combination with a spindle, B, having corresponding bearings and recess, and lubricating reservoir and channel, and a band, C, having flange c^2, substantially as specified.

142,234.—Hay-Loader.—HIRAM C. HOWLAND and THOMAS L. MOORE, Oxford, N. Y. Application filed June 28, 1873.

A semicircular frame or box has two endless aprons, moving on friction-rollers, to convey the hay through the box and deliver onto the wagon.

Claim.—1. The hay-loader herein described, having the upright ring-centers C with the semi-cylindrical coverings D E, the rollers F and J, and the endless aprons G and I, operating in the manner as shown, and for the purpose mentioned.

2. In a hay-loader, the construction and arrangement of the fluted propelling-rollers O and P, in connection with the fluted counter-rollers Q, and the endless aprons G and I, substantially as and for the purpose set forth.

3. In a hay-loader, the semi-annular frame, consisting of the parallel sides C and the concentric cylindrical coverings D and E, constructed and arranged in connection with the rollers and aprons, for the purpose of receiving and delivering the hay or grain on the same side, substantially as specified.

142,235.—Railway-Rail Chair.—WILLIAM HUFFMAN, Millgrove, Ind. Application filed July 21, 1873.

A recess in the fish-plate fits over a corresponding projection on the chair for the purpose of preventing the longitudinal movement of the rails termed "running."

Claim.—A rail-chair having a lip, C, in combination with a recessed fish-plate, *F f*, all applied to the rails in the manner and for the purpose set forth.

142,236.—Pruning-Knife.—ABRAHAM C. HULSE, Palmyra, Ill. Application filed July 14, 1873.

Claim.—1. The combination of the bifurcated handle A *a* and slotted hook-blade E with the bladed circle-plate C D, pivoted to both, as and for the purpose described.

2. The bladed circle-plate C D, having perforations, and adjustable in the handle to take up wear in the knife-edges, as set forth.

142,237.—Apparatus for Steaming Grain.—JOHN C. HUNT, Sioux City, Iowa. Application filed July 2, 1873.

Diaphragm divides the steam drum into two parts. The steam admitted in the upper part enters the perforations in the pipes and comes in direct contact with the grain; when admitted in the lower part merely circulates around the pipes, and heats the grain while passing through.

Claim.—The combination of the diaphragm E, dividing the steam-drum A into two compartments, the steam-induction pipes H and L, and the perforated pipes D D, through which the grain traverses, substantially as and for the purposes herein set forth.

142,238.—Sewer-Cleaner.—JEFFERSON H. JENINGS, Oquawka, Ill. Application filed July 22, 1873.

A mud-trap provided with a hinged bottom, operated by levers and keys, is placed below the level of the sewer to receive the precipitated matter from the running water. The inlet for water into the man-trap is provided with a valve, and the mud-trap is lifted by a crane.

Claim.—1. In combination with a man-trap for sewers, a removable mud-trap located at or below the level of the sewer or sewers entering said man-trap, for the purposes herein set forth.

2. The man-trap A, provided with a slide, B, at the mouth of each sewer entering the same, and an exit-opening, *b*, substantially as and for the purposes herein set forth.

3. The mud-trap C, provided with hinged bottom D D, keys *c c*, and levers *d d*, as and for the purposes herein set forth.

4. The combination of the man-trap A with slide or slides B, mud-trap C with bottom D D, and crane E, all constructed and arranged substantially as and for the purposes herein set forth.

142,239.—Jaw for Lathe-Chucks.—MOSES C. JOHNSON, New Bedford, Mass., assignor to MORSE TWIST DRILL AND MACHINE COMPANY, same place. Application filed February 17, 1873.

The end of the dog is chambered, and in it is pivoted a toggle, held to one side by a spring. When cylindrical work is grasped by the dog the toggles take a firmer hold and prevent slipping.

Claim.—1. The carrier A chambered, as described, and the toggle B formed and arranged within the chamber and pivoted to the carrier, all substantially as set forth.

2. The carrier A chambered, as described, and the toggle B and the spring *s* connected and arranged within the chamber of the carrier, in manner and to operate as set forth, the toggle being pivoted to the carrier, as explained.

142,240.—Apparatus for Corking Bottles.—AUGUST C. JORDAN, New York, N. Y., assignor to himself and CHARLES H. BOSSE, same place. Application filed January 15, 1873.

Four curved jaws united at their lower parts into a cylinder and attached to a stationary frame. These jaws are adjustable, to admit large or small corks or to permit a greater or less degree of compression. A reciprocating plunger attached to a sliding frame forces the cork between the jaws and thence into the bottles.

Claim.—1. The combination of the movable platform and spring-jaws D with the movable plunger F, all being arranged to operate substantially as herein shown and described.

2. The horizontal adjustable jaws D, arranged beneath the stationary platform A under the reciprocating plunger F, substantially as herein specified.

142,241.—Fire-Place.—WILLIAM M. KEPLER, Cincinnati, Ohio. Application filed May 7, 1873.

The back of the fire-place is corrugated horizontally. The top plate of the air-chamber at rear of the grate, which holds the back in position, can be so applied that its hot-air pipe can be made to fit a right-hand or left-hand flue.

Claim.—1. In an air-chambered fire-place, A B, constructed substantially as described, the corrugated fire-back C, when the corrugations are arranged horizontally, and formed by rising faces *e* and horizontal faces *e'*, as and for the purpose described.

2. In combination with the fire-back C, the reversible grooved top plate D E *d d'*, substantially as and for the purpose specified.

142,242.—Washing-Machine.—THOMAS F. KIVT, Cincinnati, Ohio. Application filed June 7, 1873.

A hollow ribbed cylinder revolves on self-adjusting spring-journals over a series of fluted rollers arranged in a cylindrical tub, which is held together by straight and curved rods.

Claim.—1. The tub A, fluted rollers H, ribbed open cylinder F, journal-boxes, and detachable springs, all combined and arranged as herein set forth.

2. The washing-machine hereinbefore described, with its curved bottom and flaring edges resting upon and secured to the legs by the straight and curved metallic rods E and E', as set forth.

3. The journal-boxes, with adjustable springs, inclosed in detachable disks and combined with the cylinder, as set forth.

142,243.—Pen and Pencil Case.—JOHN H. KNAPP, New York, N. Y. Application filed July 1, 1873.

Claim.—In combination with the pencil-case A, the reversible holder B, having at one end a pen-socket and at the other the pencil-tip D, said holder containing the sliding tubes *d e* and rigidly-fastened interior tube *b*, substantially as herein shown and described, for the object specified.

142,244.—Drill-Extractor.—DANIEL KUNKEL, Oregon, Mo. Application filed July 22, 1873.

Two jaws are pivoted between the lower ends of two straight bars. The upper ends of the bars are bent inwardly and a half-nut cut in each end, so that by pressing them together by a spring-catch a complete nut is formed. Each jaw has an arm extending upward and passing through the lower end of an interior frame, which serves as a guide. A screw-rod or shaft works in the nut formed as above stated, its lower end entering the above-described interior frame, and is, by a jointed arm, connected with the upper end of the exterior frame. By turning the screw-shaft to the right or left the jaws are closed and opened, respectively.

Claim.—1. The combination of the exterior frame A A, jaws B B with arms C C, interior frame D, and screw-shaft E, all substantially as and for the purposes herein set forth.

2. In combination with the interior frame D, screw-shaft E, and jaws B B, the ratchet-wheel *b* and pawl *d*, for the purposes herein set forth.

3. The combination, with the frames A D, jaws B B, and screw-shaft E, of the spring *f* and the bisected nut with latch *c*, for the purposes herein set forth.

142,245.—Bobbin for Spinning-Machines.—PERLEY LAFLIN, Warren, assignor to GEORGE DRAPER, Hopedale, Mass. Application filed June 2, 1873.

The stop is a wire, bent into circular form, applied in a groove in the bobbin-head or spindle-button, and having one end bent at a right angle to engage a rigid stud located on the button, (or in the bobbin in the other case,) so that the stop may yield and the spindle turn slightly, independently of the bobbin, when a strain is brought on the yarn.

Claim.—The yielding stop D, substantially as described, applied to the bobbin B, or to the stationary bobbin-seat C fixed to the spindle, all being and operating essentially as specified.

142,246.—Wire Fence.—GEORGE LAKIN, East Norwalk, and LESTER N. LAKIN, Toledo, Ohio. Application filed August 8, 1873.

An inclined brace is forked at its top to engage with a notch in the fence-post, the lower end of said brace resting on a bed-plate. One end of a horizontal rod is connected to the lower end of said inclined brace, with its opposite end passing through the post, threaded and provided with a nut. The intermediate posts are of flat metal, standing at right angles to the fence, and are split at their tops to clench the grooved ends of the cap-rail.

Claim.—1. The combination of the post *a*, the brace *c*, adjustable rod *g*, and stems *e*, substantially as shown and described.

2. The stays *d*, split at top, as shown at 5, and bent in opposite directions to clinch the grooved ends of the cap-rail, substantially as shown and specified.

142,247.—Milking-Stool.—GEORGE T. LINCOLN, Leominster, Mass. Application filed November 9, 1872.

Seat and pail-holder held to upright standard by thumb-screws.

Claim.—In combination with a milking-stool, a milking-pail holder, consisting of the rod A, having a projecting foot, as shown, and provided with the sliding and swinging brackets E and F, adjustable, either separately or together, in the manner and for the purpose set forth.

142,248.—Coffee-Package.—HENRY C. LOCKWOOD, Baltimore, Md. Application filed June 7, 1873.

The package is made of paper lined with tin-foil, and is formed on a block. The ends are opened after having been folded and the block withdrawn, and the package filled with coffee. The ends of the package are straightened by leather-board on the inside.

Claim.—The coffee-package A, made of paper, lined with tin-foil, having the protecting false bottom and top *a a'*, being closed at both ends air-tight, and glued in the seams, substantially as described.

142,249.—Sofa-Bedstead.—EDWARD LOVELL, St. Louis, Mo. Application filed February 11, 1873.

The back is hinged to the lower part of the frame, so that when dropped down it rests directly on the floor, without bearing upon its hinges, and the upper frame-section when opened rests by its arm or projecting head upon the prostrate back. A sliding leg is arranged to support the foot-end of the seat when opened.

Claim.—1. The rigidly-connected seat D and arm D', forming the upper member of the lounge, hinged at back to the armless lower member A, in combination with the back E hinged to the bottom of the frame A, so as to adapt it to lie flat on the floor and support the rigid arm D', without direct contact of the seat D, all as herein set forth.

2. In combination with the lounge sections A D and back E, constructed substantially as set forth, the sliding leg F, as and for the purpose set forth.

142,250.—Machine for Forming the Backs of Saws.—CHARLES MAJER, Brooklyn, E. D., N. Y. Application filed July 9, 1873.

Two bars or jaws lying parallel to each other, one operated toward the other by means of a cam-shaft, and a plunger of equal length, V-shaped in cross-section, presses the metal between them.

Claim.—The combination of a plunger, D, with two jaws, B B', and with a cam-shaft, E, all constructed and operating substantially in the manner herein shown and described.

142,251.—Spark-Arrester for Locomotives.—MATTHEW B. MASON, Kansas City, Mo., assignor to himself and JOHN S. MCCRUM. Application filed July 25, 1873.

Down-turned pipes are located in the exhaust-nozzles to create a draft for conveying the cinders arrested by a perforated petticoat-pipe into a receptacle. Said petticoat-pipe is protected in front of the fires by strips of metal.

Claim.—1. The down-turned spouts D D' from the exhaust-nozzles C *c c'*, arranged to discharge through apertures *e* in the smoke-arch into a hopper or receptacle, F, having a discharge-trap or valve, G.

2. The combination, with the petticoat-pipe I, of iron guards L to protect it from denting or breaking by coal or other fragments from the fires striking against it, as set forth.

142,252.—Moccasin.—ALEXANDER MAGNUSSON, Bangor, Me. Application filed January 3, 1873.

The vamp extends from the toe about half-way back toward the heel, and is then stitched to the quarters, one of which has the inner tongue and the other a lap for securing the shoe to the foot.

Claim.—The within-described moccasin, made in the manner set forth, from the patterns herein shown.

142,253.—Closing Gas-Retorts.—GEORGE A. MCILHENNEY, Washington, D. C. Application filed July 9, 1873.

Improvement on patent 137,704. A lip is formed around the mouth-piece, so that the part of the cover entering touches only a narrow surface. A receptacle below the mouth collects any tar.

Claim.—1. The retort having its mouth provided with the lip *d* or its equivalent, forming a narrow bearing for the lid, and leaving a space or clearance, *e*, around the same, inside of its line of bearing, as and for the purpose described.

2. The retort provided with a box or receptacle, D, substantially as and for the purpose described.

3. The cast-iron shoe E, constructed and applied as shown, to receive and hold the cutter-bar.

142,254.—Stove-Pipe Coupling.—HORACE A. MEARS, Pecatonica, Ill. Application filed January 24, 1873.

The collar on one section of the pipe is provided at one side with a short lug, and on the other side with a tapering head. The other collar has on its edge a notch, through which the lug passes, and on its inner surface a groove, within which the lug and head are brought in locking the sections together.

Claim.—The combination, with the pipes A and C, of the collar B, provided with lug *a* and head or flange *b*, and the collar D, having interior circumferential groove and a recess, *d*, all substantially as and for the purposes herein set forth.

142,255.—Washing-Machine.—HENRY H. MERCER and SAMUEL MENAFEE, Cambridge, Ohio. Application filed August 5, 1873.

A lower roller composed of independent polygonal rolls, and an upper roller having transverse grooves.

Claim.—The washing attachment described, consisting of the frame A A B B, rollers C D, boxes *d d*, with stems and inclosing springs *e f*, all constructed as set forth.

142,256.—Wind-Wheel.—GEORGE METCALF, Somonauk, Ill. Application filed July 11, 1873.

The wheel is mounted at the top of and within a revolving frame in the axis of the revolution of the tower or frame. The tower extends down into a permanent frame-work, in the top of which friction-wheels are set.

Claim.—1. The revolving tower B, constructed substantially as described, to support the wheel A between its shaft-bearings and above the step D, combined with the surrounding and supporting frame-work C, substantially as set forth.

2. In combination with the tower B, supporting the wheel A at its top between the shaft-bearings, and the surrounding and supporting frame-work or structure C, the step D and friction-rollers F, to enable said tower to revolve with freedom.

3. In combination with the wheel A, steady vane H, and hinged vane I, the flexible connection J, arm K, lever M, and weight L, all arranged substantially as set forth.

142,257.—Signal-Lantern.—SAM. H. MILLER, Brooklyn, N. Y., assignor to himself and JAMES E. FOLK, same place. Application filed May 6, 1873.

The exterior glass cylinder of the lantern is formed with two longitudinal grooves or flutes on opposite sides, which serve, by their interior projection, to support the edges of the curved colored glasses, while externally the whole is prevented from displacement or retention by webs from the frame fitting into the grooves.

Claim.—1. The glass globe or cylinder C, constructed with two or more internally-projecting longitudinal ribs, *b*, substantially as and for the purpose herein set forth.

2. The glass globe or cylinder C, provided with one or more longitudinal grooves, *c*, in its outside, for use in connection with one or more steps, *d*, essentially as described.

142,263.—Saw-Tooth.—WARREN P. MILLER, New York, N. Y. Application filed July 29, 1873.

The shanks of the teeth are compressed and inserted into a circular opening in the saw-plate.

Claim.—An insertible tooth for saws, when the shank is cut and separated at the back, as at *c*, for the purpose of springing the same laterally that it may be inserted into a circular socket comprising more than half of a circle, substantially as shown.

142,264.—Laundry-Stove.—JAMES H. MITCHELL, San Francisco, Cal. Application filed February 24, 1873.

Claim.—The stove A, having the sloping fire-box B smaller than the stove-shell, and provided with the flaring back and sides *f f*, so as to provide a jacket or space, *e*, between the two, when the only communication with cold jacket or space is through side openings *i i*, substantially as and for the purpose above described.

142,265.—Table-Leaf Support.—JOSEPH K. MOFFETT, Watertown, N. Y. Application filed July 12, 1873.

One end of a downwardly-projecting arm is pivoted to a jointed brace, the other end being pivoted to an ear projecting from the leaf. The lower part of the jointed brace is also connected to the table-leaf by a spiral spring.

Claim.—The combination, with a table, A, and leaf B, of the plate C with arm D, jointed brace G G', spring *d* acting directly on the jointed brace, and plate E with ear *c*, all substantially as and for the purposes herein set forth.

142,266.—Martingale.—FRANKLIN G. MOODY, North Monmouth, Me., assignor of one-half his right to GEORGE S. FAIRBANKS, same place. Application filed July 31, 1873.

A martingale constructed with rings and snaps, by which an additional martingale can be used extending to the bit.

Claim.—The combination of the martingale *a* with martingale *b*, both attached to the strap *d* by means of the ring *e* and hooks or snaps *g f*, substantially as shown and described.

142,267.—Removable Ceiling for Vessels.—WILLIAM F. MORGAN, New York, N. Y. Application filed July 31, 1873.

To the ribs of the vessel is attached a layer of ceiling-boards, over which strips of water-proof felt lining are laid, each edge lapping, and secured to the vessel by strips of wood for the protection of a cargo of grain.

Claim.—A removable water-proof lining for vessels, made up of a series of strips, as described, each strip overlapping the other, and secured in place upon a backing by strips C, as herein shown and described, for the purpose specified.

142,268.—Adjustable Bracket.—JAMES B. MORRISON, Brooklyn, E. D., N. Y. Application filed August 20, 1873.

Swinging bracket, which may be lengthened or shortened.

Claim.—1. The combination, with a swinging or stationary back-plate A, of the supporting-arms B B', having one or both of said arms provided with a curved slot, through which is inserted a locking-pin, C, whereby the altitude of the device carried by the outer ends of the said arms may be regulated as desired, substantially as herein specified.

2. The combination, with the said arms B B', of a stationary or swinging back plate A, provided with the curved slot *f*, substantially as and for the purposes herein specified.

3. The combination, with the said arms B B', of the sliding bar E, whether tubular or solid, substantially as and for the purpose herein set forth.

4. The combination of a wick or gas tube, N, with the sliding bar E and supporting-arms B B', substantially as and for the purpose herein specified.

5. The combination of the platform G, having sliding drawers *h*, with the sliding bar E, arms B B', and back plate A, substantially as herein specified.

6. The combination of the following elements: The back plate A, either with or without the slot *f*, the arms B B', one or both of which is provided with a curved slot, *c* or *d*, a locking-pin C, and a sliding bar, E, arranged and operating substantially as herein specified.

7. The combination, with the arms B B', of the head-block D and pin F, whereby the bar E, or the device supported by the pin F, may be revolved or swung around, substantially as herein specified.

142,269.—Packing for Hydrants, Pumps, &c.—JOHN W. MURRAY, Baltimore, Md. Application filed June 3, 1873.

The packing consists of a rubber ring having a flange tapering on the outside but cylindrical on the inside.

Claim.—The packing-ring C, cylindrical on the inside, and having a flange, *c*, tapering on the outside, as and for the purpose described.

142,270.—Lamp-Wick Trimmer.—SAMUEL NAYLOR and ASAHEL FAIRCHILD, Independence, Iowa. Application filed July 15, 1873.

Claim.—The upper handle A, formed with a bread cutting-edge, D, in combination with the lower handle B, formed with the frame C, and the two parts pivoted at the rear of the cutting-edge, thus exposing to view the wick as the same is being trimmed, as herein set forth.

142,271.—Windmill.—WILLIAM C. NELSON, Kentland, Ind. Application filed July 29, 1873.

A solid upright post having a tenon or pin in its upper end, upon which turns a beam carrying a wind-vane. At the other end of the beam is a bar running downward, and in this bar the wheel-shaft has its outer bearings, the inner bearing being in a short post on the under side of the beam. There is a regulating-vane attached to the front end of the lever, which is pivoted to the side of the beam; also, a rod connected with a brake-shoe. As the wind increases the lever turns on its pivot, thereby pulling the brake upward against the hub and lessening the speed of the wheel.

Claim.—1. The combination of the vane G, lever H, rod *e*, and brake I, substantially as and for the purposes herein set forth.

2. The combination of the wind-wheel shaft *b*, provided with crank or wrist pin, the pitmen J with ring *f*, and the pitmen K K, all substantially as and for the purposes herein set forth.

3. The combination, with the brake-lever H, of the rod and ring *h*, rod A, lever E, float F, and vessel O, connected with the pump-trough, as and for the purposes herein set forth.

142,272.—Rendering Fabrics Uninflammable.—DONALD NICOLL, London, England. Application filed January 28, 1873.

Claim.—The admixture with sulphate of ammonia preparations, for rendering woven and other fabrics uninflammable, of dextrine, as above described, whereby the sulphate of ammonia is fixed in the fabric.

142,273.—Washing-Machine.—WILLIAM PARKER, Rolla, Mo., assignor of one-half his right to ARTHUR COBB, same place. Application filed July 21, 1873.

Within the vessel the free end of the lower wash-board is suspended by rods, and the upper ends of the rods are connected to the side bars of the oscillating wash-board.

Claim.—The combination of the oscillating board and frame D D', the suspension-rods I, and bottom-board G, all arranged and operating substantially as set forth.

142,274.—Screw-Propeller.—NEWTON A. PATTERSON, Cleveland, Tenn. Application filed June 6, 1873.

Claim.—1. A helicoidal propeller-blade having a concave face with a curvature of equal or nearly equal radius in each direction from a point at or near the forward or cutting edge.

2. A concave-convex propeller-blade, a portion of whose concave surface has a curvature of equal or nearly equal radius in an inward, outward, and rearward direction from a point at or near the forward or cutting edge.

142,275.—Heating-Stove.—SEELY B. PATTERSON, Phillipsburg, N. J., assignor to PHILLIPSBURG STOVE WORKS, same place. Application filed June 16, 1873.

Claim.—The combination, in a stove, of a fire-pot having external recesses *c*, a chamber, F, surrounding the pot, and tubes K communicating at the lower ends with said recesses, as set forth.

142,276.—Rotating Blanket-Sluices for Washing Ore.—WILLIAM H. PATTON, Oakland, Cal. Application filed June 13, 1873.

Several sluices are arranged around a central axis, permitting free rotation, so that at intervals a clear blanket surface is presented to receive the material from a quartz-battery, while another surface will be brought to a position convenient for the removal of the concentrations by means of a stream of water thrown upon it from a hose. A free flexible apron at the lower end of the sluice, contracts the discharge and insures clear delivery into the tail-sluice.

Claim.—1. The sluice-boxes C, constructed with blanket-coverings, loose at the lower ends to allow the escape of air, as described.

2. The baffling-plate B, for protecting the blankets and distributing the material.

3. The flexible apron I at the discharge ends of the sluices, constructed to operate substantially as described.

142,277.—Belting.—WILLIAM P. POWERS, North La Crosse, Wis. Application filed August 3, 1872.

The base-wires are flattened at the sides, and the links are formed of one piece of wire having three or more coils.

Claim.—1. The construction of the link *a a*, formed by coiling a continuous piece of wire alternately around each of the two bases into three or more coils, substantially in the manner and for the purpose described.

2. The base-wires *c c*, flattened and made with an eye, as described, in combination with the inside wires *a a*, substantially in the manner and for the purpose described.

142,278.—Steam-Boiler.—THOMAS W. PRATT, Boston, Mass. Application filed July 11, 1873.

The boiler is placed at such an angle of inclination as to allow the sediment contained in the water to slide down the tube-sheets into the water-leg, where it is discharged through a blow-off cock. Ashes or cinders slide down the tubes into the furnace.

Claim.—1. A tubular steam-boiler placed at such an angle of inclination as to allow the sediment contained in the water to slide down the tube-sheets, and ashes or cinders to slide down the tubes, substantially as described, for the purpose set forth.

2. In combination with an inclined boiler, A, the fire-front *b*, provided with a furnace-door, substantially as and for the purposes described.

142,279.—Thill-Coupling.—RANDOLPH R. RAPP, Westchester, Pa., assignor to himself and WILLIAM H. LARMORE, same place. Application filed May 6, 1873.

Improvement on patent No. 134,189. The slip has an angular socket, into which a lever may be inserted to open the thill-coupling.

Claim.—The slip D, having a recess, *c*, for the reception of the end of a detachable lever, E, as and for the purpose set forth.

142,280.—Pontoon for Raising Sunken Vessels.—JOHN RICE, Buffalo, N. Y. Application filed August 7, 1873.

The pontoons have channels through them from top to bottom, through which chains are passed to the sunken vessel. The channels are at different angles from the center of the top of the pontoon to its lower side, some of them being vertical to accommodate the chain to the vessel when in deep water, and others at an angle, so that as the ship rises she is steadily supported by the pontoons on either side, and danger of the pontoons capsizing rendered less.

Claim.—The combination of the longitudinal deck-timbers B B with the lateral and timbers C C', having the iron-sheathed holes *c*, *c'*, *d'*, and *b*, and the A-braces D D, all being constructed and arranged so that the chains may be reeved at the ends of the pontoons, substantially as and for the purposes shown.

142,281.—Turpentine-Filter.—EMMANUEL G. REICHARDSON, Brooklyn, N. Y. Application filed December 17, 1872.

Twilled wire-cloth is used for the straining-web.

Claim.—As a new article of manufacture, the turpentine-filter constituted by the combination of the twilled wire-cloth web A and the circumferential rim B, substantially as and for the purpose specified.

142,282.—Eye-Glass.—MARTIN RESLEY, Springfield, Mass. Application filed May 19, 1873.

The rims of the glasses are open on the inner side to facilitate the insertion of the glasses, the separated ends of each rim being connected by an elastic loop forming the nose-rest, to which the usual bridge is attached.

Claim.—The eye-glass frames A A, constructed with the loops A' A', having the flanges or clips *b b* to secure the nose-band by swaging the same thereon, substantially as shown and described.

142,283.—Clothes-Line Support.—JAMES R. ROACH, New York, N. Y. Application filed July 16, 1873.

Two spring-jaws are pivoted together at the lower ends; one holds a pulley at the upper end, while the other is notched to receive a hook on the end of the pulley.

Claim.—A clothes-line support, consisting of the spring-jaws A and B, of which one carries the pulley C, and the other is notched to receive the hook of the pulley-arbor D, as set forth.

142,284.—Corset-Clasp.—JOHN B. ROBY, Cambridge, assignor to GEORGE R. TABER, Boston, Mass.—Case B. Application filed November 29, 1872.

A bread busk underlies the two steels to which the fastenings are secured.

Claim.—In combination with the springs *b c*, the stay *d*, said stay being attached to the body of the corset in such a manner as to leave the outer edge of the spring *c* free, and said stay *d* also covering wholly or partially the springs *b c*, substantially as above set forth.

142,285.—Log-Canting Machine.—ALEXANDER RODGERS, Muskegon, Mich. Application filed August 21, 1872.

Claim.—1. The canting-levers B, in combination with the lifting-bars C, the latter being provided with cog *e*, connection *e'*, and cross-head *a'*, substantially as described, and for the purpose set forth.

2. The bearing-plate *b'* provided with pulley-supports *k*, in combination with the guiding-posts D, cross-heads *a'*, bar C with its attachments *e e'*, and chain *f*, substantially as specified.

3. The canting-levers B and their operating mechanism, in combination with the series of carrying-rolls A or their equivalents, substantially as and for the purpose specified.

4. The canting-levers B, the lifting-bar C and its attachments, in combination with the chain *f* and the frictional gearing for operating the same, substantially as herein shown and described.

5. A log-canter composed of the elements herein set forth, all combined and arranged for joint operation, in the manner and for the purpose specified.

142,286.—Bee-Hive.—SOLOMON ROGERS and ALBERT J. MASON, Butler, Ind. Application filed April 14, 1873.

The honey-boxes are close except at their bases, where there are slits communicating with the brood-chamber. A hollow-partition between the honey-boxes, with minute perforations on its top, permits the air to ascend, and ventilated windows in the cap permit it to escape.

Claim.—The attachment or division-board B, with orifices *o o* and the apertures *n n*, in combination with the honey-board T and the cap X, substantially as and for the purpose set forth.

142,287.—Horseshoe.—JOHN ROWE, Jr., Wilmington, and FRANCIS B. BROWN, Boston, Mass. Application filed February 26, 1873.

The shoe is jointed at the toe, and each section is provided with outside flanges. A wedge-shaped screw is inserted in the joint, causing the flanges to compress the head.

Claim.—The improved horseshoe, made in two parts, united by a hinge at the toe, and secured to the heel of the horse by means of a wedge-shaped screw at the top, in combination with the flanges *c c* and bent wire *g*, substantially as described.

142,288.—Furrowing-Machine.—WILLIAM H. RUTLEDGE, Hamilton, Ohio. Application filed June 17, 1873.

Three frames, each having a furrowing-tool, are hinged to the rear side of the axle-tree. A seat, capable of being adjusted in case of longitudinal adjustment, has over the middle frame a plate in its front legs are friction-rollers which work [illegible] ally in other cases in plates projecting from the [illegible] tree. Attached to the foot of each rear leg is a block, having on each side a groove for the reception of a pin on the inner side of each outside frame, or a pin on each side of the middle frame. The blocks thus connect with any or all of the frames, and the seat being tilted the furrowers can be raised from the ground, or the operator from his seat can raise the outer frames by pressure on pedals thereon.

Claim.—1. The combination of grooved blocks J J with the tilting seat E and hinged plow-frames B C D, substantially as and for the purpose specified.

2. The combination of the slotted and notched bands *b b* with yoke A and seat E, substantially as described, for the purpose specified.

3. In combination with the tilting seat E and hinged frames B C D, the hinged adjustable brace I and cord *m*, substantially as described, for the purpose specified.

142,289.—Spike.—GEORGE H. SANBORN, Jr., New York, N. Y. Application filed August 6, 1873.

Claim.—The improved screw spike A B C D E with the projections, depressions, grooves, or notches F G H I J K L, the ridges A I, J B, and the connecting *g f* as the point, substantially as described, and for the purposes mentioned.

142,290.—Hand-Wagon.—SYLVESTER D. SCOTT, Eureka, Cal. Application filed April 7, 1873.

The driving-wheels turn independently, and each is provided with a crank to be operated by hand-power. A platform is provided for the operator to stand upon.

Claim.—The platform H, in combination with the frame, when arranged with reference to the independently-operating driving-wheels, substantially as set forth.

142,291.—Pump-Bracket.—SAMUEL SELDEN and OREN R. HANCHETT, Erie, Pa., assignors to SELDEN & GRISWOLD MANUFACTURING COMPANY, same place. Application filed July 24, 1873.

The endwise displacement of the pivots is prevented by first casting or otherwise constructing the pivot or pivot-block in the desired form, and then casting the U-shaped bracket thereon in such a manner as to cause the metal of the bracket to inclose the ends of the pivot.

Claim.—The pivot *a* in combination with the U-shaped bracket B, cast or otherwise formed upon or in one piece with the pivot or pivot-block, substantially as and for the purpose described.

142,292.—Alarm-Bell Attachment.—ALLEN SENEWOOD, Auburn, N. Y. Application filed March 31, 1873.

A spring-clasp fitted to a door-knob has a bell attached to its outer coil, so that it will sound an alarm upon the attempt of any person to enter the room by turning the outside handle.

Claim.—1. The clasp C, having the bell A connected thereto by suitable means, and arranged to be attached by clamping pressure to the knob D, substantially as and for the purpose specified.

2. The clasp C, spring B, and bell A, all constructed and arranged to be attached to a door-knob, substantially as and for the purpose specified.

142,293.—Shaft-Coupling.—WILLIAM J. SILVER, Salt Lake City, Utah Ter. Application filed August 4, 1873.

The inner circumference of a collar or nut in the form of a double screw-thread, one right and one left handed, to fit two corresponding right and left handed screw-threads of two compression-shells, so that by screwing the nut or collar the conical shells are simultaneously and equally drawn together.

Claim.—A shaft-coupling consisting of the nut E, having female right and left hand screw-threads, of the compression-shells D D, having corresponding male right and left hand screw-threads, and the split double conical sleeve B, all arranged substantially as described.

142,294.—Manufacture of Illuminating Gas.—ALFRED P. SOUTHWICK, Buffalo, N. Y. Application filed June 28, 1873.

Forms water-gas by passing superheated steam through hot carbon, condenses, carburets, reheats to fix, washes, and purifies.

Claim.—1. The combination of the steam-boiler A, decomposing-cupola B, governing-holder D, carbureting apparatus E F F, and the purifiers H H, all being arranged substantially as described, and for the purpose set forth.

2. The process herein described for making carbureted water-gas by alternately passing continued currents of superheated steam and free currents of atmospheric air through hot carbonaceous matter contained in the decomposing-cupola, the gas made from the steam being carbureted into a gas-holder, from which it is forced through a vessel containing liquid hydrocarbon as a few

temperature to be carbureted, and through one or more highly-heated retorts, in which it is fixed, and finally through one or more purifiers charged with hydrate of lime, by which the gas is freed of all its impurities.

142,290.—Trimming Attachment for Sewing-Machines.—WILLIAM A. SPRINGER, Marlborough, Mass. Application filed June 19, 1873.

The cutting-disk is on a shaft geared with another shaft beneath the table, and is carried by a pivoted plate depressed by a lever, so that the gears on the two shafts may be engaged with each other when the knife is to be operated. It cuts against a sharp shoulder on the throat-plate.

Claim.—In a sewing-machine trimmer, the combination of the fundamental plate H, having slot A, the hinged or pivoted presser-plate I, the depressing and locking cam-lever a, the rotating shaft J, the circular cutter K, and the shoulder P on the needle-plate, substantially as specified.

142,291.—Awning-Frame.—HENRY STEPHENS, New York, N. Y., assignor to JOHN BOYLE, same place. Application filed February 12, 1873.

A hollow frame slides upon a rod bent at right angles to the window-frame. The hinge is a knuckle-joint, one part of which is formed on the end of the rod, and the other upon a plate or foot which is secured to the window-frame.

Claim.—1. The combination of the rods or tubes C C and hollow frame D sliding upon them, substantially as and for the purpose set forth.

2. The combination of the knuckle-joint B with the rod or tube C and hollow frame D, all arranged to operate substantially as set forth.

142,292.—Device for Operating the Valves of Steam-Engines.—WILLIAM J. STEVENS, New York, N. Y., assignor to himself, DUDLEY S. STEELE, and NATHAN W. CONDICT, Jr., Jersey City, N. J. Application filed May 15, 1873.

Motion is first imparted to the valve by mechanism moved by the engine, and the stroke is completed by the action of springs in the steam-chest. The movement of the valve is limited in either direction by a cushion of steam in a chamber arranged within the steam-chest for that purpose.

Claim.—1. The combination, with a slide-valve, of an operating rock-shaft, D, springs G G, and devices whereby the movement of the shaft in either direction is first imparted from some moving part of the machine, and is continued and completed by the action of the springs, as set forth.

2. The combination, with the valve B, of the three-armed lever H, helical springs G G, and set-screws *e*.

3. The combination of the rock-shaft D, its arm F, having projections *f f*, and the loose lever E, connected to the piston-rod of the engine with an arm, *m*, for acting on the valve, and with springs for giving the rock-shaft to operate the valve, as set forth.

4. A valve, B, operated from some moving part of the engine, and limited in its movements by a piston acting against a cushion of steam in a chamber, substantially as set forth.

142,293.—Ball-and-Socket Joint.—MILTON W. ST. JOHN, Leonardsville, N. Y. Application filed August 9, 1873.

Claim.—1. In a ball-and-socket joint, the combination, with the spring, of the cap and its holding recess for connection with said spring, substantially as specified.

2. In combination with the socket B', open laterally and having the continuous lip *l*, the ball A, flanged concave D, and cap E, carrying the spring, substantially as specified.

3. The combination, in a ball-and-socket joint with the spring and concave bearing, of the socket and cap having a close joint between the lip and shoulder, substantially as specified.

142,294.—Sewing-Machine.—JOHN M. STOWELL, Milwaukee, Wis. Application filed July 17, 1873.

A gang of circular saws is arranged between a feeding-table and a feed-roll. The material to be cut by them is moved forward upon the table by a self-adjusting feed-roll, and is prevented from being thrown upward or backward after passing the saws by a series of serrated disks over the rear feed-roll.

Claim.—1. The corrugated or ribbed press-roll K, combined with the table B, and articulated upon the shaft J by means of the bearing-arms *h h*, substantially as described, for the purposes specified.

2. The guard saws M, capable of a movement with the feed, but not against it, substantially as and for the purpose set forth.

3. The adjustable wooden guard-blocks R, substantially as and for the purposes described.

4. The feed-rolls D D, having longitudinal peripheral grooves cast therein, in which the steel strips are inserted and held in place by a filling of soft metal, substantially as described.

5. The combination of the shaft E, wheels A' A^2, large wheel G, lever A, miter-wheels *g g'*, shaft F, spur-wheels *e' f*, and feed-rolls D D^1, connected together as described.

142,295.—Steam-Engine.—JOSEPH H. STRENLI, Cincinnati, Ohio. Application filed June 17, 1873.

By the use of the diagonal or step openings in the valve not only the positive amount of steam used can be regulated, but also the relative, thereby operating as a governor. The cylinder, valve-chamber, and intermediate chambers communicate with each other. The valve is balanced by steam admitted into recesses located opposite the cylinder A.

Claim.—1. The piston-valve C *e e*, adapted alone to control the ports of the cylinder A when made with diagonal or step openings *e'*, substantially as described, and so fitted to its operating-rod as that it may be rotated by a governor for the purpose of cutting off the steam automatically to govern the speed of the engine.

2. The combination of cylinder A, valve-chamber B, and intermediate chambers D D, communicating with each other by ports *s s' s''*, and operating in connection with a suitable valve, substantially as and for the purpose specified.

3. In the piston-valve C *e e*, the recesses I and pipe or opening J, substantially as and for the purpose specified.

142,296.—Boring-Machine.—JOSEPH STRICKLER, Columbiana, Ohio, assignor to WILLIAM W. WALLACE, Pittsburg, Pa. Application filed January 7, 1871.

The slide-frame E is elevated by the rod *a* being engaged with the notches in wheel *c*. The slide-frame E is released from the catch *g* by the pin *s* on the shaft D when revolved.

Claim.—1. The sash or gate E and vertical slide A provided with rack B, in combination with a loose pinion and latch or rod, *a*, substantially as herein described.

2. A spring-catch *g*, combined with the gate E and vertical slide A to hold the gate and automatically release it by the pin *s* on shaft D, as herein described.

142,297.—Machine for Making Boxes.—GEORGE W. SWAN, San Francisco, Cal. Application filed June 20, 1873.

The pieces of veneer from which the boxes are to be made are passed under a series of saws, which form grooves in the material at the points where the corners of the box are to be.

Claim.—1. The drum E, together with the pulley F and carrying-belts G, for the purpose of carrying the veneers to the saws, and to hold them so that they will all be channeled to the same depth, substantially as described.

2. The feeding-table I, with its gage J and the retracting spring K, in combination with the drum E and belts F, substantially as and for the purpose herein described.

3. A machine for channeling veneers, consisting of the adjustable saws D, in combination with the drum E, the carrying-belts G and pulleys F, and feeding-table I, substantially as herein described.

142,298.—Process for Softening and Toughening Blocks of Wood.—GEORGE W. SWAN, San Francisco, Cal. Application filed June 17, 1873.

Claim.—The process of boiling or steaming blocks of wood in a solution of ammonia and borax, substantially as and for the purpose above described.

142,299.—Fruit and Berry Basket.—GEORGE W. SWAN and WILLIAM FINCH, San Francisco, Cal.; said FINCH assignor to said SWAN. Application filed June 18, 1873.

One piece forms the outer sides, cut diagonally to give the form, and secured by a flap and nails. Two side-supports and bottom are formed from another piece and placed within, with an extended flap forming the cover. The bottom of the box is in arched form to allow free circulation of air between the corners.

Claim.—A fruit-box constructed of the blank A, having the bottom of each side portion concaved, as shown, in combination with the blank D, cut and inserted to form an elevated bottom, C, double sides, and a top, F, substantially as set forth.

142,300.—Bolt-Work for Sah-Doors.—HIRAM B. TRIPP, South Boston, Mass. Application filed July 12, 1873.

Two catches are pivoted to the door and connected, by means of two links and a bar, with the carrying-bar for the door-bolts. When both locks are locked the door-bolts cannot be withdrawn, but with either one or both unlocked the bolts can be thrown.

Claim.—A mechanism, K, consisting of bar *a*, link-bars *d* d^2, and lever-catches *g* g^2, arranged together and interposed between the door-bolts, and two locking mechanisms, to operate substantially as herein described, for the purpose specified.

142,301.—Knit Mitten.—OTHNIEL F. TRIPP, Battle Creek, Mich. Application filed December 31, 1872.

The hand portions of two mittens, knit in any known way, are combined by inserting one within the other, and their lower extremities joined and a single wrist knit in continuation thereof.

Claim.—A double knit mitten, the inner and outer hand portions of which are connected in several places by stitches, and joined together into a single web, forming the wrist, substantially as and for the purpose herein described.

142,302.—Car-Axle Box.—STEPHEN USTICK, Philadelphia, Pa. Application filed May 1, 1873.

The detachable oil-box is arranged in front of the journal, and oil is supplied from the box to a lubricating-pad, which is held against the journal by means of a shield, the edges of which are secured to the bearing.

Claim.—1. The detachable oil-box F, so constructed and arranged as to have its upper end in front of the journal-bearing, substantially in the manner and for the purpose above described.

2. The combination and arrangement of the shield D and pad E with the journal B and bearing C, substantially as and for the purpose set forth.

142,303.—Car-Axle Box.—STEPHEN USTICK, Philadelphia, Pa. Application filed June 12, 1873.

Each side of the upper surface of the bearing is cut away, and oil-boxes inserted between the bearing and box.

Claim.—The combination of the oil-boxes B B with the bearing A, substantially in the manner and for the purpose above set forth.

142,304.—Grain-Binder.—JAMES WADSWORTH, New Philadelphia, Ohio. Application filed April 29, 1873.

A wire connected to one of the clamping-arms and passing through an eye in the other serves to hold the gavel in the required position.

Claim.—1. The teeth G G, constructed as described, in combination with the wires A A, arranged, in relation to the teeth G, substantially as and for the purpose specified.

2. The combination of the frame A, shafts B B, pinions C C, levers D D, teeth G G, and wires A A, all substantially as and for the purposes herein set forth.

142,305.—Sash-Holder.—JOSEPH WARE, West Swanzey, N. H. Application filed June 2, 1873.

Claim.—The sash-supporter C, consisting of the elastic strip *b* and the two rabbeted flanking-strips *a c*, forming a single piece, the elastic substance projecting on either side, loosely fitting in lengthwise of the sash, all substantially as described and shown, for the purpose set forth.

142,306.—Folding Table.—CHARLES H. WHEELER, St. Louis, Mo. Application filed April 24, 1873.

The leg and table are connected together by a hinge arranged on the outside of the leg and table-frame, and the hinge has a projection on the lower part thereof. To the frame of the table is attached a flat metal spring in a horizontal position. Said spring has a notch near its free end that engages with the projection on the hinge, and locks the leg when opened out from the table.

Claim.—1. The combination of the hinge, of substantially the form shown, with the locking-spring, which fixes the leaves of the hinge rigidly in position both when closed and when open, as and for the purpose set forth.

2. The combination of the hinge and spring with the table and table-legs, in the manner and for the purpose substantially as herein before set forth.

142,307.—Boot-Lining.—HUGH WHITE, La Fayette, Ind. Application filed March 6, 1873.

Claim.—In the manufacture of boots in which the leg and vamp form two separate pieces united by stitching, the wide lining C extending high up on the instep, as described, and attached to the boot-leg A by stitching its edge *c*' to the flap *a*, and dispensing with the stitching to the vamp, substantially as shown and described.

142,308.—Spark-Arrester.—JAMES WHITE, South Amboy, assignor to himself and CHARLES S. WORTH, Jamesburg, N. J. Application filed July 25, 1873.

A spark-arresting perforated diaphragm is placed between the up-take and tube-sheet, and a tubular passage between said diaphragm and fire-box. The non-consumed products of combustion, other than smoke, are forced through this passage by a jet of live steam to the fire-box above the fire, where they are consumed, they and the steam being prevented from returning by means of the valve.

Claim.—1. The combination, in a locomotive-boiler, substantially as described, of a perforated or wire-gauze partition, *a*, in the smoke-box, a passage, *b*, between the smoke-box and fire-box, and a nozzle, *A*, directing a jet of live steam through the said passage *b* toward the fire-box.

2. The combination described of the passage *b* between the chamber *a* and the fire-box with a steam-nozzle, *A*, and a valve, *c*, opening toward the said fire-box.

142,309.—Bundling Kindling-Wood.—CHARLES B. WHITTEMORE, Arlington, Mass. Application filed June 2, 1873.

Brush-wood is compressed into bundles, tied, and sawed into suitable lengths for kindling-wood.

Claim.—The forks D D', applied upon a bench, A, and having combined with them compressing devices G *b* for compressing brush-wood preparatory to tying it and sawing it into bundles, substantially as described.

142,310.—Plow-Colter.—EDWARD WIARD, Louisville, Ky., assignor to BENJAMIN F. AVERY, same place. Application filed June 14, 1873.

The clamp is formed with curved projections *i i*, so as to permit only a limited vibration of the colter.

Claim.—1. The laterally-vibrating swiveling-clamp C, perforated, as described, for receiving the flattened end of the standard A below the shoulder *r*, for the purpose specified.

2. An open circular adjustable colter, B, constructed substantially as described.

142,311.—Flue-Casing for Forge-Chimneys.—HENRY S. WILCOX, Nevada, Ohio. Application filed August 2, 1873.

A plate with a hole surrounded by a flange, to be placed against the breast of the chimney, constituting the entrance to the flue.

Claim.—The flanged plate D having opening *a* and projecting convex flange G around said opening, and used in combination with a blacksmith's chimney, substantially as and for the purposes herein set forth.

142,312.—Half-Boot.—LYMAN U. WILLIAMS, La Fayette, Ind. Application filed October 29, 1872.

Claim.—A half-boot, having the quarters D and vamp A cut in one piece with the tongue B, forming the front of the leg, in combination with the gore C, substantially as specified.

142,313.—Washing-Machine.—ANDREW M. WILSON, White Pigeon, Mich., assignor of one-half his right to WILLIAM R. GILLETT, same place. Application filed May 31, 1873.

Claim.—The combination of the side pieces A A, having cleats *a a' a''* small rollers *c c* arranged above the large roller B, springs *f f*, and regulating-pins A A, operating in the manner as specified and shown.

142,314.—Lathe for Turning Spools.—ASA T. WING, Old Town, Me., assignor to GEORGE F. DILLINGHAM, same place. Application filed March 31, 1873.

A square stick is put in the machine, moved forward, rounded, and the spool turned, bored, and cut off automatically.

Claim.—1. A non-rotating reciprocating bit, K, in combination with the revolving head-piece T, intermediate supports D and E, and hollow center J, as specified.

2. The combination of the support C and tail-block D with their respective racks *c d* and gears *g* A, whereby the support D is kept under way between the tail-block and cutter-head.

3. The combination of the reciprocating center-head M with the lever *i*, ball-crank *k*, ratchet *l*, pawl *j*, shaft *e*, gears *g* A, racks *c d*, and support D, and tail-block C, as specified.

142,315.—Hinge.—ADOLF WIRTH, New York, N. Y., assignor to himself and CHARLES KOLB, same place. Application filed February 12, 1873.

Double hinge united by extensible shank, so that a box-cover may be turned over out of the way.

Claim.—A hinge composed of two parts, A B, united by an extensible shank, C, substantially in the manner shown and described.

142,316.—Rolling-Mill.—ALAN WOOD, Jr., Conshohocken, Pa. Application filed August 1, 1873.

A pair of segmental blocks, moving in corresponding recesses in the frame, the inner ends to operate to raise the carriage of the lower roll, when the connecting-bars, operating on their outer ends, are pressed down by the carriage of the upper roll, which is moved by a screw.

Claim.—In three-high rolls, the combination, substantially as described, of segmental blocks *e e*, or their equivalents, and bars *d d* with the bearings of the top and bottom rolls.

142,317.—Punching-Machine.—WILLIAM WOLCHESKI, Bloomington, Ill. Application filed July 3, 1873.

The L-shaped arm, bearing a die near its outer end, is arranged to receive a stove-pipe or other hollow cylinder and present the same under the punch.

Claim.—In combination with a punching mechanism operated by gearing, substantially as described, the revolving L-shaped post N, over which the pipe is placed and swung in under the punch, as set forth.

142,318.—Bee-Hive.—ALLEN T. WRIGHT, Oskaloosa, Iowa. Application filed June 26, 1872.

The comb-frames are chamfered on their outer edges and V-shaped inside, and have perpendicular or horizontal breeding-bars, which may be removed. A screen, adjustable at any desired position among the frames, has a reversible bar at top and bottom to open or close a bee-passage. The ends of the cases have these reversible bars. A frame on the same level contains feed-boxes, and has a screen with slide-bar above.

Claim.—1. The comb-frames C, the external bars of which are cut away or beveled about one-half the distance between the outer and inner faces, so that the frames may be placed edge to edge, and in opening them the bees will not be crushed, as set forth.

2. The combination of the comb-frames C, having external beveled edges, as set forth, the V-shaped comb-guides *i*, and one or more detachable intermediate bars, *b*, all as and for the purposes set forth.

3. The screen D, provided with the removable and reversible bar *h*, as and for the purposes set forth.

4. The end piece E, provided with the removable and reversible bar *h* and ear projections *m*, substantially as and for the purposes herein set forth.

5. The frame H for containing one or more feed-boxes, I, and provided with a screen, J, on its top and movable bar *n* on top of said screen, substantially as and for the purposes herein set forth.

142,319.—Rock-Drill.—SOLOMON H. YERDEN, Stone Mills, N. Y. Application filed June 7, 1873.

The main frame has attached thereto an auxiliary frame carrying the operating-lever, which is elevated or dropped by means of the cam upon the main gear-wheel.

Claim.—1. The combination, with the frame A, of the removable and adjustable frame A' supporting the trunnion-block J and operating-lever I, for the purpose specified.

2. The combination of the cog-wheel G, having the eccentric-cam K and operating-lever I, with the friction-roller *s* and the trunnion-block J, constructed substantially as and for the purpose described.

142,320.—Seed-Dropper.—FRANK W. YOUNG, Holden, Mo. Application filed July 19, 1873.

Arranging on a reciprocating slide a rotating dropping-wheel, provided with pawls for operating the same.

Claim.—The parts G K, arranged on the reciprocating slide F, as described, in combination with wheel C, blades I I, and keys *s s*, substantially as and for the purposes herein set forth.

142,781.—Mill-Pick.—MORGAN N. YOUNG, Kelseyville, Cal. Application filed June 27, 1873.

Claim.—The handle-head A with its dovetail slot *c*, which is also made tapering toward one side, in combination with the chisel D with its tapering double wedge-shaped base, substantially as and for the purpose above described.

REISSUE PATENTS.

5,546.—Steam-Trap.—JAMES H. BUNNING, Albany, N. Y., assignor to himself and FREDERICK TOWNSEND, same place.—Patent No. 123,670, dated February 13, 1872. Application filed April 30, 1873.

The water from the coils partly condenses the steam in the vessel, and then permits the pressure from the boiler to force it into said vessel, from which it flows into the boiler through gravity upon an equilibrium being obtained between the former and the latter. The vessel is pivoted so that if it should become surcharged, upon being depressed, through tripping devices a valve permits the entrance of steam to establish an equilibrium between it and the boiler, and gravity causes the water to flow into the latter.

Claim.—1. A receiving and discharging vessel, C, communicating with a steam-boiler by means of a steam-pipe, G', and inlet check-valve *x*, and with the same boiler by means of an outlet-pipe, J, and a valve, 2, and so arranged between or in respect to the two valves that the water is received and allowed to fall to the bottom of the vessel, and the steam following is not compelled to pass through the water, all for the purpose of automatically returning water of condensation to the said boiler from steam-heaters, substantially as described.

2. A vessel, C, of a steam-trap, which is sustained upon one arm of a lever, B, and counterbalanced by a weight, W, on the opposite arm of such lever, in combination with pipes G, G', and J, and an automatic tripping device for the valve g^2, substantially as described.

3. A vessel, C, valve-box D, and a valve-tripping device, which is connected by a rod, A', to a fixed arm, *d*, whereby the rising and descending movements of the trap will actuate the valve g^2, substantially as described.

4. The perforated distributing-plate Y, placed inside of the vessel C, and combined with the inlet steam passage *y* and water-passage *x'* of the trap, substantially as described.

5. A receiving-vessel, C, for the purpose of insuring the return of the water of condensation to the boiler, which rises and falls on centers, combined with a steam-heater and a steam-boiler, substantially as set forth.

5,550.—Machine for Hulling Cotton-Seed.—WILLIAM R. FIRE, Cincinnati, Ohio.—Patent No. 17,981, dated August 11, 1857; extended seven years. Application filed August 2, 1872.

Cylinder and concave provided with cutting edges, between which are furrows, the seed being split thereby, and not crushed.

Claim.—1. A series of cutting-edges with intervening furrows, for the purpose of hulling cotton-seed by a cutting action, which readily holds the screening process and the expression of the oil easy and complete, as set forth.

2. The employment, in a cotton-seed huller, of a series of cutting-edges to hull cotton-seed, each cutting-edge being separated by intervening spaces of sufficient dimension to afford the seed opportunity to turn over in passing from the cutting-edge to the next adjacent cutting-edge, substantially as set forth.

3. The employment of a series of cutting-edges to hull cotton-seed, such cutting-edges being placed at a sufficient distance apart to permit the seed to turn over in passing from one cutting-edge to the next adjacent cutting-edge, when such cutting-edges have a shearing action, substantially as specified.

5,551.—Packing for Journals and other Parts of Machinery.—CHARLES A. STEVENS, New York, N. Y., assignor to ISAAC D. CLIFT.—Patent No. 101,304, dated March 29, 1870. Application filed January 20, 1873.

By means of the central cord and outer binding-thread this packing is made strong enough to bear handling and ordinary strains. The embedding of the binding-threads in the fibers of asbestos protects them from heat or friction.

Claim.—1. A packing, composed of asbestos combined with internal strengthening fibers and with an outer binding, substantially as set forth.

2. A packing of asbestos having an outer binding-thread arranged so as to be concealed, or partly concealed, and overlapped by the mineral fibers, as set forth.

5,552.—Embroidering-Machine.—WILLIAM A. TANGEMAN, Lockland, Ohio.—Patent No. 65,548, dated January 5, 1869. Application filed October 28, 1872.

The space above the cams is for the reception of the butts of such needles as are elevated so as not to knit, but yet retain their stitches, while the others are at work knitting a fair extension of the sides to form the heel and toe. One side cam raises the needle so that its latch is above the loop, the center cam draws it down into position to receive a new yarn in its hook, and the other side cam lowers it to cast off the loop. The sliding bars regulate the height to which the side cams may be raised, and consequently the length of the loop, and the levers are for raising one of the side cams so that the look on one side of the machine shall be inoperative while the other is at work.

Claim.—1. A triangular needle-cam A, mounted on the cam-plate, with its base toward the hooks of the needles, and having a space, T, above its base-line for the reception of the heels of the needles, and arranged between movable cams also acting on the needles, in a machine capable of knitting a tubular fabric, substantially as described.

2. The graduated sliding bars K K', as and for the purposes described.

3. The levers G G', as and for the purposes described.

4. The combination, with a knitting-machine having two parallel straight rows of needles of a set of cams or lock, constructed and operating substantially as described, so that a portion of the needles may be elevated so as not to operate, and yet so as not to interfere with the proper working of the needles that are in operation for knitting the heels of stockings or other ourves.

5. The V-shaped cam A, constructed and arranged with reference to the wing-cams, as shown, for the purpose of permitting the needles to remain at rest, so that the slack of the yarn may be taken up, and power saved.

6. The devices herein described, arranged and operating as shown, to draw the needles down to such a point that they are in a proper position to receive the yarn without drawing them down so far that they would lose their stitches.

5,553.—Cotton-Bale Tie.—ANDREW J. GOING, Clinton, La.—Patent No. 137,301, dated April 1, 1873. Application filed July 12, 1873.

Claim.—A bale tie constructed with slots B and tongues D formed on opposite sides thereof, so that its ends may be locked together, substantially as shown and described.

5,554.—Cooking-Stove.—RICHARD M. HERRMANCK, Troy, N. Y., assignor, by mesne assignments, to JOSEPH B. WILKINSON, same place.—Patent No. 102,462, dated April 26, 1870. Application filed August 2, 1873.

Claim.—1. In a cook-stove a water-reservoir, located at the rear thereof, behind the ordinary rear flue-space, in combination with a flue or flues that first carry the products of combustion under and against the bottom and the back of the oven, completing the heating of the oven before they are brought in contact with the reservoir.

2. In a diving-flue cook-stove a water-reservoir, located at the rear thereof, behind the ordinary rear flue-space, and provided with a casing into which the products of combustion may enter, in combination with a flue or flues that carry the heated products of combustion into contact with the bottom and the back of the oven, and with the reservoir.

3. In a diving-flue cook-stove a water-reservoir, located at the rear thereof, behind the ordinary rear flue space, in combination with a flue through which the heated products of combustion may be made to pass from the top sheet-flue of the stove into contact with the reservoir, and thence to the exit-pipe, without being carried under the oven, substantially as described.

4. In combination with a cook-stove a water-reservoir, located at the rear thereof, behind the ordinary rear flue-space, and provided with a casing through which the products of combustion may be made to pass without heating the oven.

5. A water-reservoir, located upon the exterior of a cook-stove, above the top plate thereof, and provided with a casing into which the products of combustion enter on their way to the exit-pipe, after having heated the oven.

6. In combination with a cook-stove a water-reservoir, located at the rear thereof, and provided with a casing into which the products of combustion may enter, the front wall of such casing being formed by the rear end plate of the stove.

7. In a diving-flue cook-stove a water-reservoir, located at the rear thereof, in combination with a downward and upward draft-flue, through which the heated products of combustion descending behind the oven may change to an upward direction, and pass off to the exit-pipe, thus heating the reservoir without passing under the oven.

8. In combination with a cook-stove an inclosed water-reservoir supported directly upon the vertical walls of its casing, such casing in turn being attached to or cast as a part of the walls of the stove.

9. A water-reservoir, located behind the ordinary rear flue-space of a cook-stove, and provided with a hot-air casing, the top of which is formed by an extension of the top plate of the stove, which also serves to support the reservoir, substantially in the manner shown and described.

10. In combination with a cook-stove an inclosed water-reservoir, the top of which is closed by a cover hinged to the casing, substantially in the manner shown and described, so that it may be lifted up from the apertures in the top of the casing when it is desired to obtain access to the reservoir.

11. In combination with an inclosed water-reservoir upon a cook-stove a check-damper for admitting cool air to the hot-air chamber surrounding the reservoir, substantially as set forth.

12. The back plate of a cook-stove, provided with a reservoir chamber or casing upon its exterior face, the walls of such casing being cast continuous with the back plate itself.

13. A cook-stove provided with an inclosed water-reservoir, located at the rear thereof, the ordinary rear end plate of the stove forming one side of such casing, and being supplied with proper apertures above the lower oven-plate to admit the heated products of combustion into the reservoir-chamber.

14. In combination with a water-reservoir, located at the rear of a cook-stove, and behind the ordinary flue-space, an exit-pipe arranged in rear of such reservoir, substantially as described.

15. In combination with an inclosed water-reservoir partition-strips between the reservoir and its casing for guiding and controlling the movement of the heated products of combustion within the reservoir-chamber.

5,555.—Hand-Stamp.—HORACE HOLT, Brooklyn, N. Y., assignor, by mesne assignments, to SECOMBE MANUFACTURING COMPANY, New York city.—Patent No. 38,864, dated June 9, 1863. Application filed December 19, 1872.

Claim.—A cylinder, A, having attached to it two reels, D D', to which the ends of an inking-ribbon are secured, and provided at one end with type *t* and at the opposite end with a handle, B, all made to move together when an impression is taken, substantially as described.

5,556.—Elevator.—EDWIN T. HOPE, Philadelphia, Pa., assignor to SAMUEL I. THURSBY, Brooklyn, N. Y.—Patent No. 81,276, dated August 18, 1868. Application filed April 4, 1873.

Claim.—1. The combination of the cushions L L with the telescopic tubes.

2. The combination of the vertical ways K K, the platform H, the telescopic tubes, the three-way cock N, and the vertical rod M, with the arms *o o* for governing the action of the fluid upon the tubes automatically at prescribed points.

5,557.—Cultivator.—CICERO P. NORTON, Prairie City, Iowa, assignor to ITHAMAR P. PILSBURY, Monmouth, Ill.—Patent No. 106,384, dated October 18, 1870. Application filed July 22, 1873.

Claim.—The main frame A B and runners E, arranged, relatively to each other, so that either side of the main frame, together with its runner, may be advanced, and either plow-beam vertically or laterally oscillated without disturbing the parallelism of the runners with each other or with the line of progression, substantially as described, and for the purpose specified.

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COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

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The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

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Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks) 6,500
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FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes 4,000
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BRIDGES, (in progress.)
CARDING, CLOTH CORDAGE, KNITTING, SILK, SPINNING, WEAVING, (in progress.)

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The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 600 pages of specifications, 300 of drawings; total of each volume about 1,000 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,000 pages per month: 2,000 pages of specifications, 3,120 pages of drawings—12,720 pages.

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DIGEST OF FOREIGN PATENT LAWS.

GRAND DUCHY OF BADEN.

REPORT BY E. P. M. BAILLIE, OF THE BRITISH LEGATION.

Every State belonging to the Zollverein possesses the power of granting, by letters patent, a privilege conveying to an individual or individuals specified therein the sole right to make, use, or dispose of some new invention or discovery for a certain fixed period.

This power, however, has been limited and defined by certain regulations agreed upon at Stuttgardt in 1841 between the Zollverein States. The object having been, on the one hand, to remove as far as possible all obstacles to the freedom of trade within the Zollverein States arising from patents or privileges, and, on the other, to establish uniformity in all essential points.

These regulations are accordingly in force in the Grand Duchy of Baden. They are as follows, some slight changes only having been introduced in regard to taxes and fees:

1. Patents may be granted for those things only which are really novel and peculiar. A patent, consequently, cannot be granted for inventions which have been already practiced, have been vendible, or in any way known within the Zollverein previous to the grant of the patent, especially inventions already described in native or foreign works, by drawings, or otherwise in such a way that they can be practiced by any competent person.

Each government is to be the judge whether any invention for which a patent is demanded is really novel or peculiar.

No patent shall be granted in one Zollverein State for an invention by a German subject who has obtained a patent for the same in another German State, except to the inventor himself or his legal successor.

2. With reference to the provisions laid down in Article 1—

A patent may nevertheless be granted for an improvement to an old invention, if the improvement constitutes something novel and peculiar; but the patent must be confined to the addition or improvement, and not injure the patent granted for the original thing. On the contrary, the right of using the addition or improvement in connection with the thing that has been improved must be specially acquired.

3. The grant of a patent shall henceforth never establish the right—

(a.) To prohibit or limit the importation of such articles as have to do with those for which a patent has been granted.

(b.) The sale and disposal in trade of such articles; nor can the holder claim in virtue of his patent the right—

(c.) To prohibit the use or consumption of articles of the above kind not procured by him or obtained elsewhere with his consent, machines and implements for manufacture and industry being alone excepted, these not being general articles of commerce destined for consumption by the public at large.

4. On the other hand, every Zollverein government in granting a patent may secure to the holder within their territory—

(1.) The right of the exclusive manufacture or practice of the invention in question.

(2.) The right to introduce—

(a.) A new process or method of manufacture; or,

(b.) To apply exclusively new machines or implements for manufacture, so that he is entitled to prohibit the use of the method or the use of the machines or implements by all those who have not acquired the right to do so from him, or procured the said machines or implements from him.

5. In every State of the Union the subjects of other States of the Union shall be treated on an equality with their own subjects, both in respect to grants of patents and protection in the enjoyment of the privileges acquired by the patent.

The grant of a patent, however, in one State shall

never be held as a valid reason for the non-refusal of a patent for the same thing in other States. On the contrary, every State within the limits agreed upon is the judge whether a patent ought to be granted or not, without reference to what may have taken place in the matter in any other Zollverein State.

Further, the grant of a patent does not convey in itself to the subject of another State the right of independent settlement, or of carrying on the trade or business in which the article for which a patent has been granted is used; on the contrary, such right must be specially acquired according to the provisions of the constitution of each State.

6. A patent becomes void if the invention eventually proves to be neither novel nor peculiar.

A patent granted for an invention previously known to certain individuals, but kept secret by them, remains in force, unless rendered void by other causes, except as regards those individuals.

7. When a patent is granted the invention must be specified with the name and domicile of the holder, the period of duration, and must also be notified in the official gazette.

Similarly, the prolongation of withdrawal of a patent before the termination of the originally-fixed period must be publicly made known.

8. All the Zollverein governments shall communicate to each other, before the end of every year, complete lists of the patents granted.

2. MODE OF APPLYING FOR PATENTS.

Persons applying for letters patent must send in a petition in writing to the Board of Trade (Handel's Ministerium.) The petition must contain accurately and fully the following particulars:

1. Christian and surname, profession, domicile, and present residence of the applicant.

2. Declaration and distinct statement of the nature of the invention.

3. The distinct statement of the grounds of the petition for an exclusive right—

(a.) To manufacture or introduce a new article; or,

(b.) To apply new instruments for manufacture (machines or implements;) or,

(c.) To apply a new method of manufacture.

4. The number of years for which the patent is demanded. This petition must be accompanied by an accurate and exhaustive description of the articles for which the patent is demanded, with drawings, models, and patterns necessary for the elucidation of the same.

These points must be especially noted in the description and its annexes which serve to make the distinction between the article for which the patent is asked and others already known or in use of a similar kind.

This description may be sent in with the petition, either open or sealed up.

If the patent is not demanded by the inventor himself, a power must be obtained from him in duly legalized form.

When the petition is for the privilege of introducing an article similar in kind to one already known, and for which a patent has already been obtained in a foreign country, such patent must be annexed in original or legalized copy.

Foreigners must send in a declaration in the form of a regular deed, drawn up by a solvent Baden subject, resident in the Grand Duchy, by which the latter renders himself responsible for the payment of the costs, taxes, and fees, and also for the transmission to the applicant of the ministerial decision.

3. FURTHER PROVISIONS RESPECTING METHOD OF APPLYING FOR PATENTS.

The receipt of the application will be acknowledged by the Board of Trade, if requested by the applicant.

Applications not in accordance with the above regulations will be returned.

Proper applications, on the other hand, will be submitted to competent persons for examination (generally to technologists in the polytechnic school.)

The persons intrusted with the examination are bound to keep the description and drawings of the invention secret. The object of the examination is to determine whether the proposed invention is—

(a.) A new (not yet known,) and whether a patent has already been granted for it or not in the Grand Duchy.

(b.) Peculiar.

(c.) Admissible on economical and sanitary grounds, and in harmony with the police regulations for the public safety.

The Board of Trade has to decide on the written report, whether the patent is to be refused or not.

A patent may be refused if the invention does not appear to be generally useful.

Patents in the Grand Duchy were formerly granted for periods up to fifteen years. They are now limited to three years, in consequence of a new code of regulations in preparation.

The penalties for violation of patents are regulated by the police code of 1863, and are as follows:

The violation of a patent is punished at the suit or the holder of the patent by a fine not exceeding 300 florins, [say $125.00,] together with the confiscation of the illegally-manufactured article.

Cases of this description are brought before the police courts and there decided.

The grant of a patent involves no guarantee beyond the practical value of the invention.

It can be coupled with the condition that the holder of the patent brings the article into use in the Grand Duchy within a fixed time from the day of the grant, and does not interrupt such use longer than a fixed time, on pain of the patent becoming void.

The applicant obtains from the Board of Trade a document certifying the grant of the patent, and a notification to that effect is issued in the government gazette.

Drawings and descriptions of the patents granted are sent under seal to be deposited in the general archives of the country for the time the patent is in operation.

The corresponding dues, according to the tax, fee, or stamp regulations, are charged on every act connected with the examination and granting of patents.

By a law of July 29, 1864, respecting stamps, fees, and taxes in matters connected with the civil and police administration, the stamp charged on petitions is fixed at 15 kr., [say 14 cents,] and the tax on a letter patent from 15 to 500 florins [$6.25 to $208.35.]

Besides this, the cost of the examination of the petitions for patents must be reimbursed to the treasury, generally 6 florins [say $2.50] a day for the time spent by a technologist.

4. TRANSFER OF A PATENT TO ANOTHER PERSON.

The holder of a patent can transfer the right which he acquires by the patent to others for the period of its duration, or admit others to participate in the enjoyment of the same.

On the death of a holder of a patent, before its expiration, the right passes to his heirs.

Notice must be given to the Board of Trade on every change of possession taking place, and this must be inserted in the government gazette.

5. PROLONGATION OF A PATENT.

A petition for the prolongation of a patent granted for less than fifteen years must be sent into the Board of Trade some months before its expiration. A decision is then passed after due investigation.

When granted the applicant obtains a fresh act, and notice is given in the government gazette.

The same taxes and fees have to be paid as before.

6. DISPUTES ABOUT PATENTS AND THEIR WITHDRAWALS.

Disputes respecting the possession of a patent depending on a private right, and claims for indemnification founded on the violation of a privilege, come before the ordinary judge.

The fines imposed by the police and the proceeds of the confiscated article fall to the treasury.

7. PUBLICATION OF EXPIRED PATENTS.

Models, drawings, and descriptions of expired patents are deposited in the polytechnic school.

Drawings and descriptions of expired patents may be published in the interest of the national industry.

The law in the Grand Duchy of Hesse is in the main the same as that in Baden.

It has, however, always been a fixed rule in Hesse never to grant a patent for more than five years. Applicants from foreign countries, such as Switzerland, Hamburgh, Mecklenburgh, &c., where patents are not granted, cannot obtain a patent in Hesse. The subject of any foreign state cannot obtain a patent in Hesse for a period longer than is legal in his own country, and never for more than five years.

In other respects foreigners are treated on an equality with Hessian subjects.

In Hesse, too, the practice with respect to taxes and fees differs from that in Baden and most other states in the Zollverein. The holder of a patent has only to pay once for all a stamp of 20 florins [$8.33] on his letter patent, whether the period of duration is one year or longer (up to five years.)

Patents guarantee the holder against the manufacture or application of his invention by others, but interfere, of course, in no way with the trade of such inventions.

I must add, in conclusion, that the opinion in this country entertained generally by the government and the manufacturing classes is that the institution of patents is one which has outlived itself, and has ceased to be generally useful.

No form of patent can be discovered by which the real inventors are effectually protected, without injury being done to the community. There is, therefore, every probability that the present system will shortly either be greatly modified or done away with altogether.

BAVARIA.

REPORT BY CHARLES S. SCOTT, OF THE BAVIAN LEGATION.

The law of Bavaria affecting inventions consists of—

(A.) General enactments providing for the issue of patents, and for the protection of the rights of patentees, and contained in Articles IX and XI of the commercial law of September 11, 1825, since confirmed by a law of January 30, 1868; and,

(B.) Of a code of rules, drawn up in accordance with the spirit of these enactments, contained in paragraph eight of the commercial instructions ("Gewerbe Instruktion") of April 21, 1862.

These rules have in all essential particulars been framed on the basis of an agreement concluded between the states of the Zollverein on the 21st of September, 1842. From them I have extracted the following information, which may be taken as embodying the chief points in the law at present in force in regard to patents in Bavaria.

The department by which patents and trade privileges are issued is that of the Bavarian Ministry of the Interior.

The longest term for the duration of a patent in Bavaria has been fixed at fifteen years, after the expiration of which term the discovery or invention becomes public property.

Infringements of the rights of patentees are punishable by fines varying from 100 to 500 gulden [$41.65 to $208.35,] one-half of which sums is allotted to the patentee, the other to the poor of the parish where the infringement may have been detected. The article or articles manufactured in violation of the rights of the patentee are confiscated for the benefit of the patentee.

For each patent issued a fixed fee is charged, the highest fee not to exceed 275 gulden [$114.63,] and the produce of the fees is devoted to the encouragement of trade and industry.

The following is the scale of fees:

For a privilege for a term of	1	year	25	florins, or	$10	41
"	"	2	years	35	"	or	14	58
"	"	3	"	40	"	or	16	66
"	"	4	"	50	"	or	20	80
"	"	5	"	60	"	or	24	99
"	"	6	"	70	"	or	29	16
"	"	7	"	90	"	or	37	48
"	"	8	"	110	"	or	45	80
"	"	9	"	130	"	or	54	15
"	"	10	"	150	"	or	62	49
"	"	11	"	175	"	or	72	89
"	"	12	"	200	"	or	83	30
"	"	13	"	225	"	or	93	71
"	"	14	"	250	"	or	104	12
"	"	15	"	275	"	or	114	54

All new inventions, discoveries, or improvements in all branches of industry, whether consisting of new articles, implements, or processes of manufacture, are eligible for patents in Bavaria, irrespective of the sex of the inventors, if they fulfill the following legal conditions:

The article for which a patent is solicited must be itself new and original, or the alteration to be effected contain something new and original.

It must be of sufficient importance to entitle it to be considered as likely to prove beneficial to industry, and it must be shown that neither the article nor the process to be employed in using it is illegal, dangerous, or injurious.

Inventions patented abroad are eligible for trade privileges in Bavaria if they fulfil the aforementioned conditions, and are still protected by their original patents; but the possession of a trade patent does not necessarily give the patentee a right to a trade privilege in Bavaria, the power to grant or to refuse such privilege remaining at the discretion of the Bavarian Ministry of the Interior. Such privilege will, moreover, only be conceded to the foreign patentee or to his legal successor. Foreign patentees cannot acquire a patent in Bavaria for a longer term than that of the duration of their original patent.

Foreigners, subjects of States according reciprocity of treatment, are placed on the same footing as native subjects in regard to the concession of patents, and to the protection of the rights flowing therefrom.

Applicants for patents must produce security for the newness and originality of their inventions. Should it transpire subsequently to the issue of any patent that the invention or improvement patented was not really new and original, or that (the case of inventions already patented abroad of course excepted) the discovery had already been made, applied, or in any way known elsewhere, or had been ever publicly exhibited or explained in such a manner that any professional person could have availed himself of it, then the patent shall be forfeited, and the inventor compelled to bear all losses and expenses resulting therefrom.

Applicants for patents must address a petition to the Minister of the Interior, and this petition must contain—

1. Their names in full, their position, residence, and domicile, and, in the case of foreigners, those of their authorized agent in Bavaria.

2. A general, but at the same time characteristic, description of the peculiar nature of the invention or improvement.

3. The term of years for which the patent is required.

The petition must be accompanied by the legal fee and stamp duty, as also by a thorough and detailed description in the German language (or with a German translation appended) of the object, discovery, or improvement, and of the process to be employed in applying or preparing it. If necessary for explanation, this description must be accompanied by drawings, sketches, models, or samples. Everything new and original in the article, implement, or process must be specially noted. The description and petition may be sent open or sealed, and every precaution will be taken to prevent undue or untimely divulgement of their contents. In the case of an application for a privilege for an invention already patented abroad, the patent itself, or an attested copy of it, must be sent with the petition.

On presentation of these papers the applicant will receive an official receipt, marked with the date and hour of presentation, and this receipt will afterward be admitted in evidence in any question of disputed priority.

Petitions which fail to fulfil the above conditions, or are unaccompanied by the required description, will not be taken any notice of, and the presentation of such petitions will give no claim to priority. But if the fee or stamp duty only is wanting, or the description simply deficient, the applicant is allowed a certain time to make good the deficiency without prejudice to his rights of priority.

The term of a patent or privilege may be prolonged if it has been originally issued for a shorter period than fifteen years, but no privilege can ever be made to extend over a longer period than that of fifteen years from the date of its original issue. Fees for prolongation will be charged in accordance with the scale given above.

The grant of trade privileges confers to the extent of the terms of the privilege a right to prevent the manufacture, preparation, or employment of the patented article by a third party, unless with the consent or license of the patentee, but it does not confer any right to restrict the introduction, employment, sale, or use of articles similar to the patented articles. In the case of a privilege granted to any process or means of manufacture, or to any new implement to be employed in manufacture or industry, such privilege gives an unrestricted right to prevent the employment or use by a third party of such process or implement, unless specially authorized to do so by the patentee, or unless the patented article has been acquired from him.

The acquisition of a patent for the improvement of an already-patented article does not necessarily give a share in the rights of the original patent, but the right to use the patented article must be acquired separately in the legal and usual manner.

Each holder of a trade privilege is at liberty to erect the necessary buildings and accommodation, take in operatives, and perform all other acts necessary to the exercise of the rights conferred upon him by his privilege, subject to due compliance with the laws, statutes, and police regulations of the country.

The privilege does not, however, entitle him to an independent exercise of the particular branch of industry to which the patented article applies, but, on the contrary, he must acquire that right in the usual manner prescribed by law.

Holders of trade patents and privileges may cede the same to others in the legally-prescribed manner, or may admit others to a partnership in the rights taken as a whole conferred by it, but no division of a patent with respect to the rights taken separately, or to the places where the privilege is to be exercised, is allowed.

In case of death the proprietorship of a trade privilege passes to the legal heirs.

Notice of death or change of proprietorship must be given to the Ministry of the Interior within three months of such event.

In case of two or more applications for exclusive privileges for the same invention, preference will be given to the applicant who can produce proof of priority of presentation in the forms already alluded to.

On the expiration of a trade privilege the description of the object shall be published, if it appear likely to prove advantageous to native industry.

Patents and privileges lose their effect in the following cases:

1. Should facts transpire subsequently to the issue of a patent which if known at the time would have constituted a disqualification.

2. In case of proof of previous knowledge, or of a want of originality, as already explained. Should it, however, appear that such knowledge was possessed by a few persons only, and had been concealed by them, then the patent is to remain in force, only without effect in regard to the said persons.

3. If the applicants have concealed or misrepresented in their description any important part of the discovery or improvement essential to its perfection.

4. If the holder of a patent fail to put the invention into execution or to notify the same to the Minister of the Interior within the space of three years; or, in the case of patents for shorter terms than six years, within the half of the term; or, in the case of an invention already patented abroad, within the space of one year from the date of issue of the patent.

5. In the case of privileges granted to foreign patentees or their successors upon expiration of their foreign patents.

6. In case of the execution having been abandoned for more than two years.

7. By resignation or failure to make use of the patent.

8. By omission to notify change of proprietorship to the Ministry of the Interior within the prescribed term.

9. Upon the expiration of the term of the patent.

A register is kept at the Ministry of the Interior of all applications for trade patents and privileges, in which the dates and particulars are carefully entered. A collection of all the descriptions, drawings, models, &c., connected with the articles and inventions patented is also preserved in the same department, to which the public can obtain access, and may inspect the descriptions and plans of the inventions whose patents have expired, and, if permitted by the patentee those of the inventions still under the protection of patents.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,640.—Steam-Boilers.—Granted to JOSEPH HARRISON, JR. October 4, 1859. Application filed June 30, 1873. Hearing September 17, 1873.

25,662.—Construction of Prisms.—Granted to EDWIN MAY, October 4, 1859. Application filed June 23, 1873. Hearing September 17, 1873.

25,672.—Machines for Lasting Boots and Shoes.—Granted to JAMES FOSDICK, October 4, 1859; reissued January 6, 1863. Application filed July 5, 1873. Hearing September 17, 1873.

25,683.—Hydrants.—Granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865. Application filed June 20, 1873. Hearing September 17, 1873.

25,693.—Sewing-Machines.—Granted to KASPER VOGEL, October 4, 1859; reissued November 1, 1864. Application filed July 5, 1873. Hearing September 17, 1873.

25,701.—Skeleton Skirt.—Granted to JAMES DRAPER, October 4, 1859; reissued August 1, 1865. Application filed July 2, 1873. Hearing September 17, 1873.

25,726.—Hand-Machine for Wiring Hind-Rods.—Granted to EBRAM C. DAVIS, October 11, 1859. Application filed July 12, 1873. Hearing September 24, 1873.

25,736.—Double-Friction Couplings.—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—Method of Combining Honey with Sweet-cheese.—Granted to THOMAS J. MASAN, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—Cutting and Punching Cakes.—Granted to JOHN H. SHROTS, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—Mode of Manufacturing Barrels, &c.—Granted to GEORGE W. BARKER, October 11, 1859. Application filed July 9, 1873. Hearing September 24, 1873.

25,796.—Jacquard Machines.—Granted to AVERY RANDOLPH, October 18, 1859. Application filed June 30, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to ETHELBERT BALL, October 18, 1859. Application filed July 18, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,807.—Hem-Folders.—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 18, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,814.—Sleeping-Cars.—Granted to JOHN DARRIN, October 18, 1859. Application filed July 12, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,842.—Cultivators.—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,869.—Weeding-Hoes.—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,867.—Machines for Covering Saddle-Trees.—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,874.—Breaking-Machines.—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 28, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,883.—Construction of Steam Coffins.—Granted to JOHN R. CARSON, October 25, 1859. Application filed July 28, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,936.—Out-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,973.—Tackle-Blocks.—Granted to ISAAC R. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 5, 1865. Application filed July 28, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to WILSON STOUFFER, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,002.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,023.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,060.—Machines for Making Hon-Jolnts.—Granted to JAMES STURGEON, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,069.—Sleeping-Cars.—Granted to JOHN DARRIN, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to CYRUS CHADBURN, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 16, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,125.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,126.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to EDWARD WIRES, November 15, 1859. Application filed August 12, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WRIGHT, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 16, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 16, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,242.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 16, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MATALL, November 29, 1859; and reissued October 28, 1873. Application filed August 13, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,291.—Molding for Metal Castings.—Granted to JOHN F. BROADSHADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,297.—Nursing-Bottles.—Granted to FRANCIS J. LA FOREST, November 29, 1859; and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,299.—Heel and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 28, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,320.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 28, 1869. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,419.—Seed-Planters.—Granted to WILLIAM BLEMING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KENDALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

27,539.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 28, 1860, and antedated to September 29, 1859; reissued December 28, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

25,239.—Improvement in Elastic Hose-Tubing, granted to JOHN C. BOYD, August 30, 1859. (ALEXANDER BOYD and SAMUEL WHEELWRIGHT, executors of the estate of JOHN C. BOYD, deceased.)

Claim.—The hose made of flexible tubes, the same consisting of a woven fabric of cotton, hemp, or other fibrous materials, lined with or fastened to a layer or sheet of vulcanized India rubber or gutta-percha, or of any other water-proof composition, and the whole secured by rivets, substantially as described.

25,243.—Improvement in Stoves, granted to EDWARD M. MANSEL, September 6, 1859.

Claim.—The arrangement of the series of distinct or unincommunicative hollow open air-chambers *f f*, or their equivalents, in combination with the cross-piece of the top plate B of a cooking-stove, substantially in the manner and for the purpose set forth and described, whether the said cross-piece A be either movable or stationary in the said top plate.

25,244.—Improved Machine for Wiring the Joints of Clothes-Pins, granted to ALVIN C. MASON, September 6, 1859.

Claim.—1. The intermittingly-rotating pliers E E, in connection with a clamping device formed of the jaws *l*, recess *o*', and lever R, or their equivalents, and shears L L, arranged to operate substantially as and for the purpose set forth.

2. In combination with the pliers E and shears L and clamping device, the sliding forks *p*', arranged for joint operation, as set forth.

3. The particular manner of opening and closing the pliers E E, and operating the arbors D, to wit, by means of the sliding cones F, in connection with the springs *f* and permanent bosses *g* on the arbors D, whereby the jaws of the pliers are opened and closed, and the arbors D shifted by a very simple mechanism.

25,373.—Improvement in Machines for Making Paper Boxes, granted to SILAS B. TERRY, September 6, 1859; reissued May 17, 1870, numbered 3,905.

Claim.—1. The combination, in a machine for making paper boxes, of a mandrel and a clamp rotating together, and carrying the disk of paper, substantially as described.

2. The combination, in a machine for making paper boxes, of a rotating clamp, a mandrel rotating with the clamp, and a flanged and grooved pressure-roller, substantially as described.

3. The combination, with the mandrel and the clamp, of the pressure-lever, substantially as described.

4. The combination, with the mandrel, of the guide-ring F, substantially as and for the purposes described.

5. The combination, with the mandrel of a socket in which the paper disk is adjusted upon the mandrel, substantially as described.

6. The combination, with the mandrel, the socket, and the guide-ring, of steps on the mandrel and in the socket, substantially as and for the purpose described.

7. The combination, with the clamp, the mandrel, the guide-ring, and the flanged and grooved pressure-roller, of a guide-way for the strip, substantially as described.

8. The pressure-roller, having a groove for the projecting edge of the paper disk, a flange to turn and smooth the projecting edge of the strip upon the disk, and a bearing-surface to close and smooth the strip, substantially as described.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 2, 1873.]

6,832.—Tailer's Goose.—JOSEPH HARSHAW, Cincinnati, Ohio. Application filed August 2, 1873. Term of patent 14 years.

6,833.—Fabric.—CHARLES H. LANDENBERGER, Philadelphia, Pa. Application filed June 13, 1873. Term of patent 3½ years.

6,834.—Chair-Frame.—JOSEPH H. TRAVIS, Charlestown, Mass. Application filed May 22, 1873. Term of patent 3½ years.

6,835.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—Q. Application filed August 9, 1873. Term of patent 3½ years.

6,836.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place. Application filed August 9, 1873. Term of patent 3½ years.

6,837.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—L. Application filed August 9, 1873. Term of patent 3½ years.

6,838.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—B. Application filed August 9, 1873. Term of patent 3½ years.

6,839.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—b. Application filed August 9, 1873. Term of patent 3½ years.

6,840.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—*f*. Application filed August 9, 1873. Term of patent 3½ years.

6,841.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—F. Application filed August 9, 1873. Term of patent 3½ years.

6,842.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—c. Application filed August 9, 1873. Term of patent 3½ years.

6,843.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—S. Application filed August 9, 1873. Term of patent 3½ years.

6,844.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—E. Application filed August 9, 1873. Term of patent 3½ years.

6,845.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—Y. Application filed August 9, 1873. Term of patent 3½ years.

6,846.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—D. Application filed August 9, 1873. Term of patent 3½ years.

6,847.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—Z. Application filed August 9, 1873. Term of patent 3½ years.

6,848.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—W. Application filed August 9, 1873. Term of patent 3½ years.

6,849.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—G. Application filed August 9, 1873. Term of patent 3½ years.

6,850.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—T. Application filed August 9, 1873. Term of patent 3½ years.

6,851.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—M. Application filed August 9, 1873. Term of patent 3½ years.

6,852.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—I. Application filed August 9, 1873. Term of patent 3½ years.

6,853.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—c. Application filed August 9, 1873. Term of patent 3½ years.

6,854.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—A. Application filed August 9, 1873. Term of patent 3½ years.

6,855.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—d. Application filed August 9, 1873. Term of patent 3½ years.

6,856.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—H. Application filed August 9, 1873. Term of patent 3½ years.

6,857.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—e. Application filed August 9, 1873. Term of patent 3½ years.

6,858.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—K. Application filed August 9, 1873. Term of patent 3½ years.

6,859.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—X. Application filed August 9, 1873. Term of patent 3½ years.

6,860.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—V. Application filed August 9, 1873. Term of patent 3½ years.

6,861.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—R. Application filed August 9, 1873. Term of patent 3½ years.

6,862.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—g. Application filed August 9, 1873. Term of patent 3½ years.

6,863.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—J. Application filed August 9, 1873. Term of patent 3½ years.

6,864.—Shawl-Pattern.—FREDERICK WINK, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place.—C. Application filed August 9, 1873. Term of patent 3½ years.

6,865.—Carpet.—JONATHAN CRABTREE, Philadelphia, Pa., assignor to LEEDOM, SHAW & STEWART, same place. Application filed May 5, 1873.

6,866.—Carpet.—JONATHAN CRABTREE, Philadelphia, Pa., assignor to LEEDOM, SHAW & STEWART, same place. Application filed May 5, 1873. Term of patent 3½ years.

6,867.—Lock Escutcheon-Plate.—WILLIAM GORMAN, New Britain, Conn., assignor to THE RUSSELL & ERWIN MANUFACTURING COMPANY, same place. Application filed August 11, 1873. Term of patent 14 years.

6,868.—Toy Rail-Car.—WILLIAM A. HARWOOD, Brooklyn, N. Y., assignor to THE MERIDAN MANUFACTURING COMPANY, Durham, Conn. Application filed July 9, 1873. Term of patent 7 years.

6,869.—Cape.—MARTIN LANDENBERGER, Philadelphia, Pa. Application filed May 6, 1873. Term of patent 3½ years.

6,870.—Veils.—SOLOMON M. MEYERBERG and ROBERT COLLINSON, Paterson, N. J. Application filed July 5, 1873. Term of patent 3½ years.

6,371.—**Oil-Cloth.**—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SIMPSON, New York, N. Y. Application filed August 19, 1873. Term of patent 3 years.

6,372.—**Gum.**—HENRY G. SHOOK, New York, N. Y. Application filed May 31, 1873. Term of patent 3½ years.

6,373.—**Bolt-Buckle.**—JOHN R. SMITH, Waterbury, Conn. Application filed June 4, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date September 2, 1873.]

1,430.—**Pencils.**—AMERICAN LEAD PENCIL CO., New York, N. Y. Application filed August 9, 1873.

"'Centennial.'"

1,431.—**Preparation for the Hair.**—MATTHEW T. CLACKNER, Baltimore, Md., assignor to MICHAEL KOHLENMAN, same place. Application filed August 20, 1873.

"'Nonpareil, or Cream of Discoveries.'"

1,432.—**Fertilizer.**—GEORGE DUGDALE & CO., Baltimore, Md. Case A. Application filed August 21, 1873.

"'Paragon Cotton Fertilizer.'"

1,433.—**Fertilizer.**—GEORGE DUGDALE & CO., Baltimore, Md. Application filed August 21, 1873.

"'Eclipse Soluble Phosphate.'"

1,434.—**Men's Furnishing Goods.**—FISK, CLARK & FLAGG, New York, N. Y. Application filed July 28, 1873.

"the head of Napoleon III in military uniform."

1,435.—**Steam-Packing, &c.**—JAMES GLANDING & COMPANY, Philadelphia, Pa. Application filed July 28, 1873.

"the figure of an eagle."

1,436.—**Steam-Packing, &c.**—JAMES GLANDING & CO., Philadelphia, Pa. Application filed August 23, 1873.

"the word 'Eagle.'"

1,437.—**Axle-Grease.**—THE PALM-OIL AXLE-GREASE COMPANY, Charleston, S. C. Application filed August 12, 1873.

"'Star Axle-Grease.'"

1,438.—**Varnish and Other Brushes.**—CORNELIA C. THUM, Philadelphia, Pa. Application filed August 15, 1873.

"an eagle with extended wings."

1,439.—**White Lead.**—BETNER, BAUMAN & CO., Pittsburg, Pa. Application filed June 21, 1873.

"'Reward' inclosed by the figure made up of curved lines."

1,440.—**Fertilizer.**—GEORGE DUGDALE & CO., Baltimore, Md. Case B. Application filed August 21, 1873.

"'Cotton States Soluble Phosphate!'"

1,441.—**Cleaning-Powder.**—J. A. WRIGHT & Co., Keene, N. H. Application filed June 18, 1873.

"'Red Star Cleaning-Powder,' and the figure of a star of a red color."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date September 2, 1873.]

ORIGINAL PATENTS.

142,320.—**Paddle-Wheel.**—IRA ATKINS, Louisville, Ky., as signor of one-half his right to JOHN B. SWAN, same place. Application filed February 17, 1873.

Loosely-pivoted paddles are locked in position during a part of their revolution, and drawn down or away from the radial line during the remaining part by connecting links or rods. The locking-stops are operated by cams.

Claim.—The swinging hinged paddles, in combination with their connecting-rods, the cams, and locking-stops, the whole combined, arranged, and operating substantially as described.

142,322.—**Steam-Trap.**—JAMES H. BLESSING, Albany, N. Y. Application filed March 17, 1873.

When the basket has been filled by the condensed water from the steam-coils it is depressed and actuates trip-mechanism, which permits steam to enter and establish an equilibrium between said vessel and the boiler, the water from the former then flowing into the latter through force of gravity.

Claim.—1. The outer case A, long and short pipes b^1 b^2, valvular passages b b^1, and floating open-mouth vessel T, combined and operating substantially as described.

2. A tripping device combined with a steam-inlet valve, r, and a floating bucket, T, which is applied inside of a receiver, A, and valvular passages leading into and out of such receiver, substantially as described.

3. The inlet and outlet passages b b^1, provided with check-valves, and combined with a water-receiver containing a vertically-movable bucket, T, substantially as and for the purposes described.

142,324.—**Windmill.**—ALONZO T. BOON, Galesburg, Ill., assignor of one-half his right to TRUMAN O. JONES, same place. Application filed April 4, 1873.

Springs are arranged with each section of sails to regulate the velocity of the wheel.

Claim.—1. The springs P, when attached to the arms g'', and arranged to operate with a series of two or more sails, L, connected by a bar, *l*, substantially as described, and for the purpose specified.

2. The tubular shaft G, when arranged to operate with the connecting-rods d'' g' and crank-wheel d' of a wind-wheel shaft, and with the cranks g''' and h and connecting-rod h'', substantially as described, and for the purpose specified.

3. The three-armed or Y-shaped cranks g''' and h, when arranged to operate with the connecting-rod g' and the pump I, substantially as described, and for the purpose specified.

4. The levers T S', when connected as described, and arranged to operate with the weight W, vessel U, tank V, pump I, and connecting-rod S, substantially as and for the purpose specified.

142,325.—**Spring for Vehicles.**—HARVEY BOWLES, Trempealeau, Wis. Application filed June 21, 1873.

The ends of the springs, which are grooved, are inserted within a cap and secured by a bolt.

Claim.—The cap A A and bolt B, combined, constructed, and applied to vehicle-springs having grooves *a*, substantially as and for the purpose set forth.

142,326.—**Agricultural Boiler.**—CHARLES M. CLOUD, Grinnell, Iowa. Application filed May 26, 1873.

Claim.—The combination of the box and the heater, consisting of the draft-pipe 5, vertical pipe 3, cylinder 6, and chimney 7, substantially as shown and described.

142,327.—**Hammock-Lounge.**—J. CREW CRAFT, Baltimore, Md. Application filed April 11, 1873.

The lower frame is jointed to fold, has pivoted braces and stretchers, and rods to which the hammock is attached by cords.

Claim.—1. The combination of the jointed stripe A, levers B, stay-bars E, cross-bars O, hammock G, and cords H K, arranged and operating substantially as described.

2. The combination of the hammock G, flap F, pillow R, cords K, cross-bars O, levers B, stay-bars E, and jointed stripe A, arranged and operating substantially as specified.

142,328.—**Mop-Head.**—JAMES DAVIS, Chicago, Ill. Application filed May 8, 1873.

Is constructed with a nut working in the cross-head, having on its lower edge a projecting flange, and on its upper projections which furnish handles to turn it, to close or open the space between the bar and the outer holder, by which the mop is held.

Claim.—The part D, made in one piece, of malleable metal, and in a form substantially the same as shown and described, and rigidly attached to the adjustable jaw of a mop-head, in combination with the nut E, made in one piece, and arranged on the rigid screw C and within the part D, and provided with the ears *e* and *e'*, lapping the upper and lower face, respectively, of the part D, and with a screw-thread engaging the screw C, substantially as and for the purposes specified.

142,329.—**Fruit and Lard Press.**—WILLIAM H. DAVIS, Lexington, Ind., assignor to JOSEPH HARLAN, same place. Application filed May 17, 1873.

Claim.—1. A press-chamber composed of the outer perforated wall B, provided with an inner flange, and an inner perforated tube, C, bearing a perforated bottom, D, arranged to rest upon the above-named flange, in the manner as shown, and for the purpose specified.

2. In combination with the tube C, the fluted cone *c*, or its equivalent, operating substantially as shown, and for the purpose specified.

142,330.—**Steam-Boiler.**—WITHEROW DOUGLASS, Pittsburg, Pa., and JOSEPH H. BROWN, Youngstown, Ohio. Application filed March 13, 1873.

The boiler is suspended inside a cylinder, so that it is entirely surrounded by burning gases. A nozzle projecting from the boiler through the outside cylinder protects the steam and gage pipes from the fire. Air is admitted through ports in the cylinder to increase combustion.

Claim.—1. In combination with the upright cylindrical boiler *a* and its annular casing *d*, the opening *g* for the admission of heat from a puddling-furnace or other exterior fire, and the ports *r* for supplying air to the unconsumed gases in the annular flue *c*, all arranged substantially as set forth.

2. The boiler *a*, having a nozzle, h, in combination with the steam or gage pipes (n n', substantially as and for the purposes described.

3. The steam-generator consisting of the boiler *a*, steam-drum *b*, nozzle h, steam-pipe *i*, annular chamber *c*, and outer shell *d*, combined and arranged substantially as described.

142,331.—**Binder's Attachment for Harvesters.**—JOHN H. GARNHART, Madison, Wis. Application filed January 11, 1873.

Seats are provided for the binders, which are horizontally and vertically adjustable to allow the binders to face the grain-receptacle or the binders' tables.

Claim.—1. A grain-receiver made of two or more parts hinged to each other and to the elevator-frame, substantially as described, for the purpose specified.

2. A grain-receiver composed of two or more parts hinged together, the lower one of which is arranged to rest at each end upon the binders' tables, substantially as described, for the purpose specified.

3. A binder's seat, the inner end of whose standard is pivoted to the frame of the machine so as to swing laterally upon its pivot, to vary the distance horizontally of the binder's seat from the binder's table, substantially as described, for the purpose specified.

4. A swinging binder's seat pivoted to the outer end of its adjustable standard, substantially as described, for the purpose specified.

5. In combination with the pivoted binder's seat, the step A and the shoulders *b* upon the eye Z, so that the binder's seat shall turn or swing upon its standard and be stopped as it fronts the binder's table, substantially as described, for the purpose specified.

6. The adjustable slotted plate C, constructed with an eye, Z, as a means of connecting the binder's seat and its standard, substantially as described, for the purpose specified.

7. The binders' seats having their pivoted swinging standards connected to each other above the pivotal points, by means of a detachable rod, substantially as described, for the purpose specified.

8. Hinged or pivoted stirrups or foot-rests on the seat-standards, substantially as described.

9. Hinged or pivoted stirrups or foot rests made adjustable on the seat-standards, substantially as described, for the purpose specified.

10. The binders' seats, pivoted to the outer ends of their standards, made vertically and horizontally adjustable, and combined with the adjustable stirrups or foot-rests, substantially as described, for the purposes specified.

142,333.—**Insole for Boots and Shoes.**—JAMES GASCOIGNE, Rochester, N. Y. Application filed June 30, 1873.

Straw-board treated with boiled oil, turpentine, and shellac.

Claim.—An insole for boots and shoes, composed of the straw-board foundation D, made waterproof, as described, the cotton batting C, and the cotton covering A, provided with the paper stiffener B, as shown and described, for the purposes set forth.

142,333.—**Steam Air-Pump and Condenser.**—SAMUEL GIBSON, Freedom, Pa. Application filed December 26, 1872.

Air-pump has a float connected by a bent arm to the stem of a hollow rocking valve, and operates it, and by this valve a steam-moved piston-valve placed under the rocking valve, admits the uncondensed steam to pass through the piston-valve, and, by a bent pipe, back to the condenser. As soon as the steam is exhausted the steam from the rocking valve moves the piston-valve to its former position, and closes the communication with the air-pump until the pressure therein is too high again.

Claim.—1. The pump G, in combination with the hollow ball L, rod *f*, lever K, attached to the valve-stem *d*, the rocking valve J, steam-chest I, and piston M, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the steam-chest I, having partition, with passages m, m', and n, the rocking valve J, with ports *a* a and *b* b, and the piston M, with ports *c* and *c'*, all constructed and arranged substantially as and for the purposes herein set forth.

3. The arrangement, with the condenser, pump, and steam-chest, of the pipes O and P, substantially as and for the purposes herein set forth.

142,334.—**Shield for Sad-Irons.**—JOEL GILBSON, Brooklyn, N. Y. Application filed February 4, 1873.

A protector for the hand, constructed with an iron frame, by which it is attached to the handle, and the inside of the frame fitted or covered with a non-conducting material for the protection of hand in using it.

Claim.—A shield for sad-irons, having an open outer frame surrounding and receiving the body of the shield, in the manner described, and adapted for attachment to the standards supporting the handle of an ordinary or other sad-iron, substantially as herein set forth and shown.

142,335.—**Lock.**—FRANK GORHM, Cleveland, Ohio. Application filed March 7, 1873.

Claim.—A screw-bolt, D, swiveled to the plate by which it is thrown and retracted, and received by means of a correspondingly-formed opening in the end of the lock-case and catch-plate, when operated by the key, substantially as described.

142,336.—**Meter for Measuring Liquids, Gases, &c.**—JOHN J. GRABNOUEN, Syracuse, N. Y. Application filed June 12, 1873.

There are two sets of inlet and outlet valves. The sets are arranged on opposite sides of the partitions which form the valve-seats, and are operated by suitable valve-shifting apparatus placed within the measuring-chambers. Each pair of inlet and outlet valves is connected through the valve-ports to act simultaneously, and an inlet and outlet valve of each measuring-chamber pulled together.

Claim.—1. The valve-shifting apparatus constructed and arranged substantially as herein specified, and for the purposes set forth.

2. The valve-shifting apparatus within the two separate measuring-chambers, when connected through the valve-ports, as herein set forth.

3. The induction and eduction passages and valve-seats, when constructed and arranged parallel with each other, as herein specified, so as to admit of the independent action of the inlet and outlet valves, as and for the purposes herein described.

142,337.—**Truss.**—JOHN F. GROVES, Whitefield county, Ga. Application filed July 8, 1873.

A hinge-plate is secured at one end to the pad-plate, and at the other to the slotted spring by means of a headed rivet. A coil-spring rests upon the pad, and also upon the outer end of the hinged plate.

Claim.—The pad F having springs E, and hinge C provided with button h, in combination with the slot *a* of the clasp A, substantially as and for the purpose set forth.

142,338.—**Dissected Map.**—CHARLES J. HIGGINS, Indianapolis, Ind. Application filed February 26, 1873.

Claim.—1. A "dissected map," in which the various subdivisions are capable of being separately secured to the frame in which they are supported, substantially as described.

2. The compound blocks of a dissected map made up of two or more sheets of material, substantially as described.

142,339.—**Machine for Sawing Clapboards.**—HIRAM A. HOLMES, Epsom, N. H. Application filed July 5, 1873.

A secondary frame, provided with means for rotating the log, is detachably secured upon the carriage of a circular-saw mill.

Claim.—The combination of the saw-mill carriage A, the clamps D, and the separate stationary cam *w*, with the main and auxiliary frames C E, arranged together and provided with mechanism, substantially as described, for adjusting the altitude of the auxiliary frame, and for supporting and intermittently revolving a log, all as and for the purpose specified.

142,340.—**Chemical Fire-Extinguisher.**—ALEXANDER E. HUGHES, Louisville, Ky., assignor of one-eighth his right to EDWARD FORD, New Albany, Ind. Application filed June 19, 1873.

The acid-reservoir has an annular groove for the reception of semicircular spring-clamps; these are attached to a cross-bar operated by a shaft, which, by its depression on the inversion of the extinguisher, removes the reservoir from a stationary stopper. A spring-trigger keeps the reservoir closed against the stopper or holds it open.

Claim.—1. A chemical fire-extinguisher wherein, on the inversion of the instrument and by the weight thereof, the acid-reservoir is removed from its cork or stopper while said stopper remains stationary, substantially as set forth.

2. The combination of the shaft B, cross-bar B', supports C, and semicircular clamps C' with the annular groove *a* upon the body of the acid-reservoir.

3. The combination of the annular groove b' upon the shaft B of the acid-reservoir, the retaining-trigger *c*, and the spring E, substantially as and for the purpose set forth.

142,341.—**Grain-Basket.**—HORACE C. JOHNS, Dowagiac, Mich. Application filed May 20, 1872.

A grooved central disk, in the groove of which the tapering ends of the staves are placed. An outside and an inside hoop are secured together by nails passing through them and the intervening staves.

Claim.—A basket made by the combination of the solid grooved disk A, hoops B, and tapered staves D, all substantially in the manner herein shown and described.

142,342.—**Grain-Basket.**—HORACE C. JOHNS, Dowagiac, Mich. Application filed February 8, 1872.

The side splints or staves are secured in the center of the bottom of the baskets by an upper concave-convex disk and a lower shouldered convex disk, the ends of the staves abutting against the shoulder.

Claim.—The combination of the shouldered convex disk B with the concave-convex disk A, in the construction of a basket, substantially in the manner and for the purpose described.

142,343.—**Basket.**—HORACE C. JOHNS, Dowagiac, Mich. Application filed May 20, 1872.

The outer series is composed of alternate long and short staves, the short staves reaching just inside of the bottom hoop. The inner series of staves meet each other edge to edge, and extend to nearly the center of the bottom of the basket.

Claim.—The combination of the short outer staves B with in-

side staves C and long outer staves A in the construction of a stave bucket, substantially as herein set forth.

142,344.—Axle and Thimble-Skein for Vehicles.—AUGUST KRAUSMANN, Springfield, Ill. Application filed May 3, 1873.

The thimble-skein has a square shoulder and lubricating orifice, and when worn on one side may be turned.

Claim.—1. The reversible thimble-skein B, provided with the squared portion B', and combined with the wooden portion D, substantially as and for the purpose shown.

2. In combination with the box axle A and thimble-skein B, the rod C, passing through the interior of said axle, and provided with the nuts *a*, substantially as and for the purpose set forth.

3. The hollow axle A, having the opening *s* and plug *s'*, in combination with the detachable and reversible axle-arms B, provided with the radial openings *b*, substantially as and for the purpose shown.

142,345.—Device for Building Cisterns.—JOSEPH KRUGER, Indianapolis, Ind. Application filed January 10, 1873.

The frame, constructed somewhat like an umbrella, is designed as a removable support or center for the arch or dome of a cistern while in process of construction.

Claim.—The arch-support herein described, when constructed with the tube l l, the rod h h, the nut *g*, the blocks *t* and *u*, the segments *w* *x* and *w'* *x'*, the arms *v* and *v'*, and the slots *t'*, and used for the purpose and in the manner substantially as set forth.

142,346.—Whip-Socket.—CORNELIUS LANG, Ypsilanti, Mich., assignor of one-half his right to ALBERT H. NIMOCKS, same place. Application filed April 14, 1873.

A coiled spring is attached to a perforated plate, which surrounds the upper section of the socket. By means of the spring, whips of different sizes are securely held within the socket.

Claim.—1. In a whip-socket, the coiled spring arranged around the socket, substantially as described.

2. In a whip-socket, the combination of the top *c*, perforated plate *l*, and spring *g*, substantially as shown.

3. In a whip-socket, the tapering socket-top, perforated plate, and coiled spring, when the various parts are arranged as set forth.

142,347.—Preserving and Drying Lumber.—JOHN OLIVER, Toronto, Canada. Application filed May 21, 1873.

The wood in a close tank is subjected to the action of steam which has passed through a vessel containing sulphate of zinc and alum.

Claim.—1. The subjecting of the lumber in a tank or vessel to the action of steam impregnated with sulphate of zinc and alum under a moderate pressure, in the manner specified and described, and for the purposes set forth.

2. The combination, with each other, of the longitudinal steam-heating pipes S S and draft-pipe E, as specified and described, and for the purpose set forth.

3. The combination, with each other, of the steam-chambers W W and steam-pipes S S inside the tank B, and draft-pipe E, the whole substantially as specified and described, and for the purposes set forth.

4. The combination, with the tank B, of the steam-chambers W W, substantially as and for the purpose set forth.

142,348.—Universal Jointer.—ERNST PAMÉ, Fort Wayne, Ind. Application filed May 17, 1873.

A lathe scroll-saw and molding-cutter are arranged upon one frame, and operated by the same treadle.

Claim.—1. The arrangement in the frame A B of the crank-shaft C, adjustable treadle D, pitman G, lathe H, shafts J M connected with the main shaft C, cutter-head *f*, slide L, and scroll-saw N, all as shown and described, and for the purposes herein set forth.

142,349.—Fireman's Ladder.—PAOLO PONTA, Milan, Italy, assignor to MICHELO UDA and MARY B. S. UDA, same place. Application filed March 13, 1873.

The sectional ladder is carried upon a truck, and so pivoted as to be capable of elevation to any desired angle by means of a windlass and cord acting upon a rigid angular lever-arm at the lower extremity. The sections are successively added, to the extent required, being connected by a joint constructed as per claim 5, and the stiffening-rods are then attached by means of the spurs *j* and hays *j'*. The stiffening system consists of uprights L' and diagonal tension-rods K K' having therefrom to the extremities of each next section, the tops of the uprights being connected by tie-rods K. Counterpoise-weights, attached to the ends of extensible arms, are used for controlling the position of the center of gravity to prevent overturning.

Claim.—1. In combination with a truck, A, a pivoted ladder, B, provided with a rigid angular lever-arm, B'—the lever-arm B' connected by a suitable cord to a crank-gearing, C D, attached to the truck—by means of which the ladder may be raised, lowered, or secured at any desired inclination, all substantially as set forth and shown.

2. In combination with a ladder, the bracing and self-sustaining system, substantially as set forth, of uprights L', tie-rods K joining the top ends of the uprights, and the diagonal straining-rods K K', &c., joining the upper end of each post with the base of the adjacent one eccentrically from the base to the top of the ladder.

3. For fastening the rods to the posts L', the spurs *j* and pins or hays *j'*, substantially as set forth and shown.

4. In combination with a truck and self-supporting ladder, counterpoise-weights G suitably adjusted, as set forth, for changing the position of the center of gravity, substantially as described.

5. The ladder-joint composed of the strap-hoops b halved into each other, and the fastened key-rung M, the latter forming the bearing of the ladder-frame, substantially as set forth and shown.

142,350.—Stop-Cock.—JOSHUA REDSTER and WILLIAM H. BOWEN, Baltimore, Md. Application filed April 11, 1873.

The plug is conical, and is fitted into a seat, which is raised from the sides of the plug-chamber.

Claim.—1. The conical valve of the cock A, in combination with the raised oblique elliptical seats *g g* and the chambers formed by said seats, substantially as and for the purpose described.

2. The combination, with the conical valve G and oblique elliptical raised seats *g g*, of the auxiliary raised seats *g' g'*, substantially as and for the purpose described.

142,351.—Salt and Pepper Dredge.—DANIEL C. RIPLEY, Pittsburg, Pa. Application filed June 27, 1873.

Claim.—A combined pepper and salt dredge having separate compartments *a* and *d*, and two caps, *c* and *f*, one of which shall have a slight rotary motion, and both having perforations so arranged relatively to each other that by the rotation of the cap *f* either compartment may be opened while the other is closed, substantially as set forth, and for the purposes described.

142,352.—Machine for Finishing Horseshoe-Nails.—ROBERT ROSS, Vergennes, Vt., assignor to THE NATIONAL HORSE-NAIL COMPANY, same place. Application filed July 14, 1873.

A cam-wheel on the feed-screw bears against a conical roll to give an intermittent longitudinal reciprocation to the screw, equal to the pitch of the thread, while the cutter is trimming the sides of the nail. A milling-cutter, fixed on a shaft having its bearings in an adjustable frame, cuts the metal from the end of the nail, after which the point is finished by a cylinder provided with blunt ridges and a drawing-roll.

Claim.—1. The combination, in a nail-machine, of the feed-screw, the cam H, and the friction-roll I, or their equivalents, by means of which a longitudinal reciprocating movement is imparted to the screw during a part of its revolution, substantially as and for the purpose set forth.

2. The milling-cutter D and supporting-die G, in combination with the feed-screw A, substantially as described.

3. The corrugated roll E and supporting-die F, in combination with the feed-screw A, substantially as and for the purpose set forth.

4. The auxiliary roll U, supported on the periphery of the roll E, substantially as and for the purpose described.

5. The combination of the auxiliary roll U, the milling-cutter D, and the screw A, substantially as set forth.

6. The combination, in a nail-machine, of a shearing-punch and die or dies, and a longitudinally-reciprocating feed-screw, the parts being arranged, substantially as described, so as to trim the nail before it passes off from the screw.

142,353.—Artificial Flower.—CHARLES A. SCHALLER, Philadelphia, Pa. Application filed July 21, 1873.

Claim.—An artificial flower made in two or more detachable sections, and provided with a receptacle or casket, D E, for holding and secreting articles of jewelry, miniatures, &c., substantially as described.

142,354.—Belt and Rod Cutter.—HUGO SCHMIDT, Chicago, Ill. Application filed May 21, 1873.

By sliding the guide-tube upon the rod and closing the levers together (the rod being revolved in the hollow spindle of a lathe) the rod is cut off to gage.

Claim.—The levers A A', carrying respectively the tube b and gage-stop c and the cutting-off tool c, constructed, arranged, and operating substantially as and for the purpose set forth.

142,355.—Cotton-Planter.—OSCAR L. SLATER, Wall Hill, Miss. Application filed August 2, 1873.

A seed-box in a horizontal frame, having a furrowing-tooth in front. The box may be a common barrel with a series of seed-dropping holes round the bilge, and a rolling circular flange on each side of the holes. The pins which fasten the flanges to the barrel project some distance into it, to regulate the flow of seed. There is a cover at the back of the frame.

Claim.—In a cotton-planter, the seeding-barrel B, constructed of the staves, heads, and follies D, the pegs *b* projecting through the follies into the barrel to form separating-teeth, and the tires serving to secure the said follies, and to prevent the pegs from being forced out, all constructed and arranged substantially as specified.

142,356.—Ratchet-Drill.—THOMAS J. SLOAN, Tuckahoe, N. Y. Application filed January 15, 1873.

The inserting-nut B is serrated, and is turned on the back motion by a pawl, *f*, connected to the handle; and the pawl is held from contact with the nut during more or less of the period of operation by an adjustable cam-ring, *j*, that surrounds the lower end of the nut, and an extension, E, of pawl *f*, that bears against it.

Claim.—1. The jointed pawl *f* E applied to the handle of a ratchet-drill for turning the nut B and feeding the drill during the motion of the handle, as specified.

2. The swiveled sleeve *j* and ring *l*, applied to the feed-nut B of a drilling apparatus, substantially as set forth.

3. The jaw *f*, pivoted to the swinging plate B, and provided with the spur *p*, substantially as and for the purpose specified.

142,357.—Apparatus for Burning Gas-Tar.—ANANIAS SHUTE, Niagara Falls, N. Y. Application filed April 28, 1873.

The reservoir being supplied with gas-tar, steam is admitted into a cluster of tubes, which heat the tar sufficiently to flow readily; it is then forced by steam to the burners through condensing-pipes, where it is made to commingle with steam.

Claim.—The combination of the reservoir C, having steam-rings D D and steam-tubes D' D', the tar-conducting pipe *c*, and the burner or burners G, substantially as shown and described.

142,358.—Purification of Illuminating-Gas.—WILLIAM H. ST. JOHN, New York, N. Y. Application filed July 25, 1873.

The vapors brought with the gas from the retorts are condensed in the hydraulic main and conveyed by a pipe into the lower part of a chamber, in the upper part of which is a horizontal partition, from which dip-tubes are suspended, and the seal of these tubes is increased or reduced by a valve on the side of the chamber. An exhauster draws the gas from the main and forces it through the dip-tubes in the chamber into the liquid below, from whence it passes through a pipe into a tank, and from thence into a gasometer.

Claim.—1. The process herein described of purifying illuminating-gas, by causing it to pass through liquids which flow forward from the destructive distillation of coal, oils, or other gas-making materials, substantially as herein specified.

2. The chamber B, constructed with the horizontal partition *b* and the dip-tubes *c*, in combination with the pipes C and D and the main A, substantially as and for the purpose specified.

3. The combination, with the chamber B, constructed and operating as set forth, of the tank I, substantially as and for the purpose specified.

4. The combination, with the main A and chamber B, constructed and operating as described, of the exhauster E, arranged to serve the double purpose of withdrawing the gas from the main and forcing it through the dip-tubes of the chamber, substantially as herein set forth.

142,359.—Railway-Rail Chairs.—LEVI BARTLETT TYNG, Lowell, Mass. Application filed July 23, 1873.

Claim.—The combination, in a combined chair and fish-plates made of wrought metal in one piece, of thick rigid side pieces to serve as fish-plates, and their elastic connections extending from the bottom of said side pieces entirely around the feet of the rails to support and secure said side pieces and to serve as a chair, being constructed with side-projecting lugs with splits-notches cut thereon, as and for the purpose described.

142,360.—Gas-Burner for Heating.—JOHN VAN, Cincinnati, Ohio. Application filed August 9, 1873.

An ordinary gas-burner is inclosed in a tube, which, below the burner, has an open mouth, and extending above the burner-branches horizontally. On each branch are affixed, at their centers, upright hollow cylinders having their lower ends closed and upper ends open. It results that the original flame is separated into several flames, and cash is fed by a current of air.

Claim.—The arrangement of gas-pipe A *a*, cock B, burner C, T-couplings D G H H', air-inlet E, mingling-chamber F, catch and equalizing chambers I I', and nozzles J J', for the purpose set forth.

142,361.—Scroll-Sawing Machine.—EDWARD A. WALKER, Minneapolis, Minn. Application filed May 13, 1873.

The central portion of the saw-table is provided with a hemispherical cup, and is made vertically adjustable.

Claim.—1. The removable rest F, constructed and arranged, with relation to the saw C, substantially as and for the purpose described.

2. The removable rest F, in combination with the adjustable sliding block E, in the manner and for the purpose described.

3. A hand sawing-machine in which is arranged an adjustable sliding block, E, having a friction disk-wheel, *g*, therein, and on which block is a conical removable rest, F, substantially as described.

142,362.—Animal-Trap.—JOHN M. WILKINSON, Bloomington, Texas. Application filed January 22, 1873.

A four-way self-setter trap intersects a central prison having four pronged entrances. Upon disengaging the bait-trigger the game is impelled by the stroke of a revolving flap through an exit-return gate and into immediate proximity to one of said pronged entrances.

Claim.—The box A, with openings or entrances *a a*, encircled by the cone of bars *a' a'*, and supplied with the mirrors C C, in combination with the boxes B B, having the spring trap-doors D D, notched bars or catches E, and inner doors H, substantially as and for the purpose specified.

142,363.—Air-Heating Furnace.—JOHN M. WILSON, Philadelphia, Pa. Application filed May 24, 1873.

Claim.—1. The openings *a' a'* through the base wall of the furnace, for the purpose of supplying the fresh air to the chamber A and the pipes D D separately and distinctly from the opening for supplying fresh air to the fire-chamber E, which is heated by the lime plates which inclose the fuel-box and the combustion-chamber C, substantially as and for the purpose hereinbefore set forth and described.

2. The deflecting-plates *a''*, the open spaces *a''* between *a''* and the upper edges of the side fire-bricks H H, the chambers *b'* communicating at their respective upper ends with the said spaces *a''* *a''*, and at their lower ends with the lower part of the chamber B through the openings *a'*, all constructed and arranged to operate as and for the purpose herein before set forth and described.

142,364.—Mode of Attaching Journals to Foot-Stirrups.—GEORGE M. ARMORY, South Boston, Mass. Application filed August 9, 1873.

Claim.—The securing the journals in the roller B by means of the latter on the conical portions C of the journals, and screwing of the tightening-nuts with said journals and rollers, either with or without a groove or splines in the journals, substantially as specified.

142,365.—Mechanical Movement.—JAMES ARMSTRONG, Toledo, Ohio. Application filed August 21, 1873.

To the end of a fixed shaft a pinion is rigidly secured. Upon the shaft is placed a pipe-box, to which are attached two pulleys and a pinion, the latter meshing with another pinion, through which the power is transmitted. Loosely secured to the fixed shaft is a frame, one end of which is weighted, while the other end carries two pulleys and a pinion, the latter engaging both with the fixed pinion on the shaft, and with the internally-geared flange of the transmitting-wheel.

Claim.—1. The combination of the loose pulley turning on the fixed central shaft, the loose pulley-frame, also turning on said shaft, the connected pulley and pinion mounted in said frame and revolved by a belt from the pulley on the central shaft, the fixed pinion and the loose transmitting-wheel, both mounted on said shaft, substantially as set forth.

2. The combination of the stationary pinion on the fixed central shaft, the loose transmitting-wheel on said shaft, and the pinion meshing with both the fixed pinion and transmitting-wheel, and turning both on its own axis and around the central shaft, substantially as set forth.

3. The combination of the fixed central shaft, the connected pinion and pulleys turning thereon, the frame also turning on said shaft, the connected pulley and pinion turning in the frame, the pulley mounted in a bracket on the frame, and the belt, these parts being constructed and arranged to operate substantially as set forth.

142,366.—Combined Chest-Protector and Shirt-Bosom Support.—JOHN A. ASTON and CHARLES C. MCGINTRY, Leavenworth, Kans. Application filed February 25, 1873.

Stiff pasteboard is covered with flannel or other suitable fabric, and suspended from the neck to protect the chest and give support to the shirt-bosom.

Claim.—As a new article of manufacture, the combined chest-protector and shirt-front supporter, constructed substantially as and for the purpose described.

142,367.—Rudder for Vessels.—JUAN B. BAPTISTA, New York, N. Y. Application filed July 5, 1873.

Claim.—The improved rudder formed of the plates A A attached to the cross-bars B, which are secured near their middle to opposite sides of the shaft C, so as to leave spaces for the passage of water, as and for the purpose specified.

142,368.—Machine for Turning Wagon-Axles.—GEORGE A. BOLSER, Indianapolis, Ind. Application filed June 21, 1873.

The cutting-tools revolve around the axle to be turned, and are guided by a pattern, which revolves on its own axis and also about the axle.

Claim.—1. The cutter feed-screw and pattern arranged to revolve around the work, and the pattern to revolve on its own axis, in combination with holders for the axle, substantially as specified.

2. The cutter-bar S, rod Q, spring X, and pattern T, combined and arranged substantially as specified.

3. The clamp-nut A', spring C', feed-screw F, intermediate piece B', and the cutter-bar S, combined substantially as specified.

4. The tube J, pulley K, face-plate L, feed-screw P, pattern T, wheel U, wheel V, stationary wheel E', wheel D', and the cutter-bar, combined and arranged substantially as specified.

5. The combination of the adjusting holder-piece K', clamp-screw R, lever F, and the center H with the tool and pattern, arranged and operating substantially as specified.

142,369.—Boot-Crimping Block.—HENRY BOWMAN and DENNIS SULLIVAN, Virginia City, Nev. Application filed April 5, 1873.

Claim.—The leg-block A, and vamp or foot-block B united by the joint *d e*, in combination with the screw *f* passing through the block A, and whose free end presses against the plate *e*, operating on the plate at different distances from the joint as the foot-block is raised, substantially as and for the purpose described.

142,370.—Picture and Card Exhibitor.—BENJAMIN F. BOSTIAN, New Columbia, Pa. Application filed July 22, 1873.

Movable plates or mounts, each holding several pictures, are arranged in the frame so as to be lifted healthy by one lever and let down singly by another, whereby the several series of pictures are exposed to view in succession.

Claim.—1. The box-frame A B with a series of movable plates, D D, inclosed therein, all constructed and arranged substantially as and for the purpose herein set forth.

2. The lever G and hooked bar E, arranged, in combination with the frame A B and plates D D, substantially as and for the purposes herein set forth.

3. The bar or pawl H, with spring *d*, rod *d*, and elbow-lever I, arranged, in combination with the plates D D and their projections *b b*, substantially as and for the purposes herein set forth.

4. The combination of the frame A B, plates D D with projections *b b*, hooked bar E, lever G, spring-pawl H, and elbow-lever I, all constructed and arranged substantially as and for the purposes herein set forth.

142,371.—Heat-Regulator.—HENRY BOYLE, London, England. Application filed May 5, 1873.

Mercury in a siphon shuts off heat by its expansion and overflow.

Claim.—1. The combination of the movable or pivoted tray for the lamps or burners with the automatic mercurial or heat regulator, substantially as shown and described, whereby said tray may be operated to vary the degree of heat transmitted to the regulating apparatus, as specified.

2. The direct siphon-tube *b b*, and connecting directly with vessel *a*, the vibrating tube *c* connected therewith, the springs *z*, and guide and stop *r*, all combined and arranged as shown and described.

142,372.—Machine for Rolling Round Tapered Bars.—CHARLES F. BROWN, Bristol, R. I. Application filed July 26, 1873.

Claim.—A machine with two disks, having cam or eccentric faces revolving in opposite directions on a central arbor or spindle, and beveled in such manner as to roll or straighten a taper-spindle or other article, substantially in the manner described.

142,373.—Loom-Shuttle.—JOSEPH BROWN, Brooklyn, E. D., N. Y. Application filed June 26, 1873.

The revolving bobbin of a "narrow-ware" shuttle is fitted upon a perpendicular hollow hub by means of tension-springs. For taking up the slack of the thread the hub is provided with a velute spring acting against the pull caused by the shuttle movement, the hub being held in position when the spring is wound up, but rotating back when the slack is sufficient to allow it.

Claim.—The combination of the bobbin A, hub B, and springs C D, all arranged and operating as and for the purpose described.

142,374.—Stopping Mechanism for Doubling and Twisting Machines.—WILLIAM COCKCROFT and REUBEN ACKROYD, Chester, Pa., assignors to themselves and JAMES MAHEW, same place. Application filed July 26, 1873.

For stopping the delivery of the strands when a break occurs the arrangement is such that the winding-spindle may be revolved to take up any slack between itself and the delivery-roll, and raise the weighted lever from engagement with the pins before the delivery-roll can turn to draw more strands from the spool.

Claim.—The combination, with the twisting-spindle D, and delivery-roll A, spindle E, pulley F provided with studs *P* on its upper side, and the pivoted weighted lever Q, of the pulley K, pinion J, gear I, drums H N, and belts G L, all constructed, arranged, and operating as shown and described, for the purpose specified.

142,375.—Brick-Machine.—PETER K. DEDERICK, Albany, N. Y. Application filed December 21, 1872.

Has a horizontal mixing-shaft, on which are parallel, oblique, and spirally-arranged blades, and oblique vanes, by which the clay is mixed and discharged into a press-box, and a tripping device, whereby the action on the mold can be suspended in case of obstruction or undue resistance.

Claim.—1. The combination, in a brick-machine, of a mixer having apertures V, bread arms W obliqued to axis of shaft, arms X parallel to said axis, oblique vanes Y, and spirally-arranged blades Z, with a press-box, R, arranged as described.

2. The loose-weighted latch L and hinged bar M combined with parts G H, as and for the purpose described.

142,376.—Revolving Fire-Arm.—BENJAMIN K. DORWART, Rockland, assignor to himself and IRA C. WINDSOR, Coventry, R. I. Application filed July 5, 1873.

Cartridges are pushed through the cylinder into the barrel before ignition by means of the reciprocating brush-block, operated by a slide beneath the stock through links and arms, and the cylinder is independently rotated by a hand-lever for convenience in loading, the hand-lever operating also as a gate to the passage for removing the cartridges.

Claim.—1. The bar K, slide J, bars N, rock-levers O, and link P, constructed and relatively arranged as described, to operate the pusher.

2. The oscillating lever V that actuates clutch-spring connected through links and swinging arms O to the pusher-operating mechanism, substantially as specified.

3. The gate *c'*, handle C, and ratchet mechanism combined with the cylinder, in the manner and for the purpose described.

142,377.—Spring Bed-Bottom.—CHARLES H. DUSKA, New York, N. Y. Application filed June 7, 1873.

Spiral springs are combined on a double-parallel line of cordage stretched on each supporting-bar. Along the top of each row of springs there is a strip of steel, on which the slats lie, two sustained by each spring.

Claim.—The combination in a bed-bottom, with longitudinal slats D, of transverse plate-springs C, supported upon coiled springs B, arranged between the slats, as and for the purpose described.

142,378.—Bridge.—JAMES B. EADS, St. Louis, Mo.—Case A. Application filed March 19, 1873.

The arches are composed of flexibly-jointed sections, and are united with the girders at their centers to give the latter rigid central support. Vertical struts extend from the girders to the flexible joints of the arches to brace the arches against vertical strains. The base is broadened by expansion toward the abutments.

Claim.—1. The combination of the horizontal girder G with an upright flexible-jointed arch, giving mutual support, substantially in the manner and for the purpose set forth.

2. The bridge-arch consisting of arches A A', expanding toward the abutments, substantially as and for the purpose set forth.

142,379.—Iron Bridge.—JAMES B. EADS, St. Louis, Mo.—Case B. Application filed March 19, 1873.

The arches and trusses are built out from the abutments in skeleton sections, and are supported therefrom by guys until they are joined in the center. The arch, when first thrown across, is but a small portion of the complete structure, but is afterward added to. The sections are formed so as to be expanded to their proper position either by screw or hydrostatic pressure. The curve can be raised from the center in this manner. Each additional member is expanded to place as it is put in position.

Claim.—1. The construction of a complete skeleton span of a trussed arch, constituting a part of the proposed bridge, when the arch and truss are built out together from the piers and abutments, substantially as described, to form the support for the remaining arches and trusses of the span.

2. The combination of expanding voussoirs with the arches of bridges, substantially as described, for the purpose of bringing such arches to their proper height, and to enable each arch in a lateral series composing a span to be extended to its proper length, which will insure its bearing its contemplated share of the load.

142,380.—Iron Bridge.—JAMES B. EADS, St. Louis, Mo. Application filed April 16, 1873.

Each arch of the bridge is composed of two sections or "half-ribs," which, with skeleton girders, are constructed on the shore or bank, and connected with the abutments by hinges, so that they can be swung around and connected to each other at the center, after which the several arches are connected by transverse and diagonal ties and braces, and the structure completed.

Claim.—1. The combination of bridge-piers, abutments, towers, or vertical struts, with half spans or ribs of a bridge and hinge or pivoted connections to connect the same together, for the purpose of facilitating the construction of the bridge by enabling the half-ribs to be swung around in detail and joined to corresponding half-ribs forming the other half of the span, substantially in the manner set forth.

2. The combination of two independent half-span girders with an arch pivoted at the center for the purpose of preserving the form of the arch when unequally loaded.

142,381.—Iron Bridge.—JAMES B. EADS, St. Louis, Mo. Application filed June 11, 1873.

Claim.—1. The within-described method of trussing or stiffening the upright arches of a bridge by securing to each arch of the bridge, by suitable vertical bracing, two inverted counter-arches of half the span, the inner ends of the counter-arches being fastened at the center of the main arch and their outer ends secured to the ends of the main arch at or near the abutments, in such manner as to enable the counter-arches to resist tensile and compressive strains in the direction of said counter-arches.

2. The bridge-pier composed of columns E E, inclined and joined together in pairs, the planes of said pairs being located in the line of or parallel with the thrust of the arch.

142,382.—Iron-Bridge Foundation.—JAMES B. EADS, St. Louis, Mo. Application filed May 14, 1873.

The abutments and piers of arched bridges are formed of iron pillars, anchor-plates, and braces, secured and embedded in masonry, the several parts being so connected and arranged as to oppose the entire weight of the abutment or pier to any horizontal force in the direction of the thrust of the arch. The projecting collars *c*, cast on the pillars and braces, are for the purpose of giving them a firm hold on the masonry in which they are embedded.

Claim.—1. The combination of the pillars C, diagonal braces F, connecting-straps G, and anchor-plates E, for the purposes described, and substantially as shown in the drawings, Figs. 1 and 2.

2. The arched rib H, pillar C, and diagonal F, connected together at *h*, in the manner herein shown and described.

3. The collars *c* on the pillars and diagonals, substantially as described, and for the purpose set forth.

4. The combination of the pillars C and diagonals F, substantially as and for the purpose set forth.

142,383.—Cut-Off Nozzle for Drawing Liquors.—FRANCIS C. E. WARDE, Chicago, Ill. Application filed June 30, 1873.

To a screw-threaded nozzle, provided with a shut-off, is attached, at the end which screws into the head of the barrel, a bent tube reaching to the side of the barrel, and at the outer end a coupler, by which it may be connected either to an ordinary faucet or to one of the several branches of the suction-tube of the pump.

Claim.—1. The bent pipe F, in combination with the nozzle B, constructed substantially as described, and provided with a shut-off, for the purposes set forth.

2. The combination and arrangement of the bent pipe F, nozzle B, constructed substantially as described, and provided with a shut-off, coupler D, and faucet E, all substantially as specified, and for the purposes set forth.

3. In combination, the bent pipe F, nozzle B provided with a shut-off, coupler D, tube H provided with a nozzle, branches I I, each provided with a shut-off, and the pipes K K, all arranged substantially as specified, and for the purposes set forth.

4. In combination, the bent pipe F, nozzle B provided with a shut-off, coupler D, pump G, branched tube H provided with stop-cocks, and with the pipes K K, all arranged substantially as specified, and for the purposes set forth.

142,384.—Harness-Maker's Clamp.—DANIEL EGGERS, Chicago, Ill. Application filed July 19, 1873.

Claim.—1. A clamping-machine constructed substantially as shown and described—that is, having a stand, B, jaws C C, opening-spring I, band G, springs N N, cross-head J, connecting-bar L, and foot-lever K, combined and arranged substantially as set forth.

2. A clamp as constructed that the jaws are opened by an upward movement thereof, and closed by a downward movement, substantially as and for the purposes shown and described.

142,385.—Steam-Lubricator.—REED A. WILKES, Cheshire, Mass. Application filed June 21, 1873.

The oil-holder has a hollow stem, conically-shaped at the lower end, screwing into a hollow standard on the steam-chest or journal-box, which has a conical projection extending upward, by means of which the flow of oil is regulated. The notched ring shows the extent of oil fed, and the spring-click holds the oil-holder in any position in which it is set.

Claim.—1. The combination of the oil-holder A and hollow standard C with the socket-stand E and the conical plug F, said standard C having a bell-mouth, D, and arranged to vary the opening of it, substantially as specified.

2. The chamber L in the stand E, and tubular extension M of the passage M, substantially as specified.

3. The escape-passage for condensed steam, arranged with the socket G and a cock or valve thereafter, said cock or valve being arranged to close the passage K or not, substantially as specified.

4. The combination of the notched ring H and spring-click I, substantially as specified.

142,386.—Piano-Truck.—CHARLES A. FRENCH, Davenport, Iowa. Application filed April 19, 1873.

The trucks are secured to the frame by means of adjustable braces, which allow them to be raised or lowered to correspond with the stairs.

Claim.—The trucks B B', in combination with the sliding braces C C, hinged to the bed A, for adjusting the trucks for the variation of different stairs, substantially as described.

142,387.—Combined Wardrobe, Bedstead, Chair, and Table.—WALKER GETCHELL, Bath, Me. Application filed February 15, 1873.

The front of the case, when detached, forms a table, the legs being folded on the inside. The top of the case, when detached, forms an independent chair, having a cushion to its back that slides down when the seat is folded down, so that the cushion will be out of the way when used as a cover. The case or cabinet can be opened also in sections, so as to form an invalid-chair or a lounge, and operated by means of jointed arms, cords, and a roller and crank.

Claim.—1. A cabinet comprising the table A B C, chair F G H, bed K L J O, and the wardrobe arranged in one article, substantially in the manner herein described.

2. The arrangement of the chair-back E and sides H, by which they comprise the said parts of the chair and the cover of the cabinet, substantially as specified.

3. The arrangement of the cushion H' and the seat F of the chair with the back, and each other to shift the cushion along the back, substantially as specified.

4. The arrangement of the sections K, L, J, and O of the bed, together with the parts A, B, and M of the cabinet, substantially as specified.

5. The combination of the head-piece O and jointed arms Q V with the sections K L and the case, substantially as specified.

6. The combination of the roller S with holding devices, and the cords R with the jointed arms Q and head-piece O, substantially as specified.

7. The detachable triangular pieces *d* combined with the sections K L of the bed, substantially as specified.

8. The combination of the detachable pieces *e* with the section L and the sides of the part M of the cabinet, substantially as specified.

142,388.—Hose-Coupling.—GEORGE S. GOBLE, St. Louis, Mo. Application filed June 24, 1873.

A piece of metallic pipe is inserted in the ends of the hose, to give them interior support against the pressure of the hinged sleeve or clamp, consisting of two semi-cylindrical pieces having interior ribs, and connected by hinges and compressed upon the hose by a wedge driven into a slotted lug upon the hose-clamp.

Claim.—The non-elastic hose-coupling consisting of the pipe A and the clamp D E G *g* H I (, made substantially as proposed, in combination with the hose B C, as set forth.

142,389.—Harvester-Reel.—CHARLES F. GODDARD, St. Anegar, Iowa. Application filed July 12, 1873.

The bonter-arms of the reel are changed from a parallel to an angular position with the reel-shaft by means of crank-arms connecting them to a sliding disk placed within recessed collars, connecting the adjacent ends of the divided shaft.

Claim.—1. The shaft A, made in two parts, provided with recessed flanged collars B, the grooved disk D, the rod E, and the lever F, in combination with each other and with the bent inner ends of the reel-arms C, substantially as herein shown and described.

2. The jointed reel-bars G and the connecting-rods H, in combination with the reel-arms C, hollow shaft A, made in two parts, one of which is hollow, provided with recessed flanged collars B, the grooved disk D, the rod E, and the lever F, substantially as herein shown and described.

142,390.—Saw-Tooth Gage.—CYRUS B. GRAMBY, Stafford Springs, Conn. Application filed June 7, 1873.

The sweep, composed of two parts adjustable longitudinally, one within the other, is centered and clamped to the saw-arbor, and is adjustable in relation to the saw by means of a tangent-adjusting-screw, and cross-arm. The cross-arm revolves in the sweep at an angle of ninety degrees, and has on each end two gages, (one to gage the front of the teeth and the other to gage the set of the teeth,) and on the other end a swage-holder.

Claim.—1. The spring-arms G and center screw I, combined with the sweep D E, the grooved collar, and the center socket in the saw-arbor, substantially as specified.

2. The combination, in a saw-tooth gage, of the templet O, adjusting-pin N, and adjusting-gage arm P, substantially as specified.

3. The combination of the saw-gage arm arranged in the sweep to revolve, the set-gage R on one side, and the angle and rounding gage T on the other side, substantially as specified.

4. The combination, with the sweep and gage-arm, of the angle and rounding gage plate T, arranged to shift so as to gage different and opposite angles, and provided with the scale W, substantially as specified.

5. A swage or upsetting-tool holder, Y, combined with the gage-arm, substantially as specified.

142,391.—Spring Bed-Bottom.—EGBERT B. HILL and EDGAR VAN VALKENBURG, Grand Rapids, Mich. Application filed March 7, 1873.

A wire-brace is inserted through, in, or attached to the under longitudinal bars, crossed, and extended to the transverse bars at the outer ends, to which it is made fast.

Claim.—The cross-wire brace E, in combination with the end pieces A and side bottom pieces B, when constructed and arranged substantially as and for the purposes herein set forth.

142,392.—Spring-Hinge.—WILLIAM HOAR, Floyd, Iowa. Application filed July 12, 1872.

To one leaf of the ordinary strap-hinge is attached a downwardly-projecting standard, the end of which drawn out into a rod, and, turned upward, forms a pintle-extension, which is encircled with a spiral spring attached at one end to the standard, and at the other to the hinge, near its lower knuckle.

Claim.—The standard B, attached to one leaf of the hinge, and provided with the pintle-extension *a*, encircled by the spring C, connected at its ends with both hinge and standard, all as shown and described.

142,393.—Corpse-Cooler.—JOHN HOFFMAN, Toledo, Ohio. Application filed April 19, 1873.

Air passes through tubes in a cooling-chamber into the casket at one end, and out at the other end through a tube. The apertures of the projecting tubes of the casket are covered with wire-gauze. If the cooler is not used the projecting tubes are closed by screw-caps or by valves.

Claim.—1. The casket A, having apertures *a b*, with wire-gauze *d e* and projecting connection-tubes, substantially as described.

2. The combination of casket A with cooler B, having coil E and pipes A, and tubes C, for cooling and ventilating the interior of the casket, substantially as and for the purpose described.

142,394.—Projectile.—JAMES G. HOPE, Wichita, Kans. Application filed April 19, 1873.

Projectile having bent or inclined tail, to cause it to describe other than a natural curved line, is provided with vanes at right angles with said tail to prevent rotation and gyrations during flight.

Claim.—An improved projectile for straight-grooved rifles, formed of a ball, A, having a stem, B, provided with the wings D D parallel to its axis, and with the wings C oblique thereto, and secured to its flat beveled end, as shown and described, whereby said ball is prevented from turning on its axis, but at the same time guided in a curve of greater or less radius, as specified.

142,395.—Car-Coupling.—FRANKLIN E. HOWARD, Genesee, N. Y. Application filed June 26, 1873.

One draw-head has a cavity similar to ordinary draw-heads, and is slotted to receive a coupling-block, which is operated by suitable levers and chains. The other draw-head consists of a bar recessed on its upper side, and having a block bolted to it near its front end, to engage with the sliding block in the opposing draw-head. Provision is made for the use of the ordinary link, the angle-bar on the draw-head serving to prevent the link from being jolted over the projection on its upper face.

Claim.—1. The draw-heads A B and the coupling-blocks C and D, constructed and arranged to operate in connection with each other, substantially as herein shown and described.

2. The combination of the chain I, roller J, and levers H K L

L with the draw-head A and coupling-block C, substantially as herein shown and described.

2. The right-angled bar H, in combination with the draw-head B and coupling-block C, to adapt them to receive an ordinary coupling-link, substantially as herein shown and described.

142,396.—Breech-Loading Fire-Arm.—DANIEL HUG, New York, N. Y., assignor to himself and WILLIAM H. SEIBS, Jersey City, N. J. Application filed January 6, 1873.

Claim.—The pivoted breech-block, having the spring-hook connected therewith and the cartridge-extractor arranged centrally beneath the barrel, combined as shown, to extract cartridges and throw them clear of the gun, as well as support the new one, in the manner described.

142,397.—Heater and Blower.—WILLIAM M. JACKSON, Woodland, Cal. Application filed February 26, 1873.

A fan-blower is arranged within a heater consisting of coiled plates arranged to form two passages; one receives at its inner end, from the fan, a current of air, which is discharged at its outer end into the furnace or fire-place; the other passage receives exhaust-steam from the engine, and this passes around the coil, imparting its heat to the air. The steam may be condensed in the last turn of the passage and used as feed-water.

Claim.—The coiled plates A, forming the passages G H, in combination with the internal blower D, all constructed, arranged, and operating as set forth.

142,398.—Compound Metal-Working Machine.—GEORGE L. JONES, Vanville, Wis. Application filed June 14, 1873.

An eccentric to operate a pair of toggle-levers, one of which carries a movable shear, and the other a carriage, to which is attached the movable part of the tire-shrinking apparatus and the punch. The tire-bending apparatus operates independently, and is attached to the front of the frame of the machine.

Claim.—The blacksmith's combination-tool for cutting and punching iron parts, tightening and bending tires, &c., consisting of frame A, with standards B, eccentric C, lever D, knee-joint lever E F, cutter F, carriage G, with punches A and socket H, standard G', blocks I I', plate L, and rollers O O' O², substantially as described.

142,399.—Reed-Organ.—WILLIAM J. KENT, Buffalo, N. Y. Application filed May 3, 1873.

The wind-chest top, instead of being screwed down, as usual, is held securely in place by clamps hinged to the wind-chest. The bellows are divided and arranged at the sides of the case, and they are provided with novel means for blowing them by the hand of an assistant.

Claim.—1. In a reed-organ, the two vertical bellows B B, in combination with the treadles C C, the straps *a a*, and springs *b b*, or their equivalents, when such parts are arranged to operate as and for the purposes specified.

2. In a reed-organ, the disk-wheel D, lever E, and straps *d d*, for blowing the bellows independently, and arranged to operate substantially in the manner specified.

3. In that class of reed-organs operated by an exhaust, the hinged top of the wind-chest or cover G, in combination with the swinging clamps *g g*, the thumb-screws A A to fasten and unfasten said top, substantially in the manner specified.

142,400.—Windmill.—OWEN B. KNAPP, Brandon, Wis. Application filed April 26, 1873.

The turn-table is supported on and secured to a bevel-gear, which meshes with a pinion on a shaft provided with a pulley. A belt connects the pulley with a pulley secured to the tower. To the last-named pulley is attached a notched disk, from which a weight is suspended to bring the wheel into the wind. The tendency of the weight to hold the wheel into the wind is made to increase as the wind presses the side vane back.

Claim.—The combination, with the wheel A, turn-table C, and vane I, of the gear I, pinion K, belt H, pulleys, notched disk N, and weight K, as shown and described, to operate as specified.

142,401.—Loom-Stopping Mechanism.—LUCIUS J. KENDALL, Worcester, Mass. Application filed June 17, 1873.

The shipping-lever at its lower end terminates in a rack, which takes into a gear on a crank-wheel to which is pivoted the shipping-fork lever, which lever is carried forward to ship the belt by the direct action of the shipping-lever, and also by a spring operating on the swinging arm to which it is attached. The crank-wheel has a stop-pin so arranged on its face as to strike the fork-rod, and, when in contact with it, to hold the shipper-lever in its forward position. The shipper-lever is actuated positively, through the whole movement, by a knocking-off lever loosely pivoted within a grooved bracket under the breast-beam, and having a curved side bearing against the side of the groove, so that when acted upon by the finger on the lay its fulcrum is shifted, and, thereby, the movement of the shipper-lever is accelerated. In place of a crank-wheel a crank may be used.

Claim.—1. The combination, with the shipper-lever E and rod K, of rack *f* upon the end of the shipper-lever, gear *g*, and wheel A, substantially as and for the purposes set forth.

2. The combination, with the shipper-lever E, bell-arm L, rod K, rack *f*, gear *g*, and wheel A, of pin *i*, spring *k*, and hinged arm J, substantially as and for the purposes set forth.

3. The combination, with bell-arm L and rod K, of wheel A, or its described equivalent, provided with a stop-pin, substantially as and for the purposes set forth.

4. The combination of the loosely-pivoted knocking-off lever *c*, having its side curved with the grooved bracket *d* on the loom-frame, shipper-lever, and dog *e*, substantially as and for the purpose set forth.

142,402.—Machinery for Crimping Boot and Shoe Uppers.—ALISON KNOWLTON, Boston, Mass., assignor to KNOWLTON & JAMES, same place. Application filed June 7, 1873.

The clamps receive and crimp the leather under the press, and are then removed and put aside to allow it to set while still held upon the form.

Claim.—The herein-described crimping implement or clamp, consisting of the parallel wooden bars A, united by pressure, and adjusting-bolts B, one at each end of the bars, and provided on their contiguous faces, between said bolts, with pressure-pads C, the whole constructed and arranged as shown and set forth, and adapted for use with a former or shaping-plate, D, of any suitable configuration, as specified.

142,403.—Punching-Machine.—JOSEPH M. LAUGHLIN, Boston, Mass. Application filed November 18, 1872.

To prevent the metal from spreading, and to hold it in place during the punching operation, the presser-foot on one side of the punch are provided with lips or projections, against which the edge of the metal abuts.

Claim.—In combination with the stock-holder *g f f* and the spring *d*, the lip *i*, one or more, for the purpose as herein set forth and described.

142,404.—Movable Cloth-Plate for Sewing-Machines.—ROBERT L. LEECH, Winterset, Iowa. Application filed July 14, 1873.

The levers are disengaged from the posts through the thumb-piece.

Claim.—The movable cloth-plate A connected with the corner-posts *a* by means of the pins *b*, levers *c*, spring *d*, and thumb-piece *f*, substantially as described, and for the purposes specified.

142,405.—Letter-Envelope.—JOHN D. MCANULTY, Brooklyn, N. Y. Application filed May 17, 1873.

Flaps so shaped that by folding the tongue, inserting it into the slit, and then unfolding it, a lock is formed.

Claim.—An envelope having T-slit A in one flap and tapered tongue B in another, to lock in the manner described.

142,406.—Joint for Iron Ships and Tanks.—DANIEL E. MERRICK, Milwaukee, Wis., assignor of one-half his right to J. B. SMITH, same place. Application filed May 8, 1873.

The grooves in the surface of plate B are to be filled with cement.

Claim.—1. A seam or joint of metal made with a strip of metal, B, with a raised tongue, D, in its center riveted to sheets A, and tongue D headed down even with sheets A, and the heads of the rivets countersunk on the smooth side of sheets A, substantially as described.

2. A seam of metal when made with sheets A, strips B, rivets C, and grooves E, all combined substantially as described.

3. A seam or joint of metal when made with sheets A and strips B, one of the strips B running lengthwise of the sheets A, and the other strip B running crosswise of the ends of sheets A, with tongue D headed down even with the surface of sheets A, the strip B running across the ends of sheets A being let into the side of the other strip B, so that its end shall strike tongue D, and both strips B riveted to sheets A, substantially as described.

142,407.—Manufacture of Dies for Punching.—ROBERT J. MULLIN, Providence, R. I., assignor to himself and MICHAEL R. HANLEY, same place. Application filed July 12, 1873.

A tapering hole is first made in a block of wrought-iron, extending nearly but not quite through, and into this is welded a conical steel plug, through which a hole is afterward drilled.

Claim.—The process of manufacturing dies for cold-punching, as herein set forth.

142,408.—Medical Compound.—SELVIN E. PADDOCK, Delaware, Ohio. Application filed August 6, 1873.

Twenty parts of burdock and one part of mandrake root, steeped for fourteen days in alcohol reduced one-fourth with water.

Claim.—The medical compound herein described, composed of the ingredients in substantially the proportions and for the purposes set forth.

142,409.—Fire-Escape Ladder.—WALTER W. PARSONS, Stanstead, Canada. Application filed July 19, 1873.

To confine the rungs to the ropes of the ladder holes are bored for the passage of the rope; a wedge-shaped slit is then made, the end is slightly tapered, and a conical ferrule is driven on, which compresses the wood tightly upon the rope so as to prevent it from slipping. The ferrule is secured by a rivet.

Claim.—The method of fastening the bars to the ropes by the holes E, slits O, and tapering ferrules P, substantially as specified.

142,410.—Auger-Handle.—FRANKLIN B. PEASE, Ontario Centre, N. Y. Application filed June 26, 1873.

The concave clamp *a*, bearing always upon two corners of the bit-shank, forces it solidly against the angular bearing and secures it firmly thereto.

Claim.—The combination of the square shank-receiving openings in the cylinder with the circular-faced clamp *a*, substantially in the manner and for the purposes shown and described.

142,411.—Quilling-Frame.—GILMAN PHILLIPS, Biddeford, Me. Application filed May 14, 1873.

The rollers are adjustable by clamps and thumb-screws working in the slots in the frame.

Claim.—The clamps K K, the slots I I, and rollers E E, all combined and arranged to operate substantially as and for the purposes set forth.

142,412.—Beer-Mall.—WILLIAM M. PRESTON, Roxbury, N. Y. Application filed March 22, 1873.

Two hammers are fixed to the same hub, with suitable stops, forming, in effect, a split hammer, for allowing independent adjustment on either side, the double hammer being designed to strike the inside of the ball on opposite sides, or with a double stroke.

Claim.—The double hammer D, having the two stems and two hammers, the cylinder C, having stop *a*, and base-plate A, provided with the stops *b b*, all constructed and arranged for operation as and for the purpose specified.

142,413.—Subterranean Irrigation.—WILLIAM H. PUGH, Chicago, Ill. Application filed January 9, 1873.

Pipes, the under half being impervious to water, while the upper surface is porous or perforated, are laid, water level, over given areas of cultivated land. Water, liquid-fertilizers, hot air, or steam, are introduced through elevated pipes reaching the surface, the fluid finding a common level and imparting moisture to the earth by absorption.

Claim.—A tile, tube, or pipe, perforated or porous on the upper side, and impervious on the under side, as described in the foregoing specification, or a series of such tiles, tubes, or pipes, said pipes to be made of any material, and of any size, shape, and thickness, and either with or without the dew-tubes D and waste-pipe E, as and for the purposes desired.

142,414.—Lemon-Squeezer.—EDWARD M. SAMMIS, Babylon, N. Y. Application filed July 19, 1873.

The lower part of the squeezer has a cavity in its upper face, in which a knife is arranged in an inclined position. The upper part is provided with a projection or knob, having a slit or notch formed therein, to receive the knife. The upper part has projecting flanges that extend over the lower part when the device is operated.

Claim.—1. The knife D, secured in the cavity of a lemon-squeezer, substantially as herein shown and described.

2. The arrangement of the knife D, in the cavity of a lemon-squeezer, in an inclined position, substantially as herein shown and described.

3. The combination of the notched knob or projection F with the knife D, arranged as specified.

4. The flanges G, in combination with the parts A E of a lemon-squeezer, substantially as herein shown and described, and for the purpose set forth.

142,415.—Check-Hook for Harness-Saddles.—ABRAHAM V. SARGEANT, Newark, N. J. Application filed May 28, 1873.

Claim.—A check-hook, A, provided with a fixed guard, B, which curves outward at the bottom and inward at the upper end, substantially as and for the double purpose herein specified.

142,416.—Boring and Drilling Machine.—JOHN J. SHERIDAN, New York, N. Y. Application filed June 28, 1873.

The drill-shaft slides perpendicularly, and is fed by means of a feed-screw, entering its upper end, which may be adjusted to a slow or rapid feed. The frame is, in shape, a segment of a truncated cone, and its flanged base-plate is adjustably fastened to a flanged table by means of set-screws and bolts. The operative mechanism is two belt-pulleys and two gear-wheels, (either being set on by means of a ratchet-clutch,) to give opposite motions. The cutter is adjustable, for a larger or smaller bore, by means of a pivoted lever working within the stock, one end of which engages with teeth in the upper side of the cutter, and the other works over a swiveled screw.

Claim.—1. The combination of the flanged table A B, flanged base B D, set-screws C and G, and bolts F with each other and with the frame H of the machine, substantially as herein shown and described.

2. The frame H, made in the form of a segment of a truncated cone, and made in two parts, provided at their adjacent ends with flanges I to receive the bolts by which said parts are secured to each other adjustably, substantially as herein shown and described.

3. The combination of the sliding tool-shaft J, the swiveled gear-wheel L, the small gear-wheel M, the gear-wheel and head-pulley Q R, the driving-gear-wheel band and head-pulley T R S, the double clutch W and V, the three-armed clutch-lever X with each other and with the frame H and driving-shaft U, substantially as herein shown and described.

4. The combination of the studs E', cross-bar F', swiveled screw G', gear-wheels H' I', shaft J', gear-wheel M', pin N', and bar O' with the sliding tool-shaft J, frame H, and driving mechanism, substantially as herein shown and described.

5. The combination of the crank P' and pin Q' with the swiveled screw G', the sliding tool-shaft J', and gear-wheel L, substantially as herein shown and described.

6. The tubular piece E', the pivoted lever S', the swiveled screw T', the notched cutter U', and the set-screw V', in combination with each other and with the sliding tool-shaft J, substantially as herein shown and described.

142,417.—Harvester-Cutter.—WILLIAM E. SHEARER, Sherburne Four Corners, N. Y. Application filed July 16, 1873.

The cutters are made to oscillate on a pivot at the rear end of their shanks by means of pins on the reciprocating cutter-bar, fitting in slots in the shanks. The cutters are held down by clamps on the shanks, fitting in grooves in the finger-bar. The grooves are notched at the ends, so that the cutters may be removed, when desired, without detaching pins or screws.

Claim.—1. The combination, with the recesses in bars of fingers A and the headed pins G set in the finger-bar B, of the shanks F of the cutters, provided with a curved flange at their forward ends and a rabbeted notch at their rear ends, as shown and described.

2. The curved flange formed upon the forward end of the shanks F, in combination with the curved, grooved, and notched recess formed in the base of the fingers A at the forward side of the groove in the finger-bar B, substantially as herein shown and described.

142,418.—Combined Chair and Secretary.—GEORGE C. TAYLOR, Thibodeaux, La. Application filed July 16, 1873.

The arm-chair and secretary are both made on one frame, and the secretary is provided with folding leaves on top, and drawers and pigeon-holes in the body thereof, and the chair has drawers underneath the seat.

Claim.—The combined chair and secretary, consisting of arm-chair A, case B, table D, portfolio F, and drawers *d f*, and *g*, arranged and constructed substantially as and for the purpose described.

142,419.—Manufacture of White Lead to Collect the Dust.—MICAIAH TOLLE, St. Louis, Mo. Application filed July 19, 1873.

The spout from the separator conveys the mixture of dust and non-corroded lead to a tank, where the dust is precipitated.

Claim.—The apparatus for utilizing the lead-dust generated in white-lead factories by the separation of the corroded from the uncorroded lead, consisting of tank A, elevator B, with troughs B E', and spout F, constructed and arranged substantially as and for the purpose described.

142,420.—Machine for Making Window-Sash.—JAMES TRAVERS, Roslyn, N. Y. Application filed August 16, 1873.

Sash-stuff, by this template, is fed to a circular saw, whereby the various joints in the stiles and rails are cut without "laying off."

Claim.—1. The guide A, for sawing the dovetails of the stiles and rails of window-sashes, substantially as shown and described.

2. The strip B, in combination with the guide A, as and for the purpose described.

142,421.—Method of Securing Letters to Stone.—JOHN VENERALI, Boston, Mass. Application filed March 21, 1873.

Letters, of metal or other plastic material, are secured in recesses of the same shape cut into stone, by first drilling oblique holes in the bottoms of these cavities, and then driving the letters into the cavities. The outer surface is then smoothed and finished.

Claim.—The method of securing letters to marble or stone surfaces by making them of a plastic metal or material and driving them into corresponding cavities in the marble, so as to fill oblique holes in the bottoms thereof, substantially as and for the purpose herein specified.

142,422.—Fire-Proof Building.—JOSEPH H. WALKER, Worcester, Mass. Application filed June 13, 1873.

Claim.—A fire-proof building constructed substantially as herein described—that is to say, with double walls, leaving a space between them, and recesses from top to bottom of the house, and partially divided by horizontal partitions, provided with overflow-partitions *e f g*, &c., combined with a reservoir on the top of the house, supplied with water from a convenient source, and arranged to communicate with said space formed between the walls of the house, valves for regulating the supply of water, and drain-pipes, being also provided, the whole under the arrangement substantially as shown and set forth.

142,423.—Cards for Social Games.—PEMBURY WEST and GEORGE S. LEE, Worcester, Mass. Application filed May 24, 1873.

Claim.—A pack of cards composed of a series of pairs or companion cards, one of each pair having a picture representing some natural or other object with its name, while the other contains a brief description of said object, substantially as shown and described.

142,424.—Boot.—PEMBURY WEST and GEORGE S. LEE, Worcester, Mass. Application filed June 20, 1873.

Claim.—A boot, the side seams of which are closed upon the outer side, and formed by means of metal fastenings, substantially as shown and described.

142,425.—Lamp.—JOHN C. WHARTON, Nashville, Tenn. Application filed February 6, 1873.

A column of water is maintained between the small quantity of oil at the burner and the flame. A plug closes the orifice in the bottom of the flame, when the same is inverted after filling, for the purpose of adjustment. The stem of this plug works

through the vent-tube, which reaches nearly to the bottom of the flask.

Claim.—1. The combination of the oil-reservoir E, having vent-tube T, the nozzle N, pipes I H C, and the water-reservoir A having burner B on top thereof, as and for the purpose described.

2. The ping G and cap Q, applied in connection with the reservoir E, as and for the purpose specified.

142,426.—Coal-Breaker.—RUFUS A. WILDER, Cressona, Pa. Application filed October 26, 1872.

Consists in casting teeth on both sides of a rack-plate composing the cylindrical breaker, so that the plate can be reversed and used on the other side when the teeth on one side are worn.

Claim.—The cylinder sections or plates d, provided with teeth e, projecting on opposite sides and made reversible, as and for the purpose specified.

142,427.—Apparatus for Combing and Mixing Tampico and Bristles.—GEORGE WILLETT, Burlington, assignor to ENOCH B. WARTINE, St. Albans, Vt. Application filed June 7, 1873.

The mixed stock is laid on endless carrier-belts just in front of the endless-chain holders, and spread and mixed as evenly as possible. The stock is so presented to the holders that about one-half of its length projects from the side as it is carried along past a comb that combs out said projecting portions. Two of the movable holders and combs are arranged in one machine in connection with carrier-belts that take the partly-combed stock from the first holders and reverse it and transfer it to the second holders, so that the uncombed portion is presented to the second comb to be completed by it.

Claim.—1. The combination described of rolls B, endless chain-holders A, and guides D to hold the stock in position while the projecting portion is combed.

2. The combination of two endless feed-belts, I J, the belt I passing between rolls B, but the belt J passing over a roll, K, to cause a part of the stock to project over the side of holders, in the manner set forth.

3. The vertical pulleys Q, belts O P, and horizontal pulleys R Z, combined to receive and reverse the stock in the manner specified.

142,428.—Process for Preserving Beer.—ANTON ADAMITZ, New York, N. Y. Application filed August 15, 1873.

Claim.—The process herein described for purifying the atmosphere before its entrance into a beer-barrel or other vessel, by causing the same to pass through lime-juice, in the manner substantially as herein shown and described.

142,429.—Set-Up Device for Knitting-Machines.—HORACE L. ARNOLD, Ottawa, Ill. Application filed February 19, 1873.

The controlling-plate, while it allows sufficient movement to the hooks to pass down inside the cylinder, prevents them being bent out of proper position.

Claim.—The several hooks, arranged in the form of an inverted cone, and secured at their bases in and to the cup *a*, in combination with the slotted controlling-plate B and the weight-eye, substantially as described.

142,430.—Needle-Threader for Sewing-Machines.—CHARLES T. BEARDSLEY, Ansonia, Conn., assignor to himself and GEORGE O. CATLIN, same place. Application filed May 28, 1873.

A pair of jaws th clamp the needle on opposite sides.

Claim.—The combination of the two arms A D E D and connecting-spring C for closing them, one arm being provided with the block E grooved vertically to receive the needle and horizontally to guide the thread, and the other arm with the auxiliary arm F having a point in line with the groove for guiding the thread, all constructed and operating as described.

142,431.—Sash-Fastener.—GEORGE W. BISHOP, Saratoga Springs, N. Y., assignor of one-half his right to L. E. WHITING, same place.—Case C. Application filed April 12, 1873.

A hinged dog cast with the plate, to dispense with hinge-pin, and operated by a spring, is seated in a recess of the window-frame. A flat curved arm pivoted to the toe of the dog acts as a double latch, being curved upward and forward and extending through a slot in the catch-plate, which is let into the face of the sash-strip. This arm is notched, and has a head or thumb-piece so constructed as to engage with an angular recess or indentation in the catch-plate, thus serving to hold it securely in place, whether the dog is locked in its sash or disengaged.

Claim.—The sash-lock consisting of the hinged dog D, the slotted catch-plate G, and the curved double latch F pivoted to the dog, and passing through the slot of the catch-plate, substantially as specified.

142,432.—Lamp.—WILLIAM S. BLANDELL and CHARLES K. YOUNG, Factory Point, Vt. Application filed July 26, 1873.

The lamp has two concentric cylindrical chimneys and a base closing the space between the lower end of the outer chimney and the lamp-collar. A perforated cap fits upon both chimneys by downward flanges. The air which feeds the flame must pass into the perforations of the cap downward between the chimneys, and under the inner chimney to the flame.

Claim.—The combination of the exterior and interior chimneys C B, closed base D, and cap G, arranged to fit on both chimneys by downward-projecting flanges, substantially as and for the purpose set forth.

142,433.—Apparatus for Propelling Street-Cars by Compressed Air.—WILLIAM H. H. BOWERS, Franklin, Ky. Application filed July 30, 1873.

The tanks are divided into compartments which communicate with each other and with the working cylinder through check-valves. The working cylinder has a pressure-valve which connects with the valve in the supply-pipe.

Claim.—1. The tanks or cylinders A and B, arranged, as described, in compartments, and provided with valves and pipes, substantially as and for the purposes herein set forth.

2. The combination of the supply-tanks A B and working-tank C, constructed, arranged, and connected together substantially as and for the purposes herein set forth.

142,434.—Rivet-Setting Machine.—MYRON D. BROOKS, Boston, Mass. Application filed August 1, 1873.

Mechanism designed to hold a hollow rivet, carrying it forward and inserting it in the material to be riveted, when it is simultaneously released by the clamps, and headed upon the work by the action of the plunger and anvil.

Claim.—1. In a machine for setting rivets, the combination of a reciprocating plunger for heading or clinching the rivet and a pair of clamping-jaws connected therewith, and arranged to reciprocate with said plunger during a portion of its stroke, and to move laterally to clamp the rivet and guide it to the work and release it again at the proper time when said motions are imparted to said jaws by the reciprocating plunger, substantially as described.

2. In combination with the reciprocating plunger of a rivet-setting machine, a pair of clamping-jaws, *b b*, provided with hooks at their upper ends, the shoulders *g* and A, and a cam-shaped surface between said shoulders upon their outer edges, to be acted upon by the pins *i i*, to limit their endwise motion, and impart thereto the desired lateral motion to clamp and release the rivet, or their mechanical equivalents, substantially as described.

3. The combination of the plunger C, provided with the pins *f*, with the clamping-jaws *b b*, provided with the shoulders *g* and *e*, or their equivalents, arranged and operating as described, for the purpose specified.

142,435.—Billiard-Table Cushion.—JOHN E. CAME, Boston, Mass. Application filed May 13, 1873.

The embedded wire or band has a fibrous covering previously woven tight about it. Upon being then placed in the cushion-mold and the cushion vulcanized, the wire and covering adhere perfectly to the cushion, and the irregularity of action due to unequal separation of wire or band from the cushion is avoided.

Claim.—An India-rubber billiard-cushion constructed with an embedded spring-band, *a*, having woven about it a tight and close-fitting fibrous casing or covering, *b*, all substantially as described, for the purpose specified.

142,436.—Windmill.—GEORGE A. CARTER, Princeton, Ill. Application filed July 23, 1873.

A weighted lever is arranged between the hand-lever used for throwing the sails out of the wind and the self-regulating devices, so that the hand-regulating device will in no way interfere with the self-regulating devices when the wheel is in motion.

Claim.—1. The lever N and rod O, when arranged to operate between the governor of a windmill and the hand or automatic furling devices thereof, substantially as described, and for the purpose specified.

2. The adjustable stops *n' n'*, when arranged to operate with the rod O and levers M and N, substantially as described, and for the purpose specified.

142,437.—Machine for Making Horseshoe-Nails.—ALEXANDER H. CARYL, Groton, Mass. Application filed September 25, 1872.

Two vibrating arms, pivoted at their outer ends and operated by a horizontal reciprocating bar, carry dies that operate to spread and bevel the point of a blank fed between them, and at the extremity of the forward movement release the nail, which slides down an inclined chute to a punch and die, where the sides are trimmed and the nail finished.

Claim.—1. In combination with the segmental vibrating dies, the stop *r*, actuated automatically by the die-arm *e* to let a blank into the dies, and automatically assuming its normal position to retain the next blank as the arm moves forward.

2. In combination with the segmental dies *m n*, the stop or gage against which the head of the nail strikes when it enters the dies, and whereby the nails are successively and uniformly held to the same proper position for the action of the dies.

3. In combination with the swinging dies *m n* and the inclined grooved conductor *o*, on which the blank is supported and slides, the punch and die *y z*, arranged in relation to the dies *m n* and operating substantially as shown and described.

142,438.—Strainer for Ship's Bilge-Pumps.—SAMUEL J. CHAPMAN, Baltimore, Md. Application filed August 8, 1873.

A strainer-box, provided with an adjustable door to permit easy cleansing, and with waste-cocks, is placed between two sections of the suction-pipe to catch floating refuse, which would otherwise choke the valves of the pump.

Claim.—The strainer-box A, having the adjustable door E and fastenings, and provided with induction and eduction bilge-ports, separated by a strainer-plate, B, the induction-port being supplied with the valve *a* and guard *b*, substantially as and for the purpose specified.

142,439.—Manufacture of Carpet.—HENRY A. CLARK, Boston, Mass. Application filed February 1, 1873.

Claim.—In the manufacture of floor-carpeting composed of burlap, uniting to the burlap by a suitable cement a backing of paper, and then printing on the face of the burlap suitable patterns or figures.

142,440.—Steam-Superheater for Evaporating Salt, and for other purposes.—LEWIS R. CORNELL, Brooklyn, N. Y. Application filed July 16, 1873.

Within a suitable furnace are arranged, one above another, a number of rings, having a series of bulbs upon them, in such a manner that the steam is made to pass around each ring before it is admitted to the one above.

Claim.—1. A series of rings, A A' A'' A''', or any number thereof, placed one above another, provided with bulbs, for the purpose specified, and communicating with each other by connections inside the furnace, substantially as shown and described.

2. The elements of the first claim, constructed and arranged as therein specified, in combination with a reverberatory furnace.

3. The series of rings A A' A'' A''', or any number thereof, communicating by direct connections, on opposite sides inside the furnace, and provided with the bulbs a, substantially as specified.

4. The reverberatory furnace D, having a spiral, or substantially spiral, flue, H, built into the wall thereof, substantially as hereinbefore set forth.

5. The combination of the series of rings A A' A'' A''' A''', or any number thereof, connected, as hereinbefore described, with a reverberatory furnace having a draft-flue leading from the lower part thereof, substantially as hereinbefore set forth.

142,441.—Shuttle-Box Mechanism.—GEORGE CROMPTON, Worcester, Mass. Application filed July 10, 1868.

Any shuttle-box in a series may be selected and brought in such position opposite the shuttle-race that the shuttle contained therein may be shot through the shed.

Claim.—1. The combination of an oscillating or rocking shaft with sets of pawls proper for oscillating it in both directions, when said oscillating shaft is acted upon by each set of pawls at different distances from its center of oscillation, substantially as herein described, the combination being substantially such as hereinbefore set forth.

2. The combination of an oscillating or rocking shaft and sets of pawls, each set actuating it at different distances from its center of oscillation, with a pattern mechanism, the combination being and acting substantially as described herein.

3. The combination of an oscillating shaft and sets of pawls actuating it at different distances from its center of oscillation with a series of shuttle-boxes, by means of proper mechanical connections, as described, in such manner that sets of pawls one less in number than the boxes in the series of shuttles are effective in selecting any box of the series.

4. The combination, with an oscillating shaft and sets of pawls actuating it at different distances from its center of oscillation, and with a series of shuttle-boxes having proper mechanical connections, as described, in such manner that sets of pawls one less in number than the boxes in the series of shuttles are effective in selecting any box of the series, of a pattern mechanism, the combination being and acting substantially as described.

5. The combination of an oscillating shaft and sets of pawls actuating it at different distances from its center of oscillation with a series of shuttle-boxes, by means of a tappet or cam having two sides of varying inclination, in such manner as described, so that sets of pawls two less in number than the boxes in the series of shuttles are effective in selecting any box of the series.

6. The combination of an oscillating shaft and sets of pawls actuating it at different distances from its center of oscillation with a series of shuttle-boxes, by means of a tappet or cam having two sides of varying inclination, in such manner as described, so that sets of pawls two less in number than the boxes in the series of shuttles are effective in selecting any box of the series, and with a pattern mechanism, both these combinations being and acting substantially as described.

7. An oscillating shaft the axis of which extends across a loom-frame, and is acted upon by sets of pawls actuating it at different distances from its center of oscillation, in combination with two series of shuttle-boxes, by means of proper connections, substantially as described, so that sets of pawls one less in number than the boxes of either series shall select corresponding shuttle-boxes of both series, as described.

8. An oscillating shaft the axis of which extends across a loom-frame, and is acted upon by sets of pawls actuating it at different distances from its center of oscillation, in combination with tappets or cams having sides of different inclination on both sides of the loom, and two series of shuttle-boxes moving in unison, in such manner that sets of pawls two less in number than the boxes of either series shall select corresponding boxes of both series, as described.

9. In combination with a pattern mechanism, an oscillating shaft the axis of which extends across a loom-frame, and is acted upon by sets of pawls actuating it at different distances from its center of oscillation, combined with two series of shuttle-boxes by means of proper connections, substantially as described, so that two sets of pawls one less in number than the boxes of either series shall select corresponding shuttle-boxes of both series, as described.

10. In combination with a pattern mechanism, an oscillating shaft the axis of which extends across a loom-frame, and is acted upon by sets of pawls actuating it at different distances from its center of oscillation, and tappets or cams having sides of different inclinations on both sides of the loom, and two series of shuttle-boxes moving in unison, in such manner that sets of pawls two less in number than the boxes of either series shall select corresponding boxes of both series, as described.

142,442.—Sewing-Machine.—CYRUS S. CUSHMAN, Philadelphia, Pa., assignor to HENRY D. STOCKS, same place. Application filed July 7, 1873.

The reciprocating presser-foot bar has a horizontal socket, in which the foot is moved longitudinally by levers. The grooved cam-wheel, actuated by the U-shaped lever, engages a pin on an arm projecting from the upper end of the presser-bar, and moves the foot in the arc of a circle when it is desired to feed the material laterally. The presser-foot also feeds the material forward.

Claim.—1. The combination of the presser-foot bar D, having an arm, *e*, provided with a pin, *f*, and the cam-wheel J, for giving a reciprocating partial turn of the bar and a corresponding swinging lateral movement to the presser-foot, substantially in the manner and for the purpose above set forth.

2. The combination of the needle-arm K, U-shaped lever M, and pawl N, with the cam-wheel J, having a ratchet, O, for giving a partial turn to said wheel at each upward movement of the needle-arm, for producing a swinging lateral movement of the presser-foot, substantially as described.

3. The combination of the adjustable inclined spring L and screw P with the lever M, for regulating the movement of the latter to vary the length of the stitches, substantially as set forth.

4. The combination of the levers R M, socket I, pin *j*, presser-foot bar D, and presser-foot F, for giving a forward movement to the latter, substantially as specified.

142,443.—Car-Propeller.—JUSTUS DAY, Holley, N. Y. Application filed May 31, 1873.

A windlass, having anchor-ropes which pass through the handles of a clamp, is mounted upon a hand-car, the strain upon the ropes causing the clamp to act upon the rails.

Claim.—1. In combination with the windlass C having the divisions *i i' i''*, the draft-cord E, and anchor-cords D D, the whole adapted to a hand-car, substantially as and for the purpose described.

2. In combination with the windlass C and anchor-cords D D, the clamps G G, or equivalent, arranged to clamp the rails, the whole adapted to a car, as set forth.

142,444.—Concrete Pavement.—GEORGE W. DEAN, Stamford, Conn. Application filed June 5, 1873.

Claim.—A pavement for roads, walks, and floors, composed of blocks of coarse concrete, veneered on their faces and sides or edges with fine concrete, and separated one from the other, substantially as herein shown and described.

142,445.—File.—HENRY DISTON, Philadelphia, Pa. Application filed April 16, 1873.

Claim.—1. The method of shaping saw-file blanks, by making therein longitudinal indentations, as herein set forth.

2. As a new manufacture, a saw-file having the within described longitudinal indentations.

3. A saw-file, having at the outer end a tip, *c*, secured to or forming part of the file, as set forth.

142,446.—Compound for Filling Wood.—JAMES B. DUTTENHAVER, Napoleon, Ohio. Application filed July 29, 1872.

Claim.—White wax dissolved in hot oil and compounded with starch, magnesia, turpentine, and Japan drier, as and for the purpose described.

142,447.—Clasp for Pocket-Books.—JOHN F. DUBOIS, Brooklyn, N. Y. Application filed July 25, 1873.

Jaws, provided with openings through their line of contact, are brought together to embrace a stud by action of an U-shaped spring, to the inner ends of which they are rigidly attached.

Claim.—The jaws *b b*, having the cavities *c c*, and separately connected with the branching arms of the spring-wire *a*, in combination with each other and with the loop A and pin *d*, substantially as and for the purpose herein specified.

142,448.—Manufacture of Pipe.—GEORGE L. HAGAN, San Francisco, Cal. Application filed May 29, 1873.

Pitch, asphaltum or bituminous matter, thickened with pulverized earth to render it plastic, is pressed by means of rollers into the pores of sheets of cloth, paper, or similar substances, or into holes made in the cloth or paper. After the sheets are thus prepared they are wound around a mandrel so as to form a tube of any required thickness.

Claim.—The process of forming pipes by the application of the non-liquid plastic compound, as set forth, of putty-like consistency, to the cloth or other material, and its compression into the pores of the same, or into perforations made therein, so as to adhere firmly thereto, substantially as described.

142,449.—Sliding-Gage.—JOHN EATON, Atlanta, Ill. Application filed August 2, 1873.

The spring B is made adjustable to or from the holding-bar A by the screw-rod D.

Claim.—The combination of the bar A, spring-bar B C with slot *b*, nut thumb-screw D, all constructed and arranged substantially as and for the purposes herein set forth.

142,450.—Wire Fabric.—WILLIAM C. ESSEX, Newark, N. J.—Case B. Application filed June 25, 1873.

Each loop of the wire is passed through two loops of the fabric.

Claim.—A wire fabric constructed with each loop *a* passing through two loops, *b* and *d*, substantially as herein shown and described.

142,451.—Door-Knob.—HENRY H. ELWELL, South Norwalk, Conn., assignor to THE NORWALK LOCK COMPANY, same place. Application filed July 2, 1873.

Claim.—The barrel B as a base upon which to form a composition knob, when the said barrel is constructed with the flange *d* and with the screw-socket *c*, substantially as set forth.

142,452.—Air-Compressor.—HADLEY P. FAIRFIELD, Boston, Mass., assignor to JAMES W. BROOKS, trustee, same place. Application filed July 24, 1873.

The valve through which air is forced into the reservoir is raised by a cam and lever connection with the driving-shaft, and is seated by the force of a spring before the piston commences its return stroke. The piston is provided with a relief-valve.

Claim.—1. In combination with the compressor-pump and piston, a valve, *h*, positively raised by connection with the driving-shaft, substantially as described.

2. In combination with the pump-piston, a relief-valve, *i*, operating substantially as described.

142,453.—Compound for Preserving Wood.—LEVI S. FALES, Monmouth Junction, N. J. Application filed May 6, 1873.

Raw petroleum, waste acid, linseed-oil, slaked lime. The whole is put into a kettle and boiled, adding common resin, gum shellac, extract coal-tar. The articles to be saturated are then immersed in the liquid while at a temperature of about 300° Fahrenheit.

Claim.—The composition consisting of the ingredients stated, in about the proportions set forth, and for the purposes specified.

142,454.—Fertilizer-Distributer.—MATTHIAS WALLS FAUBION, Parrottsville, Tenn. Application filed December 21, 1872.

A farm-wagon utilized for fertilizing by attaching a shaft on bearings in pendent arms affixed to each side between the wheels. On this shaft there is a cylinder between and two outside the bearings. A hopper in the box supplies the cylinders with the fertilizer through hinged lids. Rotation being given to them through an endless belt from the wagon-wheels, the fertilizer passes out through longitudinal slots.

Claim.—In a fertilizer-distributer, the cylinders E E E, constructed in sections and having partitions *d* and the removable slides L, arranged for attachment to the wagon, as shown and described.

142,455.—Tire-Upsetting Machine.—ROBERT GIBBS, Spring Hill, Mo., assignor to himself and SARAH E. GIBBS, same place. Application filed April 21, 1873.

A base-plate A, having mortised side flanges on which a tire previously bent may be clamped by wedges and beaten down; also, a hooked stirrup, E, and separate clamp *f*, which, used in conjunction with the base-plate and wedge, will upset an unbent part of the tire by a draw movement.

Claim.—The base A, having flanges with slots *a a*', the key C F, key-clamps *f f'*, and the slide-bar gage E *e e*', combined and constructed substantially as and for the purpose set forth.

142,456.—Butter-Bucket.—JAMES GILBERDS and MILO HARRIS, Jamestown, N. Y. Application filed July 25, 1873.

The clamping device encircles the top or cover, and also a portion of the bucket itself. The bucket is rabbeted to receive said clamping device. Between the bucket and cover-edge and the encircling clamping device is interposed an elastic band.

Claim.—In combination with the package C, the cover B, the clamping-hoop A, and an elastic packing placed beneath said hoop to pack the joint, as described.

142,457.—Inking Apparatus.—GEORGE P. GORDON, Rahway, N. J. Application filed December 26, 1871.

The bed and the inking-roller frame reciprocate in opposite directions, whereby a greater number of inking-rollers may be used.

Claim.—In combination with the bed and roller-carriage M, constructed and arranged, to operate as described, the segmental cylinder J, having a portion of its surface cut away, as and for the purpose set forth.

142,458.—Valve-Guide.—ROSCOE J. GOULD, Newark, N. J. Application filed June 30, 1873.

Claim.—The construction of the valve-stem or the adjacent surfaces with angular ridges or knife-edges to form the guiding contact, so as to avoid the chance of retaining sand or other foreign matter, as herein specified.

142,459.—Steam-Carriage for Tram-Ways.—JOHN GRANTHAM, London, England. Application filed November 2, 1872.

Claim.—1. The arrangement of the boilers and their appurtenances in chambers at the opposite sides of the central passage-way of the carriage, so that a clear passage-way from end to end of the carriage is afforded, notwithstanding the presence of the boilers and their appurtenances within said carriage, substantially as before set forth.

2. The combination and arrangement of the coal-feeder for the boiler, the end platform of the carriage, the handle for controlling said coal-feeder, and the rod extending from said handle to the coal-feeder, whereby the engineer, while on the front platform, can control the supply of coal to the boiler in his rear within the carriage, substantially as before set forth.

142,460.—Planing-Machine.—WILLIAM H. GRAY, Boston, Mass., assignor to SOLOMON A. WOODS, same place. Application filed March 5, 1873.

The upper feed-roll boxes are lifted coincidently to maintain the parallelism of the rolls, and said boxes are connected by a rock-shaft to the counter-weights to insure uniform pressure.

Claim.—1. In combination with the presser-roll, supported by or upon independent boxes, the connecting-levers *i i*, to secure uniform pressure, substantially as described.

2. The combination of rods for guiding and supporting the upper roll-boxes with weighted levers connected by links to a rock-shaft, substantially as and for the purpose described.

3. As a means for connecting each box A and its lever *p*, the combination of the rods *m m*, jointed to the box, the bar *o*, rods *s s*, screws *v*, and yoke *r*.

142,461.—Ferrule.—CHARLES E. GERER and JOHN H. BODWELL, Newark, N. J. Application filed February 11, 1873.

This ferrule has corrugations running circumferentially, internally, and externally.

Claim.—As a new article of manufacture, a corrugated sheet-metal ferrule for paint or varnish brushes, constructed as herein shown and described.

142,462.—Thrashing-Machine.—ANDREW G. HAGENSTRÖM, Red Wing, Minn. Application filed November 22, 1872.

Elements arranged with a view to compactness. Belt-tightener also carries the fan-belt.

Claim.—1. The relative arrangement of the beater, concave, transfer-carrier, grain-sieves, and fan, when constructed to operate substantially as and for the purpose shown.

2. The pulley Q', journaled within the pivoted lever B', and, in connection with said lever, combined with the frame of the machine and with the beater and fan-belts, substantially as and for the purpose shown and described.

3. The means employed for connecting the horse-power frame-bars A'' to or with the frame of the machine, consisting of the hooked rods B'' and *b''*, the link D'', and the key E'', when the same are combined with said parts, substantially as and for the purpose specified.

142,463.—Cinder-Plate for Blast-Furnaces.—SAMUEL W. HARRIS, Albany, N. Y., assignor to THEODORE F. MINER, same place. Application filed July 24, 1873.

Claim.—1. The flanged or hollow water cinder-plate B, substantially as and for the purpose herein set forth.

2. The combination of the water-supply pipe *b* and waste-pipe *c* with the flanged or hollow water cinder-plate B, essentially as shown and described.

142,464.—Blast-Furnace for Smelting Iron and other Ores.—SAMUEL W. HARRIS, Albany, assignor to BENJAMIN RAY, Hudson, and IRA JAGGER and THEODORE F. MINER, Albany, N. Y. Application filed July 24, 1873.

Swinging doors or lids for closing the furnace automatically, whereby increased facility is afforded for charging.

Claim.—The combination, with the cover B B' of the vertically-swinging doors C C', arranged to rock on intermediate pivots or centers *e e*, and to open outwardly and inwardly in relation with the openings D D' against closing-weight applied to the upper portions of the doors, substantially as and for the purposes herein set forth.

142,465.—Smut-Mill.—JOHN HISSEY, Peoria, Ill., assignor to NICHOLS, BURR & Co., same place. Application filed March 17, 1873.

The grain is thrown against the interior of a cylinder composed of vertical rods, having spaces between them for the escape of smut, &c., which is blown into an exterior chamber by a fan or fans on the arms which carry the revolving beating-rods, whence a suction-fan draws it away, and at the same time extracting the light grain by a suction-spout.

Claim.—1. The combination of the cylinder G, plates F *m*, shaft K, arms A A, fans *q q*, rods H H arranged to operate with the fan-box N, fan O, separating or blast box P P^1 P^2 P^3 Q, air-draft R, hopper *t*, spout Z, pendent doors *f f*, frame A A B B D D D, casings S S, air-passages *s s*, as described.

142,466.—Railroad-Gate.—ALBERT HOUTS, deceased, (ELIAS HOUTS, administrator,) Salona, Pa. Application filed May 17, 1873.

The weight of the locomotive upon the jointed rails depresses them and thereby moves the right-angled weighted levers, the upright arms of which operate the sliding gates through the levers C.

Claim.—The compound lever, consisting of the vertically-vibrating weighted branch G having the upright arm *b* and the rail-rest and the horizontally-vibrating branch C, in connection with the slotted link *x*, the sliding gate B, and the rails I, pivoted together to form the rising joint Z at some distance from said gate, substantially as specified.

142,467.—Cooking-Stove.—HERBERT A. HUMMER, Frenchtown, N. J. Application filed April 12, 1873.

Claim.—1. The combination of the suspended sliding fire-box E, having the outwardly-extending flanges *d*, resting upon the ledges *n* of the stove-wall, and the slide-damper G, having the forked arm H and pivoted lever *k*, extending through the stove-wall, for regulating the opened flue F between the rear wall of the fire-box and the oven-wall, operating substantially as specified.

2. The fire-box E, having the fixed front grate *b*, with short fingers *d* and long arms *b'*, and the longitudinally-sliding bottom grate *c*, pivoted in rear, in combination with the hinged bar *s* and the lever *r*, substantially as specified.

3. The arrangement of the air-chambers *m m* at each end of a fire-box only, next to the stove-wall, and having the deflecting flanges or partitions *l* and communicating-passages, in connection with the register-openings *v* and hot-air pipes *z*, for the purpose mentioned.

4. The arrangement of the hot-air pipes *z* immediately under the ledge of the top plate of a stove, and extending around the sides and rear and thereof, and communicating with the air-chambers *m* and pipe L, for the purpose mentioned.

142,468.—Oil-Burning Boiler-Furnace.—FAIRTH HUNGERFORD, Rochester, assignor to AMOS CARLTON STEARNS, Corning, N. Y. Application filed April 8, 1873.

Two shallow pans running the entire length of the boiler, one above the other, and surrounded by water: the pans contain oil to be burned as fuel, and communicate with each other by a head outside the boiler.

Claim.—1. The combination of the pans B B' with the ports *f f'* and the water-sheet *d'* between them, arranged as herein shown and described, for the purpose specified.

2. The arrangement of the boiler A, pans B B', flues *d d'*, ports *f f'*, and head E when used in connection with the oil and water pipes *i k*, in the manner and for the purpose specified.

142,469.—Refrigerator.—FRANCIS W. HUNT, East Orange, N. J. Application filed February 5, 1873.

Claim.—A reversible rim or frame, A, for the ends of a refrigerator, open or struck up from sheet metal or cast, having suitable recesses *a* and *b* on the outside for the reception of the outer and inner linings, and also suitable projections or steps *c* and *d* on the inside for the support of the lids and ice-chamber, all substantially as and for the purposes shown and described.

142,470.—Vise.—JOSHUA HUNT, Richmond, Ind., assignor of one-half his right to JOSHUA FOULKE, same place. Application filed April 22, 1873.

The jaw F, by reversing the screw-shaft, is released so that it can be moved in or out to any extent as, ease for clamping large or small work.

Claim.—1. In a vise of the character described, the combination of the screw-threaded sleeve B, turning in a tap in the fixed jaw, shaft or stock C of the movable jaw having a toothed feather and fitted in the sleeve B, and an adjustable dog automatically operated to connect and disconnect the sleeve and stock, substantially as and for the purpose specified.

2. The arrangement of the tubular nut B, the stationary jaw A, pawl D, spring D', and stop E, whereby the movable jaw is removed from the article clamped, by the backward turning of the screw-shaft, previous to the liberation of the nut from the screw-shaft, substantially as set forth.

142,471.—Grate-Bar.—REUBEN A. HUTCHINSON, Bergen, N. J. Application filed August 4, 1873.

The supporting-bar is provided with as many wings on each side as there are sections required to fill the same. Each section has lugs on it, made to correspond with the angle of the wings on the bar to secure them to it.

Claim.—The combination of the wings *a a* on the bar, the correspondingly-formed wrings *d d* on the face-pieces, and the stops *b b*, substantially as and for the purposes herein set forth.

142,472.—Illuminating Reading.—THEODORE HYATT, New York, N. Y.—Case A. Application filed August 21, 1873.

Claim.—As a new article of manufacture a reading-plate composed of asbestus board or paper, and provided with glazed illuminating openings, substantially as and for the purpose specified.

142,473.—Illuminating Reading.—THEODORE HYATT, New York, N. Y.—Case B. Application filed August 21, 1873.

Claim.—An illuminating metal reading-plate having its lower surface covered and protected by means of asbestus board or paper, substantially as and for the purpose specified.

142,474.—Wall for Buildings.—THEODORE HYATT, New York, N. Y. Application filed August 21, 1873.

Claim.—A wall composed of plastic material, consisting of asbestus combined with earthy matter, placed upon both sides of corrugated wire-gauze, substantially as and for the purpose specified.

142,475.—Building-Block.—THEODORE HYATT, New York, N. Y., Application filed August 21, 1873.

Claim.—A building-block composed of plastic material, consisting of asbestus combined with earthy matter, formed over and within a frame of wire-gauze, or its equivalent, and either with or without central openings, substantially as and for the purpose specified.

142,476.—Fire-Proof Safe.—THEODORE HYATT, New York, N. Y. Application filed August 21, 1873.

Claim.—In a fire-proof safe, a book-case constructed from sheets of asbestus paper or board, substantially as and for the purpose specified.

142,477.—Nasal Respirator.—EDMUND W. JAMES, Philadelphia, Pa. Application filed March 8, 1873.

The respirator is formed of two parts, each one of which is inserted in one side of the nose. The two parts are held together, and also in position, by a spring-connection.

Claim.—A nasal respirator, consisting of a clip, A, constructed for attachment to the nose, substantially as described, and carrying screens B B adapted to the interior of the nostrils, as specified.

142,478.—Embroidery Attachment for Sewing-Machines.—ALBERT W. JOHNSON, New Haven, Conn. Application filed July 24, 1873.

Claim.—The combination, with the reciprocating thread-carriers, of the elastic tension-plates C, bent and slotted at their ends, and adjusted by means of a screw and thumb-nut, as and for the purpose described.

142,479.—Windmill.—MOSES J. KAUFFMAN, Arcola, Ill. Application filed April 11, 1873.

From a cross-head, which is connected with the fans of the wheel, extend rods that are connected with two levers. On the outer end of these levers are pivoted weighted governor-wings, made in two parts, to increase or diminish the surface, as may be desired.

Claim.—The arrangement, with the wings D, pivoted to the disk E by the arms *c* and socket *b*, as described, of the loops *f*, rods *e*, disk G, sleeve *d*, cross-head H, chains *i*, levers *k*, springs *m*, and governor-wings J, all substantially as and for the purposes herein set forth.

142,480.—Pen-Wiper.—JAMES H. KIDDER, Lawrence, Mass. Application filed April 16, 1873.

Brushes, opposite to and in a line with each other, are suspended upon shelves in a water-box attached to the inkstand, said box being provided with an aperture through which the pen is inserted between the brushes.

Claim.—The water-box B having the supporting-shelf B', in combination with the plates *d d* having the throat *f*, and the brush-heads D E, all constructed and arranged as herein shown, for the purpose specified.

142,481.—Compensating Spring-Balance for Safety-Valves.—VALDEMAR F. LARSON, Brooklyn, assignor to VALDEMAR FREDERIK LARSON and GEORGE FREDERIK METTER, New York, N. Y. Application filed June 5, 1873.

By the employment of the bell-crank lever and link with ordinary spring-balance for safety-valves a regular resistance is offered to the valve as it is raised from its seat, and the resilient action of the spring is not subject to variance on this movement.

Claim.—The quadrant or bell-crank lever F, connected by a link, H, with the lever D of a safety-valve, and combined with the spring-balance E, which connects with both levers D and F, substantially as and for the purpose herein shown and described.

142,482.—Blast and Cupola Furnace.—FRANKLIN LAWRENCE, Philadelphia, Pa. Application filed July 2, 1873.

A sort of damper-plate is arranged in the upper part of the stack in such a manner that it can be turned and set in any position, so as to control the exit of the gases.

Claim.—1. The disk A, arranged in a furnace, and adjustable, so as to be secured in either a horizontal or a vertical position, as specified.

2. The combination of the flanged disk A and its guided rod *f* with the arm *m* hung to the interior of the chimney, all substantially as set forth.

142,483.—Supplementary Oven for Cooking-Stoves.—CORNELIA O. LEE, Indianapolis, Ind. Application filed July 1, 1873.

Claim.—1. The stove-oven E and the attached oven C, in combination with the steam-generator H, its pipe I, and the pipes J and Q, interchangeable with the kettle-pipe I, to put steam into either oven through the medium of the attached oven, as described.

2. The combination of the valve M in the oven-door N with the attached oven C, having a surrounding flue, D, and the smoke-flue F of the stove, as and for the purpose set forth.

142,484.—Transmitter and Receiver for Automatic Telegraphs.—GEORGE LITTLE, Rutherford Park, N. J. Application filed March 5, 1872.

Circuit closer and breaker like Little's patent, 122,699. Brush and pressure-roller controlled by hinged arm. Pen in receiver attached to permanent magnet, vibrating between cores of electro-magnets. Other details in claims.

Claim.—1. The plate k connecting the binding-screw 4 with the insulated screw upon which the axis of the drum *s* or *f* turns, as set forth.

2. The roller or bar 15 upon the lever m, in combination with the lever r, incline 16, roller 6, drum c, and circuit-screw 6, substantially as for the purposes set forth.

3. The slotted lever-arm p upon the axis of the detaining-brush o connected with the lever m of the contact-roller, as and for the purposes set forth.

4. The electro-magnets u and w with the four poles 26, 27, 28, and 29, in combination with the polarized armature w, substantially as set forth, to oscillate the same by changing the polarity of the electric pulsations, as set forth.

5. The double inclined bed made of metal, and insulated at the points of connection, substantially as and for the purposes set forth.

6. A pen moved by an armature and electro-magnet, in combination with a condenser or accumulator introduced in the main line or a branch at either or both sides of the electro-magnet.

142,485.—Perforator for Automatic Telegraphs.—GEORGE LITTLE, Rutherford Park, N. J. Application filed March 5, 1873.

Depression of key closes circuit to magnet, actuating proper punches for desired character. Releasing key breaks such circuit and closes one to magnet, withdrawing punches.

Claim.—1. The lever c hinged to the keys a, in combination with the punch-slides e and mechanism for actuating the same, substantially as set forth.

2. The electro-magnet n, bar t, and pins l, in combination with the keys a, levers c, and slides e, substantially as set forth.

3. The magnet r and lever t, in combination with the slides e and punches h, for returning the punches to a normal position, as set forth.

4. In combination with punches and finger-keys, for perforating or embossing telegraphic paper, two magnets and their connections, substantially as set forth, for projecting and withdrawing the punches, substantially as set forth.

142,486.—Telegraph Apparatus.—GEORGE LITTLE, Rutherford Park, N. J. Application filed October 3, 1872.

Permanent magnet, provided with adjustable keeper, withdraws armature of electro-magnet. Condenser or coil, applied in a branch circuit to electro-magnet, to neutralize effect of induced current.

Claim.—1. The adjustable keeper k, made of soft iron, and mounted upon the support or axis l between the poles of the magnet A, in combination with the armature and electro-magnet, substantially as and for the purposes set forth.

2. A condenser or helix connected to the main line upon both sides of the electro-magnet, substantially as and for the purposes set forth.

142,487.—Car-Coupling.—HARVEY C. LOWRIE, Fort Wayne, Ind. Application filed May 2, 1873.

Suspended barbed couplers are arranged for automatic coupling by a lateral movement from the side of a lever by means of a chain.

Claim.—1. A barbed coupler-head, which is secured to a car, and arranged to couple with another head of the same form by a lateral movement, and to uncouple therefrom by a downward movement, in combination with a sustaining coupling-lever and suspending-link connection, substantially as described.

2. The combination of the pendent draft-lever and the coupler-bar with an abutting shoulder, which is connected to, or forms a portion of, the car, and is located in front of and between the upper end of the draft-lever and the point of connection with the coupling-bar, substantially as described.

3. The combination of the spring draw-head with the pendent draft-lever and the coupling-bar, substantially as described.

4. The guiding-frame with one or two vertical guiding-plates and their actuating springs, substantially as described.

5. The double-barbed couplers, having angular faces a' on the front edges and sides, substantially as described.

142,488.—Device for Thawing Ice from Water or Gas Pipes.—ORRIN R. MASON, Binghamton, N. Y. Application filed May 16, 1873.

The drum upon which the flexible pipe is wound has a hollow shaft, to which the inner end of the pipe is coupled. A revolving coupling-joint is used to attach the force-pump at the projecting end of shaft. The flexible pipe is used to introduce heated water or steam into frozen pipes.

Claim.—The combination of the flexible pipe C with the reel or drum B, having the hollow shaft b and coupling c, through which the fluid is delivered to the pipe, substantially as described.

142,489.—Lath-Belting Machine.—JAMES C. MCINTYRE, Fort Edward, N. Y. Application filed July 10, 1873.

The pressure-rolls are adjusted by a pair of treadles, to which they are connected by chains; and the lumber is prevented from being drawn back upon the saws by a series of pawls.

Claim.—1. The pressure-rollers of a belting-machine, hung in bearings in the frame thereof, and adjusted independently of each other by means of levers connected with said bearings by chains passing over pulleys, substantially as described.

2. The combination, in a belting-machine, of the pressure-rollers adjusted independently of one another, in the manner and for the purpose described, with the dogs or pawls for preventing the strips from being drawn back by the saws, substantially as set forth.

142,490.—Harvester-Rake.—JAMES B. MCMILLAN, North Vernon, Ind. Application filed January 21, 1871.

A reciprocating sweep-rake is pivoted to a vertical standard by a bent arm having a slotted projection, with which is connected a crank-arm, also pivoted on the standard, and tripped by steps on the platform, to depress and lift the rake at the beginning and end of its stroke. A connecting-rod joins the standard with a foot-lever or a crank on the main axle, for causing the rake to vibrate.

Claim.—The combination and arrangement of the rake-post C, the rake-arm E, the trip-lever F, the front trip G, and the rear trip H, and the foot-lever A, the connecting-rod B, and iron D, when used as a foot or self rake.

142,491.—Governor Cut-Off Gears.—HERMAN H. MEYER, Denver, Colorado Territory. Application filed April 9, 1873.

The eccentric-rod and valve-rod of the engine are connected with opposite ends of a vibrating beam, with which the governor is also connected, and which is hung in a frame vibrated by the action of the eccentric-rod, so that, when the governor raises or lowers its connection with said beam, the vibratory motion imparted to the valve-rod will be varied, as desired, by moving the connection nearer to, or further away from, the pivot of the beam. The weight of eccentric and valve rod is balanced by the governor, and therefore requires very little force to alter the cut-off.

Claim.—The combination of the eccentric-rod I, slide D, beam F, and slide E with the valve-rod J and governor-connection L, when the beam F, connecting with the slides D E, is hung in a vibrating frame, A B, for operation, substantially as described.

142,492.—Car-Coupling.—ALLEN MIDDLETON, Jr., Philadelphia, Pa. Application filed JANUARY 2, 1872.

When draft is applied the strain is transmitted to the spring of the draw-head on the opposite end of the car through the medium of a rod extending through both draw-heads, that the strain on the cars attendant upon the starting of the train may be avoided.

Claim.—The combination of the draft-rod J, extending from end to end of the car, with spring-boxes D and D', and draw-bars B and B', the draft-rod extending through both boxes and through their fixed and movable plates b' and b, and having at its opposite ends heads d adapted to the draw-bars, all substantially as and for the purpose specified.

142,493.—Planing-Machine.—FREDERICK B. MILES, Philadelphia, Pa., assignor to himself and OSCAR C. FERRIS, same place. Application filed August 4, 1873.

An ordinary cross-head, balanced, or nearly so, by means of ropes or chains and pulleys, to admit of being easily adjusted perpendicularly.

Claim.—1. A metal-planing machine in which a balanced or nearly balanced cross-head is adapted to guides on the frame, substantially as described.

2. The combination of the cross-head A, guided on the frames G G', the pulleys D D, and weighted ropes or chains.

142,494.—Automatically-Operating Shafts.—FREDERICK B. MILES, Philadelphia, Pa., assignor to OSCAR C. FERRIS and FREDERICK B. MILES, same place. Application filed August 4, 1873.

The feed-wheel is hung loosely on the screw-shaft carrying the arm, the handle of which is connected to both arm and wheel by a bolt having a head fitting within the annular groove in the wheel, so that when the nut is loosened the wheel can revolve, and when the nut is tight the arm and handle become part of the wheel.

Claim.—The combination of the shaft B, feed-wheel A, and its annular groove s with the arm D, handle E, and bolt G, or its equivalent.

142,495.—Planing-Machine.—JAMES MILLER, New York, N. Y., assignor of one-half his right to CORNELIUS H. DELAMATER, same place. Application filed August 4, 1873.

A stationary cross-head frame and sliding bed, said bed carrying another cross-head frame and tool, to operate in conjunction with an adjacent stationary bed.

Claim.—The combination, with a planing-machine, of the stationary work-bed D, arranged in proximity to the shears of the traveling bed, and the tool-holder L, carried by said traveling bed, substantially as and for the purpose herein set forth.

142,496.—Boat-Detaching Device.—WILLIAM F. MORGAN, New York, N. Y. Application filed May 24, 1873.

To the strap of an ordinary double-fall block is suspended a frame, to which is pivoted two double hooks, nearly in form of the letter *f*, connected at their center by a hub, within which is a coiled spring to hold them in position on the hooks. Through the frame are pivots to regulate their action while the boat is suspended, which is released upon its striking or resting upon the water.

Claim.—The combination of the hooks A A and their springs D with the guards B B, constructed and operating substantially as herein shown and described.

142,497.—Heating Air for Use in the Arts.—JAMES A. MORRELL, New York, N. Y., assignor to himself, JAMES H. WHEATLEY, L. P. WILLIAMS, and GEORGE H. BAXTER, same place. Application filed July 16, 1873.

Claim.—Heating a current of air by forcing it through a pipe or closed chamber containing diverse metals, such as are capable of inducing voltaic action, substantially in the manner set forth.

142,498.—Granulating Sugar.—JAMES A. MORRELL, New York, N. Y., assignor to himself, JAMES H. WHEATLEY, L. P. WILLIAMS, and GEORGE H. BAXTER, same place. Application filed July 16, 1873.

Claim.—The introduction into the mass of syrup undergoing granulation of an induced current or currents of electricity, such induced current not entering with a current of air, as covered by my Letters Patent of September 16, A. D. 1871.

142,499.—Medical Compound for Liniments.—MAURICE P. MUNDEE, Baltimore, Md. Application filed August 8, 1873.

Claim.—A compound consisting of laudanum, saltpetre, spirits of ammonia, crude petroleum, turpentine, spirits of camphor, and oil of cassafras mixed in substantially the proportions specified.

142,500.—Street-Lamp.—HENRY MANE, Brooklyn, N. Y. Application filed August 20, 1873.

The name-plates on the cases of street-lamps are prevented from being obscured or receiving injury from rain by a gutter, which projects over them and has discharge-pipes passing downward along the corners of the lamp-case.

Claim.—The gutter D, with descending discharge-pipes E fastened to the corners of the frame A, in combination with the name-plates H and main panes G resting against strengthening-strips F, which retain the name-plate and the pane on each side of the lamp in one and the same plane, all as herein shown and described.

142,501.—Cotton-Cultivator.—EDMUND H. NELSON, Gainesville, Ala. Application filed April 19, 1873.

A cross-bar is hinged to the frame of a cotton-chopper, and carries two shovels, one made adjustable laterally, and to which the draft-pole is attached.

Claim.—In a cotton-cultivator of the character described, the supplemental frame G linked to the forward end of the main frame and carrying a laterally-adjustable shovel, F, and a fixed shovel, E, the latter standing directly in line with the trend of the single driving-wheel B, all substantially as and for the purpose specified.

142,502.—Galvanic Battery.—ANDREW L. HOLT, New York, N. Y., assignor to himself and VICTOR BARJON, same place. Application filed June 6, 1873.

A tube, provided with a stop-cock, enters the bottom of the cell, and is connected with a force-pump for the purpose of injecting air into the cell when thought desirable. The tube may also be used for replenishing or withdrawing the fluid.

Claim.—1. In combination with the cup of a galvanic battery, a pipe communicating with the same, substantially as described, for injecting air or ozone through the liquid in the cup, for the purpose of agitating the same, as set forth.

2. The pipe D, having a branch pipe, a, and cocks or valves b c, for alternately introducing and regulating the supply of liquid into the cup of a battery, or for injecting air or ozone through the liquid, substantially as and for the purpose described.

142,503.—Fruit-Can.—MICHAEL O'CONNOR, New Brunswick, N. J. Application filed August 15, 1873.

A tin can is provided with a zinc cover to prevent oxidation at the junction of can and cover.

Claim.—In combination with the tin body of a can, the removable flanged zinc cover or top G, substantially as and for the purposes specified.

142,504.—Mode of Regulating Speed in Machinery.—LEVERETT H. OLMSTED, Brooklyn, N. Y. Application filed April 9, 1873.

The conical pulleys are actuated by the idle-pulley between them, to which motion is communicated from the treadle by a forked and slotted lever, moving in a frame in a plane transverse to the axis of the idle-pulley, to regulate the speed.

Claim.—1. The combination of the laterally-adjustable treadle L with the idle-pulley D, the power-shaft B, the tapering driving-pulley C, and the reversely taper driven pulley E, substantially as specified.

2. The combination, with the conical pulleys C E, the idle-pulley D, and the lever I, of the frame K, arranged to rock in a plane which is transverse to the axis of the idle-pulley, and to move in a direction parallel to the axis thereof, essentially as and for the purposes herein set forth.

142,505.—Cotton-Bale Tie.—WILLIAM J. ORR, Charlotte, N. C. Application filed August 15, 1873.

Claim.—A metal-strap bale-tie having the eye-piece D d set to one side of the strap A, open nearly the width of the strap in front of the face *d'*, and having the incline *d'*, in combination with the loop C, as and for the purpose described.

142,506.—Manufacture of Horseshoe-Nails.—JOHN C. PAIGE, Stoneham, Mass. Application filed July 24, 1873.

The punch and die are so constructed that a fin is left between the heads of two contiguous nails as they are punched from a plate, to secure a straight cut on the side of the nail-head.

Claim.—The improvement in punching horseshoe-nail blanks, substantially as described.

142,507.—Machine for Skiving and Feather-Edging Boot and Shoe Soles.—EDWARD P. PIERCE, Boston, Mass. Application filed April 5, 1873.

By removing the lower cutter-block the upper may be brought into play for action upon a different piece of soles, one cutter skiving or reducing without regard to the thickness of the edge left, and the other with special reference to that edge.

Claim.—In a feather-edging and skiving machine, means, substantially as described, for interchangeable attachment and operation of a cutter for gaging the thickness of skiving removed, and of another cutter for gaging the thickness of edge left upon the sole.

142,508.—Lamp-Extinguisher.—DAVID PIKE and OTIS B. GRAHAM, Bridgeport, Conn. Application filed February 8, 1873.

A metallic plate is secured upon one side of the wick-tube, against which the extinguisher closes. A friction-stud bears upon the shaft of the extinguisher to hold it in any desired position.

Claim.—1. The plate B, in combination with the cap C, substantially as shown and described.

2. The stop F, in combination with the rod E, arranged and operating substantially as shown and described.

142,509.—Top Roll for Drawing-Frames, &c.—HENRY T. POTTER, Norwich, Conn. Application filed May 15, 1873.

The leather covering is applied loosely—that is, without being glued or cemented to the roll, so that any looseness or pucker in the covering will run ahead of the point where the upper and lower rolls are in contact.

Claim.—A top drawing-roll having its leather or other soft covering fitted loosely upon it, so as to form a free soft band or ring, substantially as and for the purposes herein set forth.

142,510.—Lifting-Jack.—DELOSS PUTNAM, Stockton, assignor of one-half his right to A. C. PICKARD, Busti, N. Y. Application filed July 21, 1873.

Claim.—1. A lever and cam-catch, when combined for operation, as shown and described.

2. The combination, substantially as herein shown and described, of a lever, a cam-catch, and the notched standard, for the purposes specified.

142,511.—Machine for Tapping Nuts.—SALMON W. PUTNAM, Jr., Fitchburg, Mass. Application filed July 5, 1873.

The oil-conveyer and the overflow-pipe act as standards or guards to prevent the nut-holders for the two outer taps turning. Each tap-socket has an educt-opening over the table, with a perpendicular branch therefrom, stuffed with some porous substance, to allow the escape of a small quantity of oil to lubricate the bearings below the table.

Claim.—1. The tubes K' K', the force-pump r, the upper and lower reservoirs B C, the series of intermediate standards K, and the socketed heads I, (provided with operative mechanism, as specified,) arranged as explained, the said tubes K' K', under the arrangement, performing the functions as set forth.

2. The oil-educt *d'*, arranged and combined with the escape-passage i, so as to discharge oil upon the rest d, in manner and for the lubricating certain of the parts, as explained.

142,512.—Printer's Rule.—CONRAD REUTER, Cincinnati, Ohio. Application filed July 3, 1873.

In consequence of the adjustable cap or clamp B being held by friction only, the leads or rules A A may be shortened by cutting them at any point, and the clamp may be readjusted without further preparation.

Claim.—The combination of the adjustable clamps B B with the leads or rules A A, by which the type are secured between the leads or rules by frictional contact of the clamps, substantially as and for the purpose set forth.

142,513.—Draft-Tube for Soda-Fountains.—RICHARD B. ROGERS, Adrian, Mich. Application filed April 21, 1873.

A tapering tube has a valve seated on its upper end, the rod of which extends through and projects beyond the tube, so that, by pressing a glass against the end of the rod, the valve is raised. The flow of water is regulated as desired, by an adjustable ball or equivalent on the end of the rod.

Claim.—The tube a, valve and valve-stem, and adjustable ball, or its equivalent, when combined to operate substantially as shown and described.

142,514.—Fire-Place Grate.—JOHN S. RUNYAN, Columbus, Ohio. Application filed May 27, 1873.

Claim.—1. In combination with the grate A, the fire-place, constructed with the recess G formed in the back wall back of the grate, and the vertical recesses or flues H H, extending therefrom, terminating within the coal-space below the level of the upper front edge of the basket, substantially as set forth.

2. The combination of vertical portions D of the grate, the brackets E E, and the hearth F, substantially as and for the purpose set forth.

142,515.—Apparatus for Distilling Heavy Oils.—HENRY RYDER, Somerville, Mass. Application filed January 24, 1873.

A still consisting of a fire-chamber or furnace having sloping sides above its grate; the still extends on opposite sides of the furnace down below the fuel-chamber, or down alongside of the ash-pit.

Claim.—1. The still or oil-evaporating vessel A, provided with the deposit-receiving spaces d d, arranged with the fire-place L and ash-pit e, as described, and the fire-place inclined at its opposite sides, c d, with reference to such spaces d d, all as specified.

2. The partitions F G and the flues E C, the fire-place L, ash-

pit *c*, and the still or oil-evaporating vessel A, arranged and combined substantially as explained.

142,516.—Apparatus for Ironing and Pressing Garments.—ROBERT B. SAMSON, London, England. Application filed July 14, 1873.

Claim.—1. In combination with the swivel-frame *e* and reciprocating bar *f* carrying the smoothing-iron, the anti-friction rollers W, as and for the purpose described.

2. The employment, in connection with the presser-board and treadle, of the two sets or series of operating levers and links, arranged as described, for the purpose of securing parallelism of said presser-board in its vertical movement, as set forth.

3. In combination with the iron G, the ventilator *n*, when arranged in the manner and for the purpose substantially as described.

4. The ironing and pressing apparatus, consisting of the several parts described in the foregoing claims, when constructed and arranged to operate substantially as described and shown.

142,517.—Cotton-Press.—MICHAEL M. SCHENKEL, Batesville, Ark. Application filed June 20, 1873.

The lint-chamber, wherein the cotton is received as it comes from the gin, has a vertically-sliding gravitating cover. When the cover is brought to the limit of its downward movement a space is left under said cover that is filled with packed cotton, ready to undergo compression into the bale-form.

Claim.—1. The lint-room A having a vertically-sliding gravitating cover, B, in combination with the door and press-box, of which latter, during the pressing operation, the gravitating cover forms a part, substantially as described.

2. The combination of the windlass, ropes, and pulleys with the gravitating cover B of lint-room A, as and for the purpose specified.

3. The follower C supported at its end outside the press-box by wheeled carriages in combination with the windlass for moving the follower in a backward and the toggle-levers for moving it in a forward direction, substantially as described.

4. The bale-box composed of the fixed hinged top and bottom and hinged end pieces, the latter being fastened by metal frames on the door fitting over the lower ends of the end pieces, and the whole locked together by the hinged metal straps, as and for the purpose specified.

142,518.—Wash-Boiler.—EDWIN SCHOFIELD, Worcester, Mass. Application filed July 19, 1873.

The circulating-tube is connected to the plate carrying the valves, the whole device being attached to the false bottom by means of buttons, and can be removed.

Claim.—The combination, with a wash-boiler, A, of the false bottom C soldered to the boiler and provided with a central aperture, the detachable plate D, center tube E with cap G, cam-vas valves *d d*, and guards *f f*, all constructed and arranged substantially as and for the purposes herein set forth.

142,519.—Hemmer for Sewing-Machines.—LOUIS SCHULTZ, College Point, N. Y. Application filed July 9, 1873.

The oblique ledge and bar act to crowd the material into the scroll, and the edge of the slotted plate is bent down between the scroll and ledge to bear on and smooth the hem.

Claim.—The slotted plate B, having the scroll C and its edge turned at K, in combination with the adjustable stock E, with oblique ledge H and bar I, with free end J parallel with the ledge, all constructed and operating as described.

142,520.—Decorative Lantern.—CHARLES C. E. SCHWARTZ, Philadelphia, Pa., assignor of one-half his right to CHARLES BOHM, same place. Application filed July 18, 1873.

A lantern, for use at decorations, has a body with an open top, and has in its bottom an opening, into which fits a tray containing the combustible material. Both the tray and the fuel-cake are furnished with wire-handles to lower them into the body.

Claim.—1. The body A, formed of transparent or semi-transparent material, in combination with the bottom B with the opening C, and with the tray or holder D suspended from said bottom, substantially as and for the purpose set forth.

2. The conical tray D and conical cake E, in combination with the body A, substantially as and for the purpose set forth.

142,521.—Regulating-Cock.—CHARLES E. SEAL, Winchester, Va., and EDWIN F. BROOKS, Baltimore, Md. Application filed June 20, 1873.

A waste-valve is held against the lower side of the chamber by a spring. When the plug is pressed down to close the cock it forces the waste-valve open and allows the water in the lower part of the chamber to escape.

Claim.—The combination, with an upwardly spring-pressed waste-valve, K, and a downwardly spring-pressed main valve, G, the latter opening the former on its downward movement, of the sliding stem F, connection M, and lever N, arranged and applied as and for the purpose described.

142,522.—Hanging Gate.—ELI SECOR, Niles, Mich. Application filed June 17, 1873.

An adjustable bifurcated block, carrying at its lower end a large friction-roller, is arranged astride the upper bars of the gate, and is adjusted vertically by means of a pin passing through it and into or beneath one of the bars of the gate.

Claim.—The adjustable bifurcated block A, in combination with the friction-roller B and spiral inclined plane C, substantially and for the purposes hereinbefore set forth.

142,523.—Washing-Machine.—JOHN Q. A. SMITH, Lee's Summit, Mo. Application filed April 9, 1872.

In a suitable vessel is arranged a rank of ribs, behind which are curved metallic plates acting as valves, against which a swinging beater operates through the medium of arms and levers.

Claim.—The combination of the stationary socks *d d*, forming angular receptacles, the hinged and curved metallic plates or valves D D placed in said receptacles, and the rocking beater E *f e'*, all constructed and operated substantially as set forth.

142,524.—Suppository-Mold.—PETER I. STEINER, Cleveland, Ohio, assignor to DANIEL MYERS, same place. Application filed June 18, 1873.

Claim.—1. In combination with the hinged jaws A and A', provided with the slots C and C', the bolt D, provided with the nut *d*, pivoted within the slot C, and capable of engagement with the jaw A', substantially as and for the purpose specified.

2. The cut-off cap E, constructed as shown, provided with the filling openings *e* and the semicircular recess *f*, and combined with the hinged jaws A and A' and screw F, when the several parts are constructed substantially as and for the purpose shown.

142,525.—Apparatus for Carbureting and Regulating the Pressure of Gas.—THEODORE G. STRINGER, New York, N. Y. Application filed August 28, 1873.

Hydrocarbon gas passes from the retort-pipe into a valve-chamber under pressure, and, escaping downward in a pipe leading to a gasometer, induces a flow of gas from the city mains through a second pipe connected with the same valve-chamber. Pivoted to the top of the retort is a lever, long enough to be struck by the rising gasometer, having its short end bent so as to catch under a weighted lever, also pivoted to the retort, and connected by a rod with a cock in the gas-pipe, which supplies the heating-flame. The rise of the gasometer carries up the lever, gradually decreasing the heating-flame.

Claim.—1. The process described of inducing the flow of gas from the city mains into a holder, and regulating the pressure thereof by the escape of hydrocarbon vapor under pressure, said hydrocarbon mingling with the gas and increasing its illuminating power, substantially as specified.

2. The combination of the gas-pipe 6 with a suction-chamber, *g*, and a retort or coil in which the hydrocarbon fluid is vaporized, substantially as described.

3. The valve 9, provided with the opening 1 for the passage of the vapor, and arranged to cut off the gas and vapor simultaneously, substantially as specified.

4. The T-valve 9, having ribs or flanges upon its under side, in combination with the springs *j* and set-screws *k*, substantially as shown.

5. The combination of the valve 9, connecting-rod *m*, crank *n*, lever *o*, rock-shaft 4, and spring 5, when arranged to operate substantially as specified.

6. The manner described of regulating the movement of the rock-shaft by attaching an air-piston to it, substantially as shown and described.

7. The rotary valve 8, having the openings 9 1' for the passage of both vapor and gas, and held to its seat by a set-screw, substantially as shown.

8. In combination with the gasometer and weighted lever *o*, a device, 7, for stopping the descent of the gasometer in case the light should become extinguished, substantially as described.

9. The combination of the jacket *a*, retort or coil, weighted lever *c*, and connecting-rod *d* for operating the cock *e*, all substantially as set forth.

10. The valve 8, having both ends solid and a chamber in its center, and a small opening for the vapor, an elongated opening for the gas, and a circular discharge for both the vapor and gas, substantially as specified.

142,526.—Blind-Slat Fastener.—THEODORE G. STRINGER, New York, N. Y. Application filed August 29, 1873.

A metal rod is rigidly fixed upon the lower end of the upright rod, which turns the slats. The lower end of this metal rod is bent, and works in a curved slot, in which it is secured in any desired position by a clamp, thus holding the slats at any desired angle.

Claim.—The combination, with the blind-frame and blinds A B C, of the rod D with its lower end bent at right angles, the slotted plate G, and the pivoted cam-lever *e*, all substantially as and for the purposes set forth.

142,527.—Cotton-Bale Tie.—HENRY D. STARR, Texas, Tex. Application filed July 26, 1873.

Claim.—A pair of tie-plates, each consisting of a catch-bar, *d*, and a strap-bar, *c*, connected at their ends by side bars *g* surrounding a slot, *b*, and having extending from the catch-bar, on opposite sides, a tongue or hook, *a*, adapted to engage with the catch-bar of the opposite plate, forming a double lock, as shown and described.

142,528.—Cement-Lined Pipe.—MELVIN STEPHENS, Brooklyn, N. Y. Application filed July 24, 1873.

Metallic socket or branch connection fastened to a cement-lined pipe in peculiar way, and then lined with cement.

Claim.—1. The metallic socket attached to the sheet-metal tube of a cement-lined pipe, and combined with the tapering or cone-shaped end of the tube that enters the recessed end of the next tube, and around which the packing is embedded within the socket, substantially as set forth.

2. The conical or tapering thimble *l*, with its flange inside of and connected with the sheet-metal tube, and lined with cement, as set forth, for forming the connection to the branch pipe, as specified.

142,529.—Permutation-Lock.—ENOCH STOCKWELL, Stamford, Conn. Application filed November 16, 1872.

The arbor upon which the dial-tumblers are mounted is adjustable by means of the knob-spindle, so that, by pressing the knob inward, the inner wheels of the tumblers will be disconnected from the outer rings, when the combination may be changed or set as desired. After this, by drawing the knob outward, the wheels and rings will be again connected, and at the same time a latch is made to engage in a notch in the arbor for the purpose of holding it in position.

Claim.—1. In a permutation-lock, an arbor carrying the permutation-wheels, and adjustable by means of the spindle in changing the combination, substantially as described.

2. The combination of the adjustable arbor, carrying the permutation-wheels, a spring-latch for retaining it in position, and means for releasing said catch, substantially as described.

3. The combination of the inner permutation-wheels, outer rings, and inner and outer furrings, with an adjustable arbor carrying the inner wheels, and with a spring-latch and means for holding said latch and the outer rings and furrings in position while changing the combination, substantially as set forth.

4. The combination of the revolving bolt, carrying the fence-lever, with the arbor, adjustable by means of the spindle, and with the permutation-wheels, all arranged and operating substantially as described.

5. The combination of the spindle, arbor, spring-latch, permutation-wheels, revolving bolt, and fence-lever, and a case provided with an interior curb and external stump or boss adapted for the attachment and adjustment of the dial-disk and sleeve, the arbor being adjustable by means of the spindle, and all the parts arranged and operating substantially as specified.

6. In a permutation-lock, the stump on which the sleeve of the dial-ring screws and the threaded spindle on which the dial is screwed, having a proportionate number of threads to the inch thereon and provided with key-seats, substantially as and for the purpose described.

7. In a permutation-lock, the zero-mark on the dial-ring, adjusted to coincide with the gatings of the lock-tumblers, when said tumblers are set in accordance with the combination, by means of the arranging of the key-seats in the stump and dial-sleeve to receive the key *m*, substantially as described.

142,530.—Gudgeon or Bearing for Ore-Washers.—SAMUEL THOMAS, Catasauqua, assignor to JAMES W. MICKLEY, Hokendauqua, Pa. Application filed July 31, 1873.

The gudgeon is made in two parts, each provided with a flange. One part forms a band surrounding the end of the wooden shaft, and the other constitutes the journal. The two are united by bolts passing through the flanges.

Claim.—The journal or bearing C and cap or band B, in combination with the shaft A, substantially as shown and described.

142,531.—Carriage.—GEORGE K. TICHENOR, Wayland, N. Y. Application filed May 13, 1873.

The springs are supported on the shafts, and the head-block and reach are dispensed with.

Claim.—1. The combination of the carriage-body E, spring D, links *b b*, fifth-wheel *d*, and the shafts C C, as and for the purposes specified.

2. The combination of the carriage-body E, springs H H, bar *f*, links *b' b'*, braces A A, and hind axle A', all substantially as and for the purposes herein set forth.

142,532.—Hair-Wash.—ROBERT TRAVIS, Elkton, Ky., assignor of one-half of his right to JESSE RUSSELL, same place. Application filed March 25, 1873.

Claim.—As a wash for the human hair, a mixture composed of rain-water, sal-soda, hickory ashes, whisky, unslaked lime, and cooking-soda, in the proportions as herein described.

142,533.—Corpse-Cooler.—FREDERICK N. TROLL, Baltimore, Md. Application filed June 25, 1873.

The casket is lined with rubber, and a tube extends from the body-receptacle through the casket for exhausting the air.

Claim.—1. A body-receptacle, D, provided with the rubber pipe *d*, tube *d'*, and stopper *d''*, extending through the casket A, so that the air may be exhausted, in the manner described.

2. The casket A and cover B, lined on the inside with rubber to exclude the air, in the manner set forth.

142,534.—Steam-Generator.—WILLIAM P. TROWBRIDGE, New Haven, Conn. Application filed March 26, 1873.

A pipe filled with liquid is coiled through a furnace, conducted to and coiled through the boiler. The two ends of the pipe are joined in a pump which circulates the liquid.

Claim.—In an apparatus for generating steam or evaporating, consisting of a coil or succession of connected pipes, or a chamber, arranged so that heat may be applied thereto, the said coil or chamber in connection with a second coil or succession of pipes leading from the upper portion of the first and returning into the lower portion of the first, a pump, E, in connection with or between the said heating-chamber or coil and the second coil, whereby a forced circulation of the liquid from the first chamber through a circuit embracing the second coil is maintained through both, and not dependent upon the evaporation in the first or condensation in the second, substantially as and for the purpose described.

142,535.—Washing-Machine.—GEORGE S. WALKER, Erie, Pa. Application filed May 31, 1873.

A pair of wooden rollers with grooves, in which are placed elastic rings, alternating with the wooden grooves, operating with an upper corrugated roller in a suitable metallic frame, having a bed-piece with screw-bolt and other means of fastening to a tub.

Claim.—1. The rollers B B, of wood, with circumferential grooves, into which are placed projecting elastic rings *b b*, forming alternate elastic projections and wooden grooves, the elastic rings of one roller lying in the wooden grooves of the other roller, in combination with the corrugated roller A, all substantially as set forth.

2. The metallic bed-piece D with notched flanges N N, as and for the purposes set forth.

3. The combination of the bed-piece D with points G G, the screw-bolt L with point H, nut M, and thumb-screw K, and the castings I J with countersunk holes, all substantially as and for the purposes set forth.

4. The within-described washing-machine, consisting of the metallic frame D C C, the corrugated roller A, springs F F, and the rollers B B with elastic rings *b b*, all the parts constructed, arranged, and operating substantially as herein set forth.

142,536.—Combined High and Low Water Indicator.—GEORGE WALTON, Cincinnati, Ohio, assignor to POST & CO., same place. Application filed June 26, 1873.

A weighted lever, operated by two yoked floats, is fulcrumed between two escape-valves, one of which is arranged to permit the escape of steam when the water is below the water-line, and the other in the event of the water being above it. Said lever passes through the slotted or stirruped ends of the valve-rods, and operates the valves connected therewith by the rising or falling of the floats.

Claim.—1. In combination with the lever B, the valve-rods A *l m'*, provided with adjustable slotted or stirrup ends *m*, substantially as and for the purposes set forth and described.

2. In combination with the lever B and floats F, the slotted and adjustable hinged yoke D, substantially as set forth and shown.

3. The floats F provided with screw ends by which they may be suitably adjusted, in combination with the slotted hinged yoke D and lever B, substantially as and for the purposes described.

4. The lever B, fulcrum *b*, slotted alarm-valve rods A *l*, stop piece *a*, adjustable weight C, hinged and slotted yoke D, and adjustable floats F, all arranged, constructed, and combined substantially as and for the purposes set forth.

142,537.—Bee-Hive.—NATHANIEL W. WALTON and JAMES L. CUNNINGHAM, Pennsborough, W. Va.; said WALTON assignor to said CUNNINGHAM. Application filed JANUARY 20, 1873.

A bee-hive having the upper bars of comb-frames in two pieces, the top piece pivoted to raised ends upon the lower, and an adjustable and detachable moth-drawer provided with a sliding metal cover, the front end of said drawer projecting to form an alighting-platform for the bees.

Claim.—1. The adjustable and detachable moth-trap composed of the receptacle A', with the alighting-platform *a*' for the bees, and of the sliding or adjustable cover *a*', substantially as shown and described, and for the purpose set forth.

2. In combination with a comb-frame, the pivoted cap *c*, substantially as shown and described, and for the purpose specified.

142,538.—Manufacture of Boots and Shoes.—PRESTON WARE, Jr., Boston, Mass. Application filed May 10, 1873.

Claim.—A boot or shoe having the flat sole *b* produced by means of a last corresponding in shape to that assumed by the foot when a portion of the body rests thereon, as herein shown and described, for the purpose specified.

142,539.—Last for Boots and Shoes.—PRESTON WARE, Jr., Boston, Mass. Application filed May 23, 1873.

Claim.—A last for boots and shoes made with a flat sole, *a*, and corresponding in shape to the shape of the human foot, which the same assumes when a portion of the body rests thereon, as shown and described, for the purpose specified.

142,540.—Air-Cushion for Doors.—JEROME W. WETMORE, Erie, Pa. Application filed January 6, 1873.

An air-cushion or brake to prevent the slamming of doors is formed by attaching a valve-piston to the door and a suitable cylinder to some portion of the casing.

Claim.—The air-cylinder C and piston D, attached one to the door or gate and the other to the casing, to form an air-brake, all constructed, arranged, and operating substantially as and for the purpose set forth.

142,541.—Apparatus for Printing on Solid or Inflexible Surfaces.—AMÉDÉE WILBAUX, Paris, France. Application filed March 10, 1873.

A swinging frame or platen operates, with a sheet of caoutchouc, with a stationary frame and a system of pipes which exhaust the air, by their connection with a vacuum-chamber, upon any type or pattern. The sheet of caoutchouc receives and transfers the impression from the type to glass, metal, porcelain, &c.

Claim.—The movable frame E, with its attached yielding sheet or covering W hung by a cross joint or hinge, K, to a vertical pivot, in combination with the stationary frames B B', the three-way cock T, and pipes for alternating the pressure of the atmosphere to opposite ends of the table, essentially as herein described.

142,542.—Weather-Guard for Doors.—CLARK A. WOOD, Kentland, Ind. Application filed July 21, 1873.

A sheet-metal trough affixed to the lower front edge of a door for collecting and conveying away drip, said trough being provided with a perforated guard of wood to prevent the wind blowing the water out of the receptacle.

Claim.—The weather-strip composed of a gutter, A C, and perforated guard B b, substantially as and for the purpose specified.

142,543.—Ruffler for Sewing-Machines.—CHARLES M. WOOLWORTH, Ottumwa, Iowa. Application filed June 4, 1873.

The lower end of the elbow-lever is connected with the slide; an adjustable arm with a pointer is secured to the elbow-lever, and the lever or link connected with the gate strikes projections on the elbow-lever and arm and moves the ruffler-blade. The guides retain the gate steadily in position.

Claim.—The combination, with the guides C C, of the gate D, lever E, elbow-lever G, arm A, slide I, ruffling-arm J, and spring K, all constructed and arranged to operate substantially as and for the purposes herein set forth.

142,544.—Mode of Operating Sewing-Machines.—EDMUND WRIGHT, Chicago, Ill. Application filed July 23, 1873.

Claim.—1. The combination of the treadles H, the cord K, the pulleys L and L, and the journaled friction clutches E, G, and F, with the driving-wheel D, provided within its hub with the grooves *d*, substantially as and for the purpose specified.

2. In combination with the grooved hub or pulley *d* of the driving-wheel D, the journaled disks E, provided with the pivoted pawls F, which fit into the grooves of said pulley *d*, and are held in engagement therewith by means of the springs G, substantially as and for the purpose shown.

3. The relative arrangement of the driving-wheel D, cord K, pulleys L, and treadles H, substantially as and for the purpose set forth.

4. The brake M N, constructed as shown, and combined with the driving-wheel D, in the manner and for the purpose described.

5. A sewing-machine brake operated by means of a sidewise movement of one of the treadles, substantially as and for the purpose specified.

142,545.—Carburetor.—JAMES F. LOCKWOOD and GEORGE E. LOCKWOOD, Taylorville, Ill. Application filed June 3, 1873.

The regulator is placed over the perpendicular end of the air-pipe, and is so constructed that it will not entirely close the mouth of it. In case of too great a flow of gas or air it rises and moderates its pressure. The hood attachment to the inside cylinder extends obliquely downward and outward, causing the gas or air to pass through the hydrocarbon fluid.

Claim.—In a gas generator or carburetor, the governor or regulator *a*, provided with the apertures *c*, in combination, with cylinder B, having attachment *b* relatively arranged within the filled casing, as shown and described.

142,546.—Paper File and Binder.—LAWSON P. KEECH, Brooklyn, N. Y., assignor to JAMES PHELAN, same place. Application filed February 1, 1873.

Claim.—1. The hinge-bars *d*, united by the hinge plates *g* to the covers *a b*, and applied at the top, bottom, and back of the paper-file, as and for the purposes set forth.

2. The strips *m*, perforated with holes for the binding-cord, and coated near one edge with adhesive material for attaching the letters or papers, as set forth.

REISSUE PATENTS.

5,558.—Shade-Fixture.—STEWART HARTSHORN, New York, N. Y. Patent No. 68,502, dated September 3, 1867. Application filed March 20, 1873.

The pawl or detent and ratchet or notched hub are arranged upon the roller and journal thereof.

Claim.—In a shade-roller, provided with a spring for rolling up the curtain, and having a pawl or detent and ratchet or notched hub, constructed and operating substantially as described, for holding the shade in any position or at any height, the arrangement of each pawl or detent and ratchet or notched hub upon and to the roller, instead of attaching one of such parts to the bracket, or to a part separate from the roller, substantially as and for the purposes set forth.

5,560.—Sash-Holder.—ROBERT B. HUGUNIN, New York, N. Y. Patent No. 137,692, dated April 8, 1873. Application filed July 14, 1873.

A balance friction-lever works inside the roller-arm upon a pivoted bearing. This friction-lever bears upon the rubber only when the weight of the sash rests upon it, leaving the sash free to be elevated.

Claim.—1. In combination with a sash-holder having a roller and an arm operated by a spring, a double-arm balance-clamp, C C', substantially as set forth.

2. The combination of a roller and arm operated by a spring with the double-armed balance-clamp C C', being an independent piece working on a bearing in the rear of the roller, substantially as and for the purposes specified.

3. The projecting end K of arm B, in combination with the projection L on plate A, substantially as and for the purposes specified.

4. The combination of spring G, pin F, and spring-holding projection H on plate A, substantially as and for the purposes specified.

5. The combination of a projection, I, on plate A with a projection, I'', and a bearing, M, on arm B, substantially as and for the purposes specified.

5,559.—Body-Bolsters for Railroad-Cars.—ARMOUR WARD, Altoona, Pa. Patent No. 24,512, dated June 21, 1859; extended seven years. Application filed July 2, 1873.

The body-bolster is constructed on the truss principle. The bearing-plates have concentric flanges, which support the weight of the car. The outside upper flange turns within the two outer flanges of the lower plate. The space between the lower flanges forms an oil-receptacle.

Claim.—1. In body-bolsters for railroad-cars, the combination and arrangement of the trusses F, center plate D, sills G, and tension rod or rods I, as described, and for the purposes set forth.

2. The combination of the bearing-plate B, having the flanges *d b*, which form an oil-receptacle between them, with the bearing-plate D, having the flange *d'*, all substantially as and for the purpose set forth.

5,561.—Machine for Channeling Soles of Boots and Shoes.—MARTIN WESSON, Springfield, Mass., assignor to GORDON MCKAY, trustee of THE MCKAY SEWING-MACHINE ASSOCIATION. Patent No. 24,162, dated May 24, 1859; reissue No. 1,586, dated December 1, 1863; extended seven years. Application filed August 26, 1873.

Claim.—1. The combination of one or more feed-rolls, E F, knife or knives *b b'*, and guide R, or its mechanical equivalent, when operating substantially in the manner and for the purpose herein set forth.

2. The combination of lever L, sliding piece *h h'*, and knives *b b'*, when arranged and operating as described, and forming a knife-holding arrangement for the purpose specified.

3. The mode of determining the action of the cutter or cutters in machine channeling or edging the soles of boots and shoes, consisting in the employment of the perimeter of the sole-edge as a pattern.

5,562.—Non-Conducting Tablets, Platforms, or Mats.—HENRY L. PALMER, New York, N. Y., assignor of one-half interest to CHARLES C. SHILTON, same place. Patent No. 141,312, dated August 12, 1873. Application filed August 29, 1873.

A tablet or mat composed of layers of veneers and a sheet of metal on top surrounded and attached to a molding or border of wood, all glued or otherwise put together.

Claim.—1. As a new article of manufacture, a tablet, platform, or mat composed of a body made of thin sheets of wood or veneers, and of a sheet of metal secured thereto.

2. In a tablet, platform, or mat, a body composed of veneers or thin sheets of wood and a sheet of metal placed thereon, with its edge turned under the same to secure the body and sheet of metal together.

3. In a tablet, platform, or mat, a body composed of veneers or thin sheets of wood, glued or otherwise secured to each other, and a sheet of metal placed thereon, surrounded by and attached to a bead, border, or molding of wood, substantially in the manner shown.

4. In a tablet, platform, or mat, a body of wood covered by a sheet of metal, and cut out in the center under the sheet of metal, whereby an air-space is created between the metal and the resting-place of the tablet, platform, or mat.

5,563.—Tourmure.—AMOS W. THOMAS, Philadelphia, Pa. Patent No. 114,634, dated May 9, 1871; reissue No. 4,903, dated May 14, 1872. Application filed June 20, 1873.

Claim.—1. A bustle standard or support constructed with a base to rest against the person of the wearer, and with an outer extremity or brace arranged to sustain superincumbent weight exerted in the direction of its length without yielding in said direction, and at the same time capable of yielding to lateral or outward impact or pressure, substantially as described.

2. A series of braces, two or more, for sustaining superincumbent weight on a bustle, exerted in the direction of their length, each of which affords support to the bow to which it is attached, without direct connection of said braces with the waistband or other bows, substantially as described.

3. A series of braces, two or more, for sustaining superincumbent weight upon a bustle, arranged so that the bows, or waistband and bows, are kept at a proper relative distance apart, no one of said braces being connected at its outer extremity with more than a single bow, substantially as described.

4. A bustle standard or support for sustaining superincumbent weight exerted in the direction of its length, having its base resting upon or supported by the person of the wearer while its outer extremity is crossed by and secured to a bow, substantially as described.

5. A bustle standard or support for sustaining superincumbent weight exerted in the direction of its length, without yielding in said direction, having a base which rests against the person of the wearer, an outer extremity secured to the bow or bows, and a support proceeding from said base to the waistband, substantially as described.

6. A bustle standard or support for sustaining superincumbent weight, exerted in the direction of its length, having a base which rests against the person of the wearer, an outer extremity secured to the bow or bows, and a brace for keeping said base a fixed distance from the waistband, substantially as described.

7. A series of bustle-braces, two or more, forming a support for sustaining superincumbent weight, without yielding, in the direction of their length, said braces being made flaring, or so arranged relatively that, while their outer extremities are separated by the distance between the points to which said outer extremities are respectively attached, their opposite or inner extremities are in substantially the same plane, or are secured to a common base.

8. A bustle-standard for supporting the bows beneath superincumbent weight, having braces formed of single lengths or pieces of wire bent at or near their middle part, and having their ends secured by suitable means to the bows of a bustle, or to the waistband and a bow, substantially as described.

9. A bustle standard or support for the bows, having a series of braces, two or more, the extremity of each of which is attached substantially as described, and which are united where they come together.

10. A bustle support or brace for sustaining superincumbent weight, exerted in the direction of its length without yielding in such direction, having a base which rests against the person of the wearer, its outer extremity being secured to the bow, so constructed and arranged that when it or the bow to which its said outer extremity is attached is compressed inwardly or toward the person of the wearer, said brace will assume a more nearly vertical position than when sprung.

11. In a bustle, the upper bow or bows of which are supported by a standard whose base rests against the person of the wearer, substantially as described, the employment of an auxiliary bow, suspended by means of hangers or equivalents.

12. A bustle standard or support for sustaining superincumbent weight, composed of two or more braces, capable of yielding to outward impact or pressure to the same, and at the same time having a tendency to spring or return to their normal position when released from such pressure.

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In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of those classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)..... 6,500

SEWING-MACHINES and attachments..... 2,000

FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes..... 4,000

PRINTING; including presses, type, and printers' furniture. 2,500

FELTING and HATS; including caps, bonnets, flock, &c..... 1,200

WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)..... 1,000

STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs..... 1,400

CARRIAGES and WAGONS..... 6,000

RAILWAYS, (in progress.)

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CARDING, CLOTH CORDAGE, KNITTING, SILK, SPINNING, WEAVING, (in progress.)

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OF THE

United States Patent Office.

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DIGEST OF FOREIGN PATENT LAWS.

BELGIUM.

REPORT BY MR. J. G. KENNEDY, OF THE BRITISH LEGATION.

In drawing up the following report I have divided the subject into two parts. In the first part I have endeavored to point out (taking my information from official sources) the difference between the new law of 1854 and the previous law of 1817, and to give some statistical information relating to the number of patents obtained under each law. In the second part my intention has been more particularly to examine the practical interpretation and working of the new law of 1854.

Patents for invention are delivered in Belgium by virtue of the law of May 24, 1854. This law and the royal decree of the same date—copies and translations of which are annexed to this report—determine the rights and the obligations of inventors.

The said law has remained unchanged since the date of its publication, with the exception of two slight and unimportant modifications, both favorable to inventors, introduced in 1857, in articles seven and twenty-two, and, taken as a patent law, it appears to have given general satisfaction on most points.

It may perhaps be stated that a majority of the manufacturing classes in Belgium are in favor of the entire abolition of patent laws, but no decided public expression has yet been given to this feeling, and no immediate step in this direction is, I am informed, contemplated by the legislature.

By the provisions of the law of 1854 patents for inventions are granted without previous examination either of the novelty or of the merit of the invention, and at the risk and peril of the inventor. It is the substitution of the repressive for the preventive system which formed the basis of the old law of January 25, 1817.

The new law has also introduced special modifications with respect to the taxation of patents. By the old law of 1817 the tax, which varied from $60.25 to $265.00 and upward, had to be paid at once on delivery of the patent. The general effect of this condition was the exclusion of all poor inventors. Now that patents cost only $1.90 for the first year, $3.80 for the second, with a yearly increase of $1.90, and that the previous examination is suppressed, the number of inventors has greatly increased, as proved by the following statistics:

The old law of 1817 was applicable to both Holland and Belgium up to the year 1830, the date of the separation of the two countries. During this period of fourteen years, 417 patents, or an average of 29 patents a year, were delivered.

From 1830 up to the 24th of May, 1854, the same law continued in force in Belgium, and during this period of twenty-four years 7,600 patents were granted—*i. e.*, an average of 310 patents a year.

From 24th May, 1854, up to December 31, 1870—*i. e.*, during a period of sixteen and a half years—28,644 patents, or an average of 1,736 patents a year, were delivered in Belgium.

In granting patents the duty of the government is simply to ascertain that the formalities prescribed by the law and the royal decree have been fulfilled. In this case, provided the invention is a licit one, the patent is granted at the risk and peril of the patentee. In the contrary case the patent is refused.

The government also interferes in questions of annulment of patent, first, for default of payment of the annuity tax within the time prescribed; and, secondly, in the event of the invention not being worked ("exploitée.") Excepting in the above two cases, all disputes concerning the exclusive rights of inventors must be decided by the ordinary civil tribunals.

The chief cause of the annulment, or rather of the lapse of patents, is default of payment of the annuity

within the time prescribed. More than ninety-five one-hundredths of the patents become public property in this way.

The following table showns the number of patents granted yearly from 1854 to December, 1870:

Statement of patents from 1854 to 1870, inclusive.

Year of delivery.	No. of patents.	Year of delivery.	No. of patents.
1854	1,028	1863	1,857
1855	1,788	1864	1,548
1856	1,578	1865	1,655
1857	1,516	1866	1,767
1858	1,529	1867	2,012
1859	1,551	1868	2,026
1860	1,719	1869	2,048
1861	1,774	1870	1,516
1862	1,724		

It is hardly necessary to mention the number of patents annulled for omission to work them. Of such annulments there are but two or three a year at the utmost.

The number of patents which cease only at the expiration of the period for which they were granted is very limited. This period varies according to the nature of the patent, whether it is one of invention or of importation.

In the case of a patent of invention this period is twenty years, but the time for which a patent of importation is granted must not exceed the period which the original patent has still to run in the countries where it was first delivered.

The action of government with regard to the concession of patents is very simple, and is defined in the second part of this report and in the law and royal decree of May, 1854. In the case of the canceling of a patent for default in payment, the Finance Department transmits to the Home Department a statement of non-payment drawn up by the tax-receiver ("receveur") of the Finance Department, and thereupon the annulment and of the patent is pronounced and published by royal decree.

In the second part of my report I propose to investigate, summarily, some of the clauses of the Belgian law of 1854, in order to illustrate the practical working of the different sections of the said law and the nature of the privileges conferred, and the obligations incurred by patentees in Belgium.

Article I enacts that three kinds of patents may be granted—a patent of invention, of importation, and of improvement. A patent of invention is granted to the inventor who takes out his Belgian patent before obtaining letters patent in any other country. In that case he is entitled to protection for twenty years.

A patent of importation is granted to an inventor who, previously to lodging his demand in Belgium, has applied for letters patent in any other country. The patent of importation is limited to the term for which the previous foreign patent is granted, and expires with it. Thus a Belgian patent of importation for an invention already protected in Great Britain would be granted for fourteen years, and if the invention were patented in France the Belgian patent would be for fifteen years.

Belgian patents of importation may be taken out in the name of the inventor or his assign duly appointed. It has been decided by the courts in 1858-59, in the cause of *Delloye Masson* vs. *Tremoureux and De Burlet*, that a simple power from the inventor authorizing a party to take out a Belgian patent in his own name suffices for the purpose, said power being stamped and registered.

A patent of improvement may be obtained by a patentee for an improvement on or addition to his previous invention. The patent of improvement must be for improvement of the same nature as the original invention, otherwise it would not be held to be legally valid. No tax is required for a patent of improvement which forms part of the original patent, and expires with it.

In article second the government declines all responsibility as to the value of the patent or of the invention. In case of legal proceedings the patentee may be obliged to lodge a certain sum previously to the case being brought before the courts. When the patentee is a foreigner he is always obliged to make a deposit, but said deposit rarely exceeds $95.00.

Article XVII. In applying for a Belgian patent the inventor or his attorney, having paid the first year's tax, presents himself at the office of the provisional government or "Commissariat d'Arrondissement," where he lodges a receipt for the tax and a petition to the Minister of the Interior, praying that letters patent may be granted to him, and also a sealed packet containing two copies of the specifications and drawings illustrating the invention. The specification may be in any form, and written either in French or Flemish; the drawings may be made on paper of any size. The patent clerk registers the hour and date of the demand in a book kept for the purpose, and signed by the inventor or his attorney and by the head of the office.

Article XXI treats of transfers. All transfers of patents are subject to a registration tax, fixed by the law at $1.90, but, in practice, a few francs more are charged for additionals; and the deed of transfer has to be stamped according to the size of the paper upon which the deed is drawn up. The transfer is then notified to the Minister of the Interior, who has it recorded in the patent office and published summarily in the "Recueil des Brevets d'Invention."

Article XXII of the law of 1854 prescribes that a patent should be null and void in case the annual tax should not be paid within a month of its becoming due. In 1857 this article was modified, and a delay of six months was allowed to pay the tax, with an additional fine of $1.90; and the government is now obliged to call the attention of the inventor to the fact that the tax is due, by a registered letter to that effect. This duty devolves on the delegates ("receveurs") of the ministry of finance. It gives a great deal of trouble without adequate results, for the great majority of inventors who intend to continue their patents pay the annuities as they become due.

Article XXIII enacts that all patentees shall work their invention, or cause it to be worked, within a year of its having been worked in any other country. Commentators have endeavored to give the exact meaning of the word "exploiter," to work, *i. e.*, to construct, use, and vend the patented article. The question whether the manufacture or construction of the article must take place in Belgium has been answered in various ways. It has been argued that, as the Belgian law does not (like the French law of 1844) distinctly forbid the introduction or importation of the patented article from abroad, it may be assumed that such importations are allowed, and that all that is required is to import and sell, or use the patented article in Belgium; and, as a patentee cannot be compelled to find a purchaser, and cannot himself oblige others to purchase, it would be sufficient to import the article and endeavor to sell it.

Others contend that the obligation to work the patent was prescribed expressly in order that the national industry should derive some advantage from the manufacture or construction of the patented article in the country; and this was stated by several members of the Chamber of Representatives and Senate in 1853, during the debates on the proposed new law.

The law has, however, left this matter entirely to the discretion of the government, which alone has power to decide what is to be understood by the working of an invention, and to judge in each case whether the requirements of the law have been complied with. The courts decline all competency in this matter, and assume that a patent has been worked according to law until it has been annulled by the government.

The views of the government in respect of working an invention may be inferred from divers cases in which patents have been annulled. It would appear that it is not considered sufficient to import the patented articles from abroad and put them on sale in one or more shops or warehouses, even if large numbers were sold in the country by this means. It is not even considered sufficient to have a certain number of the patented articles made and sold in Belgium, the same articles being imported also from abroad and sold in Belgium. The mere fact of importing the patented articles into Belgium, excepting a very limited number to serve as models, seems to be considered as quite contrary to the spirit of the law, while a patentee having his invention manufactured in Belgium, and so badly made, owing to the lack of skill or tools or means of the workmen he employed, that no purchaser could be found to buy it, would, in all probability, be held to have complied with the law, from his having manufactured in the country, and thus favored the "national industry."

The government seldom or never interferes as regards the working of a patented invention, unless called upon to do so by any party having an interest to overthrow the patent. The head of the department there states the case to the patentee or his agent, and requests him to say when and where the patent has been worked. Every facility is afforded him to explain his case and prove that he has complied with the law; and it is only if he fail to do so to the satisfaction of the department that his patent is annulled.

The second clause of article twenty-three provides that the government may grant an extension of the term for working a patent. Practically, this seeming act of condescension is valueless; for to obtain such an extension of time the inventor is required to state in his petition the day on which he should have his invention at work, in order to comply with the law—*i. e.*, one year from the date of its having been worked in any other country; which date it is often extremely difficult to be proved against the patentee unless he himself gives it, as in the case under consideration. The inventor's petition is then referred to the different chambers of commerce, and they would not hesitate, in some cases, to give their opinion unfavorably to the patentee, should the invention be valuable and likely to be of advantage to their fellow-countrymen.

(*a.*) The courts may annul a patent if the invention should have been worked commercially in the kingdom by a third party before the demand of the patent.

This alludes to the working commercially by a third party; but if the real and true inventor shall have commercially worked his invention before applying for a patent, such commercial working has no influence on the validity of his patent.

(*b.*) The intentional omission of part of the inventor's secret, or an erroneous specification given in intentionally, also invalidates a patent.

(*c.*) If the complete specification and exact drawings should have been printed and published previously to the demand of the Belgian patent, unless such publication should have been prescribed by law—thus, for the publication of an invention to invalidate a subsequent Belgian patent the complete specification and exact drawings must be published—an abridged specification would have no influence on the Belgian patent. And, as regards patents of importation, an especial exception is made for such publications as the Blue Book, printed specifications of English patents by order of the commissioners of patents.

It may be interesting to mention a further peculiarity connected with Belgian patents of importation, showing what importance is attached by the Belgian law to the patentee being the first and real inventor.

A foreign patentee, though his foreign patent may be several years old, may, should his invention not come under any of the stipulations of article twenty-four, take out a valid Belgian patent, and his Belgian patent will have priority over any patents for the same invention taken out by others between the date of his foreign patent and that of his Belgian patent of importation.

APPENDIX A.

PATENT LAW OF BELGIUM.

[Abstract Translation.]

ARTICLE I. Exclusive and temporary rights shall be granted under the name of patents of invention, of improvement, or of importation, for all discoveries or all improvements capable of being employed as articles of industry or of commerce.

ART. II. Patents shall be granted without previous examination at the risk and peril of the demander, without guarantee as to the reality, or the novelty, or merit of the invention, or to the accuracy of the specification, and without prejudice to the rights of other parties.

ART. III. The duration of patents is fixed at twenty years, save the case provided for in article fourteen, and shall take effect from the date on which the *procès verbal* shall have been made, as mentioned in article eighteen.

For each patent yearly and progressive dues shall be paid, as follows, viz:

First year, $1.90; second year, $3.80; third year, $5.70; and so on to the twentieth year, for which the tax shall be $38.00. These dues shall be paid in advance, and shall not in any case be reimbursed.

No payment of dues shall be required for patents of improvement when granted to the proprietor of the original patent.

ART. IV. The patents guarantee to their possessors or assigns the exclusive right—

(*a.*) To make and sell to their profit the patented article, or cause or license it to be made or sold by other parties.

(*b.*) To sue in the courts of law such persons who may infringe on their rights, either by making the patented article, or by employing the means comprised in the patent, or retaining, selling, or exposing for sale, or introducing into the Belgian Territory one or more counterfeited articles of the same.

ART. V. If the persons sued invirtue of article four (*b*) shall have knowingly infringed, (the patent right,) the courts of law shall pronounce, to the profit of the patentee or of his assigns, confiscation of the articles made in contravention of the patent, or the instruments, tools, or utensils especially destined for executing the same, or award the payment of a sum equal to the price of the articles which may have been already sold.

If the persons sued are of good faith, the court shall prohibit them, under penalty as above stated, from commercially making use of the machines or apparatus of production proved as counterfeits, or to make use of, with the same intent, tools and utensils for making the patented articles.

In either case, damages and interest may be awarded to the patentee or his assigns.

ART. VI. Possessors of patents or their assigns may obtain, by request, authorization from the president of the tribunal of the first instance, to name one or several persons as experts, in order to inspect and make an inventory of the machines, apparatus, or articles supposed to be counterfeited.

The president may by the same ordinance forbid the holders to part with the said articles, and permit the patentee to appoint a guardian, or even to place the articles under seal.

The ordinance of the president shall be communicated by a bailiff *ad hoc*.

ART. VII. The patent shall be joined to the request, which shall contain the address where the inventory is to be made. The examiners named by the president of the court shall be sworn by him, or by a magistrate specially authorized by him, prior to the proceedings.

ART. VIII. The president may bind the patentee to deposit a sum as caution money.

In this case his ordinance shall not be delivered unless proof be given that the caution money has been deposited. The caution money shall always be required from foreigners.

ART. IX. The plaintiff may be present at the inventory if he should be specially authorized by the president of the court.

ART. X. If the doors shall be closed, or access refused, proceedings shall be adopted conformably to article five hundred and eighty-seven of the code of civil procedure.

ART. XI. A copy of the *procès verbal* of the inventory made by the examiners shall be left by the detainer of the articles prescribed.

ART. XII. If in eight days the inventory is not followed by a summons before the tribunal of the district where the inventory was made, the ordinance delivered conformably to article six will lose its effect, and the detainer of the articles described may reclaim the original *procès verbal*, and prevent the patentee from making use of its contents, and render public the same, without prejudice to all damages and interest.

ART. XIII. The courts shall consider patent affairs to be summary and urgent.

ART. XIV. The author of an invention already patented in a foreign country, or his assigns, may obtain a patent of importation in Belgium. The duration of such patent shall not exceed the term of the patent previously granted in another country for the longest term, and in no case exceed the limit fixed by article three.

ART. XV. In case of modification of an invention a patent of improvement may be obtained, the term of which shall end at the expiration of the original patent.

If, nevertheless, the possessor of the new patent is not the principal patentee, he shall not, without the consent of the latter, make use of the original invention, and reciprocally the principal patentee shall not make use of the improvement without the consent of the holder of the new patent.

ART. XVI. Patents of importation and of improvement confer the same rights as patents of invention.

ART. XVII. Any person desirous of obtaining a patent shall be bound to deposit, under seal, in duplicate, at the *greffe* (office) of one of the provisional Governors of the Kingdom, or at the office of a "Commissariat d' Arrondissement," observing the formalities which shall be determined by a Royal Decree, an exact and complete specification, in one of the languages used in Belgium, and an exact drawing made to a metrical scale of the invented article.

No deposit shall be received without the production of a receipt showing that the first annuity tax shall have been paid.

A *procès verbal*, drawn up free of cost by the provisional *greffier*, or by the district commissary, in a special register, and signed by the demander, shall authenticate each deposit and express the day and hour of the delivery of the document.

ART. XVIII. The legal date of the invention is established by the *procès verbal*, which shall be drawn up when the demand of the patent is deposited.

A duplicate of this *procès verbal* shall be given to the depositor free of expense.

ART. XIX. A decree of the Minister of the Interior, proving that the described formalities have been accomplished, shall be delivered forthwith to the depositor, and shall constitute his patent. An extract of this decree shall be published in the "Moniteur."

ART. XX. The specifications of patents granted shall be published *verbatim*, or in substance, under the care of the administration, in a special collection, three months after the grant of the patent. When a patentee shall require a complete publication or extract furnished by himself, such publication shall be effected at his expense.

After the same term the public shall be admitted to inspect the specifications, and copies of them may be be obtained on payment of the expenses.

ART. XXI. All legal transfers of patents between persons, or by will, shall be recorded on payment of a fixed fee of ten francs ($1.90.)

ART. XXII. If the tax fixed by article three of the law of May 24, 1854, shall not have been paid in the month when due, the patentee, after previous notice, must pay before the expiration of six months, under penalty of forfeiture of his rights, a sum of ten francs, ($1.90,) besides the usual annuity.

Holders of patents granted since the enforcement of the above law who may not have paid within the legal delay the annuity tax, conformably to article three, will be relieved of the forfeiture incurred by payment, within three months of the publication of the present law, of the sum of ten francs, ($1.90,) besides the annuities due.

The forfeiture of patents shall be published in the "Moniteur." The same shall happen in case the patentee shall have been, at his own request, relieved of the forfeiture.

ART. XXIII. The proprietor of a patent must work, or cause to be worked, in Belgium, the patented article within a year from the date of its having been worked or used in a foreign country.

The government may, however, by an explanatory decree, inserted in the "Moniteur" before the expiration of this term, grant a prolongation of one year, at most.

At the expiration of the first year, or of the delay which shall have been granted, the patent shall be annulled by a royal decree.

Annulment shall also be pronounced when the patented article, made use of in a foreign country, shall have ceased to be worked in Belgium during one year, unless the possessor of the patent shall be able to justify the motives of his inaction.

ART. XXIV. Patents shall be declared null and void by the courts for the following causes:

(*a.*) When it shall be proved that the patented object has been worked or made use of for commercial purposes by other parties prior to the legal date of its invention, or importation, or improvement.

(*b.*) When the patentee shall have intentionally omitted to explain in the specification joined to his demand any part of his secret, or shall have inaccurately specified the same.

(*c.*) When it shall be proved that the complete specification and accurate drawings of the patented object have been published in a printed work prior to the date of the deposit, unless, as regards patents of importation, this publication should be a case for legal prescription.

ART. XXV. A patent of invention shall be declared null by the courts if the object for which it was granted shall have been previously patented in Belgium or in a foreign country.

Nevertheless, if the demand has the quality required by article fourteen, the patent may be maintained as a patent of importation on the terms of the said article.

These dispositions shall be applicable, should the case arise, to patents of improvements.

ART. XXVI. When forfeiture or extinction of a patent shall have been pronounced, according to articles twenty-four and twenty-five, by judgment or decree, having acquired the force of a case judged, the annulment of the patent shall be proclaimed by a royal decree.

ART. XXVII. Patents which have not expired nor been annulled at the time of publication of the present law shall continue to be governed by the law as it existed at the time they were granted.

Their proprietors, however, shall be at liberty, in the year following the present publication, to make a new demand for a patent, conformably to the form that shall be determined by a royal decree.

In this case the patent may continue to run its course during all the time necessary to complete the period of twenty years, save what is said in article fourteen.

The patents for which the benefits of this disposition shall have been claimed shall be governed by the present law, yet the procedures commenced prior to its publication shall be terminated according to the old law.

The proprietors of patents, who shall have paid the whole amount of the primitive tax, shall pay, after the expiration of the term which had been assigned to their privilege, the taxes due to the subsequent years, agreeably to article three.

With regard to proprietors of patents who shall not have paid the full dues fixed as the acquisition cost of the primitive patent, an account shall be kept of the sums they may have already paid, and the annuities shall be regulated according to the payments made, conformably to article three.

APPENDIX B.

ROYAL DECREE FOR THE EXECUTION OF THE LAW OF MAY 24, 1854.

ARTICLE I. Any person desirous of obtaining a patent of invention, of improvement, or of importation, must deposit a demand to this effect in the office ("greffe") of one of the provincial governments of the kingdom, or in the office of one of the "Commissariats d' Arrondissements" situate out of the chief town of the province.

To this demand must be joined, under sealed cover—

1. The specification of the article invented;

2. The drawings, models, or patterns which may be necessary for the comprehension of the specifications;

3. A duplicate certified copy of the specification and drawings; and

4. A list of the documents and objects deposited.

ART. II. The deposit of the documents mentioned at article one shall not be received without the production of a receipt showing the payment of 10 francs, ($1.90,) forming the first annuity of the tax.

This receipt shall be joined to the other papers.

ART. III. The demand must be written on stamped paper, and indicate the name, surname, occupation, ("possession,") and the real or elected abode of the inventor in the kingdom. It must express a title, including a summary and precise designation of the object of the invention. Each demand shall comprise only one sole principal object, with the details and applications relative thereto.

When a patent of importation shall be demanded the petition shall make known the date and duration of the

original patent, and the country where it has been granted. If the petitioner is not the owner of the foreign patent, but his attorney, ("ayant cause,") he must justify his title by means of an act in due form.

The specification must be written in the French, or German, or Flemish language.

The specification must be written without alterations or interlineations; the words erased as null shall be counted and verified; the pages and references must be initialed, ("paraphés.")

The specification shall explain the invention in a clear and complete manner, and conclude with a clear enunciation of its component parts.

ART. V. The drawings shall be traced in ink, and to a metrical scale; they must represent as near as possible the article to be invented, by plans, and sections, and elevations, and those parts of the drawings which specially characterize the invention must have a different tint from the other parts.

ART. VI. All the documents must be dated and signed by the inventor or his attorney, whose power, duly legalized, shall remain annexed to the demand.

ART. VII. A *procès-verbal* drawn up by the "Greffier" of the provincial government, or by the district commissary, shall be evidence of each deposit, stating the day and hour of the said deposit. The invention shall be designated by the summary and truthful title which the demander shall have indicated.

This *procès-verbal* shall contain the name, surname, quality, and residence of the demander or his attorney, ("mandataire.") It shall also indicate, when a patent of importation is asked for, the date and duration of the original patent, and the name of the patentee. It must make mention of the payment of the first annuity.

This *procès-verbal* shall be signed by the depositor and by the writer of the same, and shall be affixed on the cover of the package containing the documents relative to the demand of the patent.

A copy of the *procès-verbal* shall be delivered free of cost to the depositor.

ART. VIII. The legal date of the invention is confirmed by the said *procès verbal*.

ART. IX. The officers of the provincial "Greffiers" and those of the "Commissaires d'Arrondissement" shall be open for the demand of patents every day from 10 A. M. to 2 P. M., excepting Sundays and fête days.

ART. X. All the documents relating to demands of patents shall be transmitted within five days to the Department of the Interior.

ART. XI. On the arrival of these documents at the above department the demands shall be enrolled, in the order of their date of admission, in a special register, which the public may inspect any day, excepting Sundays and fête days, from 10 A. M. to 2 P. M.

ART. XII. In case of omission or irregularity of form the demander shall be required ("invité") to make the necessary rectifications.

A note of these rectifications shall be made in the special register mentioned in the preceding article.

ART. XIII. Patents demanded in a regular manner shall be delivered without delay.

A decree of the Minister of the Interior, stating the accomplishment of the prescribed formalities, shall be delivered to the demander, and shall constitute his patent.

ART. XIV. The patent shall expressly state that the grant of the same is made without previous examination, at the risk and peril of the demander, and without guarantee as to the reality or the novelty, or the merit of the invention, or to the accuracy of the specification, and without prejudice to the rights of other parties.

ART. XV. The first delivery of patents shall be made free of expense, but all future deliveries demanded by the patentee or his assigns shall be subject to the reimbursement of the expenses.

ART. XVI. The specifications of patents shall be published verbatim or in substance, under the care of the administration, in a special collection three months after the grant of the patent.

When the patentee shall require a complete publication of his specification, or of an extract of the same furnished by himself, he must inform the administration of his desire one month at least before the expiration of the term fixed by the preceding paragraph, and consign the amount requisite to cover the cost of this publication.

ART. XVII. After the said term of three months the public shall be admitted to examine the specifications, and may obtain copies thereof on reimbursement of the expenses.

ART. XVIII. The patentee who may desire to obtain a prolongation of the delay, as provided for by article twenty-three of the law, for putting into activity the patented article, must address his demand to the Minister of the Interior two months at least before the expiration of the delay fixed by the said article.

This demand must contain sufficient motives and indicate within the legal limit the term necessary for putting into activity the invention.

ART. XIX. All cessions or mutations, total or partial, of a patent shall be notified to the Department of the Interior.

The notification of the cession or any other act involving mutation must be accompanied by an authentic extract of the act of cession or of mutation.

ART. XX. Proprietors of patents not expired or annulled at the time of the publication of the law of the 24th May, 1854, may have their rights placed under the administration of this law on forming their demand before the 25th May, 1855.

A patentee who shall not have paid, when the benefit of his disposition shall be demanded, a sum equal to the amount of the annuities due according to article three of the law, shall be bound to effectuate this payment and justify the same by a receipt joined to their demand; otherwise the demand shall be of no avail.

A declaration stating that the patent is placed under the administration of the new law shall be sent to the interested party.

ART. XXI. The grants of patents, the acts of cession or of mutation, as also the declarations mentioned in the preceding article, shall be published in a special collection of patents. The decrees pronouncing annulment of patents, or their having been given up to the public, shall likewise be inserted in the same collection.

ART. XXII. At the expiration of patents the original drawings and specifications shall be deposited in the Museum of Industry.

ART. XXIII. The Minister of the Interior is charged with the execution of the present decree.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,726.—Hand-Machine for Wiring Blind-Beds.—Granted to BERAH C. DAVIS, October 11, 1859. Application filed July 16, 1873. Hearing September 24, 1873.

25,733.—Double-Friction Couplings.—Granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873. Application filed July 7, 1873. Hearing September 24, 1873.

25,747.—Method of Combining Emery with Caoutchouc.—Granted to THOMAS J. MAYALL, October 11, 1859. Application filed June 16, 1873. Hearing September 24, 1873.

25,767.—Cutting and Pressing Cakes.—Granted to JOHN H. SEBOTH, October 11, 1859. Application filed July 11, 1873. Hearing September 24, 1873.

25,784.—Mode of Manufacturing Barrels, &c.—Granted to GEORGE W. BARKER, October 11, 1859. Application filed July 8, 1873. Hearing September 24, 1873.

25,796.—Jacquard Machines.—Granted to AVERY BARNETT, October 18, 1859. Application filed June 30, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 16, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,807.—Horse-Pulleys.—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,814.—Sleeping-Cars.—Granted to JOHN DANNER, October 18, 1859. Application filed July 19, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,843.—Cultivators.—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,862.—Weeding-Hoes.—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 16, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,867.—Machines for Covering Saddle-Trees.—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,874.—Reaming-Machines.—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,883.—Construction of Glass Ceilings.—Granted to JOHN R. CANNON, October 25, 1859. Application filed July 22, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,936.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1868, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to NELSON STOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,003.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 9, 1869. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 9, 1869. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,039.—Shackles for Hanging Saw-Spindle.—Granted to JAMES SOMERVAL, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,062.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,067.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to CYRUS CRAMMOND, JR., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MORSE G. FARMER, November 15, 1859; and reissued December 16, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,126.—Billiard-Table Cushions.—Granted to GEORGE D. SEARS, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 28, 1871. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to EDWARD WIRES, November 15, 1859. Application filed August 12, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WRIGHT, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DARIUS C. GATELY, November 22, 1859. Application filed August 16, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DARIUS C. GATELY, November 22, 1859. Application filed August 16, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,242.—Water-Closet Basins.—Granted to WILLIAM BOCH, SR., November 29, 1859. Application filed June 10, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. PERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,291.—Molding for Metal Casting.—Granted to JOHN P. BRADENBAUGH, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,397.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 26, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,399.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 12, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1869. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,419.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 12, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Melding.—Granted to JOHN FERTH and JOHN INGHAM, December 20, 1859, and reissued April 28, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

27,539.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 29, 1860, and antedated to September 29, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

15,861.—Improvement in Machines for Making Nuts, granted to WILLIAM E. WARD, October 7, 1856; reissued January 1, 1867.

Claim.—1. I claim the two punches, arranged side by side and operated substantially as described, for punching the central hole, cutting off the blanks from the bar, and discharging the same, substantially as described, in combination with the two holes or two dies, so that a hole is punched in the bar for another nut during the continued motion of the punch to discharge the nut which was cut off during the previous part of the same motion.

2. I claim the punching and cutting mechanism, or either, and with the mandrel, or its equivalent, for entering the central hole of the nut-blank, the employment of the spring-jaws, or the equivalent thereof, for transferring the nut-blank from the die to the mandrel, and there holding it until the mandrel enters the hole, substantially as described.

3. I claim the mandrel for holding the nut-blank, in combination with the swaging-surfaces, by which the faces of the nut are formed, substantially as described.

4. I claim the mandrel for holding the nut-blank, substantially as described, the hammers for hammering or swaging the edges of the nut, substantially as described.

5. I claim the swaging-surfaces for forming the faces of the nut, with the hammers for forging the edges of the nut, substantially as specified, and for the purpose set forth.

25,434.—Improvement in Cotton-Scrapers, granted to JONATHAN H. MITCHELL, September 13, 1859.

Claim.—1. The combination and arrangement of the beam *d*, chair *c*, mold-board *a*, and share *b*, when operating substantially as herein set forth.

2. The adjustable and changeable share *b*, when constructed, arranged, and operating substantially as and for the purpose set forth.

25,395.—Improvement in Hooks for Boots and Shoes, granted to SIMEON DODGE, Jr., and BENJAMIN POTTER, Jr., September 13, 1859.

Claim.—A heel having a concave seat and a flat tread, with its rises united by cement, as set forth.

25,442.—Improvement in Portable Furnaces, Boilers, and Steamers, granted to DANIEL R. PRINDLE, September 13, 1859; reissued December 13, 1859, numbered 864; reissued October 8, 1872, numbered 5,095.

Claim.—1. An apparatus in which one of its parts is capable of use either as an open caldron, or as part of a boiler for generating steam, substantially as and for the purpose specified.

2. An apparatus composed of two metallic vessels which, when combined, shall form a boiler for the generation of steam, and when separated shall be capable of use as cauldrons, substantially as and for the purpose shown.

3. The means employed for securing together the flanges of the sections, consisting of the clamps D, *d*, and *d'*, embracing the same and bearing upon the inclines of the flanges *b'*, substantially as set forth.

4. In combination with the steam-generator A and B, the supporting-casing and fire-box C, substantially as and for the purpose shown and described.

Disclaimer filed September 12, 1873.

Disclaims fourth clause of claim, as above set forth.

25,473.—Improvement in Scales, granted to ANDREW TURNBULL, September 13, 1859.

Claim.—1. The combination of the beam-lever F, with scoop-platform C attached, with the spring K, rack J, adjustable or fixed pinion *s* with index or indexes N attached to its arbor *d*, and traversing over a graduated plate or plates, M, substantially as and for the purposes set forth.

2. Attaching or suspending, loosely, the rack J to the beam-lever F by means of a pivot, *f*, and having a spring, *g*, acting on said rack in order to keep the same in gear with the pinion *s*, for the purpose set forth.

3. Attaching the lower end of the spring K to the traverse-bar *h*, by means of the screw L and nut *i*, in order to regulate the tension of the spring and preserve its uniformity, substantially as and for the purpose set forth.

4. In combination with the beam-lever F, spring K, and indexes N, connected with the beam-lever, the stop *j* on the arbor B*, for the purposes specified.

DISCLAIMERS FILED.

24,442.—DANIEL R. PRINDLE.—Portable Furnace, Boiler, and Steamer.—Reissue No. 864, dated September 13, 1859; reissue No. 5,095, October 8, 1872. Disclaims:

"That part of the claim which is in the following words, to wit: '4. In combination with the steam-generator A and B, the supporting-casing and fire-box C, substantially as and for the purpose shown and described.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 9, 1873.]

6,874.—Sad-Iron Handles.—JOSEPH HARGRAVE, Cincinnati, Ohio. Application filed August 2, 1873. Term of patent 14 years.

6,875.—Chairs.—GROVE M. HARWOOD, Troy, and ROBERT WOOD, West Troy, N. Y., assignors to "THE HENRY I. SEYMOUR CHAIR MANUFACTORY," same place. Application filed July 26, 1873. Term of patent 7 years.

6,876.—Lamp-Stand.—WILLIAM H. PERKINS, Meriden, Conn., assignor to EDWARD MILLER & Co., same place. Application filed June 4, 1873. Term of patent 3½ years.

6,877.—Fire-Place Stove.—SAMUEL B. SEXTON, Baltimore, Md. Application filed August 4, 1873. Term of patent 14 years.

6,878.—Inkstand.—BLOOMFIELD BROWER, New York, N. Y. Application filed August 9, 1873. Term of patent 3½ years.

6,879.—Inkstand.—BLOOMFIELD BROWER, New York, N. Y. Application filed August 5, 1873. Term of patent 3½ years.

6,880.—Ruche-Holder.—DAVID KIRCH, New York, N. Y. Application filed August 4, 1873. Term of patent 3½ years.

6,881.—Monument.—MARTIN VAN BUREN MITCHELL, Zanesville, Ohio. Application filed August 20, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date September 9, 1873.]

1,442.—Licorice-Paste.—DANIEL V. ARGUIMBAU, Brooklyn, N. Y. Application filed August 30, 1873.

"G. C."

1,443.—Whisky.—DERBY & DAY, St. Louis, Mo. Application filed August 30, 1873.

"A five-pointed star in the center of the barrel-head, intersected by the name 'Derby and Day,' and having a red or dark colored outer border surrounding a light-colored ground."

1,444.—Watch-Cases.—JOHN C. DUERER, Cincinnati, Ohio. Application filed August 27, 1873.

"An inclined anchor upon a shield."

1,445.—Hat.—J. S. FARNUMBATHER & Co., Danbury, Conn. Application filed August 27, 1873.

"the fac-simile signature 'J. M. Bailey' and the appended words 'The Danbury News Man,' and the portrait."

1,446.—Medicines.—FENTON MANUFACTURING COMPANY, Cleveland, Ohio. Application filed August 28, 1873.

"the arms of the Isle of Man surrounded by the garter, upon which is inscribed the words 'Fenton Manufacturing Company.'"

1,447.—Goods.—D. M. FERRY & Co., Detroit, Mich. Application filed July 14, 1873.

"A square and inclosed circle, within which is printed the name of the vegetable."

1,448.—Whisky.—WILLIAM M. FLIESS & Co., New York, N. Y. Application filed August 23, 1873.

"the words 'Gold Seal Whiskey' and the letter 'F.'"

1,449.—Hosiery.—SMITH & Co., Balbriggan, Ireland. Application filed September 2, 1873.

"the figure of a stocking-leg on a shield."

1,450.—Gold Rings.—THE DUERER WATCH-CASE MANUFACTURING COMPANY, Cincinnati, Ohio. Application filed August 27, 1873.

"A numeral indicating the fineness of the gold, and an inclined anchor upon an oblong hexagonal shield in panel.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date September 9, 1873.]

ORIGINAL PATENTS.

142,547.—Sectional Horseshoe.—JOHN D. ABBOTT, Manchester, N. H., assignor to AARON W. SMITH, same place. Application filed May 6, 1872.

The side plates are hinged together and kept in position and the pressure distributed by a toe-piece with tenons.

Claim.—1. The combination of the side plates of a jointed horseshoe with a toe-plate having the curved tenons *e* loosely fitted to corresponding recesses in the ends of the side plates, whereby the strain may be communicated from one side plate to the other, substantially as described.

2. The improved sectional horseshoe composed of side plates, which are fitted and adjusted to each other at heel and toe, substantially as described, and which are limited in their capacity for movement, in the manner and for the purpose specified.

3. The matched tenons and mortises *e* and *f*, in combination with the side plates of a sectional shoe, substantially as and for the purposes specified.

142,548.—Cutter-Head for Molding-Machines.—JOHN ALLOWAYS, Decatur, Ill. Application filed July 30, 1870.

The cutting-tools are secured in the head by means of a groove in the spindle, into which one edge of the tool enters, the other edge being held in a corresponding groove in an adjustable collar.

Claim.—The combination of the grooves *f f* in the spindle F with the movable collar I, grooves *i i*, and nut H, so as to secure the knives K K in said grooves, substantially as described.

142,549.—Bed-Bottom.—PETER ANDERSON, Chicago, Ill. Application filed March 14, 1873.

To prevent the sagging of the springs and upper portion of the bed-bottom, cables of wire or cord are stretched diagonally from top to bottom, crossing one another, at which point, as also at the sides and ends, they are tightened by rubber springs.

Claim.—The frames A B and springs D, in combination with the cables E and springs *a*, substantially as and for the purposes specified.

142,550.—Process of Disintegrating Woody Fiber for Paper-Pulp.—THOMAS B. ARMITAGE, New York, N. Y. Application filed July 13, 1872.

The chips are first saturated with an alkaline liquor. The superabundant liquor having been poured off, they are then put into a rotating closed vessel, and, steam being introduced, the same by its pressure permeates the wood, disintegrates the same, and by rapidly drying the fiber prevents discoloration.

Claim.—The within-described process of disintegrating woody fiber, wherein the alkali-saturated mass, in a revolving vessel, is subjected to the direct action of steam under pressure, substantially as and for the purposes set forth and described.

142,551.—Motor for Driving Sewing-Machines.—RICHARD H. ATWELL, Baltimore, Md. Application filed June 14, 1871.

An oscillating piston is connected through its main shaft, by a lever, to a fly-wheel, which, at the completion of each stroke, reverses an oscillating valve, causing a fluid under pressure to act alternately upon either side of the piston. The valve-rod is constructed in two parts in such manner as to take up or allow for the excess of motion in the fly-wheel over that which may be used to operate the valve.

Claim.—A combination of piston-chamber, piston, valve, valve-box, piston-shaft, lever, connecting-rod, and valve-gear, to produce a motor, substantially as and for the purpose specified.

142,552.—Device for Sharpening Needles.—RUSSEL S. BARNUM and HARRY C. GOODRICH, Chicago, Ill.; said BARNUM assignor to said GOODRICH. Application filed January 6, 1873.

A friction-wheel is secured to a hollow spindle, in which is placed the article to be sharpened. The spindle revolves on bearing attached to the handle. Motion is given to the wheel by holding it against a moving surface.

Claim.—The device herein described, consisting essentially of the handle C, hollow spindle *d*, and wheel *b*, constructed and arranged to operate substantially as and for the purpose herein specified.

142,553.—Shook-Holder.—JOHN I. BERRY, Williamsport, Pa. Application filed August 23, 1873.

The cross-bars are provided with screws which are driven into the shooks after they are arranged side by side in confluent numbers to form one side of a box or the head of a cask, thus holding them together while being reduced to the form required.

Claim.—The shook-holder described, wherein the several parts are constructed and arranged substantially as set forth.

142,554.—Ornamenting Felt Skirts, &c.—JOB W. BLACKMAN, Brooklyn, N. Y. Application filed July 27, 1872.

Claim.—The improved process of ornamenting felt skirts and analogous goods, consisting in printing or otherwise impressing upon the same figures of any desired pattern in color, whereby the surfaces so printed are rendered non-absorbent, then printing figures on the ground so formed with sizing, and, finally, flocking the sized figures with flock, substantially as described, and for the purpose set forth.

142,555.—Elevator.—ERASTUS BOYDEN, Lowell, Mass. Application filed June 3, 1873.

The elevator is provided with a table and trough to receive the cotton laps, and remove therefrom the metal lap-roll on which the lap is formed, and insert the wooden bar which supports the laps while being transported on the elevator, which is provided with an automatic starting and stopping device, thereby dispensing with hand-labor for this purpose. A set of double or reverse hooks or carriers is provided, so that the rods or bars which support the laps may be transported down opposite the ascending laps, to be again used.

Claim.—1. In combination with the elevator A, the automatic stopping device, consisting of the arm *a* and belt-slipper *c'*, connected by the rod *c'''*, substantially as described.

2. In combination with the elevator A, the automatic starting device, consisting of the trough *c'*, rod *c''*, rod *c'''*, provided with its arm *c* and belt-shipper *c'*, substantially as described.

3. In combination with the elevator A, the table C for receiving the lap while the lap-roll is being removed therefrom, substantially as described.

4. The trough *c'*, in combination with the table C, placed at a proper height to receive the lap-roll from the lap upon the table, substantially as described.

5. The double or reverse hooks *e e*, attached to the elevator A, so as to transport the rods *a* on the opposite side from the laps, substantially as described.

142,556.—Axle-Box for Vehicles.—WILLIAM A. CLARK, New Haven, Conn. Application filed December 6, 1872.

Claim.—1. A wrought-iron steel-lined box for carriage-wheels, constructed substantially as described.

2. The collar D, composed of a separate piece and secured upon the enlarged end of the box, substantially as set forth.

142,557.—Try-Square.—WILLIAM H. COOPER, Lowell, Mass. Application filed June 9, 1873.

A detached straight-edged blade is arranged to be set in various positions along the blade of a common try-square, by means of a yoke and clamp-screw.

Claim.—The combination of the supplementary blade C, provided with the yoke D and thumb-screw E, with a square, A B, as and for the purpose herein described.

142,556.—Elevated Oven Attachment for Stoves.—GEORGE CRAIGE and JOHN W. BLOSS, Fairfield, Iowa. Application filed February 1, 1873.

By means of pipe thimbles in its lower and upper sides, this oven can be readily attached to a stove-top. It has an upper and a lower chamber, the one opening in front and the other opening in the rear, and both provided with suitable doors. The heat can be regulated by the dampers.

Claim.—The hereinbefore-described supplemental oven, consisting of the external casing A, the compartments C and D, the doors E and H, and the dampers F, F', and I, substantially as and for the purpose specified.

142,559.—Rotary Engine.—JOSEPH E. CASE, Charlestown, Mass. Application filed May 26, 1873.

Two cylinders on and at right angles to the shaft receive and exhaust steam through a rotary valve. Friction-wheels on each end of each piston-rod bear on stationary cams placed vertically around the cylinders to revolve them.

Claim.—1. The combination of the cylinders A A', arranged at right angles with each other and forming part of the main shaft G, the bearings F F' with valve-seat, pistons A'' A'', cams B, cylinder-head c, and valves D E, all substantially as and for the purposes herein set forth.

2. The valve D E made in two parts, united as described, and provided with an annular passage, O, between them, and with an uneven number of inlet and exhaust passages, all as and for the purposes herein set forth.

3. The combination of the valves D E, jam-nuts *m m*, lever and handle D', studs I I, and projections I' I' with the cylinder and its parts, substantially as and for the purposes herein set forth.

4. The combination of the valve-seat, the stud S, valve D, valve E, friction-bar N, and the jam-nuts *n n*, substantially as shown, and for the purposes set forth.

142,560.—Machine for Threading Screw-Blanks.—EDWARD CROFT, Waterbury, Conn. Application filed August 12, 1873.

The screw-blanks are threaded by being rolled between the two die-faces, the configuration of which is that described in the claim, the increased pitch of the grooves corresponding to the elongation of the blank.

Claim.—1. The combination of two converging dies having longitudinal indenting-ridges of progressively increasing pitch, substantially as before set forth.

2. The combination of two converging dies having longitudinal ridges of progressively increasing pitch, and also profiles which are concave at the sides which correspond with the point of the screw, substantially as before set forth.

142,561.—Wool-Drying Frame.—EDWARD DUFFEE, Haverhill, Mass., assignor to himself and HENRY M. BRAGG, same place. Application filed May 5, 1873.

Claim.—As an improved article of manufacture, the above-described wool-drying frame, consisting of the bars A, A^1, A^2, and A^3, grooved longitudinally, and having thin strips of wood or rattan reeved through the same, and crossed or interlaced in manner substantially as shown.

142,562.—Hand-Lever Attachment for Steam-Pumps.—OSCAR T. RAMER, Norwalk, Conn. Application filed March 3, 1873.

Claim.—The combination of the detachable hand-lever for direct-acting steam-pumps, arranged horizontally between the two cylinders and the tappet-arm, substantially as described.

142,563.—Fire-Proof Shutter.—ABRAHAM GOTTLIEB, Chicago, Ill. Application filed July 15, 1873.

A double-walled ventilating iron shutter, divided into vertical flues by channel-bars, and perforated to allow of the circulation of air.

Claim.—1. A double-walled iron shutter divided into cells by vertical channel-bars, substantially as herein described and shown.

2. In a exterior double-walled shutter, constructed substantially as herein described, the perforations *a* in the bottom bar, the vertical channel-bars, and the covering-plates, when arranged in different horizontal planes, substantially as described.

142,564.—Friction-Clutch.—JOHN J. GRANT, Greenfield, Mass., assignor to himself, SOLON L. WILEY, and CHARLES P. RUSSELL, same place. Application filed August 16, 1873.

The segmental friction-pads are contracted or expanded by means of shafts, upon the ends of which are cut right and left hand screws; these screws are fitted to work in screw-holes cut in the expansible friction-pads; to these shafts are secured curved levers, which are operated by a sliding conical hub.

Claim.—1. The rim *e* of the pulley, expansive frictional pads *a*, and shafts *i*, when combined together, as and for the purposes described.

2. The shafts *i*, upon the ends of which are cut right-handed and left-handed screws, when combined, as herein described, with the segmental drivers or frictional pads *a*, as herein described.

3. The combination of cylindrical shaft *i*, lever *l*, and set-screw *f*, whereby the position of the shaft *i* may be accurately adjusted.

4. The combination of the carrier *f*, provided with ears *h*, levers *l*, frictional pads *a*, spring *p*, and pulley B, as and for the purposes described.

142,565.—Strap-Fastening for Trunks, &c.—WILLIAM GRINGTED, Washington, D. C. Application filed February 4, 1873.

Claim.—The lever B, in combination with the straps D D, attached at C C, and the buckles attached at E E, substantially as and for the purpose set forth.

142,566.—End-Gate for Wagons.—FRED. GRUNDY, Morrisonville, Ill. Application filed March 19, 1873.

The hooked ends of an arched rod are secured by vertical rods, and a snap-hook is attached to the sides of the wagon-body.

Claim.—In combination with an end-gate of a wagon, the rods D D, having hooks *e e e e*, rods G A, and spring-catch B, substantially as and for the purpose set forth.

142,567.—Stove-Pipe for Vessels.—JOHN HALL, Quincy, Mass., assignor to LOUISE I. HALL, same place. Application filed July 23, 1873.

The pendent tubular weight is suspended in the section of pipe immediately beneath the deck from the diametric cross-bar in the section above. This upper section stands on the flange of a tubular supporter, which passes through the deck and makes connection between the section above and that below. When the upper section is accidentally deflected by the wind the sliding tubular weight tends to restore it to its proper position.

Claim.—The pendent tubular weight B and its supporting-chain *g*, and the perforated diametric bars *b c*, arranged and combined with the two sections of stove-pipe and the supporter A thereof, all substantially as and to operate as specified.

142,568.—Tool-Handle.—WALTER B. HILL, Battle Creek, Mich. Application filed June 24, 1873.

The handle is secured to the tool by clips and straps fastened by gib and key.

Claim.—1. The combination of the clip H, the tool A, provided with a recess, *a*, upon its inner side, and the strap C having its head constructed to fit into said recess, substantially as described and shown.

2. The combination of the clip H, the tool A, the strap C and the blocks G and E, the latter provided with the lips *f' f'*, substantially as described and shown.

142,569.—Cut-Off for Cisterns.—GEORGE W. HOWELL, Covington, Ky. Application filed June 19, 1873.

The valve is formed of two pieces of metal joined at their upper ends and open at the bottom to rest upon each side of a ledge between the branch pipes, upon which they turn as the valve is opened or closed, making a water-tight joint at the bottom of the chamber.

Claim.—The triangular shell or casing A, having the radiating pipes B C D and slot or opening *b*, as shown, in combination with each other and with the valve F, composed of the plates I H and handle E, and the vertical ledge or rib Y, all constructed and arranged for operation substantially as described.

142,570.—Wrench.—WILLIAM J. INNS, Oil City, Pa. Application filed April 18, 1873.

The lower portion of the collar that supports the operating-screw is provided with openings to allow its compression into the recesses of the main bar where it is held by an additional ferrule.

Claim.—1. The collar D *d*, having one or more openings, H, for the purpose of reducing the diameter of the same, so as to firmly clasp bar A, as set forth.

2. The collar D, ferrule E, bar A, in combination with handle B, for the purpose set forth.

142,571.—Furnace for the Manufacture of Oxide of Zinc.—JOHN G. LANG, Pittsburg, Pa. Application filed August 16, 1873.

The arrangement of the fire and working chamber is such that the heat is applied first to the under side of the spelter and then to the upper surface.

Claim.—The furnace, hereinbefore described, consisting of the fire-chamber E, the working-chamber C provided with work-holes *f* and flue D, and the condensing-chamber B having a collecting and condensing cylinder, M, the several parts being combined and relatively arranged as and for the purpose specified.

142,572.—Self-Acting Coal-Car Brake.—JOHN D. LEONARD, Cleveland, Ohio, assignor of one-half his right to RICHARD R. HOTT, same place. Application filed June 26, 1873.

One axle of the truck is secured to pillar-blocks, which slide on friction-rollers. The brake-rubber is arranged between the forward and hind wheel. The movable axle is held out of contact with the brake-rubber by means of a lever and ratchet, while on a descending grade the lever is released, the weight of the car forces the wheels of the forward axle against the brake-rubber, and stops the car.

Claim.—The combination and arrangement of the pillar-block D, having slots *d d*, the bar *f*, having friction-rollers *g g*, the brackets A A, the lever K, push-bar L, brake-blocks I I, and bar J, ratchet *m*, with the axles B B, wheels C C, and body A of the car, substantially as shown and described, and for the purpose set forth.

142,573.—Method of Treating Glass-Molds.—JAMES LYDIATT, Montreal, Canada, assignor to NEW ENGLAND GLASS COMPANY, Boston, Mass. Application filed May 26, 1873.

Applies plumbago to formative surface, which is then polished.

Claim.—The application to the formative surface of a glass-forming mold of one or more coatings of plumbago, and subsequently treating each in the manner and for the purpose set forth.

142,574.—Machine for Making Staples.—WESLEY MALICK, Erie, Pa. Application filed September 1, 1873.

A hook at the lower end of a curved arm, attached to and reciprocating with the movable cutter, supports the wire at a point between the feed-rolls and the cutter. A cam, secured to the stationary cutter-block, prevents, by its square edge, lateral displacement of the wire while being severed; and the bending-hook is made to ascend after drawing the blank downward between the walls of the die.

Claim.—1. The rod-carrier M N, when attached to the movable knife W, as shown and described.

2. The combination of the plunger I, movable knife W, rod-carrier M N, with the bed-knife D, and guide-cap C, as shown, and for the purposes named.

3. The combination of the bending-plunger F, eccentric P, pin X, and slot Y, and finger-pin G, with the jaw K and bed-piece B, as shown, and for the purposes mentioned.

142,575.—Jeweler's Show-Case.—MORRIS MARTIN and JOHN A. STUDNS, Pittsburg, Pa. Application filed July 3, 1873.

Claim.—1. A ring-case, *a*, the ring-slots of which are formed by a rigid and an elastic slat, substantially as and for the purposes described.

2. The arrangement, under each cross-series of ring-pockets, of a slide, *g*, provided with hooks *r*, and a spring, *s*, which causes it to spring forward so that the hooks shall engage and secure the rings in their pockets, substantially as described.

142,576.—Tile-Machine.—CALVIN J. MERRILL, Upper Alton, Ill. Application filed August 4, 1873.

The faces of the wheels have a series of molds. In the bottom of each mold, in the lower wheel, is placed a metallic plate of the same form as the die, whereby the pressed article is released from the die by the raising of said plate.

Claim.—1. In tile-machines, in the wheel C, the combination of a steam-chamber, *a*, tube *b*, and a hollow shaft, G', and the dies G, substantially as and for the purpose set forth.

2. The tongue I', rod d, bar H, in combination with the die G and cam B, substantially as and for the purpose set forth.

3. In a wheel carrying molds or dies, the combination of a hollow cylinder-shaft and connecting-pipes and chambers for heating such molds or dies, substantially as and for the purpose set forth.

142,577.—Dredger.—JOHN F. MOSES, Oshkosh, Wis. Application filed February 24, 1872.

The bow of the vessel is of a ram-shape, the concavity being upward. Upon this are mounted the dredging-wheels, which are of fan-propeller form, rotated by means of steam-machinery carried on the vessel.

Claim.—The dredging-vessel A, formed with upward-receding concave bows, in combination with two or more propeller-blade wheels adapted to be mechanically rotated, as described, for the purpose of removing sand-bars, substantially as specified.

142,578.—Mechanical Movement.—WILLIAM OLIVER, Haynesville, La. Application filed July 21, 1873.

A shaft bears eccentrics, which are set directly opposite and are provided with straps that connect with the ends of a rocking lever, to which pawls are attached. As the lever rocks the pawls alternately catch in the links of the chain.

Claim.—A mechanical movement consisting of the eccentrics D D, straps E E, lever F, pawls I I, and chain J, when the same are combined and arranged to operate as and for the purposes described.

142,579.—Wagon-Brake.—WILLIAM F. OSBORN, Burlington, Kans. Application filed March 29, 1873.

The brakes can be applied to the front and hind wheels at the same time, and are operated by the movement of the wagon-body.

Claim.—The combination of the bar A, connected to the reach by the rods *g*, the bar A', connected to the bolster by the rods E, the reach D, and bolster C, the whole adapted to lock the fore wheels and the hind wheels at the same time, substantially as set forth.

142,580.—Vegetable-Cutter.—GEORGE W. PARKER, Bellaire, Ohio, assignor of one-half his right to C. L. POORMAN, same place. Application filed May 1, 1873.

The hopper is divided into sections by radial partitions, meeting at a central shielding-tube for the cutter-shaft.

Claim.—1. The combination of the bottom or ring A, standards C C C, radially-armed top frame D, sectional hopper E, and radially-armed bearing F, constructed and arranged substantially as and for the purpose herein specified.

2. The shaft-shielding tube I and radial partitions M M M, in combination with the hopper or cutting-box E and cutter-wheel K, substantially as and for the purpose herein specified.

142,581.—Revolving Horse-Rake.—GEORGE PHILLIPS, Sr., Buchanan, assignor to JAMES M. PERRINE, Sobiesky's Station, Ohio. Application filed May 26, 1873.

A spring-clasp attached to a hand-lever, and which spans either of two teeth, causes the revolution of the rake.

Claim.—The spring clasping-fingers L for embracing the rake-teeth, and curved extension M for lifting the rake, in combination with the lever F and pivoted draft-connection O, all constructed and arranged as and for the purpose specified.

142,582.—Machine for Mining Coal.—FRANCIS M. WRIGHT, Danville, Ill. Application filed February 21, 1873.

The slide bearing the drills has lateral reciprocating motion by means of the cam, connected with the driving-wheel, which gives to the sleeves holding the drills rotary motion at the same time, thus cutting a long groove in the coal.

Claim.—1. In the machine for mining coal or other minerals, a slide, carrying a gang of drills, which receive a reciprocating and a rotary motion by the action of the cam, substantially as set forth.

2. The sleeves 5 6 in combination with operating mechanism for feeding the drills forward, substantially as shown.

3. The combination of the slide 4, carrying the drills, with the eccentric and shaft 1, substantially as described.

4. The castings *c*, having the slots *a* for the adjustment of the drills, in combination with the castings *g*, substantially as specified.

5. The combination of the shafts 1 *a*, wheels 1 *u u u'*, eccentric 3, rod 4, slide 2, and gearing to communicate motion to the drills, substantially as set forth.

6. A mining-machine in which the various parts are arranged and combined for operation, substantially as shown and described.

142,583.—Coupling for Connecting Cradles to Rocking-Chairs.—JAMES REEVES, Cincinnati, Ohio. Application filed May 31, 1873.

One socket is attached to the cradle and another to the chair. A straight rigid bar is pivoted to the cradle-socket so that when the chair and cradle are disconnected it can be turned to a perpendicular position; the other end of the bar is detachably connected to the socket of the rocking-chair by means of a removable pin.

Claim.—The within-described coupling device for attaching rocking-chairs to cradles, which device consists of the sockets C D *d d' G g g'* H, rigid bar or link E *e*, and removable pin F, substantially as herein described and set forth.

142,584.—Splitting-Gage.—THOMAS RICE, Boston, Mass. Application filed March 6, 1873.

The material is severed by a rotating knife, C, on the end of the spindle *c*, inserted in a gage-bar, B. The fence D regulates the depth of cut.

Claim.—As a new article of manufacture, the splitting-tool, as described, consisting of the revolving knife C, the adjustable vertical gage-plate D, the rectangular bar B, cleat E, block G, and handle A, all constructed and arranged substantially as and for the purpose set forth.

142,585.—Saw Filing and Setting Machine.—NOBLE G. ROSS, Mitchellville, Iowa. Application filed January 27, 1873.

Every revolution of the file will sharpen the teeth on one side and at the same time move the saw so that every alternate tooth is brought under the striking-hammer. To file and set each side of the saw a right-and-left-hand file is used.

Claim.—The combined saw filing and setting machine composed of the frame *a a a*, the file *b b*, the shaft *s s*, the cam *g*, the driving mechanism *d f*, the adjustable rest *h h*, the holders *m m*, and the hammer B, substantially as described, and for the purposes specified.

142,586.—Extension-Table.—JOHN M. SACKMAN, Ridgeville, Ind., assignor to himself and JOSEPH D. MAHON, same place. Application filed June 7, 1873.

Claim.—An extension-table composed of two semicircular tables with intervening removable leaves supported by detachable side-rails fastened by means of dovetail locks, said semicircular tables being each self-supporting, whereby they may be used independently as side-tables or together as a center-table, substantially as described.

142,587.—Car-Wheel.—JOHN K. SAX, Pittston, and GEORGE W. KEAR, Kingston, Pa. Application filed December 16, 1872.

Improvement on patent No. 68,743, April 6, 1869; reissued (No. 3,954) May 3, 1870.

Claim.—A car-wheel having a cast-iron body welded directly, and without any intervening band of wrought-iron or the like, to a cast-steel tire, substantially as described.

142,588.—Compound Metal-Working Machine.—HIRAM B. SEVEY, Vienna, Me. Application filed July 16, 1873.

A movable carriage, to which are attached the movable portions of a horseshoe-bender, a vise, a metal-bender, an axle-tree bender, rod-cutter, shears, angle-iron bender, and gearing of gumlines, operated by a combination of levers.

Claim.—The movable carriage *f'* operated by means of the hand-lever *a*, connecting-rod *b*, cam *d*, and spring *e*, as herein described, in combination with the vise, the horseshoe-bender, the metal bender, the axle-tree bender, the round or bolt iron cutter,

the shears, the bender to bend iron into a V or square shape, and the punchers, as herein set forth.

142,589.—Heater for Steam Fire-Engines.—WILLIAM F. SHAW, Boston, Mass., assignor to himself and DAVID SHARP, same place. Application filed August 12, 1873.

The water-jacket is surrounded by a chamber containing heated air, supplied from the combustion-chamber, at the bottom of which there is attached an annular trough for intercepting sparks or cinders.

Claim.—1. The combination of the external heating-chamber K and one or more pipes, b, with the coil F and water-holding vessel or space E, arranged and connected, as described, all being for use and to operate essentially as set forth.

2. The water-heater, as provided with the intercepting-trough L arranged in it, as and for the purpose substantially as specified.

142,590.—Horseshoe.—AARON W. SMITH, Manchester, N. H. Application filed February 19, 1873.

A metallic wearing-sole is attached to a permanent shoe with an elastic cushion interposed. The cushion is provided with marginal flanges to protect the edges of the shoe and prevent injury by interference. The calks are attached to the shoe by countersunk screws, which turn into wood or metal nuts to facilitate removing them in case of fracture.

Claim.—1. The main shoe A, supplemental shoe or wearing-sole B, and interposed elastic cushion C, when the same are united by screws e and bosses g, in combination with countersunk perforations p, receiving the said bosses, so as not to obstruct the yielding movement of the sole, as set forth.

2. The combination of a flexible shoe, A, a slotted supplemental shoe, B, and an interposed cushion, C, as herein described.

3. The edge-guard r, combined with the cushion C, as described, for the purposes specified.

4. The plugs x, constructed and employed substantially as described, in combination with screws y for attaching the calks.

5. The combination of the flanges w, bosses v, countersunk screws y, and plugs x, substantially as described, for the purpose set forth.

6. The rivet-shanks z of the calk D, headed on the upper side of the removable supplemental shoe B, as described, for the purpose specified.

142,591.—Machine for Cutting Veneers.—JOHN A. SQUIRES, New York, N. Y. Application filed June 21, 1873.

The knife C is securely fastened in the binder B B', which, with the knife, can be removed for the purpose of grinding.

Claim.—The knife-bed A, provided with a groove, E, in combination with a knife-binder, B B', to which the knife is attached, as and for the purposes shown and described.

142,592.—Loom-Picking Mechanism.—WILLIAM STEARNS, Manchester, N. H. Application filed July 28, 1873.

A lug cast on the rail extends up from the rail through an opening in the rocker, and a lug from the rocker down through the rail, the latter lug being made to embrace and support the lower end of the picker-stick, which is extended below the rail. The stick is brought back by a coiled spring placed under the rail, and the stud which carries the spring is provided with a cup-flange to protect it from dust and dirt.

Claim.—1. The combination and arrangement of the lug H, cast on the rail and entering the hole in the rocker, with the lug J on the rocker working in the hole in the rail, the whole being constructed and operating as described, and for the purpose set forth.

2. In combination with the picker-staff extended down through the rail, the lug J on the rocker D, extended through the rail and embracing and supporting the picker-staff I, substantially as described.

3. In combination with the coiled spring P and the picker-staff I, the stud Q, provided with the cup-flange, as and for the purpose specified.

142,593.—Harrow.—REUBEN L. TAYLOR, Golden Prairie, Iowa. Application filed July 2, 1873.

Constructing harrows by placing straight bars side by side and securing them by interposing short pieces; it is further secured by placing a diagonal bar across the frame.

Claim.—The combination and arrangement of the main bars A A, diagonal cross-bars B B, with the short bars C C and the main diagonal bar D, carrying teeth at each end, substantially as described.

142,594.—Paving Composition.—ALBERT THIELE, Tickfaw, assignor of one-half his right to LOUIS SCHORMANN, New Orleans, La. Application filed May 14, 1873.

Bituminous or asphaltic clay, four hundred parts; coal-tar, fifteen parts; resin, ten parts; chalk, twenty parts; gravel, forty parts; sharp sand, sixty parts. Mixed and combined by heat, and applied in a plastic condition.

Claim.—The improved composition pavement, composed of the ingredients and about in the proportions stated, for the purposes set forth.

142,595.—Composition Mastic.—ALBERT THIELE, Tickfaw, assignor of one-half his right to LOUIS SCHORMANN, New Orleans, La. Application filed July 3, 1873.

Compound of forty parts clean sharp sand, one hundred parts of chalk, fifteen parts tallow, and six parts of tar.

Claim.—The composition herein described, when composed of the ingredients combined in and about the proportions stated, for the purposes set forth.

142,596.—Railroad Cattle-Guard.—ISAAC C. TURNBOW, Roodhouse, and ANDREW REEVE, Pike county, Ill. Application filed April 29, 1872.

The beams L L', hinged at one end and free to move at the other, support a platform, which, when depressed, operates a self-closing gate.

Claim.—The series of beams L L', in combination with each other and the gate-opening devices, as described, the beams being hinged at one end, and free to move at the other to transmit motion to open the gate, as described.

142,597.—Manufacture of Horseshoe-Nails.—DAVID TURBAYNE, Boston, Mass., assignor to GLOBE NAIL COMPANY, same place. Application filed July 24, 1873.

A conductor extends downward from the dies and conveys the nail to a pair of rolls, by which its shank is drawn out.

Claim.—1. The combination and arrangement of the gripping-dies e f, upsetting-die g, conductor d', and die-rolls d' f', operating substantially as described.

2. The process of forming a nail or blank by cutting from a plate of uniform thickness a blank with a shouldered head, upsetting the head to impart the requisite shape thereto, and drawing the shank by rollers, all substantially as described.

142,598.—Ventilating Buildings.—LAWRENCE B. VALK, Brooklyn, N. Y. Application filed May 24, 1873.

A double tube located between the roof and ceiling of the building, having trap-doors and ventilating-sashes worked by wires from the floor of the room. The space between the tubes is heated by the gas-burners, which causes an upward draft and draws the foul air off.

Claim.—The tube A B, provided with ventilating-sash K, in combination with the tube G, trap-doors P, and tubes R, all constructed and arranged to operate substantially as set forth.

142,599.—Seed Drill and Planter.—WILLIAM F. WEST, Haverstraw, N. Y. Application filed July 27, 1871.

Claim.—In combination with the detachable axle A, the couplings E F, spring G, cam H on the transverse roller I, and hand-lever J, for the purpose of throwing the wheels in and out of gear with the axle by a to-and-fro motion of the lever J by the driver, substantially as described.

142,600.—Railroad-Car Brake.—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed March 8, 1873.

A truss-brake-bar, the tie-rods of which are headed and attached to the shoe-holder, preventing them from spreading outwardly, while the ends of the braces are inserted in a recess in the inside of the holder and prevent them from being forced inwardly. An extra triangular brace secures the tie-rods and braces together and further strengthens them.

Claim.—1. The combination of the tie-rods a a, each having upset heads a', the shoe-holders b b having lateral recesses for the insertion of the tie-rods, and the braces b' b' bearing against the inside of the shoe-holders, whereby the parts named are held in place solely by the tightening of the braces, substantially as described.

2. A shoe holder having one or more recesses, c c, each recess having a lateral opening of proper size to admit the tie-rod, but not the head, and also having a seat, c', for the heads a', such that the heads cannot be removed laterally therefrom, substantially as described.

3. The shoes g, having grooves which are closed at their outer ends, as shown at c c', and also each having a lug, g', in combination with holders b, each provided with a rotating hook, h, substantially as described.

4. The lug c', on the rear face of the shoe, suitably arranged to enter the recess c and hold the lower end or eye of the hanger in place, substantially as described.

5. The hanger w, having a connection at or from its lower end to the middle of the brake-bar, and at its upper end being connected to a spring which leads from a fixed part of the truck or car, substantially as and for the purposes set forth.

6. The clamp device, consisting of a hand, o, and block b, arranged in combination with the tie and brace rod or rods of a truss brake-bar, substantially as set forth.

142,601.—Composition for Pavements.—SAMUEL J. WHITING, Philadelphia, Pa. Application filed August 20, 1873.

A composition for paving and other purposes, consisting of trinidad bitumen, twenty parts; balata gum, one part; asphaltic oil, five parts; granulated shells or coral sand, forty parts; granulated granite, ten parts; pulverized carbonate of lime, fifteen parts; resin, three parts; sand, six parts.

Claim.—The within-described composition, formed of the ingredients, in the manner and of about the proportions set forth.

142,602.—Kettle and Pan Scraper.—EMMA J. WHITMAN, Oakland, Cal. Application filed June 2, 1873.

To the lower part of the stem are secured two blades, on opposite sides of the same, and bent to an acute angle with said stem.

Claim.—The culinary scraper with handle A, stem B, and blades C and D, constructed and operated in the manner and for the purposes set forth.

142,603.—Last-Block Fastener.—LUTHER S. WRIGHT, Groton, N. Y. Application filed July 25, 1873.

A vertical post, having lateral arms near its top, is pivoted to the last, and moves back and forth in a longitudinal groove. When the post or bolt is moved forward the arms fall into slots in the end of the block and hold it in place.

Claim.—1. The pivoted clasp C, or its equivalent, for the purpose specified.

2. The combination of the pivoted clasp C, last A, and block B, substantially as and for the purpose specified.

142,604.—Sash-Balance.—LUTHER S. WRIGHT, Groton, N. Y. Application filed July 25, 1873.

A single pinion-wheel is loosely journaled in the window-frame. Ratchet-bars are applied to each sash, and two springs cause the pinion to gear with both the ratchet-bars.

Claim.—The combination of the pinion D and movable shaft E with the springs G G' and ratchet-bars C C', operating in the manner substantially as and for the purpose specified.

142,605.—Pneumatic-Railway Cars.—HENRY G. YATES, Kalamazoo, Mich. Application filed April 18, 1873.

The wheels are connected by a cylinder, within which is a smaller cylinder, in which it is intended the freight shall be transported. The car is specially adapted for use in pneumatic tubes.

Claim.—The railway-car C, connected with its wheels D D by the independent journals c' c' and cylindrical connection d, constructed substantially as and for the purpose described.

142,606.—Feed-Box for Envelope-Machines.—EDWIN ALLEN, Norwich, Conn., assignor to THE ALLEN MANUFACTURING COMPANY, same place. Application filed February 10, 1873.

The feed-box is hinged to the table so as to swing forward, whereby its blank-holding toes are raised, to facilitate refilling, by means of rods riding over cam-faced supporting-hangers.

Claim.—1. The combination and arrangement of the frames F, guides G e e, and adjustable pointed plates E, when applied to the feed-box of an envelope-machine for the purpose of separating the blanks, substantially as described.

2. The combination, with the frames F having guides and adjustable points, of the pins H and fixed cams K, substantially as and for the purpose herein set forth.

142,607.—Inking Apparatus for Rotary Printing-Presses.—EDWIN ALLEN, Norwich, Conn., assignor to THE ALLEN MANUFACTURING COMPANY, same place. Application filed April 19, 1873.

Claim.—The combination and arrangement of two tracks, D D, straight and parallel, each side of the type-bed A, but crooked each side of the distributing-surface B, with two or more rollers, C, having flanges e e on their alternate ends, so that, on the straight tracks, these rollers ink the form, and on the crooked tracks vibrate to distribute the ink, substantially as herein set forth.

142,608.—Machine for Dressing Wood Rails.—HORATIO G. ANGLE, Chicago, Ill. Application filed March 15, 1873.

Rotary cutters, moving vertically and horizontally, are placed on a traveling frame which moves over the wooden rails of a railway, and which are dressed on the top and to an even gage by said cutters.

Claim.—1. The combination of the horizontal and vertical rotary cutters and driving mechanism therefor with a truck adapted to run on the rails to be dressed, the said cutters being arranged to act upon the rails as the truck is moved along on them, substantially as specified.

2. The combination of the adjusting-screw K with the truck B and cutters M M, as and for the purpose specified.

3. The combination of the adjusting-screw J with the truck B and cutters P P, as and for the purpose specified.

142,609.—Lamp.—LOUIS BEHNE, Middletown, N. Y. Application filed July 19, 1873.

A loose drip-cup is placed in a recess formed in the pillar of a lamp and inclosed by brackets, between which the drip-cup may be passed.

Claim.—The combination, with a loose drip-cup, of the sections H H of a lamp-column connected by intermediate rods I, wide enough apart to allow the insertion and removal of drip-cup, as described.

142,610.—Fastening for Railway-Rail Joints.—BERNARD W. BUCHHOLT, East Liverpool, Ohio. Application filed March 27, 1873.

Claim.—The combination, with the rails to be united and their fish-plates, of the pairs of wedge-shaped keys C C, inserted into them from opposite sides back to back, and clinched over against the plates, substantially as and for the purpose herein set forth.

142,611.—Pitman.—JACOB H. CAROTHERS, Lewisburg, Pa. Application filed April 2, 1873.

A rubber block or cushion encircled by a spring which unites the two parts of the pitman, the spring rendering the pitman susceptible of elongation and contraction, and the cushion preventing concussion by interposing between the two parts of the pitman. Also, a sleeve fitted to one part of the pitman, having a slot which receives a pin or projection fastened to a ring or cylinder, confining the opposite end of the coiled spring to the other part of the pitman.

Claim.—The combination of the pitman A A' with the spring B, cushion C, sleeve D d, and pin or projection f, substantially as and for the purpose specified.

142,612.—Can for Holding Paint, &c.—GEORGE H. CHEMBOCK, Brooklyn, N. Y., assignor to LEONARD RICHARDSON, same place. Application filed July 21, 1873.

The screw that draws the head inward has its lower end secured to a false bottom, whose upper surface bears against a rib near the lower end of the can.

Claim.—1. The can constructed with the outlet d, the sliding head E, and the screw C, the latter having its point of attachment at the lower part of the can, and the whole arranged substantially as herein set forth, whereby, during the expulsion of the contents of the can from the outlet d, the strain upon the head and bottom portion of the can is in an inward direction, substantially as and for the purpose specified.

2. The false bottom B, provided within the can, covered by the true bottom D, and arranged to provide the means of attachment for the lower end of the screw C, substantially as herein set forth, for the purpose specified.

3. The internal circumferential rib a, formed in the can and arranged to support the false bottom B against the inward strain exerted by the screw during the downward movement of the head, substantially as herein set forth.

142,613.—Can for Oil, &c.—GEORGE H. CHEMBOCK, Brooklyn, N. Y., assignor of one-half his right to LEONARD RICHARDSON, same place. Application filed July 21, 1873.

The nozzle and air-vent are closed by a removable plunger operated by a thumb-screw, and resting on an annular shoulder secured to the inner lower end of the neck.

Claim.—1. The combination of the plunger, working snugly in the shell B, with the outlet m and the air-inlet n', substantially as and for the purpose specified.

2. The combination, with the plunger movable in the shell B, and arranged, as set forth, with reference to the outlet m, of the annular shoulder b and screw d, operating to hold the plunger lightly against the said shoulder, substantially as herein set forth.

3. The shell B extended above the outlet m, in combination with the plunger, whereby, when the plunger is brought to the upper part of the shell, it is sustained against lateral displacement and caused to act as a stop or valve to prevent the outflow of liquid from the top of the shell, when the can is tilted in pouring from the outlet m, substantially as set forth.

4. The shell B, opened or capable of being opened at the top, in combination with the plunger having a vertical movement in the said shell by means of a screw, d, whereby, when required, the removal of the the plunger is made to provide an opening for the subsequent filling or refilling of the can, substantially as herein set forth.

5. The combination, with the plunger and the shell B, of the thumb-and-finger piece g', provided upon the upper surface of the plunger and arranged to come below the upper edge of, and be protected by, the shell B when the plunger is forced down to close the passage to and through the shell, substantially as herein set forth.

142,614.—Powder-Flask.—MATTIAS CILIX, Chicago, Ill. Application filed July 28, 1873.

A hollow tube or cylinder arranged, in connection with an ordinary flask and discharge tube or nozzle, so as to be turned upon trunnions or in a case, whereby a predetermined charge is readily poured out. The amount of the charge is regulated by a movable diaphragm.

Claim.—1. The combination of the cylinder B and tube C with the cylinder D and heads E, substantially as specified.

2. The combination and arrangement of the cylinder B and D, heads E, spring c, spring-lever F, and the tube C with the flask A, substantially as and for the purpose set forth.

142,615.—Sewing-Machine Caster.—ELIAS R. CLARK, Marshfield, Ind. Application filed May 3, 1873.

The caster of a sewing-machine table is attached to a hinged or movable foot, which has projecting pins fitting in a socket to hold it more firmly.

Claim.—The combination of the movable hinged foot D, casters G, cross-bars C C C, guide B, pins d, and socket F, all constructed, arranged, and operating as shown and described, for the purposes set forth.

142,616.—Mode of Connecting Pitmen with Shafts.—RUDOLPH CLEAVELAND, Covington, Pa. Application filed April 19, 1873.

Claim.—The bar N slotted at both ends, in combination with spring catch-pin O and end-slotted end-flattened shaft I, to enable power to be applied to the latter, as described.

142,617.—Fountain Hand-Stamp.—FRANCIS J. COUTANT, New York, N. Y. Application filed July 5, 1873.

The shaft of a hand-stamp is provided with a fountain containing ink, in which the ribbon is immersed, the stripping-pieces preventing too much ink flowing out.

Claim.—1. A ribbon-stamp so constructed that the ribbon is passed through a fountain of ink, substantially as shown and described.

2. The ribbon shafts I and J, on which the ribbon is wound,

arranged in the fountain H so as to be immersed in the ink, as shown and described.

3. The packing-pieces m m and compressing-plates N N, in combination with the fountain H and ribbon G, as and for the purposes described.

4. The rollers P P and Q Q, in combination with the ribbon G and fountain K, as and for the purposes described.

5. The combination of the ink-ribbon G, ink-fountain H, type-plate E, and movable pad S, as and for the purposes described.

142,618.—Lever for Drawing Framed Timber Together.—JOHN M. RAMEY, Wilmington, assignor to himself, JOHN WADSWORTH, Newton, and LUCIUS TURNER, Reading, Mass. Application filed March 25, 1873.

Claim.—A lever for drawing timbers, &c., together, provided with a ratchet-plate, *b*, and claw-hook *c*, in combination with a yoke, *d*, and an adjustable reversible clasp-hook, *h*, all arranged and operating as described, and for the purposes specified.

142,619.—Standard Jack-Post for Drilling and Pumping Machinery.—WILLIAM W. EASTMAN and WILLIAM H. H. MORSE, Meadville, Pa. Application filed May 27, 1873.

Claim.—An extension jack-post provided with a socket-cap and journal-box combined, and the manner of securing the same to the vertical standard E and holding and bracing the same by the rod-bolts B B and tension-rods F F, substantially as shown and described, for the purposes herein set forth.

142,620.—Combined Water-Cooler and Filter.—WILLIAM J. ENGLISH, Providence, R. I. Application filed August 16, 1872.

Claim.—1. A filter comprising an outer case of *papier-maché*, or other non-conducting material, A, an inner case of sheet metal, B, a partition, D, and a filter, G, all arranged and combined substantially as specified.

2. The filter having a descending top wall, I, between the inlet-passage G and the exit-passage Q, the latter being at one side of the filter, substantially as specified.

142,621.—Traveling Threshing-Power.—RICHARD W. FARR, Murfreesborough, Tenn. Application filed May 17, 1873.

Power-gear for driving a thresher, so that the thresher can be driven in passing from one sheaf of grain to another.

Claim.—The combination of the gear-wheels G H J K, or equivalent gearing, the shafts I L, and band-wheel M, with the wheels and box of a wagon for driving a thresher mounted upon the wagon, substantially as herein shown and described.

142,622.—Tube-Welding Mandrel.—HARVEY K. FLAGG, Boston, Mass., assignor to THE NATIONAL TUBE WORKS COMPANY, same place. Application filed August 22, 1873.

A hollow mandrel, with its conical head slotted longitudinally and having longitudinal grooves in its periphery to allow the passage of the cinder through and beyond the mandrel.

Claim.—A welding ball or mandrel formed of longitudinal grooves E, and having its head perforated with triangular or other shaped apertures D, substantially as specified.

142,623.—Sled-Brake.—PETER GABLE, Elizabeth, Ill. Application filed March 1, 1873.

The brake-dog is pivoted to the end of runner. A toggle-jointed lever connects the brake-dog with a rod so formed that the brake may be vertically adjusted. To one arm of the toggle-lever an arm is secured, to which is pivoted the rod which is connected to the operating lever.

Claim.—In combination with a dog, A, pivoted to the runner of a sled or sleigh, the toggle-levers *c e*, pivoted to a support, D, connected by a rule-joint, and one of them provided with an arm, I, the rod E, and lever G, substantially as and for the purpose specified.

142,624.—Chair Seat or Back.—GEORGE GARDNER, Glen Gardner, N. J., assignor of two-thirds his right to OLIVER L. GARDNER and WILLIAM GARDNER. Application filed February 6, 1873.

Claim.—A seat or back for chairs composed of one or more layers each of paper and canvas, or other textile material, substantially as shown and described.

142,625.—Chair-Frame.—GEORGE GARDNER, Glen Gardner, N. J., assignor of one-half his right to OLIVER L. GARDNER. Application filed March 10, 1873.

The back-standards are braced by the hind legs, which are mortised into said standards. The back-standards and hind legs are let into the seat-frame. The back-standards are extended downwardly below the point of connection with the seat-frame and hind legs, and are let into diagonal braces, which abut at one and against the seat, and at the other end against the hind legs.

Claim.—The combination of the back-standards D D, seat-frame C, hind legs E, and braces E', substantially as and for the purpose specified.

142,626.—Sandpapering-Machine.—HERBERT L. HASCOM, Athol, Mass. Application filed July 3, 1873.

Claim.—1. In a sandpapering-machine, the combination of a tube of sand-paper, or equivalent material, with a core or foundation thereof made of rubber or other suitable elastic material, arranged to be compressed endwise, and thereby expanded laterally, substantially as described, for the purposes specified.

2. The combination of the shaft K, the collars J J, the nut N, the rubber tube L, and the tube of sand-paper, or equivalent material, arranged as described, for the purposes specified.

142,627.—Carriage-Spring.—GEORGE W. HARLAN, Cincinnati, Ohio. Application filed January 9, 1873.

The tension is regulated by the bolts C C.

Claim.—The combination of the adjustable scroll-springs B B', links I I, pivots *f f*, coupling-rod H, standards or support *a*, bearings D D, and bolts C C, all constructed and arranged to operate substantially as described.

142,628.—Turbine Water-Wheel.—ANGUS A. HERRIMAN, Greensborough, N. C. Application filed June 14, 1873.

Adjustable wings are hinged to one side of the openings in the gate, which correspond with the buckets of the wheel, which wings guide the water, in connection with curved chutes firmly set between plates extending, in part, along the circumference of the wheel.

Claim.—The rotary gates, chutes F, and hinged wings E combined, to admit of the adjustment described.

142,629.—Rotary Engine.—FRANCIS J. HOLLENWEGER, New Rochelle, assignor to himself, JOSEPH MANTIN, and CHARLES F. SPAULDING, New York, N. Y. Application filed May 24, 1873.

The piston revolves between two side pieces. The sides and piston are recessed around their faces. The recesses in the sides are made to communicate by means of a passage and the recesses in the piston, thus using the steam expansively.

Claim.—The steam-chests C, provided with induction-passages F, one or more series of cavities, K J, one or more series of conduction-passages, E S, and eduction-passages G, in combination with the rotary piston D, provided with one or more series of cavities, I H, substantially as herein shown and described.

142,630.—Burglar-Alarm.—HARRISON P. HOOD, Indianapolis, Ind., assignor of one-half his right to NELSON B. COOPER, same place. Application filed May 5, 1873.

Claim.—In a burglar-alarm operated by a friction ratchet-wheel, the combination of the frame B with the standard or frame C, substantially as and for the purpose set forth.

142,631.—Clothes-Reel.—DENNIS L. HUFF, Bay City, Mich. Application filed July 26, 1873.

The radial arms on a spider are arranged on a post, and above these are fastened the braces to keep the arms in position.

Claim.—The combination of the tie-rods or bars B with the arms D and spider C of a clothes-reel, substantially as herein shown and described.

142,632.—Harvester-Rake.—JAMES IRVINE, Parkersburg, Iowa. Application filed August 4, 1873.

The rake, pivoted to a rotating arm journaled near the center of the platform, is guided by a pin on the rake-arm traversing a groove in the platform, the groove being provided at its rear angle with a spring-gate, to prevent the rake from returning in the same path.

Claim.—1. The inclined platform D, having the peculiarly-shaped groove Q, provided with a spring-gate, T, formed in it, substantially as herein shown and described.

2. The rigid arms L M, pivoted rake N, spring-bar O, and guide-pin P, in combination with the platform D, having groove Q and gate T, and with gearing for connecting them with the drive-wheel C, substantially as herein shown and described.

142,633.—Tire-Tightener.—MILO B. JACOBS, Winnebago, Ill. Application filed May 24, 1873.

Claim.—A tire having its ends halved, and provided with inwardly-projecting flanges or face-plates D, whereby it is adapted to be applied to a divided felly and adjusted by a screw, E F, as and for the purpose specified.

142,634.—Car-Coupling.—PETER KENDRICK, Trenton, N. J. Application filed February 1, 1873.

One end of the link in each draw-head is held by a headed bolt, which works in slots in its top and bottom, so that when the link is struck by an approaching draw-head with the pin in plate, instead of being crushed and injured, will be forced back out of the way.

Claim.—1. The link H, provided with the central cross-stud I, in combination with the double-headed bolt E and draw-head, provided with opposite longitudinal slots D D, whereby the link and bolt may be pushed back together into the draw-head, as set forth.

2. The combination of the link H, having the cross-stud I, with the bolt E, pin G, and draw-head A provided with the slots D and holes F, whereby said link may be sustained in a position for automatic coupling, when the pin G is inserted in its proper place, as set forth.

142,635.—Hay-Elevator.—CYRUS H. KIRKPATRICK, La Fayette, Ind. Application filed May 21, 1873.

Claim.—An elevator trip-catch provided with the elbow M N to avoid wear of rope by supporting the weight while being transferred horizontally to the place of discharge, in the manner described.

142,636.—Windmill.—OWEN B. KNAPP, Brandon, Wis. Application filed March 8, 1873.

Claim.—In a windmill having a wheel with fixed vanes, a fixed vane for shifting it edgewise to the wind, and an oscillating regulating-vane, the said regulating-vane arranged on an oscillating shaft, as herein specified.

142,637.—Fire-Extinguisher.—FINLEY LATTA, Cincinnati, Ohio. Application filed January 6, 1873.

The generating-tank has a projecting head and flange, and is hung upon journals in the supporting-frame of the carriage to adapt the tank to serve as a reel, so that while unreeling the hose it will agitate the contents of the tank. The acid-receptacle is so supported that it may be detached from the exterior, and has a chain fastened near its bottom so that when detached will fall nearly to the bottom of the tank and be inverted.

Claim.—1. The acid-receptacle R, supported beneath the cap I, by devices which enable it to be detached by manipulation from the outside end, having a chain or other flexible connection, V, applied at or near its bottom, so that when detached the said acid-receptacle will fall bodily nearly to the bottom of the tank, and will then be inverted.

2. A generating-tank hung upon journals, and constructed, substantially as herein described, with a projecting head, B, and flange H, or equivalent devices, to adapt said tank to serve as a reel, so that the act of unreeling the hose will agitate the contents of the tank, as explained.

142,638.—Sling for Loading and Unloading Hay, &c.—GEORGE W. LONG, Delaware Centre, Iowa. Application filed June 21, 1873.

Two bars are connected and disconnected by means of lever-hooks and string attachment.

Claim.—The bar A, provided with recess *b* and cross-pins *d*, in combination with the bar A', pivoted hooks B, sliding bar C, spring *n*, trip-rope D, and ropes *f* and *f'*, as and for the purpose specified.

142,639.—Needle-Case.—WILLIAM J. MARCHANT and HARRIS B. HANT, Philadelphia, Pa. Application filed June 26, 1873.

Claim.—1. The perforated cap D of the needle-case A, when formed with a slot, *F*, to prevent binding.

2. The cap D, when constructed, as described, with a soft packing or surface to prevent injury to the points of the needles.

3. In combination with the emery cells B, the cloth cover *c* and perforated cap *c'*.

4. In combination with the case A and cap D, the oil-stone E and spring *c'*, so arranged that when the cap is removed from the case the oil-stone will be forced partially out of its cell.

142,640.—Metallic Piston-Packing.—JAMES MASSEY, Chester, Pa. Application filed June 14, 1873.

A continuous coiled beveled ring, located within two flanged rings of equal diameter, and set out by centering-blocks and set-screws.

Claim.—A piston-packing formed of head A, centering-block B, set-screws C, coil D, open rings E, and follower F, constructed and arranged as described.

142,641.—Metallic Roof.—ISAAC S. METTLER, Jersey City, N. J. Application filed June 21, 1873.

Claim.—A roof formed of three metallic sheets, A B C, the middle one corrugated and forming open-ended descending channels, so that the air will pass on both sides of said middle sheet, and against each of the others, in the manner and for the purpose described.

142,642.—Centering-Check.—GEORGE H. MILLER, Binghamton, N. Y. Application filed July 12, 1873.

The dogs are operated to grasp the article by means of four sliding rack-bars, (one end of each being attached to the under side of a dog,) by means of a pinion attached to a tubular hand-wheel, through the center of which the punch is driven to mark the center on the article held between the dogs.

Claim.—The combination, with the punch N and slotted arms B, of a ratchet mechanism, crank-wheel I, and the central pinion-racks J, lugs L, dogs K, tube I, and cap E, substantially as shown and described.

142,643.—Gage for Gang-Saws.—NORMAN C. MOODY, Manistee, Mich. Application filed June 21, 1873.

The gage-blocks are arranged upon a rod in such a manner that they may be turned back and removed without disturbing the saws.

Claim.—The arrangement of the gage-blocks B C of a gang of saws on rods D E, in the manner described, for changing them without disconnecting the saws, substantially as specified.

142,644.—Harvester-Rake.—JOHN L. OWENS, Cambria, Wis. Application filed May 21, 1873.

The switch for changing the path of the rake-arms is operated at different intervals of time by means of a horizontally-sliding tappet-wheel having two or more series of teeth on its periphery, which engage with a tappet on the shaft to which the switch is attached.

Claim.—1. The combination of the tappet-wheel V with the shaft of the plate Q and the tappet thereon, substantially as specified.

2. The said wheel arranged to slide on its shaft, and connected with the adjusting-lever *j* by the fork *k*, crank *d*, rod *e*, arm *f*, and rod *i*, the rod *e* being arranged in the hollow standard A, substantially as specified.

3. The standard A, arms C, rim B, standards *a*, and arms B', constructed and arranged substantially as specified.

4. The rake-arms, composed of two members, *p*, arranged and pivoted to the rim B, substantially as specified.

142,645.—Ironing-Table.—ARDEBAH J. PALMERO, Boston, Mass. Application filed June 4, 1873.

A frame, sliding on the under side of the table, has a raised support for two ironing-boards at right angles, which, when used, can be lowered to a convenient height by turning up centers hinged to the table-legs. The whole is arranged to be taken apart and packed for transportation.

Claim.—1. The combination, with an ironing-table, *a a*, of the sleeve-boards *p r*, rests *o h*, and the bars *k k*, with the thumps *l* and its screw *m n*, for the purpose of being easily detached from the ordinary ironing-table, as herein shown and described.

2. The combination, with the sleeve-boards *p r* and their connecting parts, the table *a*, and standards *o c*, of the hinged centers *w v u v*, for the purpose of lowering the board when the said sleeve-boards are used, as herein shown.

3. In an ironing-table, the combination, with the supports *a c*, of the cross-bar *d*, provided with T-headed lugs *e e* and the slotted fastening-plates *f f*, as and for the purpose set forth.

142,646.—Ore-Concentrator.—JOHN A. PERRY, Grass Valley, Cal. Application filed June 16, 1873.

The tailings are led into the perforated trough and distributed over the table. The table having an oscillatory motion, longitudinally and from side to side, imparted by the screw-shaped cam, will cause the heavier particles, sulphurets, and amalgam to be carried to the opening between the inclined bottoms, where the cylinder will carry them out and deposit them in a trough below.

Claim.—1. The cylinder I, with its cams J and the peculiarly-inclined groove K, constructed to operate the table through the arm K, substantially as and for the purpose herein described.

2. In combination with the peculiar cam-cylinder I, the table mounted upon the roller F and links G, and having the double bottom A B and the discharge-cylinder M, substantially as and for the purpose herein described.

142,647.—Ore-Washer.—JOHN A. PERRY, Grass Valley, Cal. Application filed June 16, 1873.

The riffles rest upon inclined side rails, forming a chamber beneath, into which the heavy black sand and precious metals fall through perforations in the curved channels, the said heavy particles being carried out of the sluices by the revolving cylinder, which is furnished in its passage out of the machine by a plate held against the cylinder by a spring.

Claim.—1. The riffles D E, in combination with the inclined side rails *c c*, as and for the purpose described.

2. The discharging-cylinder G, rotating between the fixed flange H and the adjustably-sliding flange I at the bottom of the flume, constructed to operate as a constant-discharging device, substantially as herein described.

3. A flume or sluice riffle and discharge, consisting of the longitudinally corrugated and perforated riffles, placed as shown, in combination with the rotating discharge-cylinder G, the whole operating substantially as and for the purpose herein described.

142,648.—Printing-Press.—JACOB G. PETERSON, Morgantown, N. C. Application filed April 12, 1873.

Paper to be printed is laid on the metal plate F in supporting-frame D; the frame is then lowered and the roller-carriage is run over it to make the impression. The metal plate prevents the upper roller from injuring the edges of the type and insures an even impression.

Claim.—1. The arrangement of the reciprocating carriage I, presser-rollers G H, toothed bars L, wheels M, crank-shaft N, presser-rollers O, and stationary housings P with the type-bed, substantially as described.

2. The combination of the metal plate F with supporting-frame, the recessed bed, and the reciprocating rollers, as described.

142,649.—Railway-Car Brake.—WILEY D. PORT, Gadsden, Ala. Application filed May 31, 1873.

The brake-shaft is arranged to be raised or lowered in order to throw one of two cog-wheels into gear with a supplementary shaft, on which the brake-chain is wound.

Claim.—The combination of the two sets of gear-wheels G D and H E, the shaft F, the lever I, spring K, and shaft C, to which the brake-chain is attached, and which is provided with the ratchet-wheel M and pawl N, substantially as herein shown and described.

142,650.—Water-Meter.—TREAT T. PROWER, Chicago, Ill., assignor of one-half his right to GEORGE G. MOSHER, same place. Application filed March 24, 1873.

Two chambers are connected with the cylinder containing the two screws, one of which communicates with the cylinder at points outside of the screw-sections; the other communicates with the cylinder at a point between the two screw-sections. To one chamber is attached a receiving-pipe, to the other a discharge-pipe.

Claim.—1. A fluid-meter consisting of the chamber or cylinder *c*, having mounted therein the shaft *i* with the screw-wheels *m*, having their spirals arranged in opposite directions, in combination with the auxiliary chamber *r* with its passage *h*, and the

chamber b with its passages d d, all constructed and arranged to operate substantially as described.

2. The arrangement of the cylinder a with its shaft k, and screw-wheels m, and the chambers b and c, all as herein set forth.

142,651.—Packing-Machine.—ALEXANDER RALPH, Philadelphia, Pa. Application filed August 6, 1873.

Claim.—1. A machine for packing bottles and packages, in which the desired compression is obtained by means of a feed-screw and a weighted lever acting in opposite directions.

2. Stirring the material in the hopper and feeding it to the feed-screw by rapidly-revolving whippers or agitators.

3. The hopper A, shaft C, and the agitators C', when combined and arranged for the purpose shown and described.

4. The shaft C, in combination with the cone-friction pulleys D E, for the purpose shown and described.

5. The shaft C, pulleys D E, gear-wheels G H, and the screw F, as and for the purpose shown and described.

6. The follower J, when constructed as described.

7. The screw F, follower J, lever P, and the weight R, constructed and arranged as shown.

8. The shifting-bar S, in combination with the clutch-lever T and the trip-rod V, as shown.

9. The shifting-bar S, in combination with the clutch-lever T, trip-rod V, and the friction-pulleys D E, as shown.

10. The trip-rod V, in combination with the clutch-lever T, the weighted lever U, and the cones D E, as shown.

11. The former X, in combination with the form-retainer Y, for the purpose shown and described.

142,652.—Apparatus for Arranging Type for Type-Setting Machines.—D. BRAINERD RAY, New York, N. Y. Application filed February 24, 1873.

A series of hoppers or troughs, one for each letter or character. Type is thrown upon its face into the upper end of the hopper, when it turns over and slides down, letter-end foremost, by reason of the upper end of the hopper being concave and spoon-shaped. To cause the type to turn on its narrow edge just before entering the channel the lower end of the hopper has an angular bottom. The sides of the whole hopper are concave, that the type may touch but at two points. Some of the type have their notches turned up; some down. The channel is divided transversely, and the lower piece widened above, as shown at a, Fig. 3, so that if the channel becomes so choked that a type slides upon its flat side it will fall into the flaring edges of the lower piece and take its proper position. Just above the branches of the channel is placed a separater, H. If the type sliding down has its notches turned upward the straight edge passes right across the separator, and the type moves into the branch I right before it; but if the notched side be down a notch catches on the separator, and pressure from behind causes the type to be thrown to one side and to enter the other branch. The branches toward their ends, have each a quarter turn in a direction opposite to the other. They are thus twisted that they may present as little bearing-surface as possible to the type, and not cause it to clog.

Claim.—1. A trough or hopper having concave sides, which meet at the bottom at an angle of not more than ninety degrees, to cause the type to slide downward on the narrow edge or side, and having the upper end concave and spoon-shaped, for the purpose of causing the type to pass down into the tubes with the face or letter end up.

2. The type-channel C, widened, as shown at a, for the purpose of causing any type which by accident may slide down upon the upper edges of the tube upon its broad or flat side to fall into the lower channel and slide down upon its narrow side.

3. The separater, consisting of a thin strip of metal, H, placed at an angle with the type-channel, in combination with branches, for the purpose specified.

4. The twisted branches I and J, each having a quarter turn, or thereabout, for the purpose of turning the type, substantially as specified.

5. The combination of the hopper A with the type-channel C, widened, as shown at a, together with the separator H and the branches I and J, all arranged and combined substantially as described, and for the purposes specified.

142,653.—Chain-Propeller.—EDWIN P. RUSSELL, Manlius, N. Y. Application filed August 2, 1872.

Claim.—1. The sprocket-wheels C C when shaped to receive and sustain the paddles in their movements, as set forth and described.

2. The sprocket-wheels C C and D D, in combination with the chain a a a, substantially as and for the purpose set forth.

142,654.—Joint-Connection for Hollow Railway-Rails.—RUFUS S. SANBORN, Rockford, Ill. Application filed April 14, 1873.

Claim.—The combination, with a hollow rail, of a beveled connecting-tube, substantially as and for the purpose specified.

142,655.—Combined Shovel-Plow and Cultivator.—ALBERT SMITH, Providence township, Pa. Application filed March 17, 1873.

The combination of devices whereby a cultivator can in a moment and without removing bolts or screws be changed to a shovel-plow.

Claim.—A cultivator with main center beam and standard, carrying a main shovel, with two side beams, each carrying a smaller shovel, the side beams adjustable in width, as shown, and attached in front, so as to be removed by unhooking clevis, making a complete single-shovel plow, the whole constructed and arranged as shown and described.

142,656.—Corn-Planter.—GEORGE W. STARNETT, Dublin, Ohio. Application filed February 15, 1873.

A forward frame hinged to a rear one; the latter supported by opening-runners, the former by broad covering-wheels. Hoppers above the runners have their seed-slide actuated by a three-armed lever and treadles, which can be also worked by a hand-lever. Another hand-lever operates the wheel-scrapers. A land-marker, running on one wheel, on its outer end, is hinged to each side of the front frame.

Claim.—The combination, with a pair of treadles, O, of hand-lever J', three-armed lever O, rods N P, and dropping-slide M, as and for the purpose described.

142,657.—Machinery for Lasting Boots and Shoes.—CHARLES H. TRASK, Lynn, and HENRY F. WHEELER, Boston, Mass. Application filed June 23, 1873.

Improvement on patent No. 107,981, granted October 4, 1870. Jaws upon each side of the last-holder having lateral adjustment, also at the heel and toe portion adjustable longitudinally, serve to press the projecting portion of the upper over upon the inner sole. Springs upon the inner faces of the jaws force the upper up snugly to the form of the last.

Claim.—1. The combination and arrangement of the pivot c, the screw-nut d, and screw b¹ with the standard D and the last-toe supporter F.

2. The toe-supporter F, having yielding jaws e e, as described.

3. The toe-supporter F, provided with the yielding jaws e e and the intertoothed caps h h, arranged as set forth.

4. The toe-supporter F, provided with the auxiliary adjustable instep foot-supporter G, arranged with it, as specified.

5. The combination of the jaws K K, slides n n, levers L L, arm M, adjustable and yielding screw s, all arranged and applied together, substantially in manner and by means and to operate as specified.

6. The combination of the lever N and the adjusting-screw z with the arm M, combined with the jaws K K by means substantially as set forth.

7. The combination of each jaw K or T, the slide n or n¹, the lever L or L', the yielding and adjustable screw s or s¹, and the arm M or M', adjusting-screw z or z', and lever N or U, all constructed and arranged substantially as represented.

8. The screw-shafts S S, provided, as described, with screws of different pitches, and arranged with the frame A and the carriage R, and provided with operative mechanism, all substantially as set forth.

9. The rods w w', the swivels s', the screws r² and r', combined and arranged together, and with the levers U and the cross-bar v', all being essentially as explained and represented.

10. The combination of the toggles c² d², the lever b⁴, the links d³, and the pedal-lever A³, provided with the arm g².

11. The combination of the foot-rest F and the lever-latch m² with the pedal-lever A³, all arranged and to operate together and with the top of the slot b³, as set forth.

12. The spring or presser c³, arranged and combined with the lateral jaw and its arm M', such being as and for use as specified.

142,658.—Car-Brake.—WILLIAM WARINNER, Crecisborough, Ky. Application filed June 14, 1873.

To the bifurcated ends of a main rod are secured, by means of cross-tongues and links, the inner ends of two brake-levers, the same being pivoted near their outer ends to the truck-bolster. The brake-bars are connected to the brake-levers by rods secured each side of their fulcrums. One end of the main rod is connected to the hand-shaft by a rod or chain, while the other end of the rod is attached to a spring, which serves to release the brakes as the pawl is released from the ratchet of the hand-shaft.

Claim.—The brake mechanism, formed by the combination, with the transverse brake-bars G, connecting-rods I, and pivoted levers E, of pivoted cross-tongues F F', links a a, and main bar D provided with pronged ends d d, and the spring b, and cord a', all arranged as shown and described, to operate as specified.

142,659.—Piston.—CHARLES B. ALLEN, Philadelphia, Pa. Application filed July 19, 1873.

The piston is provided with a ring, slotted eccentrically, operating in combination with pins suitably arranged, and a ratchet and pawl for expanding the packing and retaining it in its proper position.

Claim.—1. The ring B, having eccentric slots m, in combination with guided pins D, projections of which extend into the said slots, substantially as and for the purpose set forth.

2. The pin D, guided at the rear in the hub of the piston, and at the front in the block F, and having a projection, n, adapted to one of the curved slots in the ring B, and the projection q guided by ribs f f, all as specified.

3. The pawl H, fitted to a recess in one of the ribs e of the piston, and adapted to ratchet-teeth on the ring B, all as described.

142,660.—Steam-Engine.—ROBERT T. P. ALLEN, Farmdale, Ky. Application filed July 17, 1873.

The steam-chest revolves and forms the valve, which allows steam to go to both cylinders. A cut-off plate is placed between the valve and seat, and is operated by the governor.

Claim.—The combination of the cylinders A B, with their pistons connected with right-angled cranks on the main shaft G, the seat H, cut-off plate J, with its parts, and valve K, the cut-off plate being operated from the governor and the valve from the main shaft, all substantially as herein set forth.

142,661.—Device for Blackwashing Molds.—JOHN B. ASTON, Pittsburg, Pa. Application filed June 20, 1873.

Claim.—A circular board having suitable handles and beveled edges, its upper surface being made plain, or otherwise suitably formed to distribute the black-wash, as is herein set forth.

142,662.—Core-Barrel for Castings.—JOHN B. ASTON, Pittsburg, Pa. Application filed June 23, 1873.

The core is collapsed by first loosening the bolts holding the end plates to the sides, and then removing the core bar or wedge, thus relieving the sections.

Claim.—1. The hollow center shaft A, provided with screw threads or pivots B C and an enlargement at the lower end, for the purposes herein set forth.

2. The combination of the top and bottom plates D G, bolts d, and recesses L in the outside plates H, for the purposes herein set forth.

3. The space N formed around the bottom plate G, to be filled with plugs of wood, as and for the purposes herein set forth.

4. The combination of the plates H H, connected with the central shaft A, and the separate and independent core-bar I, when said parts are constructed and arranged as and for the purposes herein set forth.

5. The lock-bolts O O inserted in the head C of the shaft A, for the purposes herein set forth.

6. The combination of the shaft A, plates D, E, F, and G, plates H H, projections K K, links M M, lock-bolts O O, and core-bar I, all constructed and arranged substantially as and for the purposes herein set forth.

142,663.—Boiler and Condenser.—BENJAMIN T. BABBITT, New York, N. Y.—B. Application filed June 25, 1873.

An arrangement, within an upright cylinder or case, of a central tubular body, constructed in sections, and provided with a number of hollow tapering radial arms, made bifurcated, and arranged in staggering relation, to be used either as a boiler or condenser.

Claim.—1. The central tubular body E, built up of ring-like sections d, in combination, with the hollow radial tapering arms F at or from points all around said rings, and arranged within an outer shell or case, A, substantially as specified.

2. The hollow radial tapering arms F, made bifurcated or with branches h, in combination with the tubular body E and case A, essentially as shown and described.

142,664.—Boiler and Condenser.—BENJAMIN T. BABBITT, New York, N. Y.—C. Application filed June 25, 1873.

Vertical tubular passages, constructed in sections, and composed of hollow tapering radial arms projecting from them, are arranged side by side, and set by turning one upon the other, thereby forming a staggering cluster of tubes, presenting a large surface to the products of combustion when used as a boiler, or to steam when used as a condenser, and connected at the top and bottom to drums.

Claim.—The combination of the straight upright tubes or passages C', composed of hollow bosses d, fitted to turn the one upon or within the other, the oppositely-disposed radial hollow tapering arms D, set staggering, as described, the drums or passages B E, the connecting-pipes f, and the case A, substantially as shown and described.

142,665.—Marine Condenser.—BENJAMIN T. BABBITT, New York, N. Y. Application filed June 25, 1873.

Two steam-chambers are arranged on the outer sides of the pump-shell, through which steam is admitted into a compartment provided for it, where it passes through numerous tapering pipes, and is condensed by the water displaced by the wheel in propelling the vessel.

Claim.—The combination of the water-box C D surrounding the propeller, the steam-chambers J with their inlet and outlet pipes, and the taper pipes K K, substantially as and for the purpose herein set forth.

142,666.—Pile or Faget.—JOHN BARKER, Covington, Ky. Application filed July 25, 1873.

Claim.—The pile for railroad-rails, consisting of the longitudinally-grooved base-slab A a, locking-blocks E e, and muck-iron head-slab B, with its longitudinal groove b and recesses C C, when used in connection with the cap D and the rail fragments F F' G G' H H', the latter being arranged, with reference to one another, in the manner herein illustrated and described.

142,667.—Fastener for the Meeting Rails of Sashes.—LORING L. BATES, Boston, Mass. Application filed June 24, 1873.

Claim.—The herein-described sash fastener or lock, consisting of the plate A, hollow boss B, latch-bar C, and cap-plate E, the rivet D and spring G being added, and the whole operating substantially as and for purposes stated.

142,668.—Street-Railway.—JOHN R. BECKETT, Gardiner, Me., assignor to himself and CALVIN B. PAYSON, same place. Application filed August 20, 1873.

Claim.—The within-described road-bed for horse-railroads, consisting of the longitudinal stringers A A, united by transverse metallic braces b extending transversely between them, substantially in the manner and for the purpose described.

142,669.—Cutter-Head.—EDWIN BENJAMIN, Chicago, Ill., assignor to himself and SAMUEL W. PEARS, same place. Application filed May 6, 1872.

Claim.—A cutter-head having six sides or faces, so arranged that the front edge of said faces shall project at an angle of about twelve degrees more than their rear edges, whereby the cutters attached to said faces are held in such a position as to present their cutting-edges to the wood at the required angle, as set forth.

142,670.—Salt and Pepper Caster.—JOHN BERG, Philadelphia, Pa. Application filed August 16, 1873.

Salt and pepper bottles are arranged on one supporting-standard, so that the whole can be readily lifted by one hand and the contents of either of the bottles be shaken out, as may be desired.

Claim.—A combined salt and pepper caster, constructed as described, with the condiment bottles or boxes B B B arranged upon the supporting stem or base A, and projecting horizontally or radially therefrom, as and for the purpose specified.

142,671.—Sewer-Basin for Street-Corners.—JOHN H. BOSCHKE, New York, N. Y. Application filed July 9, 1873.

The sewer-basin is a quarter-section of a cylinder, the cover thereof forming right lines with the flagging. The mouth projects beyond the curved face of the cover, and a trap guards the sewer-entrance.

Claim.—The culvert A, constructed as described with the V-shaped grooves d and a projecting mouth and trap, a b, in combination with the quadrant-shaped cover B having V-shaped grooves c, all constructed and arranged as herein shown for the purpose specified.

142,672.—Grain-Separater.—JACOB W. BOSSER, Canandaigua, Mich. Application filed February 18, 1873.

Shoe so arranged upon two shafts as to receive a rearward, upward, forward, and downward motion at each revolution of said shafts.

Claim.—1. Shoe A, constructed substantially as described, and hung upon shafts F, to operate as and for the purposes set forth.

2. The combination of shoe A with the cylinder D and riddle E, as described.

142,673.—Railway-Switch.—DAVID R. BROCKETT, Wheeling, W. Va. Application filed April 8, 1873.

The crank-shaft is made in two parts connected by flanges or disks bolted together, and the hand-lever is secured between them. The pitman, which operates the movable rail is made "knuckle-jointed" to limit its play and prevent buckling, and the crank which moves it is made adjustable longitudinally on the shaft in order to adapt the device to long or short rails without the necessity of cutting and fitting the shaft.

Claim.—1. In a switch constructed substantially as herein described, the long shaft G, provided with the adjustable crank J, as and for the purpose set forth.

2. The hand-lever H, having its end secured between the coupling-flanges f of the shaft G, substantially as shown and described.

3. In combination with the vibrating tongue D and crank J, the knuckle-jointed pitman I, constructed as described.

142,674.—Blind-Slat Fastener.—GEORGE W. BROOKS, Bloomington, Ill. Application filed August 16, 1873.

The upright rod is connected by a link to a block which moves vertically in a rectangular casing upon the lower part of the blind-frame. Through a hole in the side of this casing a clamp-lever works and holds the block, and, by that means, the slat at any required position.

Claim.—The combination, with the pivoted blind-slats B B and their connecting-rod C, of the rod a, slide D, and cam-lever G, pivoted, as shown, and working upon the slide through a slot in the casing E, constructed and arranged to operate substantially as and for the purposes herein set forth.

142,675.—Corn-Planter.—ELIJAH C. BROWN, Crawfordsville, Ind. Application filed May 7, 1873.

A corn-planter of V-shape, and provided at the front with a seed-box, which is supported on the furrow-opener. To the rear of the frame are attached two coverers, which close the furrow opened by the forward opener. In the lower part there is a drop-pper provided with a slide, which works in a stationary box filled with seed, by means of a spring operated by the driver.

Claim.—The combination, with the frame A, of the seed-box E, metallic plates d a, posts f f, curved spring f, slide G, and the fingers C, the seed-box being so arranged that it is mainly below the frame, and supported upon the fingers, all constructed and operated substantially as set forth.

142,676.—Washing-Machine.—SIMEON BUDLONG, Providence, R. I. Application filed April 5, 1873.

A washing-machine with a steam-tight box or case, rectangular in form, and an opening on one side. The box has a partition on one end, which is perforated for the escape of steam by a pipe, which passes through a hollow journal, with a coupling for its disconnection.

Claim.—The washing-machine consisting of the rotary casing A, having the perforated partition E near the end, the steam-pipe G, the escape-pipe H, bent upward within the ends-chamber J, the hollow journal-pieces, and standing-boxes, substantially as specified.

142,677.—Center-Board for Vessels.—JAMES CALL, Richmond, Me. Application filed July 26, 1873.

Claim.—The T-shaped center-board C, having the oblique-curved slots I, in combination with the guide-pins K, pivoted arms D, and operating-rod G, substantially as specified.

142,678.—Die for Punching Horseshoe-Nails from Plates.—ALEXANDER H. CARTL, Forge Village, Mass. Application filed June 6, 1873.

The die-plate, punch-plate, and stripper-plate present each a series of slots extending into the plate from one edge, parallel to one another, and all of one shape—that of the nail. Punches of the shape of the slots, secured in the slots of one plate, co-operate with another plate in cutting out the nails from the sheet of metal, while the third plate, attached to, but elevated a little above, the die-plate, guides the punches and acts as a stripper.

Claim.—1. The punch-holder block or plate A, for making horseshoe-nails, formed of a single piece, and having the slots cut in it, substantially as described.

2. The die-block *a* for making horseshoe-nails, formed of a single piece, and having the slots cut in it, substantially as described.

3. The stripper-plate *m* for a horseshoe-nail die-plate, formed of a single piece having the slots cut therein, substantially as described.

4. In combination with the die-plate *a*, slotted as described, the cap-plate *s* fastened thereto, substantially as shown and described.

5. In combination with the punch-block A, slotted as described, the cap-plate *l* fastened thereto, substantially as shown and described.

6. In combination with the slotted plate *h*, the punches *q*, held in place substantially as shown and described.

142,679.—Lock-Hinge for Blinds.—THOMAS CLUCAS, Jr., St. Louis, Mo. Application filed July 3, 1873.

On each side of the pintle is a projecting lug, and between these, directly in the rear of the pintle, is a horizontal bearing. The sleeve or socket of the female part of the hinge has recesses so as to form two projecting locking inclines, and also a segmental-shaped horizontal bearing, which rests upon the similar bearing of the male part.

Claim.—1. The provision, in a self-locking hinge, of the countersunk socket G, as and for the purpose set forth.

2. The co-acting locking-cams C C′ arranged on opposite sides of the pintle B transversely, and the horizontal bearing-web A′ in line therewith forming a part of the leaf A, in combination with the co-acting cams E E′ and horizontal bearing-surface F, of the socket-member, formed and arranged substantially as herein specified, so that the movable leaf shall swing horizontally clear of the frame and then drop to a lock on the co-acting cams, as set forth.

142,680.—Lifting-Jack.—ISAAC A. CRIPPEN, Philadelphia, Pa., assignor of one-half his right to SMITH LOWDEN, same place. Application filed May 26, 1873.

A main and auxiliary lever, secured together by means of a clevis for keeping the former on the latter, and adapting the jack for various sizes of wheels and heights of axles.

Claim.—1. The auxiliary lever H, in combination with the lever C, substantially as and for the purpose set forth.

2. The clevis K, in combination with the auxiliary lever H and the sliding lever C, substantially as and for the purpose set forth.

3. The sliding lever C, auxiliary lever H, clevis K, segment G, tooth F, and standard A, combined and operating substantially as and for the purpose set forth.

142,681.—Carpet.—JOHN DORNAN, Philadelphia, Pa. Application filed July 17, 1873.

Claim.—A carpet constructed substantially as described, and having an ingrain center and a damask border, woven together at one operation, and forming a new fabric, as set forth.

142,682.—Car-Coupling.—ROBERT H. DOWLING, Newark, Ohio, assignor to himself and JOHN F. WILSON, same place. Application filed May 17, 1873.

When the pin is raised the yoke, which is pivoted to the stirrup, catches at its ends under studs on either side of the draw-head and throws the lower ends of the stirrup into notches *d*, and thus the pin is held in an elevated position until the approaching draw-head, striking the yoke, frees its ends and the pin falls.

Claim.—The stirrup B, carrying the pin C and pivoted yoke D, in combination with a draw-bar, A, having the grooves *d*, offsets *e*′, and studs *b*, arranged substantially as and for the purpose set forth.

142,683.—Cigar-Mold.—NAPOLEON DU BEUL, Chicago, Ill. Application filed October 28, 1872.

A series of molds, arranged parallel to each other, receive counter-molds within them, all being of sheet metal, each series being mounted upon sheet-metal projections from strips which are let into longitudinal slots in a wooden backing.

Claim.—The fastening for the mortises of sheet-metal cigar-molds to wooden backings, substantially as above described, consisting of the metal strips B inserted in the longitudinal slots D in the backing, and secured thereto by nails E, or equivalents, substantially as specified.

142,684.—Watch-Case Latch.—JOHN C. DUMBER, Cincinnati, Ohio. Application filed February 24, 1873.

The hinged covers of the watch are held close to the central rim, when closed, by means of an external sliding latch, secured to the latter, passing over a projecting lip on the edge of the former.

Claim.—The slide E, formed with a notch, *c*, attached to the watch-case center A, and having a limited circumferential movement thereon, in combination with a lug, D, projecting from either back or bezel, substantially as and for the purpose specified.

142,685.—Casing for Bottles.—JAMES DUGAN, New York, N. Y. Application filed April 25, 1873.

Wooden slats are bent to conform to the contour of the bottle and attached at the bottom to a circular base, and are secured together around the neck of the bottle by a surrounding wire fitting in grooves, or by a cap.

Claim.—A bottle-casing composed of a base, B, attached slats C C, and ring, band, or cap for securing the slats at the top, all combined substantially as and for the purpose herein set forth.

142,686.—Button.—JOSEPH DURAND, New York, N. Y. Application filed November 11, 1872.

The button has a spring between the shell and collet with a depression to receive and hold in place the enlarged end of the shank.

Claim.—The spring *i*, with the ridge 6 and recess for the head 4, in combination with the shank *b*, with its neck 3 and head 4, and the plate *d*, slotted for passing such head 4 and securing the shank, as set forth.

142,687.—Fence-Post Socket.—GEORGE W. DURANT and JAMES B. DURANT, Bryan, Tex. Application filed June 13, 1873.

Duplex posts, embracing the stringers, stand in a metallic socket, which rests upon, and is attached to, a large metallic plate. The plate is cut away or slotted between these posts, to permit the driving of a ground stake.

Claim.—The fence-post socket-plate A, slotted at *a*, and having a socket, B, extending at the bottom beyond each side of slot, thus forming the shelves *b b*, as and for the purpose described.

142,688.—Electrical Regulator for Transmitting-Instruments.—THOMAS A. EDISON, Newark, N. J., assignor to THE GOLD AND STOCK TELEGRAPH COMPANY, New York, N. Y. Application filed March 13, 1873.

An electro-magnet, contiguous to the revolving pulsator-shaft, produces friction thereon by attraction, whenever excited by the completion of a circuit, effected by means of a Watt governor on the shaft making a metallic contact at a prescribed limit of speed.

Claim.—The speed-regulator, consisting of the electro-magnet *l*, shaft *a*, and governor, in combination with the circuit-closer and pulsator, substantially as and for the purposes set forth.

142,689.—Hammer for Sewing-Machines.—JOHN V. D. ELDERDGE, Detroit, Mich. Application filed March 8, 1873.

The scroll is formed from a plate of metal, folded, as shown, so as to form an opening for and support the fabric on both sides, and the extreme end of the plate is bent, as shown at *a*, to guide the extreme edge of the fabric.

Claim.—The scroll A, formed of a single plate, bent as shown and described.

142,690.—Reed-Organ.—LEVI K. FULLER, Brattleborough, Vt., assignor to J. ESTEY & Co., same place. Application filed March 3, 1873.

Two or more reed-boards are arranged vertically below the key-board; the upper one is connected with the bellows by an extension of the wind-chest, also vertically, called a diaphragm, which, by means of vertical passages through the sides of the instrument, communicate therewith.

Claim.—1. In combination with a series of actions, with their reed-boards F G F′ G′, placed vertically below the keys, the interposed partition or diaphragm D, when said parts are constructed and arranged substantially as herein shown and described.

2. In a reed-organ, the throats C, arranged as shown, in combination with the series of actions and their reed-boards, arranged vertically below the keys, substantially as described, for the purpose specified.

3. The series of vertical actions arranged below the keys, in combination with the throats C and diaphragm D, for operation in respect to a bellows, substantially as described.

142,691.—Manufacture of Shoes.—CHARLES W. GREEN, Pontiac, Mich. Application filed September 2, 1873.

Claim.—As a new article of manufacture, a shoe having its upper made from a single piece of leather, cut in the manner shown in Fig. 2 of the drawings, and crimped at front and rear, so that only one seam is required, and that at about the middle of the side of one quarter of the shoe, as described.

142,692.—Manufacture of Shoes.—CHARLES W. GREEN, Pontiac, Mich. Application filed September 2, 1873.

Claim.—The quarters formed as described, the part A forming a seamless quarter and back, and extending to the front on one side, and the part B attached to the quarter A by a straight vertical seam, as shown, and joining the front on the opposite or inner side, as specified.

142,693.—Street-Lamp.—JAMES S. HAGERTY, Baltimore, Md. Application filed August 15, 1873.

A device for sustaining a street-lamp so that the light is intercepted in but one horizontal direction; also for adjusting, detaching, or separately sustaining the cover of the lamp.

Claim.—1. The shoulders *b*′ and reversely-shouldered flanges *b*′ combined with the arms *c*, *c* to hold the seat C to the holder B, in the manner described.

2. A lamp-seat, C, having the subjacent stops *c*′ *c*′ combined with a holder, B, having the shoulders *b*′ *b*′ and flanges *b*′ *b*′, as and for the purpose described.

3. The grooved subjacently-concaved and curved holder-socket *b*′ combined with the sliding cap-rod G having the side stud *g*, as and for the purpose described.

142,694.—Boring-Mill.—FRANCIS E. HAMM, Philadelphia, Pa., assignor to OSCAR C. FERRIS and FREDERICK B. MILES, same place. Application filed August 4, 1873.

Claim.—1. The combination, with a boring-machine, substantially as described, of a crane, the jib of which can be raised and lowered, and swung laterally beneath the overhanging frame, as set forth.

2. The combination, with the frame A, of the rocking-shaft E, worm *d*, jib B, and toothed segment *b*, forming part of said jib, all as set forth.

142,695.—Permutation Lock.—PHINELLO W. HALL, Calvert, Tex. Application filed August 21, 1873.

The revolving wheels have projections or pins, which so differ from each other that they can be recognized by the touch alone, and hence manipulated in the dark. On the bolt is a projector, which is combined with the rotating slotted sleeves and their slides. The wheels have notched or toothed flanges on their sides, and notches on their inner sides.

Claim.—1. The bolt *b*, having a flange, pin, or projection, *d*, formed upon its side, in combination with the rotating slotted sleeves C 5 and their slides, all substantially as and for the purpose set forth.

2. The combination of revolving slotted sleeves and sliding locking devices with the rotating wheels *c* 7, having teeth cut upon their inner surfaces, into which the locking devices catch to hold the wheels in position on the sleeves when the combination is set, all substantially as set forth.

3. The spring-pin *e* upon the guard on the outer side of the lock-frame, in combination with the notched flange *g* on the revolving wheel *c*, having studs or projections on its periphery, all substantially as set forth.

4. The wheel *c*, having studs or projections upon its periphery which are distinguishable by the touch, having letters or figures and grooves, notched or toothed flange *g* on its side, and teeth or notches upon its inner surface, all substantially as and for the purposes set forth.

5. The combination of the hook or stop K, and pivoted to the inner face of the lock-frame, which serves to lock the bolt on the inside, prevents it from being moved too far back to allow the combination to be changed, and prevents the flange *d* on the bolt *b* from leaving the slots in the sleeves when desired to use the bolt as a latch, with the pin *h* attached to the bolt *b*, and extending through a slot in the lock-frame, all, substantially as and for the purposes set forth.

6. The combination, with the bolt *b* and flange *d*, of the wheel *c*, extending through the lock-frame, and having pin *i*, the interior corrugated wheel 7 with pin 9, the spring *l*, the slotted sleeves C 5, and the locking-slides 3 4, all constructed and operating substantially as herein set forth.

142,696.—Rotary Pump.—CLARK P. HOLMES, Havana, N. Y. Application filed August 1, 1873.

The tendency of the water to turn the valve back is counteracted by a brake device.

Claim.—1. In combination with the valve D, the disk *f* and set-screws *h h*, substantially as and for the purposes herein set forth.

2. The combination of the casing A with inlet E and outlet H, wheel B with pistons C C, corrugated valve D, valve-chamber G, disk *f*, and set-screws *h h*, all substantially as and for the purposes herein set forth.

142,697.—Clamp.—FRANCIS M. HOLMES, Boston, Mass. Application filed May 21, 1873.

The vertical adjustment of the clamp is made by the elevation or depression of the post B and the holes *d*. The gage of the cam-lever is regulated by the elevating-screw I.

Claim.—1. The combination of the clamp-lever A, the fulcrum-post B, screw *e*, nut C, the cam G, and the handle H, all constructed, arranged, and applied together as and to operate substantially as set forth.

2. The arrangement and combination of the bearing I with the cam G, the clamp-lever A, the fulcrum-post B, and nut C, the cam being provided with the handle, as set forth.

142,698.—Journal-Packing Rack.—WILLIAM H. HUMPHREY, Lansingburg, N. Y., assignor to W. H. HUMPHREY and D. H. HUMPHREY, same place. Application filed June 27, 1873.

An oil-reservoir divided into two sections, the inner sides perforated. A perforated plate, supported upon springs, holds the waste against the journal.

Claim.—The combination of the perforated packing-rack C C, plate G, and springs *b b*, substantially as and for the purpose specified.

142,699.—Sewing-Machine.—ELI INMAN, Estes, Ind. Application filed August 2, 1873.

The saw is reciprocated by a pitman attached to a crank, and is raised and lowered by a system of levers and rods.

Claim.—The combination of the box J, link *f*, rock-shaft L, arms K K′, rod A, and lever N, all substantially as and for the purposes herein set forth.

142,700.—Stop-Valve for Water and Gas Mains, and other purposes.—CHARLES W. ISHELL, New York, N. Y. Application filed May 23, 1873.

Two valve-disks, provided with lifting-lugs and toggle-levers, are raised by means of shoulders upon a nut, and closed firmly by the action of the toggle-levers against the openings in the main pipe. These disks are so arranged that the inside of the valve may be inspected, when closed, through openings placed transversely to the main pipe.

Claim.—1. The valve-disks provided with the lifting-lugs *a a*, the nut E, and the toggle-levers G G, the whole combined and organized substantially as and for the purpose herein set forth.

2. The arrangement of the opposite openings *i* transversely to the valve-disks and the main, substantially as and for the purpose described.

142,701.—Railway-Rail.—JAMES B. JOHNSTON, New York, N. Y. Application filed July 12, 1873.

Claim.—The railway-rail, composed of the parts *a a*′ C, having an elongated slot, *d*, said parts being connected together by the double-headed bolts B, having rounded inner faces or shoulders conforming to the curvature of the rail, when inserted in a heated state, and turned one-quarter round, thus forming a ready means of connection without the use of nuts, screws, locking devices, or swaging, substantially as specified.

142,702.—Steam-Valve.—HARVEY P. JONES, Davenport, Iowa. Application filed May 7, 1873.

The side plates are removable, in order that the valve may be seen when being set. By means of the adjustable boxes, the binding of the valve ceased by expansion, can be obviated.

Claim.—1. The valve A, in combination with the removable side plates, substantially as and for the purpose set forth.

2. The adjustable boxes G, having an offset, I, and slots K, in combination with the box C, having dovetail lugs J and with set-screws L, substantially as and for the purpose specified.

142,703.—Refrigerator for Transporting Oysters, &c.—JAMES C. JONES, New York, N. Y. Application filed June 25, 1873.

Claim.—The transportable refrigerator composed of the cask-like case, the removable concentric ice-reservoir supported by the sub-head C, and retained in place by entering a recess in the bottom of the case, as described, and the cover G, with its bung-piece I, all combined and organized substantially as and for the purpose herein set forth.

142,704.—Treadle for Sewing-Machines.—MYRON H. KNAPP, Fulton, N. Y. Application filed July 25, 1873.

Claim.—The pedals D D′ and pitman-rods E E′, constructed and arranged with relation to the shaft C, and wrist *a*, and driving-wheel B of a sewing-machine, substantially as and for the purpose set forth.

142,705.—Flour and Middlings Purifier.—EDMUND N. LACROIX, Minneapolis, Minn. Application filed June 23, 1873.

Bolting-reel has a slow revolving motion, a reciprocating and a rising-and-falling motion imparted to it, which gives a thorough sifting action to the same, and, in connection therewith, devices for keeping the meshes of the cloth clear, and drawing off the light bran and fibrous matter which rises to the top of the material by the different motions given to the reel.

Claim.—1. The combination, with a reel, of revolving, reciprocating, and vertically-shaking mechanism, substantially as set forth.

2. In combination with a bolting-reel having a revolving and reciprocating movement, of a fan or blower for forcing a blast of air against and through the bottom of the reel and an exhaust-fan located above the reel, in direct communication with it, substantially as described, for the object specified.

3. In a middlings and flour purifier, the driving-gearing and reciprocating mechanism, as set forth, so combined with the reel as to impart a slow sifting motion to the reel, substantially as described.

4. The gears or corrugations L″ upon the shaft of the reel, in combination with the segmental cams or eccentrics L′ for imparting a rising-and-falling motion to the reel, substantially as and for the purpose specified.

5. The reel-covering plate V, having one or more brushes, V′, combined, substantially as and for the purpose described.

142,706.—Corn-Planter.—MORVAL C. LANE, Wyandotte, Mich. Application filed December 31, 1872.

The rear end of the machine is mounted upon wheels, one of which is provided with a clutch, to which radiating arms are attached, and these by contact with a sliding bar, which gives a reciprocating movement to the seed-slide.

Claim.—The clutch-box C, provided with arms D D D, having the inclined cams D′ at their ends, in combination with the bar E and lever J, for the reciprocation of the dropper-slide in the rotation of the clutch-geared traction-wheel B, substantially as shown and described.

142,707.—Heating-Stove.—EZEKIEL C. LITTLE and DAVID H. NATION, St. Louis, Mo. Application filed June 24, 1873.

Claim.—1. The oval heating-stove described, provided with hearth E, hearth-plate F, and mica doors J K on one of its sides,

and exit-flue chamber and pipe-opening upon the opposite side, whereby the draft is admitted at the center of the fire-box, and extends across the narrow portion of the stove, substantially as set forth.

2. In an oval heating-stove, the combination of the flue-sheet C, extended beyond the stove body, the exterior flue-chamber D, and the damper H with the flue B, all substantially as set forth.

142,708.—Lock for Sewing-Machine Tables, &c.—JOHN B. LOGAN, Baltimore, Md. Application filed August 25, 1873.

Claim.—A circular sewing-machine-table lock consisting of a segmental bolt, guided between flanges and front and back plates, and operated by a rack and pinion, substantially as described.

142,709.—Nut-Lock.—KELLOGG H. LOOMIS, Cleveland, Ohio. Application filed May 14, 1873.

Claim.—A metal washer having a central bolt-hole, from which radiate openings *b b*, formed by removing a portion of the metal, and also provided with lips *a a*, formed on one corner of each opening, which bear against the back of the nut and hold it by frictional contact, substantially as set forth.

142,710.—Boot and Shoe Stretcher.—JOEL LYONS, Chippewa, Canada. Application filed March 17, 1873.

The toe part K is movable, and adjustable to the main portion of the last by means of a dowel. A metal plate attached to the bottom of the last supports a notched bar, which slides in a groove cut in the under side of the last.

Claim.—The last described, consisting of the parts K L, arranged as described, plates A and C, notched bar B, slotted lever D, and ratchet H, constructed and arranged as described, for the purpose set forth.

142,711.—Water-Strainer.—FREDERICK W. MAES, Oshkosh, Wis. Application filed August 16, 1873.

A removable cap for obtaining access to the interior of the strainer-cup is connected to the top of an outer cylinder, which forms a guide for the water as it passes from the strainer to the receiving-vessel. A bail is connected to the cap for the attachment to the spout.

Claim.—A water-strainer having an inside cup, A, cylinder B, neck D, cap F, and bail G, substantially as and for the purpose set forth.

142,712.—Wrecking Apparatus.—BERNARD MCGRODER and HARMS TIEDEMANN, Cleveland, Ohio. Application filed June 25, 1873.

Claim.—The ropes H, provided with loops *a*, in combination with the floats A, having transverse and longitudinal tubes B C, and cable G, constructed and arranged substantially as and for the purpose described.

142,713.—Car-Coupling.—THOMAS MEIKLE and JAMES W. MEIKLE, Louisville, Ky. Application filed January 8, 1873.

The coupling-pin is shouldered near its upper end, and so pivoted to the lever by which it is operated that when it is struck by the link it will have only a limited movement independent of the lever, and the impact will cause them both to rise in the arc of a circle until the link has passed far enough in the draw-head for the pin to fall into its loop. The pin can be elevated entirely out of the slot and swung backward until it rests on the top of the draw-head when it is desired that cars shall stand together without being coupled.

Claim.—The draw-head A in combination with the pin C and lever D, when the fulcrum of the lever is forward of the pin, and the latter has a shoulder, *c*, to lift the lever on the entrance of a link, and is so constructed and connected that it can be elevated above and supported upon the draw-head, as described and shown.

142,714.—Clothes-Drier.—ABRAHAM S. MILLER, Nottingham, Ind. Application filed July 1, 1873.

Four braces are pivoted to a central standard near the upper end; each brace has pivoted to it a number of arms, the inner ends of which are united together by means of cords, and the cords are attached to the central standard.

Claim.—The combination of the standard 1, braces 2, arms 3, and cords 5, substantially as shown and described.

142,715.—Car-Coupling.—CHARLES L. MILLER, Cuba, N. Y. Application filed June 10, 1873.

When the coupling-hook is raised it is held up by a spring acting on its lower end, which is enlarged for that purpose and to receive the concussion from the approaching draw-head, by which it is thrown down over the transverse bolt on that draw-head. When this hook is not in use it is held out of the way by another hook catching over a pin which projects from its side.

Claim.—1. In combination with the draw-heads B, the pivoted hooks D provided with the shoulders *c*, and the springs E, constructed and arranged to operate substantially as described.

2. In combination with the pivoted coupling-hooks D provided with the pins *d*, or their equivalents, the spring F, arranged to operate as shown and described.

142,716.—Furnace for Producing Malleable Iron.—DAVID R. NASH, Brooklyn, E. D., N. Y. Application filed March 11, 1873.

The ore is reduced in a series of upright retorts from a series of puddling-furnaces, and the metal from the retorts drops into the hearths. The waste gases from the puddlers reduce the ores in the retorts.

Claim.—1. In a furnace for deoxidising ores, the combination of a series of separately-removable retorts arranged around a common center, flues for conducting the heated gases from a puddling-furnace, or from puddling or heating furnaces, to and around the retorts, substantially as and for the purpose set forth.

2. The combination of the separately-removable retorts K K and the chutes *s s* for conducting the deoxidized ore to the puddling-furnaces, substantially as set forth.

3. The combination of the central induction-passage *c*, receiving chamber *d*, and deflector *g*, arranged substantially as and for the purpose set forth.

4. The combination and arrangement of the receiving-chamber *d*, induction-passage *c*, connecting-flues *i i*, flues or spaces *e e*, flue-space *h h*, and return-flues *k k*, substantially as and for the purpose set forth.

142,717.—Reservoir Cooking-Stove.—DAVID H. NATION, St. Louis, Mo. Application filed April 3, 1873.

The horizontally-swinging cover is detachably hinged at one corner. Upon its under side are flanges, which sweep over the flange on the upper rim of the reservoir-frame and clear off all the water drops, thus preventing any dripping.

Claim.—The combination of the frame A with L-shaped flanges *d d*, and studs *a a* with wings *b b*, and the detachable covers B B with slots and under flanges correspondingly with the studs and flanges on the plate, all as and for the purposes set forth.

142,718.—Hay or Cotton Press.—DAVID A. NELSON, Tyler, Tex., assignor of one-third his right to S. D. WOOD. Application filed July 22, 1873.

Claim.—1. A press-box having the hinged latched sides J J, removable side K fitting grooves of frame L and passing through frame L', and the side K', held by key M, to form a press-box from which the bale may be easily removed.

2. The follower H, beveled on its upper side, and having the shank *h'* with an upwardly-tapering extension, combined with the pivoted straps E' E' and lever E to enable the said follower to be held up against said lever, in the manner described.

3. The opposite followers G H, operated in the same press-box by two opposite levers, D E, attached together by a connection, N, in the manner and for the purpose specified.

142,719.—Adjustable Spray-Jet.—AMOS NICKERSON, East Somerville, Mass. Application filed July 5, 1873.

The diffuser is pivoted in a socket on the jet-tube, and through the rear part of its shank passes the adjusting-screw.

Claim.—The jet-tube A, the socket *s*, the spreader B, and the screws D, constructed, arranged, and connected or applied together as shown and described.

142,720.—Drawing-Knife.—ELMON PARKER, Chambersburg, Pa. Application filed June 9, 1873.

A spoke-shave is attached to one end of a drawing-knife.

Claim.—The guide-bar, Fig. 2, the cap, Fig. 3, in combination with a drawing-knife, when arranged in manner substantially as described, and for the purposes herein set forth.

142,721.—Buckle.—WILLIAM PARSONS, Palmyra, N. Y., assignor of one-half his right to WILLIAM B. BROWN, same place. Application filed June 14, 1873.

Claim.—A buckle in which the cross-bar C is constructed with the V-shaped recesses *c c* and tongue *a*, with its vertical point *d*, combined as herein described, for the purpose specified.

142,722.—Water-Filter.—JAMES PEARSON, Sacramento, Cal. Application filed May 17, 1873.

A vessel for filtering purposes, having an inclined bottom and grating, arranged with cocks, perforated air-chamber, and alternate layers of gravel, charcoal, and sand, in connection with pressure-bars and reservoir.

Claim.—The filter consisting of the vessel A having the inclined bottom B, the grating D, the cocks *b* and *b'*, the perforated air-chamber N, and air-cock *n*, the alternate layers E F G H I of gravel, charcoal, and sand, the cap K, the pressure-bars J, the cocks *j* and F, and the reservoir M, arranged substantially as specified.

142,723.—Drop-Hammer Lifter.—CHARLES PECK, New Haven, Conn., assignor to MILO PECK and CHARLES PECK, same place. Application filed April 15, 1873.

The improvement is mainly in the device for holding the pawl in contact with the ratchet-wheel, consisting of the bent bar *d*, rubber spring *f*, and nut *g*.

Claim.—The combination, with the ratchet-wheel E, pawl *b*, and cam-guard *c*, of the S-shaped lever *d* and spring *f*, constructed and operating substantially in the manner described.

142,724.—Dumping-Platform.—FRANCIS PEISLER, Bloomington, Minn. Application filed September 3, 1872.

To be used in excavating.

Claim.—The sliding hopper A, arranged upon the girders F'' of the adjustable platform, with or without the removable apron H, substantially as described, for operation in respect to conveyers J J, as set forth.

142,725.—Railroad-Switch Stand.—ROBERT A. RASH, Petersburg, Va., assignor of one-half his right to TAFFEY, LUMSDEN & CO., same place. Application filed March 21, 1873.

The cylinder revolving within the case has upon it legs *a*, fitting recesses in the top of the case, which govern the throw of the switch, the vertical crank-shaft with cylinder being lifted by the treadle G and moved by lever H. The cylinder cannot be locked nor the key withdrawn until the switch-rail is properly replaced. The cap D protects the movement from being obstructed by ice.

Claim.—1. The combination of the cylinder C, revolving within the case B, and the bolt *f* of the lock I, constructed and arranged to operate substantially as and for the purposes herein set forth.

2. The combination of the stand A, casing B, cylinder C with cap D, crank-shaft E, treadle G, and lock I, all constructed and arranged to operate substantially as and for the purposes herein set forth.

142,726.—Straw-Cutter.—ROBERT A. RASH, Petersburg, Va., assignor of one-half his right to TAFFEY, LUMSDEN & CO., same place. Application filed March 21, 1873.

The lever, pivoted to the frame on one side, is pivoted to the knife, which has its opposite bearing in a slotted plate and works behind guides, to which is attached a gage-plate for regulating the cut.

Claim.—The combination of the extended and slotted plate J, secured to one side of the frame A B, the lever H, pivoted to the opposite side of the frame, the knife I pivoted to the lever and moving in the slot in the plate, the guide-bars K E, and the gage-plate G attached thereto, all constructed and operated as and for the purposes set forth.

142,727.—Distant-Heat Indicator.—JAMES A. READ, Enfield near Sydney, New South Wales. Application filed June 15, 1872.

The bulb of an air-thermometer is placed in the hold of a vessel or other place, whose temperature is to be ascertained and, by means of a long flexible tube, communicates the variations of expansion to the siphon or liquid-scale, placed convenient for observation. An enveloping-tube protects the inner thermometer-tube from disturbances of radiation, and stop-cock, suitably arranged at the upper part of the siphon, serves for adjusting the liquid-scale.

Claim.—1. The use of a tube or tubes, one within the other, covered and protected, if necessary, by other tubes or pipes, as hereinbefore particularly described, the inner one to connect the glass chamber or vessel above spoken of and the indicating-siphon, the insulation of the two tubes by means of an air-passage between preventing the action of the heat at any place or point except where such bulb, chamber, or vessel is placed.

2. The application of air-cocks of the form and kind above mentioned, attached to the siphon, releasing the liquid in the same from internal and external atmospheric pressure, and for the purpose of restoring the equilibrium of the liquid within the said indicator or siphon, in the same manner and form above specially mentioned and described.

142,728.—Mode of and Apparatus for Varnishing Sad-Irons and other articles.—WILLIAM J. REAGAN, Royer's Ford, Pa., assignor to ROYER'S FORD IRON FOUNDRY, same place. Application filed April 18, 1873.

Claim.—1. The mode described of varnishing sad-irons and other objects—that is, by placing them in openings in a board and immersing the portions projecting below the board in a supply of varnish, all substantially as herein set forth.

2. The combination of a trough, D, in which the varnish can be raised or lowered with the board B hinged to the trough, as set forth.

3. The combination of the said board B, for carrying the sad-irons or other objects, with the detachable board F.

142,729.—Middlings-Purifier.—LEVI S. REYNOLDS, Minneapolis, Minn. Application filed April 28, 1873.

The riddle is regulated and given any pitch desired by the adjustable bars that support the frame in which the riddle is inclosed. The bolting-cloth receives a compound vibration by means of the sliding weight and horizontal concussion given to the riddle-frame, which prevents gumming of the bolting-cloth. Perforated air-tubes arranged transversely across the machine under the tail end of screen, for giving the strongest blast of air at that point.

Claim.—1. The riddle-frame C, in combination with the frame B, supporting-bars *a'*, and springs *g*, all constructed and arranged substantially as and for the purpose set forth.

2. The relative arrangement of the openings J' and perforated tubes J J J in the case, in combination with the partitions A', screen *c*, and fan for producing an accelerated draft of air, as and for the purpose specified.

3. The sliding weight H, operated as described, in combination with the riddle C having a horizontal vibration, substantially as and for the purpose set forth.

142,730.—Lamp.—FRANK REHND, Brooklyn, N. Y. Application filed August 13, 1873.

On the standard of a lamp, whose weight prevents an extinguisher from operating, is placed a spring, which, when grasped by the hand in the act of lifting the lamp, prevents extinguishment; also the substitution in such an extinguishing device of a spring with two arms.

Claim.—1. The spring 5 secured to the side of the standard *c*, in combination with the rod *c*, having the notch 1, substantially as set forth.

2. The combination of the rod *c*, foot *f*, springs 5 and 2, and arms 3, arranged to operate as specified.

142,731.—Cutter-Head for Planing-Machines.—EPHRAIM G. RICHARDS, Detroit, Mich. Application filed July 14, 1873.

Beading-cutters are attached to one side of a cutter-head cylinder, for the purpose of "beading" on the edge or interior surface of dressed lumber.

Claim.—The cylinder A, having the double-tailed groove *a* in one of its blank sides, in combination with the bit-holder B, bolts and nuts *b b'*, bits *c c'*, and gib *c''*, as and for the purpose described.

142,732.—Apparatus for Relieving Grounded Vessels. WILLIAM R. RIGHTOR, Helena, Ark. Application filed May 23, 1873.

Sectional bent pipe or tube is connected by swivel-joint to a fixed tube connected with a pump or boiler on board the vessel. Water or steam is forced through said pipe to loosen the sand or mud, and thus relieve the vessel.

Claim.—The vertical pipe G, having a horizontal extension or discharge pipe, I, and provided with a swivel-bearing in the removable head F, whereby it is adapted to be rotated, when used in combination with the pipe C, in the manner and for the purpose described.

142,733.—Circular-Saw Table.—HENRY C. ROHR, Detroit, Mich., assignor of one-half his right to WILLIAM L. BEARD, same place. Application filed July 31, 1873.

The saw-table is adjusted vertically by a lever provided at one end with a toothed segment, which acts upon a rack attached to the under side of the table.

Claim.—The quadrants C provided with the ratchet teeth *d* cut on different planes, the bar D provided with the rack *a*, the lever E pivoted between the quadrants C, having the geared sector *b* at one end, and the pawls E' and the springs *f* at the other, constructed and arranged substantially as and for the purpose set forth.

142,734.—Coal-Hod.—HENRY B. SAFFORD, Lancaster, N. Y. Application filed February 11, 1873.

Claim.—1. The coal-hod A, in combination with the vessel C, valve D, spring I, sliding catch E, and stop J, substantially as and for the purpose described.

2. The coal-hod A, in combination with the inclined shelf K, valve D, vessel C, spring-catch E, and stop J, substantially as and for the purpose described.

142,735.—Window-Screen.—JOHN F. SCHERPE, St. Louis, Mo. Application filed August 12, 1873.

Claim.—The screen-frame formed of two parts, C D, hinged together at *c*, and having pin projections *c'* and catches E F, substantially as and for the purpose set forth.

142,736.—Shuttle-Box Mechanism.—JOHN SCHRACK, Philadelphia, Pa. Application filed June 12, 1873.

To bring any one of a series of shuttle-boxes opposite the race the lifting-lever is connected to a plate-lever reciprocating in a vertical plane and limited in its movement by a pin and slot. On its face the plate-lever is provided with pins, which project over the notched ends of a series of bell-crank levers controlled by a jacquard apparatus, and one of the pins projects into the path of a series of hooked arms, also controlled by the jacquard, and pivoted to a corresponding series of levers arranged to be raised and lowered by a series of cams of different size or throw. The notched vertical arms of the lower set of bell-crank levers being of different length, their ends serve as steps for supporting the boxes at any desired point in their descent, and the hooked arms, each receiving a different lift, give the desired upward movement.

Claim.—1. The combination, substantially as described, of the lever A, from which the drop-boxes are suspended, the lever B, its pins *f*, and the series of levers E, controlled by jacquard apparatus.

2. The combination of the two series of levers E and F, controlled by jacquard apparatus, with the lever B and its pins.

142,737.—Railroad-Car Heater.—ELIPHALET S. SCHIFFLER and WILLIAM STACKMAN, Brooklyn, N. Y. Application filed May 29, 1873.

Claim.—In combination with the heater B and main trunk-pipe G with its gates and couplings, the pipes *d d* and auxiliary heater I with pipe K and lamps *f f*, all constructed and arranged and used substantially in the manner and for the purposes herein set forth.

142,738.—Self-Closing Hatchway.—ALONZO B. SEE, Yonkers, N. Y. Application filed February 17, 1873.

The hatchway-covers fold up on the approach of the elevator, to admit its passage, and expand and close the opening on its recession. Small auxiliary folding platforms fill the spaces at the ends of the main hatches, caused by the encroachment of the corner posts.

Claim.—1. The hatchway-platform E, made jointed and composed of two sections, *a b*, which fold against each other vertically when the platform is to open, and are in line with each other horizontally when the platform is shut, as specified.

2. The combination of the brace or braces *i* with the jointed platform *a b*, substantially as and for the purpose herein shown and described.

3. The rod A, connecting the cranks *f f* of the jointed platforms, to cause their simultaneous opening and shutting motion, as specified.

4. The double-armed crank *l*, fitted upon the pin *g*, to be actuated by the lever G, in the manner set forth.

5. The spring-catch F, supporting the platforms in their closed position, and combined with rod *s* and lever G for operation, as set forth.

6. The V-shaped lever G, arranged in combination with rods *s p* and *s*, as and for the purpose specified.

7. The T-shaped links H and I, applied, respectively, to the rods *n* and *p* for connection with the lever G, to be operated as set forth.

8. The elevator-frame B, provided with projections *u v* for mounting the links I and H, respectively, as specified.

9. The filling-in platform J, applied in combination with the supporting-spring *w* for filling the spaces in corner elevators, as set forth.

142,739.—Stench-Trap.—JAMES SEMPLE, Chicago, Ill.—Case A. Application filed June 25, 1873.

At the bend of the trap is secured a metallic re-enforcement to prevent the thrusting of any sticks in the trap in relieving it of obstacles.

Claim.—A stench-trap, provided with a metallic re-enforcement at the bend *a*, as and for the purpose described.

142,740.—Derrick.—JAMES E. SHERRILL, New York, N. Y. Application filed August 16, 1873.

The boom of the derrick is hung from a cap at the upper end of the mast. This boom is made double, and the parallel pieces are outside and swing free from the mast. A counterpoise is attached to one end of the boom. When the weight to be raised is not equal to that of the counterpoise the boom swings endwise until the equilibrium is obtained.

Claim.—1. A derrick, made with a double boom passing at each side of a vertical mast and suspended from a saddle that rests upon the top of the mast, in combination with a counterpoise to balance the weight, substantially as set forth.

2. A counterpoise suspended from the top of the mast, in combination with a boom and blocks or pulleys arranged substantially as set forth, so that the weight of the article raised shall act to draw the counterpoise upward and away from the mast until an equilibrium is obtained, substantially as set forth.

3. A block connected by a bridle to the base of the mast, in combination with the hoisting-tackle, double boom, and counterpoise, substantially as and for the purposes set forth.

142,741.—Coal-Delivering Sack.—WILLIAM S. SHACKLETON, Cleveland, Ohio. Application filed November 30, 1872.

Claim.—The herein-described coal-sack, consisting of the body A, lip B, handle C, leather shield D, and ears E, as and for the purpose specified.

142,742.—Washing-Machine.—CHARLES W. SHERER, Chicago, Ill. Application filed July 21, 1873.

In a suitable frame is employed a central fluted roller; above this, partly surrounding it, is a series of fluted rollers that are pivoted in a hinged weighted frame-work that slides in a slotted frame.

Claim.—1. The arc of fluted rollers F F', bearing in the hinged weighted frames G G', in combination with the central roller B, substantially as specified.

2. The hinged weighted frame pieces G G', connected together by the rigid rods *e f*, upon which turn loosely the rollers F F', as specified.

3. The arc of fluted rollers F F, bearing in the weighted frame G G', in combination with the rocker-shaped buttons A A, attached to the ends of the rod *e*, and the upright slotted guide-plates E, as specified.

142,743.—Drying Lard and Tallow.—AMOS SMITH, Cincinnati, Ohio. Application filed June 16, 1873.

Claim.—The mode of artificially drying tallow or lard containing moisture, by passing through the same, while in a fluid state, currents of hot air, substantially as set forth.

142,744.—Apparatus for Drying and Cooling Tallow or Lard.—AMOS SMITH, Cincinnati, Ohio. Application filed June 16, 1873.

A set of pipes introduced into a tank containing the melted lard, through which a stream of hot air is first passed, and then a current of cold air in like manner.

Claim.—1. An apparatus for drying and cooling tallow or lard, combining in its construction a pressure blast, a pipe for cold air, and another passing through a heating-furnace, and a tank for containing the melted material, into which a blast of hot air and of cold air may be successively introduced, substantially as set forth.

2. In combination with the tank F, and hot and cold air pipes B and C, the adjustable pipe I, and distributing-trough N, adjustable in manner substantially as set forth.

142,745.—Floor for Refrigerator-Buildings, &c.—ROLLIN A. SMITH, Fond du Lac, and ALBERT SCHMIDT, Green Bay, Wis. Application filed January 25, 1873.

The floor is made of galvanized iron, zinc, or other non-corrosive sheet metal, and is composed of sheets with their edges soldered, so as to form a continuous piece of the proper dimensions. The corrugations extend from one end to within a short distance of the opposite end, where they terminate in a groove or gutter running at right angles with the corrugations.

Claim.—The combination of the floor A, formed with parallel angular corrugations *a*, the frame B, joists C, diagonal braces D, and troughs F, arranged under the joists, and communicating with the transverse trough F', constructed and arranged substantially as shown and described.

142,746.—Core-Barrel for Casting.—WILLIAM SMITH, Pittsburg, Pa. Application filed June 4, 1873.

Claim.—1. A core-barrel formed of a series of segmental plates, G G, cast with the interior inclined seats H H in one piece, and provided with V-shaped openings cut the entire length between said plates, substantially as and for the purposes herein set forth.

2. In combination with the segmental plates G G and their seats H H, the central shaft A with plates B C, hubs C D, toggles E E, and lugs *d d*, all constructed and arranged substantially as and for the purposes herein set forth.

3. In combination with the central shaft A, plates G G, and intermediate devices, the bottom plate I, nut M, bowl K, and bed-plate L, all substantially as and for the purposes herein set forth.

4. The slotted hubs C, attached to the central shaft A by pins *b* passing through the slots in the hubs, as and for the purposes herein set forth.

142,747.—Reciprocating Engine.—ALBERT STALEY, San Francisco, Cal. Application filed April 30, 1873.

The pitman imparts the reciprocating motion given it by the piston-rod to the cranks, the rollers on said piston-rods permitting a free vertical movement thereof.

Claim.—The skeleton-link or pitman-frame I, with its cross-bars or abutment K, in combination with the pistons S and piston-rods H with their friction-rollers *l*, substantially as and for the purpose above described.

142,748.—Bee-Hive.—ADAM J. STEINBERG, Butler, Ind. Application filed June 11, 1873.

The hive is incased in an outer box of corresponding form, an air-space being left between them. The front of the outer case is removable; and the top, front, and sides of the inner box are all hinged to open out for the exposure of the comb. The frames hang on hooks in the rear, and rest on cleats in front.

Claim.—1. The interior hive D, with hinged front, sides, and top, in combination with the comb-frames G G within said hive, and the exterior hive A surrounding the hive D, with an air-chamber between the two hives, substantially as set forth.

2. The within-described bee-hive, consisting of the exterior hive A, with loose front B, interior hive D with hinged front, sides, and top, comb-frames G G, hung as described, honey-boxes H H, and cap J, all substantially as herein set forth.

142,749.—Machine for Sawing Spokes.—JOSEPH L. THEALLS, Warsaw, Ind. Application filed January 4, 1873.

The supports which carry the log are made longitudinally adjustable upon the carriage.

Claim.—The horizontally-adjustable brackets C C' of the carriage, in combination with the screws D D, vertically-adjustable combined nuts and boxes D' D', and saws E and F, constituting a mechanism for sawing blank spokes of various lengths from bolts of timber, substantially as specified.

142,750.—Car-Coupling.—JOSHUA WAITE, Yarmouth, Me. Application filed March 1, 1873.

By means of the lever *i* the link is released. The finger *m*, projecting from the lever, is suspended over the draw-head and the rear end of the hooked lever, to prevent accidental uncoupling.

Claim.—The combination of the bent lever *i*, guide *j*, catch *k*, pivoted hooked lever *a b*, having the plate *c*, and the spring or finger *m*, as herein set forth, and for the purposes described.

142,751.—Changeable-Gage Car-Truck.—WILLIAM W. WHITAKER, Gloversville, N. Y. Application filed March 11, 1873.

The wheels are secured to independent axles, which are so arranged in their boxes that they may be adjusted for a narrow or wide gage track, and kept in their proper position by means of the brake-shoes, which are combined with the brake-bars, capable of being laterally adjusted and locked in place.

Claim.—1. In combination with the wheels and axles which are laterally adjustable, the lock-bars which are adapted to be shifted from one side of the wheels to the other, to confine the wheels when running upon either a wide or narrow gage track, substantially in the manner set forth.

2. The lock-bars pivoted and connected, substantially as set forth, so that they may be simultaneously raised to permit the wheels to be shifted.

3. In combination with the lock-bars, constructed substantially as set forth, the parts E^1, E^2, E', and E^3, for raising and lowering them.

4. In combination with laterally-adjustable car-wheels, adjustable brake-shoes moving with the wheels as the latter are shifted from one gage to another.

5. In combination with the truck-frame, the metallic brackets or caps fitted around the corners of the frame, and constructed with upper and lower flanges to receive bolts passing through the flanges and frame-timbers.

142,752.—Car-Axle Box.—WILLIAM W. WHITAKER, Gloversville, N. Y. Application filed March 11, 1873.

The waste-chamber is arranged in the upper part of the box directly over the journal.

Claim.—An axle-box having the partition E, which forms a support for the waste in the chamber B, and also guides the oil to

aperture F, through which the oil flows upon the journal, substantially as set forth.

142,753.—Tobacco-Ridger.—JOHN R. WHITTEMORE, Chicopee Falls, Mass. Application filed June 6, 1873.

The scrapers are made adjustable in width at their rear, as well as in front, and the wheel may be raised or lowered and held rigidly at any height.

Claim.—1. In a tobacco-ridger, the sides or sheet-plates A A, when their rear ends are made adjustable out or in, as well as their front ends, substantially as and for the purposes herein set forth.

2. The combination of the perforated standards I I and flanges *i*, formed on or attached to the bar B, the wheel G, and frame or rods *f*, substantially as and for the purposes herein set forth.

3. The combination of the sides or sheet-plates A A, made adjustable at both ends, bars B C, and the adjustable wheel G, attached rigidly to the machine, all substantially as and for the purposes herein set forth.

142,754.—Hammer for Planishing Sheet-Iron.—W. DEWEES WOOD, McKeesport, Pa. Application filed June 23, 1873.

The face of the hammer and anvil is wider than the pack, which is supported and fed forward on friction-rolls between adjustable guide-rails; also bearing friction-rolls.

Claim.—1. In a machine for planishing metal, the combination of an anvil and hammer, a feeding-table, and side rails, substantially as described.

2. The combination of hammer and anvil, the operative faces of which are as wide as the pack, a series of friction-rollers, constituting the face of the feeding-table, and one or more adjustable side rails, substantially as described.

142,755.—Cled-Crusher and Harrow Combined.—WILLIAM YOUNG and JAMES WORTHAM, Shelbyville, Tenn. Application filed August 8, 1873.

Claim.—In combination with one or more sliding rubbers, A, a reversible harrow, the teeth of which project on both sides of the beam, substantially as set forth.

REISSUE PATENTS.

5,564.—Breech-Loading Fire-Arm.—WILLIAM CLEVELAND HICKS, Summit, N. J.—Patent No. 16,797, dated March 10, 1857; reissue No. 1,952, dated May 9, 1865; reissue No. 3,793, dated January 18, 1870; reissue No. 3,860, dated March 1, 1870; extended seven years. Application filed September 1, 1873.

Claim.—1. The combination, substantially as before set forth, of the following three elements, viz: First, the barrel, rigidly attached to the breech-frame, and constructed with a chamber for holding the cartridge; second, the reciprocating breech-piece, operating relatively to the barrel and breech-frame, in such manner that its front surface moves forward toward the muzzle of the barrel during its closing movement; third, the reciprocating extractor, so connected with the said reciprocating breech-piece that the said forward closing movement of the front surface of the breech-piece, and the forward movement of the extractor to a position in front of the annular space occupied by the flange of the cartridge, when held in the said chamber ready for firing, may be effected simultaneously by one movement of the hand, so that the unexpended cartridge may be withdrawn by the engagement of the lip of the extractor with its flange, in case the said breech-piece be withdrawn before attempting to fire or before letting down the hammer.

2. The combination, substantially as before set forth, of the reciprocating breech-piece, arranged as before set forth, the barrel rigidly attached to the breech-frame, and constructed with a chamber for holding the cartridge, and two extractors arranged in such manner that their operating ends extend in the same direction, so that the cartridge-flange is not clamped between them, and can be readily disengaged from them after its extraction from the said chamber.

3. The combination and arrangement, substantially as before set forth, of the extractor, the breech-piece, and the barrel, in such manner that the extractor may be driven forward by the hammer after the breech is closed, and that the extractor performs the two functions of transmitting the blow to the primer, and of extracting the cartridge or remnant of the cartridge from the breech of the fire-arm.

5,565.—Tire-Setter.—JOSEPH PAILCA, Ledyard, N. Y.—Patent No. 122,770, dated January 16, 1872. Application filed July 16, 1873.

The wheel is compressed by means of a hooked lever and the bench, having plates B C. The tire is put on cold.

Claim.—1. In combination, a bench, A, provided with a suitable clamp, D, and curved plates B and C to hold the wheel, and a hooked lever, E, all substantially as described, whereby the wheel may be compressed and the tire drawn on at one operation.

2. The lever E, adapted to use in connection with wheel-bench A, and provided with an adjustable hook, G, to adapt it to tires of different widths.

5,566.—Tell-Alarm.—CYRUS TUCKER and WILLIAM H. TUCKER, Indianapolis, Ind., assignors, by mesne assignments, to HETTIE TUCKER and ROBERT S. DOBBY.—Patent No. 116,022, dated December 13, 1870; antedated December 9, 1870. Application filed May 26, 1873.

A series of rocking arms is arranged to support reversible bent tumbler-rods on either side of the pivot, so they may be set for sounding or escaping the alarm. A spring presses the engaging-plate against the tripping-dog even when the tumblers are free, unless the drawer be first pressed firmly inward.

Claim.—1. The use, in combination with the key mechanism and tumbler device, of dogs or levers E, which are formed with rear and forward supporting-arms, arranged to vibrate or turn on a center, and to operate substantially as described.

2. In combination with a holding and locking or alarm-sounding lever or projection of the counter, a catch-plate, and a series of tumblers, arranged to rise and fall, and adapted to be operated upon by the tumbler mechanism of the lock, substantially as and for the purposes described.

3. In combination with the dog J of the counter and plate E of the drawer, which interlock with each other, a pressure-spring, N, for holding the said interlocking devices together by frictional contact independently of the tumblers, substantially as and for the purpose described.

5,567.—Rivet.—JOHN E. WOOTTEN, Reading, Pa.—Patent No. 67,634, dated August 6, 1867.—Division A. Application filed July 30, 1872.

Claim.—1. A tubular rivet made by coiling a strip of iron, as set forth.

2. A tubular rivet in which the grain of the iron takes a transverse course at right angles, or thereabout, to the axis of the rivet, as described, for the purpose specified.

5,568.—Machine for Boring and Mortising Blind-Stiles.—LEONARD WORCESTER, Lebanon, N. H.—Patent No. 24,668, dated July 5, 1859; extended seven years. Application filed March 26, 1873.

Claim.—1. The combination of the following elements or instrumentalities, namely: A reciprocating carriage for holding and presenting the stile to the cutter, a pattern for spacing the mortises to be cut, a reciprocating cutter for cutting the mortises, and a feeding mechanism for automatically feeding the stiles for the successive mortises, all acting in co-operative relation with each other, substantially in the manner described and specified.

2. The combination of the following elements or instrumentalities, namely: A reciprocating carriage for holding and presenting the stile to the cutter, a pattern for spacing the mortises to be cut, a reciprocating cutter for cutting the mortises, an automatic feed for feeding the stiles, and an automatic clamp for clamping and releasing the stile for the operations of feeding and cutting, substantially in the manner described and specified.

3. A rotary cutter-head carrying cutters at both ends combined with an inclined reciprocating frame, and so arranged as to automatically and simultaneously cut mortises in or bore a pair of blind-stiles as they are presented to the cutters, substantially in the manner described and specified.

4. The combination and arrangement of the transversely-reciprocating carriages A A with the cam-cylinders L L and vibrating levers E E and *f f*, constructed and operating substantially in the manner described.

5. An organized machine for automatically mortising and boring blind-stiles, constructed and operating substantially as described and specified.

5,569.—Feed-Water Heater and Filter for Steam-Boilers.—JAMES ARMSTRONG, Toledo, Ohio.—Patent No. 91,703, dated June 22, 1869. Application filed March 13, 1873.

Water enters the chamber into which exhaust steam passes, and flows over the edges of the imperforate and over the collars of the perforate pans, held together by a slide in the removable head; thence flows through a perforated shield, removable to permit access to the heater-chamber, into the filtering-chamber, from which it passes through sponge or cloth and perforated wall into the hot-well, from which it is pumped into the boiler.

Claim.—1. The filter-chamber, constructed as set forth, to form an extension of the heater-chamber, to which its walls are directly attached, and to leave an opening through which access may be had to the heater-chamber through the filter-chamber.

2. The combination of a heater-chamber, a filter-chamber, an opening of comparatively large area in the division-wall of the two chambers, and a removable perforated diaphragm or shield to close the opening while permitting the feed-water to pass through.

3. The combination of a heater-chamber, a filter-chamber, an opening in the partition-wall between the two, and a removable head or cover to the filter-chamber to afford access to the heater through the filter-chamber.

4. The combination of a heater-chamber, a filter-chamber, forming a lateral extension thereof, and separated from it by a single perforated wall, a hot-well, and a filter between the heater-chamber and hot-well.

5. The combination of the heater-chamber and its independent separable pans, arranged in series alternately perforate and imperforate, substantially as set forth.

6. The combination of the heater, the independent separable pans, the removable head, and the clamp-screw, substantially as set forth.

5,570.—Process and Apparatus for Evaporating Liquids.—JAMES J. JOHNSTON, Columbiana, Ohio, assignor of part interest to JOHN CAMPBELL and CHARLES SEIBERT, Alleghany, Pa.—Patent No. 50,935, dated November 14, 1865; antedated November 2, 1865. Application filed September 3, 1873.

Steam from the lower chamber mingles with air from a suitable blower, passes through the superheating coil beneath the still over the fire-chamber, and is conducted by the vertical pipe to the interior of the adjustable perforated disk, escaping in contact with the liquid to be evaporated contained in the upper chamber.

Claim.—1. The process herein described for evaporating and vaporizing liquids, viz., by the application or contact of superheated steam and air combined.

2. The combination of the furnace A, still B, adjustable disk h, and pipes k, l, and m, substantially as herein described, and for the purpose set forth.

5,571.—Bracelet.—JOHN S. PALMER, Providence, R. I.—Patent No. 731, dated March 19, 1861. Application filed July 24, 1873.

Claim.—1. The improvement in bracelets and similar articles, consisting in a plate made with turned edges, and another plate or part combined with the same, and protected by such turned edges, whereby the seam or joint is kept from contact with the flesh.

2. The combination of the lips *s s* of the foundation-plate with the ornamental metal plates, or their equivalents, constructed in the manner substantially as described, for the purpose herein specified.

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DIGEST OF FOREIGN PATENT LAWS.

BRAZIL.

REPORT BY MR. PHIPPS, OF THE BRITISH LEGATION.

The law which regulates at present in Brazil the grants of privileges of inventions or patents was promulgated on the 28th August, 1830, but in consequence of its many imperfections a new project of law was presented to the Chambers in 1869 for a more complete and comprehensive legislation on the subject.

As this project has not yet become law, though more than three years have elapsed since its presentation, and thirteen years since the reform of the old law was demanded, I propose to annex the law actually in force, as well as the project recently embodied, at the same time giving in a condensed form the objections made to the old patent legislation by the "Auxiliary Society of National Industry," which has recommended its alteration. This will convey an idea of the state of public opinion in Brazil on the subject.

At a moment when the question of the total abolition of patents is being agitated in other countries, it is somewhat remarkable that Brazil, which has so much to gain from the possibility of appropriating without restriction any inventions introduced in countries more advanced in industry, has not followed the example of Holland and Switzerland, but is in course of maturing a new patent law founded on the old restrictive system.

As a patent law, however, that of 1830 is entirely behind the spirit of the age, and a great number of its provisions have become obsolete, and are not even enforced by the executive. A perusal of it will show that had industrial arts and processes attained any great development in Brazil, the law would give rise to difficulties which the practice of other countries has shown to be insurmountable.

It is founded, it is admitted, on the laws of France of 1791, of Russia in 1812, and of Holland of 1817, when the continent of Europe was still under the regimen of guilds and corporations; and while other countries have been gradually modifying the old system, the Brazilian law has remained on paper unaltered.

The preamble to the new project of law presented to the chambers thus defends the patent system, with remarks which, in the present advanced state of public opinion in England on the question, have a somewhat antiquated tone:

"Without entering into a philosophic appreciation of the nature and extension of the rights of inventors, all modern legislations on the subject agree in the principle that a patent is a contract between society and the inventor, and has the object of animating the development and progress of industry. If the inventor cannot discover anything except by means of knowledge which society already possesses, and if, on account of that, it cannot be said that an invention belongs exclusively and in perpetuity to the inventor, it is not less certain that, without the initiative of enterprising and gifted individuals, society would fail to enjoy, or would enjoy only later, the advantages due to the personal efforts of the inventor.

"The law, moreover, tends to promote and animate the spirit of undertakings, and discovers in that it protects society against adventurous speculations, imprudence, or bad faith, so as not to raise unnecessarily the price of a product which might be obtained by means of free competition, guarding at the same time the interest of free producers. Mistrust, however, timidity, and excessive government control ought not to reach the point of impeding real progress."

To these arguments the objections may be raised, cited in Prince Bismarck's message to the North German Chambers in 1868, that the present remarkably-developed system of communication and conveyance (nowhere more remarkable than in this country, where the steam communication with Europe has increased in a few years more than twenty-fold) which has opened a wide field to real merit, and enables indus-

trial men to reap promptly all benefit of production by means of large outlets for their articles, will, generally speaking, bring those who know how to avail themselves before others of useful inventions to such an extent ahead of their competitors, that even where no permanent privilege is longer admissible they will make sure of a temporary extra profit in proportion to the service rendered to the public.

Nor do the society seem to have duly appreciated the practical impediments which in other countries have met every effort to merely improve patent laws.

The following is a translation of the Brazilian patent law of 1830:

"ARTICLE I. The law secures to a discoverer or inventor of a useful industry the property and exclusive use of his discovery or invention.

"ART. II. Whosoever improves an invention or discovery has in such improvement the right of discoverer or inventor.

"ART. III. To the introducer of a foreign industry a premium will be given in proportion to its utility and the difficulty of introducing it.

"ART. IV. The right of a discoverer or inventor will be confirmed by a patent, conceded gratuitously, on payment only of the stamp and costs.

"1. It must be shown in writing that the industry in question is his own invention.

"2. He must deposit in the public archives an exact and faithful account or exposé of the means and processes to be followed, with plans, drawings, and models explanatory thereof, if possible to do so.

"ART. V. Patents will be granted according to the species of discovery or invention for periods of from five to twenty years, a longer term being concedable by law.

"ART. VI. If the government buys the secret of the invention the same must be published, but if only a patent is granted, the secret is to be kept till the expiration of such patent. This period expired, the inventor must patent the secret.

"ART. VII. The infringer of a patent forfeits his instruments, &c., and products, and pays in addition a fine equal to the tenth part of the value of the products manufactured, remaining always subject to the obligation to indemnify for loss and injury. Such instruments, &c., products, and the fine will be handed over to the proprietor of the patent.

"ART. VIII. The proprietor of a patent can dispose of it by using it himself or ceding it.

"ART. IX. In the event of two or more persons obtaining by similar processes a certain result, and applying simultaneously for a patent, it shall be given to all.

"ART. X. The patent expires if—

"1. It can be proved that the recipient has committed any fraud or has concealed anything in the declaration.

"2. If any one can prove to the declared inventor that the invention is his own.

"3. If the recipient does not put in practice the invention two years after the concession.

"4. If the discoverer obtains for the same invention a patent in a foreign country.

"In this case, according to Article III, he has a right to a premium.

"5. If the article produced is found injurious to the public or contrary to law.

"6. The right of patent cases if the recipients, before obtaining the concession, have made use of such invention, patent, or discovery."

The auxiliary Society of National Industry calls attention to certain of the above paragraphs at considerable length, but I do not propose to follow their entire analysis, which is laid before the Chambers with the project of the new law.

Article II they consider not to be explicit enough, and that the species of improvement should be defined as in the French law of 1858: "The invention of new modes, or the fresh application of known modes, to obtain an industrial product or result;" and that when an improvement applies to an invention already privileged the patent thereo should not outlast that of the original invention.

On the authority of the last year's report of the Minister of Agriculture, I may state that Article III is obsolete, for in no Brazilian budget has any such item figured as "premium to inventors."

The society remarks that in some cases such may be the difficulties attendant on the introduction of any industry, that the government may not be able to grant an adequate premium. It therefore recommends that in certain such cases privileges should be accorded, regard being had to the expense of introduction. They add that in France recent legislation has not recognized the necessity of any stimulus by a premium, in view of the facility and frequency of communication between France and foreign countries, but that Brazil cannot but, under present circumstances, encourage the introduction of industries which it does not possess, when even England, Russia, Italy, Spain, Portugal, (and they erroneously add Holland,) concede patents of introduction.

With reference to Article IV, the society observes that this gratuitous concession was doubtless intended to encourage inventors, but that such is so far from the case that it is notorious how many requests for patents are made for inventions of a trivial character and well known in other countries, but which are here put forward as new and original inventions; that, moreover, a tax is no obstacle to the serious inventor. They proceed to compare the patent dues paid in various countries, and recommend the adoption of a graduated tax.

Section 1 of Article IV, as to originality of inventions, the society declares to be most ambiguously worded, and enters at considerable length into all the well-known arguments and reflections with regard to the difficulty of ascertaining whether a so-called discovery is new or not, and to the prejudicial delays caused by discussions and litigation on such subjects, during the progress of which society is deprived of the benefit of the invention, as well as to the contradictory decisions of the law courts which successively annul and revalidate the same patent. They object to the French project law of 1858, by which an inventor has a provisional privilege for two years, the annulment of which at the end of that period, after considerable capital may have been expended, they declare to be unreasonable. They assert that the system followed in England of lodging a caveat with the attorney general to be preferable.

The Brazilian Council of State, when consulted as to the difficulty of establishing, by means of any sort of preliminary investigation, the originality of any invention, and, therefore, as to the possibility of doing away with it, alleged that though in foreign countries imposture in such matters was easily unmasked, such was not the case in Brazil, and that the liberal granting of concessions, without previous careful examination, would facilitate the possibility of adventurers obtaining monopolies in the case of articles which are already the property of the public, and which may be easily imitated by any one. Against such usurpations an appeal can, it is true, they admit, be made to the law courts, but this only would be undertaken in the case of infringements of individual rights, while in general cases it is rare that the patentee would be called to account. In such cases, when it would be the duty of the government to bring an action at law, it would by doing so lay itself open to a charge of annulling its own acts.

The Auxiliary Society, admitting the difficulty of unmasking in Brazil imposture in such matters, proposes a somewhat complicated and utopian scheme, by which it declares that security can be obtained that an invention is new, that the rights of third parties can be secured, and that the government can be relieved of any charge of partiality. It adds that the patent dues now proposed to be imposed, as well as the publicity, will drive away adventurers and proposers of fantastic projects.

The following is the proposed plan, that demands for patents, if not made in Brazil, should be made to, and registered in, one of the Brazilian legations in the principal capitals of Europe and in the United States, who will forthwith communicate the date of such demand to the home government and the other legations. All proposals to be advertised in the principal Brazilian newspapers and in those of the said capitals three times, at monthly intervals. In cases of objections, such objections to be decided in the law courts of the country where the proposal for the patent is made. A sum sufficient to cover all patent dues and expenses to be deposited with the demand for the patent.

The society, I will venture to assert, have hardly realized the enormous amount of litigation caused by a patent being disputed in law courts. The present Lord Chancellor declared that "such litigation had acquired a reputation infamous beyond every other, and that in such cases it has been often necessary to enter into the whole history of the discovery in all its numerous stages, and to beat up witnesses all over the country, so that a mass of scientific evidence had to be produced." He added that the bias being usually in favor of the patentee, the result of such trials almost always was that the public is defeated, after having endeavored to protect itself at an enormous expense.

It is well known that the law courts in England have not time to try such cases, which interfere too much with other business, and which have to be decided by arbitration at a heavy expense. It is obvious at what a disadvantage the poor inventor, unpossessed of capital, is placed.

Instead of facilitating the possibility of valuable inventions finding their way to Brazil, there is little doubt that the plan proposed would render their introduction a question of vast labor, expense, and delay, and impede the advance of industry or the likelihood of such inventions crossing the ocean as soon as they are put in practice in Europe.

With regard to Article V, the society recommends rather a curtailment of the period of concession.

Article III they consider objectionable, owing to the impossibility of several persons simultaneously preferring an identical demand.

Article X, section 2. The society very justly remarks that no sufficient distinction is made between an abstract idea and an industrial fact; between theory and practice; between an invention projected and applied.

Article X, section 3. The term of two years is considered insufficient.

Article X, section 4. This extraordinary provision, copied from the French law of 1791, is admitted to be contrary to all justice and economical principles. It could only be accounted for by two possibilities: First, if Brazil could reckon on many entirely original national inventions, whereas such cannot be hoped for, for some time; and as foreigners would not hesitate to select the market of the world instead of that of Brazil, the nation would be deprived of many inventions which it might count on; secondly, by the entirely gratuitous supposition that an invention which has obtained a patent in a foreign country is already the property of the public, and is no longer new; whereas, as long as the first privilege lasts, the products of such privileged industry can only be obtained from the patentee, unless obtained fraudulently, and if such invention is in common use it no longer comes under the category of a privileged industry.

Nor is it a fair supposition, the report of the society continues, arguing, of course, from a highly protectionist point of view, that an inventor will, for the sake of a premium, resign his invention to public competition.

The prior existence of a foreign patent, they urge, on the contrary, is a point in favor of the invention, but they allow that the patent ought only to be conceded for the unexpired term of the foreign patent.

Article X, section 6. According to this article, the merest trial on the part of the inventor might involve the sacrifice of his patent, while he might continue to enjoy the right, even if the industry is practiced on however large a scale by others. The substitution, therefore, by section 3 of Article VII of the project is recommended.

The united committees of the Chamber for Commerce, Industry, the Arts, and Public Works, after discussing the representations made by the Auxiliary Society of National Industry, of which I have given the substance above, decided that reform is required, and added that the constant concessions made by the legislative body in the form of special resolutions upon matters which the law ought to regulate, proved that it is no longer in consonance with the requirements of national industry and progress in all its branches.

They, however, add a few remarks on the general subject, and especially on premiums, or State rewards, of which the substance is as follows:

Article III of the law of 1830 grants to the introducer of a foreign industry a premium in proportion to its utility and the difficulty of introduction.

This stipulation has never been executed, but has been in practice substituted by the concession of privi-

leges of introduction for a term not exceeding ten years, owing to pecuniary considerations and the difficulty of making exact and equitable estimates, which has never permitted the establishment of regular premiums to become the rule.

This right of exclusive privilege for a definite term, though it tends to enhance the cost of the articles patented, has the advantage that only those who profit by a new industrial process pay for the same, while a premium or reward from the public purse causes an augmentation of the public expenses in favor of a limited number of persons. The inventor is prevented, moreover, by his personal interests from unduly augmenting the price of his production, and thus checking demand.

In certain rare and exceptional cases the committees would, however, accord to government the power of granting such premiums, together with a five-years' contract or privilege.

All modern legislations, they add, agree in the grant of limited terms, to prevent a privilege degenerating into an unjust monopoly, but that, in proportion that industry has in any country developed itself and attained a certain degree of prosperity, the shorter should be the term of any privilege granted, because the larger the number of inventors. Thus, while in France the term is limited to fifteen years, and in the United States to seventeen years, and in Belgium to twenty years, they consider that Brazil, whose industrial development is far from equaling that of the latter country, can at least continue to admit a similar term of twenty years.

The project of law, of which I annex a translation, was, on the 23d September, 1869, approved on the first reading, and, on the 17th May, 1871, submitted to a second discussion, approved on the 19th May, and finally, on the 13th June, adjourned for a third discussion. In the now ensuing session of the Chambers it is expected that it will become a law.

I will now briefly explain the practice of granting privileges or patents in Brazil, and the formalities to be gone through.

The proponent addresses a petition to the crown, asking for a patent or privilege, and transmitting full explanations or models according to law. This is referred by the Minister of Agriculture to the Auxiliary Society of National Industry, which, I should state, is composed of eminent or scientific men, and which is subventioned by the government, and holds bimonthly sessions. They report on the utility of the inventive process or invention. It is then submitted to the "Procurador da Coroa," or Attorney General, who endeavors to decide as to its originality, and as to its non-interference with anterior rights. Should it not be of a nature also to require reference to the Sanitary Board, or "Junta de Hygiene Publica," or other similar technical authorities, it is then discussed and reported on by the Council of State, admitted to be a somewhat lethargic body, and rather tardy in its movements and decisions.

Should it not be necessary to refer it to the legislative body whose authority must be obtained to insure any remittance of customs dues for the articles proposed to be imported, or any similar sacrifice of public resources or funds, it is then returned to the Minister of Agriculture, and the privilege granted or refused.

The actual legitimate official expenses involved by the stamps, documents, &c., I am assured, varies between £9 ($45) and £14 ($68,) the patent being granted gratuitously.

I am assured that, as a rule, several months elapse from the time when a patent or privilege of introduction is demanded till the period when the decision of the Minister of Agriculture is made public, and it is asserted that various measures must be followed and influential protection obtained to insure a grant. No distinct principle appears to regulate the grant or refusal of patents, and they appear to be as often refused as accorded, without consideration as to the importance of the invention or the scientific position of the inventor. Yet, as I have already stated, the practice is to grant as few patents as possible. During the year 1870 only twenty-two patents appear by the Minister of Agriculture's report to have been conceded, and in 1871 only twelve. The Auxiliary Society appear, however, to have examined between March 1871 and March 1872 fifty-five proposals, principally for privileges of introduction of inventions already patented abroad. The following are the patents (nineteen in number) which have been granted during the first nine months of the present year, which I enumerate, as thereby an idea can be derived of the class of inventions considered worthy of such a favor, and I am informed that most of the concessions involve the privilege of exclusive sale:

February 5, to the Stearine Light Company, for an improvement in manufacture of candles.

February 22, to Mr. Frank, for the establishment of a paper manufactory.

March 16, to W. Berry, for the machine "steam-digester."

April 30, to W. Howard, for the use of machines to condense the sap of the india-rubber plant.

May 4, to Lutz & Co., for the employment of metallic fitters.

May 4, to Romagnoli & Filgueiras, for patent water-closets.

May 15, to Wurff, for the use of molds used in the preparation of sugar.

July 3, to Rangel, for manufacture of porcelain, glass, &c.

July 3, to Wurffbaim & Just, for the sale of machines for the fabrication of gas.

July 3, to Bellido, for introduction of the "automatic regulator."

July 10, to J. Rainey, for the use of floating bridges.

July 24, to V. Keegan, for the fabrication of paper.

August 14, to J. E. Campos, for a system of transport.

August 28, to C. Guigon, for the fabrication of tubes similar to the tubes of Vecque & Co.

August 30, to Baron Campy, to introduce machines for cutting stone.

October 2, to E. Lawrence, for the manufacture of a machine for destroying ants.

October 2, to C. Nolet, for mechanism for regulating the steam-power of engines.

October 2, to Mendouca & Co., for the extraction of various products.

October 2, to Mertz, to introduce machines to fabricate gas.

I may add, in conclusion, that I am informed that the government profess to be anxious to restrict as far as possible the concession of privileges for the exclusive sale or introduction of articles or inventions which can be imported in the ordinary course of trade from foreign countries; but the general impression in Brazil appears to be that patent laws are necessary, on the ground that it would be unjust to deprive a man of the benefit of his own discoveries, and that in a young country a stimulus is required to encourage inventors and the introducers of useful industries in the shape of a monopoly for a limited period. The disposition which exists to substitute them to some extent by state rewards for the encouragement of really meritorious inventions has, perhaps, hardly yet been very closely analyzed; but the distribution of such rewards would probably give rise to endless complaints, and in a country where political-party spirit runs so high would lay any government open, however unjustly, to suspicions of jobbery and partiality.

APPENDIX.

Project of Law with regard to Patents and Privileges of Invention in Brazil.

ARTICLE I. The law insures to the discoverer or inventor of a useful industry the property and the exclusive use of his discovery or invention.

ART. II. The government is authorized to issue patents in conformity with the following stipulations:

1. To the discoverer or inventor of an entirely new industry a privilege of twenty years will be conceded.

2. Whosoever improves a discovery or invention, discovering new modes or a new application of known modes to obtain a certain result or industrial product, has in such improvement the right of discoverer or inventor, the following conditions being, however, observed:

(1) In case of the improvement applying to an invention already patented, the patent of the improvement cannot last longer than that of the original patent.

(2) Any person can obtain a patent of improvement, subject, however, to preference to the discoverer of the original invention, if it be privileged, during two years from the date of his patent.

(3) The discoverer of the original invention is not permitted to explore the improvement, nor the perfectioner the invention, unless the two patents shall have been obtained by the same individual.

3. To whosoever puts into practice a discovery or invention which is described and printed, provided it has not been also adopted either in Brazil or in a foreign country, a privilege of ten years shall be conceded.

4. To the introducer of an industry not privileged in a foreign country, nor known in Brazil, a privilege of five years shall be given, or a premium proportioned to the utility and the difficulty of introduction in conformity with special cases.

5. Longer terms than those indicated in the preceding paragraphs can only be conceded by law.

6. To the discoverer or inventor who has obtained for the same discovery or invention a patent in a foreign country, a privilege shall be conceded for the time for which the original patent has still to run.

7. If the inventors, in a patent of invention or improvement, shall make any modification in articles already privileged they can present to the government a declaration of the modification which they may have made, and this will be received, certificates being granted, which will have no other effect but to secure the use of the privilege; and it cannot be alleged that the object is not fabricated in accordance with the dispositions, models, and designs to which the patent refers.

8. Patents shall be divided into classes, and shall pay a tax in proportion to the importance of the industry, and which shall not exceed 30 millreis ($16.30) in the first year, augmenting, progressively, 10 or 20 per cent. from year to year.

9. Certificates of modification shall pay a tax of 50 millreis ($27.20) once only.

10. The classes, taxes, and fines, in default of payment, shall be established in a special regulation of the government.

ART. III. Any person who desires to obtain a patent will follow these stipulations:

(1) He shall, with the petition or proposal, deposit in the Ministry of Public Work, and in any such of the presidencies of provinces, or foreign legations, which the government may designate, an exact and faithful description of the discovery and of the means and processes to be followed, with plans, designs, and models explanatory thereof, or without them, if not necessary, further the receipt of the respective revenue office in which it has been paid, if in the empire; or, if out of it, the same amount in currency equivalent to that of Brazil, which must comprehend a tax for the first year, the seal, the preparation of documents, and the estimated cost of correspondence and publication. A list of papers deposited must also be made.

(2) Upon the regularity of the proposal being verified, and it being recognized as not being contrary to law, morality, or public health, it will be registered, the day and hour of its presentation being marked, and immediately communicated to the imperial government if it should not have been presented direct.

(3) The proposal shall be at once advertised in the principal journals of Europe and America which the government may have specified in its regulations, three times, successively, at monthly intervals, inviting all persons to come forward and establish any rights they may have.

(4) Decisions which, upon questions between such persons and those who apply for patents, may have been promulgated by competent tribunals in foreign countries in which proposals to obtain the same may have been made to Brazilian legations, shall be admitted as if they had been given by the tribunals of the empire.

(5) Three months after such last publication, there being no objection, or the objection being decided in favor of the proponent, the government will cause the patent to be issued without guarantee, consulting, in every case, the attorney-general, the crown, and the national revenue office.

(6) At the commencement of each year a list of the patents granted in the previous year shall be published in the collection of laws.

ART. IV. A patent constitutes a property of which its owner can dispose as he chooses, using the same himself, or ceding it wholly or partially to one or more persons for the whole or part of the term of privilege.

ART. V. If the government purchases the secret of an invention or discovery which, by its nature, may be for the exclusive use of the state, it shall cause the same to be published. In case, though, of concession of a patent, the secret shall be kept till the expiration of the term of the patent. Provision is made for the secret being kept.

ART. VI. The infringer of a right of patent shall lose the instruments and the products which he may have obtained, and which can be found; and shall pay a fine equivalent to one-fifth of such products which it can be proved have been fabricated, and shall be subject to a civil action for compensation for damages and injury—all in favor of the proprietor of the patent.

ART. VII. Every patent shall expire and be void if it can be proved—

(1) That the recipient has concealed or misstated essential matter in the declaration or exposition, as per article three.

(2) That the articles manufactured are recognized to be injurious to public laws, health, or morals.

(3) That before the petition for the patent has been made the same invention or discovery has been put into practice by some other person, or by the patentee, for more than one year, except in the cases contemplated under sections 4 and 6 of article two.

(4) If the recipient does not put in practice the invention or discovery within two years from the date of the grant of patent, unless the term shall have been extended by law.

ART. VIII. The regulations issued by government in execution of this law shall be at once enforced, and submitted to the legislative body at its first meeting, and cannot be altered by the government, except in respect to the presidencies and legations, and the newspapers mentioned in sections 1 and 3 of article three, which can be altered, when desirable.

ART. IX. The law of 28th August, 1830, and all dispositions contrary to the present law are revoked.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

25,736.—Jacquard Machines.—Granted to AVERY BARNETT, October 13, 1859. Application filed June 30, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,797.—Harvesters.—Granted to EPHRAIM BALL, October 18, 1859. Application filed July 18, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,807.—Hose-Folders.—Granted to LEVERETT CLARK, October 18, 1859. Application filed July 19, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,816.—Sleeping-Cars.—Granted to JOHN DANNER, October 18, 1859. Application filed July 19, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,842.—Cultivators.—Granted to THOMAS MCQUISTON, October 18, 1859; reissued May 16, 1871. Application filed July 11, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,862.—Weeding-Hoes.—Granted to JAMES M. ADAMS, October 18, 1859. Application filed July 18, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,897.—Machines for Covering Saddle-Trees.—Granted to JOHN MACLURE, October 18, 1859. Application filed July 14, 1873. Testimony closes September 16, 1873. Hearing October 1, 1873.

25,974.—Dressing-Machines.—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 26, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,983.—Construction of Glass Ceiling.—Granted to JOHN R. CANNON, October 25, 1859. Application filed July 23, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,986.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 8, 1868. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to NELSON STOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,003.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,060.—Machines for Making Box-Joints.—Granted to JAMES STIMPSON, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,069.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to CYRUS CHAMBERS, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,128.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to WILLIAM T. VASE, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to EDWARD WEBB, November 15, 1859. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WEBSTER, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Heel and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 28, 1869. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELISABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 12, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,496.—Pipe-Molding.—Granted to JOHN FERTH and JOHN INGHAM, December 20, 1859, and reissued April 26, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,497.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Traps.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN HEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,580.—Harvesters.—Granted to JOHN GORE, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEEDS, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,539.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 29, 1859; reissued December 28, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

25,484.—Improvement in Grain-Separators, granted to JONATHAN L. BOOTH, September 20, 1859; reissued September 25, 1860, numbered 1,045; and again reissued November 29, 1864, numbered 1,886.

Claim.—1. The combination of the zigzag screens and boxes B C, when the same have a lateral-shake motion, or one at right angles to the passage of the grain, in such a manner as to have the grain pass consecutively over and through them, and arranged relatively with each other to operate substantially as and for the purpose herein set forth.

2. The series of zigzag screens and boxes B C, with or without the troughs E, and having a lateral-shake motion, in connection with the fan G, and spout H, substantially as herein set forth.

25,499.—Improvement in Railroad-Car Seats, granted to ELI WHEELER, September 20, 1859.

Claim.—1. The arrangement of box-formed supports *c c*, cushioned seat-bottoms C^a C^b, and cushioned seat-backs D D, of a pair of car-seats, in the manner herein specified, whereby, when the bottoms of the seats are turned over to fill up the space between the seats, the bed-clothing contained in the box will be exposed so as to be readily removed, and then, when the backs are turned down to fill the place occupied by the bottoms, the said boxes will be closed up and a continuous bed formed from one back edge to the other of the seat, as and for the purpose set forth.

2. The short open stationary partitions B B, in combination with sliding panels b b, which, when elevated, serve as head and foot boards, and allow ventilation under and above the berth during night-time, and, when lowered, during day-time afford more room to the upper portion of the body of passengers as they pass through the aisle of the car, substantially as set forth.

3. The short sliding closet blinds C C, arranged to operate as described and serve as foot and head boards, and allowing ventilation above and below the upper berth, in combination with the upper berths E and partitions *c c*, substantially as set forth.

25,506.—Improvement in Lamps, granted to HALVOR HALVORSON, September 20, 1859; reissued June 6, 1871, numbered 4,413; reissued December 5, 1871, numbered 4,660.

Claim.—1. The combination, in a lamp-burner, of the following elements, namely: Two wick-tubes, with a draft-passage between them; a single-slotted deflector, through which the flames from the two wicks pass in the form of a single flame; appliances for holding the lamp-chimney in place; and a screw-threaded base, substantially as herein shown and described.

2. In combination with the elements named in the preceding clause, a perforated air-distributer for steadying the draft, substantially as described.

3. A lamp-burner containing the following elements, namely: A screw-threaded base, a perforated air-distributer, two wick-tubes with draft-passage between them, a single-slotted deflector,

applicances for holding the lamp-chimney, and means for adjusting the wicks, substantially as herein shown and described.

4. In a lamp-burner in which two wick-tubes with a draft-passage between them, are combined with a dingle-slotted cap or deflector, in the manner herein described, the combination, with said wick-tubes and the base by which they are carried, of the said deflector, the air-distributer, and the chimney-rest, when arranged to be removable from and adjustable upon the other portion or portions of the burner bodily and together, substantially as shown and described.

5. The combination, in a lamp-burner substantially such as described, of the two wick-tubes and the valve for regulating the supply of air which passes between said tubes to the flames, substantially as shown and set forth.

6. The combination, in a lamp-burner substantially such as described, of the two wick-tubes, the valve regulating the supply of air passing up between said tubes to the flames, and the dome adjustable to a greater or less height above the wick-tubes, substantially as shown and set forth.

7. The arrangement of the wick-raising devices, substantially as shown and described, so that one or more of the wheels or pinions on the one shaft may gear into or engage directly with a corresponding pinion or pinions in the other shaft, for the purpose stated.

25,568.—Improvement in Tailors' Shears, granted to ROCHUS HEINRICH, September 20, 1859.

Claim.—Constructing the lower bow with its upper portion widened, and with the projection *p* thereon, so as to form a bearing for the fore-finger within the bow, substantially as and for the purpose set forth.

25,544.—Improved Try-Cocks, granted to JOHN F. COOK, September 20, 1859.

Claim.—Combining with the barrel of a try-cock a two-armed lever—one provided with springs or weight, and the other with a rubber or other equivalent disk, so that the weighted arm shall hold the valved or disk arm against the bore of the barrel of the cock, substantially as herein described and represented.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 16, 1873.]

6,889.—Lamp-Bowl.—JAMES S. ATTERBURY and THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed August 26, 1873. Term of patent 7 years.

6,883.—Tug-Clip.—JOSIAH LETCHWORTH, Buffalo, N. Y. Application filed April 26, 1873. Term of patent 14 years.

6,884.—Watch-Chain.—HENRY H. MARKLEY and ALPHONSE MATHIEU, San Francisco, Cal. Application filed June 13, 1873. Term of patent 7 years.

6,885.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignees to EDWARD C. SAMPSON, New York, N. Y. Application filed September 4, 1873. Term of patent 3 years.

6,886.—Fruit-Jar.—SALMON B. ROWLEY, Philadelphia, Pa. Application filed July 19, 1873. Term of patent 14 years.

6,887.—Aquarium-Frame.—GEORGE E. SMITH, Chicago, Ill. Application filed August 4, 1873. Term of patent 3½ years.

6,888.—Carpet.—HORATIO SMITH, Kidderminster, England, assignor to JAMES HUMPHRIES & SONS, same place. Application filed August 30, 1873. Term of patent 3½ years.

6,889.—Knitted Fabric.—THOMAS LANGHAM, Philadelphia, Pa., assignor to THOMAS DOLAN and R. WILLIAMS, Jr., same place. Application filed August 25, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date September 16, 1873.]

1,451.—Medicine.—STERLING BONSALL, Philadelphia, Pa. Application filed September 9, 1873.

"'Cholera King.'"

1,452.—Saws, Tools, Steel, and Files.—HENRY DISSTON & SONS, Philadelphia, Pa. Application filed August 1, 1873.

The figure of a keystone.

1,453.—Cigars.—GOLDSMITH BROS. & BENJAMIN, Chicago, Ill. Application filed September 2, 1873.

"G. B. and B. Cigars," in a quadrangular border.

1,454.—Cigars.—JACOB HELLER, Chicago, Ill. Application filed September 3, 1873.

A table on which are the words "The Original Habana," figure of man in standing, sitting, and reclining positions.

1,455.—Mass Licorice.—HOFFMAN, LEE & Co., Baltimore, Md. Application filed May 8, 1873.

"'El Gallo,' 'H. L. & Co.,' and the figure of a chicken cock."

1,456.—Licorice-Paste.—HOFFMAN, LEE & Co., Baltimore, Md. Application filed May 8, 1873.

"The figure of a crown, the words 'Don Carlos,' and the letters 'H. L. & Co.'"

1,457.—Stoves.—WILLIAM J. KEEP, Troy, N. Y. Application filed September 12, 1873.

"'Non-Clinker.'"

1,458.—Medicated Manila Paper.—JOHN ROBERTSON & SON, Putney, Vt. Application filed August 23, 1873.

"A spread eagle and the words 'Eagle Mills, Medicated Manilla Paper.'"

1,459.—Barrels of Whisky.—WILLIAM S. STEWART, St. Louis, Mo. Application filed August 30, 1873.

"A white ground, ornamental border, the name 'W. S. Stewart,' words 'Crown Royal,' and a crown surmounting the outer broken circle."

1,460.—Petroleum.—THE ATLANTIC REFINING COMPANY, Philadelphia, Pa. Application filed September 8, 1873.

"'Atlantic.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date September 16, 1873.]

ORIGINAL PATENTS.

142,756.—Machine for Trimming and Burnishing the Edges of Boots and Shoes.—CHARLES J. ADDY, Boston, Mass. Application filed June 26, 1873.

The frame upon which the burnisher or trimming-tool is mounted is attached to a weighted lever by a universal-joint, with a spring at each side controlling its movement. The pattern is held firmly up to the sole by means of a wedge-shaped key.

Claim.—1. The combination of the clutch I^3 H^3 and the lever I^4 H^3 with the pin *i* and wheel E^5, substantially as described, and for the purpose set forth.

2. The combination of the last-holding device E E^1 and the pattern-holding device E^2 E^3 with the gears H^1 C^1 F and H^2 C^2 F^1, arranged to operate as described, and for the purpose set forth.

3. The combination of the pattern E^3 and supporter E^4 with the crank-arm E^2 and wedge-shaped key *g*, substantially as described, and for the purpose set forth.

4. The combination of the frame L, springs S S, and balanced lever L^1 L^2 with the revolving standard P, substantially as described, and for the purpose set forth.

142,757.—Car-Axle.—BENONEVILLE AHRENS and DANIEL GERHARD, Reading, Pa. Application filed July 30, 1873.

Upon divided axles, which have collars upon their inner ends, short tubes are placed. Over the short tubes, and extending from the hub of one wheel to that of the other, a long tube is placed; the tubes and bearings secured in their places by means of bolts and screws.

Claim.—In combination with the divided axle A, having the collars or shoulders *a a*, the tubes C C and D, substantially as described.

142,758.—Eaves-Trough Hanger.—THOMAS W. BAILEY, Savannah, Ohio. Application filed August 19, 1873.

The hanger-bar has one end curved to fit the curved edge of the eaves-trough. The other is furnished with a pair of lips, between which the bent edge of the trough is inserted. It is there held in place by a clamping piece or jaw, which hooks over the lips, the other end being corrugated and bearing against the corrugated central stud E. The attachment-plate is held adjustably between these latter, while its upper end is bent at the proper angle to be secured to the slope of the roof.

Claim.—The bar A, stud E, and lips *a b*, in combination with the jaw C, head D, and collar G', all constructed in the manner substantially as described, and for the purpose set forth.

142,759.—Truck for Transporting Railroad-Rails, Car-Axles, &c.—CHARLES A. BALL, Ridgewood, N. J., assignor of one-fourth his right to EDWARD WHITHORNE, same place. Application filed May 26, 1873.

Tong-shaped levers are pivoted to the end of the truck. The lower curved ends are kept open by a spring, and closed by means of an elliptic-shaped cam, which is secured to the end of a shaft journaled upon the truck.

Claim.—1. The limbs T T' of a pair of tongs, attached to the body of a truck, and having the points thereof below the level of the axle A of said truck.

2. The limbs T T' of a pair of tongs, operated by the elliptical cam C attached to the rotating tongue H of said truck.

142,760.—Alloy to Resemble Silver.—ADÈLE ELISE PISCHBAUDVIN, Paris, France, Application filed May 29, 1873.

Copper, nickel, cobalt, tin, iron, and zinc.

Claim.—The manufacture of an alloy resembling silver, substantially in the manner described.

142,761.—Machinist's Gage.—STEPHEN H. BELLOWS, Middletown, Conn. Application filed July 7, 1873.

A stock with true under surface and perpendicular side, having pivoted near its top a blade, which, near its lower end, carries a segmental slotted graduated arm, fastened adjustably to the stock, for marking angles, and having a pointer pivoted adjustably in a perpendicular slot, for marking irregularities of surface.

Claim.—The combination of the stock A, blade h *f*, and adjustable marking-bar *g*, substantially as and for the purpose set forth.

142,762.—Sewing-Case.—FREDERICK BENKENDORFF, Brooklyn, N. Y. Application filed June 20, 1873.

Claim.—The sewing-case, hereinbefore described, provided with the end caps A and B, the button-receptacle F, and reel C, having a needle-holder, E, and thimble-cap D, substantially as and for the purposes set forth.

142,763.—Stop-Cock.—JAMES W. BISKETT, Brooklyn, N. Y., assignor to HENRY M. BISKETT, same place. Application filed May 17, 1873.

The plug of the cock is held in the desired position by means of a removable locking-piece, made angular to fit a similar recess in the body of the cock.

Claim.—In combination with the body A, plug B, and confining means D, the removable locking piece M M', matching to an angular portion of the plug, and to an angular recess in the body A, so as to serve therewith, as and for the purposes herein specified.

142,764.—Bustle.—MARIE BOUPART, Fordham, N. Y. Application filed January 29, 1873.

The distension of the bustle is regulated by the laces, which draw the tongues of the diaphragm.

Claim.—As a new article of manufacture, a bustle, composed of a frame, A, covering B, binding-tape C, coiled-wire spring D, diaphragm or lining E, tongues F, and lace H, combined and arranged to operate as and for the purposes set forth.

142,765.—Mold for Plaster Pipe-Patterns.—NOADIAH P. BOWLER, Cleveland, Ohio. Application filed March 28, 1873.

Two metal cylinders are arranged concentrically to each other, the annular space forming the mold for the pattern. The cylinders are capable of adjustment to different diameters.

Claim.—The metal cylinders A C, as arranged concentrically in relation to each other, in combination with the top and bottom E F, substantially in the manner as and for the purpose set forth.

142,766.—Device for Cleaning Surface-Condensers.—HENRY C. BUCKHAM, Bucksport, assignor to JOSEPH P. BASS, Bangor, Me. Application filed January 17, 1873.

Introduces petroleum or turpentine into the condenser by means of the exhaust steam as a vehicle to remove the hardened grease and dirt therein.

Claim.—1. The within-described method of cleaning surface-condensers, to wit, by introducing and passing through said condenser, with the exhaust steam, a grease solvent, operating as herein specified.

2. The combination of the opening *c* in the exhaust-pipe of an engine with a condenser, B, and a faucet, *g*, for removing the sediment before it reaches the boiler, as set forth.

142,767.—Vapor-Bath.—JOSEPH BÜLKE, New York, N. Y. Application filed July 30, 1873.

Perforated shelves are arranged for the back and feet to rest upon, and a support for the back of the head. Above the support is an opening for the face. The vapor from the pipes connecting the retort passes up through the perforations, and is distributed around the feet and legs of the patient and over the back. Hinged covers on the top and side admit the patient to the bath.

Claim.—The arrangement of a bath-tub, A, with a hinged side, A', and cover B provided with an opening, *c*, in combination with perforated shelves C and D, and retort F having pipes *n n* passing under the shelves C, substantially in the manner and for the purpose set forth.

142,768.—Bell-Piano.—CARL G. BUTTENBERT, Toledo, Iowa. Application filed June 7, 1873.

Particular construction of the class of pianos, in which bells are substituted for strings, the improvement being mainly in the action.

Claim.—1. The combination of key A, pieces *a b*, arm d^3, levers *d f*, knee-joint *g*, arms *i i'*, with adjustable pad *m*, hammer-butt *i*, and hammer E, forming the hammer action, substantially as and for the purposes described.

2. The bell-hammer E, having weighted ends and curved tang-spring *n*, for the purpose set forth.

3. The combination of the levers *d* and *f*, connected by screws *o* with pillar A and cushion *h'*, for arresting back motion of hammer E, as described.

4. The combination of key A, damper-rod *c*, having pads or buttons c^1 c^2, damper-lever *e*, and arms *i i'*, forming the damper-action, as described.

5. The damper-lever *e*, having curved and cushioned damper G, pin *p*, and pad *p'*, weighted end e^1, and perforated lug *g*, for the purpose specified.

6. The inclined standards B and B', connected by pieces C, having stationary arms d^1 l^2, and arms *i F*, respectively, to support hammer and damper action, substantially as set forth.

7. The arm *i* of standard B, having adjustable pad *m*, as set forth.

8. The sliding pedal-bar F, in combination with rods *r*, pivoted levers r^1 r^2, and pedal and pedal-rod, as specified.

9. The combination of pedal-bar E with damper-rods *c* and damper-levers *e* for disconnecting the damper action on the bells, substantially as described.

10. The bell-frame L, having lateral pieces W, in connection with bell-rod I, as specified.

11. The bell-rod I, in combination with sounding-board M, by supporting-rod N, having eye *y* and nuts z^1 and z^2, as set forth.

12. The combination of bell H with rod I by cones and nuts c^3 and c^4, as described.

13. The frame P, having pieces P', guide-rods *p'*, lateral pieces d^3, and aprons *e*, arranged and applied for the purpose set forth.

14. The combination of frame P with rod b^1, lever b^2, pedal-rod, and pedal, as and for the purpose described.

15. The combination of the subject-matter of the foregoing clauses, consisting of the hammer and damper action, damper-pedal, bell arrangement, tone-modifying frame, and pedal, with frame D, substantially as and for the purpose described.

142,769.—Anchor.—CHARLES A. CHAMBERLIN, Philadelphia, Pa. Application filed July 11, 1873.

The yokes or links *d*, provided with spurs or trippers, serve to draw the flukes down, and also to limit the angle of penetration.

Claim.—1. The pivoted flukes *e*, in combination with the yokes *d*, which limit their motion, substantially as described.

2. The yokes *d*, attached to the arms *b* and flukes *e*, substantially as described, so as to limit the angle of penetration of the flukes, and provided with spurs or trippers *k*, to trip or throw down and hold the points of the flukes at an angle of penetration, substantially as described.

3. The yokes *d*, provided with spurs *k*, and so hinged and oscillating, relatively to the flukes *e*, that the front spurs *k* shall present the same angle of penetration as the flukes, substantially as and for the purposes described.

142,770.—Treadle Mechanism.—BARTLETT B. CHANDLER, Jr., Boston, Mass. Application filed July 5, 1873.

Pressure upon the treadle causes the band attached to the connecting-rod to unwind from the drum, and the pawl within to lock against the walls of its groove, and increase the tension of the coiled spring, the fly-wheel being moved by such action in the same direction at the same time. The release from said pressure causes the spring to recoil, carrying with it the pawl-case and releasing the action of the pawl against the walls of its groove, while the fly-wheel continues its revolutions from momentum, each revolution being increased in degree by the movement of the foot on the treadle.

Claim.—1. The combined drum, spring-and-pawl case C, constructed and arranged in manner and for the purposes as explained.

2. The combined drum, spring-and-pawl case C, friction-pawl F, grooved plate G, and spring D, in combination with shaft *a*, fly-wheel A, band I, and connecting-rod J, said parts being constructed, arranged, and applied to the frame and pedal as and to operate as herein shown and described.

142,771.—Manufacture of Wrench-Heads.—LORING COES, Worcester, Mass. Application filed July 14, 1873.

The end of the heated bar is partly upset and thrown forward by the die *c*, after which it is completed in the usual finishing-die.

Claim.—1. The process of forming a wrench-head by first forming, by means of dies, a head upon the bar, substantially like *a*, and then completing the forging by means of the second set of dies, substantially as described.

2. Wedges *g*, connected to hammer-head h by means of slotted links *i*, when operating in combination with packing *f* to close cheek-blocks *f*, as and for the purpose specified.

142,772.—Bale-Tie.—FREDERIC COOK, New Orleans, La. Application filed July 28, 1873.

Claim.—1. The cotton-tie made as shown and described, or its equivalent.

2. The plate E, having the stop H and an offset or thicker part, through which the rivets K pass.

3. The plate E, attached to the straight end of the band, and so made as to admit the bent end of the loop of the band between the hook-piece of plate E and the straight end of the band, to prevent the bent end of the loop drawing out by the strain of the expansion of the bale.

142,773.—Pressure-Regulating Valve.—WILLIAM CRAIG, Newark, N. J., and HENRY L. BENTOOSEN, Kings county, N. Y. Application filed October 5, 1872.

Two opposite-facing valves on a single stem are operated by a crank-pin on a transverse shaft projecting through the side of the case. On the end of this shaft is secured a weighted lever. When the pressure becomes too great from either side the closed valve opens and allows the surplus pressure to escape.

Claim.—The combination of the casting A, having inlet *b* and outlets *a c*, with the valves B C attached to stem D, provided with dog *d* and crank-pin *f*, and the weighted lever G, constructed substantially as and for the purpose set forth.

142,774.—Machine for Forging Solid-Belted Hinge-Pivots.—JOHN J. CROOKE, Southfield, and LEWIS CROOKE, New York, N. Y. Application filed August 30, 1873.

The dies *a a'*, each in two parts, (one of them having a recess in which to form the belt,) set into conical sockets, the upper one suspended on a cam-slide that at proper times is automatically drawn out to draw the die slightly from its seat, and thus permit it to open and release the blank, which is at this moment automatically seized between the spring-fingers of the bifurcated arm or discharger H, and carried away from the dies.

Claim.—1. The combination, substantially as before set forth, of the two pairs of gripping and upsetting dies, so operated as to gripe the blank radially to upset the blank longitudinally by the approach of one pair to the other longitudinally of the blank, and to form the opposite faces of the upset portion of the blank.

2. The combination, substantially as before set forth, of the pair of gripping and upsetting dies having a conical exterior, with a die-blank having a conical socket to receive said dies.

3. The combination, substantially as before set forth, of the pair of dies, the die-blank, and the transverse slide and incline.

4. The combination, substantially as before set forth, of the two pairs of griping and upsetting dies and the discharger for removing the pivot from between them.

142,775.—Apparatus for Cleaning Boiler-Flues, &c.—THOMAS H. DONOHUE, Washington, D. C. Application filed August 12, 1873.

The scraper consists of segmental blades provided with intersecting blades, the peripheries of which are of different curvatures and are expanded and contracted to adapt the dimensions to tubes of a diameter between its least and greatest expansion.

Claim.—1. The scraper-blades, in combination with their expanding arms, the fixed and sliding collars B C, and stem A, when said blades are connected in pairs at their one end with the fixed collar, and in like manner at their opposite ends with the sliding collar, as shown and described.

2. The scraper-blades D, constructed to form the longitudinal profile of a parabolic spindle, the outer edges of which form the arc of a circle of a diameter equal to the greatest expansion of the instrument, in combination with a similar blade, D', whose outer curvature forms the arc of a circle equal to that under the greatest contraction of the same, as shown and described.

3. The combination of the supplemental or expanding staff A', guide J, and sliding collar C with the staff A and scraper-blades D D', for operation substantially as set forth.

142,776.—Bridge.—JAMES R. DURFEE, Oshkosh, Wis. Application filed January 27, 1873.

The bridge is formed of two compound wooden arched portions, the upper one plane-concave in form and fitting closely the convexity of the lower portion. Notches F and keys G are placed along the line of juncture, and the arch is tied by the ordinary tension-rods and cast-iron shoes.

Claim.—1. The rib A, composed of the segmental portion B, having lateral notches D, in combination with the concave-plane portion E, provided with lateral notches F, both constructed as described and locked together by the keys G, for the purpose hereinbefore set forth.

2. The rib A, composed of the segmental portion B, having notches D, and the concave-plane portion E, having notches F, locked together by keys G, in combination with springers H, having studs I, connected by rods J, for the purpose hereinbefore set forth.

142,777.—Stove-Pipe Holder.—GEORGE ECKEL, Richmond, Ind. Application filed February 8, 1873.

By means of the movable clamp this device can be adapted to hold the pipe in a chimney or wall of any thickness, and the inner holding tongue or clamp can be turned down to allow the easy removal of the pipe.

Claim.—The combination of the rotary serrated bar C with the projections D and E, with the set thumb-screw F, and also the combination of the spring I with the serrated bar C, for the purposes, and in the manner and form, substantially as above set forth and described.

142,778.—Carpet-Rag Looper.—FRANZ J. EGGER, Springfield, Ohio. Application filed July 16, 1873.

The blade slides within a groove in the back of the frame, and is provided with a pivoted spring-latch, which is retracted by the external pressure of the cloth, and a lateral passage opened into the eye, through which the piece to be inserted is slipped in sidewise.

Claim.—The rag-looper, constructed as herein described, with a blade, D, provided with a pivoted spring-latch, *i*, operating substantially as and for the purposes set forth.

142,779.—Saw-Swage.—JAMES E. EMERSON, Beaver Falls, Pa. Application filed August 22, 1873.

The jaw B has an enlarged portion that fits into a socket made in body of the swage, and is adjusted by a temper-screw pressing against it for different-sized saws.

Claim.—1. The saw-swage, composed of the body A, fixed jaws A' and A'', movable jaw B, and temper-screw *b'*, constructed and operating substantially as described.

2. In a saw-swage the convexed fixed jaw A'' in combination with the plane-faced movable jaw B, in the manner and for the purpose described.

142,780.—Blank for Saw-Teeth.—JAMES E. EMERSON, Beaver Falls, Pa. Application filed June 28, 1873.

Claim.—Blanks cut from a rolled steel bar, A, of the shape in cross-section described and shown—that is to say, a bar flat on one side, *a*, round on the back, and terminating in sharp edges *a''* at the point where it joins the flat side, substantially as and for the purpose described.

142,781.—Saw-Teeth.—JAMES E. EMERSON, Beaver Falls, Pa. Application filed June 28, 1873.

The cutting portion of the teeth is rounded on the back.

Claim.—The saw-teeth herein described, as a new article of manufacture.

142,782.—Compound Tool.—FRANK W. FARRAR, Waterford, Pa. Application filed June 12, 1873.

Claim.—A compound tool, consisting of a scissors-sharpener, button-hole cutter, and carpet-rag looper, constructed and operating in the manner herein described and shown.

142,783.—Apparatus for Casting Printers' Leads.—WILLIAM FILMER, San Francisco, Cal. Application filed April 17, 1873.

A furnace and mold placed relatively to each other, so that the lead may be dipped out by a tilting ladle and run into the mold.

Claim.—1. The furnace A and pot B, with its tilting-dipper R, in combination with a lead-mold, when arranged in relation to each other, substantially as above described.

2. The dipper R, provided with the filling-holes *t t*, when suspended upon a shaft, S, and operated by the lever *v*, substantially as and for the purpose above described.

3. The frame consisting of the inclined bed-plate E, hinged side K, brace-bar M, hooks *n*, and set-screws *p p*, in combination with the removable mold-plates G A, with their flaring outer edges and the tilting dipper R, all combined and arranged to operate substantially as and for the purpose above described.

142,784.—Stove-Pipe Thimble.—JOHN R. FULTON, West Mahoning township, Indiana county, Pa. Application filed December 19, 1872.

Claim.—As a new article of manufacture, a thimble-connection consisting of the plates *a a*, secured together by the bolts *b*, and provided with the flanges *s t r* for the reception of the pipes *c h*, substantially as shown and described.

142,785.—Bridge.—JOHN M. GOODWIN, New York, N. Y. Application filed January 29, 1873.

An arrangement of girders which transmit the weight of the rolling load, at all times, directly upon the center of the supporting-girders, and with a gradually-increasing strain to reduce the vibration.

Claim.—The combination, in a bridge or other similar structure, of the principal girders G G', the supplementary girders D D D' D', and the cross-beam X, or their equivalents, in connection with abutments A A', and piers or abutments F F' or their equivalents, substantially as and for the purposes described.

142,786.—Work-Box.—EZRA HINCKLEY, San Francisco, Cal. Application filed February 21, 1873.

The eyelets of the spool-box have elastic thread-guides. The knife is for cutting thread.

Claim.—In combination with the box A, the revolving spool-case C, having eyelets E F, elastic stops G G, and stationary knife I, said parts being constructed and arranged as described.

142,787.—Cloth-Measuring Device.—OTIS R. HOLBROOK, Staffordville, Conn. Application filed March 13, 1873.

At the end of a given scale laid off upon a counter a spring chalk-marker is arranged, to be drawn to the cloth to be measured by means of a cord and pull-knob, which is also in connection with the pawl of a register-wheel, for the purpose of keeping count of the number of markings made.

Claim.—In combination with a measuring-counter, B, the spring-marker D and registering-dial K, when arranged and constructed to act conjointly, substantially in the manner as shown and described.

142,788.—Valve for Steam-Engines.—HENRY ISAAC HOYT, Norwalk, Conn. Application filed December 11, 1872.

The cushion-piston, attached to slide-valve, and working in cushion-cylinder secured directly to the steam-chest, is moved partly by tappet-arms and by steam acting through suitable passages provided in the cylinder and steam-chest.

Claim.—The combination of cylinder B, piston C, air-cock *g*, valve D, jacket E, and steam-passages and ports *i, j, k, M, O*, and *p*, constructed and operating together substantially as described.

142,789.—Reversible Pinion for Watches.—GEORGE HUNT, Chicago, Ill. Application filed March 21, 1873.

A semi-cylindrical key recessed into the arbor of the center wheel serves to hold the two firmly together in the direction of the driving strain, while it allows the pinion to slip backward by partial rotation in its seat, in case of recoil from a breaking main-spring.

Claim.—The pinion B, combined with the staff A, having in its periphery a concave seat for a correspondingly-shaped key, H, which is partially turned out from said seat by the teeth in the interior of the pinion catching its edge, and forms a step in one direction, while said key is forced snugly back into its seat by the tendency of the pinion to revolve in the opposite direction, thus allowing relief for the works in case of breakage of mainspring, as set forth.

142,790.—Core for Casting Metals.—CHARLES D. HUNTER, Plymouth, Conn. Application filed July 19, 1873.

Claim.—The combination of burned sand with an adhesive substance, for the purpose herein described.

142,791.—Fire-Place.—JAMES M. IRWIN, Pittsburg, Pa. Application filed May 17, 1873.

Openings are made above and below the grate, communicating with openings in the rear wall. The draft passes through these and feeds the rear of the fire with fresh air. The back of the fire-place is made perpendicular and the chimney-flue horizontal.

Claim.—1. The back wall of an open grate with perforations below the grate-bars, and perforations back of and opening into the basket or grate, each communicating with a chamber or passage constructed in the back wall, the whole combined with an ordinary grate and flue, substantially as described.

2. In an ordinary open-grate fire-place, the combination of the passages, extending from beneath the grate through the back wall to and into the rear of the basket or grate, with the vertical back G, smoke-flue, and grate, substantially as and for the purpose described.

142,792.—Coupling for Pipe and Oil-Well Tubing.—DANIEL JONES, Boston, Mass., assignor of one-half his right to NATIONAL TUBE WORKS COMPANY, same place. Application filed June 19, 1871.

At each end of the coupling a smooth portion is formed, called the sleeve, which projects beyond the female screw cut upon the interior of the coupling, and fits snugly upon the tube, stiffening and strengthening the joint.

Claim.—The combination, with the tubing of oil-wells, of the coupling A, having the sleeve B, all constructed and united in the manner and for the purpose specified.

142,793.—Fire-Proof Mansard Roof.—JOSIAH W. KENNEDY, St. Louis, Mo. Application filed December 4, 1872.

The frame of the roof is constructed of gas-pipe connected by screw-sockets. Flat bars are attached to the rafters, and the slates are secured to the bars by curved hooks. The partitions in the upper part of the building are constructed by attaching grooved iron supporting-bars to one or both sides of the uprights of the roof-frame and placing tiles upright in the grooves.

Claim.—1. The arrangement of the inclined or curved tubes A A', when provided with slating-bars E, in combination with horizontal tubes B B', upright tubes C C', tie-tubes D, and coupling-piece *a*, as and for the purpose set forth.

2. The improved manner of securing the slating to the slating-bar E by means of the headed hook *f*, which passes through an orifice in the slate, and is curved so as to catch over and around the slating-bar E, substantially as and for the purpose set forth.

3. The fire-proof partition constructed substantially as shown in Fig. 6, and covered with plaster or other suitable covering, substantially as described, for the purposes specified.

142,794.—Cutter-Head for Planing or Molding Machines.—JAMES D. KIMBALL, Reading, Mass. Application filed April 17, 1873.

The head is fastened to its spindle by a set-screw diagonally through the end of the head.

Claim.—The spindle A, having the longitudinal groove B, in combination with the head C and oblique screw D, all arranged and operating substantially as described.

142,795.—Fence-Post.—EDWIN KING, Dunkirk, N. Y. Application filed June 9, 1873.

The post is made in two sections, having their lower ends adjustably secured within a sectional clamp, which is secured to a base by screws. The two sections of post are embraced by yokes which bind their inner serrated edges against the horizontal rails.

Claim.—1. The stay B, consisting of two sections shouldered out to receive the posts D E, as described, in combination with the base A, in the manner substantially as and for the purpose set forth.

2. The posts D E, in combination with the stay B and yokes H, in the manner substantially as described, and for the purpose set forth.

142,796.—Refrigerator.—THOMAS D. KINGAN, Indianapolis, Ind. Application filed September 5, 1873.

Claim.—1. The drip-troughs *b a b' c*, when the same are so constructed as to combine the ice-rest *c*, the drip-plates *b* and *b'*, the troughs *b' c*, and the grooves *f* all in one single piece, and when used as and for the purpose substantially as set forth.

2. The arrangement of the troughs *b' c*, the holes by which they communicate with the trough *m*, the trough *m*, and the pipe *l*, whereby the drip-water is detained, for the purpose and in the way substantially as hereinbefore set forth.

142,797.—Coloring Leather.—JOHN KOPITZ, Boston, and FREDERIK B. MAYER, Cambridgeport, Mass. Application filed March 29, 1873.

Vinegar is added to aniline colors or pigments dissolved in alcohol and then boiled, after which the ground color, boiled in vinegar and mixed with starch, is sprinkled on the leather and the preparation of aniline applied.

Claim.—1. The employment for the purpose, and substantially as described, of ground and aniline colors, prepared in manner and by means as explained.

2. The combination or solution of an aniline pigment, alcohol, and vinegar prepared by heat, as set forth.

3. The employment, on a surface of starch, in a colored solution to resist a solution of aniline when applied to such surface, essentially as specified.

142,798.—Harvester-Rake.—SYLVANUS D. LOCKE, Hoosick Falls, N. Y., assignor to WALTER A. WOOD, same place. Application filed May 3, 1873.

The rake-driving chain beneath the platform is connected to the rake above it by a pin bent outward and upward, so as to pass beyond the edge of the platform which extends over the chain.

Claim.—The platform overhanging the rake-chain or belt, in combination with the pin connecting the rake-head therewith, bent into crank form, substantially as and for the purpose set forth.

142,799.—Car-Ventilator.—SERENUS C. MAINE, Boston, Mass. Application filed July 28, 1872.

At each end of the upper portion of the car are formed two ventilating-ducts, each provided with a swing-door opening inward. The doors are turned from within the car and held in any desired position by means of a knob connected with a revolving disk provided with a beveled lug, which, by the operation of the disk, is made to impinge against or be released from the doors. The ducts in each end are connected with finely-perforated tubes. Arranged at each end, so as to slide backward and forward, are hoods for increasing the draft.

Claim.—1. The swing doors or valves *g g'*, arranged in the ducts *f f'*, in combination with the knob *c* and revolving disk *d*, provided with a beveled lug, all arranged to operate as specified.

2. The adjustable hood or hoods *l l'*, arranged and operated as and for the purpose specified.

3. The combination of the ducts *f f'*, swing-doors *g g'*, perforated tube or condenser *k*, and ventilator *e*, provided with swing doors or valves acting reversely to those of the ducts *f f'*, all arranged to operate as specified.

142,800.—Plow.—CYRUS MARSH, 2d, Natchez, Miss. Application filed September 6, 1872.

A fin or rudder piece is riveted to the heel-end of the land-side.

Claim.—1. In a plow of substantially the described construction, the independent heel-plate *d*, removably attached to the extreme rear end of the land-side, and extending below the land-side, as described, for the purpose set forth.

2. In a plow of substantially the described construction, the share E, having its cutting-edge *e'* turned forward and located beyond the line of the standard, in combination with a heel-plate located at the rear end of a land-side, as described, for the purpose set forth.

142,801.—Float for Life-Rafts.—JOHN MASON, Detroit, Mich., and GEORGE W. ROGERS, Brooklyn, N. Y. Application filed February 21, 1872.

Claim.—A float for a life-raft consisting of the sack A, provided with eyelet-flaps B B, filled with blocks of cork strung together, the cord being secured to the sack, as and for the purposes set forth.

142,802.—Cotton-Bale Tie.—OSCAR B. MCCLEAN, New Orleans, La. Application filed July 28, 1873.

The tie-plate has two projections upon its under edge, which prevent the tie from slipping sidewise; and also two lugs, which form both a guard and a hook, by means of which the tie is firmly secured.

Claim.—1. The bale-tie plate A F B made in the form as shown and described.

2. The bale-tie plate constructed as shown, having the guard A and projections, the latter forming space B, substantially as described.

142,803.—Bale-Tie.—JOHN MCMURTRY, Lexington, Ky. Application filed May 16, 1873.

The ends of the tie are so notched that when connected the ends of the tie shall be upon its under side.

Claim.—The ends A B, having the square notches *d* and downwardly-projecting flaps *c* formed in their edges at each side of the notch *d*, so that when the ends are brought together both ends and flaps will come upon the under side of the tie next to the bale, substantially as shown and described.

142,804.—Die for Forming Carriage-Clips.—EDWIN MERRER, Bridgeport, Conn. Application filed June 23, 1873.

Claim.—The re-enforces 5 5 in the die, by which the grooves 3 3 are formed in carriage-clips, as described and set forth.

142,805.—Limekiln.—JOHN L. MERRER, Troy, N. Y. Application filed August 12, 1873.

The furnace is placed on wheels, and can be run out from under the kiln when the burned lime is to be removed. The grated top of the furnace prevents the falling down of the lime while burning.

Claim.—A removable furnace having an open, perforated, or grated top, arranged under and in combination with the discharge-passage in the bottom of a limekiln, substantially as herein described.

142,806.—Refrigerator for Transporting Ice-Cream, &c.—JOSEPH MOOS, Philadelphia, Pa. Application filed May 16, 1873.

A plate is placed across the upper part of box containing ice, and jars are passed through openings in this plate and rest upon adjustable supports. One of the jars is provided with compartments, and has pans filled with freezing-mixture in its upper and lower parts.

Claim.—1. The chest A, having the plate D, and adjustable stands E, combined with vessels H, for the purpose set forth.

2. The vessel H', formed in compartments by removable partitions or shelves O, in combination with the refrigerating-chambers at the top and bottom, as described and shown.

142,807.—Car-Ventilator.—ANDREW J. MORRISON, Troy, assignor of one-half his right to THOMAS W. C. MOORE, Mohawk, N. Y. Application filed June 6, 1873.

Three rectangular wings are attached to each other to form a wheel, and are so arranged that by a part revolution the ventilator is closed or open, and held there by spring-bolts, which also stop the revolution of the wheel.

Claim.—1. The wings D, D', and D'', constructed, attached, to the case B, and operating substantially and for the purposes as herein before described.

2. The bottom C, with adjusting-screw and nut, drop-peg, and spring-bolts, as herein before described.

142,808.—Needle for Weaving Cane-Seats for Chairs. DEWITT C. MOSHER, Washington, D. C. Application filed May 27, 1873.

The rear end of the needle is formed into a clasp, whereby the splint is held and drawn through the meshes; and the handle B has a transverse slit for turning and drawing the needle.

Claim.—1. A needle for weaving chair-seats terminating at its butt-end in jaws, to nip the end of the splint, substantially as and for the purpose specified.

2. In combination with such a needle, a handle, B, constructed with a socket to hold and turn the needle while being inserted into the web, and also a slit to catch the curved point of the needle when it is to be drawn out of the web, substantially as set forth.

142,809.—Tramming-Bolt for Grinding-Mills.—JOHN T. NOYE, Buffalo, N. Y. Application filed February 17, 1873.

Devices for tramming and securing the upper or stationary stone.

Claim.—A tramming-bolt for grain-mills consisting of the hollow tramming-screw A, upon the upper face of which the tramming-ring is supported, and the bolt I passing through said hollow tramming-screw, with a nut upon each end, all being arranged substantially as and for the purpose set forth.

142,810.—Operating Car-Doors.—JOHN A. O'HAIRE, West Troy, N. Y., assignor of one-half to W. A. JONES, same place. Application filed June 27, 1873.

A rod passes from the front to the rear of the car through a tube; on each end of the rod is a crank or lever, the front lever to be operated by the driver, and the rear one carrying a roller to work up and down in a rectangular frame secured to the rear edge of the door, and by means of which the door will move back and forth.

Claim.—The rod 4, crank or lever 3, and guiding-frame 6, secured to the door, and combined with an operating-lever for the driver, substantially as shown and described.

142,811.—Harvester.—JOHN G. PERRY, Kingston, R. I. Application filed June 3, 1872.

The chain connecting the lifting-lever with the finger-bar passes over a pulley journaled in arm, which is hinged to the tongue-frame on an axis at right angles to the axis of the pulley. The pulley-block then performs the office of the ordinary spiral sector.

Claim.—The lifting-lever A, hung on or around the axle *d* and chain *b*, in combination with the swinging pulley-block *c*, hung on a pivot at right angles to the axis of the pulley, and secured to the pole or draft-frame by arm *F*, substantially as and for the purposes set forth.

142,812.—Clamp for Sewing-Machine Attachments. JOHN G. POWELL, Philadelphia, Pa. Application filed June 9, 1873.

The hemmer or other attachment is provided with a vertical journal to enter the slot in the arm, which, at one end, is separated and provided with a latch and notch, so that the arm acts to snugly hold the journal and retain the attachment in proper working position. The parts under this construction may be adjusted to any machine, whatever may be the position of the screw-holes in the plate.

Claim.—1. The compressible slotted arm combined with a vertical journal on a sewing-machine attachment, substantially as shown.

2. The latch D and notch E in combination with the compressible slotted arm C and journal B, as described and shown.

142,813.—Table for Sewing-Machines.—HENRY O. REED, Boston, Mass. Application filed March 20, 1873.

The table is provided with hinges upon one side and one end, either of which may be used for giving it an inclination.

Claim.—The combination of the table F, having the wide slot at H, the two sets of cams *a a* and *b b*, the pin G fitting each set of cams, and the two set-screws *c c'*, with the frame A, the saw, and the mechanism for driving the saw, all substantially as described.

142,814.—Belt-Shifting Mechanism for Planers and Lathes.—THOMAS REEVE, Brooklyn, N. Y. Application filed May 7, 1873.

The shifting bar is moved by a weight operating through a system of levers. One arm, *y*, of a bell-crank weight-lever bears against a stob, I, on a spring-bolt, and the stob rests against the tension of the spring on the top of a vertical detent, J, which latter is tripped to allow the stob to fall below the end of rod *y* and thus release the weight, by a rod, H, connected to the cutter-slide or the lathe-rest.

Claim.—1. The combination lever T, three-armed lever U, weight P', and the detaining device, consisting of the latch, spring-bolt and stud, and the tool-slide, or their equivalents, when arranged to operate as and for the purpose specified.

2. The arm X, attached to the three-armed lever U, rod Y, adjustable case O, and adjustable rod H, when arranged to operate substantially as and for the purpose specified.

142,815.—Car-Coupling.—SAMUEL B. REPLOGLE, Roaring Springs, Pa. Application filed February 15, 1873.

The spring *c* has a tendency to keep the hook in a horizontal position. To "set" the coupling the hook is raised until the hook on its arm b^1 catches over the stud *i* on the spring I. When the draw-heads strike, the spring I is wedged down by the platform, and the hook is forced forward.

Claim.—1. In combination with the coupling-hook B, the chain *f* and coiled spring *e*, working in the tube D, substantially as shown and described.

2. The bar I, with its stud *i* and wedge *k*, in combination with the coupling-hook B, substantially as shown and described.

142,816.—Crank for Saw-Mills.—ALEXANDER RODGERS, Muskegon, Mich. Application filed August 30, 1873.

The crank is provided with a balance-weight, which may be readily adjusted to the varying weight of the saws and saw-gate.

Claim.—1. A balance-crank constructed as herein described, and for the purpose set forth.

2. The counter-balance E and key K, provided with the keeper *m*, in combination with the crank-body A, shank D, and bolt *b*, substantially as and for the purpose specified.

142,817.—Telegraph Switch-Board.—WILLIAM D. SARGENT, Philadelphia, Pa. Application filed March 25, 1873.

Greater certainty of good contact insured by hollow plug and the pin projecting from back strap through front strap.

Claim.—1. The hollow contact-peg, substantially as and for the purposes set forth.

2. The metallic stud or studs D, attached to one strap and projecting up to or through the other strap, substantially as and for the purposes set forth.

3. The combination of the contact-peg E, the metallic stud D, and the metallic straps B and C, constructed substantially as and for the purpose hereinbefore described and set forth.

142,818.—Car-Coupling.—JACOB B. SMITH, Jackson, Pa. Application filed March 29, 1873.

The coupling-pin is jointed so that it will "give" when struck by the link, and fall into it when it has passed far enough in the draw-head. The pin is attached to a jointed arm of a rock-shaft, which may be operated to couple either by levers at the sides of the car or by the bumpers when they are struck by the opposing bumpers. The pin may be raised by direct action or by the rock-shaft.

Claim.—1. The combination, with the rock-shaft E, arms *m n*, coupling-pin and sliding bumpers H, of the transverse rod K, lever L, and connecting-bar *s*, substantially as specified.

2. The rock-shaft E, having the jointed arm *m*, in combination with the pin F, substantially as and for the purpose described.

142,819.—Guide for Sewing-Machines.—WILLIAM A. SPRINGER, Marlborough, Mass., assignor to himself, THOMAS COREY, and CLIFTON D. HUNTER, same place. Application filed June 9, 1873.

The guide is shown as attached to the post of a wax-thread sewing-machine, and is adapted to guide a tongue-piece to be sewed to the upper, inside the row of eyelets. The guide is adjustable, and is held in position by the spring which bears against the under side of the slotted plate, and which is attached to the under side of the stud.

Claim.—The stripe E D, connected by the stud *e*, in combination with the lower spring *f*, block *d*, and slotted plate C, forming the adjustable sewing-machine guide, as herein described and set forth.

142,820.—Screw-Propeller.—HENRY K. STEVENS and SOLOMON MILLER, Waterloo, N. Y.; said MILLER assignor to said STEVENS. Application filed March 13, 1873.

Blades joined to the hub at an angle of about thirty-five degrees to the shaft, the center line of the blade being curved backward, while the extremities are curved in an opposite direction, by which a large number of blades may be used, while a free passage for the water is provided between said blades.

Claim.—1. The propeller constructed and arranged as herein described, having the blades formed and affixed to the hub, as herein specifically set forth in the above description, and for the purposes specified.

2. The joint herein described, for coupling the propeller, with the driving-shaft composed of strong jaws united together and held in place by pins, as herein described.

142,821.—Mold for Casting Car-Wheels.—JOHN BLAKE TARR, Fairhaven, Mass. Application filed August 19, 1873.

A plunger adapted to enter the hub-eye of the mold to consolidate the casting, pressure being applied by means of a lever supported at one end by a rod attached to the trunnion of the mold.

Claim.—1. The movable pressing-head J, applied to a lever which is supported at one end upon a rod, P, made detachable from one of the trunnions of a mold, for the purpose described.

2. The swiveling detachable lever-rod P, combined with the thimble P', the self-adjusting pressing-head J, and mold, substantially as described.

3. The plates F and supporting-rods *g*, combined with the receiver of a mold and a pressing-head, substantially as and for the purpose described.

4. The pressing-head J, operated substantially as described, made of a diameter to enter the hub-eye of a mold, for the purpose of pressing directly upon the hub part of the wheel.

142,822.—Stamp-Affixer.—RAPHAEL P. THIAN, Georgetown, D. C. Application filed August 20, 1873.

The stamp is picked up by the needles, and while held by them is moistened by being pressed upon a wet sponge, when it is affixed by pressing the plate upon the stamp, which forces the needles clear of it.

Claim.—1. In a stamp-affixer, the picking-up needles F, arranged as described.

2. The combination of the adjustable needles F, needle-plate L, spring M, cylinder K, rods I J arranged in the cylinder B, having the plate E at its base, and the cap A, the whole operating in the manner and for the purpose described.

142,823.—Beam-Compass.—MORTON TOULMIN, New Orleans, La. Application filed June 4, 1873.

Two parallel rods, with a continuous screw-rod between them, secured to a head-piece, form the beam upon which the center-pin and drafting pens or pencils are adjusted by means of an inclosed screw-nut.

Claim.—1. The arrangement, in a beam drafting-compass, of the bars B B, stationary screw E, and two or more drafting-pens, or their equivalents, each adjustable, back and forth upon the bars by means of nuts *n n* in the slots *s s*, working upon the screw, all substantially as set forth.

2. The needle G, arranged as shown and described, with two bearings, *b b*, between which the needle is embraced by the eye A of a bolt, *m*, extending through the stock D, and by which the middle of the needle is sprung as desired, causing an opposite deflection of the point *p* below the lower bearing, all substantially as shown and described.

142,824.—Rock-Drill.—WILLIAM WEAVER, Phœnixville, Pa. Application filed August 22, 1873.

A frictional clamp is combined with the ratchet-nut, which holds the drill as it is raised and turned. The nut in descending strikes a stop and allows the drill to be fed forward. The revolution of the drill is regulated by an adjustable finger secured to the cam. The drill-spring is kept from binding by a stationary collar having an arm sliding in a rear guide.

Claim.—1. The ratchet-nut 2, provided with frictional clamp 3, secured to the drill-rod, for the purpose of raising, turning, and feeding it forward, substantially as set forth.

2. The cam *m*, having a removable projection or catch, *n*, or their equivalent, secured to it, so as to engage with the ratchet and turn the drill-rod, substantially as specified.

3. The plate 8 and arm 9, in combination with the guide 7, substantially as specified.

4. The combination of the cam *m n*, ratchet-nut 2 3, drill-rod, spring, and stop 5 6, arranged for operation substantially as shown and described.

5. The drill-rod having the double gouge-bit 7 formed upon its end, substantially as shown.

142,825.—Telegraph Receiving-Register.—MARTIN F. WEBSMANN, Brooklyn, N. Y. Application filed February 11, 1873.

Brake G holds the paper and prevents it being paid out whenever the instrument is not receiving. Vibrating arm H presses paper down out of its line of travel when receiving, making a slack, which, straightened, gives the spacing after reception of a signal.

Claim.—1. A brake or stop, G, attached to or operated by the armature of the marking or printing magnet of an electro-magnetic receiving-instrument, operating substantially as and for the purposes herein specified.

2. A vibratory arm, or its equivalent, B, operating substantially as described, in combination with a paper-brake, G, and the marking or printing and the paper-feeding mechanism of an electro-magnetic telegraph receiving-instrument, for the purpose herein specified.

142,826.—Telegraph Transmitting-Key.—MARTIN F. WEBSMANN, Brooklyn, N. Y. Application filed February 11, 1873.

Depression of a key-lever forces down circuit breaking and making lever, which has at its end a metal piece insulated on one side, and on the other side alternate insulated and metallic spaces corresponding to a signal. On the down stroke insulated side passes a metallic side, the other side passing it on return and giving the signal. Uniform speed on return secured by a retarding device.

Claim.—1. A telegraph transmitting circuit closer and breaker, in combination with a retarding device or governor, substantially as and for the purpose herein specified.

2. A telegraph transmitting circuit closer and breaker, acting in its return movement by a regulated automatic motion after the depression of the key by the operator, and unaccompanied by the key, substantially as and for the purpose herein specified.

142,827.—Elastic-Fabric Mattress-Frame.—JOHN E WHITTLESEY and J. WILLIAM C. PETERS, Chicago, Ill. Application filed April 4, 1873.

An end plate furnished with a set-screw, and side plates with adjusting slots and bolts, are attached to the side rails for regulating the tension of the fabric fastened to the end bars.

Claim.—1. The combination of the end plate E, furnished with the set-screw F, the side plates D made with slots G G', the bolts H H', and rails A B, substantially as specified.

2. The combination of the flat side plates D, made with slots G G', the bolts H H', and rails A B, substantially as specified.

142,828.—Harvester.—JOHN D. WILBER, Poughkeepsie, N. Y. Application filed January 27, 1873.

The cutting apparatus is located in front of the driving-wheels, and its pressure upon the ground is regulated by the draft applied to the evener, which is flexibly connected to the side arms.

Claim.—1. The sliding plate *f*, constructed with stops or horns *f'*, and having pivoted to it the double-tree D^1, substantially as described.

2. The draft-chains or rods *e e*, suspended from the evener D^2, one of which is attached to the left-side arm of frame E, the other to the right-side brace G', as and for the purpose set forth.

3. The double-tree D^1 and single-tree d^2, combined and connected by rod d^3 to an evener, D^2, which extends across the tongue D, back from a vertical line from the finger-bar, the left end of said evener being connected to a draft-iron located on the rigid left-hand side arm of frame E, and the right end connected to a draft-iron located on the side brace G^1, substantially as described.

142,829.—Clock-Calendar Movement.—GEORGE R. WILLIAMS, Ithaca, N. Y. Application filed March 18, 1873.

A snail on the shaft of the twelve-hour wheel is provided with a lateral incline and cam, so arranged that the hook of the dropping-rod or calendar-trip will engage with the raising-spiral only on the second revolution after the drop.

Claim.—1. The cam A, with incline B and wedge-shaped projection E, in combination with the drop or detaching rod C, with hook C' and arm D, for the purpose of making one trip or fall of the rod C in twenty-four hours, when the cam A is fast to the twelve-hour shaft of the clock, as set forth.

2. The cam A, with incline B and wedge-shaped projection E, in combination with the drop or detaching rod C, with hook C', when operated by or on any suitable shaft or part of the clock-movement, when constructed substantially as described.

142,830.—Thill-Coupling.—SAMUEL G. WISE, Edgerton, Ohio. Application filed March 24, 1873.

A plate is interposed between the thill and a swivel-bolt, and is prevented from being pushed back by a shoulder on the clip-ber.

Claim.—In thill-couplings, the clip-ber A, having bifurcated turned ends C, and shouldered at *c*, plate F, having the slot H, rubber block I, swivel-pin G, and thill D, combined and arranged to operate substantially as and for the purpose set forth.

142,831.—Wheel for Vehicles.—JEROME B. WITHEY, Chicago, Ill. Application filed April 15, 1873.

The axle-box is in two sections, and the axle and hub are arranged to revolve together.

Claim.—The disks B B', having the projections *a* and flange D, arranged to receive the spokes, in combination with shells F F', sleeves C C', collar A', and nut E, the whole adapted to a revolving axle for vehicles, as specified.

142,832.—Cut-Off for Cisterns, &c.—CONRAD WURST, Kinnerwick, Mo. Application filed March 10, 1873.

The cut-off is made from blanks of the form shown.

Claim.—1. The blank A, provided with the opening *a* and depression a^1, for the purposes described and shown.

2. The blank a^2 a^3, for the purpose described and shown.

3. The blank A provided with the opening *a* and depression a^1, the spout B provided with the slots b^1 b^2, the flange b^3, and the slots b^4 b^5, and the blank a^2 a^3, and the studs a^4 a^5, all combined, arranged, and operating as described and shown, and for the purpose of a cut-off.

142,833.—Machine for Upsetting Tires.—JOHN L. YEAGER and ALBERT H. YEAGER, Lampeter Square, Pa. Application August 13, 1873.

Claim.—The construction and combination, as herein described and shown, of the box A, flanged bed-pieces D E, connecting-rod G, and lever H, jaws *f*, links L, ring R, pulley P, cord K, and treadle Q.

142,834.—Boat-Detaching Apparatus.—HENRY ASHFORD, Philadelphia, Pa. Application filed July 15, 1873.

Blocks carrying sheaves, and having a hook at one end, are

pivoted together, and a spring is arranged at the hub to throw the hooks apart upon their being relieved of the suspended weight. There is also attached to the upper or block end a spring-latch for locking the parts together, which is adapted to be detached by a lanyard from the vessel.

Claim.—1. In a tackle-block, the combination of two sections pivoted together, and each carrying a sheave or sheaves and a hook, with a connecting-pin uniting the sections, and a spring, the ends of which bear against the sections at or near the connecting-pin, substantially as set forth.

2. The combination of the pivoted sections A B, the connecting-pin C', and the spring-latch E, substantially as set forth.

142,835.—Means of Adjusting Paddle-Floats.—JUAN B. BAPTISTA, New York, N. Y. Application filed July 5, 1873.

Claim.—The paddle-frame D, provided with an upper and lower double or slotted cross-bar, F, in combination with paddles having two or more series of holes to adapt them to be adjusted in depth by means of pins or bolts, as specified.

142,836.—Apparatus for Elevating and Loading Hay.—JACOB H. BEAN, Macon, Ill. Application filed June 18, 1873.

A loaded hay-rake is drawn up the inclined plane by means of a windlass and dumped at the terminus of the track.

Claim.—1. The sectioned and adjustable tram-way A A' *a*, B C, D D', E E', F G, and H, substantially as and for the purpose described.

2. The automatic dumping devices T U, substantially as described.

3. In this connection, the drum K, clutch Q, and brake R S, all operating as set forth.

4. The sectioned tram-ways A A' *a*, having the described hinged attachment I to posts or legs.

142,837.—Railway-Switch.—WILLIAM H. CLARK and PHINEAS CHANEY, Jr., Oregon, assignors to themselves and JOHN H. WHITE, Hale, Ill. Application filed May 8, 1873.

The switch is operated from the locomotive through right-angled levers and long shafts and bevel gearing, and the crank-arm which throws the switch operates a spring-locking device, which secures the movable rails against accidental shifting.

Claim.—The combination, with the switch C^3 and its locking-spar A^3, of the levers D^1 D^2, with their connecting devices, arranged and operating as described, whereby, while the switch is locked in either position, it is at the same time placed under the control of the moving train, as set forth.

142,838.—Butter-Print Press.—LEWIS COATES and JOEL T. CRISWELL, Collamer, Pa. Application filed June 14, 1873.

A rectangular frame and vertical press. The die slides in laterally upon the bed, a stem passing downward through a slot. A hopper has an inclined side chute to receive the butter when the platen is up. A lever, held in a loose slot in the rear, is pivoted to a platen-rod, which it operates. Another lever (for the left hand) lifts the hopper for the removal of the print.

Claim.—1. The butter-press consisting of frame A, sliding box G, with mouth I and levers *g i*, block H, guide-posts L, follower N N', and lever M, substantially as and for the purpose described.

2. The combination of the printing-block A, having handle *d*, with guide-lugs *d'* and the supporting piece or platform F, provided with the slot *b*, as shown and described.

3. The sliding box G, having mouth I, guide stripe *e*, pivoted arm *f*, links *i*, and lugs *i'*, combined as specified.

4. The combination of the follower lever M, having notch *l'*, with the upright bar *s* and box G, as and for the purposes specified.

5. The cross-piece D, having recess *m'* and button *n* to lock post L, as described.

6. The pieces D and D', with guide-recesses *a a'*, and follower-shaft N, having the regulating-stop *o*, combined as specified.

142,839.—Sewing-Machine Power.—ALFRED W. COCHRAN, Buffalo, Ala. Application filed June 28, 1873.

Claim.—The mode of connecting the motor of a sewing-machine with the fly-wheel on a rocking-chair, having a pitman attached to the crank-pin and pivoted to some stationary object, as and for the purpose specified.

142,840.—Apparatus for Cleaning Coal-Pools, Sinks, &c.—J. P. FLORIMOND DATICHY, Brooklyn, N. Y. Application filed August 9, 1873.

The air-pumps are fixed rigidly to the rear part of the wagon-frame and rest upon platforms pierced to form guides for a frame and cross-head, operated by an eccentric upon the rear axle. Pendent from the cross-head is a sleeve, in which the piston-rod moves at such time as the two are not connected by a lock-pin.

Claim.—1. The combination of the hind wheels of the truck, having crank *g*, with the loose eccentric I of the axle and piston-rod frame H, to give steadiness to the perpendicular position and motion of the same, as described.

2. The combination of air-pump G, having bottom platform *d*, with sleeve *b*, and perforated lugs *e*, with piston-rod frame H to guide the same, as specified.

3. The regulating-gear M, consisting of hand-lever P, applied to-rack *m* of seat, intermediate lever P^2, and rods P^3 *c'*, with locking-pin *l*, in combination with cross-head L of frame H and piston-rod *i*, to establish or interrupt the working of pump G, as set forth.

4. In combination with tank A, the additional cupola O, with gage P, for communicating with the interior by pipe *q'* and stop-cock *q*, for the purposes described.

142,841.—Ornamental Chain.—WILLIAM F. DAVIS, North Attleborough, Mass., assignor to J. T. BACON & Co. Application filed May 22, 1873.

The different rows of links, being arranged to break joints, are connected together by a wire woven in and out from side to side.

Claim.—A woven chain consisting of two or more rows of beads or links A A, in combination with the continuous binding-wire H B, substantially in the manner and for the purpose specified.

142,842.—Vessel for Transporting Grain in Bulk.—FRANCESCO DEMARTINI and JOHN CHERTIZZA, New York, N. Y. Application filed August 16, 1873.

The arrangement of partitions, claimed to prevent the shifting of loose cargo as the vessel rolls.

Claim.—The combination, with cross-stays B and stanchions C, of partitions G H, constructed and arranged as and for the purpose described.

142,843.—Butter-Tub.—ANDREW J. DRAKE, Middletown, N. Y. Application filed April 12, 1873.

The ears are constructed with a part lapping on and over the cover, with a shoulder fitted to its edge, and projecting below it, for the construction of jaws. Below the top, and attached to the sides of the tub, is a plate fitted with a dovetail, which is rigidly attached to the sides of the tub and fitted to the jaws of the upper plate. On one side is a screw with a projecting head, which overlaps the upper part to hold it in position for transportation.

Claim.—The combination of the ears formed of the plates C E and D F and the screw G with the cover B and body A of a butter-tub, as and for the purpose described.

142,844.—Horse Hay-Rake.—CHARLES EDGAR, Dayton, Ohio. Application filed August 18, 1873.

Clutches, which slide on each end of the axle, (which axle serves as the rake-head,) are thrust outward, and thereby locked with the supporting-wheels by arms or links connected to opposite ends of a horizontally-pivoted lever, so as to raise the teeth and thereby dump the accumulated hay.

Claim.—The single spring *j* and the treadle-lever *n* yielding in two directions, as described, in combination with the connecting-lever and rods or wires *k i i*, the sector-bar *m* having a guide-slot provided with a retaining-notch, *l*, and the releasing-tappet *h*, arranged and operating substantially as herein set forth, for the purpose specified.

142,845.—Glass-Blowing Machine.—SOLOMON L. FLEISHMAN, Pittsburg, Pa. Application filed November 5, 1872.

To the discharge-pipe of a double-acting air-pump is connected a flexible tube, supplied at the nozzle end with a stop-cock and coupling-hood.

Claim.—The combination of the air-pump with the pipes C, the flexible tube D, cock E, and rubber hood F, for supplying a continuous current of air of unvarying pressure to a glass-maker's blow-pipe, substantially as described.

142,846.—Governor for Steam-Engines.—ROBERT W. GARDNER, Quincy, Ill. Application filed March 8, 1873.

If the belt should break, the rod secured to the sleeve in which the driving-shaft revolves is moved, thereby permitting the tube which it supports to be depressed and with it said valve, thus stopping the engine.

Claim.—The combination with tube F having groove N, and movable on rod G, of the arm M, oscillating rod O, and governor drive-shaft Q, as and for the purpose described.

142,847.—Street-Sweeper.—CHRISTIAN GRIGER, Philadelphia, Pa. Application filed June 4, 1873.

The brushes are raised or lowered by means of a rectangular frame at the front of the machine, which works in guides and is operated by a hand-wheel. The brushes revolve independently of each other, and are thrown in and out of gear by means of a shifting frame operated from the driver's seat. The position of the dirt-box is regulated by a pinion, which works in a rack which is upon the front end of the box. To the ordinary dirt-pan is hinged a tail-board, which folds down on the pan when the machine is in operation, and is raised to prevent the escape of dirt when the brushes are not in action.

Claim.—1. The rectangular frame F, in combination with the screw G, connecting side rods H, and the rocker-guides I, for the purpose shown and described.

2. The vibrating shifter J, in combination with the side rods K, brush-cylinder shaft L, and the revolving reversible brush-cylinders M, for the purpose shown and described.

3. The vibrating shifter J, in combination with the side rods H K, cylinder-shaft L, brush-cylinders M, pinions N, spur-gears E, and the guide-rockers I, as and for the purpose shown and described.

4. In combination with the frame A, carrying the operating mechanism, the rectangular frame F, working in the guides *b* and operated by the screw-rod G, substantially as described, for the purpose specified.

5. The dirt-box Q, in combination with the shaft S, pinion U, and the rack T, as shown and described.

6. The dirt-box Q, in combination with the pan W and the tail-board X, as and for the purpose shown and described.

142,848.—Ore-Washer.—IRA T. HALSTEAD, Fredonia, N. Y. Application filed July 26, 1873.

Claim.—The employment of the sieves B E, one or more, in connection with one or more sluices, A D, and pivoted boards C F, for separating the sulphurets and heavier particles of ore from the stream of water and pulverized ore passing through the apparatus, substantially as herein shown and described.

142,849.—Car-Coupling.—WILLIAM W. HAVER, Schuylerville, assignor to himself, JAMES ATWELL, same place, and WILLIAM GATES, Frankfort, N. Y. Application filed March 26, 1873.

The coupling-link is lifted on and off the coupling-pins by means of a standard rising from its center and levers attached to the end of the car.

Claim.—The standard E, slotted arm F, short shaft G, arm H, and pivoted rod I, in combination with the coupling-link D, and hook-pins or projections C attached to the bumper-heads, substantially as herein shown and described.

142,850.—Washing-Machine.—JAMES H. HILL, Boone, Iowa. Application filed March 1, 1873.

A washing-machine constructed with an oblong box, with its inner sides and bottom corrugated, having balls free to roll from end to end by its motion, the box being suspended on journals near its center.

Claim.—The combination of an oscillating tub, A, and loose balls F, the tub having corrugated sides and bottom, substantially as specified.

142,851.—Locomotive Smoke-Stack.—JAMES HOOPER, Scranton, Pa. Application filed August 4, 1873.

A cone composed of several circular plates, with their inner edges turned up to provide an easy passage for steam, serves to protect the smoke-stack from the wearing effects of exhaust steam, and also to regulate the draft by means of the adjustable top disk.

Claim.—The cone B, consisting of plates C, rings E, standard D with regulating top disk F, and ring G, arranged and constructed as described.

142,852.—Neck-Yoke Holder.—GEORGE R. HUNTLEY, Hubbardstown, Mich., assignor to himself and CARLOS E. HAIT, same place. Application filed August 24, 1872.

The perforated leathers which receive the end of the pole are inclosed by metal plates, which lap over each other at their tops and form an eye through which the yoke passes.

Claim.—The neck-yoke holder formed of the perforated leather plates A and the flexible sheet-metal plates B, formed in one piece and applied thereto on both sides, and passing around the yoke C so as to form the eye *b*, all as shown and described.

142,853.—Brush Wash-Board and Roller.—ISAAC HUSSEY, Ironton, Ohio. Application filed June 14, 1873.

Brushes on a wash-board on which the clothes are placed, to be operated on by the reciprocating motion of a revolving hand-brush.

Claim.—The rotary and reciprocating brush D, in combination with the stationary brush wash-board A B, as and for the purpose set forth.

142,854.—Machine for Cutting Carriage Lock-Plate Blanks.—THOMAS INSULL and JAMES F. DOVEY, Philadelphia, Pa. Application filed August 21, 1873.

The stock to be cut is of the same width as the cutter C. The cutter C, acting in combination with the dies D D', clips off the corners of the plate.

Claim.—The combination of the cutter C, actuated by an eccentric, cam, or its equivalent, and the die or dies D D' all constructed and arranged to operate as herein described, for the purpose of forming lock-plates for carriages, as specified.

142,855.—Spring-Hinge.—STEPHEN JOYCE, New York, N. Y. Application filed August 14, 1873.

A tubular pintle inclosing a coiled spring. The pintle is surrounded by end bands or sleeves, and also by a central or middle band, each of the three bands having a radial leaf or wing, which is mortised into the casing or door.

Claim.—A spring-butt hinge, composed of the tubular pintle A, bands D D, spring F, stop-screw C C, and bands or sleeves I J, and M, with the leaves K K, and O and screw N, constructed and arranged as shown and described.

142,856.—Steam-Jet Apparatus for Forcing and Exhausting Air and Condensing Steam.—ERNST KÖRTING, Vienna, Austria. Application filed April 14, 1873.

The steam-nozzle enters one of a series of receiving-nozzles, the small end of each of which extends slightly into the large end of the succeeding one. These nozzles are surrounded and supported by partitions, which divide the body into several chambers, each provided with an opening.

Claim.—1. An apparatus for forcing or exhausting air and condensing steam, containing a steam-nozzle, a number of receiving-nozzles having separate independent communications with the air, and a valve or valves, by which the communication between one or more of the nozzles and the air may be closed, when constructed and arranged to operate substantially as herein shown and described.

2. In combination with a steam blowing or exhausting apparatus, substantially such as herein described, a body containing coke, charcoal, gravel, or like material, so arranged that the air passes through said material, and is deprived of moisture thereby.

142,857.—Elevated Wire-Way.—HENRY T. LAMYS and NELSON DAVIS, Atlanta, Idaho Ter. Application filed June 26, 1873.

The pulleys supporting the rope are formed of two half-pulleys supported upon separate shafts, and placed face to face so as to leave a narrow opening between for the passage of a thin, blade-shaped steel hanger. For this purpose the beam is also divided and united above by a U-shaped connection. A guiding-passage for the hanger is formed by a steel frame arranged about the entrance to the pulleys. This device does away with the necessity for the ordinary saddle and bent pendent, and permits the turning of sharp angles.

Claim.—1. The divided cross-timber A, having its separated ends supported by the bridge or inverted U-shaped casting C, substantially as and for the purpose above described.

2. The half-pulleys D D, having one edge beveled or otherwise cut away, so as to provide a single pulley with a passage in the bottom of the bearing-groove, when applied in the manner and for the purpose described.

3. The oval frame K, with its lower end so contracted as to form a guiding-passage, S, in combination with the two half-pulleys D D and passage *i*, substantially as and for the purpose above described.

4. The rope M with its permanently-attached pendant O, constructed so as to pass between the half-pulleys D D, substantially as above described.

142,858.—Nut-Lock.—HOWARD C. LOWE, Northeast, Md., assignor to himself and JOHN B. HALEY, same place. Application filed March 15, 1873.

The locking-plate is formed in the shape of a Latin cross and adapted to fit in correspondingly-shaped grooves in the washer. The opposite wings of the plate are turned up against the sides of the nut. The washer is provided with projection on its lower side to prevent it from turning.

Claim.—The combination of the cross-shaped sheet-metal plate D with the correspondingly-grooved washer C, having projections *a a* on its under side, all as shown and described.

142,859.—Manufacture of Shovels, &c.—HARVEY L. LOWMAN, Birmingham, Conn. Application filed July 24, 1873.

Claim.—The combined process, substantially such as described, for making shovels, spades, scoops, or other analogous articles in one piece from sheet metal, by cutting the sheet for the body of the shovel and with a projection from the rear edge thereof, which is to form the hollow shank, and at one swaging operation between dies giving the form required for the shovels and the half form to the projecting part which is to form the projecting hollow socket, and then by the second swaging operation completing the hollow tubular projecting sockets for the reception of the handle, substantially as and for the purpose specified.

142,860.—Cock for Drawing Beer.—JOHN MOFFET, New York, N. Y. Application filed July 5, 1873.

When the cock is opened to draw beer the vent is also opened to admit sufficient air to replace the liquid drawn.

Claim.—The combination, with cocks and valve-plugs B C and D F, of an intermediate rod, K, having play in one of the plugs C, and provided with a spring, L, that tends to raise the said rod out of said plug, thereby holding both valve-plugs securely in their seats.

142,861.—Tubing for Oil-Wells.—JOHN MOLONEY, Oil City, Pa., assignor of one-fourth his right to PATRICK SARTON and JOHN C. WELCH, same place. Application filed February 1, 1873.

To the lower end of the tubing a yielding support or stop is applied, to relieve the tubing from strain and prevent its vibration.

Claim.—1. In combination with the tubing of an oil or other like well, a yielding support, C, constructed and arranged substantially as shown and described.

2. The support C for well-tubing, consisting of the body or barrel *b*, spring *c*, and piston *d*, when constructed substantially as shown and described.

142,862.—Water-Wheel.—ELI OVERTON, Utica, N. Y. Application filed July 26, 1873.

Adjustable chute and wheel gages are arranged to be adjusted together and alike at the same time that the gate is opened.

Claim.—1. The combination of the adjustable chute-gages M and wheel-gages D in a water-wheel, when connected together substantially as specified.

2. A cam, E, for the support of the wheel-gages D, adapted to form, in connection with the gate O, a double gate, substantially as specified.

142,863.—Machine for Forming the Hooks of Machine-Needles.—NATHAN PAINE, Milford, Mass. Application filed August 4, 1873.

On the end of the arbor carrying the blank-holder is a segmental gear that works on a stationary gear fastened to a center-pin, about which the arbor is swung. The milling-cutter is fixed to the end of a swinging arbor, pivoted near its end and adjusted by a screw passing through a lug on the end. As the arbor is swung either to the right or left, the needle is caused to revolve both on the pin C as a center and its own axis.

Claim.—1. In a needle-machine, the combination, with a milling-cutter, M, of the arbor F, mounted in bearings which revolve

around pivot C as a center, the gear-wheels D and G, and needle-clamp H, all operating as described, to give the needle the compound motion specified.

2. In a needle-machine, the combination, with the arbor K suspended from the pivot O at the end carrying the cutter M, and having its bearings at the other end in a vertically-sliding block, of a screw, P, and spring Q, arranged as shown and described, to operate as specified.

3. The clamp-stock secured in a groove, I, a little wider than said stock, to allow of adjusting the clamp for needles of different sizes, substantially as specified.

142,864.—Reversible Plow-Point.—ROBERT M. PATTILLO, Cartersville, Ga. Application filed April 19, 1873.

The plow-point is reversible by turning it over.

Claim.—The plow-iron C, when provided with notch *d* and bolt-holes *d'*, and reversely curved at each end, as and for the purpose described.

142,865.—Portable Fence.—WILLIAM W. POTTS, Swedeland, Pa. Application filed June 18, 1873.

Fence-panels are made flexible by pivoting the perpendicular and horizontal connections, with end battens, on opposite sides of the rails. An A-shaped support has its inclined bars rigidly fastened to opposite sides of its cross-bar, the under edge of which is notched to embrace two horizontal bars of the panels. From the cross-bar to the apex a slot receives the upper rails in pairs. The A-shaped support being fixed in position, the panels slide upon and within it.

Claim.—1. The brace or post B, consisting of the pieces *b' b' b''*, arranged and rigidly fixed together, with the piece *b''* fixed to the opposite sides of the two pieces *b' b'*, respectively, and leaving the space *i* between them, substantially as and for the purposes hereinbefore set forth and described.

2. In combination with the brace or post B, constructed as set forth, the panels A A, having their respective tie-pieces *a'' a''* pivoted to the rails *a' a'*, so as to be on opposite sides of said rails, as set forth, for the purpose of allowing the said panels to be slid, the one longitudinally along on the other, and interlocked with the brace or post B, as described.

142,866.—Boiler-Feeder.—RAFAEL RAFAEL, Havana, Cuba. Application filed April 26, 1873.

A chambered wheel is rotated between close-fitting plates. Each chamber, successively, is connected with the steam and water spaces of the boiler, which allows the water to flow into the latter. The chambers are filled by a pipe from a reservoir.

Claim.—The many-chambered revolving cylinder A, having open pipe L, and supplied by gravity from a reservoir, J, by a connecting-pipe, K, in combination with a steam-boiler connected therewith at the top by a pipe, N, leading from the steam-space, and at the bottom by a pipe, M, leading from the water-space, as and for the purpose described.

142,867.—Railroad-Car Stove.—ABRAM REESE, Pittsburg, Pa. Application filed May 9, 1873.

Reservoir of water or carbonic-acid gas opened into stove in case of accident to car.

Claim.—1. The combination of the cork A, connected, as described, to the shell of the car, lever *i*, and valve *g*, substantially as and for the purposes described.

2. The valve *g*, operated by the spring *n*, in combination with the reservoir *b* and stove *a*, substantially as and for the purposes set forth.

142,868.—Painted-Cloth Cover.—WILLIAM D. RICHARDSON, Pawtucket, R. I. Application filed May 17, 1873.

Claim.—1. The combination of a painted-cloth cover with a rigid backing of pasteboard or other suitable material for protecting the painted parts thereon, substantially as and for the purpose specified.

2. The painted-cloth cover, with a pasteboard or equivalent stiffening, and with metal bindings to protect and finish the edges of the cover, as specified.

142,869.—Steam-Engine Governor.—STEPHEN P. RUGGLES, Boston, Mass. Application filed June 14, 1873.

One of the two disks is driven by direct connection with the running part of the engine, the other by a motor whose movement is always uniform. When the speed of the engine varies from that of the motor one disk is moved more rapidly or slowly than the other, and the aperture formed by their conjunction is varied accordingly.

Claim.—The combination, with the supply-pipe A of an engine, of a pair of register valves or disks, D E, mounted on separate shafts F G, having a connection adapting them to move with different speeds, and one shaft and its valve being driven by the engine to be regulated, and the other by an independent motor not subject to the variation of the said engine, substantially as specified.

142,870.—Binder's Attachment for Harvesters.—WASHINGTON L. SANFORD, Ashton, Ill. Application filed May 31, 1873.

The cut grain as it is elevated is dropped into a receptacle, where it is held and compressed by suitable arms, and, when bound by the operator, is automatically dropped from the bottom of the machine.

Claim.—1. The arrangement of compressing-arms I and bar J with the shipping-lever *a*, for automatically throwing the retaining compressing-arms out of gear, substantially as specified.

2. The shaft D, having curved arms, and arranged in the upper open portion of the cylinder, in combination with the rods G, for the purpose of packing the grain, as set forth.

3. The retaining-arms F, combined with the receptacle A and the movable compressing-arms E, substantially as specified.

4. The combination of retaining-arms F and arms Z with the receptacle and the compressing-arms, in the manner described, for conveying the grain over the discharging-space.

5. The wheel Q, pinion O, and cam P, constructed and arranged in the manner described, for operating the movable compressing-arms, holding them during the binding of the bundles, and finally discharging said bundles.

6. The stationary arm I and the disk K at the space for presenting the bands, arranged adjustably on their supports for varying the space, substantially as specified.

7. The support J of the stationary compressing-arms, arranged to yield to the action of the movable compressing-arms and controlled by springs, substantially as specified.

8. The arm *a*, relatively arranged with the wrist-pin *d* to hold teeth H against the grain and prevent them from vibrating, substantially as specified.

9. The binder's stand, arranged adjustably on the guard-standard A, as specified.

142,871.—Trotting-Gear.—HENRY SCHMALHAUSEN, Bridgeport, Ill. Application filed August 16, 1873.

Claim.—The trotting-gear consisting of the elastic main strap A, with bolstered strap B at one end and adjustable strap C at the other end, used in connection with the hame-ring, and to be applied to the fore and hind leg, in the manner substantially as described.

142,872.—Calendering-Machine.—DANIEL SCHOFIELD, Gloucester, N. J. Application filed March 28, 1873.

The wooden rolls are kept constantly dampened, to prevent cracking under the influence of heat from the metal rolls.

Claim.—A calendering-machine in which damped or wet wooden rolls are run in connection with heated-metal rolls.

142,873.—Car-Coupling.—WILLIAM F. SENIOR, Ripley, Ohio. Application filed June, 21, 1873.

The spring-plates which catch behind the head of the link and retain it in the coupling-box have short ribs on their upper sides, by which they are opened, through the medium of a crank-rod and cam. This crank-rod has formed on it above the cam a drum, around which a spring is coiled, which spring tends to keep the block or cam parallel to the projections. A hook is placed in such a position with relation to the crank that it may be caught over the handle thereof, to hold the plates apart when it is desired that the cars shall be uncoupled, yet not be separated.

Claim.—A car-coupling, formed of the box A, pivoted arms B *b'*, springs D, block F, crank G, spring I, and drum J, constructed and arranged to operate, in connection and with the coupling-bar C, substantially as shown and described.

142,874.—Machine for Grinding Cylinder-Heads.—JAMES SHERRELL, Paterson, N. J. Application filed May 28, 1873.

Rotary motion is communicated to cylinder-head by means of a yoke attached to the head, and extension-rod having universal joints.

Claim.—The combination of shaft A, extension-bar E, and straddling bar G with cross-bar J, connected together by swivel-joints F and H and operated by suitable gearing B C and lever D, substantially as and for the purpose hereinbefore set forth.

142,875.—Armpit-Shield.—JAMES SEELEY, New York, N. Y. Application filed May 24, 1873.

Claim.—As a new article of manufacture, an armpit-protector for ladies' dresses formed of an absorbent material, *a*, provided with a water-proof lining, *b*, substantially as shown and described.

142,876.—Wheel for Vehicles.—CHARLES W. STAUD, Wilkesbarre, Pa. Application filed April 12, 1873.

Claim.—The combined spoke-socket and felly-clip D of a wheel, having one end of the socket E circular, but gradually changed in shape to an oval toward the felly to allow the spoke to be wedged, all in the manner described.

142,877.—Nut-Lock.—CHARLES H. TAYLOR, New York, N. Y. Application filed June 11, 1873.

A spring of sheet steel is placed inside the box between the nut and rubber spring, and provided with projecting corners that impinge upon the sides of the box, thereby preventing the parts from separating when the nut is removed.

Claim.—In a nut-lock, the flat sheet-metal spring D, having the outwardly-projecting corners *d* located between the elastic substance C and the nut, in combination with each other and with the metal box B, all constructed and arranged substantially as described, for the purpose specified.

142,878.—Miter-Box.—JOHN P. TIERNEY, Sacramento, Cal. Application filed August 1, 1873.

One set of guide-bars has a lateral movement for the insertion or removal of the saw. The rotary frame is secured by a bar resting in notches at one end, and by a dowel-pin in corresponding holes at the other end.

Claim.—1. In combination with the frame A and adjustable rotating table C, the operating-lever N, with its spring P, the rack O, and the perforated segment S, substantially as and for the purpose herein described.

2. The four posts G, with their adjustable guiding-collars Q, the posts being mounted upon the stationary and movable bars F F' in pairs, so as to be opened and closed to admit and hold the saw, substantially as herein described.

3. In combination with the pivoted bar F', for separating the posts G, the slotted arm H, with the operating lever-arms I and J, and the holding spring-catch K, with its disengaging-lever L, substantially as and for the purpose herein described.

142,879.—Stove-Pipe Joint.—JACOB WEAVER, Tipton, Iowa. Application filed May 16, 1873.

The middle section has rectangular rims, which embrace flanges upon the inner ends of the outer sections so that they may be adjusted in any position and held there by set-screws.

Claim.—A stove-pipe connection composed of three sections, A A A, having elliptical joints, on which they are adjustable, in the manner and for the purpose described.

142,880.—Explosive Engine.—JOSIAH M. WELBOURN, Caledonia, Ohio. Application filed August 9, 1873.

The devices for feeding the cartridges to the powder-chambers are operated by means of rods attached to the pitmen of the driving-wheels. Regularity of operation is obtained by providing the piston-rods with cross-pins, which, at the forward part of the stroke, engage with grooves in spring-rods, and are released at the proper time by bent rods attached to the pitmen of the driving-wheels.

Claim.—1. The combination of frame A, powder-chambers B, guide-frame C, pistons G, wheels E with the charging mechanisms H L and regulating mechanisms D, substantially as and for the purpose described.

2. The charging mechanism consisting of casing H with brush *i*, slide L having recess *l*, and chamber B with aperture *b'*, operated by rod *m*, pitman F, and piston G, as set forth.

3. The regulating mechanism D, produced by spring-rod M, having groove *p* for cross-head *b'*, pivoted double rod N, with rod *q*, and spring *r*, for arresting and releasing piston G, for the purpose described.

4. The guide-frame C, having pin *r'*, for retaining double rod N till ready to strike rod M, as described.

142,881.—Reel for Harvesters.—JOHN WERNER, Jr., Prairie du Sac, Wis. Application filed June 14, 1873.

An overhanging reel, (having its outer and inner supporting-arms extended rearward from the supporting standards or pivots,) is adjusted vertically by means of two bell-crank levers having connecting-links, and a lever which plays vertically and located within reach of the driver on his seat.

Claim.—The combination of the connecting-rods J, angle or bent levers K, and connecting-rod L with the pivoted bars C that support the reel, substantially as herein shown and described.

142,882.—Cotton-Press.—PAUL WILLIAMS and ROBERT A. WILLIAMS, Winona, Miss. Application filed June 21, 1873.

Claim.—The combination, with the box A of the press projecting above the frame, of the follower J, the screws G, the screw-threaded parts thereof being jointed (below the upper portion A of the press-box) to the plain-surfaced parts thereof, on which are keyed the gears H, as shown and described, for the purpose specified.

142,883.—Life-Boat.—JOHN ADAMS, Gloucester, N. J. Application filed December 13, 1872.

Claim.—The life-boat constructed as herein described, consisting of the double hull A' A', united from gunwale to bilge, and provided with the air-compartments B D at the ends to increase the buoyancy, and the central compartments C, furnished with air-tight hatches K, to serve as receptacles for provisions, all as herein shown and described.

142,884.—Portfolio-Holder.—JONAS B. AIKEN, Franklin, N. H. Application filed May 7, 1873.

A frame (hinged at its base) has fastened to it a book-support, provided with end-guards, which is connected by another frame to the rods, fastened to the upright in such a manner that when in use the portfolio will be held in a convenient position, and when closed protected from handling.

Claim.—1. The frame-work A, combined with the strips H H hinged to the foot-piece E, and the strips F F hinged to the rest D, and sliding at the upper ends on the rolls *d' d'* fixed to the frame-work, as and for the purpose described.

2. The guards J J applied to the end of the portfolio holder, rest, or support, for the purpose specified.

142,885.—Windmill.—EPHRAIM A. ATWOOD and HARRY H. BODWELL, San Francisco, Cal. Application filed September 3, 1873.

The tail or vane of a wind-wheel is hinged to a toothed segment, with which a screw engages to turn and lock the vane at any desired angle.

Claim.—1. The worm L and the segment K, for the purpose of turning the tail to any position and locking it, substantially as herein described.

2. In combination with the worm L and the segment K, the vertical pulleys M and R, and the rope O, for the purpose of operating the rudder from the ground, substantially as herein described.

3. In combination with the pulley R and adjusting-spring U, the guide-rod T, to prevent twisting, substantially as herein described.

142,886.—Pruning-Shears.—WALTER BAKER, Ilion, assignor to THE BIDDLE MANUFACTURING COMPANY, New York, N. Y. Application filed March 24, 1873.

The cutting-blade is pivoted between an arm projecting from one of the handles, and has its lower end slotted to receive a pin that projects from the other handle, so that, by being held on such pin, it will be caused to swing on its own pivot, while at the same time it follows around the pivot of the shears during the vibrations of the handle.

Claim.—1. The cutting-blade C, connected, by an independent pivot, *d*, to one of the handles of the shears, and, by a pin, *g*, with the other handle, to obtain an independent drawing cut, as specified.

2. The combination of the handles A B and pivot *a* with the blade C, pivot *d*, hook *f*, and pin *g*, all arranged to operate as set forth.

142,887.—Medicine-Case.—M. OLMSTED BALDWIN, Wamego, Kans. Application filed July 18, 1873.

The arrangement of folds, drawers, and compartments is such that when the case is opened access may at once be had to all parts without any subsequent removal of lids.

Claim.—1. That arrangement of the body of the case A, its compartments *a a*, dropping-fold B, its compartments *b b*, and tray *b'*, and drawer C, as hereinbefore mentioned, whereby the entire contents thereof are brought into convenient relation to the operator without changing the position of the case.

2. That arrangement of the folds D D of the case A and extension-folds E E, hereinbefore mentioned, whereby the latter are, when closed, contained within the former, and when open present the same relative convenience above described.

142,888.—Porter's Box.—ISAAC BARMAN, Portland, Oregon. Application filed May 21, 1873.

A box is formed with several interior compartments, and on the top are divisions for marking-ink, nails, stencil-plates, brushes, and other tools.

Claim.—The porter's box, constructed, as described, with the compartments D, E, F, G, S, and T for nails, compartments H for stencils, pots A and B for ink, with distributing-dish C for stencil-brush, as and for the purposes specified.

142,889.—Top-Prop for Carriages.—LEWIS W. BLESSING, Wilmington, Del., assignor to himself and HOWARD PUSEY, same place. Application filed August 28, 1873.

The prop is constructed with a hook or socket to embrace the bow, and with it is combined a concavo-convex washer, fastened by wood-screws passing through the base-plate into the wooden bow.

Claim.—1. A top-prop for carriages, composed of post A *a*, plate A^1, and hook or socket A^2, and wrought out of a single piece of metal, substantially as and for the purpose specified.

2. The post and fastening-plate of a top-prop for carriages, in combination with the concavo-convex washer D, which is secured by wood-screws *d* passing into the bow of the top, substantially as and for the purpose specified.

142,890.—Molding-Machine.—WILLIAM J. BODA, Dayton, Ohio. Application filed August 5, 1873.

Table-slides, with re-entering angles, are molded by once passing between appropriately-formed cutting-tools.

Claim.—1. The cutter-heads H, H, S, and T, when constructed as shown, and combined and relatively arranged to operate substantially as and for the purpose specified.

2. The cutter-heads H', H', and Q, constructed, combined, and arranged to operate substantially as and for the purpose shown.

3. The combination and relative arrangement of the cutter-heads H, H', Q, S, and T, substantially as and for the purpose set forth.

4. The apparatus, as a whole, when its several parts are constructed and combined to operate in the manner and for the purpose substantially as shown and described.

142,891.—Butter-Coloring Compound.—GILBERT BOGART, WILLIAM H. CRAMER, and WILLIAM L. LEWIS, Laporte City, Iowa. Application filed July 29, 1873.

Claim.—The compound described, consisting of annatteine, saffron, lard-oil, and butter, all as and for the purposes set forth.

142,892.—Producing Coloring Matter from Vegetable Substances.—LOUIS MARIE FRANÇOIS BERTHERIEAU, Laval, France, assignor to himself and EDWARD CROMBANT, same place. Application filed May 15, 1873.

Sawdust is treated with a solution of potassium sulphide, at a temperature of about 200° centigrade, when the coloring matter is developed. Vegetable extracts may be added to modify the color. Many other organic materials are enumerated, which may be treated by the same process.

Claim.—1. The process of converting organic substances into coloring matter, substantially as herein specified.

2. The process of modifying coloring matter for obtaining new tints, as set forth.

3. The combination of alkaline sulphurets or persulphurets, or of alkalines and sulphur, with organic substances, for converting them into coloring matter, as set forth.

142,893.—Method of Forming Soles of Boots and Shoes.—CHARLES H. BINGHAM, Marlborough, assignor to himself, G. FRED. SMITH, same place, and STEPHEN MOORE and HOMER ROGERS, Sudbury, Mass. Application filed January 29, 1873.

Shells for the soles of shoes are punched from the same piece of good leather, the larger shells successively circumscribing those of smaller dimensions, and these are afterward filled with poorer material.

Claim.—1. A middle tap or sole, formed substantially as described.

2. A boot or shoe having a sole formed with the punched and filled piece or pieces, substantially as shown and described.

142,894.—Bale-Tie.—GEORGE BRODIE, Plum Bayou, Ark. Application filed April 23, 1870.

Claim.—The method of securing and identifying bales of cotton and like material, and providing against the possible loss or detachment of the marks of identity except by disruption of the bale, by means of metallic bands and tie-plates having the names and characters indicating ownership, quality, weight, &c., indelibly stamped upon the said bands and plates, or either of them, substantially as described.

142,895.—Spring Bed-Bottom.—GEORGE W. BROWN, Buffalo, N. Y. Application filed June 27, 1873.

Each slat is suspended at each side of its ends by a spiral spring, where there is a block above and below for reversal when the slat is warped. Two supporting-bars beneath are slightly arched by a longitudinal wire and spring.

Claim.—The combination of the slats having grooved double-heads with the spiral springs *a a* located at each side of the end of the slats, and the curved cross-pieces D D, springs *f f*, and stay-rods *g g*, all constructed and arranged substantially as herein described.

142,896.—Coal and Rock Cutting Machine.—HORACE F. BROWN, Indianapolis, Ind. Application filed July 30, 1873.

Upon the annular bed is arranged the annular frame, which is connected with the projecting annular cutting-ring by means of the geared shaft. The bed, resting upon ways, can be traversed in two directions at right angles to each other.

Claim.—1. A channeling-machine in which a cutter-ring, A, is carried by an arm, B, contained within said ring, except at the point where it joins the frame, as set forth.

2. The cutter-ring A and its carrying-arm B, in combination with an annular frame adjustable upon a bed, E, substantially as set forth.

3. The cutter-head A, in combination with the arm B and its anti-friction rollers *e* and *f*.

4. The combination of the cutter-head A and its annular rack with the arm B and pinion F on the shaft F, adapted to bearings on the said arm and annular bed D.

5. The cutter-block C, having cutting-edges *w* and intermediate channels, and attached to the cutter-ring, as set forth.

6. The combination of the annular bed E and its annular frame D, carrying the cutting-ring A, with ways on which the said bed can be traversed in two directions, at right angles to each other, as specified.

7. The combination of the slide I, adapted to ways *i i*, on the frames J J, and having ways *h h* for the bed E, with the frames K K', having ways *h'*, corresponding with those of the slide.

8. The combination of the central shaft K and its worm *k*, carried by the frame D, the racks on the frames J and K' K', and within-described gearing or its equivalent, which is carried by the bed E for traversing the latter, in the manner described.

9. The sill M, its set-screws N N, and arms P P, the whole being constructed substantially as set forth, for the support and adjustment of the frames J J and K' K'.

142,897.—Sausage-Stuffer.—PENROSE W. BROWNBACK, Limerick, Station, Pa. Application filed March 29, 1873.

The lower part of the external horizontal cylinder terminates in a funnel, the delivery-pipe of which continues out in line with said lower side of the cylinder. A horizontal shaft, journaled centrally in the ends of the cylinder, has spiral wings, the pitch of which is from end to end of the cylinder.

Claim.—In a sausage-stuffing machine having a spiral conveyer of long pitch, the casing having the side wall of its lower portion or body gradually contracted without a shoulder, forming the tapering recess *k*, connecting said side wall with the discharge-spout A, substantially as specified.

142,898.—Eccentric.—JOHN C. BUTTERFIELD, Chicago, Ill. Application filed September 9, 1873.

An adjustable eccentric with an elongated aperture is provided with a fixed wrist-pin or stud in the face of the eccentric, which is locked in series of connected grooves formed in the face of the fixed disk of the shaft by a confining-nut.

Claim.—The eccentric A *a*, having a fixed wrist-pin, *b*, in combination with the fixed disk C, provided with a series of connected grooves, *c c' c''*, or their equivalents, and confining-nut D, substantially as and for the purpose specified.

142,899.—Screen for Postal Cards.—LOUGHLIN CONROY, New York, N. Y. Application filed June 25, 1873.

Claim.—The perforated screen A, covering the back of a postal card, and provided with a pocket, *b*, to receive one end of the card, and adhesive flaps *c* and *f f*, which are folded over its edges and attached to its face, essentially as and for the purpose herein set forth.

142,900.—Tip for Saw-Files.—HENRY DESTON, Philadelphia, Pa. Application filed September 5, 1873.

Claim.—The within-described rubber tip, having a central tapering orifice for receiving the end of a saw-file, as set forth.

142,901.—Spring-Coupling for Vehicles.—HACALIAH P. DOLSON, Highland, N. Y. Application filed September 1, 1873.

The bearings have projecting lugs, so that differently-shaped springs may be secured to the same bearing.

Claim.—1. The coupling sleeves or slides C of the side springs A, provided with downwardly-projecting arms G G, for adaptation to and attachment of either coiled or French head springs, as and for the purpose set forth.

2. The pivoted arms E, having offsets *e*, for the end springs B to allow of the use of narrow or wide springs without interrupting the sliding adjustment of the coupling-sleeve C upon its cylindrical bearing F, as set forth.

142,902.—Bob-Sled.—JOSEPH W. DOTY, Lockport, N. Y. Application filed February 26, 1873.

Upon the axle which carries the independent runners is secured a fixed bar. A chain, secured to the free end and to the cross-bar, limits the vertical movement of the runners. The reach extends over the fifth-wheel, and to its forward end is journaled an anti-friction roller, to allow of free movement in turning.

Claim.—1. In combination with the rocking-axle D, having the fifth-wheel C secured thereto, the axle-brace F and flexible connection *g*, by means of which the rocking of said axle may be limited as desired, all as set forth.

2. In connection with the independent runners H, pivoted to the axle D, the cross-bar G combined with the hemispherical head *i* and the slotted socket or seat A, all as set forth.

3. The combination, with the short independent runners H, axle D and single fifth-wheel secured thereto, of the reach provided with friction-roller *b* and the brace F provided with chain *g*, all as set forth.

142,903.—Harvester.—JOHN W. H. DOUBLER, West Alden, N. Y. Application filed September 12, 1873.

The pitman which operates the cutter-bar is connected with a cross-head, which, by means of a cam-wheel, is caused to reciprocate on a guide-rod, and is cushioned by springs at each end of its stroke.

Claim.—The combination of the helical plate A, cross-head B, guide-rod C, springs F F', pitman D, and cutter-bar E, substantially as specified.

142,904.—Spark-Arrester.—JOHN E. DUSTIN, Whitefield, N. H., assignor to himself, ALSON L. BROWN, and WARREN G. BROWN, same place, and AARON ORDWAY, Lawrence, Mass. Application filed May 19, 1873.

A tank surrounds the top of the stack, into which the sparks are deflected by a perforated cap. The tank is supplied with water by a pipe passing up through the stack.

Claim.—1. In combination with the stack or chimney *a* and the perforated deflector *b*, arranged as described, the reservoir *d*, when said reservoir is supplied by a continuous stream of water from a stationary head through supply-pipe *f*, and provided with a discharge-pipe, *g*, to preserve the water at the proper level in the reservoir, and to float off by a continuous current the sparks, cinders, &c.

2. The combination, with the stack, perforated deflector, and the reservoir *d*, supplied from a continuous stream from a stationary or elevated head, and with a discharge-pipe, of a water-supply pipe located within the smoke-stack, substantially as and for the purposes set forth.

142,905.—Table-Caster.—HENRY FACHS, New York, N. Y. Application filed August 7, 1873.

The stand has hinged jaws for supporting dishes. It also has hinged hoods for protecting the articles in the dishes.

Claim.—1. The caster-stand A, provided with hinged retaining-jaws C C, for supporting dishes, arranged and operating substantially as described.

2. The covers E, hinged upon the caster-frame, substantially as and for the purpose specified.

142,906.—Smoke and Spark Conveyer for Locomotives.—ERNST A. C. FOX, Frederick City, Md. Application filed July 30, 1873.

Smoke and sparks are conveyed to the rear of the train through short sections of pipe connected by flanges turned on their inner and outer ends.

Claim.—In an apparatus for conveying smoke, cinders, &c., back from the locomotive smoke-stack to the rear end of the train, the straight fixed sections of tubing T T in combination with a series of intermediate short sections, S S', having the inward flanges *v w*, arranged and operating substantially as and for the purposes specified.

142,907.—Buckle for Harness.—KASSON FRAZER, Syracuse, N. Y. Application filed May 20, 1873.

The tongue-piece is fastened to its supporting cross-bar by wire straps, and has laterally-projecting lever-arms underneath and beyond the side bars of the buckle, which terminate in knobs or thumb-pieces, and are designed to facilitate the withdrawal of the tongue. The pivoted end of the tongue-piece is constructed with a cam having a dull edge, which embeds in the strap and is released by a quarter turn or revolution.

Claim.—1. In a buckle, the tongue-plate B, constructed with one or more lever-arms, *d*, which project beyond the frame on its under side, so that the tongue-plate can be turned by them to draw the tongue out of the strap without requiring the bending of the latter, substantially as specified.

2. The tongue-piece b, seated on the cross-bar *c* of the frame of the buckle, and clamped thereto by independent wire straps E, substantially in the manner and for the purpose specified.

3. In a trace-buckle, a spring tongue-piece, B C, provided with a laterally-projecting lever-arm, *d*, and an elevated bar or knee, F, substantially as and for the purpose specified.

4. In a harness-buckle, a tongue having a knee or cam, F, constructed in such a manner that it will embed into the same in the rear of the tongue, substantially as and for the purpose set forth.

142,908.—Rubber Compound for the Manufacture of Packings, &c.—CHRISTOPHER L. FENN, Beakville, Conn. Application filed September 11, 1873.

Mixture of rubber or other vulcanizable gum is mixed with the proper quantity of sulphur, metallic filings, and refractory earths and oxides, such as plumbago, soapstone, plaster of paris, asbestus, brass filings, and the like. The packing is made of this mixture and vulcanized in place.

Claim.—1. The improved method herein described for forming compounds for packing, the same consisting in combining rubber, or other vulcanizable gum, with sulphur and other solid materials, such as named, and vulcanizing the compound in the place to be packed, substantially as specified.

2. The improved compounds herein described, suitable for steam and other packing, made by mixing, in proper proportions, india-rubber, or other vulcanizable gum, with sulphur and other solid materials, such as named, so as to form non-vulcanized but vulcanizable compounds for use, as described.

142,909.—Chimney-Cowl.—GEORGE HENRY GARDENWIRE, Nokomis, Ill. Application filed July 22, 1873.

The counterbalancing-weight is suspended from the forward end of the vane, which is attached to the revolving cowl, and counteracts the force of the wind against the cowl and aids in keeping it in its upright position.

Claim.—In combination with a revolving chimney-cowl or cap a counterbalancing weight attached to the forward part to counteract the force of the wind, substantially as shown and described.

142,910.—Fence-Post.—JASON GIBBS, Fremont, Ohio. Application filed July 3, 1873.

A burnt-clay post is made in sections, with ledges on their inner faces for supporting the rails. The two parts extend into the ground, and are held together by metallic clamps at their tops and near their entrance into the ground.

Claim.—The fence-post, made in two parts, of burned clay, with ledges or projections *a a* between them, in combination with the rails B B and clamps C C, substantially as and for the purposes herein set forth.

142,911.—Manufacture and Vulcanization of Rubber for Making Brush-Backs, &c.—EDWIN A. HILL, East Cambridge, Mass. Application filed September 12, 1873.

The body of the article is formed in a mold or die, into which fits a plunger containing pins with small diameters near the end and larger in the other portion, so that holes are formed in the article, such as a brush-back, to avoid the necessity of drilling.

Claim.—1. The hereinbefore described process for making perforated vulcanized-rubber articles, substantially as and for the purpose specified.

2. The means employed for constructing perforated articles from vulcanized rubber, consisting of the punches A and head A', combined with the die B provided with the openings *b* and flange B', in the manner and for the purpose substantially as shown.

142,912.—Machine for Turning Wheels.—JOHN W. HILL, Dayton, Ohio, assignor to himself and CHRISTIAN HERSCHELRODE. Application filed August 20, 1873.

The revolving face-plate is provided with a center, on which the end of the shaft rests, and on the cross-bar a bearing-block is secured, through which the shaft passes.

Claim.—The face-plate A and rail C of a boring and turning mill, in combination with a center, G, and bearing H, substantially as and for the purpose specified.

142,913.—Brush-Machine.—EDWIN A. HILL, East Cambridge, Mass. Application filed August 6, 1873.

A series of punches is affixed to a block, each punch having two cutting-edges, one at the extremity and one, of larger diameter, a short distance from it. These are received into a die having holes for their reception at corresponding intervals apart. Suitable material for a brush-back, placed between the block and the die, is, when operated on, ready for the attachment of bristles.

Claim.—In combination with a suitable die-plate and operating mechanism, a punch, A, provided with two cutting-faces, *a* and *a'*, substantially as and for the purpose specified.

142,914.—Piston-Packing.—CHARLES AMOS HODGE, Knoxville, Tenn. Application filed July 29, 1873.

An eccentric ring operates as a spring and keeps the piston in the center of the cylinder.

Claim.—The combination, with the shaft E and arms E B, of the solid ring A, eccentric or spring ring C, and the outside or packing rings D D, with dowels *a*, all substantially as and for the purposes herein set forth.

142,915.—Pruning Implement.—ABRAHAM C. HULME and JOSEPH S. CRUM, Palmyra, Ill. Application filed July 31, 1873.

The doubled-handled shears can be converted into a single-handled implement, suitable for cutting high branches by a rearrangement of the parts upon the series of holes arranged upon the longer of the two handles.

Claim.—A pruning-knife consisting of the handle A with a series of screw-holes, the removable strap H, and parts D E F G, and the supplemental handle I, severally constructed and arranged, as shown and described, with respect to each other, so that the device may be converted into a double-handled pruner, in the manner specified.

142,916.—Ice-Tongs.—EDWIN C. JOHNSON, South Providence, R. I. Application filed March 12, 1873.

Ice-tongs with a joint and handle made of cast metal, to which the jaws (of forged steel) are attached by being driven into a wedging dovetailed slot, or otherwise.

Claim.—1. The combination of the handled or jointed portion of a pair of ice-tongs with the claws B B by means of a dovetailed and wedged-shaped slot, *a*, substantially as described.

2. As a new article of manufacture, a pair of ice-tongs with handles A' A' and joint A make of cast metal, in combination with steel claws B B, substantially as described.

142,917.—Milking-Pail.—ANDREW J. JOHNSON, Vicksburg, Mich., assignor of one-half his right to NELSON V. JONES, same place. Application filed August 1, 1873.

An extensible and revolving tube passing laterally from the top of the pail supports a milk-receiving pan made to retain a portion of the milk, and with a deflector to prevent splash.

Claim.—The inclined guard G, in combination with the flat-bottomed milk-receptacle F and the side elbowed outlet E *f*, as shown, and for the purpose described.

142,918.—Machine for Dressing Fish.—FREDERICK KELSEY and FRANK H. HOSMER, Sandusky, Ohio; said HOSMER assignor of one-half his right to JACOB A. HOSMER, same place. Application filed July 19, 1873.

The fish are first presented to a reciprocating knife that removes the heads; the body of the fish is then placed on an endless traveling belt provided with spurs, by which it is carried by the splitting-knife, the openers, and the cleaners, and delivered at the other end of the machine. The offal is carried down a side spout.

Claim.—1. The combination of the adjustable bar P, hinged bar M, hood N, and inclined board O, substantially as and for the purpose herein set forth.

2. The combination of the revolving cutter I, openers L L, and cleaners J K, operating substantially as and for the purposes herein set forth.

3. In a fish-dressing machine, an endless traveling belt, G, with spurs or teeth projecting along its outer surface, for the purpose mentioned.

4. A fish-dressing machine having the cutter I, openers L L, cleaners J K, endless traveling belt G, and hinged board M with hood N, substantially as specified.

5. In a fish-dressing machine, the hinged board M, with the hood N extending above and over the cleaning working parts, as shown and described.

6. In a fish-dressing machine, the combination, with the horizontally-circular revolving cutter I, of the endless traveling belt G, as and for the purposes mentioned.

7. The revolving cleaner J, consisting of a disk with hooked arms *b*, for the purpose of removing the entrails, &c., of a fish, substantially as specified.

8. In a fish-dressing machine, the combination of the revolving cleaners J K, the former having hooked arms *b*, and the latter having brushes D, substantially as and for the purposes herein set forth.

9. In a fish-dressing machine, the vertically-reciprocating knife, operated by means of a crank and pitman, for cutting off the heads of the fish, as herein set forth.

142,919.—Corpse-Preserver.—HENRY KEMSTEN, Wheeling, W. Va. Application filed August 21, 1873.

Rods are passed through ears on the cooler so as to suspend it in any size coffin.

Claim.—The box or corpse-preserver A, provided with lid B, ears *a a*, spouts *b b*, and concave bottom C, said bottom and upper end of box being constructed as shown and described, and for the purposes herein set forth.

142,920.—Corn-Harvester.—JOHN KILBORN, Chicago, Ill., assignor of one-third of his right to WILLIAM GRELLIER, same place. Application filed June 4, 1873.

Alternate horizontally-arranged picking-arms, pivoted at their rear ends, are connected, respectively, to cranks of a common shaft, by links, so as to receive vertical motion for the purpose of severing the ears, the gathering mechanism being adjusted, by the driver from his seat, by a hand-lever.

Claim.—1. In a corn-picking implement, provided with a tilting and adjustable picker-frame, I, the inclined pickers J J mounted on the said frame, and each alternate one of which is rigidly attached thereto, and each other one of which is pivoted to the said

frame, and rendered vertically vibrating by means of the pitmen L L attached thereto, and to the crank-shaft K having bearings in the said frame, the said pitmen being attached to the vibrating pickers at a point between the free ends and the pivots of the latter, substantially as and for the purposes specified.

2. In a corn-picking implement, the tilting picker-frame I, provided with the pickers J J and with the aprons B' and V, and with the laterally-yielding belts E' E', all arranged substantially as described, in combination with the bent and perforated arms D' D' rigidly attached to the carriage-frame, substantially as and for the purposes set forth.

3. In a corn-picking implement, provided with a tilting picker-frame, the combination and arrangement of the yielding pins E' E', one or more, one or more perforated arms, D' D', the cord I', the pivot-lever G' connected to the picker-frame, and the notched standard F'', all substantially as and for the purposes specified.

142,921.—Sheet-Metal-Bending Machine.—WILLOUGHBY F. KETTLER, Cincinnati, Ohio, assignor to THOMAS & ROBINSON, same place. Application filed May 21, 1873.

A bed-plate, hinged clamp, and brake. One end of the clamp is detachable from its hinged arm, so as to facilitate the removal, after bending, of the metal sheet. The arm D to which the clamp is attached is hinged in a sliding block, so that the position of the clamp may be changed with respect to the bed-plate. Cam J, working on a stud on the arm D, clamps the metal sheet to the bed-plate.

Claim.—1. The bending-bar B, attached at one end to the lever D', and provided at the other end with a lug, *a*, and button *b*, in combination with the lever D, as and for the purposes herein set forth.

2. The combination, with the frame E, of the bed A, cams J J, bending-bar B, with projection *a*, bar C, hinged or pivoted lever D, with friction-roller *d* and recess *a'*, lever D', and the adjustable bevis G G, all constructed substantially as and for the purpose set forth.

142,929.—Corn-Planter.—MILLIS KNICKERBOCKER, New Lenox, Ill. Application filed November 1, 1872.

A hub, with spokes placed at the side of the planter, revolves by penetrating the ground during the advance of the machine. At the end of one of the spokes there is a block, with a spiral spring above it, to mark the spot where the seed has fallen.

Claim.—The rimless wheels *c*, constructed, as shown and described, with the foot *r* and spring *s* on the end of one of the spokes, whereby the same may pass over obstructions without sliding so as to disturb the uniformity of the distance apart the seed is dropped, and mark the ground by means of the foot *r*, as and for the purpose set forth.

142,923.—Sleeping-Car.—JAMES T. LEIGHTON and DOMINICUS R. LEIGHTON, New Haven, Conn. Application filed August 14, 1873.

The hinged seat-backs are turned up and secured in a vertical position, forming a support for the upper couch and a partition between the berth-sections. A ledge upon the car-wall, in combination with bars pivoted to the rear outer corner of each seat, and provided with a folding leg at the free end, supports the lower couch, which rests upon flexible slat-sections attached at each end to the angle of the seat. When not in use, these are, together with the pivoted bars, folded back and concealed behind the chair-backs.

Claim.—1. The upper couch, made upon and supported wholly, and at both ends alike, upon the lower edges of the seat-backs, when turned up on edge and fixed as described.

2. The chair-backs D^2, hinged upon a fixed rest, in combination with the bolts I for locking them to the car wall in positions to maintain securely the upper couch, substantially as described.

3. The free sides of the hinged backs D^2, provided with metallic rests G H for supporting the slatted bottom F of the upper couch, substantially as described.

4. The pivoted bars Q Q', in combination with the slat-sections K L and the chairs C, constructed and arranged for adjustment essentially as described.

5. The lower slat-bottom, constructed of two separate sections, K L, each secured by one end only to the chair-frame, and adapted to be stowed away, each section alike, behind the chair-backs D D^2, substantially as described.

6. The pivoted supporting-bars Q Q' for the slat-sections, having both a vertical and horizontal adjustment, substantially as and for the purposes described.

7. The pivoted bars Q Q' for supporting the outer ends of the slat-sections, in combination with the wall-ledge P and the slat-sections K L, substantially as described.

142,924.—Cartridge.—JOHN LOGAN, Jersey City, and GEORGE R. HART, Newark, N. J. Application filed January 21, 1873.

Claim.—1. The combination of the cylinder A, breech piece C, ring E, and nipple D, formed and secured together substantially as herein set forth.

2. The breech piece C, provided with a channel through the battery-cup and a nipple, D, in combination with the cylinder A and fastening-ring E, for the purposes specified.

142,925.—Electrical Stop for Looms, &c.—GEORGES F. LUFFENET, Mazargis, Department of Loiret, France. Application filed May 1, 1873.

A bent wire, hanging on the horizontally-stretched thread, above two adjacent but insulated mercury-cups forming the two electrodes of a battery, on the breaking of the thread falls straddling into the two cups, thus completing the circuit, which operates an electro-magnetic stop mechanism for the machinery.

Claim.—1. The combination, in a knitting-machine or loom, of a series of wire yokes, *f*, each hung upon a thread above the separated mercury-cups *g g'*, forming part of a circuit, which is completed upon the descent of the yoke, as set forth.

2. The combination of the split bars *g* cells *g g'*, and yokes *f*, supported by threads above the cells, as specified.

3. The combination, with the needles or other part of the machine, of a lever or levers so arranged as to be struck by such part when out of position, and to complete or break an electric current, as specified.

4. The combination, with the pulley A, of the driving-pulley B, the lever G, supported by the keeper L of a magnet, and devices described, or their equivalents, by which the pulleys are separated on the movement of the keeper.

142,926.—Combined Punching and Shearing Machine.—WARREN LYON, Mamaroneck, assignor to THE BIDDLE MANUFACTURING COMPANY, New York, N. Y. Application filed March 24, 1873.

The peculiarity that imparts novelty to a combination not otherwise new is the interposition of the oscillatory cogged-segment shear-stock E between the cogged-segment levers D and F, as shown.

Claim.—The combination of the levers D, E, and F with the punch B, shears *n o*, and rod-cutters *p p*, for simultaneous operation, substantially as specified.

142,927.—Lawn-Seat.—WILLIAM C. MEDCALF, Rochester, N. Y. Application filed May 21, 1873.

A seat has its ends or supports formed of strap-metal, bent so as to form the legs, and the seat and the back having wooden slats bolted thereto.

Claim.—1. A seat constructed with end supports A A, made of strap-metal in a single piece, bent or formed into the back *a*, seat *b*, and legs or supports *e g*, with standard-brace *d*, as shown and described, in connection with slats B B, which are bolted or riveted directly to said side supports, substantially as specified.

2. In combination with the side supports A, bent so as to form an upper and lower half, the spring *f* interposed between the said parts, in the manner and for the purpose specified.

142,928.—Bake-Pan.—JOHN G. METSKER, Logansport, Ind. Application filed April 18, 1873.

Claim.—The pan A, formed with the projections B, and provided with the plate C, in combination with the double inclosing-case D provided with the door G, as herein shown and described.

142,929.—Machine for Forming Sheet-Metal-Pipe Elbows.—HIRAM B. MORRISON, Le Roy, assignor to SARGENT & GREENLEAF, Rochester, N. Y. Application filed May 21, 1873.

A head for holding a section of pipe is connected to its shaft by a universal joint, so that the angular edge of the pipe may be properly guided between the rolls which form the bead.

Claim.—The combination of the head D and shaft E, when connected by a joint which allows vibration of the head to adapt itself to position for the passage of the angular edge of the pipe between the rollers, as herein described.

142,930.—Machine for Making Drain-Pipes, &c.—ADOLPH MÜLLER, Jersey City, N. J. Application filed August 21, 1873.

An endless belt is pivoted on adjustable bearings and passes through a water-trough. This belt constantly presses upon the pipe while being formed on the mandrel, insuring smoothness, and its tension is changed by rollers mounted on arms of the belt-frame. The sheets of material are drawn from the bitumen-bath by slight threads or wires attached to the mandrel.

Claim.—1. The endless self-adjusting belt F, combined with and impinging upon the mandrel G, on which the coated veneer sheets are wound to form pipes, substantially as described.

2. The flexible connections *y* between the mandrel G and ends of the sheets of veneer for drawing the latter out of the boiler or pan E at the commencement of forming the pipes, substantially as described.

3. In a machine for manufacturing wooden pipe, the pan or trough J for containing a fluid to moisten the exterior surface of belt F, and preventing the adhesion of the bitumen thereto, arranged and combined substantially as described.

4. In a machine for manufacturing combined wood and asphalt pipe, the troughs J, in combination with the belt F, substantially as specified.

142,931.—Reservoir Cooking-Stove.—DAVID H. NATION and EZEKIEL C. LITTLE, St. Louis, Mo. Application filed February 21, 1873.

In the aperture in the rear plate, through which communication is had with the stove-flues, a two-winged damper is placed, to close the side flues when desired.

Claim.—The combination of the base-pan C, extended rearward from a point about equidistant between the top and bottom plates of the stove, the reservoir E being free from contact with the stove excepting its bottom, the two-winged damper G, and the exit-pipe D, situated in the rear of the reservoir, all substantially as and for the purposes herein set forth.

142,932.—Reservoir Cooking-Stove.—DAVID H. NATION and EZEKIEL C. LITTLE, St. Louis, Mo. Application filed February 21, 1873.

Upon the rear plate, midway between the bottom and top, a

chamber or base-pan is cast, of the width of the stove. The bread flue through this chamber connects with the central stove-flue and delivers the products of combustion into the exit-pipe. A water-reservoir may be placed in the aperture in the upper plate of this base-pan, and when removed the aperture is covered by a suitable lid.

Claim.—The combination, with a cooking-stove, of a base-pan, C, extended rearward from a point about midway between the top and bottom plates of the stove, containing the bread flue and sustaining the reservoir D and exit-flue, substantially as set forth.

142,933.—Reservoir Cooking-Stove.—DAVID H. NATION and EZEKIEL C. LITTLE, St. Louis, Mo. Application filed August 1, 1873.

The reservoir rests upon a removable support, and is separated from the back plate of the stove by an air-chamber open at top.

Claim.—1. The combination, with the back-plate I of the cooking-stove A, of the reservoir C, arranged on a support about midway between the top and bottom plates of the stove, and the air-chamber *b* between the stove-back and reservoir-front, open at the top, and communicating with the air in the room, substantially as and for the purposes set forth.

2. The combination, with the stove A and reservoir C, of the small opening *a*, the sheet-flue G under the entire bottom of the reservoir, and the small exit passage or pipe E, all substantially as and for the purposes herein set forth.

142,934.—Reservoir Cooking-Stove.—DAVID H. NATION and EZEKIEL C. LITTLE, St. Louis, Mo. Application filed July 2, 1873.

The portable reservoir-support is detachably connected with the stove. Beneath this support is the heating-chamber.

Claim.—1. The detachable base-pan or flue-shell D, attached to the body at a point near the center of the back plate of the stove by means of hooks *a a* cast on the base-pan, and pins *b b* on the stove-body, substantially for the purposes herein set forth.

2. The portable reservoir F, with flue E in the rear side, in combination with the portable base-pan or flue-shell D, substantially as and for the purposes herein set forth.

3. The combination, with a three-flue stove having damper H arranged as described, of the portable base-pan or flue-shell D and warming-closet G, all substantially as and for the purposes herein set forth.

142,935.—Cooking-Stove.—DAVID H. NATION and EZEKIEL C. LITTLE, St. Louis, Mo. Application filed April 11, 1873.

From the top of the vertical rear-flue plate a horizontal plate extends over the central flue, which comes part way up back of the oven. The products of combustion may pass direct through a passage the whole width of the stove, and under the boiler to the exit-flue; or they may be diverted down the side flues, and then, escaping up the said central flue, will pass under the boiler and to the exit-pipe.

Claim.—1. The arrangement of the flues E F, H H, and I, and plates K K', in combination with a double-oven cooking-stove, for the purposes herein set forth.

2. The descending vertical sheet-flue E, in combination with the flues H H and I, covering-plate M, and hot-air chamber or flue E, all operating in the manner and for the purposes set forth.

3. The damper I, extending the whole width of the body of the stove below the line of the top plate of the main oven, in combination with the sheet-flue F, hot-air chamber or flue E, and flues H H and I, for the purposes set forth.

142,936.—Planing-Machine.—SOLON W. NELSON, Worcester, Mass. Application filed February 27, 1873.

The knives are ground by an apparatus attached to the standards above the cutter-head. The cutter-head spindles are adjusted laterally and held permanently when set, to prevent disarrangement; and a presser-bar, above the lower cutter, is swung horizontally when removed from position.

Claim.—1. The grinding apparatus, substantially as herein described, in combination with a cutting-cylinder of a planing-machine, and in proper relation therewith, whereby the several knives or cutters may be successively ground while properly adjusted on the cutter-head and in proper position in the machine.

2. The combination, with the matcher-head spindles, of the adjusting-screw L, and the bush-nuts *m* with their set-screws, by means of which one, or both, or neither of the spindles may be moved to or fro from the center line of the machine by the revolution of the screw, substantially as described.

3. The pressure-plate R, hinged to a sliding block on one standard, and capable of attachment to another on an opposite standard, and constructed and arranged to swing laterally away from the under cutter-head, as described.

142,937.—Apparatus for Testing the Tensile Strength of Metals.—TENUS OLSEN, Philadelphia, Pa., assignor to RIEHLÉ BROS., same place. Application filed October 31, 1872.

The metal to be strained or tested is clamped between two links, one of which is adjustably attached to the frame, and the other is connected by a lever with the compound or differential fulcrum of the testing scale-beam; the strain being applied thereto by a hydraulic pump.

Claim.—1. The combination of the compound parallel beam B, the gripe or holder for the test-piece, and the lever F, substantially as and for the purpose set forth.

2. The combination of the compound parallel beam B, the lever F, the gripe or holder H, and the hydraulic straining power, substantially as set forth.

3. The combination of the compound parallel beam B, the lever F, the gripe or holder H, and the adjusting screw-block P, substantially as and for the purposes explained.

142,938.—Clamp.—WILLIAM H. PAYNE and HENRY IMHOF, Lockport, N. Y. Application filed June 28, 1873.

Claim.—The cramp-head described, having the wooden screw E, provided with metal cap F at its end *e*, the adjustable metal head D, with the wedge *d*, and the cramp-bar A, substantially as shown and described.

142,939.—Welding Iron and Steel.—JOSEPH POPPING, New York, N. Y., assignor of two-thirds his right to HERMANN SCHIERLOH, Jersey City, N. J., and HENRY SCHIERLOH, New York, N. Y. Application filed September 9, 1873.

Claim.—1. The within-described compound, consisting of calcined borax and iron filings, substantially as described.

2. The process herein described of uniting iron to steel—that is to say, first heating one or more pieces of metal slightly, then applying the compound, and then joining the two metals, and subjecting them to a red-hot heat, and then hammering or rolling them well together.

142,940.—Tightening Device for Woven-Wire Mattresses.—DAVID J. POWERS, Chicago, Ill. Application filed December 27, 1872.

The cross-piece at the head is bolted to the side pieces, in which are slots for the bolts to slide in. In the side pieces, near the head, are nuts, in which threaded bolts are inserted, the heads of which abut against the adjustable cross-bar.

Claim.—The side pieces A B, provided with the slots *b*, and cross-piece D, in combination with the nuts *c c* and bolts *d d*, each provided with a head to fit in the recesses in the piece D, a screw-thread, and wrench-surface, all constructed and arranged as and for the purpose specified.

142,941.—Ventilating Window-Sash.—COLLIN PULLINGER, Philadelphia, Pa. Application filed August 13, 1873.

A small supplementary sash is arranged to slide above the top and to the bottom sash, thus ventilating the rooms through the windows without bringing to bear upon the persons therein a cold draft of air.

Claim.—The small sliding sash E, arranged between the upper and lower sash of a window, as and for the purpose described.

142,942.—Knives for Trimming Boot and Shoe Soles.—JOSEPH C. RATHBUN, Rochester, N. Y. Application filed July 21, 1873.

Claim.—The trimming knife herein described, consisting of the blade B, clamps C C, gage D, and thumb-lever E, when combined and arranged with the handle A, to operate in the manner and for the purpose specified.

142,943.—Car-Coupling.—JOSEPH V. REED, New Albany, Ind. Application filed May 7, 1873.

A weighted tongue pivoted to the bottom of a draw-head, said tongue being provided with a recess or shoulder on its lower side for the reception of and to hold the link in a horizontal position, said tongue having, also, an inclined orifice to hold the tip till after the link has passed in and elevated the tongue.

Claim.—The tongue D, provided with an under recess, and weighted at its forward end, and pivoted or hinged to the bottom of the bumper A, all constructed to be used substantially as and for the purposes set forth.

142,944.—Railway-Signal.—JOHN F. ROSS, Hamilton, Canada. Application filed May 6, 1872.

A suspended vane and lantern-signal, rotating on a vertical shaft, is operated by a cord wound upon the shaft; and is returned to normal position by its own weight; a pin on the rotating shaft moving in the oblique slot in the supporting-sleeve.

Claim.—The combination of the platform A, box F, tube C, having the spiral slot D, and shaft B, having a pin or button bearing the roller E, with lamp and disk or either of them, of sufficient weight to carry down said shaft, as and for the purpose specified.

142,945.—Machine for Corrugating and Beading Sheet-Metal Pipe.—JAMES SARGENT, Rochester, N. Y. Application filed May 21, 1873.

Claim.—The combination, in a machine for corrugating and beading metal pipes, of the corrugating-rollers D E and beading-heads D' E', when arranged to operate in the manner and for the purpose specified.

142,946.—Malt-Drier.—PHILIPP SCHUFF, New York, N. Y. Application filed August 7, 1873.

The axis on the rotating spreader has on each end cogged pinions, which travel on parallel horizontal racks. One end of the axis is prolonged and carries a spur-wheel, which is operated by a worm-wheel which travels on the driving-shaft back and forth with the stirrer or spreader.

Claim.—1. The reciprocating worm-wheel H, arranged upon the driving-shaft I parallel with the side racks D, in combination with the spur-wheel G, carrier-bracket J, pinions E, and shaft F of the stirring-wheel, substantially as described.

2. The guiding-hanger L, carrying friction-rollers, in combination with the side rail B, rack D, pinion E, shaft F, and stir-

ring-wheel M, substantially as described, for the purpose specified.

142,947.—Carpet.—ROBERT SCOTT, Philadelphia, Pa. Application filed June 30, 1873.

Claim.—A two-ply carpet, consisting of a surface-fabric, composed of weft-threads A, interwoven with warp-threads B, and united to a system of backing-threads, C, by backing warp-threads E, which are tied to the said warp-threads B of the surface-fabric by weft-threads D, disposed in the manner described, so as to permit the beating up of the weft-threads A into intimate contact with each other, and thereby causing the said threads A to cover and conceal the locking weft-threads D, all as set forth.

142,948.—Blasting-Plug.—DAVID SHOEMAKER, Kittanning township, Armstrong county, assignor of one-half his right to G. A. REICHERT, Jr., Manorville, and JOHN HORN REICHERT, Philadelphia, Pa. Application filed April 18, 1873.

A cylindrical blasting-plug is wound with wire to hold the sections together. When the wedge is inserted the coils of wire yield or uncoil to allow the plug to expand. The wedge may be withdrawn and the plug removed without an explosion, the spring coil serving to compress it and hold the sections together.

Claim.—1. An expansible tamping plug constructed with a flexible cylinder, C, and elastic packing, C', substantially as described.

2. The elastic outer casing E, applied and operating substantially as set forth, in combination with an expansible tamping-plug.

142,949.—Bit for Boring Minerals.—DAVID SHOEMAKER, Kittanning township, Armstrong county, assignor of one-half his right to G. A. REICHERT, Jr., Manorville, and JOHN H. REICHERT, Philadelphia, Pa. Application filed July 16, 1873.

Claim.—The plate A, tapering on its sides, as at *a b a' b'*, and formed with the cutting-edges *a a'* and triangular recess B, and with the spiral or twisted part C, substantially as and for the purpose set forth.

142,950.—Coal-Boring Machine.—DAVID SHOEMAKER, Kittanning township, Armstrong county, assignor of one-half his right to G. A. REICHERT, Jr., Manorville, and JOHN HORN REICHERT, Philadelphia, Pa. Application filed May 15, 1873.

The sliding carriage is advanced to the work by the rotation of the bit-carrying screw, which can be thrown in and out of gear by means of two eccentric cog-wheels connected with the bisected nut, through which the screw passes.

Claim.—1. The carriage Z, receiving sliding motion by means of the screw F, which carries the coring-bit, in combination with the mechanism mounted on the carriage and operating said screw, substantially as and for the purpose set forth.

2. The combination, with the bit-carrying screw F, of the bisected nut E', substantially as and for the purpose set forth.

3. The combination, with the two parts of nut E', of the eccentrics *e'*, geared to each other and operating in reverse order, substantially as set forth.

4. The screw F, the main wheel C and intermediate gearing, and the regulator D, operating upon and moving with the carriage Z, substantially as and for the purpose set forth.

5. The lever L, with hook *f'* and perforated plate *h'*, in combination with the sill or sills and the boring mechanism, substantially as and for the purpose set forth.

6. The sill A, with groove *i*, in connection with the slotted plate *h'* and the fastening bolt and nut of the housing E, substantially as and for the purpose set forth.

7. The carriage, constructed with the openings *c c d d*, substantially as and for the purpose set forth.

8. The screw-carrying carriage Z and operating mechanism thereon, in combination with the housing E and standard P, all adapted to move together laterally, for corresponding adjustment of the boring apparatus, substantially as and for the purpose set forth.

142,951.—Ice-Cream-Freezer.—CHARLES E. SIMMONS, Monroe, Wis. Application filed March 3, 1873.

Claim.—The combination of the cylinder B, cog-wheel D, pinions *b d*, shaft G, tube H, beaters I J, and scrapers K, all constructed and arranged to operate substantially as and for the purposes herein set forth.

142,952.—Egg-Carrier.—COURTENAY JAMES SIMMONS, Kansas City, Mo. Application filed May 27, 1873.

Claim.—1. A series of rows of coils having their ends fitted in obtuse-angled recesses on the inside of the end pieces of frame, and glued thereto, as and for the purposes set forth.

2. The U-shaped clamp F, applied to hold both bottom and coils in the manner specified.

142,953.—Door-Bell.—ELDRIDGE B. SIBB, Antwerp, N. Y. Application filed March 12, 1873.

An ornamental, detachable, sheet-metal band is applied to the base-plate of a door-bell for the purpose of giving a neater finish to the article.

Claim.—The bell-case A, cast in any suitable shape, when used in combination with an attachable and detachable metallic band which surrounds the same, as and for the purpose set forth.

142,954.—Railway-Rail Joint.—WILLIAM H. SNEDEKER, Philadelphia, Pa., assignor of one-half his right to CALVIN A. ELLIS, same place. Application filed August 13, 1873.

An improvement in the class of railway-rail joints where a solid block is employed, consisting of two fish-bars united by a web, adapted to embrace the sides of the rails, the web of which latter is cut away to receive the web of the block. In this case notches are made in the block and correspondingly in the rails, into which transverse pins or bolts are driven to prevent the rails from being drawn apart longitudinally except by the withdrawal of the pins.

Claim.—In combination with the block B and notched rails A A, the pins C C, as set forth.

142,955.—Die for the Manufacture of Pinchers.—WILLIAM E. SNEDIKER, Charlotteburg, N. J. Application filed July 2, 1873.

The invention consists of a pair of dies, which have suitable recesses for forming the female portion of the pinchers, and are provided with reversely-angular punches for punching out the box-joints, leaving an oblique web, which is afterward removed by another punch.

Claim.—The dies C D, constructed to receive the female portion of the box-joint within them, and provided with punches I J of reversely angular construction, substantially as shown and described, and for the purposes herein set forth.

142,956.—Soldering-Machine.—JAMES F. SPENCE, Williamsburg, N. Y., assignor to GEORGE D. BROOKS and MARY C. BROOKS, Baltimore, Md. Application filed May 22, 1873.

Hoppers for the reception of cans are provided with sliding clamps and movable rests, so that the cans may be discharged one by one into the holding-clamps. In a rotary frame are provided clamps operated by a lever, reversed wedges and inclines to seize the cans as they drop from the hoppers. By means of this frame the ends of the cans are presented to a soldering-flame and soldered. By a half-rotation of the frame the other ends are presented and soldered in like manner, after which the cans are allowed to slide upon an apron into receptacles.

Claim.—1. The tubes A, having sliding clamps *a* and movable rests A', to receive, hold, and drop cans into movable holders C, in the manner described.

2. The holders C, arranged in a rising half-rotary frame, D, to enable them to be reversed, in the manner set forth.

3. The hand mechanism, consisting of shaft E, having arms *e e'*, by which the slides are operated, at the times and in the manner specified.

4. The can-holders C, made in two parts, and combined with the separate plates J J, connected by springs, and movable to or from each other, to clamp or unclamp the cans, in the manner described.

5. A can-holder, provided with springs *c* to allow it to hold firmly cans of greater or less magnitude, in the manner set forth.

6. The fixed and reversed wedges *d d* of frame D combined with reversely-moving wedges *d' d'*, provided with studs *d''*, and moved by the slotted lever M to open and close the can-holding plates J, in the manner specified.

7. The pivoted frame D, pivoted plates N N, and the pivoted yokes O O, combined to allow the cans to be moved forward, raised, and then reversed, in the manner described.

8. The combination, with the rotary can-frame D, of an apron S, over which the cans slide gently off the said table, in the manner set forth.

142,957.—Hinge for Lounges.—AUGUSTUS SPIEGEL, Indianapolis, Ind. Application filed April 29, 1873.

When the hinge is open one of the base-plates can be moved laterally, and, at the same time, carry one leaf of the hinge with it away from the other base-plate with a circular motion, and then return it, so that the hinge proper is at right angles to its line of motion, thus forming a rigid joint that cannot be closed until the operation is reversed.

Claim.—1. The base-plates C D, provided with a circular slot, J, one edge being beveled at P, substantially as and for the purpose set forth.

2. The combination of the hinge E F G with the base-plates C and D, as and for the purposes hereinbefore set forth.

142,958.—Washing-Machine.—MOSES W. STAPLES, Richmond, Va. Application filed July 24, 1873.

A vibrating tank formed with curved bottom, ends and spaces at the top, and moving on trunnions in the side walls on a suitable frame.

Claim.—A washing-machine consisting of a suspended tank having a curved bottom merging into ends rounded, as described, so as to direct the water which flows to said ends back toward the center and upon the clothes, as set forth.

142,959.—Process and Composition for the Manufacture of Illuminating-Gas.—WILLIAM H. STERLING, San Francisco, Cal. Application filed February 1, 1873.

To crude petroleum or coal-tar there is added, in proportion to its richness or gravity, ten to twenty per cent. of water, and to this a small per cent of caustic lime is added, after which the mixture is thoroughly agitated to produce an emulsion. This emulsion is then thoroughly mixed with pulverized ashes, and the mass is molded into blocks suitable for distillation in a retort for the production of gas.

Claim.—1. The compound of powdered ashes, coal-tar or petroleum, water, and caustic lime, when compounded and used in the manufacture of illuminating and heating gases, substantially as described.

2. Powdered ashes, when combined with coal-tar or petroleum, these being mixed with water, and used in the manufacture of illuminating and heating gases, substantially as described.

142,960.—Thill-Coupling Attachment.—HARRY J. STUBBS, Kennett Square, Pa. Application filed August 21, 1873.

The case, attached directly to the axle, is provided with an arm, which is kept in place over the head of the coupling-pin by a spring wound upon a spindle connected with said arm.

Claim.—The case A, carrying an arm, B, and operating spring *c*, and adapted to be secured to an axle adjacent to a thill-coupling, as set forth.

142,961.—Thrashing-Machine.—JAMES B. SUITT, Indianapolis, Ind. Application filed September 23, 1872.

Curved shoe placed under second apron for catching all of the grain which has passed with the straw from first apron.

Claim.—In combination with the second apron B, the flipper D raised above its end, and the curved shoe 2, having its end extending up to, or above the level of, the apron, substantially as shown and described.

142,962.—Car-Coupling.—FRANK F. TAYLOR, San Francisco, and GEORGE WITHINGTON, Lone City, Cal. Application filed March 12, 1873.

The lever E is pivoted behind the lid, and has a hooked end, which, when the lid is raised, fits in a notch, *e*, of the lid and holds it up. A spring, *i*, serves to hold the lid down and prevent vibration.

Claim.—The hinged lever E, with or without the spring, and having the catch or notch S on the under side of its outer end, in combination with the hinged and channeled lid C having the recess O, as and for the purpose specified.

142,963.—Disinfectant-Package.—WILLIAM P. TENNY, Boston, Mass. Application filed March 15, 1873.

The box is constructed so that when the cap is removed the perforated top is exposed, permitting the package to be used like a dredging-box, without soiling the hands or clothing of the user.

Claim.—As a new article of manufacture, the package of disinfecting-powder inclosed in a long paper case, having the close bottom and perforated false top *b* bound securely to said case, and the removable cap *c* covering said perforated false top, and bound thereto by the wrapper, substantially as specified.

142,964.—Wheel-Plow.—TILGHMAN D. TERRY, ALONZO CASE, and CHARLES LARKIN, Knoboster, Mo. Application filed April 5, 1873.

Claim.—1. The combination, with the tongue A, axle B, and wheels C C, of the bar G, hinged at its front end to the tongue and supporting the seat E, and the bar G' pivoted to the rear end of the bar G, and having the plow H and colter J attached to it, all substantially as herein set forth.

2. The lever J', with arm A and studs *i i'*, and bars G G', staple *f'*, and support *k*, the several parts being constructed and arranged as and for the purpose specified.

3. The wheel D, constructed as described, with the outer and inner cutting-rims *d e*, substantially as and for the purpose herein set forth.

4. In combination with a plow arranged on one side of the center, as shown, the double-tree K, equalizing-bar L, single-trees M, rollers *y z*, and chain *x*, all arranged and operating substantially as and for the purposes herein set forth.

142,965.—Car-Coupling.—PHILIP M. THOMPSON, Toronto, Canada. Application filed January 11, 1873.

The link is jointed at its center in such a manner that when its sections are turned beyond a certain angle to each other they will separate, so that if one car leaves the track it will not carry the others with it.

Claim.—1. The two-part coupling-link F G, provided, respectively, with notched cup H A *h' h'* and studded tube K *h*, the studs and notches being so arranged in relation to the parts of the link upon which they are formed as that when locked together the two parts of the link cannot be separated except they be turned out of line with each other, as and for the purpose specified.

2. The flanged and notched cup H A *h' h'* of part G, provided with a spring, *k'*, combined with the studded tube K *h*, arranged under cover *g* of part F, as and for the purpose specified.

142,966.—Drilling-Machine.—WILLIAM H. THORNE and I. NORRIS DE HAVEN, Philadelphia, Pa. Application filed August 16, 1873.

The drill-heads are arranged upon the two grooved shafts *i* and 5', and are movable back and forth by means of a pinion, 7, which meshes with the rack-bar 6. As they move back and forth they also carry the worms *n* and *o'* on the horizontal grooved shafts *i* and 5' with them, from which the tangent-wheels *o* and 3' receive their motion. When it is desired to traverse the screw up or down by hand the pin 3' in the clutch-nut 1' is lifted out of the hole in the tangent-wheel 3', when the nut may be turned independently of the tangent-wheel.

Claim.—1. The sliding drill-heads arranged upon the two shafts so as to be adjusted back and forth, and which are provided with a mechanism for operating the drill-spindles, and a mechanism which will slowly feed the drills down and rapidly run them up, and which is movable with the heads, substantially as shown and described.

2. The worms *n* sliding back and forth on the driving-shaft with the drill-head, and giving motion to the tangent-wheels to revolve the spindles, substantially as specified.

3. The worms *n* on the driving-shaft and worms on the shaft 5', in combination with a tangent-wheel to revolve the spindle, and a tangent-wheel to feed the spindle up and down, substantially as shown.

4. The cross-head 9, provided with the nuck 6, in combination with the pinion on the drill-head to move the heads back and forth, and a suitable clamping device, substantially as described.

5. The tangent-wheel 3', clutch-plate 1', pin 2', nut 0, and screw 0', combined to operate as set forth.

6. The combination and arrangement of the shafts *i* 5', drill heads *a*, worms *n* 4', tangent-wheels *o* 3', nut 0, clutch 1' 2', screw 6, weighted lever 8', pinion 7, clamp 9, drill-spindles 2, and a suitable operating mechanism, substantially as shown and described.

142,967.—Bench-Iron for Harness-Makers.—JAMES THORNTON, Geneseo, and EMMIT G. LATTA, Friendship, New York. Application filed July 21, 1873.

A block of iron, flat on one side, with grooves in the opposite face, a partial filling of soft metal, and rounded corners, as a bench-iron, raising-board, punching-block, and slicker.

Claim.—The improved bench-iron herein described, for the purposes specified.

142,968.—Car-Wheel.—JOHN TIRANOFF, NICHOLAS TIRANOFF, and ALEXIS KOURAKOFF, St. Petersburg, Russia. Application filed April 23, 1873.

The wheels are made with a double-incline tread, one incline being formed to run upon the ordinary rail, and the other, of smaller diameter, to run upon an additional rail laid outside the inner rails of curves.

Claim.—A car-wheel, the tread of which is formed with double-inclined surfaces *a a*, in combination with the auxiliary rail F arranged on the inner side of curves and outside of the track, elevated to receive the smaller portion of the tread, substantially as described.

142,969.—Pressure-Gage and Alarm.—MORTON TOULMIN, New Orleans, La. Application filed April 15, 1872.

A tubular plunger, closed at its lower end by a spring valve-rod, plays within a cylinder, and is linked to weighted pendent arms, which, by raising over a graduated arc, indicate the pressure; and when a prescribed limit is reached, the valve-rod, coming in contact with a stop, allows the steam to escape through the tubular plunger into a steam-whistle.

Claim.—The combination, with a tubular piston working partly within and partly without a steam-pipe, and having a valve-seat, D', of a valve-rod, I, working partly within and partly without said piston, its valve H, the pendent arms E, and alarm M, connected with said tubular piston, the spring K, and the adjustable stop L, regulating the opening of the valve at the lower end of said tubular piston, substantially as specified.

142,970.—Car-Coupling.—WILLIAM H. WADDELL, LITTLETON WADDELL, and JOHN A. LUCE, Churchville, Va. Application filed June 20, 1873.

When the device is in position for coupling the hook on the lever A is caught by the hook on the draw-head, so that when the link strikes the curved face of the link-hook it rides over it, and on its way strikes and turns the trigger C, which raises the hook *b*, thus releasing the upper end of the lever A, when its lower end is forced forward by a spring, and locks the link-hook in position. On the upper side of the draw-head are perforated lugs, through which is passed a pin on either side of the locking-lever, to prevent accidental coupling or uncoupling, as the case may be.

Claim.—1. The lever A, provided with a foot-piece, A', on top of draw-head, by which the end *a'* may be forced off the end *c* of link-hook, in the manner set forth.

2. The treadle-hook *a* and grapple-hook *b*, combined to hold the lever A so that the cars may remain uncoupled, as set forth.

3. The combination with the grapple-hook bar B *b*, of the subjacent trigger C, to lift the same and allow the spring-pressed lever A to turn back and lock the link-hook, as specified.

4. The combination, with lever A, of the apertured lugs K K and pin L, as and for the purposes specified.

5. The lever A A *a a'*, the spring D, the link-hook E *c*, the trigger C, and the grapple-hook bar B *b*, all combined, constructed and arranged in the manner described.

142,971.—Can for Paint, &c.—OLIVER E. WALKER, Cincinnati, Ohio, assignor to himself and CHARLES F. SITTER, same place. Application filed June 7, 1873.

Claim.—A combined paint-bucket and packing-can, consisting of a metallic bailed cylinder, A, the non-removable wooden heads B C, and the plug D, constructed and put together substantially in the manner described.

142,972.—Files-Supporter.—COLUMBUS WEST, Pittsburg, Pa. Application filed September 6, 1873.

The strap which supports the adjustable arm-pad of rubber passes forward over a plate, extending down the back, and in front is passed through tubes of soft rubber. No friction of supporting-strap can, therefore, cause abrasion of the surface of the body.

Claim.—1. The supporting-straps D D and rubber tubes D'

D', when the same are so combined and arranged as to operate substantially as described, as and for the purpose specified.

2. The brass-pad C, sliding rubber sand-pad E, and double supporting-straps D and their tubes D', the whole being combined and arranged to operate substantially as described.

142,973.—Bedstead-Fastening.—CALMAN WOLF, Rochester, N. Y. Application filed June 28, 1873.

A hook has a mortise at its end for the reception of a tightening-wedge, acting against a block, in which the hook lies, the wedge having flanges working in grooves. A spring, pressing on a shoulder near the front end, retracts the hook as the wedge is being withdrawn.

Claim.—1. In combination with the hook C of a bedstead-fastening, the wedge D, constructed with the flanges *c d* upon the opposite faces, and with the blanks *b b b* for connecting the parts, said flanges *c* being dovetailed to fit the socket of the hook-shank, and said flange *d* playing in a vertical slot of the bedstead-rail, as shown and described, and for the purpose specified.

2. In combination with the hook C and wedge D, the reacting spring E, engaging with a shoulder, *m*, of the hook-shank, all constructed, arranged, and operating as shown and described.

142,974.—Transposing Key-Board.—AUGUSTUS D. R. WOLFF, Paris, France. Application filed February 27, 1873.

A key-board adapted to be placed directly upon the keys of a piano or organ, above which it slides, and at any point upon which it may be fastened.

Claim.—The combination, in a transposing key-board, of levers E, having projections D^2 D^3, and keys A' B', adjustable above the levers and resting on said projections, as set forth.

142,975.—Clock-Calendar.—NATHANIEL T. WORTHLEY, Brunswick, Me. Application filed June 14, 1873.

Claim.—1. An automatic calendar-motion composed of the rotating disk C, the four-gear wheel D, the month-wheel K, the cam L, the levers M and N, the pawls N', G, and *i*, and the lever F', with the lever J, the pawl H, and the cams *g* g^1, substantially as specified.

2. In a calendar-motion, the combination of the wheel D and lever F' with the lever J, the pawl H, the pin A, the cam g^1, the pin g^2, and the cam *g*, constructed and arranged substantially as and for the purpose set forth.

3. In a calendar-motion, the combination of the revolving cam L with the ascending curve *l*, the inclined bearing P, and the vertical return line P, and the weighted lever M with the pin *m*, the shaft m^1, the lever N, and the pawl N', constructed and operated substantially as specified.

REISSUE PATENTS.

5,572.—Composition for Dental Plates, &c.—GEORGE F. J. COLBURN, Newark, N. J., assignor to WILLIAM M. WELLS.—Patent No. 67,025, dated July 23, 1867. Application filed August 22, 1873.

The new composition is composed of shellac and asbestus.

Claim.—1. The composition of gum shellac and asbestus, substantially as set forth.

2. The plate for artificial teeth composed of the materials and substantially as set forth.

5,573.—Design for Spoon and Fork Handles.—EDWARD C. MOORE, Yonkers, N. Y., assignor to TIFFANY & CO., New York city.—Design No. 4,831, dated April 18, 1871. Application filed July 24, 1873. Term of patent 7 years.

Claim.—1. The design for the front face of the upper or enlarged end of the handle, consisting of an arrangement of branches, twigs, &c., and a perched bird, substantially as described and represented.

2. The design for the back face of the upper or enlarged end of the handle, consisting of an arrangement of branches, twigs, &c., leaving an open plain space, substantially as described and represented, on which to engrave the name, crest, or other mark of ownership.

5,574.—Vise.—GEORGE N. STEARNS, Syracuse, N. Y.—Patent No. 32,682, dated October 9, 1866. Application filed August 19, 1873.

The movable jaw is journaled upon two upright arms in close proximity to the saw. The cam-lever is interposed between the arms at the base. The stationary jaw is provided with a concave projection, extending below and beyond the line of intersection of the jaws when closed, which presses against the saw and prevents vibration in the act of filing. The movable jaw is provided with an offset at its lower inner edge, which extends into the concave projection of the stationary jaw and assists in effecting the result.

Claim.—1. The movable jaw B, having extension or lever E journaled upon and between the vertical arms C C' rising from the lower portion of the frame A, having jaw D, in combination with each other and with a cam-lever, D, journaled between the upright arms C C', substantially as herein shown and described, for the purpose specified.

2. The jaw D, having concave projection extending below the jaw B, and beyond the line of intersection of the jaws when closed, substantially as and for the purpose specified.

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FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant therefor, unless he shall make a new application within two years from the date of notice of the original allowance.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

BOUND VOLUMES OF PATENTS.

The Office is now prepared to furnish to subscribers the monthly volumes of patents at $125.00 per annum, bound in half-sheep.

In these volumes the specifications are in full, the type of the same size as the printed patents and records; the drawings are in full, but are one-half the size (linear) of those attached to the patents and bound up for record; the illustrations are four on a page, but *fac-similes* of the originals, with the headings and signatures

The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 260 of drawings; total of each volume about 1,060 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,060 pages per month: 9,000 pages of specifications, 3,120 pages of drawings—12,720 pages.

REMITTANCES.

All money sent by mail, either to or from the Patent Office, will be at the risk of the owner. In no case should money be sent inclosed with models. All payments to or by the Office must be paid in specie, Treasury notes, national bank-notes, certificates of deposit, or post-office money-orders.

COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)..... 6,500

SEWING-MACHINES and attachments..... 2,000

FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes..... 4,000

PRINTING; including presses, type, and printers' furniture. 2,500

FELTING and HATS; including caps, bonnets, flock, &c..... 1,200

WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)..... 1,600

STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs..... 1,400

CARRIAGES and WAGONS..... 6,000

RAILWAYS, (in progress.)

BRIDGES, (in progress.)

CARDING, CLOTH CORDAGE, KNITTING, SILK, SPINNING, WEAVING, (in progress.)

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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AMENDMENT TO RULES OF PRACTICE.

U. S. PATENT OFFICE, *October* 2, 1873.

ORDER.

Rule 10 of the Rules of Practice of the U. S. Patent Office are hereby amended by *striking out* the last clause, which reads as follows:

"Or before any notary public of the foreign country in which the applicant may be, the oath being attested in all cases, in this and other countries, by the proper official seal of such notary."

M. D. LEGGETT,
Commissioner of Patents.

DIGEST OF FOREIGN PATENT LAWS.

CHILI.

REPORT OF J. DE V. DRUMMOND-HAY, OF THE BRITISH LEGATION.

In accordance with the instructions received by me on the 27th ultimo, in a circular dispatch from your lordship's office, dated the 14th August, 1872, I have the honor to furnish the following report on the law and practice in the Republic of Chili with regard to inventions:

Article 152 of the Chilian constitution, dated May, 1833, accords to every author or inventor the exclusive proprietorship of his discovery or invention for the time which the law may cede to him, and further authorizes the payment of a proper indemnity should it be found necessary to publish the invention.

In 1840 a law was passed which expressly limits the privileges which should be ceded in Chili to patentees of an invention, and lays down the formula and conditions under which such privileges shall be granted. A new invention or discovery must be laid by the inventor before the Home Minister, who has to name a commission for the examination of the samples, models, or drawings produced. On the report of the commissioners, who are sworn to secrecy, the Minister grants or withholds the patent.

The term of a patent cannot exceed ten years.

The patentee pays a sum of £10 (about $50) into the treasury as a contribution toward the museum in which the model of his invention is kept, together with a full explanation of the use and method of the article or matter he has invented, which is preserved closed under private seal of the inventor until the term of his patent has expired.

By the same law and under the same conditions, a patent is allowed for inventions of arts or industries which may appear in foreign countries, but are unknown in Chili; but such patents are granted for shorter periods, not exceeding eight years.

The transfer of patents, or the privileges thereon, to another party is permitted, unless fraudulency be suspected.

Forgeries of an article already patented are subject to a fine of from $100 to $1,000, and the forfeiture not only of the article itself produced, but also of the establishment and implements used in the manufactory; the proceeds of such a fine and forfeiture being equally divided between the treasury and the patentee, after payment of the loss calculated as suffered by the latter.

Should a patent be fraudulently obtained—that is, by false pretenses—or by any other but the inventor himself, such a person is liable to a fine of from $100 to $1,000, or an imprisonment of from three to twelve months.

In cases of disputes arising between parties who may obtain privileges sanctioning the issue of the same article, the law provides the settlement of such causes by

arbitration, an arbitrator being named by each party and a third by the Home Minister of the government.

Patents may be granted as effective throughout the country, or be confined to one or more provinces.

Terms exclusive of the period allotted for the patent are granted for the purpose of installing the establishment, machinery, or industry for the issue of the invention, but should this term expire without the object for which it is intended being carried out, all privileges allowed for the patent are annulled; and in the same manner is all exclusive privilege disallowed if such establishment is abandoned for more than a year, or if the article produced is inferior to the original sample.

Extension of the term ceded for patents or exclusive privileges of production are allowed when the patentee is judged worthy of such an extension of his patent, but for which he must have applied six months before the expiration of his first license.

In August, 1851, a law was decreed which obliges the commissioners who take cognizance of the petition for a patent or introduction of an industry to report, not only on its utility, but also on the hindrances which might result to industry or commerce by the cession of an exclusive privilege, as also to report on the the difficulties or expenses to which the petitioners may be subjected in their undertaking, with a view to determine the allotted time for the introduction of the art or invention, in order that full knowledge may be taken of the industry which may be prejudiced by any cession of exclusive privilege. Special mention must also be made whether the petition is for a patent of invention or for introducing into the country some new article.

Under date of August 16, 1856, a law was promulgated which makes it obligatory on the petitioner for the introduction of inventions already known in other countries, that the privileges for which he solicits be published in the official journal during the term of thirty days, in order that those parties who may have already brought into the country, or established such conventions or industries, or have taken steps for their introduction or establishment, and thereby incurred expense previous to the petition for such exclusive privilege, shall have a right to oppose the cession of the monopoly.

There has been considerable discussion in congress this present year, 1872, as to the advisability of any patent law, and commissioners have been named to examine into the matter and report on the same, and to suggest what reforms are necessary should the actual patent law in force be continued.

From the feelings evinced in the discussion it would appear as most probable that all introduction of patents from other countries will be abolished, and that only inventors resident in the country will have the patent rights, or at most those inventors in foreign countries who may ask for privileges which they are already and still in possession of in other countries.

COLOMBIA.

REPORT OF CHARLES O'LEARY, OF THE BRITISH LEGATION.

I had the honor to receive on the 7th instant your lordship's circular dispatch of the 14th of August, instructing me to prepare and transmit to your lordship, with as little delay as possible, in a succinct form, a report respecting the law and practice of Colombia with regard to inventions.

I lost no time in applying to the proper department, which in this country is the Office of Public Works, for information on the subject, but it was only this morning that I was favored with a reply. The information thus supplied to me is as follows:

The power to grant privileges in Colombia, conveying the sole right to make, use, or dispose of any new invention or discovery, is limited and defined by the law of the 13th of May, 1869. This exclusive right is guaranteed by the national executive power of the union by means of an instrument called "patent of invention."

A patent may, in the terms of the law, be granted in respect of any "invention or improvement of a machine, mechanical apparatus, combination of materials, or method of proceeding of useful application to industry, arts, or sciences," and for the making and sale of any manufacture or industrial product, for a term of years not exceeding twenty nor less than five.

No privilege is given for the importation of foreign productions, whether natural or manufactured.

Inventors in possession of a foreign patent may also obtain one in Colombia for the same invention on the condition that its expiration shall coincide with that of the foreign patent.

Patents of invention are obtained upon petition to the executive power, setting forth with clearness the nature of the invention or improvement. In the event of a favorable decision, and in order to obtain the patent, the inventor must furnish the government, within forty days, with a design or model of the machine or mechanical apparatus, or with a circumstantial and complete description of the new method or process, together with a sample of the manufacture or production. Such model, design, or description, as the case may be, is enrolled and deposited in the proper department of state for the two-fold purpose of serving as a reference in the event of any controversy as to the genuineness of the invention, and of giving copies thereof to whomsoever may apply for them at the expiration of the patent.

In the patent, reference is made to the law on the subject. In it is embodied the executive decree granting the privilege and stating the nature of the invention, as well as the term to which the duration of the concession is limited. Such decree must be published twice at least in the official gazette.

A patent is granted without any previous examination as to the novelty or utility of the invention. The government does not declare that the invention is new or useful, nor that the patentee is the real inventor, nor accurate the models or descriptions of the invention. But it is open to any one whose rights may have been encroached upon by the concession to appeal to the tribunals for its reversal, and in fact the right so to do is expressly reserved in the patent itself.

Thirty days before the issuing of a patent the government is by law required to publish the inventor's petition in the official gazette.

Patents of invention are withheld in the following cases: When the provisions of the law are not faithfully complied with by the petitioners, or when the invention endangers the public salubrity or security, or encroaches upon proprietary rights already acquired.

The moment a patent expires every one is at liberty to profit by it. The descriptions of the invention are published, and copies of the models or designs given to any applicant on payment of the necessary expenses. The same publicity is given to the invention in the event of the patent becoming void from any cause.

An injunction may be obtained for the infringement of a patent, the offender being dealt with in conformity with the penal laws of the union.

A patent is void when it violates vested rights, the decision in such cases resting with the courts of justice. It also lapses if during a whole year no use is made of the invention, unless it be from accidents beyond the control of the patentee.

To secure a privilege a fee of from $5 to $10 (£1 to £2) for every year of its duration must be paid to the government, the entire sum being levied when the patent is granted. In soliciting a patent, the number of years for which it is desired to take it out is mentioned in the petition, but no petition is entertained unless preceded by a payment into the treasury of $10, (£2,) which the petitioner forfeits if the application is refused, or if granted is computed as part payment of the fee.

DENMARK.

REPORT BY G. STRACHEY, OF THE BRITISH LEGATION.

1. No laws have been passed in Denmark on the subject of protection to inventions.

Inventors are protected by royal letters patent granted through the Ministry of the Interior, in accordance with rules prescribed by the traditional practice of that department.

2. A person who wishes his invention to enjoy "gueret," or monopoly, must address to the Ministry of the Interior, accompanying his demand by detailed specifications and drawings.

3. The Ministry forwards these papers to the polytechnic school, with a request that the director will report on the applicant's scheme. The director, after consulting, if necessary, the professors of the institute, reports to the Ministry whether the alleged invention is new and deserving of protection. He also states the period for which, in his opinion, the "gueret" or patent should be granted.

4. The Ministry always adopts the director's conclusion. It is understood that a patent will be allowed whenever the alleged invention really contains something novel in principle or practice. Generally speaking, the applicant's request is granted.

5. The patents usually run for three, four, or five years. Important inventions are protected for ten years, and in special cases for fifteen years.

Patents granted to foreigners never run for more than five years.

6. The fee charged at the Ministry of Interior for the whole transaction is £1 17*s.* 6*d.* ($9.) The time occupied in the correspondence is about two months.

7. The patent is forfeited (1) if it is shown that a similar invention has been used in Denmark before, or (2) if the patentee does not carry out his invention within the year and continue to employ it.

COMMISSIONER'S DECISIONS.

NEUBOECKER AND SCHAFHAUS.—*Interference.*

[*In the matter of the interference between Adam Neuboecker and John Schafhaus.—Decided September* 18, 1873.]

APPEAL UNDER RULE 44—PRACTICE IN INTERFERENCES.

The law does not make the Examiner of Interferences a judge of the novelty of devices before him in interference; jurisdiction of that question is with the Primary Examiners and the appellate tribunals.

But, by order of the Commissioner, it is made the duty of the Examiner of Interferences to suspend an interference whenever it appears to him that an insufficient examination has been made, or when a new reference has been discovered.

LEGGETT, *Commissioner:*

This case comes up from the Examiner of Interferences on an interlocutory appeal. The interference is between the applications of two citizens of Germany.

During the progress of the trial it was developed that prior to the date of the applications a patent had been issued for the invention described, in France, to Hinkel and Neuboecker. The French patent, it seems, describes the device as the joint invention of Hinkel and Neuboecker, while Neuboecker, in his pending application here, claims to be the sole inventor.

The Examiner decided the question of priority in favor of Schafhaus, but, in view of the French patent, determined that no patent could issue, and therefore dissolved the interference. From this decision of dissolution the appeal is taken to the Commissioner in person.

Rule 59 provides that an interference may be dissolved, first, when neither party is entitled to a patent; second, when no interference exists between the applications; and, third, when there has been such irregularity in declaring the same as will preclude the proper determination of the question of right between the parties.

The action of the Examiner in this case has been under the first clause, upon the ground that neither party is entitled to a patent, for the reason that the alleged invention is anticipated by a patent issued in France to other parties. This action of the Examiner is, I think, premature. The law does not make him an Examiner as to the question of novelty. His jurisdiction by law relates solely to the question of interference.

The party has a right to be heard before the Primary Examiner upon all matters pertaining to the novelty of his device; also to an appeal from the Examiner's decision, if adverse, to the Board of Examiners-in-Chief, and from the Board to the Commissioner, and from the Commissioner to the Supreme Court of the District of Columbia; consequently, when the Examiner of Interferences had reason to believe that a new reference had been discovered, or that there had been a careless and insufficient examination upon the part of the Examiner, it was his duty to suspend the interference and refer

the cases back to the Examiner for further examination in view of the newly-discovered reference, and afterward, if his view of the effect of the new reference was sustained by the Examiner, and the Examiner's decision not appealed from, a judgment of dissolution should follow. I mean by this that it is not within the province of the Examiner of Interferences to determine that a party is not entitled to a patent because of some other invention anticipating the same. That question is made by law the province of the Principal Examiners.

By order of the Commissioner, however, it is made the duty of the Examiner of Interferences to suspend an interference whenever, in his judgment, there has been an insufficient examination or a new and pertinent reference discovered, and to return the case to the Principal Examiner for further examination. In case the views of the Examiner of Interferences are not sustained, the interference may then progress without the delay and expense of again taking testimony.

The decision of the Examiner of Interferences is therefore reversed, and the interference will be suspended and the case referred back to the Examiner for further examination in view of the French patent referred to.

LIPPMANN AND MARCHANT.—*Interference.*

[*In the matter of the interference between the applications of Phillipp Lippmann and Wm. J. Marchant, for* IMPROVEMENT IN CORSET-CLASPS.—*Decided September* 16, 1873.]

APPEAL FROM THE DECISION OF THE BOARD OF EXAMINERS-IN-CHIEF.

The Office must judge from the data given whether or not an applicant has been reasonably diligent.

Where an applicant showed only by the unsupported affidavits of himself and wife that he made two experiments with a device in 1867, which he kept secret, and it appeared he did nothing further until he applied for a patent in 1872, and gave no sufficient reason for his laches: *Held*, that what he did in 1867 must be regarded as abandoned experiments, and that one who in the meantime made the invention and conferred it upon the public was the prior inventor.

LEGGETT, *Commissioner:*

The issue in this interference may be very readily decided. The evidence in behalf of Marchant—the only witnesses being himself and his wife—shows that he made two "experiments" in 1867, which he kept secret. Subsequent to that time he did nothing whatever until he made his application for patent in 1872. He gives no sufficient reason for his delay in disclosing his invention, and produces no sample or drawing made at the time, showing his experimental construction of it. Whether or not he was reasonably diligent in following up his experiments is a matter, as the Board have remarked, of which the Office must be the judge. He has given no data by which it appears that he was. Lippmann conceived and completed the invention in 1870, and put it into practical use. Before two years had elapsed he presented his application for patent. In the light of the decisions of the courts and the Office in similar cases, what Marchant did must be regarded as mere abandoned experiments. Lippmann, an independent inventor, more diligent, actually conferred the invention upon the public through his manufacture and sale of it. This Marchant in fact has never done.

The decision of the Board awarding priority to Lippmann must be affirmed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,590.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

25,874.—Bronzing-Machines.—Granted to GEORGE H. BABCOCK, October 25, 1859. Application filed July 25, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,883.—Construction of Glass Coffins.—Granted to JOHN R. CARSON, October 25, 1859. Application filed July 23, 1873. Testimony closes September 23, 1873. Hearing October 8, 1873.

25,936.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 8, 1868. Application filed July 28, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,984.—Bit-Stocks.—Granted to NELSON STOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 28, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,003.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,060.—Machines for Making Box-Joints.—Granted to JAMES STIMPSON, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,069.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,090.—Machines for Folding Paper.—Granted to CYRUS CHAMBERS, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,128.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to EDWARD WIENE, November 15, 1859. Application filed August 18, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WRIGHT, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOOM, Sr., November 29, 1859. Application filed June 10, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 20, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1862. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1860. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,406.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 12, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 12, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FERTH and JOHN INGHAM, December 20, 1859, and reissued April 22, 1862. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GOBB, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEGGE, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STURTEVANT, December 27, 1859. Application filed September 25, 1871. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873 Hearing January 7, 1874.

27,539.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 22, 1859; reissued December 28, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

25,565.—Improvement in Rolling-Mills, granted to JOHN FRITZ and GEORGE FRITZ, September 27, 1859.

Claim.—The application to each of the pairs of drawing or forming rolls of a feed-roll, such as described, and driven by gearing or other machinery, and turning in the same direction with said drawing or forming rolls, for the purpose of carrying and feeding into them the pile or bar of heavy iron, substantially as described.

25,569.—Improved Bedstead-Slats, granted to TYLER HOWE, September 27, 1859.

Claim.—1. The within-described bed-slat, consisting essentially of the lifter A, in combination with the slat, constructed and operating in the manner substantially as herein set forth.

2. The construction in the ends of slats, by which they are connected with the bedstead or springs, as shown by C and D, and as herein described.

25,570.—Improved Mode of Arranging Couches in Railroad-Cars, granted to EDWARD C. KNIGHT, September 27, 1859.

Claim.—The arrangement of couches in railroad-cars by means of the double-hinged rod *c c*, constructed as described, in such a manner that the couch, when not in use, may be folded up against the ceiling and retained there by means of a button or other suitable device, substantially as herein described.

25,572.—Improvement in Molding Water-Traps, granted to JAMES ALLEN LOWE, September 27, 1859.

Claim.—The application of a metallic core, constructed and operating substantially as herein described, to cast water-traps.

25,586.—Improvement in Burglar-Alarms, granted to ABBOTT Q. ROSS, September 27, 1859.

Claim.—1. Connecting the doors or windows of house to an alarm mechanism, through a system of strained wires, so that the forcing of the door or the cutting of any wire shall let off the alarm mechanism, substantially in the manner described.

2. So connecting the panels of a door with the strained wires that unite the door with the alarm mechanism, as that the cutting out of a panel or the cutting of one of their wires shall let off the alarm mechanism, substantially as herein described.

3. The combination of the swinging lever *f* on the door with the bolt *r*, and its inclined plane *s* that locks the spring-drum J, for the purpose of putting said door in connection with the alarm mechanism when said door is drawn to and shut from the outside, substantially as herein described and represented.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 23, 1873.]

6,880.—Printing-Types.—EDWIN C. RUTHVEN, Philadelphia, Pa., assignor to DAVID WOLFE BRUCE, New York, N. Y. Application filed September 8, 1873. Term of patent 14 years.

6,881.—Parlor-Furniture.—DANIEL SHALES and NEWMAN MCCULLY, Boston, Mass. Application filed June 30, 1873. Term of patent 3½ years.

6,882.—Printing-Types.—RICHARD SMITH, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed September 1, 1873. Term of patent 7 years.

6,883.—Printing-Types.—RICHARD SMITH, Philadelphia, Pa., assignor to MACKELLAR, SMITHS & JORDAN, same place. Application filed September 1, 1873. Term of patent 7 years.

6,884.—Chairs.—JAREZ M. WATERS, Cincinnati, Ohio. Application filed May 10, 1873. Term of patent 14 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date September 23, 1873.]

1,461.—Woven-Silk Fabrics and "Passementerie" Goods.—BERNSTEIN & MACK, New York, N. Y. Application filed September 13, 1873.

"two shields and eagles, combined with a scroll and the words 'Warranted full measure. Trade-Mark. Pat. Col. Yds.'"

1,462.—Hard Soap.—OLIVER CUTTS & Co., Port Au Prince, Hayti. Application filed July 12, 1873.

"'Extra No. 1, Palo Soap.'"

1,463.—Packing for Railroad-Car Journal-Boxes.—PATRICK S. DEVLAN, New York, N. Y. Application filed September 20, 1873.

"'Elastic Waste.'"

1,464.—Saws, Tools, Steel, and Files.—HENRY DISSTON & SONS, Philadelphia, Pa. Application filed September 11, 1873.

"'Keystone.'"

1,465.—Shirts.—FINLAY, GOURLAY & FINCH, New York, N. Y. Application filed September 13, 1873.

"'X. L. N. T.' on the figure of a shield."

1,466.—Pegs for Boots and Shoes.—KRAMBARGE PEG COMPANY, Andover, N. H. Application filed September 8, 1873.

"a star, and the words 'Star Peg.'"

1,467.—Pegs for Boots and Shoes.—KRAMBARGE PEG COMPANY, Andover, N. H. Application filed September 8, 1873.

"a United States flag and the words, 'The Flag Peg.'"

1,468.—Spirituous Liquors.—GEORGE W. KIDD & Co., New York, N. Y. Application filed August 30, 1873.

"a monogram formed of the letters S. N. P. & Co."

1,469.—Clothing for Women and Children.—MOSES NEWMAN and BERNARD LIEBMAN, New York, N. Y. Application filed September 2, 1873.

"'New York Suit Man'g Co.,' with a vignette or group between the words 'New York' and 'Suit Manf'g Co.'"

1,470.—Teas.—NEWTON BROTHERS & Co., San Francisco, Cal. Application filed August 16, 1873.

"the letters 'N. B.' inclosed in a diamond-shaped figure."

1,471.—Leaf-Tobacco.—WEISS, ELLER & KAEPPEL, New York, N. Y. Application filed September 13, 1873.

"a rose with a single leaf upon each side of the stem."

1,472.—Leaf-Tobacco.—WEISS, ELLER & KAEPPEL, New York, N. Y. Application filed September 13, 1873.

"an eagle standing erect with outspread wings."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date September 23, 1873.]

ORIGINAL PATENTS.

142,976.—Sectional Steam-Boiler.—JOSHUA K. ABBOTT, Cincinnati, Ohio. Application filed April 30, 1873.

The feed-water enters a mud-drum common to all the sections, passing up through a section-head having reverse incline diaphragms, thence through tubes divided by partition-plates and open at one end, returning through return-bends into the other division of the double head—thus keeping up a constant circulation of the water in the boiler.

Claim.—1. In combination with the generating-pipes A, the section-heads B, when constructed with reverse incline diaphragms C C', substantially as and for the purpose specified.

2. The combination of generating-pipes A, section-heads B C C', and diaphragms E in the generating-pipes, substantially as and for the purpose specified.

142,977.—Treating Iron and Steel to Anneal and Toughen Them.—ALBERT F. ANDREWS, New Haven, Conn., assignor to THE ANDREWS MANUFACTURING COMPANY, same place. Application filed May 9, 1873.

Articles, such as cut nails, are placed in boxes heated to about a red heat. Water-gas, made by decomposing steam by means of hot coal, is passed through the box containing the nails.

Claim.—1. The charcoal-box B, in connection with the narrow tube G and the box or series of boxes F.

2. The construction of the box F in separate or detachable pieces, substantially as described.

3. The retort A, in connection with the charcoal-box B and broad perforated tube G', for treating bar iron or steel, substantially as described.

4. The within-described treatment of wrought iron and steel, by subjecting it to a slow current of free hydrogen, as herein specified.

142,978.—Device for Holding Wagon-Boxes to the Bolsters.—HENRY L. ANDERSON, Chicago, Ill., assignor of one-half his right to JAMES M. RAND, same place. Application filed August 12, 1873.

To securely fasten and hold the body and running-gear.

Claim.—The combination of the swivel D, the curved-headed hooks *a a*, and the stirrup F, the whole arranged and applied to a wagon, to operate substantially in the manner and for the purpose described.

142,979.—Riveting Joints of Sheet Metal.—PHINEHAS BALL, Worcester, Mass. Application filed July 29, 1873.

The two edges are lapped one upon the other and riveted, but with a washer or a long strip of metal interposed between the sheet and one or both ends or heads of the rivets.

Claim.—The mode herein described of forming a steam or water tight joint between the overlapping edges of thin sheets of metal, as applied to the manufacture of water pipes, tubes, or other articles of manufacture—that is to say, by riveting ribs or washers over the laps or joints—in the manner substantially as shown and described.

142,980.—Heel-Trimming Machine.—CYRUS G. BALLOU, Albany, N. Y., assignor to EAST NEW YORK BOOT, SHOE, AND LEATHER MANUFACTURING COMPANY, New York. Application filed July 11, 1873.

The shaft upon which the cutter-head is mounted rests upon vertically-sliding bearings. The guide which enters the crease between the counter and heel is kept from revolving by spiral springs, one attached to each side, which allow the guide sufficient motion to overcome any tendency of the shoe to adhere to it.

Claim.—1. The combination of the shaft J, having a cutter-head, L, attached thereto, with the sliding bearings D D, substantially as and for the purpose set forth.

2. The combination of the shaft J and sliding bearings D D with the adjusting-screw M, having a slotted head, m^2, and sliding block, m^3, as and for the purpose specified.

3. The guide Q, constructed and arranged to operate as herein described, in combination with the springs R R, as and for the purpose set forth.

142,981.—Device for Hanging Picture-Frames.—THEODORE C. BARNARD, West Meriden, Conn. Application filed July 29, 1873.

Two metallic rods are pivoted to a frame, which is vertically-adjustable upon the third rod. The two rods are freely adjustable laterally, so as to be spread at their lower ends to adapt them to different sizes of frames, and said lower ends are provided with suitable hooks, upon which the frame is hung.

Claim.—1. The pivoted arms 7, in combination with the vertical rod 1, and a suitable adjusting device for adjusting the arms 7 up and down, substantially as set forth.

2. The combination of the perforated rod 1, slide 3, and hooked suspension-rods 7, substantially as specified.

142,982.—Rotary Steam-Engine.—JOHN V. BERKMAN, Brooklyn, N. Y., assignor to himself and JOHN A. LIGHTHALL, same place. Application filed March 19, 1873.

By adjusting the cylinder laterally steam-tight joints may be maintained between it and the concave abutments.

Claim.—The combination, in a rotary steam-engine, of the laterally-adjustable cylinder B and pistons D D' D'' D''' with the concave abutments E E, as and for the purpose specified.

142,983.—Feed-Water Heater.—JOHN V. BERKMAN, Brooklyn, N. Y., assignor to himself and JOHN A. LIGHTHALL, same place. Application filed March 19, 1873.

A heating-pipe passes through the water-cylinder, which is divided into two chambers by a partition. Water enters at the top of the cylinder at one side, passes down one chamber and enters the other, and ascends to the outlet.

Claim.—The combination of the heating-chamber B with the division flanges or walls C C' within said chamber, constructed and operating as and for the purpose specified.

142,984.—Lantern.—WILLIAM J. BERRY, Brooklyn, E. D., N. Y. Application filed February 8, 1873.

The diameter of the lamp is considerably shorter than that of the gallery, allowing an air-space between the two. The lamp has two flanges, one at top and one at bottom, which govern the incoming currents of air, and it is held in place concentrically with the gallery by springs so bent as to engage with the flange of the gallery in such manner as to prevent the lamp from moving up or down.

Claim.—The flanges or deflectors *b l* surrounding the lamp-reservoir, and within the lantern, for regulating the direction of the currents of air and preventing the lamp being extinguished, as set forth.

142,985.—Insect-Destroying Compound.—WILLIAM C. BIBB, Madison, Ga. Application filed August 16, 1873.

Arsenic acid, sulphate of copper, and resin in about equal proportions, used in a dry powder or in a solution of soap and water.

Claim.—The above compound as my invention, substantially as described, and for the purpose herein before set forth.

142,986.—Water-Cooler.—ISIDOR BRACH, Philadelphia, Pa. Application filed July 25, 1873.

The ends of the percolator are passed between the annulus that supports the ice-receptacle and the legs upon which the annulus rests, and are held in position by a circular rim of bamboo pressing them tightly against the sides of the vessel. Ice is put into a receptacle before it is placed in a cooler, and a removable diaphragm supports the ice after the ice-receptacle (whose lower end is open) has been inserted and placed in the cooler, where it is supported by a bead bearing against a metallic ring.

Claim.—1. The removable felt percolator F, secured within vessel A, in the manner specified.

2. Percolator F, annulus D, and receptacle C, provided with the diaphragm H, all arranged within the vessel A, and acting together as and for the purposes described.

3. The inverted ice-receptacle C, provided with diaphragm H and open at its lower and closed at its upper end, in combination with vessel A, as and for the purpose set forth.

142,987.—Sand-Sifter.—DAN BROUGHTON, Chicago, Ill. Application filed August 1, 1873.

Claim.—The combination of the cylinder or rubber D with the cylindrical sieve C, arranged to receive the material through one end and discharge the coarser matters through the other, and operated by the collar and pulley-wheels E F, substantially as and for the purpose specified.

142,988.—Dredging-Scraper.—DAN BROUGHTON, Chicago, Ill. Application filed August 1, 1873.

A closed box-scraper for collecting sand below the shore line. The hinged scraper allows the sand to enter the box, but is supported by the hook G until the box is drawn up along the inclined ways to a sufficient height, when the load is dumped into a proper receptacle. The holes in the bottom allow the water to drain off.

Claim.—1. The hinged scoop or shovel B C, in combination with the case A, substantially as and for the purpose specified.

2. The combination of the spring-catches G with the case or box A and scoop B C, substantially as and for the purpose set forth.

142,989.—Wagon-Body.—BRADLEY BURR, Batavia, Ill. Application filed January 27, 1873.

The corners and sides are supported by means of peculiar brackets, which permit the use of continuous side rails and prevent spreading.

Claim.—1. A wagon body or box, constructed of frame-work, when the several parts are connected together without mortise or tenon, substantially as specified.

2. The angle irons or brackets L, when provided with projections *b*, *c*, and *d*, substantially as and for the purposes specified.

3. The flat brackets M, when provided with the projections *g*, *h*, and *i*, substantially as set forth.

4. The bar N, when provided with the hinge-projection *p*, substantially as described.

5. The bar K, when provided with the pins or projections *r*, substantially as specified.

6. The bar O, when provided with the pins *r* and hinge projection *s*, substantially as specified.

7. The combination, in a wagon-body, of the bars N, provided with hinged projections *p*, with the brackets R and rod S, substantially as described.

142,990.—Machine for Burnishing the Shanks of Boots and Shoes.—AUGUSTUS C. CAREY, Malden, assignor to himself and DEAN PEABODY, Lynn, Mass. Application filed August 25, 1873.

The burnisher, having free vibratory movement, may be elevated or depressed, while in motion, to accommodate itself to the form of the sole. The jack is capable of being tilted both laterally and longitudinally, that all portions of the shank-surface may be presented to the action of the burnisher.

Claim.—1. In mechanism for burnishing the shanks of boot and shoe soles, the combination, with a jack for holding the boot or shoe, of a burnisher, located above or opposite to the sole of the jack, and vibrating upon an axis movable nearer to or farther from the jack, as occasion demands, and during the continuance of the vibratory movement of the burnisher, substantially as and for the purposes herein shown and described.

2. In mechanism for burnishing the shanks of soles, a jack, jointed to its support so as to be capable of being tilted in the direction of its length, as herein shown and set forth.

3. In mechanism for burnishing the shanks of soles, the combination, with a vibratory burnisher movable bodily toward and away from the jack, as described, of a jack capable of being tilted or rocked both longitudinally and laterally, substantially as shown and set forth.

142,991.—Weighing-Scale.—WILLIAM Z. CONNER, Shelbyville, Ind. Application filed January 8, 1873.

A loaded cylindrical vessel or bucket, partly immersed in water, is suspended by a cord passing over a pulley, and having attached to its opposite end the scale pan. According to the weight in the scale-pan will the vessel in the water be more or less lifted, and an index in gear with the pulley will indicate, on a suitable dial, the amount of the weight.

Claim.—1. In a weighing-scale, the combination of a reservoir for water or other liquid, a weight-receptacle, a belt for connecting the parts, a drum over which belts pass, a platform for receiving the article to be weighed, a dial, and an indicator-hand, the parts being constructed and arranged substantially as and for the purpose set forth.

2. The combination of the auxiliary reservoir A' and the balancing-rod B, substantially as and for the purpose set forth.

142,992.—Drill for Boring Artesian Wells.—CHRISTOPHER G. CROSS, Chicago, Ill. Application filed January 14, 1873.

Claim.—1. The combination of the wheel A with the drill B and pipe C, arranged to descend together in operation, substantially as specified.

2. The combination of the cylinder H with the wheel A, drill B, and pipe C, substantially as specified.

142,993.—Car-Coupling.—THOMAS H. CROSS, East Boston, Mass. Application filed May 5, 1873.

The link is pivoted to the draw-bar, and operated by means of an upright rod and levers extending to the sides of the car.

Claim.—The link C, pivoted to the draw-bar *b*, and operated by means of the bar D, having rack *g*, and the levers E F G, as described.

142,994.—Sash-Holder.—FRANCIS MARION DAVIS, La Cygne, Kan. Application filed February 26, 1873.

A friction rubber-faced cam is secured in a mortise in a window-frame by means of a journal, which has a grooved neck to

receive a retaining-pin, which latter, while it allows of rotation, prevents displacement.

Claim.—A cash-holder, composed of a mortise-frame, *d*, a cam, *e*, with circumferential groove 1 and rubber band 2, a shaft, *f*, with squares 3 4 and journal 5 6, and a knob, *g*, with grooved neck 7, fitted to receive a retaining-pin, as herein shown and described.

142,995.—Cooper's Crozing and Howel.—WILLIAM R. DAVIS, Union City, Pa. Application filed May 13, 1873.

Peculiarly-formed howeling and crozing tools are so arranged as to form one implement and act together.

Claim.—The combination of the plow F, cutters G G', and howel H, having the spiral or carved edge J, when secured to the plate A, and arranged in the manner substantially as shown and described.

142,996.—Railroad-Rail Joint.—HIRAM DECKER, Cocheeton, N. Y. Application filed March 25, 1873.

The inclined guard-plate E is to prevent the flanges of the wheels of a car temporarily off the track from cutting off the projecting fish-bolt nuts, by which accidents to following trains are caused.

Claim.—The combination, with the plate of a fish-joint connection for railroad-rails, of an inclined plate, or plate with an inclined face, substantially as and for the purposes herein specified.

142,997.—Mangle.—ROBERT A. DUNCAN, Brooklyn, E. D., N. Y. Application filed June 21, 1873.

Constructed with an apron passing over its table and the roll, the journals of which are attached to cylinders having springs to govern the tension, and is endless and arranged to pass under and over three rolls geared to the driving-shaft, which has a crank to give it motion.

Claim.—1. The endless apron or belt A, passing around the rollers *c d e*, in the manner set forth, in combination with the table *i*, substantially as set forth.

2. The yielding roller *m*, acting to tighten the belt or apron A, in combination with the rollers *c d e* and table, substantially as set forth.

142,998.—Car-Coupling.—JACOB L. DUNCAN, Fremont, Ohio. Application filed June 28, 1873.

The coupling-jaws are recessed so as to receive the enlarged and recessed head of the coupling-rod and hold in position to couple with the approaching draw-head. The jaws have shoulders on their outer edges, which bear on ribs attached to, or forming part of, the draw-head. These ribs relieve the pivot-pins of part of the draft strain. The jaws are opened by chains attached at their rear ends and operated by a vertical rod passing down through the platform of the car.

Claim.—1. Laterally-movable coupling-jaws J J, pivoted at *e e*, and shouldered at *f' f'*, in combination with ribs *f f* on the inner sides of the coupling-head A, for the purpose of relieving the pivots *e e* from drawing strain.

2. The coupling-rods *a*, constructed with heads a^2 a^3, short necks a^4, and enlargements a^1, and applied to the recessed and shouldered coupling-jaws J J, substantially as and for the purposes described.

142,999.—Galvanic Battery.—THOMAS A. EDISON, Newark, N. J. Application November 5, 1872.

Claim.—The arrangement, in a galvanic battery, of the horizontal copper plate above the sulphate of copper and its solution, and below the zinc pole and the liquid surrounding the same, for the purposes and substantially as set forth.

143,000.—Street-Lamp.—JOHN H. ETNIER, Pekin, Ill. Application filed August 9, 1873.

A street-lamp for burning fluids is supplied with an auxiliary reservoir under the main reservoir, and connected with it by a pipe having a stop-cock. This lower reservoir communicates directly with the burner, and has a sealed indicator.

Claim.—The combination and arrangement of the lamp A, burner D, supply-pipe h, reservoir C with its indicator *a b*, cock *d* in the passage to the reservoir B, and the reservoir B, as described.

143,001.—Boot.—LUTHER H. FARNSWORTH, Hudson, assignor to THE BOOT AND SHOE IMPROVEMENT COMPANY, Boston, Mass. Application filed February 17, 1873.

Claim.—A short-legged boot or gaiter, having its upper formed of a single piece of leather or other suitable material, united by a seam over the toes, and crimped to conform to the shape of the heel, and form a seamless boot, substantially as specified.

143,002.—Lady's Under-Vest.—OLIVIA P. FLINT, Boston, Mass. Application filed July 28, 1873.

Straps are attached to the under-vest to afford suspenders for under-garments and an abdominal support.

Claim.—1. The combination, with a ladies' elastic under-garment, of a supporter for under-clothing, said supporter being non-elastic, or less elastic than the said under-garment, and sewed thereto and made to pass over the shoulder of the wearer.

2. The combination and arrangement of the bands b and stocking-supporters *g h i k*, substantially as above set forth.

3. The combination and arrangement, with the bands b, of the band *c*, substantially as and for the purposes hereinbefore described.

4. The arrangement of the bands b and abdominal supporters *d*, both made of the same piece, or each separately, substantially as and for the purposes above specified.

5. The arrangement of the bands b with the abdominal supporter *d* and band *c*, substantially as and for the purpose before set forth.

6. The combination and arrangement of the under-vest *a a'*, bands *b c d e*, and stocking-supporters *g*, the whole being combined, arranged, and constructed as set forth.

143,003.—Ice Breaker and Fender.—FREDERICK FORD, Point Pleasant, W. Va. Application filed July 18, 1873.

Claim.—The detachable ice fender or breaker A, having the front tapered to a point, and the edges of the rear inclined inwardly, and the surface of the fender beveled and covered with iron, and provided with rings *m* to receive the cable *n*, by which it is attached to the bow of the vessel, the whole constructed and applied substantially in the manner and for the purpose as shown and set forth.

143,004.—Smoke-Burning Furnace.—SAMUEL A. FORD, Chicago, Ill. Application filed August 18, 1873.

Air is heated to the desired temperature in a series of chambers; is then emitted through small orifices, and by commingling with the volatile gases and smoke assist in their consumption in the combustion-chamber.

Claim.—The combination of the air-chambers D, E, and H, the discharge-openings F F, I I, and O O, and the steam-pipe J, constructed, arranged, and operating in the manner and for the purpose set forth.

143,005.—Core-Bar for Castings.—DANIEL GALLAGHER, Cincinnati, Ohio. Application filed June 21, 1873.

Stationary arms are attached to the shaft and provided with inclined ends, which match the inclined lugs attached to the sections of the bar, expanding them by a longitudinal movement. Toggle-arms are connected to each section and to a loose collar upon the shaft, which holds the sections in position by means of a key inserted through an intermediate opening in the shaft.

Claim.—1. The sections A and shaft B, connected together by toggle-arms C, in combination with the rigid arms D, whose inclined outer ends act upon inclined lugs *a* of the sections A, substantially as and for the purpose specified.

2. The core-bar, composed of the sections A *a*, shaft B, toggle-arms E, and rigid arms D, in combination with the toggle-arms E, loose ring F, and key G, substantially as and for the purpose specified.

143,006.—Feed and Blow-Off for Steam-Boilers.—ROBERT P. GARSED, Norristown, and ISAIAH D. BUCK, Philadelphia, Pa.; said BUCK assigns his right to said GARSED. Application filed August 2, 1873.

Water is forced into the boiler at the top and conveyed to the bottom of the same by pipes leading through the steam-space and heated water, where it is discharged through a perforated pipe. When used as a blow-off the perforated pipe collects all the sediment lying at the bottom of the boiler, which is discharged through a cock provided for said purpose.

Claim.—The combination of the pipes B, C, and D, arranged and operating as either or both feed and blow-off for steam-boilers, substantially as herein described.

143,007.—Steam-Generator.—RICHARD GERNER, New York, N. Y. Application filed July 14, 1873.

A steam-generating coil is located in the fire-chamber connected to a generating steam-cylinder. The lower end of said coil and a pipe from the cylinder are connected to a vertical pipe, and also to an additional pipe containing a pump and check-valve, by which means the water is forced from the cylinder through the coil, thus keeping up a rapid circulation of the water, and thereby causing a rapid generation of steam. The end of the coiled pipe entering the boiler is provided with a perforated diaphragm, causing the water as it enters to spray.

Claim.—The combination of steam-boiler G, having two water-inlets and one outlet, coiled tube H having diaphragm or disk K, tube I connected with tube L and pump J, and tube I', also connected to tube L and pump J, and to boiler G, all arranged substantially as described.

143,008.—Steam-Engine Cylinder.—HENRY GERNER, New York, N. Y. Application filed July 10, 1873.

The cylinder is made of wrought-iron with thick wooden bands around it. Said bands are strengthened by iron rings. The cylinder-heads, valve seat, and chest are made separate, of cast-iron.

Claim.—The steam-cylinder A, with wooden bands B B and metal bands C C, in combination with the steam-chest D with ports *e e*, and heads F F with passages *g g*, substantially as and for the purposes hereinbefore set forth.

143,009.—Fly-Wheel.—HENRY GERNER, New York, N. Y. Application filed September 3, 1873.

Claim.—As a new article of manufacture, the fly-wheel D C A, having the rim cast hollow, and with openings *g g* filling the same, substantially as and for the purposes described.

143,010.—Machine for Bending Truck-Sides for Railway-Cars.—J. HENRY HELM, Pittsburg, Pa. Application filed June 16, 1873.

The upper die and the central section of the lower die are provided on their rear sides with lugs, through which passes a bolt which couples them together. The side sections of the lower die slide over two adjustable rests, and are coupled to the central section by means of gear-teeth and coupling-links.

Claim.—1. The combination of the male die B with the female die, consisting of sections I m m, hinged and geared together through the medium of links l and gear-teeth *c*, substantially as described, and for the purposes set forth.

2. The section I of the female die, provided with plate *f*, and coupled with the male die B through the medium of the lugs *a c* and coupling-bolt *e*, as herein described, and for the purpose set forth.

3. The combination of the adjustable rests *n* with the sections m of the female die, substantially as herein described, and for the purpose set forth.

143,011.—Car-Coupling.—JOHN F. L. HOLMAN, Hamilton, Canada, assignee of one-half his right to EDWIN HEMWOOD, same place. Application filed March 14, 1873.

When the draw-heads approach near enough, the link in one striking the beveled face of the "tooth" in the other depresses and passes over it, when the "tooth" is thrown back into position by the weight on its lower end, and confines the link in the draw-head. Uncoupling is effected by means of suitable chains and pulleys.

Claim.—1. In combination with the bumper-head B, the weighted tooth or pin C pivoted between the lugs E, for operation, in respect to the link of a car-coupling, substantially as herein set forth.

2. In combination with the weighted tooth or pin C and bumper-head, the chain L, pulleys I I, and link-guide F, to operate substantially as described.

143,012.—Breech-Loading Fire-Arm.—HENRY H. HORNE, Norwich, Conn. Application filed June 3, 1873.

Claim.—The combination of the barrel, stock, and hammer, and the friction-stop *d*, with the swinging breech-piece A, formed of a plate of metal in which is the aperture A, and safety-notch *i*, as and for the purpose specified.

143,013.—Elevator.—GEORGE W. HUMMEL, Philadelphia, Pa. Application filed September 26, 1872.

By means of a valve operated by an attendant in the car, through the medium of a handle, shafts, gearing, and a hollow funnel-shaped piece of the valve, and connected by tubes with the upper and lower portions of the well, the air may be directed into the well beneath the car, thus forcing it upward and allowing the air above the car to escape; or it may be directed into the well above the car, thus forcing it downward; or it may be entirely cut off and the car be held in a stationary position. The movement of the handle, through a connecting-sleeve and attached eccentric, and arrangement of rods and joints, throws the shoes of a brake against the walls of the well, and assists in holding the car.

Claim.—1. The tubes or tubes L, M, and K, communicating from the common chamber W to the two extremities of the well B B.

2. The valve H, constructed and operating substantially in the manner and for the purpose described.

3. The devices, substantially as described, by which the brake N and valve H are simultaneously operated, in the manner and for the purpose described.

4. The doors V, swinging inwardly, in combination with the vertically-moving car A, as and for the purpose described.

143,014.—Screen for Middlings-Purifiers.—WILLIAM W. HUNTLEY, Silver Creek, N. Y., assignor to W. W. HUNTLEY, A. P. HOLCOMB, and AUG. HEINE, same place. Application filed December 30, 1872.

A series of sections, covered with cloth of different numbers or degrees of fineness, are interchangeable and reversible in the frame that supports them, so that the same belt or sieve may be used while grinding different qualities of grain.

Claim.—A belt or sieve, consisting of a series of longitudinally-interchangeable and reversible sections, said sections being covered with bolting-cloth of different numbers or degrees of fineness, substantially as and for the purpose set forth.

143,015.—Fan Attachment for Sewing-Machines.—RICHARD JACKSON, Philadelphia, Pa. Application filed June 14, 1873.

Claim.—The combination of the fan A, bent wire C, and clamp D with the needle-bar E of a sewing-machine, substantially in the manner and for the purpose above set forth.

143,016.—Stripper.—WILLIAM E. JACOBS and FELIX A. JACOBS, Columbus, Ohio. Application filed July 5, 1873.

The stripper-bowl is attached to the journal and ball by extensions, so that when the handles are raised to a vertical position the rear extensions of the bowl will be released from the holding-down bar, and the bowl allowed to revolve and empty itself. When the revolution is completed the rear extensions will be caught by the holding-down bar, and the elevated spring-latch will hold the bowl up to the proper position.

Claim.—1. A revolving stripper-bowl, having its handles B B and ball J connected to its sides by means of extensions G G, in combination with extensions r r, the holding-down bar C, and a holding-up latch, *d*, substantially as described.

2. The spring-latch *d*, latched, as shown, upon the stripper C, in combination with the beveled cheek *c* on the revolving stripper-bowl, substantially as specified.

143,017.—Steering Apparatus.—BENJAMIN KING, Philadelphia, Pa. Application filed February 19, 1873.

The drum or cylinder, around which are wound the ropes or chains leading from the steering-wheel, is [illegible] the rudder-post by means of tongues and grooves, [illegible] on the upper portion of the rudder-post and [illegible] the drum and ropes or chains always retain the same [illegible] during the rising and falling of the rudder.

Claim.—The combination, with the extended upper portion of the rudder-post F, and the drum or cylinder E, of the tongues and grooves *f f*, constructed, arranged, and operating substantially as and for the purpose set forth.

143,018.—Fire-Shovel.—FRANK M. KINCHAM, Indianapolis, Ind. Application filed January 28, 1873.

A shovel adapted to be thrust under the mouth of the [illegible] der of a base-burning stove, in order to support the [illegible] while the fire-space is being cleaned out. The handle, resting on the door-space, is supported by an adjustable brace.

Claim.—The arm *b c* and the slide *d*, in combination with the perforated handle *e e'* of a shovel, constructed and arranged substantially as herein set forth.

143,019.—Cultivator.—WILLIS LEWIS, Oxford, N. C. Application filed April 3, 1873.

A center beam with diverging side beams, supplied with curved harrow-teeth, followed by disk shares, one in each beam. A semicircular blade is placed behind the shares, whose length is as wide as the rear end of the machine. A rake is attached by links to the rear end of the beams, for removing weeds.

Claim.—The combination of the solid-water-teeth D D', semicircular blade C, and rake E, as described.

143,020.—Condenser for Carding-Machines.—NOAH LUCAS, Norwich, assignee of one-half his right to BENJAMIN LUCAS, Preston, Conn. Application filed March 28, 1873.

Claim.—The combination and arrangement of vertical disks, the faces of one revolving in an opposite direction to the other, their two faces forming an acute angle, between which the sliver is guided to the vertex of the angle, where it is condensed into roving for spinning, substantially as herein set forth.

143,021.—Setting Diamonds or Carbon Points for the Faces of Metal Tools.—WILLIAM MCKENNA, Boston, Mass. Application filed March 28, 1873.

Claim.—The herein-described method of securing diamonds or carbon points in metal tools by means of wedges made from horseshoe-nails or metal of like quality, substantially as set forth.

143,022.—Nail-Plate Feeder.—JOHN MCKENELY, Pittsburg, Pa. Application filed August 13, 1873.

The griper-rod passes through a double socket, from which project, in opposite directions, two arms that are alternately struck by an arm made to revolve by a connection with the main shaft. This device parts the plate after each cut, it being fed up by a weight in the usual manner.

Claim.—The arms A, provided with the sockets B and C, mounted in bearings D, in combination with the spring and support E, and rotating lever *f*, and tong *g*, the several parts operating with relation to each other, substantially as herein described, and for the purpose set forth.

143,023.—Jeweler's Hand-Press.—JOHN MCWILLIAMS, Providence, R. I. Application filed May 13, 1873.

Back lash, resulting from wear of the screw, is avoided by means of the plate E and screws *d d*; wear of the face of the screw is diminished by placing it in contact with a hard steel stop, F, and the extent of the descent of the punch is regulated by the set-screw I.

Claim.—1. The combination of the screw C, collar *c'*, plate E, screws *d d*, and plunger D, substantially as described.

2. The combination of the hand-wheel B, many-threaded screw C, sliding plunger D, lug H, adjusting-screw I, and male and female dies, the whole operating substantially as described.

143,024.—Clothes-Pin.—HENRY MELLEN, Walpole, N. H. Application filed July 31, 1873.

The pin has a flexible prong and a rigid prong. Between the two is a spring-bar attached to the flexible prong, which clamps the line.

Claim.—A clothes-pin constructed of the open flexible prong A, the rigid prong B, with a suitable body to form the pin, as described.

143,025.—Blowing-Machine.—HIPPOLYTE MICHAUX, Higganum, Conn. Application filed October 18, 1871.

The plate to which the finger-bar is attached is hinged to the cutter-frame, and supports the slide, links, and lever, by which the cutter-bar is driven.

Claim.—The combination of the swing-block *c'*, bar *c''*, link *c'''*, lever *d'*, link *d''*, cutter-bar *c*, and finger-bar *c'*, the whole constructed, arranged, and designed for operation and use, substantially as described.

143,026.—Stitch-Fastener.—OSCAR W. NOBLE, Waltham, Mass., assignor to himself and JAMES W. HANSON, same place. Application filed August 23, 1873.

A bar at right angles to the plane of the saddle is furnished at its inner end with a bolt, and also a guiding-shank surrounded

by a coil-spring. The outer end has an arm projecting from the face-plate at right angles thereto, and is locked over it by means of a notch, which is forced over its edge.

Claim.—The thumb-piece *d*, passing through the face-plate of the casing, and provided with a notch or catch, in combination with the arm *c*, bolt *a*, and its spring or springs, all constructed and operating substantially as and for the purpose set forth.

142,027.—Sewing-Machine.—JOSEPH P. NOYES, Binghamton, N. Y. Application filed September 5, 1872.

Machine makes lock-stitch. The under thread is contained on an ordinary spool placed within a spool-case balanced or supported on levers that are alternately removed from contact with the cone to allow the passage of the loop of needle-thread, said loop being carried about the cone by a rotating hook.

Claim.—The combination, with a rotating hook, of the spool-case and supporting-levers, or their equivalents, operating substantially as and for the purpose described.

142,028.—Traction-Engine.—LOFTUS PERKINS, Seaford Street, Gray's Inn Road, England. Application filed January 21, 1873.

The boiler and engine are supported upon a centrally-arranged driving-wheel, which is secured to a circular frame, the same turning within a horizontal ring attached to the end of the body of the truck. A condenser is attached to the rear of the truck, and by means of flexible joints is connected with the boiler.

Claim.—1. The combination of the circular frame, the boiler and engine mounted thereon, the central driving-wheel which supports the circular frame, the main carriage-frame, and the horizontal ring rigidly secured to the main carriage-frame and connecting the circular frame and the main carriage-frame, the whole constructed to operate substantially as before set forth.

2. The combination of the circular frame, the boiler and engine mounted thereon, the central driving-wheel which supports the circular frame, the main carriage-frame, the condenser mounted upon the said main carriage-frame, and the horizontal connecting-ring rigidly secured to the main frame, the whole constructed to operate substantially as before set forth.

142,029.—Wheel for Vehicles.—THOMAS W. PORTER, Boston, Mass. Application filed June 30, 1873.

Claim.—1. A metallic spoke and felly coupling formed tubular through its whole length and provided with the adjustable screw-shoulder *d*, substantially as described and shown.

2. The insertible flanged plates *l m*, in combination with the outer shell, substantially as described and shown.

3. A hub divided transversely and having two metallic parts, *f g*, with the bosses *p* so formed upon one or both parts as to separate the spokes at the outer periphery of the hub, and having entire metallic spoke-sockets, and the parts *f g* being united by rivets passing through the bosses, substantially as described and shown.

4. A transversely-divided hub, the metallic portions of which constitute the entire outer wall or surface thereof, and have transversely-divided wood filling and the bosses *p* formed upon one or both of the said halves, substantially as described and shown.

142,030.—Wagon.—THOMAS W. PORTER, Boston, Mass. Application filed June 30, 1873.

The angle-plate, for the protection of the rear end of the wagon-body, is adapted to receive the end of the skid.

Claim.—1. The angle-plate *c*, formed to envelop the ends of the bed-plank, and with the skid-rest 3, substantially as described and shown.

2. The corner shield *b*, formed with the raised curb-socket *e*, and to receive the curb-plate, all substantially as described and shown.

3. The elbow *h*, formed cellular, and with sockets for curb *f* and cants for plate *g*, substantially as described and shown.

4. The metallic rocker *i*, formed with the plate 1, supports 2 3, and base-plate 4, substantially as described and shown.

142,031.—Foot-Rail for Carriages.—THOMAS W. PORTER and HENRY K. PORTER, Boston, Mass. Application filed June 30, 1873.

The rail is adjustable to vehicles of different widths.

Claim.—1. A foot-rail bar formed with a longitudinal groove, *h' m'*, substantially as and for the purpose described and shown.

2. A foot-rail bracket formed with a slot, *f'*, substantially as and for the purpose described and shown.

3. An adjustable foot-rail formed with groove *h' m'* and slot *f'*, substantially as and for the purpose described and shown.

4. Foot-rail brackets formed with a riveting-pivot, *n'*, substantially as and for the purpose described and shown.

142,032.—Carpet-Stretcher.—HENRY POWELSON, New Brunswick, N. J. Application filed April 14, 1873.

A plate with points set diagonally on its lower side, with a hollow handle extending upward from it, having a pointed spike or awl passing through it for holding the carpet, after stretching, to be nailed.

Claim.—The awl or spike A and hollow handle B, in combination with the plate C applied to carpet-stretchers, in the manner and for the purpose substantially as herein set forth, shown, and described.

142,033.—Sewing-Machine.—GEORGE T. RIDDLE, St. Louis, Mo. Application filed August 11, 1873.

The saws are hung upon opposite ends of revolving arms. They are thus brought alternately in contact with the material to be cut.

Claim.—The saws P P, at the ends of the arms M M, attached to the shaft L, in combination with the shaft D carrying the pulleys E F, the shaft I carrying the pulley H, and pinion J engaging with gear-wheel K and the belts G K, whereby the saws have simultaneous rotation on their axes O O, and continuous revolution around their common shaft L, all as herein shown and described.

143,034.—Rocking Grate.—JAMES SEDDON, Susquehanna Depot, Pa. Application filed July 29, 1873.

The hollow bar, having hollow arms, is provided with trunnions, and a valve at one end to prevent the escape of water when the grate is rocked.

Claim.—1. The hollow bar K, having hollow arms and provided with trunnions on one end, which have a bearing in the cross-bar, in combination with the circular recess in the opposite end of the bar, which is connected to the water-pipe A, substantially as shown and described.

2. The combination of the hollow grate-bar K, tube A, valve-cage B with plug F, valve D *b*, and spring C, all constructed and arranged substantially as and for the purposes herein set forth.

143,035.—Bed-Bottom.—WILLIAM W. SKAATS, Cincinnati, Ohio, assignor to JAMES D. HENRY, same place. Application filed November 18, 1872.

A bed-bottom formed of rings and links, with springs at the ends, is attached to the cross-bars by hooks, one set of the hooks being double to regulate the tension.

Claim.—In combination with the attaching hooks *e* and the double tension-hooks *f*, the springs S, links *l*, and rings *i*, constructed and arranged as described, for the purposes set forth.

143,036.—Corn-Planter.—ARTEMAS M. SMITH, Chillicothe, Mo. Application filed February 3, 1873.

The rear side of the chamber beneath the seed-cup slide, through which the seed is conducted to the furrow, is a screen for the purpose of viewing the valve within.

Claim.—The screen F, for the uses and purposes substantially as shown and described.

143,037.—Tent.—JONAH B. SMITH, Chicago, Ill. Application filed July 23, 1873.

Claim.—The box A B, constructed with respect to the superficial capacity of a tent, and adapted to be used as a support and floor of the same, and also as a receptacle for packing the tent away, substantially as described.

143,038.—Propelling Canal-Boats.—OLIVER C. SMITH, Ipswich, Mass. Application filed July 17, 1871.

Bevel-gears and vertical and horizontal shafts are arranged on a rotating frame, and are so combined as to form a joint, by which universal motion is given to a frame supporting on its end the driving mechanism. The driving mechanism receives motion from the boat, and acts upon a rail on the banks of the canal.

Claim.—1. The arrangement of bevel-gears, vertical and horizontal shafts and frames, when combined substantially as described, so as to form a joint by which a movable arm can be turned around the shaft as an axis, and raised or lowered at the opposite end.

2. The pinion-shaft O, arranged to oscillate in its bearings, so as to keep it perpendicular with the rack S.

143,039.—Apparatus for Charging Gas-Retorts.—JOHN SOMERVILLE and JOHN ROBINSON, Dublin, Ireland. Application filed October 24, 1872.

By means of a grooved rail-track and a steam-engine in the retort-house a series of trucks carry the scoops and rakes for charging and drawing the retorts. The coal is carried up by means of an elevator.

Claim.—1. The combination of the cradle D, having detents or stops arranged in pairs on rocking-spindles, with the vertical rakes and the operating-levers, as described.

2. In a machine of substantially the described construction, the employment of a water-trough and pipes, as and for the purpose set forth.

3. The revolving tool, provided with cutters, as described, and adapted to receive a stream of water, as and for the purpose described.

4. The combination of the duplex scoops, constructed and arranged as described, with the arm *b* and bar *c*, as and for the purpose described.

5. The saddle V, having a drum adapted to take up the slack or let out the chain as the cradle D moves vertically, in combination with the scoops E, as described.

6. The combination of the coiled spring in box *a'*, and pinions *a² b' c'''* with the scoops, the stop *z*, and catch *y*, as described.

7. The combination of the rake *f* and U-shaped bar *d* with the bar *c*, sleeve K, and link *l*, as described.

8. The combination of the elements of the seventh claim with lever *o*, having stud A, lever *m*, and spring in box *j*, as described.

143,040.—Water-Wheel.—JOSEPH TANEY, Bangor, Me. Application filed September 5, 1873.

A water-wheel with spiral vents above and below at the outer rim, and a central discharge, so that the water will act upon it both by impact and pressure.

Claim.—A water-wheel having the curved vents *c* in its outer rim, and the central vents *i*, substantially as herein shown and described.

143,041.—Fire-Heater.—RODERICK F. THOMPSON, Batavia, N. Y. Application filed January 27, 1873.

The heater is situated vertically upon a stove that has an opening on top. A slide can be made to close this opening when the heating-drum is not in use, in which case the smoke passes up on the outside of the drum through a flue, to the chimney of the drum.

Claim.—The combination of the stove A, cover B, drum C, and flues D and *f* with their respective dampers, the whole arranged substantially as and for the purpose specified.

143,042.—Self-Closing Faucet.—JOHN W. TRAFTON, Chicopee Falls, Mass. Application filed December 18, 1872.

A faucet operated by a spring attached to a crank, the tension of said spring regulated by a polygonal bush, both spring and crank causing the faucet to close, if accidentally left open.

Claim.—The shaft *g*, crank *i*, spring *l*, and polygonal bush *n*, in combination with the valve *d* and body of the cock, substantially as set forth.

143,043.—Balanced Slide-Valve for Steam-Engines.—JOHN F. WALLACE, Pittsburg, Pa. Application filed June 12, 1873.

The valve is prevented from wearing round on its face by lengthening the seat and making the ports wider toward their outer ends. A flexible and balance plate is provided to prevent under pressure to the upper surface of the valve. The valve is also provided with steady-pins and devices for carrying off the waste steam that may leak through the valve-packing.

Claim.—1. The combination of the lengthened valve D with the valve-seat, having the steam-ports enlarged in it their entire width, substantially as herein described, and for the purpose set forth.

2. The combination of the balancing-plate *f*, packing-ring *e*, flexible plate *n*, bolts *j*, and jam-nuts *l* with the slide-valve D, substantially as herein described, and for the purpose set forth.

3. The combination of the set-screws F and springs *s* with the packing-ring *e* and flexible plate *n*, substantially as herein described, and for the purpose set forth.

4. The bolt *j*, provided with an opening, *w*, through it, in combination with the stop-cock *i*, balancing-plate *f*, and packing-ring *e*, substantially as herein described, and for the purpose set forth.

143,044.—Toy-Whistle.—JASON WATERS, West Sutton, Mass. Application filed April 28, 1873.

A series of hollow chambers, of different diameter, arranged together lengthwise, to be whirled through the air at the end of a string held in the hand.

Claim.—1. The rotating toy-whistle, constructed substantially as described, consisting of a series of conical chambers, B, provided with apertures A, substantially as set forth.

2. The rotating toy-whistle, constructed substantially as described, being the combination of a series of air-chambers of different diameters, B, with apertures A, as herein substantially set forth.

143,045.—Governor-Valve.—HORATIO B. WEAVER, Hartford, Conn. Application filed June 18, 1873.

The valves are attached to separate rods, the one passing through the other, and are operated independently by means of a governor.

Claim.—The combination of the barrel *a*, the ingress and exit pipes, valves *c* and *c'*, and valve-rods *d* and *d'*, all constructed, arranged, and designed for operation and use, substantially as described.

143,046.—Thread-Cutting Mechanism for Sewing-Machines.—ALEXANDER WEBBER, Lynn, Mass. Application filed May 15, 1873.

The cutter is shown as applied to a machine for sewing shoes, and when the lever is depressed to raise the presser from the work, the knife, through the described connections, is moved to sever the thread.

Claim.—The swinging knife-holder *n'*, having the knife *n* and arm *g* journaled in the adjustable standard *p*, and connected by the rod *r* with the bent arm or lever *s s'*, in combination with the vertical rod or plunger *k*, spring *u*, and lever *g*, substantially as described, for the purpose specified.

143,047.—Game Apparatus.—FREEBURY WEST and GEORGE S. LEE, Worcester, Mass. Application filed July 24, 1873.

To a game substantially like croquet are added glancing-boards or cushions, upon which to make carom shots.

Claim.—The rubber or wire cushioned rail E E and glancing-boards F F, constructed and arranged as shown, in combination with a field-game apparatus, substantially as described.

143,048.—Fire-Kindler.—EDWARD P. WHEELER, Corinth, Miss. Application filed August 27, 1873.

Claim.—A fire-kindler composed of clay, asbestos, and furnace-slag, substantially as and for the purpose hereinbefore set forth.

143,049.—Gathering and Ruffling Attachment for Sewing-Machines.—JOSEPH WEBB, Watertown, N. Y., assignor to THE DAVIS SEWING-MACHINE COMPANY, same place. Application filed August 30, 1873.

The gathering-blades are supported at the lower end of an elastic or spring bar secured by a screw to the supporting-plate attached to the head of the machine. The elastic arm is pressed from the needle by a reciprocating inclined bar, and carries the material toward the needle when allowed to spring back.

Claim.—1. In a gathering and ruffling attachment for sewing-machines, the combination, with a clamp or supporting-plate adapted to be fitted and fastened to the sewing-machine head, of an arm, in itself a spring, carrying on its lower end the gathering-blade or blades, or gatherer proper, and rigidly [illegible] at or near its upper end to said clamp, as herein shown and described, said arm being adapted to operate in connection with the sewing-machine needle-bar, or other part moving in unison therewith, or so as to derive a vibratory motion therefrom, substantially as described.

2. The combination, in a gatherer or ruffler for sewing-machines, of a clamp or supporting-plate adapted to be applied to the head of the sewing-machine, and a spring-arm carrying the gathering devices and removable from and vertically adjustable on said plate, substantially as herein shown and set forth.

3. The spring-arm, carrying on its lower end the gathering device proper, and at a point intermediate between its ends bent inwardly or toward the needle-bar or other moving part from which its movement is derived, the thumb-screw or its equivalent, by which the throw of the said arm is regulated, being located on the spring-arm at this point, substantially as shown and described.

4. The combination, with the supporting-plate and the spring gathering-arm, of a regulating-screw on the said arm, and a stop-piece on said plate for the purpose of arresting the forward movement of the arm at any desired point, substantially as shown and described.

143,050.—Disengaging Towing Apparatus for Boats.—JOHN H. WYBART, CHRISTOPHER PEMBTON, and CASPER J. WESTERVELT, Hackensack, N. J. Application filed February 28, 1873.

Claim.—The lever and brake L B, in combination with the boat, for the purpose of dislodging the chain or cable from the side-grooved rimmed wheel W.

143,051.—Knitting-Machine.—CHARLES H. YOUNG, Lake Village, N. H., assignor to JOHN S. CHASE and BENJAMIN F. PEARSON, same place. Application filed February 24, 1873.

For cutting apart the stocking-feet, produced as described in patent No. 136,140, August 6, 1872, and while knitting them. A disk, toothed so as to gear with and be revolved by the needles, carries the knives, which are brought, by the revolution of the disk, into the vacant spaces in the circle of needles, and raised by a cam on the disk to cut the loose threads in such spaces. The knives are so connected as to operate like shears. The step motion shifts the driving-belt on the completion of a determined length of web. The rim or flange is to prevent displacement of the needles, by the inward strain of the work, when their holding-plates are removed for any purpose.

Claim.—1. The cutter or cutters B C, arranged and operating substantially as herein described, in combination with the needle-cylinder A and needles *a a*, substantially as and for the purpose herein specified.

2. The automatic stop, composed of the spring-catch *c*, lever K, and rod L, or their equivalents, operating in combination with the belt-shipper G and work-suspending swivel M, substantially as and for the purpose herein specified.

3. The rim or flange *y* on the needle-cylinder A, arranged in combination with the needles *a a*, substantially as and for the purpose herein specified.

143,052.—Flexible Vertically-Extensible Attachment for Boats.—JOHN R. ADAMS, Oakland, Cal. Application filed July 12, 1873.

Flexible material is attached to the gunwale of a boat, which has notched standards and an adjustable hook, to which the upper or outer edge of the material may be fastened, thus affording a shield and protection to the passengers.

Claim.—The upright supports B having adjustable hooks *a* and notches *b* combined with lateral pieces D having top and side coverings C E, as and for the purpose described.

143,053.—Machine for Manufacturing Carpet-Linings.—EDWARD H. BAILEY, Brooklyn, N. Y. Application filed August 9, 1873.

The odoriferous powder is contained in a reciprocating box or hopper placed over the fiber-feeding apron.

Claim.—1. The combination, with a carpet-lining machine, of apparatus, substantially as described, for sprinkling odoriferous powder with the fibrous material before it is inclosed by the paper, but during the process of making the lining, substantially as specified.

2. The combination of the reciprocating box I, pan N, and the contrivance for actuating the box, substantially as specified.

3. The paste troughs and rollers arranged to rise and fall under the paper-rolls, and provided with cords and weights, and the brush-rollers provided with the gage-rollers to act upon the paper-rolls, substantially as specified.

143,054.—Bench-Hook.—DANIEL BOYCE, North Providence, R. I. Application filed March 3, 1873.

The hook is operated by a rack and endless screw.

Claim.—The combination of the bench-hook B provided with a rack, F, the worm-wheel E, and handle D, all constructed substantially as and for the purpose indicated.

143,055.—Cow-Coupling.—WILLIAM A. BOYDEN, Harrisburg, Pa. Application filed May 29, 1873.

The coupling-pin is jointed to a lever which is held down by a flat spring and raised by the center arm of the rock-shaft.

Claim.—The combination and arrangement of the rocking-shaft B provided with levers D D, and lifting-arm F with the lever G, and swinging connecting-pin I, substantially in the manner and for the purpose above described.

143,056.—Device for Raising Sunken Vessels.—LEWIS W. BOWEN, Chicago, Ill., assignor of two thirds his right to TIMOTHY M. CURTISS and HENRY H. LADD, same place. Application filed May 19, 1873.

An endless rope passes around a windlass secured on the floating vessel, and through a pulley-block firmly attached to the sunken ship. Buoys or barrels have a line permanently fastened to each of them, at the ends of which lines is attached a metallic staple. As the windlass is revolved hooks, which are fastened at intervals on the rope, may be made to engage with the buoy-lines, and thus drag the buoys successively down to the sunken vessel, where they are secured by a diver driving the staples into the vessel to be raised, until sufficient number of buoys are attached to float the ship.

Claim.—The combination with the vessel A, the windlass B, rope C, pulley c, and hooks d, as described, the rope acting to draw the barrel down through the water, substantially as specified.

143,057.—Piston-Packing.—JOHN C. BUDD, Union township, Bergen county, N. J. Application filed March 3, 1873.

Two split rings, one fitting in the packing-box, the other around the piston-rod, rest on the fibrous packing. A washer forces the smaller soft-metal ring against the larger ring, and close to the piston-rod, preventing the escape of the fibrous material.

Claim.—1. A cut metallic ring, constructed substantially as described, for packing piston-rods, as set forth.

2. The soft-metal ring *l*, arranged in relation to the rod C and washer e and ring u, substantially as described, whereby the soft-metal ring is compressed upon the rod to prevent the escape of the packing material, and to receive the wear caused by the friction of the rod, as herein set forth.

3. The herein-described packing for piston-rods, consisting of the washer e and the rings t and u, with the fibrous material, all constructed and arranged to operate substantially as set forth.

143,058.—Cooler for Water.—JOHN E. CAMMEYER, Brooklyn, N. Y. Application filed July 16, 1873.

A supply-pipe conveys water into a conical vessel driven into the earth, and when the water has become cooled it may be withdrawn through a delivery-pipe whose lower end extends nearly to the bottom of the conical vessel.

Claim.—A tubular water-cooling vessel provided with a conical point, so as to be forced down into the earth, and to which vessel the pipes b and c are connected, as set forth.

143,059.—Refrigerator.—CHARLES CAMP, Mount Haven, N. Y. Application filed June 23, 1873.

A revolving perforated shaft provided with swinging shelves communicates with an ice-chamber, and is held in any desired position by a screw.

Claim.—1. The removable ice-box C, in combination with the box A and removable partition B of a refrigerator, substantially as herein shown and described.

2. The hollow perforated shaft F, the four-armed plates or spiders I, and the swinging shelves J, in combination with the box A, the removable partition B, and the ice-box C, substantially as herein shown and described.

3. The combination of the set-screw K with the perforated hollow shaft F that carries the swinging shelves J, substantially as herein shown and described.

143,060.—Washing-Machine.—ARTHUR M. CAMPBELL, Kline's Grove, Pa. Application filed July 19, 1873.

Claim.—1. The quadrangular frame C C, having legs B, embracing and combing the rude-box A, and forming the bearings of the crank-shaft O, as shown and described.

2. The combination of the U-spring K with the lever J and cam I of the pressure-board, and with the pivot-pin thereof, as and for the purposes specified.

143,061.—Device for Generating and Burning Hydrocarbon Vapor.—CALVIN CARPENTER, Jr., Seekonk, Mass., assignor of one-half his right to JAMES F. MADELL, Providence, R. I. Application filed June 23, 1873.

Steam and gas are generated together in the same boiler. After being used as a motive power the compound passes into a receiver, thence through a superheating coil in the furnace into an annular chamber, and is burned from nozzles projecting therefrom into said furnace. Gas which is not consumed is condensed by a gas-trap, passes through a water-tank.

Claim.—The combination of exhaust-chamber N, the still-worm U with water-tank condenser T, the pipe-coil O, and nozzles S S, for the purposes of regulating and applying the hydrocarbon-laden vapor of steam, as fuel, as specified and set forth.

143,062.—Faucet Attachment.—JAMES CHURCH, St. Louis, Mo. Application filed April 12, 1873.

A cup fixed with an india-rubber disk surrounds the faucet at the point where it enters the vessel, a tight joint being secured at this point by means of an india-rubber band.

Claim.—In combination with a faucet, a waste-receptacle composed of the cup A, with flexible rim F and bottom E, as shown and described.

143,063.—Broom-Manger.—MARY A. CLIFFORD, Boston, Mass. Application filed July 26, 1873.

A spring-hand for encircling a broom-handle has a spring-loop attached to it by eyes.

Claim.—The two expansible springs A B, combined in the manner described, to form a hanger for brooms and other articles.

143,064.—Pruning Instrument.—WILLIAM H. COLLINGS, Raytown, Mo. Application filed May 10, 1873.

A hook embraces the limb and holds it firmly while a saw is operated by means of a shaft, which has a vertical movement within the handle of the hook.

Claim.—The hook H and saw I, combined with the hollow socket A and a rod, B, movable in said socket, as and for the purpose set forth.

143,065.—Whip.—FREDERIC P. COMBS, Westfield, Mass. Application filed June 25, 1873.

Claim.—In a whip, the screw A, the ferrule C, the handle B, the braiding c, and the stock D, arranged and combined as set forth.

143,066.—Fire-Kindler.—JOHN C. CROMPTON, Allegheny City, Pa. Application filed July 16, 1873.

Claim.—A fire-kindling pile or faget, composed of a series of wooden blocks or strips, fastened together with intermediate air-spaces, and coated wholly or partially with a resinous or oleaginous compound and sawdust, substantially as set forth.

143,067.—Saw-Sharpening Device.—JOHN B. DRAKE, Goshen, Ind. Application filed March 28, 1873.

Claim.—The file-guide B, having, at one end, jaws C C, to hold the file, and rounded at the other, to slide in a hole, combined with a guide, F, that is adjustable laterally with the frame G H, as and for the purpose described.

143,068.—Tap-Holder Attachment for Beer-Coolers.—JOSEPH HYDE FISHER, Chicago, Ill. Application filed August 23, 1873.

The rubber packing-ring is clamped between two metal rings by means of screws, and projects within their inner circumferences so as to closely fit the faucet and prevent the escape of cold air from the cooling-box.

Claim.—A packing for tap-holes of beer-coolers composed of the metal clamping-rings D E and rubber packing-ring F, arranged in two parts, of which one is fastened to the box, and the other to the door, in connection with the tap-hole, substantially as specified.

143,069.—Barge-Pump.—CHARLES P. GAVER, Ashland, Ky. Application filed February 25, 1873.

The valves are hinged at opposite sides of the opening in the base-plate, meeting in the middle of the opening and resting on rubber packing, such arrangement allowing the valves to open inward and allow a stream of water the full size of the bore of the tube to enter when the pump-piston is lifted.

Claim.—The combination, with the tube D and base A, of the valves F F and packing H, substantially as and for the purpose hereinbefore set forth.

143,070.—Atomizer or Vaporizer.—JOHN H. GERARD, New York, N. Y. Application filed August 4, 1873.

A flexible bulb on top of the vessel containing the liquid to be vaporized or "atomized" forces a jet of air down upon the liquid so as to force the liquid up through the discharge-pipe, and another jet of air along with the small stream of outflowing liquid so as to convert it into spray.

Claim.—1. The combination in a vaporizer of an air-nozzle surrounding the liquid-nozzle and arranged to concentrate the air-blast upon the liquid-jet, in the manner described.

2. The collapsible bulb attached to the hollow stopper by stretching the mouth over the head into the groove C, substantially as specified.

3. A vaporizer having the air-inlet at the ejecting-nozzle so as to dispense with the inlet-valve, substantially as specified.

143,071.—Ironing-Table.—WALTER B. GROSS and SIMON H. FORNEMAN, Reading, Pa. Application filed August 26, 1873.

The table is formed of a frame with four hinged legs, held by braces. One brace is hinged to the ironing-board, which is hinged to a board that is permanently attached to the frame. The other end of the ironing-board rests on a movable end piece.

Claim.—An ironing-table consisting of the frame A, hinged or folding legs B, braces C C and D, hinged ironing-board E, and movable supporting end piece G, constructed and arranged to operate substantially as and for the purposes described.

143,072.—Bench-Plane.—CYRUS H. HANDY, Boston, Mass., assignor to JOHN SULLY, trustee. Application filed May 29, 1873.

Claim.—1. In a bench-plane, a curved shield or guard, A, having beveled projections of prongs b', arranged and operating substantially as specified.

2. In a bench-plane, the combination of a curved shield or guard, A, wedge-block f, and blade e, all arranged and operating substantially as described.

143,073.—Fuel for Making Steam, &c.—JOHN T. HAWKINS, Salisbury, Vt. Application filed August 20, 1873.

The mold is formed on the end of the stick, ready to be severed by a cut-off saw.

Claim.—The stock A, having the conical socket C, cylindrical socket D, gutter E, and G, and the cutter H, I, constructed and arranged, substantially as described.

143,074.—Cotton-Gin.—EMMA HUNTSMAN, Little Rock, Ark. Application filed January 25, 1873.

The cotton, being delivered into one end of a hopper over the gin, is conveyed to the other end by fingers on the endless belt passing up through the parallel wires forming the bottom of the hopper. A revolving-grooved cylinder here raises the fiber and forces it downward through the adjustable gates to the gin, said gates being cleaned in their passage by a comb in the rear.

Claim.—1. The arrangement of the bristles I obliquely to a plane passing through the axis of motion to bring them with greater force against the saws, and to prevent them from being sprung backward, as set forth.

2. The sectional collars G and sectional saws A, combined with the shaft R, as and for the purpose set forth.

3. The combination of the comb F, open-wire bottom Z, and the carrier W Y, substantially as specified.

4. The combination of the vertically-adjustable finger-board S' with the open wire bottom Z and the carrier W Y, substantially as specified.

5. The combination of the discharging-teeth U' with the carrier W Y and the open-wire bottom Z, substantially as specified.

6. The bristles arranged parallel to each other radially and in separate rows on a roll, B, as and for the purpose described.

143,075.—Fastening-Hooks.—JOHN S. HICKS, Roslyn, N. Y. Application filed August 4, 1873.

Claim.—A hook provided with index-tags bound into the hook with its leaves, and projecting beyond the side edges thereof, as shown and described.

143,076.—Windmill.—JONATHAN HOAG, San Ramon Valley, Cal. Application filed August 2, 1873.

A curved lever is pivoted on the wheel-support, one end of which is forked, and is placed between two collars on the shaft, which had a longitudinal play; the other end is connected by a brace to the hinged vane. The centrifugal force of the wheel is thus made to draw the vane around, which throws the wheel more or less out of the wind. A weight is so attached to the curved lever as to draw the vane back into the wind when the violence of the latter decreases.

Claim.—1. The shaft D of a windmill moving longitudinally in its boxes, and provided with the eccentric I, together with the lever J, connected with the hinged tail L, for the purpose of turning it to an angle with the side of the shaft, substantially as herein described.

2. The weight O, with its cord P passing over the pulley R and connected with the lever J, in combination with the tail L and the connecting-arm K, for the purpose of returning the tail to its position in line with the shaft, as herein described.

143,077.—Wheel for Vehicles.—ROLLA R. JONES, Piller Point, N. Y.—Case A. Application filed May 24, 1873.

Claim.—1. The combination of divided socket D with the screw E b, nut F, felly B, and spoke C, said parts being arranged as shown and described.

2. The combination of cap G, having flanges f, with the nut F and felly B, having open recess for said nut, as set forth.

143,078.—Wheel for Vehicles.—ROLLA R. JONES, Piller Point, N. Y.—Case B. Application filed May 24, 1873.

Claim.—The plate B, pin C, flange-cap D G, and ferrule H, constructed and combined to form an intermediate connection between spokes and follies, substantially as set forth.

143,079.—Grate-Bar.—HENRY C. KESSNER, Cleveland, Ohio. Application filed June 13, 1873.

Movable and stationary bars, having slanting teeth, are set opposite to each other to break clinkers.

Claim.—A grate composed of a stationary and a movable set of bars, and which have teeth arranged in opposite directions upon their tops, so as to break and grind clinkers, substantially as shown and described.

143,080.—Metal-Planing Machine.—JOHN T. KINSMAN and WILLIAM H. OENSATT, Philadelphia, Pa. Application filed August 16, 1873.

A circular face-plate is mounted horizontally in a frame, which is supported above or alongside of the work, by posts passing through arms made adjustable by means of the said posts and bolts. The face-plate on their upper ends, and provided with set-screws in which rests the axle-bearings. This axle is provided with a screw bearing on its outer end a pilot-wheel and engages with on the stationary frame. The shaft has an adjustable sliding pin with which a pinion engages. The cut-off is effected automatically by means of a lever, commencing at or near the center and extending toward the edge.

Claim.—1. The supporter B for said rotating tool-carrying disk, mounted on standards W, adapted for attachment to a steam-cylinder by screwing in the holes for the steam-chest bolts, substantially as specified.

2. The combination of the adjustable screw A' with the said supporter B and the stand [illegible]

3. The arrangement of the driving-shaft O, face-plates U, clutch V, driving-shafts O P, and wheels M, N, R, and S, with the revolving tool-carrying disk A, substantially as specified.

143,081.—Grain-Separator.—JOSEPH KOONS, New Antwerp, Minn. Application filed June 14, 1873.

Claim.—The shafts B, wheels C, upper rods D, lower rods E, or equivalent pins, cranks K, connecting rods L M, and wheel N, provided with an adjustable crank-pin, in combination with each other and with the rock F G H and the conductor I, [illegible] as herein shown and described.

143,082.—Automatic Toy-Dancer.—WILLIAM A. P. LA GROVE, Brooklyn, N. Y., assignor to MESSRS. CHARLES O'NEIL, same place, and HENRY H. WEBB, Newark, N. J. Application filed April 1, 1873.

Clock-work in the base gives a reciprocating vertical motion to the supporting-wire to which the figure is attached.

Claim.—In combination with the jointed dancing figure, the vertical wire A, reciprocated in the guides c by the connecting-rod d, crank e, shaft, and gearing, substantially as described.

143,083.—Car-Brake.—ANTOINE LAMBELLIN, Concord, N. H. Application filed April 16, 1873.

A friction-wheel is secured to a supplementary axle, which is journaled in sliding bearings. The friction-wheel is forced against the main wheel by means of a lever, whereby a chain is wound upon the supplementary axle, forcing outward a pair of levers, which in turn force inward the heads of the sliding ears and operate the brake.

Claim.—The brake for cars composed of the bumpers a a, b b, c c, the rods h i j, and y, the friction-wheels e e, the levers f and m with the chains thereto attached, the levers l l, the rod k with spring, the rod d with spring n, the lever o, the slide x, and the whiffletree p with the chains thereto attached, said devices or their equivalents combined and adjusted to operate as and for the purposes set forth.

143,084.—Jeweler's Bolting Device.—JOHN K. LAUDERMILCH, Lebanon, Pa. Application filed July 24, 1873.

Claim.—1. The spindle C constructed with the twisted portion x, the traversing-nut r conformed to said twisted portion, and the spring D having the bearing-cup f adapted thereto, in combination with the tubular handle A E, as herein shown and described, for the purposes specified.

2. The tubular handle A and its cap B, constructed with the notches s s' and lug y, as represented, in combination with the spring D and bit-spindle C, operating as herein described, for regulating the tension of the spring.

143,085.—Spring for Vehicles.—GEORGE W. LEWIS, Portsmouth, Va., assignor to himself and C. W. WALKER, same place. Application filed May 17, 1873.

A half-elliptic spring made in two parts, which are divided by an elastic block. The two lower leaves of the under section are bent upward, and inclose the longer leaf of the upper section.

Claim.—1. The two springs A B, the long sections of the latter held by the backwardly-curved ends of sections a b of the former, in the manner described.

2. The yoke F and medius block D, combined with spring-sections having the corrugations F, as and for the purpose set forth.

143,086.—Wagon-Seat.—MICHAEL LIKES, Mansfield, Ohio, assignor to himself and J. H. BARR, same place. Application filed July 19, 1873.

The seat is thrown forward and inclines beyond the foot-board, by means of risers produced at a certain angle, and pivoted to the sides of the wagon-box.

Claim.—The angular supports or risers B, pivoted at their lower ends to the side of a wagon or other vehicle, and supporting at their upper ends a seat, C, in combination with a step, as and for the purpose specified.

143,087.—Saddle-tree Wire Ways.—THOMAS M. MARTIN, San Francisco, Cal., assignor to himself and ANDREW S. HALLIDIE, same place. Application filed August 5, 1873.

Claim.—The combination of the inside india-rubber with the middle-frame A, substantially as and for the purpose above described.

143,088.—Book and Paper Clamp.—JAMES P. MCILRAY, Brooklyn, N. Y. Application filed February 20, 1873.

The hollow handle has a free shaft passing through it beyond either end and terminating in spools thereon, upon which the cord is wound, drawing the clamps together by the rotation of the shaft actuated by the spiral spring contained in one end of which is fastened to the handle and the other to the shaft, whose rotation is governed by a thumb-screw passing through the handle and impinging upon the shaft-collar.

Claim.—A self-winding book-clamp or paper-clamping file having a stationary cylindrical handle, A, with or without the guard B, and provided with a revolving spindle, D, [illegible] gear-wheel c, fixed nut and pin e, handle f f', [illegible] a the whole arranged and combined and operating substantially the cord d, [illegible] as and for the double purpose as above set forth.

143,089.—Apparatus for Extracting Cane-Juice.—DUNCAN MOFFAT, New Orleans, La. Application filed August 14, 1873.

A presser-guide is placed in advance of the upper roll and close to the cutting-knife to press the crushed cane down on the delivery-roll, from whence it falls into the upper chamber of the vat; becoming saturated with steam, is delivered by the revolving bottom into the lower compartment of the vat, where it is pulped, the juice escaping through perforations into a receiver, and the refuse cane onto a traveling belt.

Claim.—1. The arrangement of the compressing-guide B and spring D with the delivery-rolls A and the rotary cutters E, as and for the purpose specified.

2. The steaming-vat G, having an upper steaming-compartment, H, and a lower one, L, separated by the valve K, and the latter compartment having beaters M and N and a perforated bottom, O, substantially as specified.

3. The arrangement of the endless carrier Q and the trough R with the steaming and straining vat G, substantially as specified.

143,090.—Boy's Sled.—SAMUEL D. MOTT, Milford, Pa. Application filed August 9, 1873.

The springs, cross-bar, runner, and cords are so arranged as to be applied to a coasting-sled, which can be guided altogether by the hands.

Claim.—The springs D, cross-bar E, pivoted runner F, cross-bar H, and cord I, constructed, combined, and applied to a coasting-sled, substantially as shown and described, and for the purpose set forth.

143,091.—Propelling Mechanism for Vessels.—LINDSAY MURDOCH, Marble Hill, Mo. Application filed June 21, 1873.

Claim.—A horizontally-sliding frame, C, and a bar, B, carrying at its lower end paddle-floats sliding vertically therein and horizontally therewith, combined with the crank-shaft of a boat or vessel, as and for the purpose described.

143,092.—Quilting Attachment for Sewing-Machines.—WILLIAM H. NULL, Blandinsville, Ill. Application filed April 12, 1873.

The quilt being stitched is rolled from one roller to the other and passes under the guide-bar, and the adjusting devices enable the rollers to be moved, and the holding devices retain them in proper position. The nippers, actuated by the cord, assist the operator in moving the central portion of the quilt evenly with the carriage. The "bench" devices enumerated in the last two clauses support the carriage beyond the machine-plate, and are adjustable for machines of different sizes, and are otherwise constructed to avoid friction.

Claim.—1. The combination, on a carriage adapted to operate in connection with a sewing-machine in the manner described, of the rollers G, C, and E, guide-bar F, presser-bars I, and adjusting and holding devices R, L, and M, substantially as specified.

2. The combination of the griper Q with said carriage and rollers, substantially as specified.

3. The combination, with the griper, of the actuating-cord T, substantially as specified.

4. The combination of the stop-disk W, pointers X, and spring-stop Y with the roll C, substantially as specified.

5. The combination of the bars *c*, wheels *i*, adjusting-bars A, and wheels *j* and *k* with a carriage having the long notches *u* in the tracks, substantially as specified.

6. The vertically-adjustable standard *b*, oscillating bars *a*, and adjusting lever-support *g*, combined and arranged substantially as specified.

143,093.—Adjustable Tongue for Organ-Reeds.—MARIA PROCOPÉ, Stockholm, Sweden. Application filed February 21, 1873.

The reeds are tuned by changing their vibrating lengths through a movable clamp operated by rack and pinion.

Claim.—1. The tuning-key E, arranged in combination with the slide C and finger B, as set forth.

2. The combination of the movable tongue A, slide J, screw I, rod *e*, slide L, and plate *f*, all arranged as specified.

143,094.—Machine for Rolling Sword-Blades.—JULIUS C. RICHARDSON, Philadelphia, Pa., assignor of one-half his right to E. REMINGTON & SONS, Ilion, N. Y. Application filed June 2, 1873.

The blank cut from a strip of steel is passed successively through the grooves in the rolls—alternately through four grooves to form it, and edgewise through the others to straighten it.

Claim.—1. The dies B, having formed in their faces the drawing and edging grooves, substantially as shown and described.

2. In combination with the dies B, having the grooves formed therein, as described, the stop-bar I and the guide-bar F, having the ribs or projections *e* thereon, all constructed and arranged to operate as and for the purpose set forth.

143,095.—Sheep-Plow.—WILLIAM J. ROBBINS, Cold Spring, N. Y. Application filed May 31, 1873.

Within a frame attached forward of the engine is journaled in suitable bearings a cone-shaped snow-cutter, which is caused to revolve by its being geared to the forward axle.

Claim.—The revolving cone-wheel C, having the wings H, applied in front of a locomotive, as and for the purpose set forth.

143,096.—Compound for Sanitary and Decorative Articles used in Building.—JOHN RUST, Bond Street, Vauxhall, England. Application filed March 12, 1873.

Claim.—1. A compound formed of equal parts of ground glass and sand, or their equivalents, fused, cohered by some liquid, molded, and baked, in the manner and for the purpose described.

2. A compound of equal parts of fused and powdered glass and sand, mixed with five or more parts of clay or sand, cohered with liquid, molded, and baked, as set forth, and for the purpose specified.

143,097.—Nut-Lock.—DANIEL SAWYER, Washington, Ind. Application filed January 16, 1873.

A slotted metal plate having a flange which bears against the side of the nut, is hinged to an elongated stud having a spring attached, secured to the washer.

Claim.—The steel pieces D, having spring *d*, and secured edgewise to a washer, C, arranged under nuts B B, in combination with a hinged slotted plate, E, having turned-up edge *e'*, as and for the purpose described.

143,098.—Needle-Threaders for Sewing-Machines.—THOMAS SCHOFIELD, Grass Valley, Cal. Application filed June 7, 1873.

The hook is passed through the eye of the needle and the thread is drawn back with it. The screw adjusts the hook with relation to the guide for the side of the needle, so that the hook is opposite the eye, and it may be adapted to needles of different size.

Claim.—The screw *g*, plate *f*, and guide, combined with handle A and hook B, as and for the purpose described.

143,099.—Car-Coupling.—AUGUST SCHONE and BENJAMIN VAN VALKENBURGH, Cobleskill, N. Y. Application filed February 15, 1873.

The lower part of the mouth of the draw-head is hinged, and is held in place, when the cars are coupled, by a sliding band operated by a forked lever. To uncouple, the band is moved to the rear, and the bottom turns on its hinges, and thus the link is allowed to fall out of connection.

Claim.—1. The sliding band C applied about a draw-head, having one hinged and falling jaw, as and for the purpose set forth.

2. A forked lever, D L L, applied to the loops K K of sliding band B, as and for the purpose specified.

143,100.—Wind-Wheel.—NICHOLAS SHEPLAR and DANIEL SHEPLAR, Murrayville, Ill. Application filed July 19, 1873.

The wings are hinged at one side to the rigid wings of the shaft, and connected by cords and a weight attachment, so that the movements of the wings are made simultaneously, and the pressure on them equalized.

Claim.—1. The wings E, hinged at one side to the rigid wings D of shaft B and connected by cords F, in combination with a suitable weight attachment having a function like that shown and described, whereby the movements of said wings are made simultaneously and the pressure on them is equalized, as set forth.

2. The combination of the arm H, cord I, pulleys J K, cord L, and weight M with the hinged wings E, cord or chain F, stationary wings D, and perforated shaft B, substantially as herein shown and described.

143,101.—Rabbet-Plane.—FRANCIS SMITH, Boston, assignor to JOHN SULLY, trustee, Dedham, Mass. Application filed May 26, 1873.

The cutting-blade is inserted from the side of the plane, and held by the gib. The blade extends entirely across the face of the plane, the front end being attached to the rear end by the goose-neck.

Claim.—The combination of the bar or goose-neck *c*, formed with flanges *d e*, and block or wedge *g*, blade *f*, and plate *a*, all arranged substantially as herein set forth.

143,102.—Coffee-Pot.—MARGARET J. SIEBENECK, Youngstown, Ohio. Application filed May 5, 1873.

The perforated spraying-drum is provided with elbow-tubes connected to, but detachable from, the circulating-tubes. The coffee-bag is attached to the removable drum.

Claim.—1. In combination with the pot A, steam-chamber C, and circulating-tubes D, the detachable perforated spraying-drum F, provided with elbow-tubes E, and carrying a coffee receptacle or bag, G, as herein shown and described.

2. The bag G, provided with an upper rim or hoop, *d*, bent as shown, and supported by legs *b b* on the tubes E E, as set forth.

143,103.—Hat-Former.—GEORGE W. SWAN, San Francisco, Cal. Application filed July 30, 1873.

A cylindrical former, around which the material is wound, is provided with a clamp which holds the parts in place while being nailed or otherwise secured.

Claim.—The block A with its tail-piece B, and having the longitudinal channel C, in combination with the clamp having the two jaws *d f* and ring *h*, or equivalent fastening, substantially as and for the purpose above described.

143,104.—Shuttle for Sewing-Machines.—WILLIAM H. THAYER, Somerville, assignor of one-half his right to AMOS J. TOWNE and JOHN J. CELLEY, Boston, Mass. Application filed July 12, 1873.

The compensating-spring forces the edge of the bobbin-head against the wall of the shuttle, and the thread between the spool and the delivering-orifice in the shuttle passes through this spring, and its pressure on the bobbin-head is regulated according to the quantity of thread on the bobbin.

Claim.—The combined compensating-spring and latch-bar C *f*, when constructed, arranged, and operated in the manner substantially as described, and used in connection with a bobbin and shuttle of a sewing-machine, for the purpose set forth.

143,105.—Tanning Compound.—WALDEMAR TIELMANN, Cleveland, Ohio. Application filed August 19, 1873.

Claim.—The herein-described compound for tanning skins and hides, consisting of either the chloride of barium, muriate of baryte or baryta, in combination with tannin, sugar, or its saccharoids, substantially as specified.

143,106.—Preservation of Pulp, Paste, or Slip Pigments.—PETER COOPER TIELMANN, New York, N. Y. Application filed September 6, 1873.

The paints are packed in wooden vessels which are lined with an insoluble varnish of paraffine, shellac, wax, or oil-paint.

Claim.—The method of preserving pulp or slip-pigments, substantially as herein described.

143,107.—Oil-Can.—ORRIN H. WARREN, Baldwinsville, N. Y. Application filed August 16, 1873.

To a hollow tube, having an oil-receptacle, is secured a hollow handle provided with an air-chamber and an oil-receptacle. To the tube leading into the air-chamber is secured a rubber bulb. The discharge-pipe extends nearly to the bottom of the handle, and is provided with a valve. A small tube connects the upper with the lower oil-receptacle. The bulb being compressed, the air forces the oil through the discharge-pipe. The bulb, expanding, draws the oil from the upper to the lower receptacle.

Claim.—1. The oiler for elevated parts of machinery, consisting of tubular rod A with oil-receiving chamber D, handle C with air-chamber C', bulb E, and air-receptacle F, in combination with discharge-pipe B, all arranged and operated substantially as and for the purposes described.

2. The oil-receiving chamber D in combination with air-chamber C', tube *e*, valve *e'*, and bulb E, to draw oil down from the oil-chamber into the chamber C' by the expansion of the bulb, as set forth.

3. The combination of valve *f* of discharge-pipe B with air-chamber C' and bulb E, to force oil through discharge-pipe to elevated machinery, as described.

4. The combination of bulb E, by tube *i i'*, with air-chamber C' and F, to prevent access of oil to bulb, as specified.

5. The discharge-pipe B, having double U-shaped end with ears *l*, for the purpose set forth.

6. The valve *f*, consisting of outer guide-tube *f' g*, inner tube *f' g'* with orifice *g'*, and stop A for securing regularity in action, as described.

143,108.—Shirt.—WILLIAM B. WATSON, Somerville, Tenn. Application filed July 10, 1873.

Neck-band of the shirt is adjustable in size.

Claim.—A shirt having the bosom D, yoke A A', and collar-band C, constructed and arranged substantially as and for the purposes specified.

143,109.—Bracelet.—HARRISON A. WILLIAMS, Mansfield, Mass. Application filed June 7, 1873.

A body-plate of rubber, in the form of a buckle, a loose tongue, and a series of plates, are connected by elastic cords, the plates at the opposite end from the buckle being provided with perforations for the reception of the tongues, and which is kept in proper position by the tension of the holding-cord.

Claim.—The combination of the plates *a* and *b* with the body of the buckle and its tongue, when constructed and secured together substantially as described.

143,110.—Harvester.—THEODORE YATES, Milwaukee, Wis. Application filed December 6, 1872.

The inner bearing of the reel-shaft is supported on a pivot, and the outer bearing is made detachable, so that the reel may be swung around to permit the lifting of the platform. The reciprocating rake is driven by a belt connected by a pitman to a crank on the rake-shaft.

Claim.—1. The main frame A, having the endless belt, with its driving mechanism mounted thereon, in combination with the slotted platform provided with the reciprocating tilting rake, the latter being connected to the belt K by the crank I and pitman J, all being constructed and arranged to operate substantially as described.

2. The reel-shaft having one end mounted in a pivoted bearing, and the opposite end detachable from its bearing, substantially as shown and described, in order that the reel may be swung around horizontally.

143,111.—Windmill.—JOHN Q. ADAMS and H. RAYMOND ADAMS, Marseilles, Ill. Application filed July 9, 1873.

Weights are attached by projecting stationary arms to the sections of the wind-wheel, so that the centrifugal force made by the rotation of the wheel shall throw out the weights to open the sections and incline them from the wind. There is also a flanged disk mounted loosely upon the shaft of the wheel, connected by a coiled spring to an interior hub secured firmly to said shaft, and by radial rods to the inner ends of weighted arms, so that the centrifugal force of the weights shall act against the tension of the spring to open the sections uniformly and gradually as the velocity of the wind increases, and throw them back into the wind as the centrifugal velocity of the weights diminishes.

Claim.—1. The pivoted sections provided with transverse weighted arms, in combination with the connecting-rods and spring-disk, loosely mounted on the wheel-shaft, substantially as described.

2. The pivoted sections provided with transverse weighted arms, in combination with the connecting-rods, loose spring-disk and brake, as and for the purposes set forth.

3. The adjustable collar or hub, in combination with the flanged disk and coiled spring, substantially as described.

143,112.—Fire-Escape.—LLEWELLYN E. AINSWORTH, East Bolton, Canada. Application filed September 18, 1873.

The ladder is held in place by the tooth on the bent arm, and is released by depressing the lever-arm.

Claim.—The combination of the pronged and bent bar G, tooth *a*, and lever J, with a ladder, A B, all constructed substantially as and for the purposes herein set forth.

143,113.—Filter.—CHRISTIAN ANDERSEN, Brooklyn, N. Y. Application filed August 7, 1873.

In the center of the perforated top of a vessel containing suitable filtering material is the discharge-chamber, having a perforated bottom. From the top of this chamber extends the discharge-pipe, and from the bottom a bell-mouthed tube. The liquid is admitted to the filter through a sand-chamber, which constitutes the top of the apparatus. By this arrangement the liquid must pass down through the filtering material, and then up again, in order to reach the discharge-chamber.

Claim.—1. The arrangement of a discharge-chamber, B, with a perforated bottom, in the perforated top of the filtering-vessel A, substantially as and for the purpose shown and described.

2. The pipe D, extending downward from the discharge-chamber B, in combination with this chamber and with the filtering-vessel A, substantially as set forth.

3. The sand-vessel E, in combination with the filtering-vessel A, perforated top *a*, and discharge-chamber B, all constructed and operating substantially as and for the purpose described.

143,114.—Pruning-Shears.—WILLIAM E. HALL, Bethesda, Ohio. Application filed February 27, 1873.

The instrument can be used with a single long handle, and will cut with a simple downward pressure upon said handle. A second handle can be placed upon a tang, extending out from one of the links for that purpose; and the instrument will then serve without further change for a double-handled instrument for hedge-trimming.

Claim.—1. The cutting-jaw *b*, constructed with the long lever arm or stem *y* and the link *d*, corresponding in length to said stem *y*, and constructed with the supplemental handle-tang *w* at an angle thereto, as described, in combination with the hook-jaw *a* having a short arm or stem, *z*, and the straight extended handle-tang *c x*, these parts being pivoted together, and operating either with a long pull-handle, *h*, or a pair of short handles, as set forth.

2. The smooth hook-jaw *a*, having the spur or tooth *v* at its extremity, as described, in combination with the cutting-jaw *b* having a convex blade, for the purpose specified.

143,115.—Cream-Strainer.—RICHARD W. BARNARD, Kennett Square, Pa. Application filed July 16, 1873.

A cylindrical vessel, having an inverted conical elongation beneath it which terminates in a small cylinder, said cylinder having a close bottom, and being perforated laterally, except about a fourth of its length next the bottom, a piston moved by rod operated above serving to compress sediment and clear the perforated sides for the escape of the fluid.

Claim.—1. A cream-strainer, consisting of a vessel contracted at the bottom to form a perforated extension, B, and provided with a plunger adapted to said extension, substantially as described.

2. The tubular extension B of the said strainer, having a solid bottom and perforations *a* at the sides terminating at some little distance above the said bottom so as to form a receptacle, *b*, for the purpose specified.

143,116.—Covered Vessels.—WILLIAM BATES, Dale Hall Burslem, England. Application filed July 11, 1873.

The cover is formed somewhat smaller than the circumferential recess, and is prevented from falling off the body when tipped by sliding into said recess.

Claim.—A tea-pot or other spouted vessel, having at the upper edge of its body an internal lateral recess for receiving and retaining a cover, all as set forth.

143,117.—Violin.—JOSEPH BELKNAP, Adrian, Mich. Application filed July 15, 1873.

Claim.—1. As a new article of manufacture, a violin having the body 1 made wholly of metal, substantially as set forth.

2. The combination of the metallic body 1, bridge 2, and tubes 3, substantially as shown and described.

143,118.—Weighing-Platform.—FREDERICK BLECKMAN, Washington, assignor to JOSEPH F. IRBE, St. Louis, Mo. Application filed July 18, 1873.

A purifying-box, constructed as claimed, is provided with a cover having a spout communicating with the front end of the box, and sliding plates over the same to a flat case, for drawing off through the spout the light substances separated from the weighings by a current of air.

Claim.—1. The purifying-box B, constructed as described, with inclined seat-boards D, sieve E, inclines G G, and slide G', all arranged substantially as set forth.

2. The purifying-box B, sieve E, inclined feed-board D, inclines G G, cover H, fan K, spring-supports C C, and slide G', all combined in the manner and for the purpose set forth.

143,119.—Retractible Canopy.—WILLIAM BOURDERON, Providence, R. I. Application filed June 26, 1873.

A central hub is inside with arms which turn upon a wire that encircles the hub. On the outer ends of the arms are projecting pins which enter corresponding holes in the outer frame. The outer frame is hinged at the four corners, and is made in two sections, which are joined by sockets and pins on the two sides. Two of the arms extend through and beyond the frame, and are mortised into a block which receives the supporting-standard.

Claim.—1. The frame-work, consisting of the hub A, arms B B, pins *a a*, the hinged frame C, socket *d*, and pins *e e*, made substantially as described.

2. The combination of said frame-work with the block D, standard E, adjustable clamps F F with their thumb-screws *f f*, made and used substantially as described.

143,120.—Stove-Pipe Connection.—GEORGE F. BRINKERHOFF, Bucyrus, Ohio. Application filed July 12, 1873.

The stove-pipe is kept in place in its thimble by a hook which connects the collar to the pipe and prevents its outward movement, while two flanged springs attached to the inside of the collar prevent inward movement of either pipe or thimble.

Claim.—A stove-pipe collar having the outer guard-hook *d* and the inner spring D, each dividing to form two spring branches, *a' a'*, *b' b'*, respectively, outward and inward at their ends to keep the collar in the wall-hole and to locate the stove-pipe, substantially as specified.

143,121.—Automatic Toy Dancer.—HENRY L. BROWER, New York, assignor to JOSEPH DE F. BROWER, Yonkers, N. Y. Application filed July 22, 1873.

A toy dancing-figure, flexibly limbed, is connected by a horizontal spring extended to an escapement, with clock-work. The parts readily detach and fold together for transportation.

Claim.—1. The horizontal spring-lever C, connected to the figure M, in combination with clock-work G, substantially as herein specified.

2. The balance-spring N, in combination with the dancing figure, connecting spring-lever, and operative mechanism, as herein specified.

3. The dancing-figure M, having wiggle or loose-locking joints *a' a'*, and operated by clock-work escapement, a spring-lever, C, and a balance-spring, substantially as herein specified.

4. The folding frame A *a* B *b* and detachable lever C, in combination with such frame and with a dancing figure, M, and clock-work G, as herein specified.

143,122.—Fabric Prepared to Imitate Leather.—HENRY A. CLARK, Boston, Mass. Application filed August 23, 1873.

The prepared fabric is coated on its back with shellac varnish for the purpose of rendering it water-proof, and thus preventing its blistering and shrinking when pasted to another article, and as a protection against the moisture of the atmosphere.

Claim.—Paper or cloth, or other suitable sheet material, which has been prepared on one side or surface with flock, paint, or print, and water-proofed on the back or remaining unprepared side or surface, substantially as herein described, for the purpose specified.

143,123.—Washing-Machine.—TIMOTHY COLVIN and RUFUS M. PADDOCK, Meriden, Conn. Application filed June 4, 1873.

A vertical shaft has radial ribs, at the upper end a collar, and the lower end a collar and plate, which are attached to the head.

Claim.—In a washing-machine, consisting of the tub A with radial ribs upon the bottom, the head L fitted to a vertical shaft and rotated from above, the said vertical shaft F formed with radially-projecting ribs *r*, and the collars *b* and *f*, and the plate P attached to the head, and fitting the said ribs and shaft, substantially as and for the purpose described.

143,124.—Cotton-Bale Tie.—THOMAS CROMER, Galveston, Tex. Application filed July 31, 1873.

A rectangular oblong piece of metal, having on each side of two parallel bars slotted projections, between which the band is introduced and held.

Claim.—The plate A, provided with slotted projections *a*, when combined, as described, with the indented band.

143,125.—Bridge.—BENJAMIN F. DAVIS, Hearne, Tex. Application filed May 28, 1873.

The chord-bolt arches are constructed of short pieces of plank bolted or nailed together in layers so as to break joints. Wedge-shaped pieces of wood or metal are inserted between the ends of the chords and arches, which are firmly fastened to it and to each other by bolts and bands. The girder is strengthened by vertical struts and radial braces.

Claim.—The combination of chords and arches A B, made of successive layers of planks, the end wedges G G, the bands D, the braces E F, and the steadding I, as and for the purpose described.

143,126.—Soldering-Furnace.—JUSTUS DAY, Holley, N. Y. Application filed April 30, 1873.

The chambers that receive the irons to be heated are capable of vertical adjustment.

Claim.—The combination, with the fire-pot A, of the tubes C C and slides *b b*, when arranged for vertical adjustment, in the manner and for the purpose specified.

143,127.—Planing-Mill.—LYMAN H. DECKER, Grove Lake, assignor of one-half his right to THOMAS BOLLES, Sauk Centre, Minn. Application filed July 8, 1873.

Square-framed mill; fan in end corner thereof; screens and blanks arranged in shoe so as to give large amount of screening surface in a small compass.

Claim.—1. The combination, in and with the shoe H, of the gang of sieves A A A, sieves B, C, and D, and blank and chute boards *a*, *b*, *c*, *d*, and F, arranged substantially as and for the purposes set forth.

2. The screen D, having blank *d* and guide-strip *e*, blank *f*, and guide *g*, constructed substantially as and for the purposes set forth.

143,128.—Hand-Saw.—THOMAS S. DENTON, Philadelphia, Pa., assignor to himself and HENRY DENTON & SONS, same place. Application filed August 21, 1873.

The handle may be adjusted at different angles with relation to the saw-blade.

Claim.—The saw-handle having set-screws *b b*, adapted to nuts fitted transversely into the handle, in combination with a bolt, *a*, passing through the slotted front end of the handle and through the blade, all as set forth.

143,129.—Stump-Extractor.—WILLIAM DUFFIELD, Jasper, Ind. Application filed August 27, 1873.

To the lower ends of two levers, which form part of a system of compound levers, pivoted to the uprights, is secured a clamping device, through which the draft-bar passes. When the clamping device is lowered to take a new hold the draft-bar is retained in its position by a locking-ring.

Claim.—The combination of levers B, C, and D, frame A, block *c*, levers *a a*, bar E, and clutch-ring J, as and for the purpose specified.

143,130.—Feather-Renovator.—LEVI S. ENOS, Almond, N. Y., assignor to himself and S. B. ESTABROOK, same place. Application filed May 24, 1873.

The plate D enables different varieties to be treated separately, but simultaneously.

Claim.—1. In a feather-renovator case or box, one or more movable perforated partitions, D, for the purposes herein set forth.

2. The combination, with the box A, lining B, and pipe C, having one or more perforated partitions, D, of the steam-pipe G, with stop-cocks *d'*, branch pipe I, and partition *b*, all constructed and arranged substantially as and for the purposes herein set forth.

143,131.—Watchmaker's Chain-Clamp.—CHARLES E. EVARD, Leesburg, Va. Application filed August 5, 1873.

The jaws are provided with recesses at their upper and inner edges to receive and hold the links, leaving a sufficient space between the jaws to allow the rivets to pass between.

Claim.—A watchmaker's chain-clamp, provided with jaws A A, having recesses C C forming chain-rests *c c*, as and for the purpose described.

143,132.—Hollow Auger.—EDWARD W. FAUCETT, ELMER W. SILVER, and JOHN DEMING, Salem, Ohio, assignors to ALBERT R. SILVER and JOHN DEMING, same place. Application filed July 28, 1873.

By an adjustable ring the cutters are regulated to the size required. The stop-piece governs the length of the cut.

Claim.—1. In a hollow auger, the beveled rim *c*, substantially as set forth.

2. The cutters and blanks, or their equivalents, having bevel-ended ends, in combination with the rim *c*, substantially as shown and described.

3. The jam-nut *e*, having a left-hand thread, in combination with the rim *c*, substantially as shown.

4. The adjustable shank *b*, having the thread upon its head and steam running in the same direction, the thread on the screw being finer than the thread on the head, in combination with the jam-nut *e* and cylinder *a*, substantially as set forth.

5. In a hollow auger, the jam-nut *e*, having a recess formed in its top for receiving the cylinder *a*, substantially as set forth, constructed and operating to hold the stem *b* in a central position.

6. The combination of the rim, cutting devices having bevelled ends, cylinder, shank, and jam-nut *e e*, substantially as set forth.

143,133.—Medical Compound or Powder for Infants.—JULIUS FERER, Hoboken, N. J. Application filed September 12, 1873.

Claim.—1. A medical compound, prepared of silicate of magnesia and carbolic acid mixed together, in the manner and about in the proportions herein specified.

2. A medical compound, made of silicate of magnesia carbolic acid, and oxide of zinc mixed together, substantially in the manner and about in the proportion set forth.

143,134.—Musical Wind-Instrument.—ISAAC FISKE, Worcester, Mass. Application filed June 18, 1873.

Claim.—The arrangement of the valve-cases *a b c*, extensions *n p r*, and connections *g i*, substantially as shown and described.

143,135.—Railroad Time-Signal.—HIRAM H. FORD, Sanford, Me., assignor of one-half his right to HORACE M. FORD, Boston, Mass., and IVORY H. FORD, Great Falls, N. H. Application filed June 25, 1873.

A lever, operated by the wheels of a passing train, is connected with a valve at the bottom of a narrow glass chamber, into which sand is allowed to trickle from a reservoir above, after the manner of an hour-glass. At each time after the glass chamber is emptied through the opened valve by the passage of a train, the valve reclosing, allows the chamber to be again slowly filled, thereby showing the time elapsed since the last passage.

Claim.—In combination with a rail, A, of a railway, the hinged lever B, box C, spring S, connecting-rod D, valve F, receptacle G provided with glass sides I I', case E, and reservoir J, having a hardened steel bottom, K, provided with a small hole, L, or their equivalents, when constructed to operate in conjunction with dry sand or similar material, substantially in the manner described, as and for the purposes set forth.

143,136.—Envelope.—LOUIS G. JERICH, Ottumwa, Iowa. Application filed August 23, 1873.

Small flaps, folding to and from each other, are formed in the center of the lower flap to receive the tongue of the upper or closing flap.

Claim.—An envelope formed of the usual main part A and four main flaps, B, B, C, and D, and provided with the flaps *a* and *f f*, as shown and described, and for the purposes herein set forth.

143,137.—Spool for Boot and Shoe Soling Machines.—LOUIS GODDU, Boston, Mass., assignor to THE AMERICAN CABLE SCREW-WIRE COMPANY. Application filed July 24, 1873.

Claim.—The metal spool or wheel, having the spokes *g* and arms *i* cast with the rim A, and the removable spider or head, formed of the hub *l* and arms *m*, substantially as shown and described.

143,138.—Gas-Bracket.—JOHN F. GOLDTHWAIT, Boston, Mass. Application filed May 17, 1873.

A portion of the outer half of the socket which receives the swinging bracket is cut away to form shoulders, against which a pin in the bracket abuts, thus preventing the flame from coming in contact with the wall to which the bracket is applied.

Claim.—The socket A', provided with shoulders D D, in combination with the swinging part C, having a pin, E, substantially as described, and for the purpose set forth.

143,139.—Gun-Cleaner.—CHARLES G. GOULD, Windham, Vt. Application filed September 17, 1873.

Claim.—1. The hinged sections A and B, having external screw-threads and a securing-nut adapted to clamp or secure a wiper, and adapted by suitable means for attachment to a ramrod or other handle, substantially as described.

2. The combination of the sections A and B with the slotted hinge-plate and a clamping-nut, as and for the purpose set forth.

143,140.—Rein-Holder.—CHARLES M. GRANNIS and LAUREN M. FITCH, Morrisville, N. Y. Application filed May 31, 1873.

Arranged to be clamped to the dash-board, the rein to be held between the metal base and the yielding and beveled rubber block.

Claim.—1. In a rein-holder, the rubber piece G, having a beveled edge, and held edgewise by the lips or catches *b b* against the rims, substantially as and for the purposes herein set forth.

2. The combination of the clamp B C, arm D with lips or catches *b b*, rubber piece G, and guard *d*, all substantially as and for the purposes herein set forth.

143,141.—Casing-Spear.—VICTOR GRETTER, Richland township, Clarion county, Pa. Application filed May 14, 1873.

The tool is inserted within the tubing at any desired point. The spring-wickers, being lowered upon the incline or conical guide, expand and take a firm hold of the tube, by means of which it can be withdrawn from the well.

Claim.—The combination of the wickers W W, straps R R, and square collar M with the tapering square stem S S, having movable collar K, spring L, conical point, and shoulders Z Z, all constructed substantially as and for the purposes set forth.

143,142.—Gimlet-Handle.—CHARLES L. GRISWOLD, Chester, Mass. Application filed June 26, 1873.

The handle, made in two sections, holds the hooked end of the tool between them, the neck *a* filling the interior of the hook.

Claim.—As an improvement upon my patent of November 26, 1872, the hooked shank *b*, adapted to embrace the enlargement *d* and be clamped between the sections of the handle, substantially as shown and described.

143,143.—Wick-Raiser.—JAMES G. HALLAS and WILLIAM N. WENDEN, Waterbury, Conn., assignors to THE BENEDICT & BURNHAM MANUFACTURING COMPANY, same place. Application filed August 28, 1873.

The wick is raised by toothed adjusters, which, by turns, are raised and at the same time engaged with the wick, and lowered and at the same time disengaged from the wick. This up-and-in and down-and-out motion is imparted to the toothed upper ends of the wick-adjusters by making their lower ends elbow outward from the wick and ride the upper and cammed surface of an annular flange, which is made to rotate horizontally by turning the chimney-rest.

Claim.—1. The flange *a*, having a rotary movement around the wick-tube, and in connection with the wick-adjusters, substantially in the manner described, the said flange *a* constructed in a cam shape, so that in rotation it will impart an up-and-down in-and-out movement to the adjusters, substantially as set forth.

2. In combination with the adjusters *f* and the chimney-rest, the flange *a*, constructed as described, so that by turning the said chimney-rest the requisite rotary motion for the adjustment of the wick is imparted to the said flange *a*.

143,144.—Suspender-Buckle.—SAMUEL HAMM, Philadelphia, Pa. Application filed June 26, 1873.

An L-shaped slot in the plate B prevents accidental disengagement from the stud on the buckle.

Claim.—The combination of the buckle A, the pin C, and the attachment B having the slot D, substantially as and for the purpose hereinbefore set forth.

143,145.—Furnace for the Manufacture of Iron and Steel.—GEORGE E. HARDING, New York, N. Y. Application filed May 26, 1873.

Combines a rotary puddler, a gas-furnace, and a deoxidizing-chamber, utilizing the waste gases from the puddler to heat the deoxidizing-retorts. The rings, provided with tension-springs, prevent leakage of gas.

Claim.—1. The general arrangement of the furnace *f*, rotary *c*, flue *d*, shaft *a*, chamber *w' w'' w'''*, retorts *s s s*, and dampers *p p' p''*, as shown and described.

2. The rings *z z*, with beveled faces and adjustable tension-springs *z'*, for the purpose specified, as shown and described.

143,146.—Trolling-Spoon.—WILLIAM HARPER and WILLIAM SMITH, Montreal, Canada. Application filed July 1, 1873.

Two spinning blades, having their ears flaring oppositely as to their ends and with relation to each other, are strung on the line or its appendages through their centers, in order to revolve while trolling.

Claim.—1. In trolling-baits the spinners C and D, arranged upon the wire B to revolve in opposite directions, when constructed substantially in the manner described.

2. The propeller-shaped spinners C D, constructed substantially as described and shown.

3. The spinners C and D in combination with the sleeves *f* and the wire B, substantially as described, and arranged to spin continuously and oppositely in moving through the water.

143,147.—Wheel-Plow.—JOHN D. HARRISON, Middletown, Ohio. Application filed August 2, 1872.

The plow is supported on a crank-axle, one of the arms of which may be locked to the wheel so that the forward movement of the machine will raise the plow out of ground.

Claim.—1. The combination of arm *l*, link *j*, lever *m*, pawl *k*, and short arm *i* with studs *n i'*, crank *c*, and ratchet-wheel A, substantially as and for the purpose described.

2. The combination of the frame *a b c* with the journaled double crank *c* and adjustable tongue *d*, substantially as described, for the purposes specified.

143,148.—Shoe-Fastening.—GEORGE B. HART, Buffalo township, Linn county, Iowa. Application filed March 27, 1873.

Claim.—1. The instep-plate C, provided with a central opening through it, and having its front end bent upward to permit the insertion of the string, as described.

2. The clip D, adapted to clasp the edge of the shoe-front, and to be secured by a single rivet, as described.

143,149.—Skylight.—GEORGE HAYES, New York, N. Y.—Case D. Application filed July 14, 1873.

A stiffener of angle-iron is inserted within the hollow sheet-metal bar of a skylight. The cap-piece C is riveted to the upright portion of the bar, and is formed of lead so as to be readily conformed to the varying thickness of the glass when bent down upon the same to cover the joint.

Claim.—1. The combination, with the hollow triangular bar A, formed as described, of the single or double ribbed angle piece D, essentially as and for the purpose herein set forth.

2. The combination, with the hollow bar A, of the cap-plate C, substantially as and for the purpose specified.

143,150.—Skylight.—GEORGE HAYES, New York, N. Y.—Case F. Application filed July 14, 1873.

The pliable cap-plate is inserted between the adjoining raised portions of the divided bar and secured by rivets, being formed of a single piece folded along its middle and parted outward.

Claim.—The combination, with the bar having a divided ridge at its top, of the cap-plate C folded to give it a double thickness along its middle or tongue, but of single thickness through

cut its lateral extensions or portions, substantially as shown and described.

143,151.—Skylight.—GEORGE HAYES, New York, N. Y.—Case E. Application filed July 14, 1873.

The pliable cap-plate for protecting the juncture of the glass is attached to the side of the raised portion of the bar by rivets.

Claim.—The combination, with the ridge *r*, of the bar of the cap-plate C secured to one side of the same, substantially as set forth.

143,152.—Skylight-Cover.—GEORGE HAYES, New York, N. Y.—Case H. Application filed July 14, 1873.

The skylight-cover has a lipped flange extending upward near the hinge, the lip of which comes in contact with an inverted ledge on a cap attached to the roof and projecting over the hinge.

Claim.—The combination of the lip *s* on the back part of the cover, with the ledge *a* on the cap C of the roof, substantially as and for the purpose herein set forth.

143,153.—Skylight Turret and Conservatory.—GEORGE HAYES, New York, N. Y.—Case G. Application filed July 14, 1873.

The uprights are formed of two flanged trough-shaped pieces of sheet-metal with their flanges in contact and joined by rivets. The flanges afford a support for the glass, which is further secured by flanged cap-plates riveted to the uprights and bearing on the outer face of the glass. The swinging sashes are provided with a flying elastic flange at the lower edge, which overlaps the joint and serves as a weather-strip.

Claim.—1. The combination of flanged covering-strips D with the hollow metallic posts A, having flanges *b b*, for the support of the glasses, substantially as specified.

2. The swinging sashes C, provided with exterior and overlapping elastic flanges *f*, essentially as described.

143,154.—Machine for Threading Bolts.—MERRITT HIER, New Haven, Conn. Application filed July 9, 1873.

The levers B are provided with a recess to receive the interchangeable die-holders D; said holders are also recessed to receive the dies. Upon the die F is formed a rib or spline, *n*, which fits into a corresponding groove in the die-holder.

Claim.—1. In a bolt-cutting machine in which the thread-cutting dies are arranged in the ends of the levers, substantially as described, the said levers constructed with a recess to receive and define the position of the holders D, and means, substantially as described, for securing the holders always in the same relative position, and the said holders recessed to receive the dies F, and provided with means, substantially such as described, for adjusting the said dies, as herein set forth.

2. The dies F, constructed with the rib *n*, and the holders D with a corresponding groove, substantially as and for the purpose described.

143,155.—Carpet-Beater.—JAMES HOTHERSALL, New York, N. Y. Application filed August 20, 1873.

The ends of the oscillating beating-arms are provided with projecting stops for regulating the extent of the motion of the pivoted swinging beaters, which are pivoted to the beating-arms.

Claim.—The swinging levers E for supporting the cross-bars F, in combination with the oscillating beating-arms A having the stops *c c*, substantially as and for the purpose specified.

143,156.—Fire-Proof Shutter.—THEODORE HYATT, New York, N. Y.—Case A. Application filed September 3, 1873.

Claim.—A window or door shutter composed of sheets or boards of asbestus combined with earthy matter or its equivalent, substantially as and for the purpose specified.

143,157.—Fire-Proof Shutter.—THEODORE HYATT, New York, N. Y. Application filed September 3, 1873.

Claim.—A metal shutter having one or both of its sides covered with sheets or boards of asbestus combined with earthy material, or its equivalent, substantially as and for the purpose specified.

143,158.—Meat-Mangle.—SAMUEL D. INGHAM, Ripley, Ohio. Application filed August 8, 1873.

With a series of circular knives rotating on a shaft is a set of clearers, having a shank made adjustable, that will take into notches in the knives, to hold them as fixed cutters, when desired.

Claim.—The adjustable clearer G *g* H, nut I, and screw J, in combination with the notched circular knives A A' A² A³, substantially as herein shown and described, for the purposes specified.

143,159.—Shutter-Worker.—JAMES W. JENKINS, Monmouth, Me.—Case B. Application filed July 2, 1873.

Claim.—The combination and arrangement of the toothed disk *c* on the shaft E, the reciprocating rack C, having its teeth arranged on its inside vertical face to prevent clogging, and formed with the lug *b* on its outer face, and the rod D with the arm *a* pivoted thereto and attached to the shutter, the rack C working in a covered recess in the jamb *a* with only the lug *b* protruding therefrom, all as herein shown and described.

143,160.—Hammer for Sewing-Machines.—JOHN F. JOHNSON, Cincinnati, Ohio. Application filed August 23, 1873.

Claim.—The combination of slotted bracket E *e* with screws K K', slotted gage-plate F L, scroll-plate G M, spreader H-O P Q, and tightening-nuts J and J', all constructed, arranged, and operating as described.

143,161.—Fence.—WILBUR F. KING, Gonzales county, Tex. Application filed June 5, 1873.

Claim.—A fence in which the stringers or rails are united to the main posts, substantially as described, a medium or lower rail forming the top rail of a minor fence of brush wood having shorter posts on opposite sides, all as and for the purposes set forth.

143,162.—Thill-Coupling.—HORACE B. KINNEY, Leonardsville, N. Y. Application filed June 21, 1873.

Claim.—1. The seat *a*, having circular flange *f*, enlarged portion *a'*, and stem *b*, in combination with the ball E, all constructed and arranged as and for the purpose specified.

2. The seat *a*, combined with the spring *c*, stem *b*, knob *e*, seat D, cap H, and ball E, substantially as and for the purpose herein set forth.

143,163.—Manufacture of Fur-Coated Fabrics.—HENRY KELLOGG, Milford, Conn. Application filed January 23, 1873.

A woven or knit fabric is passed through a bath of water stiffening; then dried; then thoroughly saturated with steam-heated water; and then passed gradually over a perforated surface, B, behind which is a vacuum, D. Fur is introduced between the conductor E and the fabric, and is blown against the latter, as it passes over the suction-box, by a blast from E. The combined effect of blast and suction is to cause one end only of the fur to adhere. From B fabric passes to roll C, where an apron, F, of hair-cloth is laid upon the coated surface, and both fabric and apron then pass to a roll, G, the apron preventing the fur from coming in contact with the reverse side of the coated fabric. The roll, with fabric and apron, is then taken to a scalding-hot bath, and there rolled between several rollers until the fiber is firmly set; then the coated fabric, with the apron, is unrolled and passed like a belt around two revolving drums, H H, partially immersed in hot water. The belt passes over a table, L, and between it and presser-rollers P P which fix or felt the fur into the surface of the fabric. After thoroughly drying, the surface is "whipped up."

Claim.—1. As an article of manufacture, a knit or woven fabric having the surface coated with fur so as to present a fur surface, substantially as set forth.

2. The process herein described for coating the surface of knit or woven fabrics with fur.

143,164.—Medical Compound or Opium-Cure.—ULYSSES H. KELLOGG, Jamestown, N. Y. Application filed August 9, 1873.

Claim.—1. The combination of *lactuca elongata*, lactucin, and salucin, with or without a tincture of bitter almonds, substantially as specified.

2. The medical compound described, substantially as and for the purpose specified.

143,165.—Car-Coupling.—GEORGE E. KNOX, Ballston Spa, N. Y. Application filed March 25, 1873.

The spring in the block behind the angular end of the link serves to retain link in position to couple with cars of different heights.

Claim.—The combination of the link B with square end *a*, the block A with concaved end, opening *d*, spring *f*, and plate *e*, and the metallic strap C secured to the block and around the end of the link, all substantially as and for the purposes set forth.

143,166.—Combined Rake and Tedder.—CHARLES LA DOW, South Galway, N. Y. Application filed December 27, 1872.

A sulky-rake, in which the weight of the driver is utilized in dumping the accumulated hay, has means for attaching a tedder, so that both may be operated alternately without detachment.

Claim.—1. The combination of the yoke J, arm K, cross-bar F, and its attached straps *f f* hinged to the axle A by the bearings D D, and the right-angled ends *e e* of the rake-teeth E E, with the seat-bar L, lever G, rods I I and M M, when arranged to operate substantially as and for the purposes set forth.

2. The arm Q, having a swivel-pin R, when supported by the cross-bar P, and driving-wheel T, in the manner and for the purpose herein set forth.

3. The combination of the arm Q and driving-wheel T with the shield Z, substantially as and for the purpose specified.

4. The combination of arm Q, when attached to the rear part of a rake-frame, wheel T, endless chain U, wheel V, crank-shaft W, and tedder-tines Y, as and for the purpose set forth.

143,167.—Stop-Cock.—CHARLES W. LAURIE, Philadelphia, Pa. Application filed July 31, 1873.

The faces of the valve incline toward one side. It slides vertical in corresponding seats, in which it is held by a side set-screw.

Claim.—The combination of the prism-shaped valve with the screw G for adjusting it to its seat, as and for the purpose set forth.

143,168.—Machine for Tapping Gas and Water Fittings.—ALBERT D. LAWS, Bridgeport, Conn., assignor to THE BELKNAP AND BURNHAM MANUFACTURING COMPANY, same place. Application filed March 15, 1873.

The taps are worked forward and backward at different periods, to divide the strain upon the machine, by means of an arm attached to each of the tap-shafts, which, as it is rotated, comes in contact with a lug situated at different points upon each of the large gears upon the tap-shafts. One of the taps can be made to cut a left-hand thread by introducing an intermediate gear.

Claim.—1. The swinging and swiveling chuck V, provided with work-holding clamps c^3 f^3, arranged in relation with each other, for operation in connection with the tap-stocks E F G, substantially as specified.

2. The combination, with the tap-stocks E F G, arranged in relation with each other, as described, of the sliding pinions K M and wheel L', essentially as and for the purpose herein set forth.

3. The combination, with either tap-stock E, F, or G, of the sleeve T or T' in feather gear with said stock, the wheel L, I, or L', with its sleeve *l*, the driving stud or studs *m*, m^1, or m^2 on the face of such wheel, the radial stud *n*, n^1, or n^2 on the sleeve T or T', and the hollow screw O, O^1, or O^2, arranged to provide for lost motion of the tap-stock in direction of its length, substantially as described.

4. The arrangement of the studs *m* m^1 m^2 on the wheels L, I, and L' in relation with each other and the studs *n* n^1 n^2 on the sleeves T T', whereby the tap-stocks E F G, controlled by said wheels, are rotated at different periods relatively with each other, to effect the reversal of the taps, essentially as described.

5. The combination, with the screw O^1 and tap-stock F, of the sliding screw-box D', the rack c^4, the pinion e^4, the worm-wheel f^4, the screw e^4, the shifting-pawl g^4, the wheel A^4, and the spring d^4, substantially as and for the purposes herein set forth.

143,169.—Animal-Trap.—DAVID A. LEACH, Bloomington, Ind. Application filed May 24, 1873.

Claim.—In an animal-trap, the rear stop-catch E, with spring *e*, used in combination with the radially-winged revolving trap-platform, substantially as shown and described.

143,170.—Horse Hay-Fork.—JOHN W. LOWE, Ashland, Ohio. Application filed August 21, 1873.

Inverted U-shaped tines have pivoted auxiliary tines, the points of which are turned outward at nearly right angles to the main tines, to retain the hay for lifting after the insertion of the fork into the top of the load, the whole operated by means of levers, a hoisting and a tripping rope.

Claim.—The combination of the tines *a*, bar *c*, lever 5, hook *g*, catch *e*, connecting-rod 6, lever 7, forks 8, ring *i*, and tripping-rope *l*, all combined and arranged to operate as shown and described.

143,171.—Steam Cooking Apparatus.—JOHN LUNDGREN, New York, N. Y., assignor to JONAH R. COLE, same place. Application filed June 23, 1873.

The water-heater is provided with a concave bottom, which forms a tube leading to the condensing-chamber, thereby presenting a large area of heating-surface.

Claim.—The water-chamber D, having concave bottom, forming tube Q, interposed between the condensing-chamber E, having pot S, and the parts B C, substantially as shown and described.

143,172.—Cultivator.—EDWARD P. LYNCH, Davenport, Iowa. Application filed October 19, 1870.

Cultivator consisting of two wheels, a bent axle-tree, and two independent sets of cultivator-beams, which are hinged to the axle-tree by double-acting journal-boxes. The shovels are vertically adjustable, upon the curved beams by a sliding shoe, and are provided with a break-pin.

Claim.—1. The clevis or attachment for fastening the front end of the beam to the axle, said clevis consisting of the bar B with an upper rigid arm, *a*, and a lower hinged arm, *b*, said arms being perforated to receive the journals of the swivel-boxes *c*, and being secured together by means of a bolt or screw, substantially as set forth.

2. The shank D, provided with a vertical slot, *n*, and the holes *o*, whereby it can be adjusted vertically on the beam, and also pivoted and locked by a break-pin, as set forth.

143,173.—Double-Tree.—WILLIAM MARTIN, Clarence, Iowa. Application filed July 7, 1873.

The double-tree is steadied, and the extent of its motion regulated, by a friction device placed in front of the center-bolt.

Claim.—The combination, with a double-tree pivoted at the angle of a rear extension, F, and having the guard-pieces E *e e'*, of a friction-roll, H, arranged as and for the purpose described.

143,174.—Attaching Knobs to Latches.—LEWIS MICHAELS, Covington, Ky. Application filed January 7, 1873.

The interior of the knob-shank is provided with a female screw to receive the projecting screw-cut portion of the hub, which hub may have a bearing in one or both sides of the case.

Claim.—The hub B, extending through the plate C, and provided with a screw upon its extended part *b*, in combination with the knob A, with female screw to fit upon the said extended part, substantially as set forth.

143,175.—Car-Spring.—AUSTIN W. MORRIS, Philadelphia, Pa. Application filed March 11, 1873.

Claim.—The combination of a series of elliptical springs spirally arranged with a box or case, so that the ends of the first spring rest on seats equidistant from the contiguous head-plate, the ends of the second spring on seats a short distance therefrom, and at opposite sides of the first seats, the seats being farther removed from the plate than the former, and so on in succession throughout the whole series of the springs, each spring overlapping the preceding one at or near the center of the case, substantially in the manner and for the purpose set forth.

143,176.—Machine for Clearing Streets of Snow.—WILLIAM E. MUNROVE, Fair Play, Colorado, Ter. Application filed February 17, 1873.

A case in which is placed a furnace supplied with an air-blast by a blower, the case ending at the front near the ground, in a long and narrow opening, through which the heated air and smoke are projected against the snow and ice covering the ground.

Claim.—1. The machine for the removal of snow, ice, &c., having the adjustable wide-mouthed case H, furnace K, and blower L, constructed to operate in the manner and for the purposes herein set forth.

2. The combination of the case H supported on guideways *i*, the lever E, and connecting mechanism *a g g' g''*, for the adjustment of the mouth A in relation to the surface of the ground.

3. The combination of the case H, blower L D', pulley and clutch M N, and lever O, as and for the purpose set forth.

4. The combination of the furnace K, case H, blower L L', pulley M, clutch N, and pulley *s* attached to the wheel, all substantially as and for the purpose set forth.

143,177.—Washing-Machine.—DAVID B. MYERS, Ubrichsville, Ohio, assignor of one-half his right to CHRISTIAN D. HELWIG, same place. Application filed August 18, 1873.

In a suitable wash-box is arranged a series of rollers. Pivoted above these on standards is a swinging frame having a rubbing-board; and on each side are clamps, operated by levers and springs, to hold the article being washed.

1. In combination with a rubber of a washing-machine, such as herein described, a pair or series of levers, *j*, and cross-bar *k*, operating to form catches for retaining articles of clothing or fabrics in position while being washed, substantially as described.

2. The shaft *n*, lever *o*, rod *p*, arm *m*, links *l*, supported and carried by the bent arms or levers *f*, in combination with the levers *j*, cross-bars *k*, springs *r*, and rubber A, constructed as described, for the purpose specified.

143,178.—Potato-Bug Destroyer.—WILLIAM H. MYERS, Oregon, Wis. Application filed March 1, 1873.

Claim.—1. A machine for destroying bugs, provided with revolving rakes F, scoop L to receive the bugs, roller M, and rake P for destroying the bugs, substantially as shown and described.

2. The cranked axle 6, pitman N, and rake P, in combination with the scoop having roller M, all arranged so as to keep the bugs drawn beneath the roller, substantially as shown and described.

3. The roller M, operated by the cranked axle, pitman, and roller, in combination with the scoop, all arranged so as to destroy the aforesaid bugs, substantially as shown and described.

143,179.—Hemp-Machine.—URANIA U. NEILL, Key West, Fla., administratrix of JOHN E. NEILL, deceased. Application filed August 8, 1873.

The material passes from an inclined table between a pair of rollers, and is then guided upwardly and through another pair. Revolving yielding scrapers are arranged, by means of combined journal-boxes, on opposite sides of the roller, and near where the peripheries of the upper and lower set approach each other.

Claim.—1. The combination and relative arrangement of the feed-rollers I and scraper-rollers Q and *q* within the supporting-frame, substantially as and for the purpose specified.

2. The feed-rollers I and yielding scraper-rollers Q and *q*, combined by means of the united journal-boxes F and R, in the manner and for the purpose substantially as shown.

143,180.—Harness-Buckle.—OLIVER B. NORTH, New Haven, Conn, assignor to O. B. NORTH & CO, same place. Application filed February 21, 1873.

A strap is passed through slots in the buckle-frame, embraces the trace, and is fastened by a buckle or equivalent means.

Claim.—In combination with a buckle consisting of the frame A B C, the bars or plate F F, and the studs *a*, a device substantially such as described, to transversely inclose the trace between the studs *a*.

143,181.—Well-Auger.—WILLIAM L. PAYNE, Topeka, Kans., assignor of one-half his right to JOHN G. SEARLE, same place. Application filed August 7, 1873.

When the auger is full it is withdrawn from the well by sliding it on the operating-shaft. The top of the square tube is rounded, and is provided with a loose collar, in which it revolves, the collar having an arm pivoted thereto, to which the elevating-rope is attached. As the auger revolves the arm drags down the side of the well and prevents the collar from revolving and the rope from twisting around the shaft.

Claim.—The auger *l* having the hinged doors *m*, square tube *i*, through which the shaft *c* passes, collar 2, and arm 3, the parts being combined for operation substantially as shown and described.

143,182.—Fire-Escape Ladder.—JAMES S. PIERSON, Brooklyn, N. Y. Application filed February 5, 1873.

The telescopic tube is elevated by pneumatic pressure applied through the hollow trunnion on which it turns. The jointed links surrounding the tube at intervals are connected by chains, so as to form a ladder on each side when extended.

Claim.—1. The chain L connected, with the fixed links *g* to the upper ends of the sections of the telescopic tubing and with loose rings A that embrace said sections, as specified.

2. The hollow trunnion *a* applied to the telescopic tubing as a means of connecting the same with the air-tank, as set forth.

143,183.—Carriage-Top Setter.—JONAS POTTENBURGER, Farmersville, Ohio. Application filed April 5, 1873.

The height of the carriage-top is regulated by adjusting the segment-boards up and down, and the inclination which the top is to have by means of the slotted arc-braces.

Claim.—The jigoted segment-board B, with the arc E and curved slot *e*, with or without a spirit-level and plumb-bobs, substantially as shown and described.

143,184.—Adding-Machine.—SOLOMON POOL, Chapel Hill, N. C. Application filed June 13, 1873.

A revolving plate, confined between a stationary base and face-plate, and carrying a loose series of numbered concentric rings with a peculiar decimal trip, is moved by projecting pins on an exterior flange. The stationary face-plate is provided with suitable reading-openings, with a set of figures near its outer edge, and with two sets of engaging-dogs for each ring—one of them for bringing the rings all to zero at the radial window, and the other set for separately acting on the particular ring under operation.

Claim.—1. The loose rotary rings E E^1 E^2, each having a pin, *e*, combined with holder H, having the three pins A^2 A^3 A^4, to cause the rings to be brought to the 0 or zero, in the manner described.

2. The rotary plate B *b* *b'*, counting-plates E E^1 E^2, held thereto by friction, and having pawl, ratchet, and pins *c*, stationary top notched cap-plate G *g*, having notch K, and holders H^1 H^2 H^3, all combined to enable columns of figures to be counted, in the manner described.

3. The ring C, fixed to a rotary plate B, and having numerals placed at intervals to correspond to the distance between pins *b'*, combined with a stationary cap-plate, G, having the hole J placed in the radial line from notch K to the center-pin *a*, to enable the counter to verify each addition.

4. The arrangement of the odd and even numerals on ring C upon different colors, to enable the eye to detect at a glance any mistake of the hand in bringing forward a figure from either side of the right one.

5. The loose block-pawls F, held by springs *f* in recesses of the rings E, combined with the end inclined arc-flanges D and teeth F, to allow the plate B to revolve in either direction, at the times and in the manner set forth.

143,185.—Wagon.—FERDINAND POST, Clinton, Iowa. Application filed May 28, 1873.

To cause the rear wheels to steady and always follow the front ones, allowing the wagon to turn in small space.

Claim.—The combination of the tongue-piece C, supplemental pieces *c*, chain *k*, axle A, bounds H, and cross-piece F, to operate together as described.

143,186.—Gaiter.—WILLIAM E. PUTNAM, Boston, Mass., assignor to W. E. PUTNAM & COMPANY, same place. Application filed April 5, 1872.

Claim.—In a gaiter or shoe having a front or instep opening and an overlapping flap, a gore-piece, secured at one edge to the flap, and at the other edge to the leather flanking one side of the instep or front opening, as herein shown and described, for the purposes specified.

143,187.—Car-Brake.—EDMOND O. RICHARD, Quebec, Canada, assignor of one-half his right to JEAN E. RICHARD, Columbia, S. C., and JOSEPH C. RICHARD, Quebec, Canada. Application filed July 3, 1873.

The brakes may be applied (at the engine) to the cars, in succession, and the uncoupling of any car will cause the brakes to be put in operation automatically.

Claim.—1. The combination, with a windlass or other winding device on the engine and car-brakes, having suitably-arranged pulleys, of a brake-chain or rope connected by both ends to the engine, and engaging by its return branch with said pulleys, substantially as specified.

2. The combination, with an automatic uncoupling device, of an automatic car-brake, substantially as specified.

3. The hinged coupling frame K, bearing on one side of the draw-head the extension *q'*, and on the opposite side thereof the lifting plate *w*, respectively designed to engage with a similar lifting-plate and extension connected with the opposite car, substantially as specified.

4. The combination, with the hinged coupling-frame K, having the lifting-plate *w* and the extension *q'* on opposite sides of the draw-head, of the hinged guide-plate, key, and adjustable suspension-lever, substantially as specified.

5. The combination, with the coupling-frame K, of the transverse journal-shaft, slides, and pivoted joint, designed to move in line with the spring at the rear of the draw-head, substantially as specified.

6. The arrangement of the winding device, brake-chain, and pulleys, whereby the brakes are operated in succession from the rear, substantially as specified.

143,188.—Machine for Molding and Pressing Bricks by Hydraulic Pressure.—ETHAN ROGERS, Cleveland, Ohio. Application filed March 13, 1873.

The valve which closes communication between the upper plunger-cylinder and the exhaust-chamber and pipe is hollow and perforated, and has in its face a small valve, whose stem is attached by collar and spring to the supply-valve. The arrangement is such that when the two large valves are closed the small valve must open. The construction and combination of all the parts are such that each separate movement of the press is started by the parts last in action.

Claim.—1. The combination of the valves N O P, arranged substantially as and for the purpose set forth.

2. The device for removing the pressure from the top of the upper plunger when a certain pressure is attained, the said devices consisting of the cylinder V, spring-piston *v'* V', rod *v*, lever W, rod *l*, lever 3, arm 4, engine 5 6, rod 7, lever 8, valve-stem *n*, and valve O, substantially as set forth.

3. In combination with the upper plunger D, the water-engine T, by which the said plunger is held down upon the bricks against the upward pressure of the lower plunger C, when both are rising, and the upper plunger is raised from the bricks to allow the removal of the pressed bricks.

4. The combination of the lower plunger C and piston and cylinder *c' c''*, to aid the descent of the plunger against the pressure of the water column in the vertical pipe M.

5. The combination of the valve N, water-engine 6, arm 4, lever 3, and spring-piston V' *v*, closing the valve N between the two rams, to cause them to rise simultaneously, substantially as described.

6. The combination of the hooked arm *c'*, lever *c*, lug or arm *u'''*, rock-shaft U, arm *u*, pitman *u''*, slide-valve T', engine T, rod S, lever R, rod *d*, and upper plunger D, substantially as and for the purpose set forth.

7. The pulling-engine 13 14, acting to reverse the valve 5 of the engine 6 when released from the catch-lever 3, substantially in the manner and by the means described.

8. The combination of the engine F, passage 15, and engine 13 14, allowing the operating of both engines by a single slide-valve, *f*, substantially as set forth.

9. In combination with the plunger C, operating as described, the screw H' to limit the upward movement of the rod H, so as to adjust the depth of the mold to the condition of the clay used and the desired thickness of the bricks.

143,189.—Combined Shutter Fastener and Bower.—RUDOLPH RUHLMAN, Trenton, N. J. Application filed September 1, 1873.

Claim.—The combination with a window-frame and shutters, of hooked rods D D, hung to the said shutters, and adapted to hooks *a a'* on the same, to perforated plates secured to the window-frame, and to holes in the latter, as set forth.

143,190.—Bed-Bottom.—WILLIAM H. SEARS, Cheshire, Conn., assignor to TITUS STOWE, Readsborough, Vt. Application filed August 16, 1873.

A wire-spring for the suspension of each slat, at its ends, to the bedstead-frame, shaped with a straight portion at its middle; then, at the ends of such portion, at right angles, and one coil at the middle of each side; the ends of the wire affixed to the frame, and partially bent round it. An additional straight piece is passed through and fastened to the coils. The slat lies between the two straight pieces.

Claim.—The spring for bed-bottoms herein described, consisting of the two legs secured to the bar A, bent to form the bar *b*, and combined with the bar *c*, the end of the slat passing between and supported by the said bars *b c*, substantially as set forth.

143,191.—Tumbling-Shaft.—DANIEL SNELL, Springfield, Ohio. Application filed March 25, 1873.

A rectangular box provided with central bore and longitudinal grooves, together with a rod secured to a head provided with lugs corresponding to the bore and grooves, passing out through a bearing-box, placed in the end of main box, with lugs or ribs, also corresponding to the grooves, and at the other end of the main box a forked coupling to connect with shaft of power.

Claim.—1. The box A, provided with central bore having grooves *a a*, substantially as and for the purposes herein set forth.

2. The combination of the longitudinally-bored box A, having grooves *a a*, the head B, with ribs *b b* and rod C, the bearing-box D, with ribs *d d*, and the coupling E, all constructed and arranged substantially as herein set forth.

143,192.—Horse Hay-Fork.—IRA E. SNYDER, Woodward, Pa. Application filed February 15, 1873.

Two pivoted tines are parallel with three sliding bars, for insertion into, and turned at right angles for raising the hay, being locked in the hoisting position by a shouldered spring-catch abutting against the under side of a cross-head, and released therefrom by a cam-trip and chord.

Claim.—In a hay-fork having the side bars C, the central sliding bar B, and the folding prongs G, the locking devices, consisting of the spring-stop *m* and the dog *h*, connected to the central bar B and shouldered guard E, substantially as shown and described.

143,193.—Balanced Valve.—JOSEPH H. STOMMS, Winona, Minn. Application filed March 24, 1873.

The packing-ring is pressed upon the hollow valve by the follower and springs within the cylinder, which, in connection with the peculiar form of the valve, balances the latter. The ribs form guides for the valve.

Claim.—The hollow valve B with its ports *j j*, exhaust cavity *m*, seat C, and ribs *f f*, in combination with the packing-ring *o*, follower *b*, spring *d*, and cylinder F, substantially as and for the purpose specified.

143,194.—Bag-Holder.—GEORGE W. STRIKER, Iowa Falls, Iowa. Application filed August 18, 1873.

A bed plate has a hinged prop at its top and back to regulate its inclination; also a pivoted hoop, which holds the bag, these two being supported by a pivoted brace at each side.

Claim.—The combination of the bed *a*, brace 3, hoop 5, and brace 6, substantially as described.

143,195.—Coupling-Joint for Reapers, &c.—GEORGE W. SYLVESTER, Plain View, Minn. Application filed July 23, 1873.

A metal lining, located between the packing and adjustable sections, to prevent the packing from getting between the joints.

Claim.—In combination with the adjustable sections B B', and packing D, the lining E', located between the two, substantially as herein described, for the object specified.

143,196.—Fire-Proof Building.—LUCIEN A. TANTIÈRE, New York, N. Y. Case A. Application filed August 28, 1873.

The hollow bricks or tiles which form the ceiling are supported by angle-shaped bars suspended from the flanges of the iron floor-beams by hangers of bent metal, so as to allow contraction and expansion in the metallic portions without detriment to the less-expansible ceiling.

Claim.—The hangers *b*, *c*, or *c'* catching over the bottom flanges of the floor-beams A, in combination with bars *d*, which support the filling bricks or tiles of a ceiling, substantially in the manner herein shown and described.

143,197.—Fire-Proof Building.—LUCIEN A. TANTIÈRE, New York, N. Y. Case B. Application filed August 28, 1873.

The hollow bricks or tiles of which the ceiling is formed are supported loosely upon beveled brackets attached to the wooden floor-beams above by screws; or, in lieu of these, angle-shaped bars resting within hook-shaped supports. The wood-work is thus protected against fire, while the fire-brick is readily attached and detached, and is independent of expansions and contractions in the supporting-beams.

Claim.—The spikes A, provided with supporting hooks or heads, and intended to be fastened in wooden floor-beams B, or in strips nailed to said beams, in combination with bars or brackets C, which support the filling bricks or tiles of a ceiling, substantially in the manner shown and described.

143,198.—Skirt.—WILLIAM S. TAYLOR, Brooklyn, N. Y. Application filed June 3, 1873.

The waistband of the skirt is funnel-shaped, to fit the form.

Claim.—1. As a new article of manufacture, a skirt provided with the circular band A, constructed and arranged as and for the purpose specified.

143,199.—Holdback for Carriages.—DANIEL TERRY, Wakeman, Ohio. Application filed April 28, 1873.

The yoke is attached to hooks which are fastened to the ends of the thills. The strap which is secured to the yoke is buckled to the girth of the harness.

Claim.—The yoke C and breast-strap D, as arranged, in combination with the thills A, having the hoops B, as and for the purpose specified.

143,200.—Steering-Apparatus.—WILLIAM E. THOMAS, Queenstown, assignor to himself and JOHN T. LOWE, St. Michaels, Md. Application filed August 22, 1873.

Claim.—1. The combination, with a rudder, N, of the sprocket-wheel, chain, and reversely-threaded screws rotated in opposite directions, as and for the purpose set forth.

2. The combination, with the reversely-threaded screws of a steering mechanism, of the wide pinions H H made fast to their ends, rotating as well as sliding on guide-rods A A, and operated by a spur-wheel, G, as and for the purpose specified.

143,201.—Seal-Lock.—JAMES E. THOMSON, Buffalo, N. Y. Application filed April 22, 1873.

The cover of the seal is hinged so as to move both laterally and vertically, and is secured when in its proper position by a spring-catch. Pins upon the cover move through grooves in the bar underneath.

Claim.—1. The double-hinged seal-cover F, in combination with the sliding bar B of a seal-lock, substantially as and for the purpose set forth.

2. The bar B, with its teeth, spring-catch, and grooves, in combination with the cover F, having the openings, pins, and shoulder *f*, as set forth.

143,202.—Manufacture of Sulphuric Acid.—ELIHU THOMSON and WILLIAM H. GREENE, Philadelphia, Pa., assignors of one-third their right to STEPHEN GREENE, same place. Application filed July 28, 1873.

The sulphurous gases from the burner can be tempered by passing through the extended conduit, and are conducted into the first vertical chamber beneath the grating, rise through the porous packing, meeting the streams of dilute nitric acid. The products of the reaction are sulphuric acid, which is syphoned off from the base of the chamber, and hyponitric acid and nitric oxide, which escape into the second vertical chamber, where they are absorbed by water and oxidized by air. For the manufacture of concentrated acid the gases are admitted to the first vertical chamber at two points, one above and the other below the grating. The formation of the walls prevents the acid from attacking the joints.

Claim.—1. An apparatus for the manufacture of sulphuric acid in which the gases evolved from the combustion of sulphur, iron pyrites, or other sulphides are admitted at two points, one above the other, and in two currents of different temperatures, to a chamber filled with a packing of porous material, which is kept constantly moistened with nitric acid, substantially as and for the purpose set forth.

2. An apparatus for the manufacture of sulphuric acid in which the nitrous gases evolved from the reaction of sulphurous acid and nitric acid are subjected to the action of cold water and currents of atmospheric air in the passage of said nitrous gases through a chamber filled with porous packing, substantially as described, whereby the nitrous gases are oxidized and condensed to form nitric acid, which can be again used in the continuance of the operation.

3. In an apparatus for the manufacture of sulphuric acid, the combination of a burner for evolving gases from the combustion of sulphur or sulphides, conduits provided with means for regulating the temperature of said gases and dividing them into two separate currents, a producer filled with porous packing, into which said gases are led, in two separate currents, by the conduits, and a reservoir and valve for supplying a constant stream of nitric acid to the porous packing of the producer, substantially as set forth.

4. In an apparatus for the manufacture of sulphuric acid, the combination of a burner for evolving sulphurous gases, a conduit or conduits for leading said gases to a producer, a producer filled with porous packing moistened with nitric acid, a chamber or series of chambers filled with porous material, and provided with means for supplying jets of water and currents of air to the nitrous gases admitted to them, and an exhauster or fan for maintaining a constant circulation of gases through the apparatus, substantially as set forth.

5. In an apparatus for the manufacture of sulphuric acid, a chamber having its walls composed of blocks of material trapezoidal section, said blocks overlapping at their inner ends, and being built in, so that their joints shall incline inward and downward, as set forth.

143,203.—Fire-Extinguisher.—JONATHAN S. TIBBITS, Jeffersonville, Ind. Application filed September 8, 1873.

The acid-reservoir communicates with the alkali-chamber through transverse openings near the top, which are closed by suitable stoppers, or the ends of the reservoir are surrounded by sleeves forming annular air-chambers, the air in which prevents the mingling of the acid and alkali.

Claim.—1. The pipe C for containing the acid, made of lead or other non-corrosive material, arranged within the alkali-chamber of a fire-extinguisher, and made to communicate internally at both ends with the said chamber by means of transverse openings *d*, and with the external atmosphere at one or more points by means of a controlling valve or stopper, substantially as described.

2. The pipe C, arranged within the alkali-chamber E, and surrounded at its ends with the fixed case or sleeve P, to create an annular air-space, substantially as and for the purpose specified.

143,204.—Coffin.—FRANCIS TIGHE, Rockland, Me. Application filed July 8, 1873.

The cover is joined to the lid with hinges, as usual, and the edge is grooved for the admission of a tongue upon the main part of the lid. The tongue is beveled, and crowds into the groove a piece of rubber packing.

Claim.—The cover of a coffin, which is provided with a tapering tongue, *m*, which, when closed, enters a corresponding tapering groove, *n*, in the lid, the joint being also packed with a suitable material to render it air-tight, and the cover and lid being also united by hinges, as and for the purposes set forth.

143,205.—Combined Shirt-Bosom and Lungs-Protector.—WILLIS R. TRASK, Skowhegan, Me., assignor of one-third his right to THAON H. DISMORE, same place. Application filed June 14, 1873.

Claim.—1. A shirt-bosom provided with a pocket inside to receive a bosom-protector, substantially in the manner shown and described.

2. The combination with the shirt-bosom, having the pockets as described, of the protector, substantially as set forth.

143,206.—Automatic Fan.—OLIVER VANORMAN, Fond du Lac, Wis., assignor of one-half his right to HENRY HAMILTON, same place. Application filed April 7, 1873.

Claim.—The frame or stand A and shaft B, having the fans C arranged upon said shaft in a spiral form, in combination with operative mechanism, substantially as and for the purpose specified.

143,207.—Blind-Stop.—JACOB WEBER, New York, N. Y. Application filed June 2, 1873.

A small pinion-wheel upon a movable and adjustable shaft meshes with a rack-bar which is attached to and moves the sliding bar connected to all the slats of the blind. This wheel is stopped by a pin at any position, and thus holds firmly the slats at any required angle.

Claim.—The bars H and G, caps D, and blinds B, in combination with rack O, arbor M, pinion N, stud Q, and knob P, all constructed and arranged for operation as and for the purpose specified.

143,208.—Coal-Scuttle.—JOHN J. WHITE, Norfolk, Va. Application filed April 28, 1873.

A grooved ring connects the body and lower chamber and forms a support for the perforated bottom. When the bed is

tilted the ashes fall into the chamber formed on the side, thus having a clear space under the sifter.

Claim.—1. The grooved rim F, entirely surrounding the lower part of the coal-scuttle, in combination with the perforated bottom H and coal-scuttle A, when the lower edge of the latter projects nearly down to said bottom H and within the rim to confine the bottom in the groove, as and for the purpose set forth.

2. The ash-pan B, having the peculiarly-shaped chamber J on its front side, for the purpose of receiving the ashes when the scuttle is inclined, substantially as described.

143,209.—Washing-Machine.—FRANCIS M. WIDERMAN, Calverton, Md. Application filed May 3, 1873.

The washing-machine is constructed with a box or tub, with a double endless belt separated by blocks of wood, and is supported by cylinders, over which it passes, and has at or near its center a ribbed roller, which serves as a rubber in its revolution, and beyond which is a supporting-roll to give form to the belt. The journals of the supporting-roll E pass through the sides of the box in a slot, and are connected by levers to give tension to the belt.

Claim.—1. The means employed for feeding the soiled clothing beneath the beater-cylinder, consisting in the slatted supporting-belt H and I, the feed-belt or apron K, the shafts and pulleys F and G, the bars O, P, and Q, and the levers R and S, when combined to operate substantially as and for the purpose specified.

2. The slatted supporting-apron, composed of the rubber belts H and I, in the manner shown, and combined with the feed-apron K, substantially as and for the purpose described.

3. The machine as a whole, when its several parts are constructed and combined to operate substantially as and for the purpose set forth.

143,210.—Machine for Affixing Middle-Bits to Umbrella-Ribs.—ARTHUR WILSON, Birmingham, England, assignor to JAMES COMAWAY and JOHN LOCKEN, Philadelphia, Pa. Application filed November 25, 1872.

The "middle-bit" and the rib are placed upon the bed-plate and adjusted and secured together by the impact of the cuneiform blade and the pegs descending into the groove.

Claim.—A machine for affixing connections or laps on the ribs of umbrellas and parasols, composed of the metal bed A provided with a central groove, B, a set, D, the metal piece E provided with a shoulder, *b*, and terminating in the cuneiform blade F, the pegs G G, and the springs H and I, or their equivalents, arranged and constructed to operate in the manner and for the purposes substantially as described.

143,211.—Cotton-Seed Planter and Guano-Distributer.—CARLOS G. WILSON, Milledgeville, Ga. Application filed August 12, 1873.

A rock-shaft having two hand-levers, one for each hand, is arranged upon the handles of the machine. From the rock-shaft a lever extends, to which is attached a cord for lifting the coverers. An arm connects with one of the hand levers, and is also connected with the geared shaft which transmits motion from the driving-wheel to the stirring device, so that when the coverers are lifted the stirring-shaft is thrown out of gear. The regulating-slide, by its form, is adapted to sow different kinds of seed or fertiliser.

Claim.—1. The coverers R, united by a weighted cross-bar, *k*, and having shares *l*, constructed as specified, for the purposes set forth.

2. The rock-shaft S, having the pair of latch-levers A, and arranged as described, in combination with the connections *i j* for lifting the coverers by either hand.

3. The combination of the rock-shaft S with its arm *i* and latch-levers A A, the cord *j*, lever *f*, and connecting-rod *g*, for simultaneously lifting the coverers and throwing the clutch-pulley out of mesh, as set forth.

4. The regulating-slide *e*, having the lands 3 for adapting the implement to sow guano or rolled seed, when the same is constructed with the hub 1 and arm 2, as described.

143,212.—Attachment for Ladies' Work-Tables.—JOHN P. WILSON, New York, N. Y. Application filed June 25, 1873.

Claim.—The within-described attachment for ladies' work-stand, consisting, essentially, of the bed-plate A, provided with the front clamp and the curved back J, carrying the several special devices, all substantially as described and shown, and for the purpose set forth.

143,213.—Fertilizing Soil.—JOSEPH B. WILSON, Townsend's Inlet, N. J., assignor to himself and WILLIAM A. BARRETT, Philadelphia, Pa. Application filed August 12, 1873.

Claim.—As an improvement in fertilizing the soil, applying to the same crude pulverized mineral coal, with or without manure ingredients, as herein set forth.

143,214.—Hoisting-Machine.—JOHN M. YATES, Princeville, Ill. Application filed August 9, 1873.

A trestle is so combined with a hoisting apparatus that when a wagon is drawn over the trestle the hind axle will rest in a groove cut in the top of the trestle, and allow the wheels to revolve, which is used as the lever-power to hoist bags of grain, &c.

Claim.—1. In a hoisting or elevating machine, a trestle arranged to support the hind axle of a wagon for the purpose of allowing the hind wheel to be used as the lever-power of the machine, substantially as herein set forth.

2. The combination of the crane A B, slide *a*, block and tackle C, trestle D, and the hind wheel and axle of a wagon, as and for the purposes herein set forth.

143,215.—Car-Coupling.—ALBERT ZEIGLER, Cumberland, Md. Application filed July 1, 1873.

When the coupling-link enters between the spring-plate and the bottom of the draw-head it raises the plate so that the rear end of the lever to which the pin is attached is relieved, and the bolt is allowed to fall into the link.

Claim.—1. The combination of the plate *i*, spring 3, connecting-links, and levers 5 8 with the coupling-pin 9, substantially as described.

2. The combination of the head *a*, casting *c*, plate *i*, spring 3, links 4 6, levers 5 8, arm or projection 7, and pin 9, when all are arranged to operate as specified.

REISSUE PATENTS.

5,575.—Egg-Carrier.—OTIS T. BEDELL, New York, N. Y. assignor, by mesne assignments, to WILLIAM D. TABER, PHILIP P. JOSEF, and EDWARD STEIBER.—Patent No. 48,507, dated July 4, 1865. Application filed May 29, 1873.

The pockets can be made by stamping, or they may be attached to the plate A. They are of sufficient depth to hold the eggs in a vertical position, yet permit enough of the eggs to project to facilitate their removal.

Claim.—1. The egg-carrier A, having pockets B, as and for the purpose set forth.

2. The egg-carrier A, having pockets B and aperture *a*, as and for the purpose set forth.

5,576.—Curtain-Fixture.—CHARLES EATON, New York, N. Y.—Patent No. 132,453, dated October 22, 1872. Application filed July 24, 1873.

A spring-stop is interposed between the movable stops and the fixed stops, so that the concussion between the two will be greatly diminished and noise prevented.

Claim.—In a spring curtain-roller, a spring acting in conjunction with a stop or stops operated by centrifugal force, said spring serving to relieve concussion, substantially as and for the purpose specified.

5,577.—Patched Cartridge.—WILLIAM H. ELLIOT, Plattsburg, assignor to E. REMINGTON & SONS, Ilion, N. Y.—Patent No. 35,872, dated July 15, 1862. Application filed July 21, 1873.

Claim.—As a new article of manufacture, a cartridge consisting of a metallic shell, with the powder, fulminate, and bullet, having a tubular patch applied thereto, substantially as described.

5,578.—Metallic Bail-Ear.—THOMAS EVANS, Branchport, N. Y.—Patent No. 24,451, dated June 21, 1859; reissue No. 3,063, dated August 4, 1868; extended seven years. Application filed September 8, 1873.

Claim.—1. Metallic ears for attaching the handles to pails and other vessels formed with concentric annular corrugations surrounding the bail-orifice, substantially as and for the purposes set forth.

2. So arranging the hooked ends of the bail as to give them an additional bearing against one or more of said corrugations, substantially as set forth.

3. A bail-ear formed with the portion surrounding the eye raised to receive the hooked end of the bail, when the marginal portion or portions thereof are formed on the plane of the part to which they are to be attached, substantially as set forth.

4. The groove *a*, formed by a radial continuation of the outer corrugation, and fitted to embrace the side seam of a tin vessel, substantially as and for the purposes set forth.

5,579.—Fruit-Basket.—JESSE K. PARK, Marlborough, N. Y., assignor, by mesne assignments, to THE AMERICAN BASKET COMPANY, New Britain, Conn.—Patent No. 28,105, dated May 1, 1860. Application filed August 20, 1873.

Two laminæ of wood, having each their two ends slitted, are placed across each other at their middle to form the bottom of the basket. The remaining portions are then turned up and interlaced with filling, and finished at the top with a hoop, the bottom being square.

Claim.—1. In a fruit or berry basket, the laminæ of wood, *a a*, slit toward their ends and laid across each other, the slit ends being bent up, substantially as described, whereby said laminæ of wood form the solid bottom and open uprights of the basket, as set forth.

2. A fruit or berry basket in which the bottom and uprights are formed of laminæ of wood, slit toward their ends and laid across each other, and connected to a circular band at their ends, so as to assume an angular box-shape at the bottom and a round basket-shape at the top, all substantially as described.

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FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant thereof, unless he shall make a new application within two years from the date of notice of the original allowance.

COPIES OF DRAWINGS OF BACK ISSUES.

Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1873, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of those classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)..... 6,500
SEWING-MACHINES and attachments..... 2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes..... 4,000
PRINTING; including presses, type, and printers' furniture. 2,500
FELTING and HATS; including caps, bonnets, flock, &c..... 1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)..... 1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs..... 1,400
CARRIAGES and WAGONS..... 6,000
RAILWAYS, (in progress.)
BRIDGES, (in progress.)
CARDING, CLOTH CORDAGE, KNITTING, SILK, SPINNING, WEAVING, (in progress.)

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

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DIGEST OF FOREIGN PATENT LAWS.

FRANCE.

REPORT BY H. WODEHOUSE, OF THE BRITISH LEGATION.

The former legislation with regard to inventions was revised by the Chamber of Deputies, and a new law passed on the 5th of July, 1844.

This law, comprising the whole subject, takes the place of all prior regulations and still remains in force.

It is based on the principle that patents for inventions are only applicable to discoveries relating to industrial arts, and that the said titles are to be delivered without preliminary examination.

Patents are not granted for pharmaceutical preparations or remedies of any kind; nor for financial schemes. As regards the former, the law on the subject prescribes that all pharmaceutical remedies must be submitted to examination by the faculty of medicine, and, unless duly authorized, their sale is illegal. They cannot be protected otherwise than by trade-marks.

Patents can be taken out for the terms of five, ten, or fifteen years, subject, respectively, to a tax, 500, 1,000, or 1,500 francs—say, $100, $200, or $300—payable by annual instalments of $20, due before the expiration of each year. If not paid within the term the patent is forfeited.

Applicants for patents having paid the first annual fee to the treasury, or, if not in Paris, to the Receiver General of the Department in which they are domiciled or elect to be domiciled, must deliver at the office of the Secretary of the Prefecture the receipt for the above payment, to which must be affixed a stamp of 25 centimes and a sealed packet containing—

1. Their petition to the Minister of Agriculture and Commerce.

2. A description of the invention written in French and in duplicate.

3. A drawing or sample in duplicate.

4. A memorandum of the documents delivered, all of which must be signed by the applicant or his representative.

A declaration, entered in a special register and signed by the applicant, records the day and hour of the deposit being made, and the duration of the patent commences from that date. A copy of the declaration is delivered to the applicant on paying the stamp, which costs thirty cents.

All applications must be transmitted from the prefecture to the Minister of Commerce within five days of their being deposited there, and the letters patent are granted by the minister according to the order in which they are received at the ministry. One copy is presented to the patentee gratis, and, if the patent cannot be granted, the amount of the tax is refunded.

The duration of the patent can only be prorogued by special act of the legislative assembly, and such cases are of rare occurrence.

Certificates of addition for improvements connected with the patented invention are obtained in the same way and by the same formalities as in taking out a patent. They have the same force as the original title, and are granted to the patentee or his assigns at any time during the continuance of the privilege. Those filed by one of the assigns are to the advantage of all the others. Each certificate of addition is subject to a tax of $4, and to the charge of five cents for the cost of the stamp. Instead of a certificate of addition expiring with the original patent, the patentee can, if he wishes,

take out a distinct patent of improvement for the term of five, ten, or fifteen years. Any person is, however, at liberty to file applications for patents of improvement on the already-projected invention; but when such applications are lodged within the first year of the patent, they are kept under seal until this term has expired, and the privilege is then only accorded in the event of the original patentee having failed to claim the same improvements by application for a certificate of addition or new patent filed in the interval. When such an application is filed by the patentee it takes precedence over all others of similar nature.

Assignments, to be valid, must be passed before a public notary, and afterward registered at the prefecture of the department. Before the registration is effected the tax for the remainder of the years during which the patent has to run at the moment of the transfer must be paid into the treasury. Changes in the proprietorship of the patents are inscribed in a register at the ministry of commerce.

The assignees and licensees of a patent have the full benefit of all certificates of addition subsequently granted to the patentee, and, on the other hand, the patentee has the benefit of those granted to the assignees. It has been remarked that this article is open to the objection that the patentee can evade the first clause of it by taking out a distinct patent of improvement.

The specifications, drawings, and specimens of the patented inventions are open to public inspection at the ministry of commerce. After payment of the second annuity the text or extracts of the descriptions and drawings are published, and a catalogue of the patents delivered is issued annually.

Foreigners can obtain patents on the same terms as natives. In the case of imported inventions the duration of the patent is limited by the prior foreign privilege.

The patent is null if the invention is not new—that is to say, if publicity has been previously given to it in France or abroad;

If it is not patentable, according to the terms of Article III;

If not shown to be applicable to industry;

If prejudicial to public morals;

If the patent has been obtained under a fraudulent title or contrary to the provisions of Article XVIII;

Or if the description given of the invention is not true and complete.

Certificates of addition are also null when they do not properly refer to the patent.

The patentee forfeits his rights if the invention is not worked within two years of the signature of the patent, or if not worked at any time for a period of two years. He also forfeits them if articles made abroad similar to those patented are introduced into France, unless they are introduced as models under a special authorization. In making mention of his title or of his patent the patentee must add the words "without guarantee of government." The penalty for not doing so is a fine of from $10 to $200, which may be doubled in case of a repetition of the offence. This formula is intended to denote that the patent has been granted without preliminary examination, and that the government is not involved in any responsibility on its account.

Actions for annulment or forfeiture are brought before the civil tribunals of first instance, and are conducted in the ordinary form of civil procedure for summary matters.

Actions for infringement of the rights of the patentee are tried before the "Tribunal Correctionel," (court for trial of misdemeanors,) according to the prescriptions of the penal code. The offender is liable to a fine of from $20 to $400, and, in case of a repetition of the offence, to an imprisonment of from one to six months.

The patentee can obtain an order from the President of the Tribunal for the Seizure of Counterfeits, and the confiscated articles are delivered to him without prejudice to his claiming greater damages.

The application of the patent law to the Colonies is confirmed and regulated by a decree dated October 31, 1848.

The petition, accompanied by the description and drawing of the invention, is delivered at the office of the Director of the Interior, by whom it is forwarded to the Minister of Agriculture and Commerce through the Minister of Marine and the Colonies. Actions for infringement are tried before the court of appeal in the colony.

It will be observed that the taxes imposed by the government in France, viz., for a patent, annuity, and stamp, 100 francs, 25 centimes—say $20; for a certificate of addition, tax, and stamps, 20 francs, 25 centimes—say $4.00—are small as compared with those to which applicants are subject in most other countries, and amount to considerably less than the cost of letters patent in Great Britain.

Various amendments of the law have been at different times in contemplation, but none have hitherto been carried into effect.

ANNEXE I.

CHAPTER I.—GENERAL PROVISIONS.

ARTICLE I. Every new discovery or invention in all departments of industry confers upon its author, under the conditions and for the time hereafter mentioned, the exclusive right of working for his own profit the said discovery or invention.

This right is established by deeds delivered by the government, under the name of patents of invention.

ART. II. The following shall be considered as new inventions or discoveries:

The invention of new industrial products;

The invention of new means, or the new application of known means, for obtaining an industrial result or product.

ART. III. The following shall not be patentable:

1. Pharmaceutical compositions or remedies of all kinds, the said objects remaining subject to the special laws and regulations for these matters, and especially to the decree of the 18th of August, 1810, relating to secret remedies.

2. Schemes and combinations relating to credit and finances.

ART. IV. The duration of the patents shall be five, ten, or fifteen years.

Every patent shall be subject to the payment of a tax, fixed as follows:

500 francs, say, $100, for a patent of five years.

1,000 francs, say, $200, for a patent of ten years.

1,500 francs, say, $300, for a patent of fifteen years.

This tax shall be paid by yearly instalments of 100 francs, say, $20, under penalty of forfeiture if the patentee allows one year to elapse without paying the tax.

CHAP. II.—FORMALITIES RESPECTING THE DELIVERY OF LETTERS PATENT.

SECTION 1.—*Demands for Patents.*

ART. V. Any person who shall wish to obtain a patent of invention must deposit, under a sealed cover, at the office of the Secretary of the Prefecture, in the department in which he is domiciled, or in any other department in which he may elect to be domiciled—

1. His petition to the Minister of Agriculture and Commerce;

2. A specification of the discovery, invention, or application forming the subject of the petition;

3. The drawings or specimens necessary for the comprehension of the specification; and

4. A memorandum of the documents deposited.

ART. VI. The demand must be limited to a single principal object, with the details that constitute it, and the applications, which shall be indicated.

It must mention the duration which the applicants wish to assign to their patent in the limits fixed by Article IV, and must contain neither restrictions, conditions, nor reservations.

It must set forth a title, containing a compendious and precise designation of the object of the invention.

The specification must not be written in a foreign language. It must be without alterations, or words written over others. The words that have been obliterated must be counted and verified. The pages and references must be initialed. It must not contain any denomination of weights and measures other than those inserted in the table annexed to the law of the 4th July, 1847.

The drawings must be made in ink, and according to a metrical scale.

A duplicate of the specifications and drawings must be added to the petition.

All documents must be signed by the applicant, or by his proxy, whose power of attorney must be annexed to the petition.

ART. VII. No deposit can be received except on the production of a receipt proving the payment of a sum of 100 francs, say, $20, on account of the tax on the patent.

A declaration, entered gratis by the Secretary-General of the Prefecture in a special register, and signed by the applicant, shall authenticate every deposit, indicating the day and hour when the documents were delivered.

A copy of the said declaration shall be delivered to the depositor on paying the cost of the stamp.

ART. VIII. The duration of the patent is to begin from the day on which the deposit is made, according to Article V.

SECTION 2.—*Delivery of Patents.*

ART. IX. Immediately after the registration of the petition, and within five days from the date of the deposit, the prefects are to transmit the documents, under the seal of the inventor, to the Minister of Agriculture and Commerce, together with a certified copy of the declaration of the deposit, the receipt proving the payment of the tax, and, if there be one, the power of attorney, mentioned in Article VI.

ART. X. On the arrival of the documents at the Ministry of Agriculture and Commerce they are to be opened, the petitions registered, and the letters patent delivered, according to the order in which the said petitions have been received.

ART. XI. The patents demanded in due form shall be delivered, without previous examination, at the applicant's own risk, and without guarantee as to either the reality, novelty, or merit of the invention, or the accuracy or exactness of the description.

An order of the ministry, proving the regularity of the demand, shall be delivered to the applicant, and constitute the patent of invention.

To this order shall be annexed the certified duplicate of the specification and drawings, (mentioned in Article VI,) after its conformity with the original has been verified, and, if necessary, authenticated.

The first copy of the patent is to be delivered gratis.

All subsequent copies required by the patentee or his representatives shall be subject to a payment of 25 francs, say, $5.00.

The cost for drawings, if any, shall be paid by the applicant.

ART. XII. All applications in which the formalities prescribed by Nos. 2 and 3 of Article V, and by Article VI, have not been observed, shall be rejected.

One-half of the sum paid shall belong to the treasury; but the whole sum shall be carried to the account of the applicant, if he renews his application within the term of three months, reckoning from the date of the rejection of his application.

ART. XIII. Whenever, in pursuance of Article III, a patent cannot be granted the tax shall be repaid.

ART. XIV. A royal ordinance, inserted in the "Bulletin des Lois," shall publish every three months the patents delivered.

ART. XV. The duration of patents can only be extended by a special law.

SECTION 3.—*Certificates of Addition.*

ART. XVI. The patentee or his assigns shall be entitled during the whole term of the patent to make alterations, improvements, or additions to the invention, by complying, on the deposit of the petition, with the formalities prescribed by Articles V, VI, and VII.

These alterations, improvements, or additions shall be authenticated by certificates, delivered in the same form as the principal patent, and having from the re-

spective dates of the petitions and their delivery the same effects as the said principal patent, with which they will expire.

Every application for a certificate of addition shall be subject to the payment of a tax of 20 francs.

Certificates of addition filed by one of the assigns shall be to the advantage of all the others.

ART. XVII. Every patentee who, for an alteration, improvement, or addition, wishes to take a principal patent for five, ten, or fifteen years, instead of a certificate of addition expiring with the original patent, must comply with the formalities prescribed by Articles V, VI, and VII, and pay the tax mentioned in Article IV.

ART. XVIII. None but the patentee or his representatives, acting as above mentioned, can, during one year, legally obtain a patent for an alteration, improvement, or addition to the invention which forms the subject of the original patent.

Nevertheless, any person who shall wish to obtain a patent for an alteration, addition, or improvement in the discovery already patented, may, during the said year, make an application, which shall be transmitted to and remain under seal at the Ministry of Agriculture and Commerce.

At the expiration of the year the seal shall be broken and the patent delivered.

Nevertheless, the original patentee shall have the preference for all alterations, improvements, and additions for which he shall have demanded, during that year, a certificate of addition or a patent.

ART. XIX. Whoever has taken a patent for a discovery, invention, or application connected with the subject of another patent, shall have no right to work the invention already patented; and again, on the other hand, the original patentee cannot work the invention which forms the subject of the new patent.

SECTION 4.—*Assignment and Transfer of Patents.*

ART. XX. Every patentee may transfer the whole or part of the proprietorship of his patent.

The transfer of a whole or part of a patent, either gratuitously or for a consideration, can only be effected by a notarial deed, and after the payment of the whole of the tax prescribed by Article IV.

No transfer shall be valid, as regards a third party, before it has been registered at the secretary's office of the prefecture of the department in which the deed has been executed.

The registration of transfers and all other acts concerning mutations shall be made on the production and deposit of an authentic extract from the deed of transfer or mutation.

A copy of each declaration of registration, together with the extract from the deed above mentioned, shall be forwarded by the Prefects to the Minister of Agriculture and Commerce within five days of the date of the declaration.

ART. XXI. There shall be kept at the ministry of agriculture and commerce a register in which shall be inscribed the changes in the proprietorship of each patent, and every three months a royal ordinance shall be published, in the form prescribed by Article XIV, containing the mutations registered during the expired quarter.

ART. XXII. The assignees of a patent, and those who may have acquired from a patentee or his representatives the power to work the discovery or invention, shall have the full benefit of the certificates of addition which may be delivered to the patentee or his representatives at a later period. On the other hand, the patentee or his representatives shall have the benefit of the certificates of addition, which may be at a later period delivered to the assignees.

All those who may have a right to profit by the certificates of addition may obtain a copy at the Ministry of Agriculture and Commerce by paying a fee of twenty francs, say, $4,00.

SECTION V.—*Inspection and Publication of Specifications and Drawings of Patents.*

ART. XXIII. The specifications, drawings, specimens, and models of the patents delivered shall, until the expiration of the patents, remain deposited at the Ministry of Agriculture and Commerce, where they may be inspected by every applicant.

Any person may obtain, at his own expense, a copy of the said specifications and drawings, according to the forms established by the regulations prescribed in accordance with Article L.

ART. XXIV. After the payment of the second annuity the specifications and drawings shall be published either in the full text or by extracts.

Moreover, at the beginning of each year a catalogue shall be published, containing the titles of the patents delivered in the course of the preceding year.

ART. XXV. The collection of specifications and drawings, and the catalogue published according to the preceding article, shall be deposited at the Ministry of Agriculture and Commerce, and at the secretary's office of the prefecture of each department, where they may be inspected free of charge.

ART. XXVI. On the expiration of the patents the original specifications and drawings shall be deposited in the "Conservatoire des Arts et Métiers."

CHAP. III.—RIGHTS OF FOREIGNERS.

ART. XXVII. Foreigners can obtain patents of invention in France.

ART. XXVIII. All formalities and conditions prescribed by the present law shall be applicable to patents demanded or delivered in compliance with the preceding article.

ART. XXIX. The author of an invention or discovery already patented abroad may obtain a patent in France, but the duration of such patent cannot exceed that of the patents previously obtained abroad.

CHAP. IV.—ANNULMENTS AND FORFEITURES, AND ACTIONS RELATING THERETO.

SECTION 1.—*Annulments and Forfeitures.*

ART. XXX. Patents delivered under the following circumstances shall be null and void:

1. Whenever the discovery, invention, or application is not new.

2. Whenever the discovery, invention, or application is not patentable according to Art. III.

3. Whenever patents refer to theoretic or purely scientific principles, methods, systems, discoveries and conceptions, the industrial applications of which are not indicated.

4. Whenever the discovery, invention, or application is known to be contrary to public order or safety, to

morals, or to the laws of the country, without prejudice in such a case, and in that of the fourth paragraph, to penalties which might be incurred for manufacturing or selling prohibited articles.

5. Whenever the title under which the patent has been demanded indicates fraudulently any other object than the real object of the invention.

6. Whenever the specification annexed to the patent is not sufficient for working the invention, or whenever it does not point out completely and fairly the real means employed by the inventor.

7. Whenever the patent has been obtained contrary to the provisions of Art. XVIII.

Certificates comprising alterations, improvements, or additions which are not connected with the original patent shall be likewise considered null and void.

ART. XXXI. Any discovery, invention, or application to which, in France or abroad, and previously to the date of the deposit of the petition, sufficient publicity has been given to enable the same to be worked, shall not be considered as new.

ART. XXXII. The following shall forfeit all their rights:

1. The patentee who has not made his annual payment before the commencement of each year of the term of his patent.

2. The patentee who has not worked his discovery or invention in France within two years from the date of the signature of his patent, or who has ceased to work it during two consecutive years, unless, in one or the other case, he justifies himself as to the causes of his inaction.

3. The patentee who has introduced into France objects manufactured abroad and similar to those which are protected by his patent.

Models of machines, of which the Minister of Agriculture and Commerce may authorize the introduction, pursuant to Art. XXIX, are excepted from the provisions of the preceding paragraph.

ART. XXXIII. Whoever, in signboards, advertisements, prospectuses, placards, marks, or stamps, calls himself patentee without possessing a patent delivered in conformity with the law, or after the expiration of a former patent, or who, being a patentee, mentions his title of patentee or of his patent without adding the words, "without guarantee of the government," shall be subject to a fine of from 50 to 1,000 francs—$10 to $200. In the case of a repetition of the offence the fine may be doubled.

SECTION 2.—*Actions for Annulment and Forfeiture.*

ART. XXXIV. Actions for annulment or forfeiture may be brought into court by all parties having an interest therein.

These actions, as well as all contestations relating to the proprietorship of patents, shall be brought before the "Tribunaux Civils de Première Instance."

ART. XXXV. Whenever an action is brought at the same time against the patentee and against one or several assignees of parts of the patent, it shall be brought before the tribunal of the place where the patentee is domiciled.

ART. XXXVI. The case shall be tried and adjudicated in the form prescribed for summary matters by Art. CCCCV, and the following articles of the Code of Civil Procedure. It shall be communicated to the Procureur du Roi.

ART. XXXVII. In every action tending to a judgment of annulment or forfeiture of the patent, the public prosecutor may intervene and require the patent to be pronounced absolutely annulled or forfeited.

He may even sue directly by principal action, in order to have the annulment pronounced in the cases provided against in Nos. 2, 4, and 5 of Art. XXX.

ART. XXXVIII. In the cases coming under Art. XXXVII, all assigns whose titles have been registered at the Ministry of Agriculture and Commerce, in conformity with Art. XXI, are to be included in the suit.

ART. XXXIX. Whenever the absolute annulment or forfeiture of a patent has been pronounced by a judgment or decision which has acquired the force of a final adjudication, due notice shall be given to the Minister of Agriculture and Commerce, and the annulment or forfeiture shall be published in the form prescribed by Art. XIV, making patents public.

CHAP. V.—FRAUDULENT IMITATIONS.—PROSECUTIONS AND PENALTIES.

ART. XL. Every infringement of the rights of a patentee, either by the manufacture of products, or by the employment of means which constitute the subject of his patent, constitutes the offence of a fraudulent imitation.

This offence shall be punished by a fine of from 100 francs to 2,000 francs—say, $20 to $400.

ART. XLI. Those who have knowingly received, sold, or offered for sale, or introduced into the French territory, one or more counterfeit articles, shall be liable to the same penalties as the infringers.

ART. XLII. The penalties established by the present law cannot be accumulated.

The highest penalty shall alone be inflicted for all offences previous to the first action.

ART. XLIII. In the case of a repetition of the offence, an imprisonment of from one to six months shall be inflicted, besides the fine established by Arts. XL and XLI.

It shall be considered a repetition of the offence, whenever the accused party in the five preceding years has undergone a first sentence for one of the offences coming under the present law.

An imprisonment of from one to six months shall also be inflicted whenever the infringer is a workman, or a person employed in the workshops or establishment of the patentee; or whenever the infringer, being in partnership with a workman or person employed by the patentee, has become acquainted through the latter with the processes described in the patent.

In the latter case the workman or person employed may be prosecuted as an accomplice.

ART. XLIV. Art. CCCCLXIII of the Penal Code may be applied to the offences to which the preceding provisions relate.

ART. XLV. The action for a misdemeanor, involving the application of the above penalties, can only be brought by the Public Prosecutor at the demand of the injured party.

ART. XLVI. The court for the trial of misdemeanors, before which an action for infringement is brought, shall decide as to the objections raised by the accused

party, respecting either the nullity or forfeiture of the patent, or the questions relating to the proprietorship of the said patent.

ART. XLVII. The proprietors of the patent may, by virtue of an order of the President of the Tribunal de Premiére Instance, proceed through the agency of the officers of the court to have the objects supposed to be counterfeit pointed out and fully described, with or without seizure.

This order shall be issued on a simple application, and on the production of the patent; it shall contain, if requisite, the nomination of an expert to assist the officer in his description.

Whenever a seizure is to be made the said order may impose on the applicant a security, which he must furnish before proceeding in the matter.

Security shall always be required from a foreign patentee who may demand a seizure.

A copy shall be left with the holder of the objects described or seized, both of the order and of the deed, certifying that the security, if required, has been deposited, under pain of annulment of the proceedings, and an action for damages against the officer.

ART. XLVIII. In default of the applicant suing either by civil or criminal proceedings, within eight days, besides one day for every three myriamètres distance between the place where the objects seized or described are, and the domicile of the infringer, receiver, importer, or seller, the seizure or description shall be legally void, without prejudice to the damages which may be claimed, if required, in the form prescribed by Article XXXVI.

ART. XLIX. The confiscation of the articles known to be counterfeit, and if requisite, that of the instruments or utensils specially designed for manufacturing them, shall, even in a case of an acquittal, be pronounced against the infringer, the receiver, importer, or seller.

The confiscated objects shall be delivered to the proprietor of the patent, without prejudice to his claiming greater damages, and, if the circumstances allow it, to his having the judgment posted up.

CHAP. VI.—SPECIAL AND TRANSITORY PROVISIONS.

ART. L. Royal ordinances for the regulation of the public administration, shall establish the necessary provisions for the execution of the present law, which shall not come into force until three months after its promulgation.

ART. LI. Ordinances delivered in the same form shall regulate the application of the present law in the colonies, with the modifications which may be judged necessary.

ART. LII. From the day on which the present law comes into operation, shall be abrogated—the laws of the 7th of January and the 25th of May, 1791; that of the 20th of September, 1792; the decision of the 17th Vendémiaire of the year 7; the decision of the 5th Vendémiaire of the year 9; the decrees of the 25th of November, 1808, and 25th of January, 1807, and all provisions anterior to the present law, relating to patents of invention, importation, and improvement.

ART. LIII. The patents of invention, importation, and improvement, at present in force, delivered in conformity with the laws anterior to the present, or prolonged by royal ordinance, shall continue in force during the time originally assigned to them.

ART. LIV. All proceedings commenced before the promulgation of the present law shall be terminated in accordance with the anterior laws.

All actions, either for annulment or forfeiture of a patent not yet commenced, shall be concluded according to the provisions of the present law, even if they refer to patents delivered previously.

The present law, which has been discussed, deliberated upon, and adopted by the Chamber of Peers and the Chamber of Deputies, and this day sanctioned by us, shall come into force as a law of the State.

ANNEXE 2.

Table of weights and measures (with their English equivalents) as fixed by the law of July 4, 1837, mentioned in Art. VI of the patent law.

	French measures of length.	
	In English inches.	In English feet = 12 inches.
Millimètre	0.03937	0.003281
Centimètre	0.39371	0.032809
Décimètre	3.93708	0.328089
Mètre	39.37079	3.280899
Décamètre	393.70790	32.808992
Hectomètre	3937.07899	328.089917
Kilomètre	39370.79000	3280.899167
Myriamètre	393707.90000	32808.991667

	French measures of length.		
	In English yds. = 3 feet.	In English fathoms = 6 feet.	In English miles = 1760 yards.
Millimètre	0.0010936	0.0005468	0.0000006
Centimètre	0.0109363	0.0054682	0.0000062
Décimètre	0.1093633	0.0546816	0.0000621
Mètre	1.0936331	0.5468165	0.0006214
Décamètre	10.9363306	5.4681653	0.0062138
Hectomètre	109.3633056	54.6816528	0.0621369
Kilomètre	1093.6330556	546.8165278	0.6213684
Myriamètre	10936.3305556	5468.1652778	6.2136842

1 inch = 2.539654 centimètres. 1 yard = 0.9143635 mètre.
1 foot = 3.0479449 décimètres. 1 mile = 1.6093149 kilomètres.

	French measures of surface.	
	In English square feet.	In English square yards = 9 square feet.
Centiare or square mètre	10.764299	1.196033
Are or 100 square mètres	1076.429934	119.603326
Hectare or 10,000 square mètres	107642.993419	11960.332602

	French measures of surface.		
	In English poles = 272.25 square feet.	In English roods = 10,890 square feet.	In English acres = 435.60 square feet.
Centiare or square mètre	0.0395363	0.0009085	0.0002471
Are or 100 square mètres	3.9536289	0.0908457	0.0247114
Hectare or 10,000 sq. mètres	395.3628930	9.0845794	2.4711431

1 square inch = 6.4513889 square centimètres.
1 square foot = 9.2903609 square décimètres.
1 square yard = 0.83609715 square mètre or centiare.
1 acre = 0.40467169 hectare.

French measures of capacity.

	In cubic inches.	In cubic feet = 1728 cubic ins.
Millilitre or cubic centimètre	0.06103	0.000035
Centilitre or 10 cubic centimètres	0.61027	0.000353
Décilitre or 100 cubic centimètres	6.10271	0.003530
Litre or cubic décimètre	61.02705	0.035317
Décalitre or centistère	610.27049	0.353166
Hectolitre or décistère	6102.70515	3.531659
Kilolitre or stère or cubic mètre	61027.05150	35.316581
Myrialitre or décastère	610270.51519	353.165807

	In pints = 34.65923 cubic inches.	In gallons = 8 pints = 277.27384 cubic inches.	Bushel = 8 gallons = 2218.19075 cubic inches
Millilitre or cubic centimètre	0.00176	0.0006301	0.0000795
Centilitre or ten cubic centimètres	0.01761	0.0063010	0.0007951
Décilitre or 100 cubic centimètres	0.17608	0.0630097	0.0079512
Litre or cubic décimètre	1.76077	0.2800967	0.0795121
Décalitre or centistère	17.60773	2.5009668	0.7951208
Hectolitre or décistère	176.07734	22.0096677	2.7512065
Kilolitre or stère or cubic mètre	1760.77341	220.0966767	27.5120846
Myrialitre or décastère	17607.73414	2200.9667675	275.1208459

1 cubic inch = 16.386176 cubic centimètres.
1 cubic foot = 28.315312 cubic décimètres.
1 gallon = 4.543456 litres.

French measures of weight.

	In English grains.	In Troy ounce = 480 grains.
Milligramme	0.01543	0.000032
Centigramme	0.15438	0.000322
Décigramme	1.54323	0.003215
Gramme	15.43235	0.032151
Décagramme	154.32349	0.321507
Hectogramme	1543.23468	3.215073
Kilogramme	15432.34680	32.150727
Myriagramme	154323.46800	321.507267

	Avoirdupois lbs. = 7000 grains.	Cwt. = 112 lbs. = 784000 grains.	Ton = 20 cwt. = 15680000 grains.
Milligramme	0.0000022	0.0000020	0.0000000
Centigramme	0.0000220	0.0000200	0.0000000
Décigramme	0.0002205	0.0002020	0.0000001
Gramme	0.0022046	0.0020127	0.0000010
Décagramme	0.0220462	0.0201269	0.0000090
Hectogramme	0.2204621	0.2012684	0.0000064
Kilogramme	2.2046213	2.0126841	0.0000639
Myriagramme	22.0462126	0.1968412	0.0006421

Grain = 0.064799 grammes. 1 pound avoirdupois = 0.453593 kilogramme.
Troy ounce = 31.103496 grammes. 1 cwt. = 50.802377 kilogrammes.

COMMISSIONER'S DECISIONS.

WILLIAM L. SMITH.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of William L. Smith for Letters Patent for* IMPROVEMENT IN HYDRAULIC ENGINES.—*Decided September 30, 1873.*]

A device for pumping water from below a water-wheel by hand, to operate the wheel and drive heavy machinery, commented upon, and held to be without the requisite utility to warrant the grant of a patent, because involving the perpetual-motion delusion and a defiance of physical law, and not being an adaptation of means to the end sought.

Section 31 of the patent act, requiring that an invention shall be "sufficiently useful and important" in order to be patentable, should be rarely invoked to defeat an application, and should be applied with caution. The mere fact that but little invention is shown, or that a device is small and apparently trifling, is not proper ground for applying it.

LEGGETT, *Commissioner:*

This case exhibits one of those projects akin to the attempts in which men sometimes engage, in defiance of immutable physical law, with the vain hope of achieving perpetual motion. The applicant proposes to elevate water from a vat by means of hand-pumps, and deliver it into a trough that will convey it upon an overshot water-wheel, the wheel being thereby operated, and the water returned to the vat, to be again raised and used, as before. He ignores the fact that the power he employs to apply the water to the wheel must be not only equal to that which he can derive from the operation of the wheel, but greater, for the reason that the friction of the machinery is against him, and the water must be raised from below the lower bucket of the water-wheel to a point above the upper bucket.

If hand-power is sufficient to operate the pumps to convey an adequate amount of water to run the water-wheel, then the same hand-power is more than sufficient to operate the same wheel by direct application, without the intervention of pumps and water, and the consequent loss of power through friction, &c. The invention is an apparatus for losing, rather than for gaining, power.

It does not alter the case that applicant's lever is vertical and weighted at the lower end, and denominated a pendulum—for it is only a pump-handle after all. He says, "When this pendulum is started it will vibrate a long time, and raise water at every stroke through the medium of the pumps"—the old perpetual-motion delusion. The absurdity of the proposition that the mere oscillation of the pendulum pump-handle by hand will be sufficient to raise water to operate machinery of the nature contemplated is too bald to call for argument to refute it. The simplicity of the following statement would be amusing were it not so earnestly advanced: "It is confidently believed that a machine embodying my invention can be constructed of sufficient capacity to drive a quartz-mill with ease, having five or more stampers of the largest size, using the water over and over again." All this is to be done by hand-power through the vibration of a weighted pump-handle. The applicant ignores the mechanical law that action and reaction are equal in opposite directions, and his production belongs to the same class as that of the navigator who attempted to propel his craft by placing a bellows at its stern to artificially fill the sails with wind.

This device is deficient in utility. Section 31 of the patent act requires that the Commissioner shall issue a patent only when the invention for which a patent is sought is "sufficiently useful and important." The courts have construed the word "useful" so as to include anything that is not hurtful, and *is adapted to the end sought.* In this case there is an entire want of such adaptation. I admit that there is rarely ground for invoking this clause of the statute to defeat an application, and it should always be resorted to with great caution. The mere fact that but little invention is shown, or that the device is small, and apparently trifling, is not proper ground for rejection; but when, as in this case, the universal law of gravitation must be

ignored in one portion and doubled in effect in another in order to make the device operative, the question as to whether it is "sufficiently useful and important" is pertinent.

The device, however, even if it were useful, is not new. The form of pump selected is one well known, even to the pendulum pump-handle. The adaptation of the device for using the same water over and over is shown in almost the identical form on page 176 *Perpetuum Mobile*, by *Dircks*, second series. The device there shown is really a full and complete answer to the application. The only difference is that the reference shows one well-known form of pump, and the application another. The reference, however, is a little further advanced in the art than the application, for it shows mechanism, by means of which the water-wheel is to pump the water by which itself is revolved. There is no good reason why the applicant should not show an equivalent device, even for that purpose, for he proposes, with less than one-man power, to raise water enough to run a water-wheel with sufficient force to operate a quartz-mill of five or more stampers of the largest size. Now, as it requires at least a three-man power to operate a single stamper, applicant might omit one stamper, and use the power required to operate it in vibrating the pendulum pump-handle, when he would have the perpetual motion.

Substantially the same device is shown in the rejected application of R. M. Loffelmire, (class Water-Elevators,) filed July 2, 1855, and in at least a dozen other references that might be cited. I have given these references in addition to those cited by the Examiner, though I deem his references as abundantly sufficient.

The device lacks both novelty and utility; hence the decision of the Board of Examiners-in-Chief must be affirmed.

WILLIAM WARD.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Wm. Ward for patent for* IMPROVEMENT IN HOUSES. *Decided October 3, 1873.*]

Inventions are not to be ignored because they relate to the subject of architecture.

There is no reason for excluding patents for inventions from the art of building which will not apply to exclude them from every other art.

In whatever department of art a new and useful invention is produced, a patent for it, duly applied for, cannot lawfully be refused.

LEGGETT, *Commissioner:*

The object of this alleged invention is set forth in the specification to be "the construction of two distinct dwellings upon a single circumscribed lot of ground, with such divisions and subdivisions of its interior space as to give to each dwelling large and roomy apartments where most needed, and affording in each access to both front and rear of the building on every floor, without depriving either dwelling of its equal proportion of front and rear apartments."

The claim is as follows:

"I do not claim the particular style and arrangement of the rooms; but what I do claim is—

"In a double tenement-house on a single circumscribed lot of ground, the broken wall X X X X X, so constructed, substantially as described, as to apportion off the corresponding space in the successive stories to each dwelling alternately, and give to each tenement both front and rear space on each floor, as set forth and shown."

A lot of ground—say, twenty-five feet—intended for two tenements, instead of being divided by floors, or in the center by a partition-wall extending from the ground to the roof, as is the common practice, is divided diagonally by an angular wall, so as to give to the respective tenements alternate wide front and rear rooms on each floor. Two entrance-halls are provided, extending through the building, next the outside walls, leaving the larger rooms in the center, and facing, respectively, front and rear. The stairways are between the large rooms, and lead, respectively, from the lower large back room in one tenement to the upper large front room, and, in the other tenement, from the lower large front to the upper large back room.

The objection made to the grant of a patent is that the case comes within the province of the architect, whose business it is to furnish plans for buildings adapted to the sizes of lots, and to the tastes, wants, or means of builders or tenants; and that a patent is precluded by the decision of the Acting Commissioner in the case of A. M. Smith, OFFICIAL GAZETTE, vol. 2, p. 674. In other words, I take it the objection is that the device exhibits no invention, for if it is an invention it comes within the province of the inventor, and not of the architect, and may be patented if new and useful, whether it appears to be in some sense similar to the business of an architect or not. There is no reason for excluding patents for inventions from the art of architecture which does not apply to exclude them from every other art. If a new dwelling for man is invented it is as much the subject of patent as a bird-cage, a bee-hive, or a dove-cote, all of which have been patented without question.

The following patents indicate somewhat the practice of the Office with reference to inventions of different structures, and show that buildings of all sorts have been the subjects of patents:

J. Harmony, granary, August 20, 1835; R. M. Abbe, hog-pen, August 29, 1854; Ebenezer Ford, granary, October 24, 1854; A. B. Furbee, corn-crib, December 6, 1859; Wm. E. McIntire, stable, September 18, 1860; Patrick Burke, stable, October 9, 1860; S. R. Beckwith, granary, fruit-house, &c., March 13, 1866; J. Knapp and H. S. Elliott, sheep-shed, November 27, 1866; D. Pangle, sheep-house, October 8, 1867; D. S. Whittenhall, dwelling, March 24, 1868; Shelby Reed, sheep-rack, March 23, 1869; Joel Tyler, stock-barn, August 2, 1870.

The claim in the case of A. M. Smith was refused because, in the opinion of the Acting Commissioner, it did not cover an invention, and not because invention is to be forbidden or ignored in connection with the subject of architecture.

In whatever field of art a new and useful invention appears, a patent for it, duly applied for, cannot lawfully be refused.

This case appears to me to clearly exhibit an invention. I have no idea that an architect, as such, would ever hit upon such a plan of building a house. If called upon to produce a plan for two tenement-houses upon a small lot of ground, a mere architect will uniformly follow one or the other of the well-known methods of division. He will either make a straight partition-wall in the center between the two tenements, or else he will separate them by floors. Within these two plans he will present a great variety of subdivisions; but it never occurs to him that he can radically depart from them, or conveniently and advantageously combine the two. Therefore this device is not merely within the province of an architect to produce.

The decision of the Board, which, it is due to them to say, was merely *pro forma*, is reversed, and the application will be allowed.

CHARLES W. JENKINS.—*Appeal.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the application of Charles W. Jenkins for patent for* IMPROVEMENT IN SKATES.—*Decided October 2, 1873.*]

ABANDONMENT.—PUBLIC USE.

A public use of an invention must always be distinguished from a merely experimental one, and any use which, viewed with liberality, can be reasonably regarded as experimental, should be so held.

But a public use, once established, need not be shown to be general or extensive.

Where an inventor swore his use of his invention had been experimental, with a view of perfecting and patenting it, although the use had extended through several years, and apparently resulted in no substantial change in the device, and although a patent for the device had been granted to another more than two years before he made his application: *Held*, that these circumstances were not sufficient to rebut the inventor's oath and prove that he had abandoned his invention, in view of the rule that the law does not favor abandonment.

LEGGETT, *Commissioner:*

This application was put in interference with the patent No. 77,862, granted to Barney and Berry, May 12, 1868. Upon the testimony in said interference it was adjudged that Jenkins was the prior inventor, but that he had abandoned his invention, under section 7 of the act of 1839, through its use or sale in public, with his knowledge and consent, more than two years prior to making application for a patent therefor. The question of abandonment under this section of the statute, being an *ex-parte* one, the interference has been dissolved, and Jenkins has brought it up upon appeal. It is merely a question of fact. Was there or was there not a public sale or use of this invention more than two years before July 1, 1870, with his knowledge and consent? A *public use* must always be distinguished from a merely experimental one, and I gather from the decisions of the courts that, in consonance with the spirit the patent law which fosters invention, much latitude of experimental use is allowable—that any use which, when viewed with liberality, can be reasonably regarded as experimental, should be so held.

Judge Clifford recently said: (*Jones* vs. *Sewall*, OFFICIAL GAZETTE, vol. 3, p. 630,) "When a party practices his invention merely for the purposes of experiment or completion, before he takes out a patent, the inference that he intends to surrender the invention to the public does not arise, and consequently a dedication to the public cannot be proved by evidence that shows only experimental practice by the inventor or his employés, whether in public or private. Such an inference is never favored, nor will it generally be sufficient to prove such a defense unless it appears that the use, exercise, or practice of the invention was somewhat extensive and for the purpose of gain, evincing an intent on the part of the inventor to secure the exclusive benefit of his invention without applying for the protection of letters patent."

In all cases in which a use is proven the question constantly recurs whether it was public or experimental. With respect to a sale there is less room for a controversy. But it has been held that if a single actual public use be established in proof which cannot, by liberal allowance, be reasonably considered experimental, it works a forfeiture. It is not essential that *such* a use be shown to be general or extensive in order to work abandonment.

Judge Swayne said, in *Blandy* vs. *Griffith*, 3 Fisher, 609, decided in 1869: "The statute (act of 1839, sec. 7) is inflexible as to the time when the patent is to be applied for, with reference to the prior (public) use and sale of the invention. The neglect to apply within two years after such sale or use is inevitably fatal. Whenever this fact appears the patent falls. Whatever the circumstances, the courts have no dispensing power."

See also *Rich* vs. *Lippincott*, 2 Fisher, 1; *Pitts* vs. *Hall*, 2 Blatchford, 229; *McCormick* vs. *Seymour*, 2 Blatchford, 240.

It is clear that Barney and Berry had obtained their patent, and had publicly used and sold the invention more than two years before Jenkins applied for his patent. But it is not established that this was with the knowledge and consent of Jenkins, however strong the implication may be. I concur with the Examiner of Interferences that Jenkins made the invention in 1862. It is impossible for me to perceive a substantial patentable difference of construction as existing between the skates originally made with a steel spur secured in the toe of the blade, and as now made with a spur which is a projection from the toe of the blade and a part of the blade. The spur is the same thing, and answers the same purpose in either case.

The invention is wholly comprehended in placing a small short spur on the toe of a skate-blade in any suitable manner, so as to catch into the ice when the skater desires to execute what are called toe movements. If Jenkins has been diligently experimenting, as alleged, for eight years upon this little spur, (which seems almost incredible,) he has practically come out where he started, having made no more than a colorable variation.

"Exhibit E, Cole," which Ward, testifying for Jenkins, swears he made in 1864, is unquestionably the same invention exhibited by the model Jenkins has filed with his application for patent. The two are as nearly identical as could well be.

Had the spur placed upon the skates in 1862, or that shown by "Exhibit E," made in 1864, and used by Jenkins in skating afterward, been known to be in existence, the patent of Barney and Berry would certainly never have been granted. It may be considered, then, whether skate-blades with spurs of any sort upon their toes were in public use or on sale, with the knowledge and consent of Jenkins, more than two years before he applied for his patent.

Upon a careful examination of the entire evidence, I do not find that they were. He swears his own use was experimental, and there is nothing but his delay, and

the seeming improbability of so much experiment upon such a device with such meager results, to rebut his oath. That cannot be regarded as sufficient, in view of the rule that when a man is clearly shown to be the first inventor the law does not favor the idea that he will voluntarily abandon his invention. He also swears that it was ever his intention to obtain a patent, and he is, to some extent, corroborated.

Abandonment is not proved, and the decision of the Board is therefore reversed, and the patent will issue.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,260.—Defecating and Clarifying Cane-Juice.—Granted to EDWARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

25,236.—Cut-Off Valves of Steam-Engines.—Granted to EDWARD R. ARNOLD, November 1, 1859. Application filed August 1, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

25,978.—Tackle-Blocks.—Granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, April 11, 1865, and December 6, 1866. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,064.—Bit-Stocks.—Granted to NELSON STOFFORD, November 1, 1859; reissued April 23, 1867. Application filed July 26, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,068.—Telegraphic Machines.—Granted to GEORGE M. PHELPS, November 1, 1859. Application filed July 30, 1873. Testimony closes September 30, 1873. Hearing October 15, 1873.

26,088.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,089.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,099.—Machines for Making Box-Joints.—Granted to JAMES SIMPSON, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,099.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 22, 1873.

26,097.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,099.—Machines for Folding Paper.—Granted to CYRUS CHAMBERS, JR., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,120.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,125.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,126.—Mode of Advertising.—Granted to EDWARD WIRE, November 15, 1859. Application filed August 18, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WISSEY, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 16, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 16, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,242.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 16, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 20, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,291.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1866, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 12, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1869. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, JR., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to ESTHER BURTON, December 20, 1859, and reissued December 31, 1860. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FERTH and JOHN INGHAM, December 20, 1859, and reissued April 26, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL L. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GOSS, December 27, 1859, and reissued January 13, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,592.—Horse Hay-Rakes.—Granted to SAMUEL LYMAN, December 27, 1859. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Fervor Ware.—Granted to BRADFORD S. PIERCE and MARCH R. PIERCE, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STURTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,805.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 19, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,832.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 30, 1873. Hearing January 7, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,539.—Manufacture of Gun-Barrels.—Granted to JAMES H. BURTON, March 20, 1860, and antedated to September 20, 1859; reissued December 26, 1871. Application filed July 1, 1873. Hearing September 16, 1873.

EXTENSIONS GRANTED.

25,640.—Improved Steam-Boiler, granted to JOSEPH HARRISON, JR., October 4, 1859.

Claim.—1. The construction of a boiler of distinct globular or spherical parts, single or in groups, substantially as above described, united in the manner hereinbefore specified, or any other analogous thereto, and wherein the strength of the globular form of such parts is common to the entire structure.

2. The employment, as units of construction, as hereinbefore explained, of separate chambers, of cast-iron or other metal, of uniform size or shape, substantially as described, to be used as wanted, wherewith boilers of different forms and dimensions may be built up, being united together in the manner hereinbefore specified, or any other analogous thereto.

25,662.—Improvement in Construction of Prisons, granted to EDWIN MAY, October 4, 1859.

Claim.—1. The angle-door D, in combination with the safe-lock or bolt I, when constructed and operated substantially as set forth.

2. The safe J, containing the drum p and bolt I, and being held by the outer door C, when constructed and operated substantially as and for the purpose set forth.

3. The endless chain or rope s, in combination with the levers d, when constructed and operated substantially as and for the purposes set forth.

4. The combination and arrangement of the levers b, bar c, and bolts or lugs p, when operated from without the grating i, substantially as and for the purposes set forth.

25,673.—Improved Machine for Lasting Boots and Shoes, granted to JAMES PUSHETON, JR., October 4, 1859; reissued January 6, 1863, numbered 1,362.

Claim.—1. Compressing the upper around the last by means of clamps provided with projecting plates or flanges to turn the projecting edges of the upper over upon the insole or last in any manner, substantially as described.

2. In combination with any suitable device for holding and supporting the last, the use of a series of clamps moved inward simultaneously by levers, or their mechanical equivalents, to compress the upper upon the last equally on all sides, substantially as hereinbefore explained.

3. The hinged or folding plate C, employed in connection with the clamps A, substantially in the manner described.

4. The cutting or roughening plate E, constructed and operating substantially as and for the purposes set forth.

Disclaimer filed September 27, 1873.

Disclaims as follows: "The parts may be arranged to impart motion to the said plates or flanges, either simultaneously with the motion of the lower part A of the clamps, or at any desired period in relation thereto. If moved simultaneously, the said plates or flanges may be permanently attached to, or form parts of, the clamps projecting inwardly to the required distance from the inner surfaces of the lower portion A."

25,683.—Improvement in Hydrants, granted to CHARLES L. STACY, October 4, 1859; reissued June 6, 1865, numbered 1,905.

Claim.—The provision, in a hydrant-piston, of a flexible cup, G, or its described equivalent, as arranged as to cover the water-aperture in the act of drawing, and to be pressed against said aperture by the head of the water in the discharge-pipe, substantially as set forth.

2. The relative arrangement of the cup-formed disks F, G, and G'', and the apertures K and L, adapted, in the manner set forth, to form a chamber, I, closed on all sides, with the exception of the ingress-aperture K, while the hydrant is open, substantially as set forth.

25,692.—Improvement in Sewing-Machines, granted to KASMIR VOGEL, October 4, 1859; reissued November 1, 1864, numbered 1,805.

Claim.—1. In combination with the needle which carries the thread through the cloth, combined with suitable means below for concatenating the stitches to form a seam within the edge, or what is to be the edge, the employment of the thread-conductor, or the equivalent thereof, for uniting the thread, which passes over the edge to make the edge-finish, with the seam within the edge, substantially as described, and for the purpose set forth.

2. The employment of a guide or guides for introducing and laying a thread or cord, turned a bur, on one or both surfaces of the material, parallel with the seam and under the concatenating thread or threads, substantially as described, in combination with the sewing mechanism, or the equivalent thereof, and the mech-

anism, or the equivalent thereof, for passing the thread or threads over and across said bar or bars, substantially as described.

96,701.—Improvements in Skeleton Skirts, granted to JAMES DRAPER, October 4, 1859; reissued December 27, 1859, numbered 870; and again reissued August 1, 1865, numbered 2,046. (GEORGE A. DRAPER, administrator.)

Claim.—The (new) manufacture of skeleton skirts, substantially such as described, consisting of a series of tapes woven in the direction of their length, in alternate sections, as single and as double tapes, with the hoops inserted in the loops formed by weaving the tapes in double tapes, and there secured, to prevent the tapes from sliding laterally on the hoops.

DISCLAIMERS FILED.

25,666.—Machine for Lasting Boots and Shoes.—Granted to JAMES PURRINGTON, Jr., October 4, 1859; reissued January 6, 1863, numbered 1,303. Disclaimer filed September 27, 1873.

Disclaims:

That part of the reissued specification which relates to a permanent attachment of the plates or flanges to the clamps, and which is contained in the following words, viz: "The parts may be arranged to impart motion to the said plates or flanges, either simultaneously with the motion of the lower part A of the clamps, or at any desired period in relation thereto. If moved simultaneously, the said plates or flanges may be permanently attached to or form parts of the clamps projecting inwardly to the required distance from the inner surfaces of the lower portion A."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date September 30, 1873.]

6,285.—Gall-Bolts.—CHARLES S. BARNARD and EDWARD A. BARNARD, West Meriden, Conn. Application filed September 5, 1873. Term of patent 14 years.

6,286.—Boot-Jacks.—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place. Application filed June 30, 1873. Term of patent 7 years.

6,287.—Lamp-Shades.—WILLIAM MARVERS, New York, N. Y. Application filed June 14, 1873. Term of patent 14 years.

6,288.—Tea and Coffee Pot Base.—EDWARD B. MANNING, Middletown, Conn. Application filed July 17, 1873. Term of patent 7 years.

6,289.—Lamp-Feet.—NATHANIEL L. BRADLEY, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place.—B. Application filed September 16, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date September 30, 1873.]

1,472.—Windmill.—ATWOOD & BODWELL, San Francisco, Cal. Application filed August 16, 1873.

"'Excelsior Windmill.'"

1,474.—Packed Oysters and Fruits.—BARNES, ADAMS & Co., Baltimore, Md. Application filed September 24, 1873.

"'Capitol brand,' with engraving of Capitol of the United States."

1,475.—Fertilizer.—GEORGE DUGDALE & Co., Baltimore, Md. Application filed August 21, 1873.

"'Early Ripener Soluble Phosphate!'"

1,476.—Fertilizer.—GEORGE DUGDALE & Co., Baltimore, Md. Application filed August 21, 1873.

"'Upland Cotton-Fertilizer,' the word 'Upland' having the figure of an arrow drawn through it lengthwise."

1,477.—Fever and Ague Cure.—HARMAN VAN RIPER and JAMES G. BEACH, New York, N. Y. Application filed September 13, 1873.

"the figure of an Indian having a bag containing the cure tied across the bare stomach."

1,478.—Prepared and Preserved Fish.—DODD, TABR & Co., GLOUCESTER, Mass. Application filed September 24, 1873.

"A star, the outline of which is composed of broken lines."

1,479.—Brandies.—MICHAEL DOHERTY & COMPANY, Boston, Mass. Application filed September 22, 1873.

"'Imperial Cognac,' with crown and one or more stars."

1,480.—Cheese.—WEBB, TURNER & Co., New York, N. Y. Application filed September 20, 1873.

"'Gilt Edge.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date September 30, 1873.]

ORIGINAL PATENTS.

143,216.—Oil-Cup.—ALEXANDER T. BALLANTINE, Titusville, Pa. Application filed May 31, 1873.

A filling-cup is connected with the oil-reservoir beneath by a neck, having a two-way cock to open and close successively a passage for the oil down and one for the steam up. The oil-reservoir is surrounded by a shell, and between the two is a narrow space for steam, which softens the lubricant. Below this is a neck connecting the reservoir with the steam-chest, and having two passages, one conveying oil into the steam-chest, the other a passage for steam from the steam-chest into the narrow space between the oil-reservoir and its shell. This neck is also supplied with a two-way cock, and when the upper cock closes both passages steam may be admitted by turning slightly the lower cock, and by further turning it the lubricant will enter the steam-chest. After this the lower cock is turned off, and the steam is allowed to escape through a passage in the upper neck and a pipe extending above the filling-cup. By turning the upper cock, and by further turning it, the reservoir is replenished by oil from the filling-cup.

Claim.—1. In an oil-cup or lubricator, a steam-discharge tube, P, arranged in relation to the filling-cup, substantially as and for the purpose specified.

2. In an oil-cup or lubricator, the combination of the filling-cup F, steam and oil passages Q R, and two-way cock S, and the discharge-tube P, substantially as and for the purpose specified.

3. The steam-space C, oil-reservoir A, oil and steam passages H L, and two-way cock K, in combination with the steam and oil passages Q R, two-way cock S, and filling-cup F, with the discharge-tube P, substantially as and for the purpose specified.

143,217.—Wood-Screw.—OLIVER D. BARRETT, Washington, D. C. Application filed September 5, 1873.

Claim.—The wood screw A with the drill-point *b*, as set forth.

143,218.—Loom-Picker.—SAMUEL BOORN, Lowell, Mass. Application filed April 9, 1873.

To prevent the picker from breaking near the guide-rod, it has applied to it the jacket, and the ends of the jacket project against the side of the shuttle-box and assist in preventing angular deviation and fracture.

Claim.—The picker A, having its spindle sleeve surrounded by the jacket F, so that the ends of said jacket shall bear against the sides *x x* of the shuttle-box case, substantially as described.

143,219.—Separator for Coal, Ores, &c.—HEZEKIAH BRADFORD, Reading, Pa. Application filed February 1, 1873.

The jig-box, cast in one piece with a perforated bottom, is suspended by means of springs, which balance the weight of the box and contents and plays up and down in a fixed casing, whereby a uniform action of the water upon the material is obtained. The particles of greater specific gravity pass through the sieve and fall upon the incline beneath, which conducts them to the elevator which removes them from the tank. The lighter material, which is separated from the heavier, passes over the edge of the jig and falls upon the perforated inclined apron, from whence it is removed by means of the reciprocating rake.

Claim.—1. A delivery-incline, F, and rake *n*, combined with the jig, substantially as set forth.

2. A perforated delivery-incline and rake or elevating mechanism, in combination with the said jig and a water-supply acting to wash the material as delivered, substantially as set forth.

3. Elevating-buckets passing around pulleys in the tank *m'*, in combination with the jig, and an incline to direct the material that is separated into the path of the buckets, substantially as set forth.

4. A jig, with a perforated bottom and valves to which a reciprocating motion is communicated, of a length proportionate or about corresponding to the diameter of the pieces of material operated upon, substantially as set forth.

5. A reciprocating jig with perforated bottom and valves, in combination with a stationary box to confine the water below the jig-box, substantially as and for the purposes set forth.

6. The reciprocating jig-box and its connections cast in one piece, and provided with supports for the removable perforated bottom, substantially as and for the purpose set forth.

7. The method herein described of regulating the discharge of the material from the jig by varying the height of the water above the place of delivery, as set forth.

8. The method herein specified of separating articles of different specific gravity by screening or assorting the same in size previous to the jigging operation in water, in which the movement is proportionate to the size of the material operated upon, substantially as set forth.

143,220.—Clothes-Wringer.—H. JEROME BURR, Bloomfield, assignor to himself and WM. E. SIMONDS, Hartford, Conn. Application filed July 31, 1873.

The rollers are propelled by gearing that admits of their being separated some distance apart without being ungeared. The clamps are adjusted by screws through pillar-sockets. The upper roller is adjusted by springs and screws bearing on circular plates in grooved slots in the frame.

Claim.—1. The combination of the two larger gears with the smaller pinion, the axles of the former being connected with the axle of the latter by arms (or plate) turning upon said axles, substantially as described, and for the purpose set forth.

2. The combination of the wringer-frame *a*, the pivoted clamps *i*, the thumb-screws *h*, and the pillar-sockets I, constructed, arranged, and operated substantially as described, for the purpose set forth.

3. The combination and arrangement of the screw *r*, the crosser *p*, the circular plates *n*, the springs *o*, and the bars *m* with the axle-ends of the upper wringer-rolls.

143,221.—Wood-Turning Lathe.—JAMES CHASE, Rochester, N. Y. Application filed December 30, 1872.

A revolving pattern-knife is arranged to travel lengthwise of the lathe and act in connection with a smoothing-cutter, the movement of which is regulated by a gage-bar.

Claim.—1. A wood-turning lathe embracing in its construction the main sliding tool-rest B and secondary tool-rest J, the latter having a rotary pattern-knife arranged to be automatically attached to or detached from said main tool-rest, substantially as and for the purposes set forth.

2. A rotary pattern-knife, I, arranged upon the carriage or tool-rest J, and automatically adjusted toward or from the work, as the carriage moves along, by means of the guide *f h*, substantially as set forth.

3. The hollow rotary knife-head L, for permitting the free discharge of the chips therefrom, and for convenience in sharpening the knife, which can be done without removing the latter from the stock.

4. A rotary knife-head, L, in combination with the sleeve N and slide K, operating substantially as described.

5. The conical ring *g* and nut *o*, in combination with the circular knife I and head L, for the purposes set forth.

6. In combination with the main tool-rest B and secondary rest or rests J J', the dog *p* and fixed cam or cams *e* and *e'*, operating substantially as described.

7. The slide *c'* and step *d'*, in combination with the smoothing-tool stock B', for the purposes set forth.

8. In combination with the adjustable rotary head or heads I or I', the rack or racks *j j*, pivoted at one end to the frame, and allowed to follow any undulations of the knife-head, substantially as set forth.

143,222.—Apparatus for Loading and Unloading Wagons.—BENJAMIN COKLY, Washington, D. C. Application filed August 11, 1873.

The truck is lowered to be filled, and then raised to a level with and run into the box to be emptied.

Claim.—1. The combination of the platform A, bed B, supports B', lever C', and connecting-bar C, substantially as and for the purpose described.

2. The combination of the lever C' and adjusting device E *e* E' *g*, or its equivalent, with the bed B and uprights B' of a loading device, substantially as shown, and for the purpose specified.

143,223.—Bale-Tie.—FREDERIC COOK, New Orleans, La. Application filed September 13, 1873.

The curled fastener is riveted to one end of the band. A hook formed on the other end of the band is secured to one end of the fastener, and locked under the other end of the same.

Claim.—1. A cotton-bale tie, made of band metal curled around one end of the band and riveted thereto, and standing off from the band far enough to admit, between itself and the band, the other or bent end of the band, substantially as described.

2. In combination with a bale-band, the curled fastener E, secured to operate substantially in the manner and for the purpose set forth.

143,224.—Grate-Bar.—ALPHONSO F. CROWELL, Hyannis, Mass., assignor to GEORGE H. CLARKE, Brooklyn, N. Y. Application filed September 9, 1873.

Hook-lugs are cast on both sides of the bar, those on one side being turned up and on the other down, so that each bar engages with the one next to it and prevents lateral displacement. Stop-lugs at each end of the bars prevent longitudinal displacement.

Claim.—In combination with the bar A, the hooks *a* and *a'* upon opposite sides of the bar, and the stop-lugs *b*, constructed, arranged, and operated substantially as described.

143,225.—Washing-Machine.—LEVIS H. DAVIS, West Chester, Pa. Application filed August 9, 1873.

In the bottom of a wash-tub is secured a standard. On this revolves a carrier having a projection in the center, and ribs and openings. Above this is an agitator having triangular-shaped beaters with inclined surfaces, and operated by a shaft and gearing attached to the cover of the tub.

Claim.—1. The carrier C, having socket *g*, and loosely pivoted upon the standard B, in the manner and for the purposes specified.

2. The triangular-shaped beaters D, having inclined surfaces, as described, and secured upon the agitator E, substantially as described, for the purposes specified.

3. The agitator E, having the beaters D, formed with inclined sides and rounded corners, in combination with the cap *m*, shaft E', pinion F, gear-wheel G, and the carrier C, all arranged and operating substantially as and for the purpose specified.

143,226.—Machine for Forming Spring-Keys.—MICHAEL DERRING, Syracuse, N. Y., assignor to SWEET, HAMMS & Co., same place. Application filed May 24, 1873.

A reciprocating slide carrying a holder, in which is fitted a vertical mandrel, the end of which is reduced to the inner dimension of the eye. The cutter *c* severs the blank fed in in front of the mandrel. The mandrel carries the blank forward between the rollers *g g* that give the first bend. At this point a spring-catch, *g'*, depressed by the mandrel, rises between the ends of the blank and keeps them apart while the mandrel enters the notches in the rollers *i i*, turning them as it advances and crimping the blank to form the eye, the ends being drawn through and formed by grooves in the rollers. The key is released by cleats *r*, the mandrel being withdrawn by an incline, *s*, up which an arm projecting from the mandrel rides.

Claim.—1. The combination, as herein described and shown, of the notched rollers *i i* and the mandrel *p* and the springs *g' g'*, the rollers being moved in one direction by the mandrel *p*, and in the opposite direction by the springs *g' g'*, as and for the purposes herein set forth.

2. The combination of the spring-holder *g'* and rollers *i i*, for forming the crimp in the eye of the key.

3. The combination of the stud-rollers *g*, spring-holder *g'*, and forming-rollers *i i*, as and for the purposes specified.

143,227.—Machine for Painting Wire-Cloth.—JOSIAH H. DE WITT, Orange, N. J. Application filed March 31, 1873.

Paint is transferred from a roller to a porous belt, and from it to another roller covered with some porous material, and the cloth that passes between the belt and roller is carried through a drying-chamber over an endless belt, having cross-bars provided with pins to carry the belt along and to keep the paint on the cloth from abrasion against the cross-bars. The cloth is formed into a roll at the end of the drying-chamber.

Claim.—1. The painting-machine, constructed and operated substantially as described, with the belt or belts L and rolls B, C, D, and E, or their equivalents, to distribute paint to the wire-cloth.

2. The drying-machine, constructed with endless chains or belts and cross-bars with pins, and operated within a heated chamber, K, substantially as described.

3. The combination and arrangement of the drying-machine, constructed with endless chains or belts, and cross-bars with pins, and operated within a heated chamber, K, with a painting-machine for painting wire-cloth in a continuous web.

143,228.—Printer's Galley-Rest.—JOHN A. DOYLE and JOHN A. MURPHY, Lancaster, Pa. Application filed August 25, 1873.

The bracket is held in different positions by the lug falling into the notches on the hinge.

Claim.—The bracket, with its arm A, brace B, and pins D E, and conic lugs *b*, in combination with the perforated bearing I K N, all substantially as and for the purpose specified.

143,229.—Pipe-Coupling.—WILLIAM B. DUNNING, Geneva, N. Y. Application filed August 26, 1873.

A screw-coupling ring, working upon two flanged conical collars, draws them together upon inclined surfaces of a longitudinally-divided sleeve, compressing it firmly upon a tubular packing, making a tight joint between the two sections of pipe.

Claim.—A pipe-coupling or union embracing in its organization a tubular packing, *k*, conical sleeve *a*, collars *b* and *d*, and coupling-ring A, operating conjointly substantially in the manner and for the purposes set forth.

143,230.—Programme-Clock.—SAMUEL F. ESTELL, Chicago, Ill. Application filed May 10, 1873.

The adjustable pattern-wheel for determining the striking intervals is placed in the lower part of the clock-case, beneath the time movement, from which it receives motion by a long connecting-shaft. A tripping-lever on the pattern-wheel and an attached rod or wire connect the same with the ordinary striking-train.

Claim.—In combination with a programme-wheel, the lever C and drop-wire *a*, operating substantially in the manner described, and for the purpose set forth.

143,231.—Car-Coupling.—MOSES FERREE, Freedom, N. H. Application filed April 11, 1873.

The wedge-shaped furcations on one end of the link, acting upon the studs of the yoke, raise and sustain it, and with it the coupling-pin, until the link has passed far enough in the draw-head to bring its slot beneath the pin, and then, on account of the peculiar shape of the link, the studs are relieved and the pin falls. Should the pin break, the studs on the yoke will engage with shoulders on the link and sustain the draft.

Claim.—1. The draw-bar provided with the yoke B, link-pin C, and studs *c c*, and the link having the slot *g*, the wedged prongs *p*, and the inclined planes *h*, all arranged substantially in manner and to operate as specified.

2. The combination of the yoke B, having studs *c c*, with the link D, having shoulders *k k*, as described, and for the purpose set forth.

143,230.—Planing-Machine.—ANDREW H. FRANK and GEORGE SPIER, Buffalo, N. Y. Application filed June 14, 1873.

Claim.—The pulley G, composed of the pulley proper *g* and one or more concentric cylinders, *g'*, capable of being readily secured thereto and detached therefrom by means of the fastening-pin *i* and cavity *j*, substantially as and for the purpose hereinbefore set forth.

143,233.—Wheel for Vehicles.—JACOB C. GARRETSON, Marshland, N. Y. Application filed August 23, 1873.

Claim.—A spoke and felly fastening, consisting of socket A, base C, and flanges K and L having beveled edges *m* and *n*, bolts F and G with nuts I and J, in combination with the spoke B, felloe D and B, and tire H having flanges, substantially as and for the purpose hereinbefore set forth.

143,234.—Combined Door Hinge and Spring.—WILLIAM GILFILLAN, Syracuse, N. Y. Application filed March 3, 1873.

The hinge swings open in both directions, and has connected with it, so as to operate both ways, a spring-arm. The arm is drawn constantly downward by a coil-spring, and is prevented by a stop-joint from falling within the door-frame when it is disconnected from the hinge.

Claim.—1. In the above-described spring-hinge, the combination and arrangement of the bars *i i'* and plates *a* and *c*, specifically as and for the purposes set forth.

2. The arm *f* connected to the plate *c* of the hinge by a rule or stop joint, as and for the purposes described.

3. The bar *m* in combination with the spring and double-acting hinge, substantially as specified.

143,235.—Cam-Movement.—JOHN E. GOODWIN, Brewerton, N. Y. Application filed February 10, 1873.

Claim.—1. The cam-groove walls placed out of the plane of each other, and their combination with double friction-rolls working on the same arbor or stud, substantially as and for the purpose set forth.

2. The combination of the cam-groove walls placed out of the plane of each other and double friction-rolls working on the same arbor or stud with the mechanical means of relatively adjusting the said walls and rolls in such relation to each other that the lost motion may be taken up, substantially as and for the purpose set forth.

143,236.—Sash and Door Clamp.—ROBERT L. GREENLEE, Chicago, Ill. Application filed November 16, 1872.

Sash, doors, and blinds are clamped in both directions. The clamps are movable upon a stationary frame.

Claim.—1. The combination, in a sash and door clamping machine, of two or more clamps, *c L*, constructed with clamping-lever N and rack M mounted upon a bar, E, adjustable along the bearers A B, and entirely detached from the said bearers or their supports.

2. The combination of the clamps *c L*, draw-rod R, lever N, pivoted rack M, and counter-weight W with the bar E and an adjustable longitudinal clamp, I J K, as set forth.

143,237.—Boot and Shoe Channeling-Machine.—BENJAMIN H. HADLEY, Brooklyn, N. Y. Application filed August 21, 1873.

The groove-cutter and the feed mechanism are attached to a vertically-movable head. The feed mechanism consists of two feed-dogs, loosely pivoted, having their bearing ends serrated, which press down upon and take hold of the stock alternately, giving it a continuous forward motion. The stock is supported upon a revolving convex-faced table, which rotates at a speed corresponding to the feed movement.

Claim.—1. The herein-described feed mechanism consisting of feed-dogs arranged to move above and in contact with the work, and having a compound vibratory or walking movement, so that each, alternately and in succession, will take hold of and carry along the sole, the one taking hold of the work just as the other is about to leave it, substantially as herein shown and set forth.

2. In combination with the feed mechanism, the cutter mounted upon a vibratory arm in the manner substantially as herein shown and described, so as to cut into the sole, forming the inside channel at the proper angle with respect to the sole, and that it may be withdrawn therefrom, substantially as and for the purpose set forth.

3. The combination of the feed-dogs, moving on a fixed gudgeon passing through slots in their upper ends, with the crank-shaft for operating said dogs, substantially as shown and described.

4. The divided crank-shaft carrying the feed-dogs and mounted at one end in the vertically-movable head, and at the other end in a rocking bearing on the main frame, under the arrangement and for operation as shown and set forth.

5. In a boot and shoe sole channeling-machine, the combination, with a top feed mechanism, of a revolving circular convex-faced table or support for the work, placed at an inclination to the horizontal, with its upwardly-tilted part located under the feed mechanism, and moving at the same rate of speed at which the work is fed along, substantially as shown and described.

6. The cutting and feed mechanisms, arranged on and carried by a vertically-movable head held down toward the table or support for the work with a yielding pressure, and adapted to elevate said mechanisms entirely from the work, or to adjust them bodily and together at different distances therefrom, substantially as and for the purposes shown and described.

7. The combination of the vertically-movable head with the vibratory arm carrying the inside-slanting channel-knife and pivoted to the head, substantially as shown and set forth.

8. The vertically-movable head carrying the outside grooving-cutter and feed mechanism, and the vibratory slanting knife-carrying arm pivoted to said head, as described, the two being provided with recoil springs, and connected together by means substantially such as specified, in combination with a single lifting-lever arranged to operate in connection with said parts, in the manner shown and set forth.

143,238.—Carpet-Fastener.—CHARLES HARTING, Washington, D. C. Application filed February 21, 1873.

A round nail has a projection on the head and an angular offset near the lower end; a tube for insertion into the floor, the tube having a groove on the inside, into which the offset of the nail passes in under the tube, which holds it in place.

Claim.—The combination of the nail A, having projections B and E, with the tube D and slot C, as herein described, and for the purposes set forth.

143,239.—Earth-Closet.—CLARK C. HASKINS, New Albany, Ind., assignor of one-half of his right to JAMES FERRIER, Louisville, Ky. Application filed April 28, 1873.

An air box or blower is placed on the under side of the shelf immediately under the drawer. The box is provided with a piston that is operated by means of an arm arranged on the under side of the hopper-slide, the arm being connected with the end of the piston-rod. As the drawer is drawn out a sufficiently strong blast is produced to scatter the dust over all parts of the vessel.

Claim.—The air box or blower E, as above described, when used for earth-closets, in combination with the drawer C, arm F, and slide-arms D D, by means of which it is operated, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

143,240.—Composition for Preventing Incrustations in Steam-Boilers.—ROBERT HATFULL, Deptford, England, assignor to DAVID L. EVANS, New York, N. Y. Application filed August 1, 1873.

Composed of lac-sulphur, carbonate of potash, animal charcoal, and terra-japonica, mixed with water.

Claim.—A composition formed of the within-mentioned ingredients, in about the proportions specified, for the purposes set forth.

143,241.—Dinner-Bucket.—FRED E. HELLIG, Louisville, Ky. Application filed July 17, 1873.

The pail is made in the form of a cylinder, the top portion of which is divided into two parts, one of which is removable from the other, and has a back attached to it so as to form a water-tight vessel; said detachable portion is hinged to the other part and is provided with a nozzle. The lower portion of the pail is cylindrical also, and is secured to the upper portion by a flange on its upper edge engaging with a flange continuous on the lower edge of the two upper parts.

Claim.—The three-part bucket herein described, constructed with a hinged removable liquid-receptacle, A, and provision-apartments C D, the latter, D, being secured to the bottom of parts A C by flanges, as shown and specified.

143,242.—Gear-Cutting Attachment to Lathes.—WILLIAM P. HOPKINS, Lawrence, Mass. Application filed April 24, 1873.

The sleeve H, which contains the gear-supporting mandrel I and carries the index-wheel C, is located in a hub, B, of which an upright arm, *t*, is held by dovetail against the face of a bar, A, and is adjustable as to height in relation thereto by the screw S, and clamped by screw O, the bar A to be inserted in the tool-post.

Claim.—1. The combination of the arbor-box B, the arbor-spindle H, the index-pulley C, and the screw-bolt O, constructed substantially as shown and described, when used in combination with a slotted and grooved bar, A, and a lathe-carriage tool-post or lathe-carriage.

2. The slide-clasp K, when used with the index-pulley C, and the number of holes in each row in the pulley C is indicated on the face of the clasp K opposite the row of the holes the number represents, substantially as set forth.

143,243.—Wood-Compresser.—HENRY A. HOUSE, Bridgeport, Conn.—Case D. Application filed December 6, 1872.

The invention consists in a peculiarly-formed conical tube, through which the bundles of wood are forced before tying.

Claim.—The compressing-chamber A', presenting a taper which is uninterrupted from one end to the other, as herein shown and described.

143,244.—Apparatus for Checking Horses.—JOHN JACKSON, Hartford, Conn., assignor of one-half his right to GEORGE ROHRMAYER, same place. Application filed December 30, 1872.

Upon the rear end of a hand-lever, pivoted to the side of the wagon, is a half-gear meshing into a rim-gear, which is slipped onto the inner side of the hub.

Claim.—The rod *a a'*, pivoted to the vehicle, one end coming up at the front or side of the same, and the other end bearing the half-gear *d*, or its equivalent, meshing into the gear *e*, attached to the hub or wheel, the whole combined and arranged to operate substantially as and for the purpose set forth.

143,245.—Potato-Bug Destroyer.—ALFRED A. MIXER, Hamilton, Ohio, assignor of one-half his right to FRANK BLACK, same place. Application filed August 16, 1873.

A hopper, at whose open side is mounted an adjustable reel, is fixed upon a barrow, from the wheel of which a bevel-gear transmits motion to a pair of crushing-rollers in the bottom of the hopper, and by cord and pulley to the reel. The operator propels the instrument along at the side of the row, the reel brushing the bugs off into the hopper, where the rollers crush them.

Claim.—1. The crushing-rolls F K, in combination with the adjustable reel and hopper J, constructed and arranged as and for the purpose specified.

2. The combination of the frame A, handles B, hopper J, rolls F K, and reel G, with a single driving and carrying wheel, C, substantially as and for the purpose specified.

143,246.—Apparatus for Separating Nails.—ALEXANDER MORRISON, Harrisburg, Pa. Application filed April 2, 1873.

A chute in two parts, adjustable to nails of different sizes, with defending flanges to allow limited oscillations to the nails; an adjustable wicket to arrest the exit of more than one nail at a time; and a supplemental chute directed rearward to conduct imperfect nails to a separate receptacle. It is connected at its upper end to the frame of the nail-cutting machine, and its lower or free end is so connected to the heading-lever as to receive therefrom quick lateral vibrations.

Claim.—1. The frames L A' and L' A', in combination with each other, when joined adjustably above by the binding-screw *d g* in the heads of the standards S S', or their equivalents, and when joined adjustably below by the differential screws *a b* and *a' b'*, or their equivalents, so as to form between them, by their direct union, the defective-nail exit-opening Z, of variable width, in the manner as and for the purpose herein set forth.

2. The conformation of the inner faces of the fenders A' A' farther apart at the bottom than at the top, to allow the nails limited space to dangle while suspended by their heads in the crevice Z, substantially as herein set forth.

3. In the trough of the upper chute, the inclined standards S S', pivoted to each other adjustably by a slot in the head of one of the standards, and a seat in the opposite head for the binding-screw *d g*, in combination with the frames L A' and L' A', to form in said trough, by their union, a variable wicket vertically over the opening Z, substantially as and for the purpose herein set forth.

4. The apparatus herein set forth, composing the upper and the under chutes, in combination with the nail-machine, by means of the strap N and pivoted cross-head W attached to the frame of the nail-machine, and the agitator C attached to the spring-rod B on the nail-machine heading-lever, all operating conjointly, substantially in the manner as and for the purpose herein set forth.

5. The agitator C, attached to the vibrating rod B, in combination with the nail-separating apparatus, when its connection therewith is by simple contact against the under side of the oblique outwardly-projecting plate forming a side of the upper chute, the vertical vibration of the agitator being thus carried by the elasticity of the frames of the apparatus in favor of lateral and vertical agitation, as herein set forth.

6. In a nail-separating apparatus, a forwardly-inclined upper chute for the delivery of the perfect nails, in combination with a rearwardly-inclined under chute for the removal of the imperfect nails, slivers, and dust particles, to favor the collection of the discharged contents of the chutes in separate receivers, as herein set forth.

143,247.—Mode of Fastening the Racks of Dredging-Machine Dipper-Handles.—RALPH R. OSGOOD, Troy, N. Y. Application filed August 28, 1873.

The racks by which the dipper-handle in dredgers of this class is reciprocated are in this case secured to its under face by bolts passing up through and fastened by nuts screwed down upon the upper face of the wearing-plates. The nuts are exposed, to enable portions of the rack to be readily removed in case of breakage; and in order that they may not interfere with the slice or rollers on which the carriage works, said slide or rollers are grooved so as to allow of the passage of the nuts without impediment.

Claim.—The racks G G, secured to the dipper-handle by means of nuts, which are exposed upon plates D D, substantially as and for the purposes described.

143,248.—Walking-Cane.—CHARLES K. PEVEY, Worcester, Mass. Application filed August 18, 1873.

Claim.—The cane, or handle part thereof, provided with the eyeglass C, the projection A, and the head or bow B, all constructed and arranged as specified.

143,249.—Running-Gear for Wagons.—GARDINER PHILLIPS, Augusta, Me. Application filed May 7, 1873.

The reach is bifurcated near its forward part, the rear ends being rigidly secured to the rear crank-axle, while the forward part of the reach is made in such form as to constitute the upper portion of the fifth-wheel.

Claim.—1. The reach F', bifurcated at its rear end, bent upward at its front end, in combination with the rear crank-axle B and front axle A, substantially as and for the purposes specified.

2. The reach F', bent upward at its forward end, and attached, by the bar T and rods U, to the rear axle, by the braces H and eye H', to the king-bolt, and by the segmental plate J and brace N to the bolster, substantially as described.

3. The combination of the segmental plate J', formed on the end of the reach F', and provided with the bent lug J², with the corresponding plate K on the axle A, substantially as and for the purposes specified.

143,250.—Sifter.—DANIEL PIERCE, Washington, D. C., assignor to JOHN W. WILLIS. Application filed March 3, 1873.

The cover is constructed to receive a packing, which renders the device dust-tight.

Claim.—The sifter-case constructed as shown and described, the same consisting of the pan or box B provided with the projections *c* and handles *k k*, the sifter-pan A, extending above the pan, as shown, and the cover E, provided with the inner flange *g*, extending downward within the box, and having the packing-channel A between the flange and rim *f*, the construction being such that the very act of sifting permits the operator to compress the parts together, and also to compact the packing and make the whole dust-tight.

143,251.—Ordnance and Projectile Therefor.—BENJAMIN C. POLE, Washington, D. C. Application filed January 22, 1873.

Claim.—For use in a gun having an axial bore extending entirely through the breach, a projectile, having a tag, *h*, provided with the tapering tip or knob *x y*, for the purposes set forth, the grooves *g g* for positively locking the projectile to its proper position, and the groove *d* to determine the point of rupture, the construction permitting the ready withdrawal of the tag from the rear of the butt, or the use of the gun with any ordinary projectile by leaving the tag unremoved.

143,252.—Apparatus for Preventing Back Motion.—ALFRED H. RACE and JAMES H. RACE, Brooklyn, N. Y. Application filed December 9, 1872.

The disk is made fast to the shaft to be driven, with arms pivoted in it, projecting to the inner periphery of the hollow disk fixed loosely on the hub. The arms project rearward of the radial lines of their pivots and clutch against the rim of the hollow disk when the wheel is turned in the forward direction, and instantaneously release it when turned backward.

Claim.—1. The combination of the loose pulley provided with an internal flange, E, at its periphery, the disk A, fastened rigidly to the shaft C, and the loose pressure-pawls D D D, &c., hinged thereto, all substantially as and for the purposes set forth.

2. In combination with the disk A, provided with the sockets H, constructed as described, three or more pawls, D, which are prevented from falling too far from the rim E by the sides of the notches H, and come into action, when the machinery is driven forward, entirely by their own gravity.

143,253.—Harness-Pad.—WILLIAM A. REDDICK, Niles, Mich. Application filed September 6, 1873.

A hollow harness-pad made flexible and ventilated by slots cut from the pad-plate. The strips formed by this slotting are bent over a metal stay, which is secured to and retained by the leather.

Claim.—The hollow flexible zinc pad B, having the slots D D D, and forming a constituent part of a harness, substantially as and for the purposes hereinbefore set forth.

143,254.—Apparatus for Collecting and Transporting Grain and other Materials.—JOHN RICHARDS and GEORGE RICHARDS, Philadelphia, Pa. Application filed February 25, 1873.

Claim.—1. The pneumatic apparatus for transporting grain, shavings, dust, textile material, or other substances, arranged and operating as described, consisting essentially of a magazine in which a partial vacuum is maintained, a fan or equivalent to generate air-currents, with conducting and air pipes, the whole combined and operating substantially as specified.

2. A magazine or receptacle for the substances being conveyed arranged with chambers and capable of being partially exhausted of air, as hereinbefore described.

3. A magazine constructed with an air-lock and compartments that may alternately be emptied without impairing the air-currents in the feeding-pipes, as shown and described.

143,255.—Piston and Packing.—ALEXANDER K. RIDER, New York, N. Y. Application filed March 20, 1873.

A piston-packing having a rabbet on its working face nearly its entire circumference, the part resting on the bottom of cylinder being solid, while the upper part is in sections, and set out by springs peculiarly arranged.

Claim.—In combination with the packing D D² and spring or springs E, the continuous surface A' in the body A, adapted to lie in steam-tight contact with the lower part of the interior of the inclosing-cylinder, as and for the purposes herein specified.

143,256.—Drawing-Roll.—HORACE T. ROBBINS, Hyde Park, Mass. Application filed June 5, 1873.

The washer is a wire ring, open at one point in its circumference, and applied in a groove in the arbor, and against to rests a shoulder in the loose boss, so that the latter is prevented slipping off the arbor when one end is raised. The ring can contract when the boss is pulled off.

Claim.—The spring-washer A, or its equivalent, in combination with the loose tubular boss *a* and the arbor *d*, substantially in the manner and for the purpose above specified.

143,257.—Loom Picking Mechanism.—LESTER E. ROSE, Providence, R. I., assignor of three-fourths his right to ELISHA C. MOWRY, same place, and JOHN ENOCH and DAVID B. ALLEN, West Liberty, Ohio. Application filed April 21, 1873.

The picking-stick is actuated by a series of torsion-springs wound spirally upon a rock-shaft, and, to regulate the power of the springs, the lever, which carries the stick, is connected to the rock-shaft by means of a ratchet and pawl. The inner end of said lever moves in a slotted vertical bracket, and when raised by a cam, to place the stick in position at the end of the shuttle-box, it is held by a latch-lever, which is withdrawn by another cam when the shuttle is to be picked.

Claim.—1. The ratchet and pawl R, in combination with the springs J J, shaft g g, and lever G, with the supporting-rod H, substantially as and for the purposes specified.

2. The latch-lever C, cam B, and support F, in combination with the lever G, picker-stick K, shaft g g operated by springs J J, the parts arranged as set forth.

3. The cam L, bell-crank lever M, arm G, and ratchet R, in combination with the shaft g g, springs J J, and brace-rod H, constructed substantially as described, for the purpose specified.

143,258.—Device for Cooling Millstones.—J. JACOB ROTH, Philadelphia, Pa. Application filed January 14, 1873.

The exterior of the bushing is provided with air-flues, which set in vertical openings formed around the eye of the stationary stone of a paint-grinding mill.

Claim.—The stone A, bushing B, and the flues a, as and for the purpose shown and described.

143,259.—Ruffler for Sewing-Machines.—CONRAD SCHULLER, New York, N. Y. Application filed July 23, 1873.

The ruffler is sustained on a bracket attached to the head of the machine, and is operated from the vibrating arm of the machine.

Claim.—The bell-crank lever B, pivoted upon the bracket A, and supporting the hinged elastic gathering-toe C and spring b, in combination with the slotted rod D, adjusting-screw F, stop e, and clamp E, all constructed as described, and adapted to the needle arm or slide of a sewing-machine, as set forth.

143,260.—Butter-Worker.—EDMUND E. SCOTT, Beloit, Wis., assignor of two-thirds his right to G. E. SMITH and JESSE WILSON, same place. Application filed June 6, 1873.

An oblong box with knives forming a grate at each end, said grate removable through a slot; a follower-block, moved by a lever, forcing the butter through the grates, whence it falls into receptacles, a hopper above delivering the butter on alternating sides of the reciprocating-block.

Claim.—In a butter-worker, the combination and arrangement of the grates E E, the sliding double-acting frame or chamber B, divided by the follower-block C, and actuated by the vertical lever G, and oscillating arms H, outer frame or shell F, and hopper A, substantially as set forth.

143,261.—Valve Movement for Reciprocating Engines.—HENRY C. SERGEANT, New York, N. Y. Application filed July 10, 1873.

The piston coming in contact with the tappets moves them, and, through the stems, the valve, it passing beyond them before completing its stroke. The stems are provided with heads which pack the apertures in which they move when the valve has completed its stroke in either direction.

Claim.—1. The tappets e and e', arranged as described, in combination with the valve-stems, the valve C, and the piston B, as set forth.

2. The duplex valve-stem, having the heads m n acting alternately as valves to close the openings through which the valve-stems pass, in combination with the valve C, all constructed and arranged substantially as and for the purpose set forth.

3. The valve-stems m n, constructed with heads, as shown and described, and so arranged as to close alternately the openings through which they pass, substantially as set forth.

143,262.—Corn-Planter.—ALBERT F. SMITH, Montrose, Iowa. Application filed May 27, 1873.

On one of the driving-wheels are cams for operating a seed-slide in the hopper, the corn dropping down through tubes into furrows made by cutter-shoes, after which it is covered by wheels. The cutter-shoes have a free movement, and are connected by a cross-bar, to which is connected a bar extending rearwardly between guards which allow a vertical movement to regulate the action of the shoes.

Claim.—The hopper G, slide F, and tubes g', in combination with cutter-shoes I with cross-bar N, guards F, covering-wheels D, and driving-wheels B having markers b and cams c, as shown and described.

143,263.—Plow.—SAMUEL W. SOULE, New York, N. Y. Application filed September 25, 1872.

A secondary mold-board and share pivoted to the beam forward of the main plow, and capable of being turned up out of the way, so that either one or two furrows may be turned at once.

Claim.—A secondary mold-board and share pivoted to the frame to allow of its being raised and lowered, substantially as and for the purposes set forth.

143,264.—Edging-Machine.—EDWARD H. STRAHM, Erie, Pa. Application filed December 30, 1872.

Two or more adjustable saws are arranged in connection with feeding-rolls and guides, so as to carry the lumber straight through the machine.

Claim.—1. As a means for securing a parallel motion in the movable roll of a pair of feed-rolls, a pinion on each end of such roll, meshing each into a curved toothed rack, substantially as set forth.

2. The movable feed-roll H, consisting of a shaft by means of which the roll is moved vertically, and a roller part, a, with its pinion or bend-wheel a' slipped onto the shaft, so as to have a fixed positive rotary motion, independent of the shaft, and at all points of the vertical travel of the shaft, substantially as set forth.

3. The sectional roll P, in combination with pressure-rolls H H', substantially as and for the purposes set forth.

4. In a machine for edging or slitting boards, the combination of a side guide or rail, fixed or adjustable, and a spurred guiding-roller, n, arranged with its axis at an acute angle to the direction of the feed, substantially as and for the purposes described.

5. As a device by which to set an adjustable guide-rail, a series of slots, o', running in the direction of the feed, two or more in number, when connected with each other by an inclined slot or slots, substantially as set forth.

143,265.—Mitering-Machine.—JAMES H. VAN NESS, Charlotte, N. C. Application filed May 31, 1873.

Miter and square joints are cut, and the table, moving on a hinge, admits of bevel-joints in connection with the miter. Clamps, operated together by a screw, hold the work for these operations.

Claim.—1. The table 1, having the square 2 secured to its top, in combination with the two adjustable clamping-blocks 4, moving at right angles to the sides of the square, and suitable devices for operating them, substantially as set forth.

2. The screw, screw-block, connecting-arms, and clamping-blocks, substantially as specified.

143,266.—Balanced Valve for Hydraulic Cranes.—JAMES A. VAUGHN, Cuyahoga Falls, Ohio. Application filed July 31, 1873.

The piston L' N' d', balances L N d, their disks and flanges, as well as the lower edge of the cylinder D, are beveled to admit water gradually. When the piston L N d enters the chamber M to admit water piston K closes the cylinder D to prevent its escape.

Claim.—1. The combination of the long piston K with the pistons L N d N' L' d' and cylinder A, so arranged as to retain the water in the crane after the inlet-port shall have been closed.

2. The beveled edges of the disk L, flange N, and interior of the cylinder D, at b, for the purpose of rendering the effect of opening and closing the valve gradual, and preventing the shock consequent upon a sudden opening.

143,267.—Jack for Holding Shoes.—ALBION K. WASHBURN, Bridgewater, Mass. Application filed May 26, 1873.

Claim.—In a jack for holding boots and shoes, the combination of the block D^1, link D^2, bent lever D^3, and hand-screw E^1 E^2, when the parts are constructed and arranged as described.

143,268.—Twine-Holder.—DAVID WEBBER, Houlton, Me. Application filed March 22, 1873.

A holder for the ball of twine, constructed in two parts, held closed by a hook at its bottom and suspended by a brace from its center rod, on which a ring is attached, and on its lower end a coiled wire through which the twine is passed, to give tension to it and prevent its free unwinding.

Claim.—The receptacle A, hook b, arms B and C, tension worms and rings c, c, and f, eyes d, K, and G G, rod D, ring E, and regulator F, substantially as and for the purpose hereinbefore set forth.

143,269.—Dredging Apparatus.—ERNEST BAHN, Paris, France. Application filed March 3, 1873.

A tubular metallic frame is connected to the sides of a vessel below the water-line by water-tight ball-and-socket joints, so as to have a free motion. The hydrostatic pressure afforded by the difference of level between the point of entry and the water-line causes the water, mixed with sand and other matter, held in suspension, to enter the perforations in the lower portion of the tube, and be discharged in a continuous stream so long as it is constantly removed, which may be done by centrifugal pumps or other means. To prevent clogging, jets of clear water are forced out just below the dredging-tube, through small apertures for that purpose.

Claim.—1. The mode of extracting mud and sand from any depth by means of a dredging-vessel, having two or more apertures in its hull below the water-line, and forming water-drafts by aid of the pipes a a', the ends of which terminate in spherical sockets for the reception of the pipes b b', in connection with pipes c c, also terminating spherically, and the perforated pipe d, the whole forming a metallic frame capable of being raised and lowered, as desired, by aid of the chain and pulleys e e, the sand, gravel, or mud being removed as it arrives, by the pipes a a, by means of centrifugal pumps p p, and thence conducted to a convenient position or deposited in lighters or barges, thence to be conveyed away as may be desired.

2. The mode of disgregating or separating the solid matter by means of jets of forced water, conducted by the elastic tube m n to the pipe f, furnished with jets o o, which at the same time clean the perforated pipe d, and allow the matter to pass, substantially as and for the purposes hereinbefore set forth.

143,270.—Propelling Boats.—ABRAM BEEKMAN, New York, N. Y. Application filed August 4, 1873.

Claim.—The tubular crank-shafts F H F H, arranged to turn independently upon the same pintle G, and each provided with a paddle, B C, in the manner and for the purpose described.

143,271.—Object for Kaleidoscopes.—CHARLES G. BUSH, Boston, Mass., assignor to himself and J. W. HOARD, Providence, R. I. Application filed November 30, 1872.

A small hermetically-sealed glass-bulb contains two or more immiscible liquids of different colors and densities. When placed in the object-box of a kaleidoscope the liquids change their relative positions in the bulb as the instrument is rotated.

Claim.—As a new manufacture for the kaleidoscope object-box, an object consisting of a hollow glass hermetically-sealed vessel and two liquids of different densities and colors placed in such vessel, such liquids being such as will not readily intermix or combine while in use in some respects.

143,272.—Saw-Set.—BENJAMIN S. CASTLE, Johnstown, Ohio. Application filed June 21, 1873.

The clamp E extends across nearly the whole breadth of the bench A, and is forced down upon the saw by the screw H.

Claim.—The clamp E, levers G, screw H, and spring I, combined with the setting-plate, substantially as specified.

143,273.—Machine for Cutting and Threading Pipes, &c.—WILLIAM D. CHASE, Marion, N. J. Application filed June 3, 1873.

Two columns projecting from the face-plate e carry a cross-head in which the die is placed and revolved. At the rear of the hollow gudgeon supporting the sleeve of the face-plate is a pair of stationary clamps, h h', for holding the pipe. For cutting off a pipe, a cutter held in a slide, s', is moved toward the center by a pin, w^2, bearing on a cam-flange, v, on a sleeve, x. A bevel-pinion, g, aring with teeth on the face-plate, communicates motion thereto, and also to a bevel-gear, v', which has one more tooth than the gear e. This gear v' can be made to communicate its motion to the cam by a screw-ring, w, pressing it against the flange.

Claim.—1. The cam-flange v, sleeve x, clamping-nut w, and wheel v', in combination with the face-plate e and cutting-tool s, substantially as and for the purposes set forth.

2. The latch-pins o o and notched columns l l, in combination with the screw-ring p, die-box m', and die n, substantially as and for the purposes set forth.

3. The movable die-box m^2, with a tubular projection, m^3, entering the hollow gudgeon f, in combination with the gripers h h', cross-head m, columns l, and revolving face-plate e, substantially as set forth.

143,274.—Eyelet-Making Machine.—HENRY L. CHURCHILL and JOHN D. ROBINSON, Taunton, Mass. Application filed September 8, 1873.

The cylindrical punch i is of a less diameter than the interior of the die l. The yielding pressure-rod I gives firmness to the bottom or closed end of the eyelet while the punch is operating to cut it out.

Claim.—The die l, having a flaring mouth corresponding in form and size to the bell of the eyelet, in combination with the yielding pressure-rod I and punch i, of a less diameter than the interior of the die, operating substantially in the manner and for the purpose set forth.

143,275.—Machine for Gumming Shoe-Uppers.—PETER E. CLARK, Hartford, Conn. Application filed June 13, 1873.

Claim.—The gore setting and gumming apparatus consisting of the tablet a, gage-plate b, hinge flap c^1, in combination with the sliding plates c^2 c^3, with or without the clamp d, all arranged and operating as shown and described.

143,276.—Earth-Auger.—WILLIAM T. COOLEY, Chicago, Ill., assignor of one-half his right to DARIUS H. WELLS, same place. Application filed March 3, 1873.

The hollow shank of the auger is attached to the handle by two curved arms, for the purpose of more readily discharging any loose particles accidentally included. The vent of the hollow shaft is protected while boring by the auger-block, but when it is desired to raise the auger the shaft is turned back a short distance until the cross-pin F reaches the vertical groove G', when the shaft carrying the point E is depressed to the extent of the groove, thus exposing the vent. The shaft is then turned in the opposite direction, the pin F entering the lower groove G, when the whole can be readily withdrawn without atmospheric resistance.

Claim.—1. The hollow shank B, provided with the vent H, point E, and pin F, in combination with the loose grooved block C, substantially as and for the purposes specified.

2. In an earth-auger, a hollow shank, provided with a vent, arranged below the cutters, and having its upper end open, and attached to the handle by means of the arms a a, substantially as specified.

143,277.—Fire-Kindler.—JOHN C. CRUMPTON, Allegheny City, Pa. Application filed September 12, 1873.

Claim.—A fire-kindler consisting of the wooden box a, having air-spaces b, and filled with shavings, blocks, and other light combustible material slightly saturated with an oily or resinous substance, as described.

143,278.—Horse Hay-Rake.—BURTON J. DOWNING, Mitchell Iowa. Application filed July 19, 1872.

A spring-clutch on the inner end of a stub axle, by means of a chain, locks therewith the rake-head and automatically dumps the accumulated hay by the advance of the propelling power.

Claim.—1. The combination of bent lever O, pawl P, rack Q, spring R, and chain S, substantially as described, so that power applied to the chain first disengages the pawl and then raises the rack, as described and shown.

2. The combination of the bent lever O, pawl P, rack Q, spring R, chain S, arm T, clutch U, bent lever V, spring X, inclined projection Y, and weight Z, with the bar J, and axles B and D, substantially as herein shown and described.

143,279.—Plow.—WILLIAM A. ESTES, China, Mo. Application filed April 28, 1873.

The mold-board and land-side of the plow are exclusively composed of vertical friction-rollers, the former being set in a hinged frame, adjustable laterally at the rear upper corner to adapt it to turning furrows up hill.

Claim.—1. A plow having its mold-board adjustable laterally so as to cause its rear end to incline outward from the bottom at any desired angle, and adapt it to turning furrows up hill, substantially as described.

2. The plow-frame, composed of the rigid bars f f', A, h, and e, and hinged bars r s, provided on each side with the friction-rollers n n' t t, and adapted to admit of the lateral extension or contraction of the plow at its rear end, substantially as described.

3. The combination of the hinged bar r with the arm r', connecting it to the mold-board, the slotted plates c c' connecting it to the bar h, and the hinged slotted arm K connecting it to the handle, substantially as described.

143,280.—Oscillating Gland for Flowing Oil-Wells.—GEORGE FISTON, Meadville, Pa. Application filed July 19, 1873.

The object of the invention is to prevent the escape of oil or gas from oil-wells during drilling, except through orifices which connect with reservoirs.

Claim.—1. An apparatus, consisting of shell A, socket-plates D and E, ball I, extension-tubes J K, and sectional tube M, fastened to the top of the casing of an oil-well, substantially as and for the purposes described.

2. The discharge-openings B and C, substantially as and for the purposes described.

143,281.—Car-Coupling.—JAMES GRIFFITH and WILLIAM F. MILLER, Adamsburg, Pa., assignors to themselves and C. D. B. RISAMAN, same place. Application filed May 5, 1873.

The coupling-bar is jointed in the middle that it may have play enough to couple with cars of unequal height. A block is pivoted in each draw head in such a manner that it will swing inwardly when struck by the head of the coupling-bar and engage with a shoulder thereon. This block is prevented from swinging outwardly by a pin inserted from the top of the draw-head and behind it. Uncoupling is effected by withdrawing the pin.

Claim.—The draft-bar B, made with a guard or stop-joint in its middle part, and shoulders upon the upper sides of its rounded ends, in combination with the boxes A, pivoted blocks C, and keys or stop-blocks D, substantially as herein shown and described.

143,282.—Wheel for Vehicles.—PETER C. HAINSTON, Crawfordsville, Miss. Application filed June 7, 1873.

The hub is formed with a central projecting piece and two detachable collars. The spokes are dovetailed, and, by means of lateral screw connections, are mortised into the collars.

Claim.—1. The combination of hub A, collars B, screws b, spokes C, and tire D, forming the metallic wheel, substantially as and for the purpose described.

2. The combination, with the hub A, having central rim a, and the annular collars B, of the spokes C, provided with dovetailed inner ends, whereby they are secured, as shown and described.

143,283.—Lounge.—WILLIAM H. HART, Lowell, Mass., assignor of one-half his right to AI COLBURN, Nashua, N. H. Application filed May 26, 1873.

To the body of the lounge, on each side thereof and near the head, are attached plates, projecting over the end and having radial grooves on the inside of said projections. To the detachable head of the lounge is a disk having radial grooves on its outer face, which engage with the like grooves on the side plates. Through the center of all the disks, and through the head, passes a rod having a thumb-nut on one end, so that the disks can be pressed together to hold the head in any desired position.

Claim.—The combination of the rod L, the thumb-nut H, the plates I I on the body of the lounge, and the disks F F on the head A, as and for the purpose herein specified.

143,284.—Harness Trace-Buckle.—HILLERY H. HARTSELL, Holden, Mo. Application filed June 7, 1873.

The loop of the buckle consists of two parts, which are divided by a cross-bar. One part is attached to the hame-strap and has a side expansion to embrace a loop on one end of the buckle-frame, and the other part, which is the same width as the frame-loop, and inclines forward, has a cross-bar with a circular recess which locks over the tongue. The lateral bar of the loop on the under side also bears against indentations in the loop of the frame.

Claim.—The combination, with frame A and tongue f, of the

loop C, consisting of parts A and *l* with lateral bar *t*, and tongue-bar F with recess *m*, for the purpose described.

143,285.—Clock and Watch Key.—PHILIP J. HOFFLICHER, Philadelphia, Pa. Application filed December 4, 1872.

By means of two cross-cuts or slots in the end of the key four prongs are formed, adapted to grasp the square of the winding-shaft by its sides.

Claim.—A watch or clock key, having prongs A arranged as shown, so that the pressure, in winding, is exerted upon the sides of the winding-post, the corners of which project between the prongs.

143,286.—Device for Detaching Horses.—ROLLA R. JOHNS, Pillar Point, N. Y. Application filed May 24, 1873.

To the outer end of the whiffletree is secured a fixed and a pivoted jaw, between which the trace is secured. The outer and pivoted jaw may be released by means of lever and spring, allowing the trace to be detached from the fixed jaws.

Claim.—1. The rigid arm B, spring-arm DC, and loop *b'*, combined with whiffletree A, to allow the horse to be released from the shafts by the turning of arm C, in the manner set forth.

2. The combination, with pivoted arms C C, of notched rods E E, pivoted spring-pressed catch F, pivoted plates H H, rods I I, levers J J, and eye-piece L, to enable the pieces C C to be turned, in the manner and for the purpose described.

143,287.—Railway-Gage.—LEONHARD KAYSER, Homburg, assignor to JEAN BAPTISTE CHARLES CAMOZZI and HERMANN JULIUS SCHLOSSER, Frankfort, Germany. Application filed June 27, 1873.

The wheels of one side of a railway-truck are arranged to slip lengthwise their spindles, but are forced outward against the rails by springs. Any variation in the width of the track will obviously correspondingly change the gage of the truck, and a pointer moving over a scale is so connected to one of the wheels as to indicate such variation.

Claim.—1. The construction and arrangement of parts *d*, *h*, *k*, and *l*, for indicating on the graduated scale *m* the inequalities in the distance apart of the rails *a a'* while my improved gaging-machine is being propelled along a line, substantially as set forth.

2. The construction and arrangement of parts *p q r s*, for indicating on the graduated scale *u* the relative elevations of the rails *a* and *a'* while my improved gaging-machine is being propelled along a line, substantially as set forth.

143,288.—Folding Camp-Baker.—FREDERICK LEHNEN, Marquette, Mich. Application filed June 21, 1873.

When the device is folded the staples *s* rest within the cavities *f*.

Claim.—1. The folding camp-baker, consisting of main part A, having extension or back *a*, with hinged top and side plates B C, pan D, and supporting-frame E, substantially as and for the purpose described.

2. The main part A, having indentations *g*, staple *m*, and clasp *n*, combined to lock frame E, as described.

143,289.—Combined Shutter-Worker and Blind-Operator.—DANIEL M. LEONARD, La Crosse, Wis. Application filed August 4, 1873.

A toothed disk is attached to the bottom of the shutter, and a toothed segmental lever is likewise attached upon the inside and connected with the blind-slats. A cog-wheel is keyed on a sliding crank-shaft, which is brought into engagement alternately with the teeth of the disk to open and close the shutter, and with the teeth of the segmental lever to operate the blind-slats.

Claim.—The combination of crank-shaft C and cog-wheel E, arranged in frame A, with toothed disk F, pivoted lever G, shutter B, and spring bolt H, for operating, adjusting, and locking both the shutter and blind-slats, substantially as described.

143,290.—Machine for Disintegrating Fabrics.—MOSES MARSHALL, Lowell, Mass., assignor to himself and DAVID LANE, same place.—Case B. Application filed July 23, 1873.

Two cylinders, with annular blades meshing into each other receive the material from an endless carrier, and the blades are kept from clogging by vibratory cleaners, which enter the spaces between them.

Claim.—For the purpose set forth, the machine, substantially as described, consisting of the two grooved cylinders A B, the vibratory cleaners G H, and the feeding-apron D, combined and operating substantially as specified.

143,291.—Self-Closing Faucet Attachment.—ROBERT MCCONNELL, WILLIAM TRUESDELL, and FREDERICK METTENBERGER, Omaha, Neb. Application filed May 24, 1873.

Into a hollow bushing, provided with external and internal screw-threads, is screwed the barrel of the faucet, forcing back the valve and the packing-disk and admitting the liquid through the orifices in said valve as it passes through a strainer thereto appended. As the barrel of the faucet is withdrawn the valve closes by the action of a spring arranged for this purpose.

Claim.—The self-closing faucet attachment formed by the combination of the tube B, valve C, spiral spring *c*, disk *i*, strainer *l*, and nut *h'*, substantially as and for the purpose described.

143,292.—Crank-Connection for Steam-Engines.—JOHN H. MCGOWAN and DAVID B. CALDWELL, Cincinnati, Ohio. Application filed August 2, 1873.

The piston, working in auxiliary cylinder connecting with the main steam-chest, communicates its motion through bell-crank connecting and coupling rods with crank on main shaft to assist the main crank in overcoming the dead-center.

Claim.—In combination with the driving-shaft I W of a steam-engine, the crank K, bell-crank L *l'* P, connecting-rod M, coupling-rod N, and piston P of the auxiliary cylinder E T, when arranged and adapted to operate substantially as herein described and illustrated.

143,293.—Internal Spring Coupling and Brake.—LÉANDRE MÉGY, José DE ECHEVERRIA, and FÉLIX BAZAN, Paris, France. Application filed January 25, 1873.

The curved blade-springs are inclosed within a pulley or drum working by their own expansive force, which keeps them pressing, more or less closely, against the internal cylindrical face of the said drum or pulley.

Claim.—The open band-spring E, applied on the inside of pulleys, spur-wheels, or analogous devices, in connection with a cam-piece, B C, tight on a rotary shaft, as and for the several purposes described.

143,294.—Ball-Valve.—WILLIAM MENDHAM, Philadelphia, Pa., assignor to himself and W. PRICE DAVIS, same place. Application filed February 1, 1873.

The swiveling of the cap prevents its turning upon the movement of spindle, and the shape of cap lessens wear of ball-valve.

Claim.—1. The combination, substantially as described, with a ball-valve, A, of a cup or plunger, D, swiveled to the valve-stem, and having a semi-spherical recess, for the purpose set forth.

2. The combination, with an elastic ball-valve, A, of a semi-spherical seat, *a*, adapted to the valve, and a semi-spherical plunger, T, between which and the seat the valve can be confined, compressed, and inclosed without materially altering its form, substantially as described.

143,295.—Bee-Hive.—GEORGE MILLER, Battle Ground, Washington Ter. Application filed May 31, 1873.

A number of cells or nests of frames are arranged under and attached to one roof, the whole centrally supported upon one pedestal rising from a reservoir of water, each of the cells being held together by frames forming rigidly-connected parts of the whole, the others sliding in grooves therein.

Claim.—1. An improved bee-hive consisting of a number of cells, E, provided with a roof, L, and supported upon a single shaft, B, from a base A, substantially as herein shown and described.

2. The main frames F, detachable single frames G, and plates H *h'* K, in combination with the cells E of the hive E L B A, substantially as herein shown and described.

3. The combination of the water-vessel C and cover D with the base A and post B of the hive A B E L, substantially as herein shown and described.

143,296.—Taper-Turning Attachment to Lathes.—MICHAEL NECKERMANN, Pittsburg, Pa. Application filed May 10, 1873.

The tool-slide E, movable longitudinally in the usual manner, is at the same time movable transversely through the medium of a toothed wheel M, on its outer end, and other gears connected to a plate suspended from the screw, the one, G, gearing with a stationary rack, B, on the side of the frame; another, J, on the same shaft, gearing with an interchangeable idler, K, interposed between it and that on the screw. Thus, longitudinal movement of the slide necessarily begets transverse movement also, unless the idler be thrown out of gear.

Claim.—1. The combination, with the feed-screw on the cross-slide and the shears of the lathe, of a toothed bar, B, and intermediate wheels connecting the feed-screw and the toothed bar, substantially in the manner described.

2. The combination of the swinging bar L, crank N, shaft O, clamping-rod Q, and clamping-nuts, substantially as specified.

143,297.—Umbrella-Cover.—DAVID W. ODIORNE, Elizabeth, N. J. Application filed August 15, 1873.

Claim.—1. The umbrella or parasol cover made with a metallic eyelet at the center to unite the sections of fibrous materials, substantially as set forth.

2. The washer or ring *c*, combined with the metallic eyelet *b*, for securing the sections *a* of the cover together at the center, substantially as set forth.

143,298.—Mechanical Key and Sounder for Telegraphs.—DAVID L. PARKHURST, San Francisco, Cal. Application filed August 1, 1873.

Underneath lever a thin strip of metal is attached, which gives the sound by being bent or crinkled by the lever.

Claim.—The piece of sheet metal A, with its thin spot or indentation *i*, or equivalent vibrating point, combined with and arranged to be vibrated by a lever, D, and button or rest *g*, substantially as and for the purpose above described.

143,299.—Reclining-Chair.—ELISHA C. RANKS, Boston, Mass. Application filed March 14, 1873.

The back and leg frames are pivoted to the main chair-frame, and the respective sides of the back and leg frames are connected near the main frame by metal rods, and the seat-frame has its side rails notched, so as to fit over said rods. The seat thereby acts in connection with the leg and back frame, but can be detached when desired.

Claim.—The rods *l m*, in combination with side rails *i* of chair-seat, having notches *o p*, the swinging leg-frame *c*, and the swinging back-frame *f*, substantially as described, for the purpose specified.

143,300.—Vehicle Axle-Box.—OLIVER P. RICE, New York, N. Y. Application filed August 4, 1873.

Claim.—The chambered axle-box C, provided with the hollow flange E, and perforated as described, in combination with the perforated sleeve D, and nut K, recessed to embrace the ends thereof, all as shown and set forth.

143,301.—Puddling-Furnace.—EZRA RILEY, Pontnewynydd, England. Application filed September 9, 1873.

Flanges, one attached to the rotary, the other to the stationary, hearth, project downward into an annular trough, the trough being raised or lowered at pleasure by means of the brackets and pinions on top of the furnace gearing with racks attached to rim-pieces supporting the trough.

Claim.—1. A water-vessel and flanges passing into the water, in combination with a revolving puddling-bed, substantially as specified, so as to form a water-lute at the joint, as set forth.

2. In combination with the water-vessel, flanges, and revolving puddling-bed, the means, substantially as set forth, for raising or lowering the trough, for the purposes specified.

143,302.—Railway-Switch.—JOSEPH G. ROCKWELL, Shell Rock, Iowa, assignor to himself and PETER C. WEITZ, same place. Application filed July 26, 1873.

The switch is shifted by the locomotive operating on hinged levers at the side of the track, through rods and bell-crank levers, to move the transverse bar carrying the movable rails. An extension of this bar operates the target-rod by a rack and pinion. The pinion on the target-rod shaft is locked by a pawl, thus preventing the shifting of the switch before said pawl is released.

Claim.—1. The combination of the levers R S, connecting-rods U V, oscillating-shaft L, and arms T and K, with the main rails, switch-rails, and the switch-bar, substantially as specified.

2. The combination of the bell-crank O, rod P, pawl H, pinion F, and target-rod, with the switch-bar D and shaft L, substantially as specified.

3. The arrangement of the holes W *w* in the plates M N for the shaft L with the levers R and S, to actuate the pawl H in advance of the switch-bar, substantially as specified.

143,303.—Shuttle for Sewing-Machines.—WILLIAM H. SCHOFIELD, Somerville, assignor of one-half his right to JOHN F. DONNELL, Cambridgeport, Mass. Application filed April 11, 1873.

The tension is regulated by the amount of thread against which the spring is allowed to bear. The swell on the spring keeps the shuttle-thread from becoming slack, and the hook prevents it from being caught at the pivot of the spring.

Claim.—The tension-spring D, pivoted at *f*, made to hook into the slot *g*, and having the hook *f*, substantially as and for the purpose hereinbefore set forth.

143,304.—Elastic Seat for Railway-Rail Joints.—LEWIS SCOFIELD, Jr., Atlanta, Ga. Application filed August 4, 1873.

A metallic socket-plate is let into the tie and secured by flanges, which project downward over the sides thereof. Its upper surface is recessed to retain the elastic cushion upon which the rail rests, a metallic plate being interposed.

Claim.—The plate E, having the end flanges F and top flange G, and the rabbeted elastic cushion H, combined with the cross-tie C, provided with rabbeted slot or recess, as described, for the purpose specified.

143,305.—Boiler-Furnace.—CHARLES D. SMITH, Chicago, Ill. Application filed June 13, 1873.

A perforated coil of pipe is so placed in the combustion-chamber that the products of combustion will pass entirely around it. Air or vapor is supplied from central or side pipes, and, being completely heated, will escape through the perforations and be consumed.

Claim.—The circular coil or serpentine series of perforated pipes located in the combustion-chamber beneath the steam-boiler, each end of said pipes communicating with the external air for conducting and distributing therein the vapors to be consumed, substantially as herein shown and described.

143,306.—Machine for Making Metal Screws.—CHRISTOPHER M. SPENCER, Hartford, Conn. Application filed March 6, 1873.

The post X on frame S, reciprocated by cam T, is provided with a clutch-sleeve, through which a sliding-spindle passes, on which, at one end, is a threading-die, *m*, and at the other a roll; and above the latter is another roll on a belt-shaft that is intermittingly brought in contact with the first-named roll by lever F and cam E. The rod, fed through and clamped by chuck A, enters die *m* and pushes it back until it clutches with the sleeve, and after the screw has been cut the post and spindle are drawn back and the two rolls brought together, by which a speed is imparted to the spindle greater than that of the chuck, in virtue of which the bolt is screwed out of the die. Tool V is then forced up by cam I and severs the screw from the rod.

Claim.—1. In combination with revolving chuck A having jaws *o o*, the inner and outer sleeves C W, the former, by intermittent reciprocating motion produced by cam H, feeding the stock a suitable length through chuck A; the latter by a similar motion produced by cam I, alternately opening jaws *o o*, to permit the passage of stock, and closing them to hold stock to be operated upon by suitable tools.

2. In combination with clutch *f* and die *m* upon reciprocating turret X, the spindle Q, prolonged to hold the friction-roller *y*, for the purpose of enabling the die to be run off the screw in the direction of its revolution, substantially as shown and described.

3. The combination, with cam H, connection *b*, and sleeve C, and clutch mechanism H L A W, the clutch-bearing turret X and friction-roller R, substantially as shown and described.

4. In combination with cam H, connection *b*, and sleeve C, and clutch mechanism H L A W, the cutter V, operated as described.

5. In combination with the clutch-bearing turret X and friction-roller R, the cutter V, operated as described.

6. The combination with the cam H, connection *b*, and sleeve C, and clutch mechanism H L A W, with the clutch-bearing turret X and friction-roller R, the cutter V, operated as shown and described.

143,307.—Bee-Hive.—CHARLES J. SPERRY and LYMAN CHANDLER, New London, Minn. Application filed May 31, 1873.

A duplex hive, a slotted partition through which bees may pass, and a removable board or plate to stop communication. At each end of the comb-frames a space is partitioned off by a close board and covered by a slat, the removal of which permits the partition to incline to the end. The top horizontal bar of each comb-frame is mortised on its bevel under sides and upward in center.

Claim.—1. The hinged partitions B and top piece *i*, arranged substantially as shown and described.

2. The slat partition O and shutter P, arranged between the two compartments A and B of the hive, as and for the purpose specified.

3. The top bar K of the comb-frames, provided with the apertures U having dividing-bars, as and for the purpose specified.

143,308.—Windmill.—GEORGE STRAHM, Eldorado Mills, Wis. Application filed August 23, 1873.

The slotted elbow-bars cause the hub to slide forward and backward, shifting the vanes by rising and falling. In going downward they turn the vanes so as to take the wind and set the mill in motion, and going upward they turn the vanes out of the wind and stop the mill. A weight, which floats upon the water in the tank or trough, to be filled by the pump, is suspended from the bars and pulls them down and sets the wheel in motion when the water falls. By the rising of the water the bars will be relieved of the weight, and the smaller weight, arranged to lift the bars and turn the vanes out of the wind, will stop the mill.

Claim.—1. The combination of the hollow sliding hub E, arms D, shaft F, inclined slotted angle-bars L, and a floating weight, P', with the vanes B, arranged to revolve on their axes, substantially as specified.

2. The combination of the wheels O and way P with the hollow shaft F, crank-shaft G, and the slotted bars L, substantially as specified.

3. The combination of the regulators R with the inclined slotted angle-bars L, oscillating vanes B, and the weight P', substantially as specified.

4. The arrangement of the U-shaped portion of the frame H to form a bearing, Z', for the front end of the crank shaft, substantially as specified.

143,309.—Metallic Vault.—ALEXANDER L. STIMSON, Chicago, Ill. Application filed August 25, 1873.

A double-walled metallic vault, corrugated and provided with gutters for carrying away the moisture which condenses. Tubular corner-pieces also assist in this function. The air-space between the walls has inlet and outlet ventilation-passages, and one or more gas-jets are provided to assist the circulation of air within the narrow space between the walls, a metallic plate being located over each to arrest the deposit of soot.

Claim.—1. A vault lined with plates of metal, and provided with gutters or tubes for conveying away the fluid produced by the condensation of moisture, substantially as described.

2. The air-chamber *c*, arranged within the walls of a vault, and provided with one or more inlet and outlet passages, substantially as and for the purpose set forth.

3. In combination with the air-space *c*, the gas-burners *a* or their equivalents, arranged to operate substantially as described.

4. The tubular corner pieces C, arranged to serve as tubes for conveying away the accumulated fluid from the walls of a vault, substantially as set forth.

5. The corrugated metallic lining, arranged within a vault, substantially as described.

6. In combination with the hollow wall or air-space of a vault, and a burner arranged to operate therein, the plate *e*, arranged to operate as and for the purpose set forth.

143,310.—Fertilizer from Offal.—JACOB J. STOBER, Boston, Mass. Application filed August 28, 1873.

Claim.—The improved fertilizer herein described, consisting of offal, tank-stuff, blood, or other animal matters, separately or in combination, treated with burning gases directly in contact, so as to impregnate the mass with soot and free carbon, and give a dark-brown or almost black color to the product, substantially as described.

143,311.—Coal-Scuttle.—AMASA S. THOMPSON, Little Falls, Minn., assignor to himself and LOUIS VASALY, same place. Application filed JUNE 8, 1873.

The cover is divided, hinged to the sides, and provided with projecting hooks, which engage with the bail when the same is changed from a vertical to a horizontal position, thereby opening

the device, while the opposite movement of the ball closes the same by bearing against the projecting corners.

Claim.—A coal-scuttle cover made in two parts, C C, hinged to opposite sides of body, and opened as well as closed by the ball B, as described.

143,312.—Turbine Water-Wheel.—JOSEPH E. WHITING, Harford, Pa. Application filed March 7, 1873.

A series of chutes are arranged to revolve around a series of fixed chutes, and they are so adjusted as to control the amount of water admitted to the wheel, while the portion of water admitted is always allowed to enter with its full force and effect.

Claim.—The fixed series of chutes C and revolving series D with means for easily adjusting the latter, combined and arranged relatively to each other and to an inclosed turbine wheel, as and for the purposes herein specified.

143,313.—Life-Preserving Mattress.—JOHN J. WOODRUFF, Hoboken, N. J. Application filed August 9, 1873.

Middle and end sections coupled together by loops so that the end sections will assume a vertical position in the water, whichever side up the mattress falls.

Claim.—A life-preserving mattress having the end sections connected with the middle section by straps F G that interlock, one sliding upon the other and both together, allowing the said end sections to turn up on either side of the middle one, as and for the purpose described.

143,314.—Condenser-Tube Fastening.—SAMUEL ARCHBOLD, Chester, Pa. Application filed August 9, 1873.

A projection on the side of the tube is held in a recess in the plate by packing and a follower, to prevent longitudinal displacement of the tubes.

Claim.—A surface-condenser having tubes, each of which has a projection or collar, *a*, confined to one side of a condenser by a follower and its packing, as set forth.

143,315.—Feed-Regulator for Grinding-Mills.—EPHRAIM H. AUSTIN, Scott's Hill, Tenn. Application filed March 17, 1873.

The invention pertains to the special means of feeding the grain to the spiral passages in the eye of the millstone.

Claim.—The bent arm Z, attached to the top of the stationary curb Y, and projecting downward, as shown, in combination with the spiral passages in the eye of the runner to press the grain into and through the same, as specified.

143,316.—Concealed Jointed Brace for Carriage-Tops.—DAVID W. BAIRD, Geneva, N. Y. Application filed March 25, 1873.

To be used between the rear bows of carriage-tops to prevent collapse of the leather. Opens or "breaks" downward, and is operated by a handle formed on its under side.

Claim.—The stays *a a'* having the enlarged heads *c*, with lateral sockets *d*, for the purpose specified, the stay *a* being formed with the depending handle A, all constructed and arranged as and for the purpose specified.

143,317.—Refrigerator-Building.—WILLIAM S. BATE, Philadelphia, Pa. Application filed June 24, 1873.

Claim.—1. In combination with a series of separate and independent preserving-apartments, two or more, and a single ice-chamber for cooling the same, induction and eduction pipes and a fan or blower, arranged substantially as described, so that a current of cold air may be driven from the said ice-chamber to, into, and through any one or more of said chambers, said current entering at the lower portion or through the floor and passing out through the upper part or ceiling, and returning to the ice-chamber to be used again, the outlets and inlets of said chambers having valves so arranged that any one or more of them may be cut off from the circulation, substantially as specified.

2. In combination with a series of separate and independent preserving apartments, through which an upward movement of air is produced by means of a fan or blower, a single ice-chamber, arranged substantially as described, so that the air-currents from any one or more of said apartments will be forced into and through it in contact with its contents for the purpose of purifying and drying said currents, substantially as specified.

143,318.—Marine Drag.—JOHN C. BEALS, Searsport, Me. Application filed September 15, 1873.

Claim.—The folding wings A A, hinged braces N N, collar S, shank E, and trip-rope O, all combined and adapted to operate as a marine drag, as substantially as set forth.

143,319.—Cotton-Bale Tie.—GEORGE N. BEARD, St. Louis, Mo. Application filed September 13, 1873.

A tie-plate, having a notched horn, is secured in such a manner to one end of the band that the other end of the band, when hooked over the horn, is held securely between the tie-plate and band.

Claim.—1. The tie-plate consisting of a thick back, A, provided with a side flange, *a*, lock-projection F, and a horn, G, so much thinner than the back A as to allow a thickness of the band between the horn and the end B of the band when attached to the latter, substantially as set forth.

2. The combination of band-end B and plate or tie-piece consisting of a back, A *a*, projection F, horn G *g*, and rivets or studs D E all substantially as and for the purpose set forth.

143,320.—Stove-Pipe Shelf.—JAMES F. BECKWITH, Albion, N. Y. Application filed August 8, 1873.

The shelf is formed of three principal parts, with semicircular recesses for inclosing the pipe. The parts are hinged together, and held by lugs and bolts.

Claim.—The stove-pipe shelf constructed of the parts A, B, and F, hinge C, bolt *d*, arms E, wires *g*, and lugs A, substantially as specified.

143,321.—Paper Bag.—LORENZO D. BENNER, Boston, Mass. Application filed August 4, 1873.

Claim.—A paper bag having a series of perforations made near the edge of the paper at the end of the bag to be folded, in order that the paste may pass through to the outer fold to seal both flaps from one application of paste, as set forth.

143,322.—Lasting Mechanism.—LYMAN R. BLAKE, Brooklyn, N. Y. Application filed September 3, 1873.

Claim.—1. A lasting tool or nailer having a guide-passage for the blank set at an inclination to the driver, substantially as shown and described.

2. A lasting tool or nailer having, in combination with the driver, a bender for forcing forward the nail-shank to be severed, substantially as described.

3. A lasting tool or nailer, in which the end of the comb-like blank enters the nail-tube at one angle and is brought to another angle to be severed, substantially as described.

4. The feed-pawl *q* and detainer-pawl *u*, jointed to the levers *r* and *w*, and operated substantially as described.

5. A comb-like nail-blank, having its head formed by bending one edge of the plate, substantially as shown and described.

143,323.—Feeding Device for Coal and Ore Separators.—HEZEKIAH BRADFORD, Reading, Pa. Application filed March 25, 1873.

A cylinder, mounted upon rollers, and having an internal worm or screw, is revolved at a regular speed, and receives the coal from a hopper, conducting it to the chute or slide leading to the separator. A gate in the hopper regulates the amount of coal passing to the cylinder.

Claim.—1. The cylinder *a* and its internal screw or blades *i*, supported by the rollers or wheels *c* and revolved in combination with the mouth *o* or delivery-opening of the hopper *m*, substantially as set forth.

2. The combination of the slide *n*, delivery-mouth *o*, and hopper *m* with the cylinder *a* and feeding-screw or blades *i*, substantially as and for the purposes set forth.

3. A revolving cylinder containing a screw or inclined blades interposed between the mouth of a hopper and a delivery-incline, substantially as set forth, to regulate the delivery of material from said hopper.

143,324.—Weather-Strip.—JAMES W. BROWNE, Brooklyn, N. Y. Application filed August 13, 1873.

Claim.—The weather-strip, composed of the strip of vulcanized india-rubber and a narrower strip of felt or woolen cloth secured together, substantially as described, for the purpose set forth.

143,325.—Lath-Machine.—SAMUEL P. BROWER and WILLIAM H. KNOX, Glen's Falls, N. Y. Application filed May 24, 1873.

The feed-rolls are adjustable independently of each other, or together, and act in conjunction with a system of hinged and adjustable gages to carry the lumber to the saws.

Claim.—1. The combination, with the saw-arbor and removable saws, of the slotted and adjustable tables D D, rods *m m m' m'* passed through the tables, the shafts *n n*, and feed-rollers E E, all constructed and operated substantially as and for the purposes set forth.

2. The combination of the adjustable gage G, having its outer end hinged or jointed, and the adjustable plate *c* attached to the under side of the outer end of the gage, all constructed substantially as and for the purposes set forth.

3. The pivoted lever *f* with wheel *h*, operating through a slot in the front table D, substantially as and for the purposes herein set forth.

4. The combination of the shaft *p* with crank I and arms *r r*, and the rod *s* with arm *t*, for raising and lowering the feed-roller frames, substantially as and for the purposes herein set forth.

143,326.—Manufacture of Water-Traps.—WILLIAM A. BUTLER, New York, N. Y. Application filed June 5, 1873.

The trap is cast with an open slot, through which an instrument can be inserted for removing a sectional core.

Claim.—A water-trap cast with an open slot or with a series of apertures, substantially as and for the purpose described.

143,327.—Mold for Casting Water-Traps.—WILLIAM A. BUTLER, New York, N. Y. Application filed June 5, 1873.

Projections are placed either on the interior of mold or exterior of core to form a slot in the casting for facilitating the removal of the sectional core.

Claim.—The combination of the sectional core A and mold B with the projections *b* or *d*, as specified.

143,328.—Wheel for Vehicles.—JOHN P. CHANDLER and WYMAN V. TAINTER, South Carthage, Mo. Application filed June 21, 1873.

Claim.—In a metallic hub, the combination of the skeleton hub A, having the conical end bearings a^1 a^2 and flanges B, with the partitions *d*, the axle-box C having the conical raised end bearings c^1 c^2, recess c^3, and the advanced face-bearing *e*, substantially as shown and described.

143,329.—Air-Compressor or Blower.—LORENZO CHASE, Portland, Me., assignor to himself and CHARLES W. CAHOON, same place. Application filed February 20, 1873.

Two air-chambers, each provided with valves for the admission and discharge of air, and having a slide-valve common to both for the admission of steam, are placed upon a reservoir which receives the air when compressed. The air and steam inlet-valves are all operated by the same rocker-shaft.

Claim.—1. The combination and relative arrangement of the air-chambers A and A', the air induction and eduction ports C and *c*, respectively, the air-valves D and *d'*, the steam-valve H and h, and the steam-ports *g*, substantially as and for the purpose shown.

2. In an air-compressor, substantially as described, the combination of the puppet-valve stems E, slide-valve stem *h'*, and the rocker-shaft F, substantially as and for the purpose specified.

143,330.—Wood-Sawing Machine.—BENJAMIN F. CLICK, Newark, Ind. Application filed May 31, 1873.

The saw may be adjusted to different lengths of stroke, and the saw-guides have a vertical adjustment in suitable ways.

Claim.—The combination of the frame A, shafts *a b* with pulleys and belt, slotted fly-wheel D, adjustable pitman G, cross-head E with saw-arm and saw-guides h h, adjustable frame J, and saw-guide L, all constructed and arranged substantially as and for the purposes herein set forth.

143,331.—Grain Separator and Scourer.—WILLIAM P. CLIFFORD, West Jersey, assignor of one-half his right to LEWIS and JEREMIAH GARRISON, Elmora, Ill. Application filed March 22, 1873.

The grain is subjected to the action of a fan-blast controlled by peculiarly-arranged valves, and the different grades, as determined by gravity, are collected in separate receptacles.

Claim.—1. The combination of blast-passage G, grain-entry A, valves *a f f*, chamber H, subdivided chambers 1 2 3, valves *r r r*, blast-passage I, fan R, and box *y y*, all constructed and arranged to operate in the manner and for the purpose as herein shown and set forth.

2. The combination of blast-passage G, valve *a*, air-passages *e e*, valves *f f*, screen *i*, grain-ducts *g* 12, and scourer N, all substantially as and for the purpose set forth.

3. The combination and arrangement of the frame A A, B B, C C, and D D, fan R, box *y y*, shaft L, pinions *v u*, shaft M, cam *q*, scourer N T, shaker-rod *n*, arm *o*, spiral spring *p*, shaking-trough P, spout *k*, hopper *i*, and supports *m m*, all substantially in the manner and for the purposes as set forth.

143,332.—Snap-Hook.—JAMES C. COVERT, Farmer Village, N. Y. Application filed October 26, 1872.

Claim.—A snap-hook composed of the tubular shank A, solid hook B, and link E, cast in one piece, and provided with an opening, *a*, the spring C, bolt D, and button *b*, working in an open-end slot in the face of the tube, all constructed substantially as herein set forth.

143,333.—Corner Fastening for Wagon-Boxes.—JASON W. CRANDALL, Homer, N. Y., assignor to himself and WATSON HOLMES, same place. Application filed November 22, 1872.

The inner and outer corner-plates are of peculiar construction, and combined with securing-bolts.

Claim.—The combination of the inner angle-plate having the projection *b* with a wagon-seat corner having a seat-rail, and the outer angle-plates and securing-bolts, as described.

143,334.—Caster.—STEPHEN CURTIS, New York, N. Y. Application filed September 4, 1873.

The bottle-frame has rings for the several bottles, and a continuous rim around these, all cast together; outside of these a band is secured by turning the edge over the continuous rim.

Claim.—1. The center *a*, constructed with a continuous rim, *b*, and separate from the band *c*, substantially as and for the purpose set forth.

2. As a new article of manufacture, a bottle-frame for casters constructed with center and band in separate parts, united without solder by turning the edge of one over the edge of the other, substantially as set forth.

143,335.—Subsoil Attachment for Plows.—EDWARD CUTCLIFFE, East Bethany, N. Y. Application filed July 30, 1873.

From the foot or shovel a standard rises, upon which are adjustably fixed, by sockets and set-screws, a slotted cross-brace for securing the handles adjustably, and a jointed brace for connecting the standard with the mold-board so that the pitch may be varied.

Claim.—1. The cross-brace D, having clips in the slots in each end, adapted to accommodate the varying widths of plow-handles and a collar, D', and combined with standard B, in the manner and for the purpose set forth.

2. The brace C, connected with the standard B at one end, and with the mold-board at the other, and provided with a double or single joint, as set forth.

3. The clips E, when combined with the slotted adjustable cross-brace D, and with the wedges H, and adapted to, and used in combination with, the plow-handles, in the manner and for the purpose set forth.

4. The subsoil foot or attachment combined with the plow-share and handles, and arranged to be moved vertically, and its point raised or lowered, all in the manner and by the means described and set forth.

143,336.—Quartz-Mill.—THOMAS O. CUTLER, Jersey City, N. J. Application filed March 6, 1873.

Two disks which revolve in opposite directions, one provided with a flange or rim that projects close to the base of the other disk, which is furnished with a central feed-opening, and both disks provided with reversible beaters, these on one disk working between those on the other in such a manner that the material fed through the central opening is by centrifugal force thrown violently against and among the beaters.

Claim.—The disk A, provided with the lateral flange *e* and beaters *d*, in combination with the disk A, beaters *c*, and arms *f g*, arranged and operated substantially as described, the disks A B being adjusted in respect to each other so as to leave a discharge-space between the flange *e* and the disk A, as and for the purpose specified.

143,337.—Wagon-Brake.—JOHN F. Durbin, Pana, Ill. Application filed August 2, 1873.

Claim.—1. The lever B and shoe *f'*, in combination with bar G, arm H, and metal bars *m m*, all constructed and arranged substantially as and for the purpose set forth.

2. The combination of levers B D, connected by bar *d*, brake-shoes *f f'*, arm H, keepers h h', and bars *m m*, all arranged for operation substantially as and for the purpose set forth.

143,338.—Cultivator.—JOHN H. FRANK, Millheim, Pa. Application filed August 9, 1873.

Pins are introduced to render the laterally-flexible drag-bars rigid, to adapt the implement for use as a field-cultivator.

Claim.—1. The combination of the frame-bars J J', the single and double pivoted joints, and the screw-bolts *p'* for rendering the drag-bars laterally rigid, thereby adapting the machine to be used as a field-cultivator, as described.

2. The combination of the frame-bars J J', the double and single pivoted joints, screw-bolts *p'*, drag-bars H H', and shovel-standards G, as and for the purpose described.

143,339.—Smoke-Stack for Locomotive-Engines.—ROBERT FRAZER, Camden county, N. J. Application filed August 23, 1873.

The top of the stack is hinged, to facilitate its removal for the purpose of inspecting and repairing the wire-gauze.

Claim.—In smoke-stacks for locomotives, the combination of the wire-gauze E, the band *b*, and the top A, the latter hinged to facilitate the examination of the interior, substantially as described.

143,340.—Circuit-Closer and Circuit for Multiplex or Interval Telegraphs.—MERRITT GALLY, Rochester, N. Y. Application filed September 22, 1873.

Metal stripes of rotating circuit-closer let in diagonally. System of circuits and switches so that any transmitter or receiver may be thrown into circuit for use at any unemployed interval.

Claim.—1. An automatic circuit-closer, having conductors for a single transmitter, in combination with a device for adjusting the same to the different intervals of a multiplex instrument, without necessarily increasing the size of the circuit-closer, or changing the size or number of its segments, spaces, or conductors, substantially as specified.

2. The combination of a group of conductors and a circuit-connector, having a diagonal position in their relation one to the other, for producing lengthened unbroken pulsations by combinations of conductors of the group, substantially as specified.

3. The combination, with a multiplex transmitter or receiver, or both combined, of an automatic safety device, which preserves, in case of stoppage or derangement of the instrument, the proper connection of the main line for the use of other instruments.

143,341.—Multiplex or Interval Telegraph.—MERRITT GALLY, Rochester, N. Y. Application filed September 11, 1873.

Through automatic circuit-closers at the various stations synchronously driven. Definite intervals are allotted to the instruments for communication, so that the wire may be worked to its full capacity by using the intervals necessarily occurring in ordinary transmission.

Claim.—1. An automatic circuit-closer having a group of conductors representing the short dashes of a telegraphic alphabet, and sufficient in number to fill a space equal to the length of the longest letter of such alphabet, in combination with transmitting-keys, each key connecting with such a selection or combination of the conductors of said group as to produce any letter of the alphabet indicated by such key.

2. In a line of instruments arranged for multiplex transmission by allotting to different instruments different intervals of time for operation, the combination, with a transmitter or receiver, of devices for changing such transmitter or receiver from one interval to another, thus setting the instrument to any unemployed interval desired, substantially as specified.

3. A transmitter having in connection therewith an automatic circuit-closer with an interval-circuit, cutting out the transmitter during the intervals not allotted to it for transmission, in combination with devices for allowing the working of the operating-keys during an interval or intervals allotted to other instruments, and holding such key or keys until their proper interval of transmission has arrived, substantially as specified.

4. The combination, with a line of multiplex instruments, of call-receivers, arranged upon a given interval or intervals, allowing all the stations of the line, or any part of the line, to be in constant communication with each other, for calls or explanations, without interrupting the message-intervals, substantially as specified.

5. The combination-key G^2, in connection with its conductors, substantially as specified.

6. The magnetic latch-escapement G *d* D F, or equivalent, for tripping the circuit-closer and correcting its time of revolution without affecting the motor.

7. A circuit-closer made of conductors separated by non-conducting material, having non-conducting bearings for the connector or connectors, which bearings are separated from the conductors by intervening trenches, substantially as set forth.

8. In combination with an automatic circuit-closer, a receiving conductor or conductors, occupying a space equal to a group of transmitting-conductors, from which group combinations are made for producing different characters.

9. The combination, with a transmitter and receiver arranged for a multiplex system of intervals, of devices for securing one interval to the transmitter while another is being used by the receiver, substantially as set forth.

10. The combination of an armature with a number of magnets operating therewith, substantially as specified.

11. The armature of a magnet, in combination with a device which applies positive mechanical force for the return movement of the armature after it has been attracted by the magnets, substantially as specified.

12. A magnetic indicator consisting of a wheel moved by slight friction-power, and stopped or retarded for its indications by means of a magnet.

13. The combination, with a telegraphic transmitter or receiver, of a relay or repeater, which gives its repeated pulsations by means of the return movements of its armature, which impulses are measured by the duration of such return movement, substantially as set forth.

14. The combination, with a register, of devices for setting the same for movement of the paper at appointed intervals, corresponding with the intervals on which it is to receive, when connected with a multiplex instrument, substantially as set forth.

15. In multiplex instruments, a type-wheel and motor combined with a device for securing to such type-wheel its revolutions only for the receiving-interval, substantially as specified.

16. The operating-keys, each having its group of connectors, by means of which it selects from a common group of conductors the proper number and order to produce any letter indicated by such key, substantially as specified.

143,342.—Swinging Gate.—JOHN J. GENTRY and JAMES F. COLLETT, Corinth, Miss. Application filed June 26, 1873.

The upright of the gate next to hinge-post is forked at its lower end to receive a friction-roller, which moves within a double inclined slotted casting fastened near the base of the hinge-post. The gate is also hung to long hinge-rods on the hinge-post by a staple and forked bar.

Claim.—The combination, with the forked end post of the gate with its roller *f*, forked bar *d*, and eye-bolt *e*, of the post A with slotted casting G, staple *e*, and roller A, and the hinge-rod *b*, all substantially as and for the purposes set forth.

143,343.—Cotton-Bale Tie.—J. MORTIMER GOLDSMITH, Boston, Mass. Application filed August 23, 1873.

Metallic fastener having beveled lugs to form a dovetail space, which device is riveted to one end of the band, while the other end of the band is notched. In fastening, the ends are drawn together, and the notched end inserted between the beveled lugs of the fastener.

Claim.—The fastening B having lugs *b b*, beveled, as shown, to form the dovetailed space C of uniform width, and riveted to the band A, in combination with the notches *a a* upon said band, substantially as specified.

143,344.—District and Fire-Alarm Telegraph.—JOHN H. GUZZY, Brooklyn, N. Y. Application filed September 22, 1873.

Combines a series of thermostatic alarms with the normally-closed circuit of a district alarm-telegraph in such a manner as not to interfere with the closed circuit unless acted on by heat, when an alarm is given.

Claim.—The combination, with a district-alarm signal-box or series thereof, of one or more alarm mechanisms operated directly through changes of temperature, and arranged in the normally-closed circuit of such alarm signal-boxes.

143,345.—Pump for Driven Wells.—JOHN W. HARRINGTON, Cincinnati, and JOSEPH A. YINGLING, Hamilton, Ohio. Application filed July 23, 1873.

The internally-tapering coupling rigidly connects the suction-pipe and barrel of the pump. Within the coupling is a check-valve fitted externally with a packing-ring to make a tight joint by crowding down into the conical bore of the coupling, and has a bail for the attachment of a hooked rod to withdraw it when desired.

Claim.—The internally-tapered coupling C, which rigidly connects the suction-pipe A and barrel B of the pump, in combination with the check-valve and seat D D' D'' and the protruding packing-ring E, which is permanently secured in an annular recess of either the valve-seat or the coupling C, substantially as and for the purpose specified.

143,346.—Middlings-Purifier.—JESSE HOLLINGSWORTH, New York, N. Y. Application filed August 7, 1873.

Middlings are purified after being sifted through bolting-reel into the several compartments, by subjecting them to currents of air during their descent into the conveyor, which carries off the light particles of bran, &c., sifted through with the middlings.

Claim.—The combination of two or more grades of bolting-cloth on a reel with two or more fans, regulated as to blast with regard to said cloth, and two or more separate chambers or passages communicating between the bolt and the fans, for the purpose of separating middling material from bran, &c., as described and represented.

143,347.—Marking-Pen.—D. SHEPHERD HOLMAN, Philadelphia, Pa. Application filed July 5, 1873.

Several flexible metallic leaves are joined at their shanks, while their bent ends, overlying each other, are perforated to allow the ink to flow freely.

Claim.—A pen, substantially as shown and described, having a lower plate whose nib determines the maximum width of the stroke, and a superposed plate or plates to carry the ink.

143,348.—Coupling for Gas and Water Pipes.—JOHN HOLMES, Evanston, Ill., assignor of one-half his right to GEORGE WALKER, Salt Lake, Utah Ter. Application filed June 25, 1873.

This invention consists in connecting the ends of pipes together by means of clips, one-half of each clip being cast upon the pipe, and the other separate. The ends of the pipes have an annular mole or flange cast upon them, which is designed to fit the groove in the clips.

Claim.—Sections of pipe having clips at one end and annular flanges at their other for securing them together, as is herein set forth.

143,349.—Cotton-Press.—THOMAS R. JACKSON, Dallas, Tex. Application filed June 17, 1873.

The double diagonal pawls are pivoted on each side of the rack-bar to a vibrating lever. The rack-bar is provided with two rows of reverse-set teeth. Cords are attached to each end of the diagonal pawl, from which weights are suspended, so that either the upper or lower point of the pawl may be caused to engage with the rack.

Claim.—The combination of diagonally-arranged double-acting pawls *g*, follower-rod C with two rows of reverse-set teeth, *n n'*, cords *e e'*, changeable weights *w w'*, and vibrating lever D, substantially as and for the purpose set forth.

143,350.—Manufacture of Cast-Iron from Ore.—PIERRE E. JAY, St. Jean Baptiste, Canada. Application filed March 18, 1873.

Claim.—The treatment of iron ore, before being placed in the cupola or furnace, by wetting it with a solution composed of sugar, nitrate of soda, carbonate of lime, and water, in the proportions specified, substantially in the manner and for the purpose described.

143,351.—Fire-Proof Building.—GEORGE H. JOHNSON, New York, N. Y., assignor of one-half to WM. J. FRYER, Jr., same place. Application filed July 14, 1873.

Claim.—The combination of a series of hollow cylinders, A A, made of fire-clay or other non-combustible material, and held in position and supported by the double and single concave binders or clamps B B C C, made of the same material, all as shown and described, for the purposes specified.

143,352.—Fire-Proof Roof.—GEORGE H. JOHNSON and WILLIAM J. FRYER, Jr., New York, N. Y. Application filed August 12, 1873.

The slabs are hollow and rectangular in form, with rabbets on the upper and lower edges to form a flush lap-joint on both sides. The ends of the slabs rest on the flanges of the hollow supporting-stripe. The whole surface may be covered with metallic paint or Portland cement.

Claim.—The slabs C C, made of baked clay or other non-combustible material, and the supporting-stripe B B, made of baked clay, metal, or other non-combustible material, resting on wood or metal beams or rafters to carry the same, as shown and described, for the purposes specified.

143,353.—Horseshoe.—JAMES B. JOHNSTON, New York, N. Y. Application filed May 26, 1873.

The key is arranged transversely between the head of the calk and face of the shoe and entirely clear of the screw-stem. In this situation the key forms a resistance to injurious blows directed parallel to the face of the shoe.

Claim.—The combination of a shoe, A, with a removable calk, C, attached to the shoe by a screw-stem, and secured from turning by means of a key embedded between the shoe and the lower face of the calk, substantially as described, for the purposes set forth.

143,354.—Garden-Weeding Implement.—WILLIAM JONES, New Albany, Ind. Application filed August 1, 1873.

Upon a toothed frame is formed a socket for containing a handle and a blade for cutting the weeds.

Claim.—The within-described garden implement, consisting of the frame A, with socket C, teeth B B, and blade D, all constructed and arranged substantially as and for the purposes herein set forth.

143,355.—Rock-Drill.—DANIEL KENNEDY, Brooklyn, N. Y. Application filed March 24, 1873.

The steam-valve and the feeding mechanism are operated by means of a plunger, which is arranged within the main piston.

Claim.—1. The piston of a rock-drill made of a large part, B, and a smaller part, B', the part B' being grooved, as at *i*, to admit steam to its upper ends, as described.

2. The piston B of a rock-drill, carrying the grooved tubular piston B', and combined with the loose nut I and ratchet-wheel *d*, to operate substantially as herein shown and described.

3. The plunger J, arranged within the piston B', and connecting with the disk or plate *l*, to actuate the steam-valve and feed mechanism, substantially in the manner set forth.

4. The reciprocating disk or plate *l*, arranged within the cylinder A, in combination with the three-pronged lever M and spring-pawl N, to actuate the slide-valve H and feed-screw D, substantially as herein shown and described.

143,356.—Straw-Cutter.—AUGUST KINDERMANN, Cleveland, Ohio. Application filed June 2, 1873.

Directly over the pair of feed-rolls is the hopper, which has an articulated cover held up means of a spring. The straw passes from the rolls between two bars, which are provided with stationary shear-blades, beneath which a horizontally-reciprocating shear-blade operates.

Claim.—The hopper B, provided with the guide-board *b* and spring-cover *b'*, and the two toothed feed-rollers C C', each having a positive motion, and the blocks E E', forming the narrow opening, all located directly above the knife F, all constructed and arranged for operation, as and for the purpose specified.

143,357.—Machine for Sorting Potatoes.—DAVID M. KING, Garrettsville, Ohio. Application filed July 31, 1873.

An inclined endless screen or riddle runs over sprocket-wheels carrying the potatoes—after sifting out the dirt—onto another coarser screen running at a greater rate of speed, by which the small potatoes are separated. To the end of the frame is attached a bag-holding device, adjustable to height of different bags.

Claim.—1. The combination, in a potato-sorting machine, of a coarse, endless, rapidly-moving screen, D, for sorting the potatoes, and a finer, endless screen, C, projecting over it, for first sifting out the dirt, substantially as described.

2. The combination of the bag-holding hooks G on the discharge end of the machine with cord *g* and weight *g'*, for adapting the same to bags of different height, as described.

143,358.—Paper-Bag Machine.—WILLIAM LIDDELL, Buffalo, N. Y., assignor of three-fourths his right to ROBERT D. HAMLIN, same place. Application filed August 11, 1873.

The web of paper is passed from a reel over a guide-roll at one end of the machine, above its bed, where paste is applied to one edge, whence it passes under and is partially creased for side folds by two suspended curved formers. The partially-creased edges are directed under two bracket-creasers, arranged on or near the edge of the folding-table, by which the creases are completed. Two spring-punches, arranged upon the bracket-creasers, are automatically precipitated, cutting out or nicking the edge or crease made by the brackets, which insures the complete separation of a bag-length by a stationary knife and two cutters arranged on rollers and operating alternately to hold and cut from the upper and under sides of the blade. Feeding-rollers, in advance of the cutting devices, insure the travel of the web and also roll down the crease. The severed bag-length travels over tapes, and its forward end is projected over pressure-rolls the required distance, when a revolving pasting-brush pastes the end of the blank; a folding-blade then descends, upturning the pasted end and directing the fold between the pressure-rolls, forming the bottom and completing the bag.

Claim.—1. The combination, in a paper-bag machine with a stationary blade or cutter, of the rollers G G' provided with cutters g^1 g^2, substantially as and for the purpose hereinbefore set forth.

2. The combination, with the stationary blade K, of the supporting-arm K', attached thereto, so as to permit the passage of the overlapped and unfastened edges of the folded-paper tube, substantially as hereinbefore set forth.

3. The combination, with the rollers F F', the former provided with a recess, *g*, of the stationary knife and arm K K' and ledge *k'*, substantially as and for the purpose hereinbefore set forth.

4. The combination, with the knife and arm K K', and roller F provided with recess *g*, of the adjustable screw *k*, arranged substantially as and for the purpose hereinbefore set forth.

5. The combination, with the guide-roller *b* and curved gages C C, of the edge punches E and guide-brackets *d*, substantially as and for the purpose hereinbefore set forth.

6. The combination of the edge punches E, striking-arms *e e*, and rock-shaft *e'*, substantially as and for the purpose hereinbefore set forth.

7. The combination, with the edge punches, rocking shaft *e'*, and striking-arms *e e*, of the plate n^2, return-spring n^3, pawl *n'*, oscillating arm *n*, pitman *m'*, and crank-arm *m*, substantially as and for the purposes hereinbefore set forth.

8. The combination, with the cutter-rollers G G' of the elliptical gear-wheels L L', for imparting a variable motion to the cutter-rollers, substantially as and for the purpose hereinbefore set forth.

9. The combination, with the shaft P actuated by the counter-shaft O, of the revolving pasting-bar S, folding-blade, and rocking arms *p' p*, rocking lever *r'*, and cam *r*, substantially as and for the purpose hereinbefore set forth.

10. The combination, with the shaft P, of the arms *s s* and paste-roller *u*, pivoted pasting-blade S provided with arm *s'*, and resetting spring *t*, substantially as and for the purpose hereinbefore set forth.

143,359.—Corset-Clasp.—PHILLIPP LIPPMANN, New York, N. Y. Application filed November 7, 1872.

Claim.—As a new article of manufacture, a covered corset-clasp, the cloth of which forms a marginal flap or flaps along its length suitable for and adapted to being sewn upon the corset, substantially as described, and for use in the place of broken, injured, or worn-out clasps or cloth, as herein set forth.

143,360.—Fare-Box.—SAMUEL H. LITTLE, Rosemead, Ill., assignor of one-half his right to WILLIAM D. LITTLE, same place. Application filed July 21, 1873.

The tilting shelves are operated by means of the tri-armed lever and connections when the door is pushed back to deposit the fare. By means of the lever R the driver can suspend the operation of the shelf H, by disconnecting the rod O, until he has examined the fare.

Claim.—1. The combination of the door B, stud *b*, lever K L M, rods N and O, and shelves G and H, all arranged and operated as described.

2. The combination of the door B, stud *b*, lever K L M, rod N, shelf G, rod O, shelf H, and lever R, all substantially as set forth.

3. The inclined slide F, the shelf G, consisting of the parts *g g'* set angularly to each other, and the shelf H consisting of the three parts A A' A'', all arranged, relatively to each other, substantially as shown.

143,361.—Skirt-Protector.—JULIA C. LIVERMORE, Boston, Mass. Application filed August 1, 1873.

A broad water-proof band is suspended from a waistband by connecting-bands underneath the dress-skirt. Its lower edge is turned up, and it incases the bottom of the dress.

Claim.—The skirt-protector consisting of the waistband B, bag portion A, connecting-bands C, and the furcated front connecting-piece D, all constructed and arranged as specified and shown.

143,362.—Lubricating Compound.—SAMUEL Y. LOVE, Philadelphia, Pa., assignor to LOVE BROTHERS, same place. Application filed August 4, 1873.

Claim.—The within-described lubricating composition, consisting of petroleum, petroleum products, resin, and lime-water or alkaline liquid, treated and compounded with or without flour, grease, or gums, substantially in the manner described.

143,363.—Railroad-Car.—FRANÇOIS MARIN, Geneva, Switzerland. Application filed July 1, 1873.

Each railway-carriage is provided with supplemental wheels, one at each corner of the frame, of small diameter, and set at a certain fixed angle thereto. These wheels act in conjunction with an elevated rail upon the outside of curves of small radius.

Claim.—The supernumerary wheels B, set at an angle, and applied to a locomotive or railway-carriage, A, in combination with the elevated outside rail E of the curve of a railway-track, as and for the purpose specified.

143,364.—Tag-Hook.—THOMAS P. MARSTON and NATHAN M. PHILLIPS, New York, N. Y., assignors to NATHAN M. PHILLIPS. Application filed January 6, 1873.

The shank of a spring-wire hook is bent to form a horizontal loop, into which the free end engages and is held.

Claim.—The self-locking spring-hook having the simple offset 3, formed with a curve, as shown, for the purposes specified.

143,365.—Clamp for Securing Advertising-Boxes to Lamp and other Posts.—PETER MCCOSKER, Pittsburg, Pa., assignor of one-half his right to HENRY SCHMIDT, same place. Application filed January 17, 1872.

The two arms or shanks upon which the box rests are arranged each to project from an opposite end of each of the two semicircular bands composing the clamp, instead of both.

Claim.—In combination with the box or advertising medium D applied to a post, substantially as shown and described, the supporting-clamp consisting of the two curved sections C C, united by means of the transverse bolts H H, said sections having each a threaded arm, B, projecting, respectively, from opposite sides of the clamp and holding the nuts G, substantially as and for the purpose specified.

143,366.—Scarf-Ring.—ALFRED P. MATHEW and ISAAC D. LEONARD, Newark, N. J. Application filed September 15, 1873.

A catch, having one or more points on its lower end, is hinged on the inside of the ring. The points engage with the scarf and prevent the ring from slipping off.

Claim.—The combination of the ring *a* and the hinged or jointed catch *c*, substantially as specified.

143,367.—Wrench.—ALONZO D. MCMASTER, Rochester, N. Y., assignor of one-half his right to ISRAEL SMITH, same place. Application filed March 6, 1873.

The movable jaw is provided with a tapering shank adapted to enter a socket in the handle.

Claim.—The handle A, formed with the socket *a* and groove *d*, and having ratchet-teeth *f*, and supporting the clamping-sleeve

C, in combination with the shank B, having the rib *d'* and ratchet-teeth *f'*, all constructed and arranged to operate substantially as described.

143,368.—Car-Coupling.—DAVID M. MILLER, South Bend, Ind. Application filed August 28, 1873.

The center lever of the rock-shaft serves to depress the spring which actuates the pin and retain it until the draw-head is struck by that of the approaching car, when a stop on the bottom of the draw-head throws the short arm of the lever to the rear and relieves the spring, so that the pin is forced up in position. An india-rubber cushion, placed around the pin between its collar and the straight spring, serves to provide the necessary oscillation as the pin is drawn outward.

Claim.—1. The combination of the draw-head A, having a projection, *a*, pin B, spring C, and lever or prop E, substantially as and for the purpose specified.

2. The combination of the draw-head A *a*, pin B, spring C, lever or prop E, and rock shaft or rod D, extending to the sides of the car, substantially as and for the purpose specified.

3. The combination of the pin B, spring C, and rubber or other spring *b*, substantially as and for the purpose specified.

143,369.—Car-Coupling.—JOHN DIX MILLS, Alexandria, Va. Application filed July 22, 1873.

The peculiar shape of the coupling-heads allows of one of the heads rising over the other, so that they couple vertically and are locked on a horizontal plane. Uncoupling is effected by depressing either one of the draw-heads.

Claim.—1. The described hook, having the recess a^2 and point a^1, with equal and similar inclines, the hook being adapted to move vertically to couple with its fellow, and hold the head of the same by means of the recesses a^2 in the same horizontal plane, all as shown and and described.

2. The combination of the pivoted socket *x* with the hook A and spring *x'*, as and for the purpose described.

143,370.—Lubricating Car-Wheel.—JOHN H. MURRAY, Hollidaysburg, Pa. Application filed August 9, 1873.

Claim.—The loose feeding-plug H, in combination with the short tube G, the oil-chamber D, and the adjusting screw-plug F for regulating the length of the feeding movement of the plug H outside of the tube, as shown, and for the purpose described.

143,371.—Washing-Machine.—GODFREY S. NEWSOM, Edgefield, Tenn. Application filed August 1, 1873.

A washing-box has an elevated extended part, in which the devices operate. The main box is divided by a strainer. A hollow perforated cylinder has grooves on its surface, in which are laid curved rods connected with the strainer and small roller. Water is forced from the box by means of a pump and pipe, and distributed upon the rollers, and all operated by suitable gearing.

Claim.—1. The combination of the box *a*, provided with an elevated extension for support of operating mechanism, with roller *c*, and operating mechanism substantially as set forth, all arranged and operating to keep the goods being washed elevated above the sediment or "dirty suds" that settle at the bottom of compartments *a* and *a*.

2. In a washing-machine, the hollow perforated grooved cylinder *c*, upon which the clothes are rubbed, substantially as set forth.

3. In a washing-machine, the rods 4, permanently attached at one end, passing over the cylinders *c* and *u*, as and for the purpose set forth.

4. The combination, in a washing-machine, of the force-pump *p*, provided with induction and eduction pipes, with perforated pipes 3 3, substantially as shown and described.

5. The shaft *d*, eccentric *l*, connecting-rod *n*, and frame 1, in combination with cylinder *c*, substantially as set forth.

6. The combination, in a washing-machine, of the wash-frame 1, having rollers 2, with the cylinder *c*, substantially as shown and described.

7. The combination of the rollers *c u* 6, and rods 4, substantially as described.

143,372.—Portable Fence.—HENRY W. NICHOLS and RUE P. NICHOLS, Northfield, Ind. Application filed June 27, 1873.

The lower ends of the adjacent panels are provided with hooked rods, which engage with T-shaped metallic ground-stakes. Cross-braces, which enter the ground, come between the ends of the adjacent panels, and are united near their tops by pins, which pass through them and into the ends of the panels.

Claim.—The combination, with two fence-panels, A A, of the metal post E, hooks *a a*, pin *b*, and braces C C, substantially as and for the purposes herein set forth.

143,373.—Spring Bed-Bottom.—CHARLES W. NORTHRUP, Utica, N. Y. Application filed April 18, 1873.

Spiral springs rest on slats. Each spring has on its top a square flat block, which are all tied together by rattan slips—a double row across the blocks laterally, and a single row longitudinally, to the bedstead.

Claim.—The combination of the springs *s*, attached to blocks G and slats *a*, and strips of rattan R, all arranged substantially as described, and for the purpose set forth.

143,374.—Register-Point-Perforating Devices.—WILLIAM OVERHEID, Cincinnati, Ohio, assignor to EDWIN CHAMBERS and CYRUS CHAMBERS, Jr., Philadelphia, Pa. Application filed April 30, 1873.

A strip carrying perforating-points is adjustable upon the tympan-bed.

Claim.—In combination with the tympan of a printing-press, the adjustable bars C C' with the attached punch-heads D D, constructed and operating substantially as and for the purpose specified.

143,375.—Eaves-Trough Hanger.—THOMAS F. PALM, Toledo, Ohio, assignor to ISAAC H. HAMPTON and THOMAS F. PALM, same place. Application filed September 6, 1873.

Claim.—The one continuous wire A, passing under and over the trough, provided with the loop C, and having the ends made fast, substantially as and for the purpose described.

143,376.—Coil-Holder for Wire, &c.—ISAAC E. PALMER, Hackensack, N. J. Application filed March 24, 1873.

Two open wheel-like disks are kept in place by rods attached to one and passing through holes in the other. The upper disk is adjustable by spring-clasps.

Claim.—1. A coil-holder composed of sections or disks B B', constructed and arranged to support and hold the coil in between them, and provided with central eyes *b b*, substantially as and for the purposes herein set forth.

2. A coil-holder having its sections, heads, or disks B B' adjustable in relation with each other, essentially as herein set forth.

143,377.—Drill-Chuck.—LEANDER PARMELEE, New Haven, Conn., assignor to himself and MERRITT HINE, same place. Application filed May 28, 1873.

Claim.—The head A, having two or more levers, C C, arranged therein as described, and provided with the spindle B, by means of which the head is secured in the lathe, and conical sleeve E, threaded to move longitudinally on the said spindle, combined with the jaws D, pivoted upon the forward ends of the levers so as to swing longitudinally, all substantially as described.

143,378.—Vehicle-Wheel.—LAWSON G. PEEL, Hazlehurst, Miss. Application filed February 19, 1873.

The axle-box and hub are formed together of two tubular pieces. The inner one has a fixed flange, and the outer one a loose flange, between which the spokes are clamped.

Claim.—The combination of the tubular piece A with stationary flange C, the tubular piece B with shoulder *a* and the movable flange E, and the parts A and B, provided with male and female screw-threads, all substantially as and for the purposes herein set forth.

143,379.—Portable Burglar-Alarm.—JOSEPH PENNEPACKER, Philadelphia, Pa. Application filed January 8, 1873.

A bell is attached to a screw-clamp for securing it to a door-jam, the clamp carrying a curved spring-hammer, and a detent-rod for holding back the same by means of a notch in the spring, so that, when touched by the opening of the door, the hammer is released and strikes the bell.

Claim.—1. The combination, with the bell A, of the detent E, extending some distance across the door when the alarm is applied, and the spring-clapper F G, the spring F of which, when hooked upon the detent, bears against the door, substantially as and for the purpose specified.

2. The combination of a bell, A, the adjustable clamp, composed of the bar B B', bolt and nut *a a'*, slotted bar C *c*, movable jaw C', and screw and nut D D', the bar E provided with detent *e* and the spring-clapper F G, a notch being cut in the edge of the spring at *f*, all substantially as specified.

3. In a burglar-alarm, substantially such as described, the spring-clapper and detent, when made adjustable, as specified, so that they may be swung around out of the path of the door.

143,380.—Cultivator.—FELIPE PEREZ, Havana, Cuba. Application filed August 4, 1873.

Two pairs of side bars, farthest apart at the center, and converging at each end, carry in front a series of cutting blades. Behind them is a horizontal blade or scraper extending across the entire width of the frame, followed by harrow-teeth.

Claim.—A cultivator composed of a forward supporting-roller, E, of the cutting-blades F F, horizontal transverse blade H, and pointed teeth J J, to operate on light soil, substantially as herein shown and described.

143,381.—Harness Saddle-Tree.—MARTIN W. POND, Elyria, Ohio. Application filed September 11, 1873.

Claim.—1. A separate fixed core-bearing for the joints in combination with a center-hinged self-adjusting harness saddle-tree, essentially as described.

2. The separate core *d* and the independent cap *m*, secured together by means of the check-hook *r* to cover the united joints of the tree, essentially as described.

3. In a center-jointed self-adjusting harness saddle-tree, a fixed core-joint bearing, *d*, constructed to form stops to the joints, essentially as described.

143,382.—Bracelet-Fastening.—BETHUEL RANGER and JAMES B. SMILEY, Brattleborough, Vt. Application filed May 5, 1873.

Claim.—The combination of an ordinary V-spring clasp with a pivoted push-piece, which, when upright, serves as a push-piece to compress the spring, and, when upset, or turned down, interposes between the two leaves of the spring and prevents its compression.

143,383.—Comb-Frame.—WORCESTER RASEY, Remington, Ind. Application filed August 2, 1873.

Each frame consists of a horizontal top bar having annular grooves and sharp ridges upon it, its ends adapted for seating in

V-shaped recesses, a piece of wood or metal bent rounding as a bracket or staple; its two ends attached near the ends of the described bar, wires being stretched from the bar diagonally and horizontally at the side or sides to retain the comb.

Claim.—1. A comb-frame for bee-hives formed of the top bar A turned to form the circumferential sharp edges *a a*, and having the edge *b* at each end on the under side, and the bar B bent to form the round corners *d d*, all as herein set forth.

2. The combination, with the comb-frame A B, of the screws or pins *e e* and wires *f f*, as and for the purposes herein set forth.

143,384.—Manufacture of Plaster Patterns.—JAMES SEMPLE, Chicago, Ill. Application filed June 25, 1873.

Claim.—1. The combination described, with a mold, A a^1 a^2, for making plaster patterns, *a*, of a collapsible core, B, centered by bits of plaster placed between it and the mold, which become consolidated with the liquid plaster, as set forth.

2. A collapsible tubular core, B, provided with valve-seat tube *b*, and a threaded hollow valve-plug, *b'*, laterally perforated, as and for the purpose specified.

143,385.—Burner for Carburetors.—IRA W. SHALER, Brooklyn, N. Y. Application filed June 23, 1873.

The outer cylinder of an argand burner rises above and bends inwardly over its inner cylinder, causing the circle of flame to tend toward its center and then upward.

Claim.—The hollow arm 4, cylinder-body 3, and jacket 5, the jacket 5 extending above and curved inwardly over the top of the body 6, substantially as shown and described.

143,386.—Preparing and Preserving Fish.—WILLIAM SHARP, Portland, Me. Application filed February 3, 1873.

Claim.—1. The process of preparing and preserving fish as an article of food by smoking, and subsequently canning and boiling them in the cans, substantially as described.

2. The improved article of manufacture, obtained by first smoking the fish and subsequently canning and boiling them in the cans, as and for the purpose set forth.

143,387.—Sewing-Machine Caster.—JAMES E. SMITH, Sharpsburg, assignor to himself and THOMAS J. PETERS, Owingsville, Ky. Application filed April 16, 1873.

The housing or frame of a caster-wheel is provided with open curved slots for the gudgeons to work in. The periphery of the caster is notched or corrugated, so that it will readily engage with a fixed detent within the housing, thereby locking the caster. This construction applies to two of the casters of a sewing-machine table, allowing it to be trundled over the floor or held locked against ordinary displacement.

Claim.—A locking and releasing caster, whose roller is corrugated on its periphery *c'* to engage in one position with its detent F, and in its other position to be free therefrom, its gudgeons *s* occupying, for this purpose, curved slots *d* in the housing D, substantially as set forth.

143,388.—Tacking-Machine for Boots and Shoes.—DAVID M. SMITH, Lynn, Mass., assignor to HENRY G. THOMPSON, Milford, Conn. Application filed June 27, 1873.

Claim.—1. A magnetic hammer for the purpose of receiving, holding, and driving a tack through the upper of boots and shoes into the inner soles thereof, combined with automatic machinery constructed for operating and feeding the same, for the purpose set forth.

2. A magnetic hammer, in combination with the non-magnetic feeding devices, substantially as described.

3. The combination of the spring push-bar, provided with the nut and catch, with the sliding bar, having a projection and adjustable stop, and the mechanism for operating the same, substantially as shown.

143,389.—Shank-Stiffener.—WATSON N. STRAGUE, Keene, N. H., assignor to himself and GEORGE GOODYEAR, Elizabeth, N. J. Application filed June 27, 1873.

A shank-stiffener formed of a strip of wood and strip or strips of leather or leather-board glued together or otherwise secured, so that the latter prevents the former from splitting, and full elasticity, with sufficient thickness, is secured to the shank.

Claim.—A shank composed of two or more thicknesses of the materials herein specified, for the purpose set forth.

143,390.—Gas-Meter.—WILLIAM A. TELLING and SAMUEL JOHNSON, Wood Green, London, assignors to THE IMPERIAL METER COMPANY, London, England. Application filed July 7, 1873.

The slide-valve, which controls the flow of the gas, is operated by a weighted lever, which is thrown from side to side by two pins upon an arm of a rock-shaft operated by the diaphragm, the latter being provided with a weighted balance-lever. The parts of the first-mentioned lever, with which the pins come in contact, are curved to reduce friction.

Claim.—1. The combination, with the diaphragm in a dry gas-meter, of the weighted balance-lever G, arranged so that it assists in lifting the weighted lever *p* used for reversing the slide-valve *w*, and thus renders the action of the diaphragm continuous and equable, substantially as described and shown in the drawing.

2. The combination, with the pins *m m'* driven by the diaphragm, of the curved or cycloidal-shaped weighted lever which drives the slide-valve *w*, so that the downward pressure upon the pins is reduced, substantially as described and shown in the drawing.

143,391.—Harvester-Dropper.—JOHN S. TRUXELL, Greensburg, Pa. Application filed February 27, 1873.

The shaft upon which the dropper vibrates passes through the hollow reel-shaft and supports the dropper at both ends.

Claim.—The combination of the hollow reel-shaft D, bars F H, and dropper A, substantially as and for the purpose specified.

143,392.—Device for Suspending Hammocks.—OTIS TUFTS, Boston, Mass. Application filed August 12, 1873.

Two standing rods connected near the bottom by a horizontal rod with sockets on its ends. On each upright there is a sliding head with sockets, in which are inserted the ends of brace-rods that extend inwardly to the ground. All the sliding parts are adjustable by set-screws.

Claim.—1. A hammock-support having suspending-heads *a b* and movable rods *g h e*, constructed and connected substantially as described.

2. In combination with the adjustable stands, the connecting-rod *m*, substantially as shown and described.

143,393.—Capped Nail.—CORNELIUS WALSH, Newark, N. J. Application September 17, 1873.

Claim.—1. A nail having a sheet-metal cap attached by folding two thicknesses of the same around and beneath the nail-head, substantially as herein described.

2. A finishing-nail consisting of a common small-headed nail, A, and a sheet-metal cap, B, the latter being attached by contracting a central portion thereof in a double fold beneath the nail-head, and completed by stamping this central portion and the margin or rim of the cap into ornamental shape, substantially as herein specified.

143,394.—Revolving Fire-Arm.—ROLLIN WHITE, Lowell, Mass. Application filed August 27, 1873.

Claim.—1. In a revolving fire-arm, a cartridge-extractor, the stem of which is entirely within the cylinder thereof, and adapted to be operated by a piston projecting within the cylinder, as and for the purposes set forth.

2. In combination with a cartridge-extractor, the stem of which is entirely within the cylinder, a pawl or piston for moving or operating the extractor in the act of tilting the barrel, as described.

3. The shipping-stud 7, in combination with the cam *i*, pawl 1, and a spring for returning the extractor to its seat, as specified.

4. The adjustable stop 8, for automatically releasing or unshipping the pawl 1 at any desired or predetermined point in the act of tilting the barrel, as described.

5. The cam *i*, in combination with the pawl 1, stop 8, and piston for operating the cartridge-extractor, substantially as specified.

6. The combination, with a hinged barrel of a fire-arm, of the pivoted spring-locking bolt *i* having projection *k*, the slotted spring-locking plate *h*, and the projections *j* on the breech, all substantially as and for the purposes herein set forth.

7. The combination of the hammer *a* and spring-bolt *b*, having the double bearing shown, whereby a rebounding lock or hammer is obtained, as set forth.

143,395.—Coal-Separator.—JOHN B. WILFORD, Reading, Pa., assignor to HEZEKIAH BRADFORD, same place. Application filed March 25, 1873.

Rollers, connected to the frame of the machine, are placed so that the rake-handles rest upon them at the completion of the upward movement, the rollers becoming fulcrums to elevate the rake on the return movement.

Claim.—The rake reciprocated by the crank *o'*, in combination with mechanism that acts upon the rake-handle to lift the rake upon the return movement, and with the incline *P* and separating-jig, substantially as set forth.

143,396.—Squib for Blasting.—SAMUEL HARRIS DADDOW, St. Clair, Pa. Application filed October 20, 1871.

Claim.—As a new article of manufacture, the squib with a match permanently attached thereto, substantially as shown and described.

REISSUE PATENTS.

5,580.—Speaking-Tube.—JAMES R. CRICHTON, Boston, Mass., assignor of one-half interest to OSBORN B. HALL, 2d.—Patent No. 91,827, dated June 29, 1869. Application filed September 6, 1873.

A tilting valve leans lightly against the mouth of a speaking-tube, and is connected with an alarm which is set off when a current of air blown through the tube drops the valve.

Claim.—1. The combination, with a speaking-tube, of a tilting-plate valve pivoted in such manner that upon blowing within the tube such device is so tilted or operated as to release or set in motion a suitable alarm or signal connected with the same, substantially as and for the purposes stated.

2. The combination, with a speaking-tube, of a tilting valve, whose support is a rock-shaft located immediately at one extremity of the tube, the overbalance of the valve against or toward the tube being so slight that a current of wind from within the tube against the valve will overcome and drop the valve, substantially as and for the purposes stated.

3. The construction and arrangement of the tilting arm *g* with its knob *f*, the rocker-shaft *b* with its tripper *d*, and finger *h*, and

the oscillating lever *e*, the latter being actuated by the spring and disposed in connection with the rocker-shaft and an alarm mechanism, and the whole being arranged and operating substantially as hereinbefore explained.

5,581.—Machine for Bending Tubing.—WILLIAM T. FARRE, Montreal, Canada.—Patent No. 133,636, dated December 3, 1872.—Division A. Application filed June 30, 1873.

The bending is of cast tubes having a surplus of metal on one side, at the point where the bend is required, the surplus metal being reduced to a thickness uniform with the rest of the tube by the drawing blows of a revolving beater over the extremity of a mandrel, in virtue of which the metal at that point is extended, and the tube consequently deflected from a straight to a curved line.

Claim.—1. The combination, with the die F and mandrel D, of the revolving plate-die E, the construction and combination of the parts, and the mode of operation of the combination, being substantially as specified.

2. The combination, with the threaded mandrel-stem L and the lifting-bar O, of the intermediate mechanism, through which feed-movement is imparted to the tube, substantially as described.

5,582.—Method of Bending Tubing.—WILLIAM T. FARRE, Montreal, Canada.—Patent No. 133,636, dated December 3, 1872.—Division B. Application filed July 17, 1873.

The bending is of cast tubes having a surplus of metal on one side, at the point where the bend is to be made, the surplus metal being reduced to a thickness uniform with the rest of the tube by the drawing blows of a revolving beater over the extremity of a mandrel, in virtue of which the metal at that point is extended, and the tube consequently deflected from a straight to a curved line.

Claim.—The method or art of making bent tubes of soft metal, of a single piece of metal, without a seam, by casting a tube with surplus metal where the outside of the bend is to be, and then forming the bend by bending or rolling the surplus metal to a uniform thickness with the rest of the tube without increasing the diameter, substantially as described.

5,583.—Cooking-Stove.—GEORGE H. PHILLIPS, Troy, N. Y.—Patent No. 63,790, dated November 3, 1868; reissue No. 4,063, dated July 5, 1870. Application filed May 15, 1873.

Claim.—1. The boiler-hole top-plate of a cooking-stove connected with the top of a reservoir, which is against and partly above the rear vertical end plate of the stove, (the top edge of said vertical end plate being on a line with the boiler-hole plate A extended rearward,) by means of an inclined plate or molding which joins the boiler-hole top-plate at a point over and above the descending and ascending flues of the stove, and therefrom extending upward, outward, and backward, until it unites with the reservoir-top, substantially as herein described and set forth.

2. The combination of a water-reservoir at the back of a cook-stove, against and partly above the upper edge of the rear vertical end plate C, which plate extends from the stove-bottom up to and terminates on a line of the boiler-hole top extended rearward, with a chamber or chambers formed, in part, by the front of that part of the reservoir which is above the upper edge of said rear end plate, and an inclined plate or molding which connects the boiler-hole top of the stove with the top of the reservoir by its upward, outward, and backward extension, substantially as and for the purposes hereinbefore described and set forth.

3. The descending and ascending vertical flues extended upward within the rear end of a cooking-stove, such extension being above the horizontal plane of the top plate A, and also above the upper edge of the rear vertical end plate C, and covered over at the upper ends or parts by means of a connecting-plate or molding, B, substantially as and for the purposes hereinbefore described and set forth.

4. The division flue-stripe extending upward into the space formed, in part, by the front of a reservoir, which is against and partly above the upper edge of the rear vertical end plate C, and by an inclined or connecting plate, B, joining the boiler-hole top with the top of the reservoir, to partition off the space so inclosed, and shown in Fig. 3, substantially as hereinbefore described.

5. The pipe-collar for the exit-pipe upon the inclined plate or molding B, which connects the boiler-hole top with the top of the reservoir S, and arranged substantially as shown, so that, where it joins the inclined plate, it shall follow the same line therewith, and open into the space inclosed against the front wall of said reservoir upon an angle, and, between its higher and lower points of union with the molding or connecting plate, shall inclose the escaping heat against the exposed part of the reservoir-front, which is above the upper edge of the rear plate C, or above the horizontal line of the boiler-hole top A, substantially as and for the purposes hereinbefore described and set forth.

6. A cooking-stove having a water-reservoir attached to the rear end of such stove, and a part of such reservoir raised above the horizontal plane of the boiler-hole top A, the reservoir-top and the boiler-hole top connected together at and above the ordinary rear descending and ascending flue, flues, or space, and inclosing a space or spaces, as hot-air chamber or chambers, between the front of said reservoir and the aforesaid connecting-plate or molding, and above the horizontal plane of the boiler-hole top of said stove, substantially as and for the purposes hereinbefore described and set forth.

5,584.—Boat-Detaching Apparatus.—SAMUEL SKIDMORE, Brooklyn, N. Y.—Patent No. 141,470, dated August 5, 1873. Application filed September 16, 1872.

The lever E, by its construction and arrangement through the bifurcated bar B and slotted plate A, has a bearing independent of the pivot F, and should this pivot give way the bolt G would still be held in its position.

Claim.—The frame consisting of the plate A, provided with the slot *a*, the lugs B and B, and the lug C, provided with the opening *c*, in combination with the lever E and bolt G, substantially as and for the purpose specified.

5,585.—Cut-Off and Regulating-Cock for Gas.—CHARLES E. SEAL, Winchester, Va., assignor of one-half interest to EDWIN F. BROOKE.—Patent No. 140,549, dated July 1, 1873. Application filed September 9, 1873.

A valve, which is held to its seat by means of a spiral spring, is operated from any part of a building by a bell-crank lever, to the upper extremity of which is attached a dog, serving to hold the valve at any desired distance from its seat by operating into notches in a ratchet-wheel thereto attached.

Claim.—1. The combination, with a self-closing valve, B, of an operating mechanism for opening and holding the valve, arranged in a room or apartment different from that in which the valve is located, substantially as described.

2. The valve B, having stem *b'*, valve-chamber A, and connecting-rod L, combined with the lever G and ratchet-and-pawl mechanism I H A', as and for the purpose described.

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AMENDMENT TO RULES OF PRACTICE.

Amendment to Rules of Practice, dated October 2, 1873, and published in No. 13 of the current volume of OFFICIAL GAZETTE, is hereby revoked.

M. D. LEGGETT,
Commissioner of Patents.

DIGEST OF FOREIGN PATENT LAWS.

GREECE.

REPORT OF MR. WM. A. C. BARRINGTON, OF THE BRITISH LEGATION.

With reference to your lordship's circular of the 14th of August last, I beg to state that there is no special law in Greece affecting inventions. The practice of the country places all inventors on the same footing as a person seeking a monopoly; and in either case a special act is required to secure the individual in the possession of the rights which he claims. A bill for the purpose may be introduced in the chamber by any deputy, and is treated like any other bill; and, if it passes, it defines, according to the circumstances of the case, the limits both as to time and place within which exclusive privileges are accorded to the party on whose behalf the motion is made.

GUATEMALA.

REPORT OF MR. E. CORBETT, OF THE BRITISH LEGATION.

In obedience to the instructions contained in your lordship's despatch of the 14th of August last, I have the honor to inclose such information as I have been able to collect respecting the law and practice of the Republics of Central America with regard to inventions.

I have received no answer from Honduras to my inquiries on this matter, but I do not delay longer sending the reports from the remaining four governments.

Inclosure 1.

[Translation.]

I have the honor to inform you that I have received your favor of the 21st instant, asking me to remit to you information respecting the law and practice of this country respecting inventions.

In reply, I have the honor to inform you that the accompanying law of the month of June, 1864, is the only one existing on this matter.

Inclosure 2.

DECREE.

[Translation.]

The president has seen fit to issue the following decree:

Don Rafael Carrera, president, seeing that there are now pending several petitions respecting exclusive privileges; and that in consequence of the progress of industry, and chiefly of agriculture, it will follow that this class of petitions will continue to increase, and that it is necessary to give due attention to everything that may co-operate with the spirit of enterprise which is displaying itself in these branches; but at the same time considering that fixed rules ought to be established for the concession of such privileges, in order that they may produce good results, in conformance with the council of state, has held it good to decree, and decrees—

ARTICLE I. The author or inventor of an art, manufacture, machine, instrument, preparation of material, or any improvement in them, who may wish to enjoy the exclusive proprietorship of his work or invention, shall present himself to the ministry of interior, making a clear and succinct description of the work or invention, swearing that it is his own discovery, unknown in the country, accompanying this with examples, drawings, or models, according as the nature of the cases

permits, and petitioning for a patent that may accredit his proprietorship.

Art. II. The Minister of Interior will name a commission of one or more experts, in order that the work or invention may be examined, and he will explain to them its originality, they taking a solemn oath in the presence of the petitioning inventor to faithfully discharge their duty, and to guard religiously the secret which he is about to communicate to them during the whole time which this law may order.

Art. III. The originality of the work or invention being established, the president of the republic will concede the exclusive privilege for a term not exceeding ten years, and will command the respective patent to be issued, which will be authorized by his signature, and sealed with the seal of the republic.

Art. IV. This patent will be registered in a book, which will be kept for that purpose in the office of the ministry of the interior.

Art. V. Before issuing the patent to the person soliciting it, he will have to show by the corresponding receipts that he has paid into the public treasury the sum of fifty dollars, and also has deposited in the museum of the "Sociedad Economica" the patterns, drawings, or models, and a paper drawn up to the satisfaction of the examining committee, and authorized by the signature of each one of the members, which paper shall contain a complete description, so minute and specific that it may distinguish the invention or discovery from other things before known and used, and that it may point out the mode and principles by which it may be applied, in order that it may be of use to any other intelligent person that may cause to be made or make use of the same invention, in order that the public may reap the advantages at the end of the term for which the patent was granted. This paper will be closed in presence of the committee, and the title or object of the privilege written on its cover. The proprietor or inventor will affirm that he has strictly fulfilled this duty, and the committee will certify the same. The proprietor, during the term of his privilege, shall be allowed to examine this paper whenever he wishes to do so, in order to see that it remains closed and sealed as he delivered it.

Art. VI. In the museum of the "Sociedad Economica" a "sala" will be set apart for the reception of the patterns, models, or drawings, and a secure safe for the custody of the closed papers mentioned in the former article, which may not be opened or published before the expiration of the term of the privilege or patent, excepting in the cases set forth by Articles XI, XII, and XV.

Art. VII. The fifty dollars, payment of which is established by Article V, shall be applied for the preservation and support of the hall, which is to be established in the museum.

Art. VIII. The introduction of the arts, industries, or machines invented in other countries, and entirely unknown, and neither established or used in Guatemala, shall obtain exclusive privileges on the same terms and with the same conditions as the new discoveries or inventions, but for a shorter period than the latter, which shall not exceed eight years, according to its utility, and the difficulties of the enterprise in the judgment of the minister in view of the report of the committee. Simple variations, or changes of form or proportions of machines, or articles formerly established, shall enjoy no priviledge.

Art. IX. The property in a privilege or patent is transmissible like every other property; but when it is transferred the Minister of the Interior shall be informed of the motives which led to the transfer. If he finds them just, he will make note of them in the book of transfers; and if not, he will proceed to put in force the terms of Article XI. For the transmission of the property of privilege a tax of two per cent. upon the amount paid for the transfer shall be paid, which tax shall be paid into the public treasury.

Art. X. Any person who shall construct privileged articles by the same method as the patent shall pay a fine of not less than $100 or more than $1,000. He shall lose the articles which may be found constructed, and the machines, engines, instruments, or utensils which he has employed in their construction. The whole amount shall be applied, half to the exchequer, half to the proprietor of the patent or privilege, reserving the action for damages and injuries which the latter may have suffered.

Art. XI. The privilege which may have been obtained surreptitiously—that is to say, by false testimony, or the petitioner being other than the inventor, or on account of some industry already established in the country in the same manner—shall immediately be annulled; and the person obtaining it shall be condemned in the costs of the process of the inquiry, and punished by a fine of not more than $1,000 and not less than $100, or with a term of imprisonment not exceeding twelve months or less than three.

Art. XII. If any question should arise among individuals who have obtained privileges for the fabrication of the same products, it shall be decided by an arbitration composed, in the first instance, of a judge named by either party, and of a third named by the Minister of the Interior.

Art. XIII. General privileges may be conceded, which shall take effect in the whole republic, or particular ones, which shall comprise one, two, or more departments.

Art. XIV. In every privilege which may be conceded a proportionate time shall be fixed, which may not exceed two years, for the establishment of machines, engines, or manufactures, the which being concluded the time conceded to the privilege shall begin.

Art. XV. If by the end of the time conceded for the establishment it has not been begun the privilege will not hold good; and it will be forfeited if after commencement it is abandoned for more than a year, or if the products are adulterated, proving inferior to the models or paterns presented.

Art. XVI. It will only be possible to renew a patent when fortuitous circumstances, or extraordinary occurrences, may make the privileged person worthy of it, (the renewal,) and it must be solicited at least six months before the expiration of the privilege.

Art. XVII. The Minister of Interior is charged with the execution of this present decree, of the which he will give account in the chambers at its next session.

Inclosure 3.

SAN SALVADOR.

[Translation.]

I have had the honor to receive your favor of 21st ultimo, in which you seek information from this office respecting the laws with reference to inventions.

In conformance with your desires, I inform you that our constitution gives power to the executive to award and concede privileges to the authors of useful inventions; but that this faculty is not arranged as it should be by a secondary law; and that in the few cases which have occurred the spirit of this constitutional disposition has been followed in accordance with the practice of civilized governments.

Inclosure 4.

SAN JOSÉ.

[Translation.]

In answer to your favor of the 21st ultimo, I have the honor to inform you that the twentieth division of the article of constitution states that it belongs to congress to promote the progress of the arts and sciences, and to secure, for a limited time, to authors or inventors the exclusive right of their writings or discoveries.

According to this, every one that believes himself to have a right to a patent of invention must solicit it from the constitutional congress.

Inclosure 5.

MANAGUA.

[Translation.]

I have had the honor to receive your favor, dated 21st ultimo, in which you seek information for your government respecting the laws and practice of Nicaragua relative to inventions.

The Spanish cortes, whose resolutions obtained until the 15th of September, 1821, and as far as they are not in opposition to those of these countries have been declared in force in this republic, assure and regulate the right of property of inventors, establishing also the term of its duration.

Decree forty-three declares as to this right—to consider as proprietor of his work him who should invent, import, or introduce.

The government, by means of the proper minister, will issue to the said proprietor a certificate, in which will appear his name as inventor, improver, or introducer of the work, a description of it, (the invention,) and the duration of the exclusive right. This certificate will serve as a sufficient title; but in order to obtain it, it is necessary that the petitioner should address himself to the prefect of the department or to the municipality, giving an account of his work, describing it with the greatest exactness possible in conformity with the model, which the same law establishes.

The said authorities, in their turn, shall be obliged to give to the petitioner testimony of everything which may serve for the information of the minister of the department.

The inventor shall have ten years of exclusive property, the improver seven, and the introducer five. These terms may be extended by the sovereign power, on the proposition of the government, to fifteen, ten, and seven years, respectively.

The inventor, improver, and introducer, apart from the aforesaid terms, will cease to be considered as sole proprietors, first, if they cede their right for the public good; secondly, if they let six months pass without taking up the certificate; thirdly, if they let two years pass without putting in execution their invention, perfection, or improvement.

This is, in substance, that which is decreed by the Spanish cortes.

In this republic nothing new has been arranged with respect to this matter.

The state of continual agitation, in which this country has been involved since its political emancipation, has not permitted the complete reform of its codes.

But our constitution has given to congress the faculty of promising rewards and privileges to the inventors and managers of useful works, as will be seen by its Article XLII, division twenty-two; and, in practice, the rules of the decree cited above are not followed.

He who wishes for a reward or privilege seeks it from congress, who concedes it, if it sees fit to do so.

In this manner I have the honor to give to you the information solicited, having the pleasure, &c.

HAYTI.

Report of Mr. S. St. John, of the British Legation.

I have the honor to acknowledge the receipt of the circular of August 14, 1872, respecting the law and practice of foreign countries with regard to inventions.

On inquiry I find that the Republic of Hayti has no law or practice on the subject, having never yet had occasion to apply either. Should it ever feel the want of such a law it would probably base its legislation on the French system.

NETHERLANDS.

Report of Mr. J. Walsham, of the British Legation.

On the 25th of January, 1817, an act was passed for conferring exclusive privileges on inventions and improvements of articles of art and industry, and remained in force up to 1869.

On the 21st of June of that year, a project of law was submitted to the second chamber of the States-General, having for its object the repeal of the act of 1817, and the complete abolition of all patents.

It was worded as follows:

Art. I. From and after the 1st of January, 1870, no fresh patents for inventions and improvements, or for the first introduction of objects of art and industry, shall be granted, except in the cases of applications that shall have been made prior to that date.

Art. II. Patents formerly conferred, or to be conferred, by virtue of Art. I of this act, may be extended in accordance with the law of 25th of January, 1817.

After an interesting debate, in which the supporters of the patent laws endeavored to prove that invention conferred a right of property, and should therefore be protected, the project passed the chamber by a majority of 49 to 8 votes, one amendment having been proposed and carried, namely, to insert in the first article the words, "after the day of the publication of the law," instead of "after the 1st of January, 1870."

With this modification the law went up to the first chamber, was passed there, and after receiving the royal assent on the 15th of July, 1869, was published on the 19th of the same month.

Consequently, from this latter date no fresh patents could be conferred, except in the case of applications

made and acceded to prior thereto; at the same time these special patents, as well as those which had been granted under the old act of 1817, and had not yet expired, could be extended in accordance with the provisions of this same act of 1817.

It will be necessary to say a few words on the subject of these provisions, and to refer to the regulations for carrying out the act itself, and annexed thereto, which received the sanction of the Crown on the 26th of March, 1817; but before doing so it may be as well to correct a somewhat prevalent idea that the Crown, notwithstanding the law for the abolition of patents, has still the power in special cases of conferring exclusive rights upon inventors.

No such royal prerogative, however, exists; and no exceptions whatever are or can be made, beyond those specified in Arts. I and II of the abolition law.

According to the act of 1817, a patent can be granted for five, ten, or fifteen years; and those patents which are conferred for either of the first two periods can be extended, but only up to fifteen years. Therefore, by the first article of the law of July 15, 1867, patents, the application for which had been made and approved before the law came into operation, can, from the 19th of the same month (the date of its publication,) be granted for a term of five, ten, or fifteen years; and by the second article of the same law, these particular patents—if conferred for five or ten years, as well as those granted previously to the publication of the abolition law, if the latter were not originally granted for the full term of fifteen years—can be extended to that period.

Now, by the "Regulations" for carrying out the patent act of 1817, all proprietors of patents who, by new inventions, improve the articles patented, may obtain a new patent for such inventions and improvements, either for the period of their original patents, or for one of the periods assigned in the act itself, viz., five, ten, or fifteen years; and at first sight it might be supposed that the two classes of patentees alluded to in the first and second articles of the abolition law of 1869, as still coming within the application of the old patent act of 1817, and therefore within that of the "Regulations," which form an integral part of the act, would not even at the present day be debarred from enjoying the privilege first mentioned with regard to improvements on the inventions for which the original patent was granted. But this is not the case, as such privilege would necessitate the issue of a new patent; and the law of 1869 expressly prohibits such issue beyond the limits assigned in its two articles.

A translation, *in extenso*, of the act of 1817, and of the regulations for carrying out its provisions, accompanies this memorandum, in case they may be required for reference.

ANNEXE.

Netherland "Patent Act" of 1817.

[TRANSLATION.]

Act passed on the 25th January, 1817, for conferring exclusive rights on inventions and improvements of articles of art and industry.

We, William, &c., with greeting, to all persons who shall see or hear these presents, hereby make known:

That having taken into consideration the advantage of making general rules for conferring exclusive rights on inventions and improvements of articles of art and industry;

We, therefore, after having consulted the council of state, and deliberated with the States General, have approved and directed as follows:

ART. I. We will continue to confer, within the Kingdom, on any inventions or actual improvements in any branch of art and industry as well as on the first introduction or bringing into operation of inventions or improvements, exclusive rights for a definite period, by public license, under the name of patents, after due examination.

ART. II. These patents shall be conferred without prejudice to any one's rights or possession, and therefore shall not be valid whenever it shall appear that the invention or improvement constituting the subject of any patent has been used or employed or been brought into operation within the Kingdom before the conferring of such patent.

ART. III. The patents shall be conferred for the period of five, ten, or fifteen years, and, in proportion to the time and importance of the invention or improvement, lower or higher charges shall be made, which shall, however, never exceed the sum of 750 g., [$307.50,] nor less than 150 g., [$65.50.]

ART. IV. A patent conferred for five or ten years, on the expiration of that period may be prolonged, in cases when very weighty reasons can be given, but it may not be extended to a longer period than fifteen years altogether.

ART. V. Patents, on the first introduction or bringing into operation of inventions or improvements, made or brought into operation in foreign countries, so far as they are patented in those countries, shall not be conferred for any longer time than that for which an exclusive right shall have been granted in such foreign country, and under the express condition that the patented articles shall be manufactured within the Kingdom.

ART. VI. The patents shall confer on their owners or possessors the right and privilege:

(*a*) Of exclusively manufacturing and selling within the Kingdom, during the period prescribed, the patented articles, or of causing them to be manufactured and sold with their permission.

(*b*) Of prosecuting at law and proceeding against such persons as shall infringe the exclusive right conferred on them, in order to the confiscation to their own profit and advantage of what is manufactured and still unsold, to recovery of the amount for which the patented articles have been already sold, as well as such further compensation for injury, loss of profit or advantage, for which a claim may be established.

ART. VII. In applying for any patent the applicant is bound to annex an exact and explicit description of the subject of the secret constituting the object of the patent, signed with his own hand and sealed, comprehending the requisite plans, drawings, &c., and this description, at the expiration of the period of the original or extended patent, or if it shall have lapsed earlier, for reasons hereafter to be assigned, shall be made public, unless the government for weighty reasons should determine on postponing this publication.

ART. VIII. A patent shall be declared forfeited for the following reasons:

(*a*) Whenever it shall appear that the patentee, in the description appended by him to his application, has dishonestly omitted to mention or falsely represented any portion of the subject of the patent.

(*b*) Whenever it shall appear that the subject of the patent has been already described in print before the patent was issued.

(*c*) Whenever the patentee shall have made no use of his patent for the space of two years after his patent was signed, unless for weighty reasons, to be left to the decision of the government.

(*d*) Whenever the patentee, after having secured his patent, shall have obtained another patent in another country for the same object.

(*e*) Whenever it shall appear that the object patented, in its nature or application, is dangerous to the safety and security of the Kingdom or its inhabitants.

ART. IX. A separate account shall be kept of the fees paid for patents, and the amount shall be applied to the encouragement of art and industry, by awarding premiums, gratifications, &c.

ART. X. The laws and ordinances relating to patents, and such like exclusive rights on inventions and improvements up to the present time in operation, are by this act repealed and set aside; the patents, &c., however, hitherto issued and conferred for inventions shall remain in force for the benefit of their rightful owners in their original extent.

We command and direct that this shall be printed in the gazette, ("Staatsblad,") and that ministerial departments and authorities, corporations and servants of the government, shall co-operate to the exact execution of the same.

Given at Brussels on this 25th January, in the year 1817, the third year of our reign.

(Signed) WILLIAM.

By order of the King.

A. R. FALCK.

Regulations for carrying out the act of January 25, 1817, *on the conferring of patents for inventions, improvements, &c.*

ARTICLE I. In order to obtain any patent the applicant is bound to present a petition on the subject to the King, to be deposited with the clerk (greffier) of the states of his province. This petition shall contain a general account of his application, his surname, christian name, and address, as well as the period for which he desires to acquire a patent, and for which the same object has been already patented abroad. Finally, he shall append a sealed, exact, and complete description, signed by himself, of the subject or secret of the patent, accompanied by the plans and drawings belonging to it, in accordance with Article VII of the act of 25th January, 1817.

ART. II. The clerk (greffier) of the provincial states shall make a memorandum (procès-verbal) on the outside of the packet (model No. 1) of the delivery of the petition and the accompanying documents, and the exact date of this delivery. This memorandum (procès-verbal) shall be signed by him and by the applicant, and a duplicate of it shall be given to the latter.

ART. III. The governor of the province shall, without delay, and at the outside within ten days of the delivery of the petition, forward all petitions for patents to the Commissary-General for Instruction, Arts, and Sciences.

ART. IV. The Commissary-General shall present these petitions with his opinions thereon to the King, and on the supposition that the application falls within the terms prescribed, he shall submit with his report the patent for His Majesty's signature.

ART. V. In case the King should think good to reject the application, or to take the opinion thereupon of the Royal Netherlands Institution at Amsterdam, or of the Royal Academy of Science and Literature at Brussels, notice thereof shall be given to the applicant.

ART. VI. The patent (model No. 2) shall contain the description of the subject or invention, and indicate the rights and privileges which it confers on the possessor in accordance with Article VI of the act of 25th January, 1817. It shall, in addition, contain the express condition or stipulation that the government, in granting such patent, in no way guarantees the excellence or value of the invention, and reserves to itself the right of declaring it forfeited for one of the reasons assigned in Article VIII of the act in question. A patent for the first introduction of an article already patented in a foreign country shall besides expressly mention that the Government does not guarantee the truth of the declaration by the petitioner or applicant with respect to the duration of the foreign patent, as well as that the patented articles shall be manufactured within the Kingdom, in accordance with the condition or stipulation of Article V of the act.

ART. VII. Whenever a patentee wishes to obtain an extension of a patent conferred for five or ten years, he is bound to present his application in writing to the Commissary-General for Instruction, Arts, and Sciences, who thereupon shall make a report to the King. The patent so extended shall also be signed by the King.

ART. VIII. All proprietors of patents who, by new inventions, improve the articles patented, may obtain a new patent for such inventions and improvements, either for the period of their original patent, or for one of the periods assigned in Article III of the act.

ART. IX. In acquiring such a patent the same conditions shall be observed as in the applications for other patents. The fees to be paid for such patents shall be regulated in proportion to the time during which the patent is to be enjoyed, and in apportioning these charges attention must at the same time be paid to the importance of the improvement introduced.

ART. X. Whenever any one professes to have discovered an improvement in an article for which a patent has already been granted, he shall be allowed to obtain a patent for separately bringing such improvement into operation, without on any pretence being empowered to manufacture or produce the article itself for which the former patent was granted, so long as this former or previous patent shall not have ceased to be in force. In like manner the first inventor shall not be suffered to bring into operation the improvement patented at a later period. Changes in shape, forms, &c., or proportion, or additional ornamentation, of any description whatsoever, shall not be considered as included in such improvements.

ART. XI. Possessors of patents wishing to make over in whole or in part their rights for the benefit of others, are bound to ask the King's approval beforehand. They are obliged on penalty of invalidity to get this transfer registered at the office of the greffier (greffe,) where a report (procès-verbal) of it shall be drawn up, in accordance with the model under No. 3, which shall be transmitted without delay to the Commissary-General for Instruction, Arts, and Sciences. This procès-verbal or report shall be entered in the register hereafter to be mentioned.

ART. XII. All persons succeeding to the rights of a patentee in consequence of his death, are bound, before making use of their rights, to make a declaration of them at the proper office (greffe) in the province, where a report of it shall be drawn up, in accordance with the model under No. 4, which shall be transmitted without delay to the Commissary-General for Instruction, Arts, and Sciences. This report or procès-verbal shall be entered in the register hereinafter to be mentioned.

ART. XIII. On the expiration of any patent, or whenever it shall have been declared forfeited in accordance with one of the reasons assigned in Article VIII of the law, the Commissary-General for Instruction, Arts, and Sciences shall take the necessary measures to make public the inventions and improvements for which the patent was conferred.

ART. XIV. Whenever, on the expiration of a patent, or on the declaration that it has been forfeited for one of the reasons assigned in Article VIII, the Commissary-General for Instruction, Arts, and Sciences shall deem it undesirable to make the invention public, for political or commercial considerations, he shall in such a case draw up a report to the King, so as to submit the matter to the decision of His Majesty.

ART. XV. The Commissary-General for Instruction, Arts, and Sciences shall forward the patents, after they have been granted and signed by the King, to the governor of the province where the applicant resides, and at the same time indicate the amount to be paid for fees. The governor shall hand over the patent to the applicant in question, when the latter shall have given proof that he has paid the required fees to the provincial paymaster or receiver.

ART. XVI. The fees to be paid for patents shall be as follows:

For a patent for five years, 150 guilders=$65.50.

For a patent for ten years, 300=$131; or 400 guilders=$164, in proportion to the importance of the invention or improvement.

For a patent for fifteen years, 600 guilders=$246; or 750 guilders=$307.50, in proportion to the importance of the invention or improvement.

On transferring or inheriting a patent, 9 guilders=$3.69.

ART. XVII. Whenever a patent shall have been declared forfeited for one of the reasons mentioned under letter (c) of Article VIII of the act of January 25, 1817, the fees which have been paid for it shall be returned, in whole or in part, according to the time yet to run before the expiration of the patent.

ART. XVIII. The Minister of Finance shall every year send in an account to the Commissary-General for Instruction, Arts, and Sciences, containing an exact return of the sums paid in fees for patents. The Commissary-General shall make the necessary report to His Majesty, so that these sums may be applied to the purposes determined on in Article IX of the law of January 25.

ART. XIX. A register shall be kept by the Commissary-General for Instruction, Arts, and Sciences, in which the patents granted, transferred, or inherited, shall be registered. All applicants for a patent shall always be allowed to inspect this register beforehand.

ART. XX. Patents granted and the names of the patentees shall be published in the official papers.

MODEL NO. 1.

Model of a report (procès-verbal) of the presentation of a petition for a patent on inventions, first introduction, or improvements.

Province of this day the of the month 18 at o'clock, Mr. has placed in our hands the present packet, sealed with his own seal, which he declares to us to contain a full description of (describing the subject) for which he applies for a patent for the period of five, ten, or fifteen years, according as it is set down in the petition annexed.

And the same Mr. has declared to us that he is the inventor, improver, or introducer of the article above mentioned.

Given at the office (greffe) of the province the

MODEL NO. 2.

Model of a patent on the invention, introduction, or improvement of any article.

We, William, by the Grace of God King of the Netherlands, Prince of Orange-Nassau, Grand Duke of Luxembourg, &c.

In reference to the petition of residing in which he applies in accordance with the act of January 25, 1817, for a patent for the term of years, for the invention, improvement, or introduction of [description of the article] of which he has declared himself to be the inventor, (or introducer,) as it appears from the report (procès-verbal) drawn up on the presentation of his papers, at the office (greffe) of the province the

In reference to the drawings and description, whereof the contents are as follows:

Have sanctioned and approved the granting to the applicant, as granted by the present decree, a patent on the invention for years, for [description of the invention].

This patent shall confer on its possessor or legal owner the right:

(a) All over the Kingdom, during the time specified, exclusively and alone to manufacture and sell the patented articles, or to cause to be manufactured and sold with his permission.

(b) To sue at law and proceed against all persons who shall infringe the patent, for the purpose of procuring the forfeiture to his own benefit of the manufactured and yet unsold articles, and of the amount received for the already sold patented articles, as well as for such farther compensation for injury, loss of profit or interest, to which claim can be made.

Without in any sense guaranteeing the excellence or value of the invention (or in granting a patent on the introduction of any article, the truth of the representation of applicants, with reference to the period of a foreign patent.)

And this patent shall by us be declared forfeited, for one of the reasons mentioned in the act of January 25, 1817, Article VIII.

(To a patent for the introduction of any article is to be appended, that the patented articles must be manufactured within the Kingdom.)

Given at

MODEL NO. 3.

Model of a certificate on the transfer of a patent.

This day the of the month, 181 Mr. presented himself at our office to draw up a report (procès-verbal) of the entire or partial transfer by him executed in favor of Mr. of the patent granted to him on the with notarial certificate.

The present report (procès-verbal) is signed by the parties concerned and by ourselves, after payment of the fees, according to the scale appointed by the regulation for issuing patents.

Given at the office of the province of the

MODEL NO. 4.

Model of a certificate on obtaining a patent by bequest or inheritance.

This day the of the month, 181 Mr. presented himself at our office to draw up a report (procès-verbal) of his having acquired by right of succession, in whole or in part, as it appears in a certificate of the notary, a patent on which was granted on to Mr. deceased.

And this report (procès-verbal) is signed by the parties concerned and by ourselves, after payment of the fees, according to the scale appointed in the regulation for issuing patents.

Given at the office of the province of 181 on the

The above regulation with the models approved and decreed by the King on the 26th March, 1817.

Authorized by me,

The Secretary of State.

(Signed) A. R. FALCK.

Compared with the original.

The Clerk of the Secretary of State.

(Signed) D. HANNECOURT, C. G.

COMMISSIONER'S DECISIONS.

T. N. FOSTER.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of T. N. Foster for reissue of patent No. 30,215, granted October 2, 1860, for* HARVESTER.—*Decided October 4, 1873.*]

An invention approved, which consisted of a new combination of old devices.

A mere consideration of the steps taken to produce inventions tends to belittle them, and often misleads the judgment.

All there is of any invention, so far as its embodiment is concerned, is the new shaping or arranging of matter.

While it is well to examine the steps in the light of the state of the art by which an invention has been arrived at, a consideration of the results accomplished by the invention, as compared with what were before accomplished by complete individual devices of the same class, is more important, and is less likely to mislead the judgment in determining whether or not an invention has been made.

LEGGETT, *Commissioner:*

The claim under consideration is as follows:

The combination of the tongue-frame, vibrating on the main axle, and having the tongue rigidly connected thereto, the independently-vibrating cutter-frame, and the flexible draft-connection between said cutter-frame and the whiffletrees, substantially as described.

The reference cited is the patent of S. E. and M. P. Jackson, granted December 29, 1857, and reissued May 25, 1869. This patent lacks one element of the claim, viz., "the independently-vibrating cutter-frame." The cutter-frame in Jackson's machine is rigidly attached to the tongue-frame, so that it cannot be lifted without at the same time lifting the tongue-frame and the driving-wheel, which would stop the vibrations of the cutter-bar and the operations of the machine.

The draft-chains are similarly attached in both machines, it is true; but the argument of the Board that in Jackson's the chain could have been applied "for no other purpose except that of raising the cutting apparatus" is palpably erroneous, because in just so far as it tends to raise the cutting apparatus it also tends to raise the driving-wheel and prevent it from operating the cutter-bar. The result of the lifting tendency in Jackson's machine is injurious, so far as it goes, while in applicant's it is beneficial, because the cutter-frame is pivoted, and may be raised independently without disturbing the working of the machine. Applicant's chain serves an additional purpose beyond that of Jackson's. It obviates the side draft as Jackson's does, and it also elevates the cutter-frame. The combination claimed appears to be operative, novel, and useful; and I see no reason why it should not be allowed. A consideration of the steps taken to produce a device, rather than a consideration of the complete device itself and its comparison as a whole with other complete devices of the same class, tends to belittle inventions, and often misleads the judgment. I think such a course of reasoning has misled the Examiner (on whom the Board seem greatly to have relied) in this case. He says: "The type of machine was old, and the independent under draft was old. Applicant has simply transferred the draft-connection from one existing machine to another. * * * He communicated nothing new to the public, and is not entitled to a monopoly of the under draft in this popular class of machines." Now, what applicant communicated to the public (by

whatever apparently easy steps, in view of the state of the art) was the new combination of parts he has claimed, out of which, and out of which only, so far as appears, the results he specifies spring. The invention is not great perhaps, but it is all in quality that ever results from a new combination of old devices. All there is of invention in any case, so far as its embodiment is concerned, is the new shaping or arranging of matter. While it is well to examine the steps in the light of the state of the art by which an invention has been arrived at, a consideration of the results accomplished by an invention, as compared with what were before accomplished by complete individual devices of the same class, is more important, and is less likely to mislead the judgment in determining whether or not an invention has been made.

The decision of the Board of Examiners-in-Chief is reversed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,599.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,028.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 28, 1873.

26,030.—Manufacture of Gas.—Granted to LEONARD D. GALE, November 8, 1859; reissued March 8, 1870. Application filed August 7, 1873. Testimony closes October 7, 1873. Hearing October 28, 1873.

26,060.—Machines for Making Box-Joints.—Granted to JAMES STEPHENS, November 8, 1859. Application filed August 2, 1873. Testimony closes October 7, 1873. Hearing October 28, 1873.

26,068.—Sleeping-Cars.—Granted to JOHN DANNER, November 8, 1859. Application filed August 4, 1873. Testimony closes October 7, 1873. Hearing October 28, 1873.

26,087.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,096.—Machines for Folding Paper.—Granted to CYRUS CHAMBERS, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,097.—Electro-Magnetic Telegraphs.—Granted to MOSES G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,126.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,135.—Portable Pumps.—Granted to WILLIAM T. VARE, November 15, 1859; reissued February 28, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,136.—Mode of Advertising.—Granted to EDWARD WIRES, November 15, 1859. Application filed August 18, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,139.—Pumps.—Granted to WILLIAM WRIGHT, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 22, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 28, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1860. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FENTH and JOHN INGHAM, December 20, 1859, and reissued April 26, 1869. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GOBB, December 27, 1859, and reissued January 15, 1861. Application filed September 29, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEGGO, December 27, 1859. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STUNTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 20, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,832.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 22, 1873. Hearing January 7, 1874.

27,005.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,456.—Machines for Covering the Springs of Elastic Skirts.—Granted to JOHN T. LOVE, March 13, 1860. Application filed October 6, 1873. Testimony closes February 16, 1874. Hearing February 25, 1874.

31,963.—Fare-Boxes.—Granted to JOHN R. BRAYMER, January 29, 1861. Patented in England January 14, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

25,726.—Improved Hand-Machine for Wiring Blind-Rods, granted to ESRAM C. DAVIS, October 11, 1859.

Claim.—1. The setting-form A, which sets over the rod C and straddles the slats D, and which is secured under the blind by means of the stationary bar B, in such manner as to let the staples through the eye of the staple in the rod C, into the slats D D, being the equivalent means employed for setting the staple in the rod C, in combination with the adjustable arrangement E, operating substantially as described.

2. In combination with the form A, the joint-lever G, flange-rod or driver H, dividing-slide I, inclined needle-bar J, the whole being arranged substantially as described, and for the purpose set forth.

25,733.—Improvement in Double-Friction Couplings, granted to JOSHUA HENDY, October 11, 1859; reissued March 25, 1873, numbered 5,335.

Claim.—1. The application of two such truncated cones to one coupling, one at either end, and operated by a single lever, so as to work in cavities or conical sleeves attached to pulleys or wheels arranged on one shaft, so that said shaft may be run slow or fast, or backward or forward, or entirely stopped, without stopping the prime motor or changing its speed, substantially as herein set forth and explained.

2. The lever E, in combination with the double-acting friction device, substantially as set forth.

25,747.—Improvement in Method of Combining Emery with Caoutchouc, granted to THOMAS J. MAYALL, October 11, 1859.

Claim.—A process of making emery sharpening and polishing tools by combining emery with india-rubber, gutta-percha, or other substances, and then submitting the same, while under great pressure, to a high degree of artificial heat, substantially as set forth, whereby, with a given quantity of rubber, emery may be combined in much greater quantities than it could be heretofore done.

25,767.—Improvement in Cutting and Panning Cakes, granted to JOHN H. SHROTS, October 11, 1859, (MARY SHROTS, executrix.)

Claim.—The cutter A, as constructed, or its equivalent, in combination with the pan E and bottom-board D, for the purpose of facilitating the cutting and removing the cakes to the oven, as set forth and described.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 7, 1873.]

6,900.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—B. Application filed September 24, 1873. Term of patent 3½ years.

6,901.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—U. Application filed September 24, 1873. Term of patent 3½ years.

6,902.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—Y. Application filed September 24, 1873. Term of patent 3½ years.

6,903.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—X. Application filed September 24, 1873. Term of patent 3½ years.

6,904.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—D. Application filed September 24, 1873. Term of patent 3½ years.

6,905.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—C. Application filed September 24, 1873. Term of patent 3½ years.

6,926.—Carpets.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—A. Application filed September 24, 1873. Term of patent 3½ years.

6,927.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—W. Application filed September 24, 1873. Term of patent 3½ years.

6,928.—Carpet.—ROBERT R. CAMPBELL, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—T. Application filed September 24, 1873. Term of patent 3½ years.

6,929.—Carpets.—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,930.—Carpets.—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,931.—Carpets.—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,932.—Carpets.—OTTO HEINICKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,933.—Lathe-Dog.—BENJAMIN L. LATHROP, New Haven, Conn., assignor to himself and JOSEPH DANIELS, same place. Application filed September 5, 1873. Term of patent 14 years.

6,934.—Carpets.—LEVI G. MALKIN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,935.—Frame for Machines.—JOHN M. MARSTON, Boston Mass. Application filed January 6, 1873. Term of patent 3½ years.

6,936.—Carpet.—DAVID MCNAIR, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—Z. Application filed September 24, 1873. Term of patent 3½ years.

6,937.—Carpet.—DAVID MCNEIR, Lowell, Mass., assignor to LOWELL MANUFACTURING COMPANY, same place.—V. Application filed September 24, 1873. Term of patent 3½ years.

6,938.—Carpets.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,939.—Carpets.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,940.—Carpets.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,941.—Carpets.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,942.—Carpets.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,943.—Carpets.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,944.—Carpets.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,945.—Carpets.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

6,946.—Toy Bank.—THOMAS SWAIN, Philadelphia, Pa. Application filed September 16, 1873. Term of patent 7 years.

6,947.—Buttons for Wearing Apparel.—JONATHAN E. WHEELER, Westport, Conn. Application filed July 30, 1873. Term of patent 14 years.

6,948.—Lazy-Foot.—THOMAS B. ATTERBURY and JAMES S. ATTERBURY, Pittsburg, Pa. Application filed September 19, 1873. Term of patent 7 years.

6,949.—Butt-Hinges.—MILTON BRADLEY, Springfield, Mass., assignor to THE UNION MANUFACTURING COMPANY, New Britain, Conn. Application filed September 24, 1873. Term of patent 7 years.

6,950.—Carpet.—HERMICH F. GOETZE, Boston, Mass., assignor to THE ROXBURY CARPET COMPANY, same place. Application filed September 17, 1873. Term of patent 3½ years.

6,951.—Floor Oil-Cloths, &c.—CHARLES T. METER and VICTOR E. METER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed September 24, 1873. Term of patent 3½ years.

6,952.—Hats.—JOHN S. FATHERWEATHER, Bridgefield, Conn. Application filed September 12, 1873. Term of patent 3½ years.

6,953.—Sword-Hilt and Scabbard.—VIRGIL PRICE, New York, N. Y. Application filed September 22, 1873. Term of patent 14 years.

6,954.—Printing-Types.—EDWIN C. RUTHVEN, Philadelphia, Pa., assignor to DAVID WOLFE BRUCE, New York, N. Y. Application filed April 21, 1873. Term of patent 14 years.

6,955.—Advertising-Frames.—CHARLES H. SHACKFORD and MARTIN V. CAMPBELL, Syracuse, N. Y. Application filed September 15, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date October 7, 1873.]

1,481.—Gin.—JOHN W. CULBERT, New York, N. Y. Application filed September 27, 1873.
"'I. B. H.'"

1,482.—Iron and Steel.—LENG & OGDEN, New York, N. Y. Application filed September 24, 1873.
"'Credenda.'"

1,483.—Distilled Liquors.—M. M. SMITH & BROTHER, Chicago, Ill. Application filed September 17, 1873.
"the monogram 'S. T. D.'"

1,484.—Distilled Liquors.—M. M. SMITH & BROTHER, Chicago, Ill. Application filed September 17, 1873.
"'Silver Tide.'"

1,485.—Distilled Liquors.—M. M. SMITH & BROTHER, Chicago, Ill. Application filed September 17, 1873.
"'Silk Finish.'"

1,486.—Distilled Liquors.—M. M. SMITH & BROTHER, Chicago, Ill. Application filed September 17, 1873.
"monogram of the letters 'M. M. S. & B.'"

1,487.—Soap.—WILLIAM L. TROXELL, Brooklyn, N. Y. Application filed September 24, 1873.
"the words 'Pride of the Kitchen' and a picture of a monkey seated on an inverted pan."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date October 7, 1873.]

ORIGINAL PATENTS.

143,397.—Spring Bed-Bottom.—CHARLES L. AMES and ABEL H. FROST, Chicago, Ill. Application filed August 12, 1873.

Spiral springs at the corners of a bed-bottom, extending from the side supports of the bottom to the head and foot supports of the slats above, keep the whole tight and prevent sagging, when under pressure.

Claim.—The braces D, provided with the pivoted ends G and coil-springs F, in combination with the upper and lower sections A A′ C B′ of a two-part bed-bottom, as and for the purpose set forth.

143,398.—Leather-Skiving Machine.—GEORGE ANDREWS, Oxford, Me. Application filed June 27, 1873.

Adjustable guides nid in the operation of beveling the different sizes of welts and counters, and may be adjusted to give different angles to the bevel, as desired.

Claim.—1. The guides M and N, made and arranged substantially in the manner and for the purposes set forth.

2. The combination of the guides M and N, constructed substantially as described, with the feed rolls or wheels D and E, and the cutter C², as set forth.

143,399.—Medical Compound.—JOEL P. BARNETT, Navasota, Tex. Application filed June 2, 1873.

Alexandria senna, leptandra, podophyllum, gum acacia, Mecca, Aleppo, gamboge, hydrastis, Socotrine aloes, alcohol, sugar, and water.

Claim.—The medical compound herein described.

143,400.—Hose-Bridge.—EDWARD BAKER, Philadelphia, Pa. Application filed February 25, 1873.

Claim.—A hose-jumper, consisting of the block A, having a tongue, B, and the independent block A′, its tongue, and strip D adapted to the recess in the block A, all substantially as set forth.

143,401.—Slaughtering Apparatus.—MOSES BAMBERGER, Baltimore, Md. Application filed April 10, 1873.

An endless railway, suspended, carries the carcass from the slaughter-room to an ice-room, and thence out of the building, when desired.

Claim.—1. The combination of slaughtering-apartments and cooling-apartments, provided with movable doors or shutters, and a continuous suspended railway, provided with traveling hooks, and having switches through which the doors open and close, substantially as described.

2. The hinged sections c c, applied to the railway C, for the purpose explained.

3. The sliding gate D, arranged over the door leading into the ice-house A′, in combination with the railway C, substantially as described.

4. The bent arm r, constructed with side spurs s s and top spurs v, adapted to receive and hold in place the meat-hooks, substantially as described.

5. The combination of a slaughtering and refrigerating apartment, separated by movable partitions or doors, with an endless conveyance rail, provided with traveling hooks, and constructed with movable sections, which can be adjusted to form hooks, through which the upper door or movable part may be shut, substantially as described.

143,402.—Stove-Platform.—CLARK BROWNELL, Troy, assignor of one-half of his right to PERSHIAN J. MARSH, Lansingburg, N. Y. Application filed April 12, 1873.

The metallic platform is raised in the center to provide an inclosed air-space between the floor and the stove.

Claim.—The device represented, having the flat portion g and domed or elevated center b all made in one piece, constructed substantially as and for the purpose described and set forth.

143,403.—Corset-Clasp.—JOHN BURKE, Boston, Mass. Application filed July 26, 1873.

The catch-plate on one corset-spring takes into a corresponding depression in the other spring, so that when fastened there are no projections from the surface of the springs.

Claim.—The projections b, secured between the spring A and its covering-plate C, in combination with the metallic block c, secured between the spring B and its covering-plate D, provided with slots 12 to receive the said projections b, in botanically as and for the purpose described.

143,404.—Coupling for Vehicles.—CHARLES M. CRATAR, North Kingsville, Ohio. Application filed June 12, 1873.

Claim.—The combination, with the axles A and B, and the reach formed of two parts, C and D, pivoted together, of the curved bars H and rollers K, substantially as shown and described.

143,405.—Railroad Time-Signal.—GEORGE BENJAMIN CUMMINGS, Cambridge, Mass. Application filed June 24, 1873.

A numbered disk, revolving once in ten minutes by a suitable clock-work, is held in check by a stop-lever, which is connected with a trip operated by a passing train. At the end of one revolution, or ten minutes, the stop again falls, arresting further motion till the passage of the next train, thus indicating to the approaching train whether less than ten minutes has elapsed since the passage of the preceding train.

Claim.—1. The combination and arrangement of the shaft B, stop-lever E, stop-wheel U, and stop Q with an intermittingly-revolving indicator, when constructed substantially as described.

2. The combination and arrangement of the shaft and stop devices named in claim 1 with the eccentric-cam and the escapement-wheel Z, when constructed substantially as described.

143,406.—Die for Forging Hammers.—THOMAS DAVIS, Philadelphia, Pa., assignor to himself and WILLIAM BALDWIN, same place. Application filed August 20, 1873.

The lateral opening c is for the purpose of allowing the eagle to escape while forming the eye of the hammer.

Claim.—A die for swaging hammers, constructed as described, and having the portions a′ and a separated by the open transverse groove b, for the reception of the eye portion of the hammer, substantially as and for the purpose set forth.

143,407.—Railroad-Tie.—PATRICK S. DEVLAN, Jersey City, N. J., assignor of one-third his right to CHARLES BARNUM, Brooklyn, N. Y. Application filed March 21, 1873.

Claim.—As a new article of manufacture, the improved railroad-tie, consisting of end blocks or pieces of any material and dimensions which are adapted to support and correctly hold the railroad-rails, and which are connected or combined together by stripe or side pieces of board or hoop iron, or its equivalent, substantially as and for the purposes set forth.

143,408.—Boot-Jack.—FOLSOM DORSETT, Sr., Chicago, Ill., assignor to CHARLES PARKER, Meriden, Conn. Application filed April 12, 1873.

A boot-jack constructed in two parts, pivoted at its lower end, held and adjusted by a screw bolt and nut to vary the size of the boot-holder, with legs for its elevation rest upon it.

Claim.—The within-described boot-jack, consisting of two parts, A A, forming the foot-standard jaws and legs, united by a joint, a, a bolt, c, and an adjusting-nut, f, as and for the.

143,409.—Rein-Holder.—EZRA FARNSEY, Deep River, Iowa. Application filed March 1, 1873.

To a curved block is pivoted a spring-bar, so arranged as to hold the reins between the block and the bar.

Claim.—The combination of the block A, having the concave and lug a², with the bar B, having the chain b², the ring b³, and spring C, substantially as shown and described.

143,410.—Press for Holding Books.—LOUIS BRENTANI, New York, N. Y. Application filed August 6, 1873.

Two vertical end pieces are held apart and in position to receive the books by adjustable rods, upon the upper bow of which

the "round" of the books rest, as does also the screw-follower, which tightly compresses the books so as to prevent the coloring-liquid from damaging the faces of the leaves while their edges are being dipped.

Claim.—A press consisting of the two end pieces *a a'*, rods *b* and *c*, screw *f*, and follower *g*, substantially as and for the purpose specified.

143,411.—Railroad-Car Lamp.—JAMES L. HOWARD, Hartford, Conn. Application filed August 12, 1873.

The reflector, chimney, and globe are affixed by screw-threaded flanges and bands. In the device for locking the lamp proper to the base-ring which holds the globe, springs are added which bind the locked portions closely together.

Claim.—1. The base-ring section C, constructed with the lips *i*, and furnished with the springs *t*, in combination with the base-section collar D, which is constructed with the laterally-beveled and vertically-notched bosses *g*, spaces *p p*, and furnished with the spring-latch *e*, and the trigger *f*, all substantially in the manner shown and described.

2. As a new article of manufacture, the car-lamp fixture, consisting of the metallic chimney G G', reflector J, glass globe A, ring section C, base-ring section C, and collar section D, united and made divisible by the screw-threads on the globe A, chimney, and base-ring sections, and by the lips *i*, beveled and slotted lugs *g g*, springs *t t*, spring-pin *e*, and trigger *f* of the base-ring and collar sections, all constructed substantially as described.

143,412.—Machine for Making Metal Screws.—NAPOLEON C. HUNNELL, Hartford, Conn., assignor to JOHN JOHNSON and AMOS WHITNEY, same place, and ANDRUS CORBAN, Plainville, Conn. Application filed August 2, 1873.

On opposite sides of the revolving head dies rotating in opposite directions simultaneously cut the thread on the blank, and present the finished screw to the screw-driver which withdraws it. By a peculiar arrangement of cams and a spring-detent working in a notched disk at the back of the revolving head, the said head is revolved one-eighth or one-quarter of a revolution, as may be necessary in presenting the gage, milling-tool, or dies to the screw-blank while held in the chuck. While the screw is held in the dies, after the thread has been cut, the dies holding the screw are passed over a rapidly-revolving saw which cuts the nick, after which it is presented to the screw-driver.

Claim.—1. The combination of the revolving head *b* and the two rotating die-holders *b' b'*, so geared together that when they rotate such rotation is in opposite directions, all substantially as described, and for the purposes set forth.

2. The combination of the revolving head *b*, the two contrarily-rotating die-holders *b' b'*, equipped with the square collars *c' c'*, and the locking-guard *c''*, all constructed, arranged, and designed for operation and use, substantially as described.

3. The combination of the revolving head *b*, the two contrarily-rotating die-holders *b' b'*, equipped with the square collars *c' c'*, and the pull-off *c'*, the whole constructed, arranged, and designed for operation and use, substantially as described.

4. The combination of the revolving head *b*, the two contrarily-rotating die-holders *b' b'*, the longitudinally-reciprocating screw-driver rod *d*, the weighted lever *d'*, and the screw-driver blade *d''*, the whole arranged, constructed, and designed for operation and use, substantially as described.

5. The combination of the longitudinally-reciprocating slide *b'*, the head *b* provided with the notched collar *f*, the dog *f'*, and the cam *i*, the whole constructed, arranged, and designed for operation and use, substantially as described.

6. The combination of the sliding plate *b'*, the head *b* provided with the notched collar *f*, the ratchet and pawl *f'' f'*, the dog *f'*, the stationary cam *i*, and the sliding cam *i'*, the whole constructed, arranged, and designed for operation and use, substantially as described.

7. The combination of the sliding plate *b'*, the adjusting-screw *b''*, the standard *b'''*, the stationary cam *i*, the sliding cam *i'*, with its cam-rod and actuating-lever, the lever-arm *c'*, and the head *b*, provided with the pins *c'*, the whole constructed, arranged, and designed for operation and use substantially as described.

8. The combination of the sliding plate *b'*, the pull-off *c'*, the pin *c'*, lever-arm *c''*, provided with stop *c'''*, and the head *b*, equipped with the pins *c'*, the whole constructed, arranged, and designed for operation and use substantially as described.

143,413.—Chisel.—CHARLES E. L. JELLIFFE, Bayonne, N. J. Application filed August 8, 1873.

Any number of chisel-blades are fitted by notches and a slide to one stock and handle.

Claim.—The chisel, as a new article of manufacture, constructed substantially as shown and described.

143,414.—Stock-Car.—THOMAS J. MCCARTY, Salem, Ohio. Application filed August 18, 1873.

The stall partitions are hung upon perforated supporting-rails applied to the sides of the cars, sliding upon their supports to provide for enlarging or contracting the stalls, and locked in any desired position by pins fitting the perforations. Each partition is provided with a flexible joint to allow slight lateral yielding upon contact with the body of the animal.

Claim.—1. The perforated longitudinal supporting-rails C, applied to the sides of the car, in combination with the slides B and gates A, for the purposes set forth.

2. The combination of the gates A, slides B, perforated supporting-rails C, and pins *b*, for locking the slides in any position to adjust the gates for enlarging or contracting the stalls, said pins being accessible either from inside or outside of the car, all as set forth.

3. The gates A, constructed with the joints *h*, formed to adapt them to yield laterally with the animals to a limited extent, as set forth.

143,415.—Means of Attaching Cartridge Magazine-Blocks to Fire-Arms.—HENRY METCALFE, Lieutenant, United States Army. Application filed May 19, 1873.

Claim.—1. The combination, with a gun-stock, of hooks or projections, substantially such as described, so that a block or cartridge-holder provided with a bent wire at each end, as set forth, may be attached thereto.

2. A block or cartridge-holder, *d*, when provided with a bent wire at each end, substantially as set forth, and adapted to be carried in a cartridge-box and to be attached to a gun-stock, as described.

143,416.—Shutter-Worker.—LOUIS MULLER, Hartford, Conn. Application filed October 3, 1872.

The gear-wheels of a shutter-worker are incased in a cylindrical water-tight box forming part of the hinge, which box or case is so constructed that the journals of both wheels revolve in the dividing line of the castings.

Claim.—The water-tight frame or box *a*, formed of two parts, joined along the line of the axes of the arbors of the wheels *b c*, and forming the journals in which both the gear-wheels revolve in the dividing line of the castings, substantially as herein described.

143,417.—Whip-Socket.—FRANK B. MUNROE, Malden, assignor to WILLIAM WARREN RICHARDSON, Westfield, Mass. Application filed July 5, 1873.

The jaws for grasping the whip-handle are kept in their relative positions by the guide at the bottom and the conical part at the top.

Claim.—The combination of the ring or frustum *b*, the case A, the series of jaws F, the annular springs C D, and the bottom guide E, combined and applied substantially in manner and to operate as and for the purpose described.

143,418.—Device for Retaining Fillings in Teeth.—EDMUND OSMOND, Cincinnati, Ohio. Application filed July 23, 1873.

The small gold screw which is inserted in the bottom of a prepared cavity in a tooth is provided with split upper ends, which, when the filling has been packed around, are turned down over it to receive it more firmly.

Claim.—A screw-anchor, A, formed with a divided end or branches, *a*, to be bent back for securing the fillings of teeth, substantially in the manner and for the purpose specified.

143,419.—Bullet.—JOHN REIN and JOHN STOCK, New York, N. Y. Application filed May 22, 1873.

Claim.—The within-described bullet, provided with an annular outward-projecting ring at its front end, of the size of the bore of the gun, and with two outward-projecting rings near its rear end, one of which is of the size of the one-half of the depth of the rifled groove, and the other of the size of the full depth of the groove of the gun, as set forth.

143,420.—Apparatus for Cleaning Privies, Sinks, &c.—ROBERT R. RETOWSKY, Baltimore, Md. Application filed September 1, 1873.

Claim.—1. A privy-cleaner composed of tank A, with discharge-pipe D and hose F, and three valves and exhaust-pump on the top of the tank, and rods N N, connected to the wheels, as and for the purpose set forth.

2. The combination of the tank, pump, gas-chamber, and furnace for burning the gas, arranged substantially as set forth.

143,421.—Child's Carriage.—HENRY M. RICHARDSON, Boston, Mass. Application filed June 23, 1873.

The top may be inclined at any angle, or dropped either in front or behind the seat, or fixed in an upright position by means of rigid arms secured to the top and jointed to recessed arcs which are attached to the body.

Claim.—1. In a child's carriage, a rigid top or canopy, C, fixed upon the arms A, pivoted to the sides of the body, so that said canopy may drop in front of the seat or behind it, or be held in an upright or intermediate position, substantially as and for the purposes set forth.

2. The combination of the arms A, having the spring-bolt *f*, and pivoted upon the arc-shaped irons B, with the top C, and applied to the body D, substantially as herein shown and described, for the purpose specified.

143,422.—Lubricator.—JAMES ROSS, Charlestown, assignor to JOHN F. ROSS, North Cambridge, Mass. Application filed July 22, 1873.

The flow of oil is regulated by means of a spiral spring wound about the spindle. The wire being either contracted or expanded affects the flow of oil to the shaft.

Claim.—As a regulator for oil-cups and lubricators, the circular or polygonal spindle *b*, surrounded by a loosely-wound spiral wire, *c*, projecting through the oil-cup, and kept in contact in their lower ends with the shaft that is to be lubricated, as and for the purpose herein set forth.

143,423.—Fly-Trap.—CONSTANT S. ROUSH, Dowagiac, Mich. Application filed March 31, 1873.

A bottom disk on which rests a conical-wire trap, held by detachable spring-hooks. Within this trap is a semi-spherical wire trap with a hole in the apex. Above this is another wire chamber with several holes for the flies to pass through.

Claim.—The fly-trap consisting of the saucer-chamber A, bait-chamber B, truncated cone-shaped chamber C, having holes, as described, and disk D, provided with the elastic hooks E E, when constructed and combined as and for the purposes set forth.

143,424.—Ruffling or Plaiting Attachment for Sewing-Machines.—ARTEMAS RUSH, Chariton, assignor of one-half his right to JOHNSTON RUFFLER COMPANY, Ottumwa, Iowa. Application filed May 27, 1873.

Claim.—1. The combination, with the sliding plaiter-bar rack, of a reversible vibratory double pawl, carried by a lever or arm receiving movement from the needle bar or arm of the sewing-machine, and reversed at the proper times by means of stops on the plaiter-bar, to cause the bar to travel alternately in opposite directions, substantially as shown and described.

2. In combination with the reversible vibratory double pawl and sliding plaiter-bar and rack thereon, the two stop-pieces on the said bar, the one fixed and the other adjustable, for the purposes stated, arranged in the path of said pawl to reverse the same at the proper times, substantially as shown and set forth.

3. The combination, with the vibratory lever and the partly-cylindrical bearing carried by the same, of the double pawl, composed of a cylindrical hub encircling said bearing, and provided with a socket-piece containing a bevel-headed pin pressed up against the under side of the said bearing, to operate in connection with a wedge-shaped projection thereon, as described, and two arms or catches, each of which is adapted to engage, when the pawl is tilted to allow it, a rack on the sliding plaiter-bar, substantially as herein shown and set forth.

143,425.—Signal-Lantern.—IRA W. SHALER, Brooklyn, N. Y. Application filed June 23, 1873.

The lamp is provided with two tubes arranged near the wick-tube and extending downward to a chamber, from which a volatile fluid may be thrown upward when desired, so as by the sudden inflammation of the vapor to produce a flash-light signal.

Claim.—1. The combination, in a signal-lantern, of the reservoir provided with pump-barrel, hollow piston, and induction and eduction tubes, with a lamp, as set forth, all arranged and operating for the purpose of forcing a volume of gas into contact with the flame of the lamp, by applying a blast at the outer end of the hollow piston.

2. The combination, with the lamp-burner, of one or more tubes, arranged in such relation to the lamp-burner that when volatile oil or gas is forced through said tube or tubes from an independent reservoir it will be ignited by the flame, substantially as set forth.

3. The combination of the lamp of a signal-lantern with the apparatus, substantially as described, for forcing gas or volatile oil from a source independent of the lamp reservoir into the immediate proximity of the flame, for the purpose of producing a flash-light signal.

143,426.—Portable Gas-Machine.—BYRON SLOPER, New York, N. Y. Application filed September 23, 1873.

Claim.—1. A carburetor consisting of a cask, A, in combination with a removable cross-bar locked across its mouth, and carrying the inverted bell, substantially as described.

2. The carburetor, consisting of concentric partitions, in combination with the perforated partition to which they are attached and the distributing-pipe, substantially as described.

3. The packing for gas-machines, consisting of picked cotton and excelsior thoroughly mixed and commingled, as and for the purposes herein set forth and described.

143,427.—Medical Compound or Stomach-Bitters.—FRANK STÜTZEL, Wabashaw, Minn. Application filed September 13, 1873.

Spanish saffron, rhubarb, agarious, gum-myrrh, sedearic root, gentian, electuary theriac, tormentil root, St. John's wort, Peruvian bark, juniperi, aloes, camphor, centaury, angelica, whisky.

Claim.—The manufacture or preparation of a compound which is denominated stomach-bitters, of the ingredients, in the proportion, and for the purpose, set forth.

143,428.—Device for Detaching Horses.—SAMUEL STERR, Portland, Oreg. Application filed June 14, 1873.

To guard against accidental separation of the trace from the whiffletree.

Claim.—1. The combination of the casting B, having a slotted partition, with the longitudinally-moving headed rod, having a key, as set forth.

2. The combination of the whiffletree A, casting B, rod C having key *c'*, washer *d*, spring *e*, and disk *e'*, combined and arranged as described, for the purpose set forth.

143,429.—Car-Coupling.—JOSEPH B. TRACY, Lincoln, Del. Application filed May 3, 1873.

Improvement on Patent No. 121,823.

Claim.—1. The hook-headed draw-bar, arranged diagonally across the central line of draft, so that the hook is on one side and the pivot on the other side thereof, substantially as set forth.

2. In combination with the draw-bar and spring to which the draft is applied, the intermediately-placed lever, with which both are connected, substantially as set forth.

3. In combination with the draw-bar and buffer-bar, the concentrically-arranged springs, sliding plates, and stirrups, arranged to operate substantially as set forth.

143,430.—Putting Up Alkalies for Making Soap.—JOHN H. WYLD, Philadelphia, Pa., assignor of one-half his right to ABRAHAM EDWARDS, same place. Application filed June 18, 1873.

Claim.—As a new article of manufacture and commerce, a saponifying composition consisting of slaked lime and alkali, as set forth.

143,431.—Fastening for Bedsteads, &c.—JAMES M. RAIRD, Wheeling, W. Va. Application filed January 18, 1873.

Blocks with oblique faces are fastened to the longitudinal and transverse rails and to the legs, which interlock and are held in place by a locking-piece.

Claim.—1. In combination with the rails A B of a bedstead, the blocks *a b*, having oblique faces, and arranged to interlock, as shown and described.

2. The locking piece or block *d*, in combination with the blocks *a b*, applied to the rails A B, and blocks *a b*, attached to the legs D C, as specified.

143,432.—Toy Device for Making Soap-Bubbles.—SAMUEL B. ELIAS, New York, N. Y. Application filed July 5, 1873.

Claim.—1. The instrument or toy for producing soap-bubbles, consisting of a double tubular casing, A, air-pipe D, receptacle E, valves *g h i*, and exit-tube F, arranged substantially as and for the purpose described.

2. The casing A, provided with the parts B C, communicating, by slot *a* and opening *b*, for introducing the soap and water, and the cork *d*, as set forth.

3. The receptacle E, having apertures *f* and opening for air-pipe, for the purpose described.

4. The exit-tube F, having concave face, with perforation *e*, as set forth.

5. The upper tube B, having guide-casing *h*, with aperture *f'*, for the purpose described.

6. The valve arrangement described, consisting of valve-rod *g* with flattened parts, cap *h*, spring *i*, and disks *i*, as specified.

143,433.—Hammer.—OSCAR L. BROWN, Hopkinton, Mass. Application filed August 21, 1873.

The gage is pivoted to the hammer, so that it may be elevated when it is desired to introduce the work; and when turned down is held in a horizontal position by means of a flange or step formed on the gage.

Claim.—The hammer *a*, in combination with the pivoted vertically-moving gage *c*, provided with a suitable flange or stop, substantially as shown and described.

143,434.—Plow-Carriage.—HENRY M. BULLITT, Louisville, Ky. Application filed June 28, 1873.

Elevated axle-arms are connected by an adjustable cross-bar, from which depends a hanger for carrying the plow-beam. The cross-bar is raised or lowered by a series of holes in the standards, and may be placed at unequal heights to admit of one wheel running in the furrow.

Claim.—The uprights C, provided with axles B at their lower ends, and connected together at top by an axle, D, upon which depends a hanger, K, in combination with the stirrup L, L M, brace-rods G G, and adjusting-holes H P, and plow-beam F, constructed and arranged as and for the purpose set forth.

143,435.—Axle for Vehicles.—THEODORE F. COLEMAN, Allegheny City, Pa. Application filed May 28, 1873.

Claim.—The spindle A, provided with longitudinal projections *c*, in which are cut notches to fit the corners of the iron axle B, in combination with the axle B, as and for the purposes described.

143,436.—Sliding-Hook.—PHILIP J. COON, Nunica, Mich. Application filed April 7, 1873.

Various devices for gaging and scribing wood-work are combined in one stock.

Claim.—1. A combined gage and square, composed of the body A B, provided with right-angle groove E, and guide C, and graduated removable and changeable slide D, substantially as specified.

2. A combined gage, square, and scribe, composed of the body A B, provided with a right-angle groove, E, guide C, graduated removable and changeable slide D, and knife F, substantially as specified.

3. The herein-described combination tool, composed of the body A B provided with right-angled groove E, guide C, graduated removable and changeable slide D, knife F, hooks A' B', and sliding marker G, all arranged substantially as specified.

143,437.—Feather-Renovator.—ELIASON B. COOPER, Monticello, N. Y. Application filed August 16, 1873.

Claim.—The feather-renovator, consisting of outer casing A with doors D and perforated screens E, steaming-chamber C with drying-chamber L and dumping-box H arranged thereon, hollow crank-shaft F F with perforated drums G G, and steam-tubes *d d'*, all arranged and operated substantially as and for the purpose described.

143,435.—Burial Case.—JEROME B. COX, San Francisco, Cal. Application filed August 16, 1873.

The upper inner edges of the sides are rabbeted, so that the upper edges of the thin metal lining can be secured therein by the pressure of the inner lid of the coffin. This prevents the lead lining from falling down by its own weight. A second cover is placed over the one above mentioned.

Claim.—1. The coffin-box A, having the upper inner edges of its sides rabbeted, in combination with the lining B and supplementary or inside cover C, when said lining is made to pass under and over the edges of the supplementary cover, substantially as and for the purpose above described.

2. A burial case, consisting of the box A, lining *b*, supplementary or inside cover C, and outside cover F, when the parts are combined and united substantially as above described.

143,439.—Mode of Operating Bellows of Furnaces.—HUGH CRUMLISH, Buffalo, N. Y. Application filed June 25, 1873.

A double or bent rod is connected to the frame on one side, and on the other is pivoted to the angle of the bent rod, which connects the lever-handle with the bottom of the bellows.

Claim.—The combination of the rigid angle arm or rod K, pivoted, bent, or double rod L, and lever D, with the bottom of the bellows, as and for the purpose specified.

143,440.—Propulsion of Vessels.—GEORGE BOUCHER DE BOUCHERVILLE, Quebec, Canada. Application filed July 19, 1873.

System of gearing, in connection with a swinging platform and propeller-shaft of a navigable vessel, whereby a continuous motion is imparted to the propeller, whichever way the vessel rolls.

Claim.—In connection with a vessel, the propeller-shaft, the pinion V, bevel-wheels U U on independent sleeves of the same shaft, F, ratchet-and-pawl mechanism R *r* S, bars 14, rods D *d*, and the suspended platform B, all combined as and for the purpose described.

143,441.—Pulley-Block.—ALFRED S. DICKINSON, Brooklyn, N. Y. Application filed April 18, 1873.

The sheave having flanges and projection-arms on each side of the groove, pivoted and combined within a block having a tapering or V-shaped rib and furrows. When the rope is allowed to slack the slack end, by its contact with said rib, is caused to slip sidewise into one of the furrows and becomes caught by the arms and held with safety.

Claim.—1. The shell or block A, provided with the rib G and the furrows H H, substantially as and for the purpose herein set forth.

2. The sheave or pulley B, provided with flanges and arms or raised projections F F, pivoted and combined within the shell or block A with the rib G and the furrows H H, operating substantially as and for the purpose herein mentioned and shown.

143,442.—Middlings-Separator.—ROBERT L. DOWNTON, Collinsville, Ill. Application filed May 24, 1873.

Middlings fed onto a disk, which distributes them centrifugally upon an inclined apron, whence they pass down the heavier onto an inclined apron and exit through discharge-spouts, while the lighter are drawn by the suction-fan into the slotted drum, thence through one pipe and discharged through another into one of a series of draft-regulating chambers, through which they pass, for separating them into different grades.

Claim.—1. The drum C, provided with openings and with slotted bands, in combination with the casing D provided with adjustable openings, the distributing-disk F, and fan-blower I, substantially as herein shown and described.

2. The series of chambers K L M, provided with inlet and outlet openings at a different level, with slides N and adjustable partitions O, except the last chamber, in combination with the fan-blower I, the outer case D, the drum C, and the distributing-disk F, substantially as herein shown and described.

143,443.—Stove-Grate.—GEORGE W. ELTONHEAD, St. Louis, Mo., assignor to himself and WILLIAM GERKHARDT, same place. Application filed December 19, 1872.

The grate is cylindrical in form, so that the coals will rest on that portion of its surface which is uppermost. A small space is left between its perimeter and the stove-lining on either side, wherein the coals are crushed when the grate is revolved.

Claim.—The described grate, composed of the solid ends C^1 C^2, having pivot-journals *c c'* and the flat bars D, in combination with a stove, A, as described, for the purpose set forth.

143,444.—Apparatus for Graining Wood, &c.—CHARLES FALES, New York, N. Y. Application filed January 25, 1873.

Relates to special construction of roller for graining surfaces of different widths.

Claim.—1. In combination with frame A, the adjustable shells C, screw-bolt *f*, female screws *g*, nuts h, and washers *h'*, for the purpose described.

2. In combination with frame A and shells C, the adjustable bands B, hand-rollers d, set-screws *e*, and recessed slots *b*, as and for the purpose set forth.

3. In combination with the subject-matter of the foregoing clauses, the handle-frame D, set-screws *i*, slots K, belt and screw *l*, as described.

143,445.—Shoe-Fastening.—GEORGE L. FITCH and HENRY M. JONES, Little Lake, Cal. Application filed March 19, 1873.

The button and elastic are both secured by a single fastening-strip to one quarter, and to the other the second button is made to hook.

Claim.—The combination of the button *b*, having its fastening-attachment for securing one end of the elastic with the button *f*, provided with a hook engaging in the perforated plate *e*, substantially as and for the purpose set forth.

143,446.—Apparatus for Freezing Liquids.—SAMUEL S. FITCH, New York, N. Y. Application filed August 20, 1873.

An air-chamber intervenes between the wooden case and the chambers for the freezing-mixture. Water admitted by the induction-pipes falls upon the percolator, is broken into fine spray, and, in its descent in the middle chamber, is frozen to a semi-solid state, similar to snow.

Claim.—1. The percolator or foraminous plate C and the receiving and refrigerating tanks or chambers A B A, arranged as specified.

2. The combination of the percolator C, the chambers A B A, and the encompassing wooden case D, and cover E, with the air-spaces or chambers intervening between each and the combined chambers A B A, all being arranged substantially in manner as specified, the whole being provided with one or more inducts, H, as set forth.

3. The combination of the auxiliary cover F with the percolator C and the chambers A B A, arranged in a wooden box, as specified.

4. The double-hooked rod G, arranged and combined with the percolator C and the chambers or tanks A B A, all being as explained.

143,447.—Saw-Set.—THOMAS R. GRIMES, Fremont, Ohio. Application filed February 27, 1873.

The conical frustum C is adjustable on the screw *c*, and the screw *c* is adjustable on the slotted bar B, as are also the rests G and the griping device D' D.

Claim.—1. The combination of the adjustable rest D with its screw *c'*, the adjustable rests G G, and the anvil-faces *b b*, substantially as described.

2. The combination of the anvil A, cone C, and the auxiliary rests, the whole constructed and operating substantially as described.

143,448.—Scaffold-Pole Clamp.—HENRY HANKING and HERMAN ALLES, New York, N. Y. Application filed March 5, 1873.

A self-holding clamp and support for the poles of scaffolding.

Claim.—1. The combination of the clamping-lever J with the yoke A, eccentric lever B, and binding-chain C, substantially as specified.

2. The combination of the lever J, blocks O, bar Q, and yoke A, substantially as specified.

143,449.—Mordant for Dyeing.—GUSTAV A. HAGEMANN, Copenhagen, Denmark. Application filed June 21, 1873.

The acetate of soda is calcined and pulverized, the sulphate of alumina is ground and sifted, and the two mixed by means of a sieve in the proportions of two parts of acetate of soda to three parts of sulphate of alumina.

Claim.—As an article of manufacture a package of coarse powder of calcined and pulverized acetate of soda and sulphate of alumina, ready to be dissolved for the production of the mordant acetate of alumina, as described.

143,450.—Corn-Planter.—EDWARD E. HERREGAN, Downsville, Wis. Application filed June 17, 1873.

The feeding device consists of a rocking semicircular or half cylinder, having a seed-cup that passes an opening in the bottom of the seed-box, and thus conveys the seed to the ground through the conductor.

Claim.—The oscillating receiver *f*, platform *g*, and planting-tube h, in combination with the hopper *a*, frame *b*, and guide *c*, substantially as shown, and for the purpose specified.

143,451.—Sad-Iron.—BARBARA JONES, State Line City, Ind. Application filed August 30, 1873.

A hollow sad-iron, open at the rear end for the insertion of a heater, provided with a spring-gate that slides in grooves.

Claim.—The hollow body A of a sad-iron, in combination with the sliding gate C, stems C *c c'*, thumb-piece C^2, lug *d*, and spiral spring E, substantially as and for the purpose specified.

143,452.—Lamp.—FREDERIC KAMPFE, New York, N. Y. Application filed August 14, 1873.

A safety-valve, which permits the exit of gases, is set in a collar affixed to a lamp-reservoir, and is provided with spring-flanges to prevent its being forced out of the collar.

Claim.—The combination, with a lamp-reservoir, A, of the flanged collar C and the valve B, consisting of the shouldered head *a*, forming a cap to close the opening in the collar, the tube *b* with openings *x x*, and the spring-arms *c c*, all made in one piece, substantially as and for the purposes set forth.

143,453.—Hot-Air Furnace.—OTIS S. KELSEY, Hartford, Conn. Application filed June 19, 1873.

Claim.—The combination of the fire-box *d*, cold-air pipes *p* having bosses or brick supports *n* and regulating-tubes *q'*, water or air heat *q*, ornithorhynchal chamber *b*, heating-pipes *q*, rabbeted-edge plate *a*, and doors and frames A, substantially as and for the purpose set forth.

143,454.—Sheave.—ALLEN LAPHAM, Paterson, N. J., assignor to himself and ORVILLE W. LEONARD, same place. Application filed August 22, 1872.

One handle is pivoted a short distance from its end to the shank of one blade, while the opposite end is connected by a link-joint to the other handle, which is merely an extension of the shank of the blade.

Claim.—The combination of two arm-sections, A B, pivoted at B, the one-piece arm D pivoted to A at I, and the strap H pivoted to B D, respectively, at S and H, as and for the purpose described.

143,455.—Machine for Splitting Wood.—DAVID MILLIKEN, New York, N. Y. Application filed April 17, 1873.

A reciprocating knife is arranged in connection with a series of stationary knives so as to first split the wood into sheets and then transversely into smaller portions.

Claim.—The adjustable gage M, arranged in relation to the cutter and stationary knives substantially as described, and for the purpose set forth.

143,456.—Fountain and Aquarium.—JONATHAN MOORE, Brooklyn, N. Y. Application filed May 10, 1873.

A basin and supply-pipe; also an overflow-pipe extending up through the bottom of the basin concentric to the supply-pipe. The overflowing water escapes through a passage communic to the pipe which supplies the water to the jet.

Claim.—In combination with a fountain-basin, A, the casing D D' surrounding the discharge-pipe C, and arranged to receive the water through the openings *d*, and thence through the open-topped discharge-pipe C, as and for the purposes specified.

143,457.—Toy Gun.—ROBERT T. MURPHY, Chicago, Ill., assignor to ALFRED JAMES, same place. Application filed July 11, 1873.

The trigger and spring-catch are in one piece of flat metal fast at both ends. The turn forming the trigger is sharp at the top, to form a shoulder for retention of the push-rod.

Claim.—In combination with the bar D of a toy gun, the spring F, when constructed and arranged to operate in the manner described and shown.

143,458.—Watch-Maker's Lathe.—JOHN M. ORAM, Goshen, Ind. Application filed January 10, 1872.

To give, practically, greater extension to the driving-arm K, the collar D, that confines the head A to the mandrel B, is sunk into the face of said head, and a groove around the head permits it, and, with it, the article that is being turned, to be rotated by the application of the cord, and thus avoid the application of the cord to the article itself.

Claim.—The combination of the lathe-center C, lathe-head A, axle B, frictional collar C, and driving-arm K, all operating together as and for the purpose described.

143,459.—Car-Coupling.—SAMUEL A. OTIS, Boston, Mass. Application filed May 6, 1873.

The toggles in the lower end of the link-pin are operated by a rod passing down through it; and for the sake of further security the rod has two clasping-arms pivoted in its head and catching over flanges around the pin-hole in the draw-head.

Claim.—1. The combination of the pin A with the toggle D D^1 D^2 D^3 and rod E, substantially as described, and for the purpose set forth.

2. The combination of the pin A with the grapple K K', and draw-head having the flange *h h*, substantially as described, and for the purpose set forth.

3. The combination of the grapple K K' and the pin A with the toggle D D^1 D^2 D^3 and the rod E, substantially as described, and for the purpose set forth.

143,460.—Shutter-Fastening.—ANDREAS JOHANSON PALMBERG, Boston, Mass., assignor to CHARLES S. HICKS, same place. Application filed August 29, 1873.

Claim.—A blind-fastener consisting of a metallic spring-wire, d, attached at one end to the blind, and provided with a handle, *g*, formed upon it, and having its other end, *f*, projecting as a bolt through a hole in the lower part of the blind, in combination with the perforated fastening-plates A and *f*, or their equivalents, as and for the purpose herein set forth and described.

143,461.—Means for Forcing Ashes from Vessels.—JOHN PALMER, Sandisfield, Mass. Application filed May 26, 1873.

Claim.—1. The air-cock *i*, arranged in the cover of an ash-ejector to admit of the escape of air from the barrel B, and serve as a test of the tightness of the closing of the valve below, substantially as described.

2. The arrangement of lever or wrench J and the handle *i'* of the cock *i* in the manner described, so that the wrench cannot be turned without opening the cock.

3. In combination with the ash-receptacle B, the tight-fitting cover I, suitable provisions for opening and closing the ash, and for introducing air under pressure to expel the contents, the water-connection G, with suitable connecting means, so arranged that the flues below may be washed clean of all matter that may prevent the proper shutting of the valve or valves, as herein specified.

143,462.—Fire-Escape Ladder.—GEORGE PULSIFER, Deerfield, N. Y. Application filed May 6, 1873.

The drum-shaft, by which the extension-ladder is elevated, carries two disks, one ratcheted and the other plain. The detent-pawl is arranged to be shifted from one to the other, as it is desired, to use it as a pawl or as a brake.

Claim.—In a fire-escape, constructed as set forth, the combination of the disk or pawl *e* with the ratchet-wheel *d* and disk *c*, to operate in combination with each other, substantially as described.

143,463.—Cupola and other Furnaces.—LOUIS QUINCKE, Joliet, Ill., assignor of one-half his right to FRANZ MÜNZLER, Carondelet, Mo. Application filed February 24, 1873.

A strip of metal, having a curved cover open toward the blast, and a wire or rod attached to the cover, is placed in the blast-pipe between the wind-box and the tuyeres, so that a portion of the blast entering the box will raise the rod, thereby indicating the velocity and pressure of the blast.

Claim.—The wind-gage described, consisting of the combination and arrangement of the parts *s t r e* and pipe *b*, for the purpose set forth.

143,464.—Picture-Frame.—FELIX REINSCHMIDEL, New York, N. Y. Application filed June 26, 1873.

Claim.—The combination, in a round or oval picture-frame, of the part A, of wood or other material, the cloth cover B, and the open-metal rings or bands D and E, substantially as specified.

143,465.—Tire-Heating Furnace.—JOHN G. ROGERS, Williamsburg, Ohio, assignor to VOLNEY STOCKTON, same place. Application filed May 1, 1873.

The blast-pipe is extended in circular form under the furnace, and has nozzles attached, which extend perpendicularly through the bottom of the furnace.

Claim.—The combination of the annular furnace A, having the hinged cover, ribs D, and smoke-flue E, with the circular tuyere B, having receiving-nozzle C and discharge-nozzles *a a a*, and any suitable blower, as and for the purposes set forth.

143,466.—Machine for Cutting Gores in Stoves.—CHARLES RUGGLES, Huron, Ohio. Application filed September 6, 1873.

A series of circular saws are so arranged as to have a vibratory movement upon their mandrel, which enables them to cut gores from the material, the size of which is governed by the amount of vibration imparted to the saws.

Claim.—1. The goring mechanism composed of sliding frame L with forms O, arranged to operate in combination with the adjustable gang of wabble-saws M, substantially as set forth.

2. The combination of saws M, pivots *m*, hollow shaft N, sliding concentric shaft P with projecting spuds *p*, as and for the purposes substantially as set forth and shown.

143,467.—Stereoscopic-Picture Holder.—SEWALL D. SAMSON, Woburn, and GEORGE H. SMITH, Waltham, Mass. Application filed May 28, 1873.

Turning the knob in the center of the box-top revolves the inner stereograph-compartment, exposing the open ends of the same.

Claim.—A holder for stereoscopic pictures consisting of the case A B C D, in combination with the revolving compartment H K and handle P, substantially as specified.

143,468.—Knitting-Machine.—LORENZO D. SAMSON, Cohoes, N. Y. Application filed September 3, 1873.

The stops which shift the cams in the "Lamb" knitting-machine are made yielding, to prevent wear, noise, and jarring, and are adjustable by set-screws.

Claim.—1. The spring-stop L or its equivalent, arranged to act in combination with the cam-shifters or plates E of a knitting-machine, substantially as described.

2. The spring-stop L, provided with screws *s*, or equivalent means for adjusting it, as set forth.

143,469.—Support for Wash-Tubs.—GEORGE F. SHAW, West Roxbury, Mass. Application filed February 18, 1873.

The device is constructed with three uprights pivoted at two points, and by the aid of a detent forms, by opening the parts, a substantial support for a tub, and can be folded into small space.

Claim.—The combination of the bars A A' B B' C C' with each other and the detent H, substantially as described, and for the purpose set forth.

143,470.—Machine for Clearing Streets of Snow.—RILEY A. SHIRK, Georgetown, D. C. Application filed February 20, 1873.

A snow-shovel having hollow walls and adapted to be heated is connected to the portable boiler by means of links and flexible tubes.

Claim.—1. A snow-shovel attached to a portable boiler by means of the connecting-links N and tubes L, as shown and described, for operation in the manner set forth.

2. The guard P, in combination with the shovel M, substantially as and for the purpose specified.

143,471.—Sheet-Metal Roofing.—Roslin A. Smith, Fond Du Lac, Wis. Application filed September 12, 1873.

The metallic sheet is turned over the triangular fastening-pieces B at the sides, and at the ends is slit to form the lips b. Clips G serve to attach the sheet to the roof, and the joint is covered by the interlocking-lip b of the next sheet. A strip of felt is sometimes placed in the joint.

Claim.—The herein-described roof, consisting of the plates A, having their sides bent and secured to the strips B and their ends locked together and secured by the clips G, as shown and described.

143,472.—Compound for Painting and Coating Wood.—Hiram F. Snow and James H. Davis, Dover, N. H. Application filed September 8, 1873.

Claim.—1. Our said special composition, it consisting of dead-oil, whiting, linseed-oil, ground slate or steatite, coal-tar, sal soda in solution, and resin dissolved in alcohol, made in manner and of the materials as herein before first explained.

2. The combination of such composition with vermilion red and an additional quantity of dead-oil, or with such and a small amount of the alcoholic resinous solution, all as explained.

143,473.—Machine for Punching Sheet Metal.—Melvin Stephens, Brooklyn, N. Y. Application filed June 12, 1873.

The holding and stripping plate h is pressed down by springs acted upon by cams and pins, and is raised by the bar d, actuated by crank-pins and connections b' b' passing through the forked ends of the bars h. In the bar d is fitted a holder or bar carrying three or more punches, which pass through holes in the stripper and outer dies in the bed-plate.

Claim.—The die-plate g, clamping-plate h, and actuating-rods k, in combination with the punches i and punch-bar f, inserted into the dovetailed recess in the head-block d, substantially as set forth.

143,474.—Belt-Fastening.—Peter Subit, Boston, Mass. Application filed March 3, 1873.

Claim.—In a belt-lock, the combination of the single curved plate a, provided on its concave side with projecting screw-sockets b, with the screws c, having enlarged flat heads d, substantially as described, for the purpose specified.

143,475.—Pitman.—Joseph Swan, Richmond, Ohio. Application filed August 20, 1873.

Claim.—A pitman-rod, c, having an enlarged end, c, divided into two halves, c c', such halves c c' having each formed within their lower ends one-half of the slot f, forming jaws g g' and shoulder h, said jaws having a plain surface on their inner sides, in which are formed recessed bearings i i' for the reception of journals i' formed on the knife-head i², the halves of the pitman-rod being held firmly together by means of the combined screw-nut and cap l, substantially as set forth.

143,476.—Artificial Teeth.—William C. Tracy, Brooklyn, N. Y. Application filed August 30, 1873.

A platinum backing is baked into the single teeth or blocks of teeth. This platinum backing is used in connection with the ordinary means of fastening and in securing the teeth more firmly upon the plate.

Claim.—The platinum lining C, baked upon the back of the teeth, and either with or without the pins D, substantially as herein shown and described.

143,477.—Machine for Waving or Embossing Leather Straps.—Daniel H. Unger, Philadelphia, Pa. Application filed June 12, 1873.

The movable flanges of the wheels A B are adjusted to admit straps of differing widths by means of a set-screw. A lever is provided to relieve the shaft from pressure, that the strap may be readily introduced between the cylinder and the rollers.

Claim.—1. The two separate rollers A and B, and their respective adjustable flanges a'' and b', with their keys 4 4, in combination with the adjusting screw-nut c' and the rotary shaft C, the said parts being constructed and arranged in a suitable frame, D, so as to operate substantially as and for the purpose hereinbefore set forth.

2. In combination with the shaft C and the frame D, the raising and lowering device, consisting of the parts I i' i'' i'', lever K, and gudeon d' d', constructed and arranged to operate substantially as and for the purpose hereinbefore set forth and described.

143,478.—Wood Fence.—Robert F. Ward, Senatobia, Miss. Application filed June 7, 1873.

Two cross-stakes and central vertical post are united by inclined slats, leaving spaces for the ends of the horizontal rails.

Claim.—The cross-stakes A A and uprights C, connected by inclined slats F, in combination with the rails G, as and for the purpose described.

143,479.—Corset.—Julius Waterman, New York, N. Y., assignor to Waterman & Mayer, same place. Application filed July 24, 1873.

Claim.—A corset having the single breast-gore f inserted in the fabric of the corset-front, and the gore b introduced between the front piece d and back piece c, as and for the purposes set forth.

143,480.—Ore-Stamp.—Lewis D. Wade, Greenville, Cal. Application filed August 1, 1873.

The rollers aid in overcoming the friction between the spring-bar and lifting-cam.

Claim.—The cams composed of the rollers J, turning between the flanges K, and constructed to operate upon the ends of the springs E, substantially as herein described.

143,481.—Wheel for Vehicles.—Michael B. White, McLean county, Ill. Application filed December 26, 1872.

For the purpose of expanding the fellies in vehicle-wheels.

Claim.—1. The adjusting-nut b and jam-nut a, in combination with the thimble c, having a reduced screw-threaded portion, and the projections f for engaging the spoke-shoulder, as shown and described.

2. The T-shaped device E, having one of its arms notched to fit between the abutting ends of the fellies and the others perforated to receive screws, whereby it is secured to said fellies, as shown and described.

143,482.—Process of Treating Refuse Matter.—Charles Whittier, Boston, Mass., assignor to William L. Bradley, same place. Application filed May 6, 1873.

Should any leakage take place from the annular heating-chamber it will be simply hot air which will assist the drying process.

Claim.—The method of treating animal matter by inclosing and mechanically agitating the matter in a horizontal drum or cylinder, into which air is introduced, the cylinder being heated by a current of hot air forced through an annular chamber encompassing the horizontal cylinder.

143,483.—Railroad-Signal.—William Wickersham, Boston, Mass. Application filed September 25, 1872.

A spring-arm, projecting from a car or engine, strikes a lever attached to the piston-rod of a pneumatic apparatus connected, at any desired distance, by tubing to a vertical cylinder having suitable valves to trip its piston at the proper point of each stroke. To the piston-rod is attached a hook, which, as the piston rises and falls, turns a ratchet-wheel on the shaft, which bears the rotary signals.

Claim.—1. The combination of the lever a and the lever c c, constructed substantially in the manner described, so that the lever a will be unlocked from the plate b and swing around out of the way when passing through a door, and yet be permanent and fixed when pressure is made against its outer end, substantially as described, and for the purpose set forth.

2. The device for bringing the lever a to its central position after it has been moved around to one side, consisting of the inclined edges b^1 b^1 of the plate b, combined with the spring f, the bearing or pin e', and the slot c, as and for the purpose set forth.

3. The levers i i with their springs k k, in combination with the piston h, as and for the purpose set forth.

4. In railroad-signals, the combination of the cylinder n n, piston-rod o^1, and hook o^2 with a ratchet-gear, constructed and arranged as described, so that the ratchet-gear will be turned on its axis the distance of one or more teeth each time the cylinder is inflated or filled with compressed air, as and for the purpose set forth.

5. The combination of the ratchet p and its shaft t with the fly-wheel v^1, having a bell attached thereto, or equivalent device, and its spring v, constructed and arranged substantially as described, and for the purpose set forth.

6. The openings s s in the cylinder n n, allowing the compressed air in said cylinder to escape for the purpose of enabling the piston, its rod, and the hook o^2 to fall to their lowest position, so that the said hook can take another notch in the ratchet-gear p, in readiness to raise it on the next inflation of the said cylinder, as and for the purpose set forth.

143,484.—Dish-Washing Machine.—Charles H. Williams, Syracuse, N. Y. Application filed October 22, 1872.

A semi-cylindrical vessel is hung on journals within a cylinder that is revolved by a crank, and has buckets for throwing water over the dishes in the vessel. All are inclosed in a covered tub.

Claim.—1. The sheet-metal cradle A, with its corrugated supports s s s and openings f f f, supported by journals a, which rest in hollow journals b, all arranged as described, for the purpose set forth.

2. The revolving cylinder B, having V-shaped perforated buckets c, in combination with the cradle A, the whole being supported by hollow journals b b, bearing in the ends of the closed tub C, all arranged as and for the purpose set forth.

143,485.—Apparatus for Granulating Slag, Iron, &c.—Charles Wood, Tees Iron Works, Middlesborough-on-Tees, England. Application filed September 13, 1873.

Slag, ecoria, or cast-iron, as it flows in a fine stream from a runner, is received into water contained within a wheel or revolving tank, and is reduced to granules by the contact and motion of the water. The revolving tank has a series of floats, which agitate the water and elevate the granules, delivering them into a spout, which conducts them to wagons.

Claim.—1. The combination, substantially as before set forth, of the water-tank for receiving the slag, the elevating-floats, and the delivery-spout.

2. The arrangements of granulating apparatus, consisting of the revolving tank A, floats, buckets, or agitators E, runner F, and delivery-spout G, combined substantially as herein described.

143,486.—Machine for Pointing Wire.—Frank H. Ahern, Franklin, N. H. Application filed March 25, 1873.

Claim.—The revolving spur-gear D, in combination with the revolving spur-gear M, spring G, and compressing slide E, carrying the upper die, when the teeth of the revolving spur-gear D are longer than those of the revolving spur-gear M, substantially as and for the purpose described.

143,487.—Blast-Furnace.—Ebenezer B. Andrews, Lancaster, assignor of one-half his right to John G. Deshler, Columbus, Ohio. Application filed May 15, 1873.

Consists in the construction of cross-walls, arches, bars or supports of whatever form, made of fire-brick, stone, or other suitable refractory material.

Claim.—A blast-furnace provided upon its interior with sustaining-walls a b of refractory material, substantially as and for the purpose set forth and shown.

143,488.—Commode.—John D. Averell, New York, N. Y. Application filed March 15, 1873.

The annular tank is of the same diameter as the top of the vessel upon which it rests, but is higher at the back than at the front, to which it gradually slopes to afford a support for the back and arms of the person using the same.

Claim.—A commode having a lower vessel with annular tank fitting on the top thereof, in such manner as to afford a rest for the back and arms of the sitter.

143,489.—Inking Apparatus.—Franklin L. Bailey, Boston, assignor to Joseph Watson, Everett, Mass. Application filed July 7, 1873.

An ink-distributing roller is reciprocated laterally upon the ink-cylinder to spread the ink, the frame which holds the roller being moved in one direction by a spring after a vibrating lever has moved it in the opposite direction. The lever receives its motion from a cam. This cam forms the periphery of a ring or inside gear with which meshes a pinion fixed to the shaft of the ink-cylinder. If the number of teeth in the ring cannot be exactly divided by the number of the teeth on the pinion—if the one number is not a multiple of the other—the roller will constantly assume new positions with reference to the cylinder.

Claim.—The combination, for the purpose described, of the cylinder E, roller O, frame V, its rod and spring L, the lever Z, the gear-ring H with its cam, and the pinion R.

143,490.—Middlings-Purifier.—John Bandon and John Wiggin, Jr., Dayton, Ohio. Application filed May 29, 1873.

The shaker receives a slight vertical action, by means of the knockers and tappets, to prevent the cloth from clogging. Vertical action and inclination of shaker regulated by the elastic suspension-arms.

Claim.—The combination of the elastic suspension-straps W, knockers e, and tappets f with the screen, substantially as described.

143,491.—Car-Coupling.—Andreas W. Bohaker, Granville, Nova Scotia. Application filed March 19, 1873.

The pin-supporter is dovetailed on its upper side to fit into a dovetailed groove in the upper side of the mouth of the draw-head, and is thrust under the pin by means of arms extending through slots in the sides of the draw-head.

Claim.—The draw-head A, provided with the slots D D and dovetailed groove I, in combination with the pin G and sliding block E, having arms C C on its sides, and notch E for the reception of the link, and dovetailed projection H, all constructed and arranged to operate as set forth.

143,492.—Apparatus for Separating Ores and other Substances.—Hezekiah Bradford, Reading, Pa. Application filed September 23, 1873.

The jig-box is reciprocated up and down in a tank of water. The current created carries the lighter substances through the upper opening of the box into a separate chamber, and the heavier portions through the lower opening into a separate chamber.

Claim.—1. A jig-box with a perforated bottom, that is reciprocated in water and provided with two places for delivery, one at a higher level than the other, for passing away the materials of different specific gravities, substantially as set forth.

2. An adjustable gate or gates applied to enlarge or contract the lower delivery-opening in a jig that is provided with a perforated bottom and is reciprocated in water, substantially as set forth.

3. A cut-off applied to the lower delivery-opening of a jig-box that is reciprocated in water, substantially as set forth.

143,493.—Farm-Gate.—William S. Brown, Norwood, Ill. Application filed July 14, 1873.

This gate opens by moving in a direct line away from the latch-post, two of its rails fitting in a deep groove in a friction-pulley which sustains the whole weight, said pulley being confined on one side to hold the end of a horizontal pin from the post, said pin turning upward at right angles into an eye-bolt universally attached to the pulley.

Claim.—The roller D, constructed with the recess d, and combined with the plate c and axle eye-bolt f, substantially as shown.

143,494.—Curtain-Fixture.—Harvey H. Burritt, Newark, N. J., assignor to William A. Cook, same place. Application filed March 10, 1873.

Upon the inside of one of the heads of a hollow spring-roller project one or more lugs, to which a ball-crank is attached, one arm of which lies parallel with the axis of the roller, and has a weight attached to its end. The other arm is forked, and embraces the arbor near a projection. When the roller is revolved slowly the forked arm engages with said projection, but when the roller is revolved swiftly said forked arm passes by said projection.

Claim.—The arrangement of the lever or ball-crank H K and arbor I M with the spring shade-roller E, constructed and operated substantially as shown and described.

143,495.—Bayonet-Socket.—Bethel Burton, Brooklyn, N. Y. Application filed April 10, 1873.

The particular construction of the socket, whereby a smooth handle is formed, adapting the instrument to be used by hand.

Claim.—1. The combination, substantially as herein described, of the socket provided with a straight slot and rim or shoulder and the ring arranged at the rear end of the socket, as and for the purposes described.

2. The combination, with the subject-matter of the foregoing claim, of the attachment b', whereby a perfect sword or other handle and bayonet-socket is produced, as set forth.

143,496.—Nail-Extractor.—George J. Capewell, Cheshire, assignor to Eli Curtiss, Watertown, and Douglass F. Maltby and Lewis J. Atwood, Waterbury, Conn. Application filed April 11, 1873.

The jaws are provided with a concealed spring, and the lever has attached to it a movable hammer for driving the jaws into the wood around the nail.

Claim.—A nail-extractor having its stem provided with a stationary and movable jaw, the inner faces of which are recessed to receive a circular spring for holding the jaws apart, in combination with a tubular weighted rammer secured to the stem, substantially as described.

143,497.—Cop-Winding Machine.—William Chadwick and Samuel Lowndes, Brooklyn, N. Y. Application filed March 24, 1873.

The "building spindle" on which the thread is wound is moved by the winding-spindle, and as the cop increases in size and moves from the cup the spindles rise, and the stop-rod descends until the projection at its lower end comes under a projection on the building-rail, which stops the machine. The size of the cop and the engagement of stopping devices are governed by the devices enumerated in the third clause.

Claim.—1. The combination of the stop-rod Q, chain r, and pulley s with the winding-spindle B, the building-rail K, and the building-spindle E, as shown and described, for the purpose specified.

2. The bell crank S, in combination with the rod T, connected with the winding-spindle B, as shown and described, for the purpose specified.

3. The finger R, capable of adjustment in the holder v on the sleeve D, in combination with the stop w on the stop-rod Q, as shown and described, for the purpose specified.

143,498.—Truss for Coaches and Cars.—George F. Chalenden, Burlington, Iowa. Application filed January 16, 1873.

A sheet-iron truss is placed around the car between the sill and belt-rail, secured to the former by angle-iron and the latter by bolts.

Claim.—The truss B for cars or coaches, constructed by applying plate-iron to upright posts A A and belt-rail F, and the angle piece or portion C to the lower edge of the truss and to the sill E of the car, substantially as and for the purpose herein described.

143,499.—Scale-Pan.—John P. Chatillon, New York, N. Y. Application filed July 31, 1873.

A flange projecting downward, and doubled up, protects the enameled surface of the pan against shocks, and forms a support for the brackets of the ears.

Claim.—1. A scale-bottom provided with a downwardly-projecting flange, and coated with enamel, said flange serving to protect the enamel against blows when the scale-bottom is set down, as set forth.

2. The flange a on the scale-bottom A, being partially or wholly turned inward or doubled up to form a support for the corner of the scale-bottom, and for the brackets of the ears d, substantially as shown and described.

143,500.—Billiard-Table Ball-Holder.—Hugh W. Collender, New York, N. Y. Application filed July 9, 1873.

A ring-holder screwed into the end of the billiard-table serves to hold the fourth ball of the usual game while the players are engaged upon the French or three-ball game.

Claim.—The combination, with a billiard-table, of an annular ball-holder, arranged and adapted to operate substantially in the manner and for the purpose described.

143,501.—Toilet-Rack.—Oscar H. Cooke and Frank Kenfield, Morristown, Vt. Application filed October 21, 1872.

The brackets are connected near their upper ends by a shelf against which the towel-rack can be thrown up and form a guard

to said shelf. When the rack is dropped in position for use it is supported by stops placed on the inside of the brackets.

Claim.—As a new article of manufacture, the toilet-rack consisting of the brackets A, the fixed top shelf B, and the lower rack D E, provided with stops, and capable of being folded against said shelf B to act as a guard for articles placed on the latter, as and for the purposes set forth.

143,502.—Bolster Pillow, &c.—CHARLES P. COOPER, New York, N. Y. Application filed June 25, 1873.

The pillow or mattress is made hollow, with openings at the ends or sides to afford a circulation of air, and its open form is maintained by ribs of wood, metal, or whalebone, or by wire helices.

Claim.—A bolster, pillow, or mattress made hollow, with openings at the ends or sides to afford a circulation of air through it, and having its form preserved by ribs of wood, metal, or whalebone, or by wire helices, substantially as herein set forth.

143,503.—Manufacture of Watch-Chains and Bracelets.—WILLIAM C. EDGE, Newark, N. J. Application filed June 25, 1873.

Claim.—A chain for watches, bracelets, and similar articles, formed of woven-wire fabric bent and doubled, substantially as described and shown, for the purpose specified.

143,504.—Rotary Steam-Engine.—SAMUEL B. FRANK, Rochester, Mo. Application filed April 21, 1873.

The revolving cam or eccentric has a central valve and radial ports, and a packing-ring is fastened, by screws, in a semicircular manner to the cylindrical part of the cam, and is pressed out against the casing by springs. The piston-abutment is fastened to the wheel by a spring, which forces it against the casing. The sliding abutments are operated by springs secured to the framing.

Claim.—1. The eccentric C, constructed in the form shown, and provided with rings *d d* and follower *b*, and used in connection with casing A, sliding abutments I I, and springs h h, all substantially as and for the purpose specified.

2. The combination, with the eccentric C, of the valve G, pipe E, and collar and set-screw, constructed as shown and described, and for the purposes set forth.

143,505.—Binder's Attachment for Harvesters.—JOHN H. GARDHART, Madison, Wis. Application filed February 26, 1873.

The binder's seat and table are connected together, so that when the binder faces the grain-receptacle to receive the gavel the table passes under said receptacle.

Claim.—1. A binder's table and a binder's seat, connected to each other at different elevations, and arranged to swing upon the seat-standard, substantially as described, for the purpose specified.

2. In combination with the seat-standard, a swinging binder's table, arranged to be moved under the grain-receptacle, and to be swung outward from the same, substantially as described.

3. In combination with the seat-standard, a binder's table and seat, arranged to swing upon said standard, and adapted for adjustment with respect to each other, substantially as described.

143,506.—Fanning-Mill.—EDWARD M. GILBERT, Kasson, Minn. Application filed May 17, 1873.

Between the two principal screens are arranged two inclined boards and two sets of division-blocks for guiding the grain and refuse into separate receptacles.

Claim.—The screens A and B, boards D and E, division-blocks F, perforated blocks G, and trough C, all combined and operating together, as described.

143,507.—Heel-Burnishing Machine.—CHARLES W. GLIDDEN, Lynn, assignor to JAMES W. BROOKS, trustee, Boston, Mass. Application filed August 25, 1873.

A series of burnishing devices are attached to the links of an endless chain, which passes around a series of notched pulleys, the shoe being locked in such position in relation to the pulleys that the burnishers are brought into contact with the heel edge as they rotate.

Claim.—1. A boot and shoe heel burnishing machine having, in combination with a suitable mechanism for holding the boot or shoe in position, a chain or continuous series of burnishing devices, substantially as shown and described.

2. In combination with the burnishing-chain, the movable carriage *d*, substantially as described.

3. In combination with the burnisher-chain, the movable arms *s* and wheels *v v*.

4. The jack-carriage having the vertical swinging pin *s*, the tread-plate *t*, and the guide-block *f*, arranged substantially as shown and described.

5. In combination with the movable arms *s*, the mechanism for drawing them inward and forcing them apart, substantially as shown and described.

6. The method of burnishing the edges of boot and shoe heels by subjecting the curved edge to the continuous action of a yielding series of burnishing devices, substantially as described.

143,508.—Condensing-Tube for Spinning-Machines, &c.—JOHN GOOD, Williamsburg, N. Y. Application filed May 23, 1873.

The ring has a tapering channel in it, and the tendency of the spring is to keep the small end of the channel opposite the opening through the condenser. Variations in the size of the silver will cause the ring to turn until the opening through the condenser corresponds in size to that of the silver.

Claim.—The combination of the throat A, its controlling-plug B, and the spring S, or its equivalent, for controlling the opening in the throat, substantially as and for the purpose herein set forth.

143,509.—Pedal for Musical Instruments.—HENRY HAAS, New York, N. Y. Application filed July 23, 1873.

Claim.—A pedal for musical instruments made of cast-iron, provided with a bottom rim, *b*, and protected by a piece, *a*, of sheet metal, which may be nickel-plated, substantially as shown and described.

143,510.—Machine for Punching and Shearing.—SAMUEL R. HOUSER, Upper Sandusky, Ohio. Application filed August 16, 1873.

Claim.—1. In a combined punching and shearing machine, the frame B cast in one piece, as described, with the lip *a*, bed *b*, and head *d*, as and for the purposes set forth.

2. The combination of the punch D, lever E, arm H, and movable shear-blade I, as and for the purposes herein set forth.

3. The combination of the frame B, stationary blade C, punch D, lever E, arms G G and H, movable blade I, and gage J, all constructed and arranged substantially as and for the purposes herein set forth.

143,511.—Wheel for Wheelbarrows.—WILLIAM E. JACOBS, Columbus, Ohio. Application filed July 5, 1873.

The spokes are beveled at the inner ends and rounded at the outer ends.

Claim.—1. A wheel, the outer ends of the spokes B of which are rounded, as at *b*, and are of the width of the felloes, and fitted into notches *a*, which are scored out, as described.

2. The hub sections C C and tubular caps C′ C′, in combination with the bolt *g* and spokes B, substantially as described.

143,512.—Mode of Fastening Buttons.—WILLIAM A. JOHNSON, FRANK V. JOHNSON, and H. SMITH WORTH, of Oxford, Pa. Application filed February 15, 1873.

The plate or washer for the eyelet is made of sheet metal, and has its front edge turned over the cloth.

Claim.—The combination of the button, eyelet, and plate D, having a part turned over the front edge of the cloth, substantially as described.

143,513.—Hand-Car.—LOWELL H. KENYON, East Greenwich, R. I. Application filed August 2, 1873.

The levers are pivoted to the journals near the center, and extend nearly the entire length of the car, so that those working the levers can stand at the sides thereof.

Claim.—1. The cap B, having flanges A A, in combination with standards A and bolts *c c*, substantially as and for the purpose specified.

2. The longitudinal levers *b b*, in combination with the cap B having flanges A A, standards A, and bolts *c c*, all constructed and arranged as and for the purpose specified.

143,514.—Hose-Coupling.—WELLS KILBURN, Napa, Cal. Application filed March 10, 1873.

Two coupling-joints, one fitting over the end of the other, provided with suitable straps, which can be linked together when the joints are held at an angle; and when they are brought into line these straps draw the parts together so that they will fit and be held closely. A suitable packing is employed.

Claim.—A hose-coupling consisting of the sections A B, with their ends fitted as shown, and provided with the straps E I, with the pin H and corresponding slot J, respectively, and having the beveled shoulder at *h*, the whole constructed and operating as described.

143,515.—Seat for Carriages and Wagons.—CHRISTIAN K. LEHMANN, Savannah, Ohio. Application filed June 9, 1873.

One end of a torsional spring is secured to the under side of the seat, and the other end is attached to a link which connects with the steady-rod. The lower end of the rear torsional spring is hinged to the other end of the steady-rod.

Claim.—The combination of the torsion-springs C and the supporting steady-rods D with the links E, substantially as specified.

143,516.—Running-Gear for Railway-Cars.—JAMES S. LESTER, Atlanta, Ga., assignor to himself and ALVIN S. WORSHAM. Application filed August 1, 1873.

The car runs upon a single rail, whose cross-section is an isosceles triangle, the base forming the "tread." Each truck is mounted with five wheels, three of which run upon the upper surface of the rail, while two others bear against the inclined sides. The central upper wheel is grooved to fit an auxiliary rail upon the surface of the main rail. The brake acts upon the three upper wheels.

Claim.—1. The V-shaped main rail A, supported upon ties or posts B B, and provided on its upper surface, in the center, with an inverted-V-shaped metallic rail C, and with or without the side-edge plates *b b*, substantially as and for the purposes herein set forth.

2. A railroad-car truck provided with a center wheel, D, having a V-shaped circumferential groove, a smooth-faced wheel, E, at each end of the center wheel D, and a wheel, G, at each side underneath, all substantially as and for the purposes herein set forth.

3. The brake-block K, provided with projections *e* and *f f*, and used in combination with the wheels D and E E of a car-truck, as and for the purposes herein set forth.

4. The car-truck described, having a central wheel, D, adapted to run on the rail C, wheels E E, adapted to run on the upper surface of the main rail, and wheels G G adapted to run on the inclined sides of the rail, all substantially as and for the purposes herein set forth.

143,517.—Railroad-Ticket Holder.—JAMES C. MALOY, Johnstown, Pa. Application filed September 18, 1873.

A hinged frame, having a transparent front, is attached to the side of the car at the end of the seat. Tickets are held in position under the glass by an elastic cord. The frame is locked by a vertical spring-bolt operated at will.

Claim.—The combination of the hinged frame *a*, having a transparent front, *c*, a cord, *d*, for holding the tickets in position, and a locking-bar, *f*, for holding the frame closed, substantially as shown and described.

143,518.—Hoisting Apparatus.—GIDEON B. MASSEY, New York, N. Y., assignor to himself and ALFRED B. DARLING, same place. Application filed July 19, 1873.

The descent of the car is controlled by the rotary fluid-retarder, the amount by means of ropes or chains worked by the engine. The piston and cylinder, operating as an air or fluid stop, are combined with the traveling governor, actuated by contact with a bar for arresting the motion of the car in case of a too sudden descent from any cause whatever.

Claim.—1. The combination of a rotary inclosed fluid retarder, G, with the car or platform B, arranged to descend by gravity, and hoisting mechanism operated by the engine, substantially as specified.

2. In a rotary retarder applied to a hoisting apparatus, an abutment controlled by a spring, substantially as herein described.

3. The rotary fluid retarder G with its swinging abutment h and spring *k*, arranged for operation as described, in combination with the drum D, the lifting rope or chain C, the car or platform B, and the hoisting-drum E, operated by the engine during its travel in one direction only, substantially as specified.

4. The combination, with the drum D and lifting rope or chain C, positively or incidentally connected to the platform B, of the safety ropes or chains M, the rocking beam *l*, and the springs J J, essentially as and for the purposes herein set forth.

5. The piston and cylinder fluid stop L M, in combination with a governor, K, carried by the car, and mechanism, substantially as described, for actuating the governor, and causing it, when moving at an undue velocity, to couple the piston L with the car, essentially as and for the purpose herein set forth.

143,519.—Hoisting Apparatus.—GIDEON B. MASSEY and ALFRED B. DARLING, New York, N. Y. Application filed August 4, 1873.

Chains pass from the cross-trees of the car over pitched wheels connected with the shaft, upon which the fluid retarder revolves, and are attached to counter-balances moving on the side of the elevator-frame. As the car ascends the fluid retarder moves in common with its shaft; when the car descends the shaft of the retarder is locked by means of a pawl.

Claim.—1. The combination, with the car or platform arranged to descend by gravity, of one or more rotary fluid retarders connected with the car by safety ropes or chains, and in which the outer cylinder or case of either retarder is free to move in common with its piston when the car is ascending, but is locked from moving when the car is descending, substantially as and for the purpose herein set forth.

2. The combination, with the retarders, of counter-balances connected by chains with the car and pitched wheels on the shafts of the retarders, whereby the chains are made to operate the retarders, substantially as specified.

3. The safety-chains G^1 G^1 G^2 G^2, arranged in relation with the car as described, in combination with the centrally-pivoted cross-tree H and car or traveling platform B, essentially as herein set forth.

143,520.—Harrow.—DAVID B. MAIR, West Buffalo, Ohio. Application filed August 22, 1873.

A harrow constructed of two triangles hinged together and provided with reversible handles, supported by tubular standards and bolts.

Claim.—The harrow-frames A A, having the handles a^2 a^2, made reversible through the mechanism comprised of the screw-rods a^3 a^3, tubular standards or supports a^4 a^4, and screw-bolts and nuts, substantially as and for the purpose set forth.

143,521.—Machine for Wiring Blinds.—CHARLES MCGILL, New Haven, Conn. Application filed August 21, 1873.

The seats and rod are wired coincidently and together.

Claim.—1. The combination of the screw B with the bench A and table C of the machine, substantially as specified, whereby the machine is held to the bench, and provision made for adjusting it to suit different thicknesses of rods and widths of slats, as herein set forth.

2. The combination of the hollow screw B with the follower G, the stem *g*, the bench A, and the table C, essentially as shown and described.

3. The double spring staple-feeder K, in combination with the head-block D, provided with the shoulders *k k*, and the follower G, with its attached pair of drivers H H, substantially as specified.

4. The combination of the spring I, the band or cord J, and guide or pulley *i* with the dog or pawl A and stem *g* of the follower, whereby the same spring operates to feed the rack K and to return or lift the follower with its attached drivers H H, substantially as specified.

143,522.—Baker's Oven.—DUNCAN MCKENZIE, Brooklyn, N. Y. Application filed August 21, 1873.

Claim.—The additional external chimney D, the passages *b b*, and the dampers H I J, in combination with the fire-place and perforated oven bottom, the pin or arches K L, and the chimney C, the whole arranged to operate substantially as and for the purpose herein set forth.

143,523.—Carburetor.—WILLIAM T. MCMILLEN, Cincinnati, Ohio. Application filed February 24, 1873.

The float, through which air is conveyed to the hydrocarbon fluid, is arranged to rise and fall upon its surface by an angular jointed pipe arising from its top, connected with a horizontal pipe, which works, by its trunnion, in a bearing at one end, and at the other end fits over the end of a rigid supply-pipe.

Claim.—1. The air-reservoir D, jointed to the rigid supply-pipe by means of the angular pipes F G H and the trunnion I, turning in suitable bearings, substantially as described, for the purpose specified.

2. The angular pipe H, adapted to turn as the reservoir rises or falls by means of the trunnion I and its bearings, and the rigid angular pipe J, entering the end of said pipe H in line with the trunnion, substantially as described.

143,524.—Car-Coupling.—JAY A. MERRILL and DAVID W. KEMPTON, Denver, Colorado Ter. Application filed August 8, 1873.

The coupling-hook is held in position by a spring wound around the rod, by which it is uncoupled, and a step depends from the top of the thrust of the draw-head to protect the spring from the thrust of the link.

Claim.—1. The hook C, provided with the tapering slot or orifice *d*, in combination with the vertical rod D and spring G, substantially as described.

2. In a draw-head containing a pivoted hook to be operated by a spring-rod passing through the chamber, the step J, adapted to protect the spring G from the coupling hook or link, substantially as described.

143,525.—Steam-Heater.—PETER H. MERRILL, Pardeeville, Wis. Application filed June 21, 1873.

Water passes from the reservoir into the hollow grating, where it is converted into steam, which passes into the separator, whence it can be taken for heating purposes. A return-pipe from the hollow grating enters the reservoir above its exit-pipe. A partition parallel with the reservoir-cover inclosed an air-tight space. In this partition is a spring-weighted safety-valve.

Claim.—1. In a steam-generator for heating purposes, the hollow grating L, connected at both ends with the water-reservoir A, and near the steam-end with the steam-drum and separator M, substantially as specified.

2. In a steam-generator, the combination of a closed reservoir, A, with the partition B, the air-tube D, the spring-weighted safety-valve F, the pivot *f*, the lid E, the elastic packing D, and the exhaust-pipe I, substantially as specified.

3. In combination with the water-reservoir A, as described, the steam-drum or separator M, air and steam trap K, steam-pipes N, and hollow grating L, substantially as and for the purposes set forth.

143,526.—Railroad-Car Stove.—MARION MOONEY, TUNIS D. VAN DORN, and CHARLES C. WHITTENBERG, Edinburg, Ind. Application filed February 21, 1873.

The water-chamber is fastened to the car-floor, and is so made as to leave a space within its borders for the stove to be placed and fastened to the car-floor. A pipe extends from the water-chamber into the upper part of the stove to allow water to flow into the stove upon the fire, in case the car is upset.

Claim.—The shallow water-reservoir B, secured to the car-floor, and provided with an open space, into which the stove A is placed, and the elbow-pipe C, connecting the stove and the reservoir, all combined substantially as and for the uses set forth.

143,527.—Grain-Register.—GEORGE W. NESMITH, Metamora, Ill. Application filed February 7, 1872.

The tripping-lever of a tallying-register has a pivoted dog or pawl and spring so arranged as to complete its action upon the teeth of the first or unit wheel at the middle of its play, and thus secure the count of but a single tooth, whatever the throw of the lever.

Claim.—In a measure-register for grain, the arrangement of the unit-wheel and its stop-spring, the lever and its spring, and the pawl sliding between the springs and pivoted to the lever, substantially as specified.

143,528.—Manufacture of Felt-Cloth.—JAMES B. POLLARD, Norfolk, Mass. Application filed April 16, 1872.

Carded batts are first felted, then, instead of fulling, the material is pressed between hot calender-rollers.

Claim.—1. The process herein described, for the manufacture of felt-cloth, consisting in forming carded batts, treating them in a felting-machine, and subsequently subjecting the fabric thus formed to the action of heated calender-rolls, either plain or figured, so as to make the process of fulling unnecessary, substantially as specified, and for the purpose set forth.

2. The improved felted fabric herein described, produced by hot-calendering a felted batt, in the manner described.

143,529.—Electric Circuit and Device for Railway-Signals.—FRANK L. POTS, Elizabeth, N. J. Application filed June 11, 1873.

Signals at each end of a rail-section, controlled by relays,

whose batteries are opposed so as to normally neutralize each other, the entrance of a train on the section short circuiting each battery and rendering the relays operative, each relay closing two breaks normally in circuit of its signal magnets, and displaying signal at each end of section. Shows method, also, of limiting electric rail-circuit at switches.

Claim.—1. The combination of the following elements: Two batteries, B and B^1, so arranged as to oppose and neutralize each other, included in the same circuit, and placed at opposite ends of a section of railroad-track, one or more electro-magnets, S S^1, for actuating or controlling one or more visual or audible signals, and a circuit-closer, W or W^1, arranged to bring the said batteries simultaneously into action, and thereby cause said electro-magnet or magnets to operate said signal or signals, substantially as and for the purpose herein specified.

2. The combination, with the rails of a railroad-track, of two galvanic batteries, B B^1, arranged to neutralize each other until metallic connection is formed between the said rails, when two independent circuits will be established, substantially as and for the purpose specified.

3. The combination of the following elements: An insulated section of railroad-track, a relay, E^1, placed at or near one end of said insulated section of track, a secondary circuit controlled by said relay, and a magnet, S, situated at or near the opposite end of said insulated section of track, and arranged to operate or control the operation of a visual or audible signal, or both, substantially as and for the purpose herein specified.

4. The combination of the following elements: The battery E^1, signal-operating magnet S, circuit of conductors 13, 14, 15, 16, 17, 18, 19, and 20, and two independent circuit-closers, w and r^1, each under the control of a locomotive or train, the whole being so arranged that the magnet S can only be operated by the simultaneous action of both circuit-closers, substantially as specified.

5. The combination of the following elements: The insulated section of track a^6 a^8, the battery B^2, the relay M, the retaining-magnet N, and the insulated section of track a a^1, substantially as herein specified.

6. The combination of the movable rails of a switch with the double-acting circuit-changer *l* and the electro-magnets S and S^2, arranged to operate or control the operation of visual or audible signals, or both, substantially as herein specified.

7. The signal-operating magnet S, battery E^1, and circuit of conductors 26, 27, 28, 29, 30, 31, 32, and 33, in combination with the circuit-changer *l* and the circuit-breaker S^2, (either or both,) substantially in the manner and for the purpose specified.

8. The insulated section of track or other circuit-closer a^5 a^7, signal-operating magnet S^2, and battery D^4, in combination with the circuit-changer *l* and circuit-breaker r^2, (either or both,) substantially in the manner and for the purpose specified.

9. The combination of the insulated section of track a a^1 with a branch track or siding, insulated for a proper distance by means of breaks *b* b^1, or otherwise, for the purpose of confining the electric circuit to the main track, substantially as and for the purposes herein specified.

10. The combination of the insulated section of track a a^1, with a branch track or siding, provided with an insulating break, b^2, for the purpose of preventing an electrical connection between the opposite lines of rails of the said insulated section, substantially as herein specified.

11. The combination of the insulated sections of railroad-track A^2 and A^3 with the electrical conductors D or D^1, (either or both,) substantially as and for the purpose specified.

143,530.—Lubricator.—William A. Pratt, Baltimore, Md. Application filed August 26, 1873.

The rod carrying the lower valve is threaded part of its length; a correspondingly-threaded sleeve is secured to the upper part of the rod; the lower part of the sleeve forms the upper valve. These valves are adjustable and have their seats in the upper and lower ends of the stem which forms the supply-chamber.

Claim.—In a lubricator, the combination of the valve-rod D, sliding and adjustable sleeve D^1, having upper valve B, valve-seat *b*, and supply-chamber E, substantially as and for the purpose set forth.

143,531.—Gutting-Machine.—John Richards, Philadelphia, Pa. Application filed September 24, 1873.

The cutting-tool is made to travel across the material for cutting the gains.

Claim.—A wood-working machine to form notches, gains, and rabbets, organized and operating substantially in the manner and for the purpose hereinbefore specified.

143,532.—Tenoning-Machine.—John Richards and Lucius H. Berry, Philadelphia, Pa. Application filed September 24, 1873.

The material to be tenoned is not turned end for end, but slides endwise, having the gage-side always to the gage-board. The cutter travels down to cut one set of tenons, and upwardly to cut the other end.

Claim.—The tenoning-machine herein shown and described, when constructed, arranged, and operating in the manner and for the purposes substantially as specified.

143,533.—Railway-Rail Joint.—Tyree Rodes, Pulaski, Tenn. Application filed August 20, 1873.

Claim.—In combination with the rails A A^1, cut away at *b* b^1, as shown, the fish-plate B, adapted to grasp the feet of the rail, to support the web, and fill the recess formed in the rail by cutting away at *b* b^1, and the plate C, adapted to grasp the feet of the rails and support the web, as described.

143,534.—Carburetor.—Ira W. Shaler, Brooklyn, N. Y. Application filed March 20, 1873.

Consists in regulating the flame by controlling the amount of air admitted to the carbureting-chamber; also in placing the cotton, wool, or other absorbent material within a coil of wire, and then placing a number of these coils within a suitable-shaped wire-gauze frame in the carbureting-chamber.

Claim.—1. The regulating-valve *i* in combination with flues *g*, substantially as shown and described.

2. The wire-coil *c*, for holding the absorbent material, substantially as described.

3. The flues or passages *g* applied to a carburetor, as specified.

143,535.—Undermining-Auger.—Porter Sheldon, Jamestown, N. Y. Application filed September 8, 1873.

The double flanged twisted bar has along the outer edges of the helix cutters secured, which are so arranged that they overhang the concave surface of the twisted bar. The end of the bar is provided with a double-curved cutter.

Claim.—The combination of an auger with cutters arranged along either flange or spiral overhanging the concaves from the wrist to the point or end, and with the cutter at the end thereof, substantially as and for the purposes hereinbefore set forth.

143,536.—Game-Register for Cards.—Joseph W. Sheppard, New York, N. Y. Application filed May 24, 1873.

Within a suitable case a revolving disk, numbered so as to exhibit the state of the game through an aperture, is turned as required, by a projecting button operating an interior lever, while a connected disk, properly notched on its edge, causes a ball-hammer to strike at each change of the register.

Claim.—1. The instrument for registering the game of cards consisting of outer box A, main plates C C', button B with bifurcated lever F, slide *i*, and arm *m*, sectional plate D, screw *b'*, arm G with pawl H, face-plate and ratchet-wheel E E', ball I, and hammer L, substantially as and for the purpose described.

2. The button-shaft *c*, arranged to operate the plate D through arm *a'*, and plate E through lever F, slide *i*, screw *b'*, arm G, pawl H, and wheel E', substantially as set forth.

3. The face-plate E, in combination with the notched and recessed wheel E', revolving arm G, and pawl H, substantially as described.

4. The shallow notches *p*, arranged between the series of deep spaces in wheel E', to furnish bearing for pawl H, but not allow the ball to ring, as set forth.

143,537.—Ankle Supporter and Filler.—Samuel Silberschmidt, Baltimore, Md. Application filed September 25, 1872.

Claim.—As a new article of manufacture, a combined ankle-supporter and filler or pad, composed of stiff material and of a length and shape to fit both the rear and sides of the ankle and the calf—that is to say, made with an inwardly-curved and pointed lower part, and an outwardly-curved upper portion, substantially as and for the purpose described.

143,538.—Adjustable Ratchet-Rod.—Edward H. Smith, Worcester, Mass., assignor to R. Ball & Co., same place. Application filed August 21, 1873.

The screw-spindle is swiveled in a central fixed tooth, and has the direction of its thread reversed on the opposite sides of the fixed tooth, and the pitch of its thread increased for each tooth that is further away from the immovable tooth. By turning the spindle all the teeth will be moved to an equal degree of greater or less distance from each other.

Claim.—1. The screw-spindle B, provided with left and right hand screw-threads, in varying degrees of pitch, and connected with the immovable ratchet-teeth C, and with the movable ratchet-teeth D E and F G, for the simultaneous adjustment of the movable teeth with reference to their distances from the immovable tooth C, and from each other, substantially as specified.

2. The grooved and slotted bar A, in combination with the right-and-left threaded screw-spindle B, immovable ratchet teeth C, and movable ratchet-teeth D E and F G, all arranged to operate substantially as described.

143,539.—Composition Metal for Casting Plows.—George K. Smith, Waterloo, Iowa, assignor of one-half his right to George W. Miller, same place. Application filed April 8, 1873.

Scrap-steel, wrought-iron, and black oxide of manganese.

Claim.—A composition of scrap-steel, scrap wrought-iron, cast-iron, and black oxide of manganese, in the proportions enumerated, and prepared, mixed, and cast in the manner herein described, for the purposes specified.

143,540.—Attachment to Chimneys or Flues.—Jane Eliza Starnes, Worthington, Ind. Application filed July 19, 1873.

The tapering drum which extends into a room to be heated connects with the chimney at each end in such manner that the heated products of combustion pass through it. The inner wall of the drum is extended across the chimney-flue so as to deflect the ascending current into the drum. The drum is provided with a damper and a door to admit of cleaning.

Claim.—The curved tapering drum G, having the extensions *a a'* of its inner wall, the damper *b*, door *d*, and open ends *v v'*, the latter communicating, respectively, with the openings *n n'*, arranged one above the other in the chimney-wall, substantially as specified.

143,541.—Stove-Grate.—William H. Strieker, Syracuse, N. Y. Application filed August 2, 1873.

Claim.—The grate described, having the upper portion A, enlarged lower portion B, and connecting portion C, with intermediate draft-space E, substantially as and for the purpose described.

143,542.—Awning.—Henry Stern, New York, N. Y. Application filed September 12, 1873.

The shutters are placed at right angles to the window-frame and secured by hooks and staples. The shade or awning is adjusted to the inside of the shutters.

Claim.—1. The combination of the awning C with the blinds or shutters B B of a window, substantially as set forth.

2. The combination of the adjusting-hooks *a a*, staples *b b*, and braces *c c* with the awning C and blinds B B, arranged and operating substantially as and for the purpose herein described.

143,543.—Treadle.—Josiah Tibbals, John Putnam, and Horatio M. Allen, Norwood, Mass., assignors to Josiah Tibbals and John Putnam, same place. Application filed September 3, 1873.

Upon the journal of a stationary shaft is placed a sleeve, to one end of which the belt-pulley is secured, while upon the other end is formed a brake-wheel. Upon each side of the brake-wheel grooved pulleys, having friction-clutches to engage with the rim of the brake-wheel, are loosely secured. The pulleys are revolved by means of a wire encircling their grooved peripheries, the wire attached to a reciprocating and adjustable frame.

Claim.—1. The combination of the stationary shaft A, the frame H, the bands or wires G G', the chambered and grooved wheels F F', the furnished brake E E, springs *e e*, brake-wheel D, and its tubular shaft B, all constructed, arranged, and applied together substantially as and to operate as and for the purpose specified.

2. The screw L, yoke K, and arched slide I, combined and arranged, in manner as specified, with the frame H and the two wires G G', applied thereto and to the groove-wheels F F', as set forth.

143,544.—Seal-Lock.—James E. Thomson, Buffalo, N. Y. Application filed September 15, 1873.

A sliding plate, provided with a series of knives for canceling the stamp or seal, is arranged within the lock so as to be operated by the key in unlocking the bolt, and also by an arm attached to the hasp when the latter is opened.

Claim.—1. The sliding plate F, carrying a series of knives for canceling a stamp, in combination with the hasp B, provided with a suitable device for operating the same, substantially as and for the purpose set forth.

2. The dog E, in combination with the sliding knife-carrier, for withdrawing the catch C, and, at the same time, canceling the seal, substantially as and for the purpose set forth.

3. The hasp B, carrying the arm *b*, in combination with the oscillating dog E and traveling knife-carrier F for canceling the seal independent of throwing the bolt, as set forth.

4. The dog E, constructed with the sliding pin *i*, spring *n*, and stop *o o*, in combination with the arm *b* and knife-carrier F, all constructed substantially as described, and for the purpose set forth.

5. In a seal-lock, the arrangement of a vertically-sliding plate, F, carrying a canceling apparatus, and operated by a key or spring, so as to pass, in the act of unscalation, across a transparent portion of the lock case or face, in order that any mutilation of the stamp may be detected without opening the lock, substantially as set forth.

143,545.—Machine for Packing, Wrapping, and Labeling Tobacco.—John H. Townsend, New Haven, Conn. Application filed October 8, 1872.

The material is fed into an endless-band carrying-trough, passing under two rollers which leave the tobacco of a uniform depth. Two knives or combs are pressed down into the tobacco. One holds back the layer of tobacco, the other divides and drives forward a charge, forces it beneath a plate, and leaves it there. A plunger now descends and pushes forward the charge of measured tobacco into a receiver, which has already been automatically provided with a sheet of printed foil and a wrapper from a printing-press arranged at one side. One set of folding-knives then folds one end of the package, which is re-pressed and completed in another receiver by an additional plunger and another set of folding-knives.

Claim.—1. The combination of the endless-band carrying-trough and flange-box E' with rollers D and D', or their equivalents, by which the tobacco or other material may be packed into the said carrying-trough to a uniform depth.

2. The knife or comb F' and plate *b*, having such a motion imparted to them that they will convey the measured tobacco or other material beneath the plate *b'*, and, returning, leave the tobacco beneath the said plate.

3. The combination of the carrying-trough and plate *b'* with the plunger G, having such horizontal and vertical movements imparted to it that it will descend into the feeding-trough and force the measured tobacco from beneath the plate *b'*, all substantially as set forth.

4. The combination of the traversing feeding-trough, plate *b'*, and receiver H, into which the tobacco or other material is forced by the plunger G.

5. The folding-knife *s*, operating substantially in the manner described, in respect to the retaining folders m^1, m^2, and m^3.

6. The combination of the receiving-box M with the hinged door O.

7. The combination, substantially as herein described, with a machine for packing tobacco and other material, of a printing-press, whereby the required impression or impressions may be imprinted on the wrappers before the latter are fed to the packing-machine.

8. The combination, in a packing-machine, of the packing mechanism described, or its equivalent, and a machine whereby continuous strips of paper and foil are brought together, printed, cut, and fed to the folding mechanism, as set forth.

143,546.—Process of Treating Fibrous Substances for Paper-Pulp.—Albert Ulsemer, Pforzheim, Germany. Application filed October 1, 1872.

Wood, cut up into small pieces, is put into closed vessels, in which it is treated at a gradually-increasing pressure, and at a temperature corresponding to the same, with a caustic-soda lye, several times renewed and heated beforehand. The means for treating the wood under a gradually-increasing pressure in these same substances in the wood, which, in the beginning are dissolved at a comparatively low heat, are precipitated again at a higher temperature as insoluble matter.

Claim.—The process, herein described, of cooking, krivisting, and washing wood and other vegetable fibrous materials, by exposing the same in a cut or separated state, within a closed vessel or vessels, to the action of hot caustic-soda lye as a gradually-increasing pressure and temperature, several times repeated, substantially as specified.

143,547.—Extension for Stove-Flues.—Francis Warner, Troy, New York, assignor to Susan S. Huntington, same place. Application filed August 27, 1873.

The extension *d* of the flues *f* may be readily detached and a new one substituted therefor.

Claim.—1. The detachable piece or pieces that form the inner and top part of the descending flue or flues of a cook-stove, that may be put in position or replaced whenever desirable without removing the fire-pot or disconnecting the stove, substantially as and for the purposes described and set forth.

2. The combination of the detachable piece or pieces *d*, that form the top part of the descending flue or flues, with a fire-pot, C, and the descending flues *f*, substantially as and for the purposes hereinbefore described and set forth.

143,548.—Furnace for Tempering Castings, &c.—William M. Watson, Tuscon, Ill. Application filed August 9, 1873.

A jet of air or steam is admitted into the combustion-chamber to promote combustion and urge the draft, the current being deflected directly upon the rotary table by the pendent bridge. The annular pan, into which dips the flange of the rotary table, is filled with ashes to form a seal.

Claim.—1. The combination of the air or steam jet pipe or nozzle D with the fire-chamber B, reverberatory chamber E, and rotary tempering or hearth table G, substantially as described.

2. The annular ash-pan J, combined with the annular flange *e* and the rotary table G, substantially as described.

3. In a furnace for tempering castings, the reverberating chamber E, having an overhanging wall or deflecting bridge, *h*, which will direct the heated products downwardly upon the castings on the turn-table, substantially as described.

143,549.—Machine for Heading Rivets.—Joseph A. Wells, Waterbury, Conn. Application filed April 26, 1873.

The heading-plunger *d* and sleeve *r* are permanently fixed to the reciprocating cross-head A, while sleeve *b*, loose on the plunger and backed up by a spring, is held projected outward to center and steady the end of the wire to be headed until meeting die *c*, which stops its further movement, while the plunger still advances.

Claim.—In a heading-machine, the combination of the movable header-block A, sliding sleeve *b*, encircling the drive-pin *d* and having a collar-stop, *s*, the outer case *r*, having a corresponding interior shoulder, *t*, and spring *e*, all operating in the manner as shown and described.

143,550.—Locomotive Head-Light.—William Westlake, Chicago, Ill. Application filed August 21, 1873.

In order to facilitate the lighting or trimming of locomotive head-lights during high winds or while the locomotive is in motion, the lamp and reflector is mounted rigidly on a platform, which revolves horizontally, bringing the lamp before an opening in the outer case, out of the direction of the wind. This opening has an elastic cover, slitted for the passage of the hand, and while, closing around the wrist, prevents ingress of wind to the lamp.

Claim.—1. The revolving platform I, supporting and carrying the lamp and reflector within and independently of the outer case of a locomotive head-lamp, provided with a suitable door or opening to allow access to the interior, substantially as and for the purpose specified.

2. In a locomotive head-light, the elastic or yielding covering E for filling the space between the arm and the boundary of the hand-hole, substantially as and for the purposes set forth.

143,551.—Automatic Gate.—Edward P. Wheeler, Corinth, Miss. Application filed September 9, 1873.

The rear cord, which passes half around the head-post and thence through an eye to the latch-cord, operates the gate by pulling the hand-levers. The inner cord passes to the front of head-post and directly through the eye to the latch-cord, and operates the gate by pushing the hand-levers. The gate is thrown open in either direction.

Claim.—The arrangement of the cords P P' and M M' in front of the gate-post A, with the hand-levers K K', head-pcss O, latch-cord Q, and latch H, for opening and closing the gate in either direction, as herein specified.

143,552.—Stop Mechanism for Looms.—Henry F. Wheeler and William O. Wakefield, Boston, Mass., assignors to themselves and George Allen, same place. Application filed April 5, 1873.

At each end of the lathe is pivoted a detecting-finger, and when the weft fails each presses down a lever in a socket in the

lathe, causing one of the levers to strike the knocking-off lever. These rocker-levers are connected by a shaft so that the depression of either will stop the loom. The detector and rocker-lever are so constructed that the latter is held up in normal position by the fingers as long as the weft is present. A sliding pin in the lathe holds up the detector until pressed back by striking the cloth-beam at the beat-up, when the detector is released and allowed to fall and feel for the weft. To the detector is pivoted a swing-finger extending down in front of the lathe to prevent the picks, already beaten up, from falling back upon the lathe, and also yielding to let the last pick by as the lathe starts back.

Claim.—1. The arms *g*, levers *n*, and pins *i*, constructed and arranged to operate substantially as shown and described.

2. In combination with the arms *g*, and pivoted thereto, the fingers *a*, operating substantially as and for the purpose set forth.

142,553.—Sofa-Bedstead.—SAMUEL M. WEIS and SYLVESTER A. WEIS, San Francisco, Cal. Application filed May 17, 1873.

The main frame and secondary frame and the two head-pieces are all hinged together, and when it is desired to change the position of the folding-frame and head-piece a cord is drawn, which operates a lever under the main head-piece and releases a catch so that the hinged head-pieces can drop to a horizontal position, when the frame can be folded or unfolded.

Claim.—In a bed-lounge, the secondary head-piece A', head-piece A, and folding frame B', attached together as described, in combination with the lever F and its connections, as described.

142,564.—Slide for Extension-Tables.—ALFRED ZEH, GEORGE P. LIVINGSTON, and PETER V. W. CULLINGS, Gallupeville, N. Y. Application filed March 21, 1873.

The sliding rails are constructed with grooves, having iron rods laid therein, said rods being fastened at their ends. Nuts are attached to the opposite face of each consecutive rail that slides on said rods.

Claim.—The slide-rails A B constructed with grooves *a a*, and the rods D D laid therein, substantially as shown, combined with the sliding nuts E E, each moving on the rod D of the opposite rail, as and for the purpose set forth.

REISSUE PATENTS.

5,586.—Concrete Pavement.—GEORGE BASSETT, Syracuse, N. Y., assignee of one-half interest to THOMAS G. BASSETT.—Patent No. 132,630, dated October 29, 1872. Application filed August 16, 1873.

The joints are made of calcined plaster, so that they will yield readily when the blocks are to be removed for repairs or from other causes. The joints are also made wider at the bottom than at the top, to facilitate the removal of the blocks.

Claim.—1. The concrete-pavement blocks A, united with joints B of calcined plaster, substantially as specified.

2. The method of constructing the joints of calcined plaster or other cement by plastering it on the edges of the concrete blocks under a projecting straight-edge so as to gage both the height and width of the joint of cement, substantially as specified.

3. The joint B, made thicker at the bottom than at top, as and for the purpose specified.

5,587.—Car-Coupling Attachment.—WILLIAM G. BROWN and JAMES W. JEDKINS, Monmouth, Me.—Patent No. 135,202, dated January 28, 1873. Application filed July 23, 1873.

A bail for guiding the link of one car, having arms arranged so as to receive and guide the link of an approaching car.

Claim.—The combination of the draw-bar B, the bail E, provided with inclined arms M and a device for actuating the bail E, to operate together substantially in the manner and for the purpose set forth.

5,588.—Speaking-Tube.—CHRISTIAN A. FREDERICKS, Brooklyn, N. Y.—Patent No. 135,421, dated February 4, 1873. Application filed August 21, 1873.

A plate or piston at the end of the speaking-tube, just above the mouth-piece, is connected by a wire to an external plate, so as to indicate to the eye, by its position, when the tube has been blown into from the opposite end. The seat of the hinged whistle is so inclined that the whistle will fall freely into place, and be so held firmly by gravity when not raised by hand.

Claim.—1. The indicator composed of the plate I, rods J J, and plate K, in combination with a speaking-tube, substantially as shown and described.

2. The arrangement of the inclined valve-seat D, in combination with the flat interior sides of a speaking-tube, whereby the valve, closing by weight, is guided by said interior sides of the tube, substantially as shown and described.

5,589.—Apparatus for Grooming Horses.—JOHN JAMES GREENOUGH, Syracuse, N. Y.—Patent No. 118,449, dated August 29, 1871. Application filed January 24, 1873.

A jointed arm or axes united by couplings or gearing, connecting the driving power with a revolving cylindrical brush, sponge, rubber, cloth, or other tool.

Claim.—A grooming-machine whose main driving-wheel, or shaft to which the motor is applied, is connected to the brush by means of a jointed connecting rod or shaft, constructed of such parts and proportions as to permit the tool to be applied readily to the animal, as set forth.

5,590.—Combined Water-Wheel and Sewing-Machine.—ISAAC HYDE, Oakland, assignor to OSCAR J. BACKUS, San Francisco, Cal. Patent No. 131,616, dated September 24, 1872. Application filed June 5, 1872.

The wheel is applied to the driving-shaft of the machine, and is inclosed in a case, the lower part of which is formed so as to carry off the water as rapidly as it falls from the wheel. The supply of water is regulated by a cock, to which a pedal is attached for operating it.

Claim.—1. In combination with the water-wheel C and pipe *e*, the cock *g*, with a horizontal operating-rod, h, and foot-lever or pedal I, substantially as and for the purpose described.

2. The pocket D', constructed to receive water falling from the wheel C on both sides of the plane *y y*, substantially as described.

3. The driving-shaft B, connected with a needle-bar at one end, and carrying on its opposite end an inclosed water-wheel, substantially as described.

4. The treadle-cock *g* and base-board A^2, applied to a sewing-machine table, and so as to be movable with it, substantially as described.

5. A rotary motor consisting of a water-wheel and its casing, sustained both by the frame or table of the sewing-machine and by a shaft of the operating mechanism of said machine, substantially as described.

6. A vertically-revolving water-wheel, in combination with an inclosing-case, which has a projecting spent-water pocket, D', to prevent the spent water from acting upon the wheel, substantially as described.

5,591.—Bed-Bottom.—ANDREW TURNBULL, New Britain, Conn. Patent No. 126,436, dated June 25, 1872. Application filed June 6, 1873.

The bed-bottom is formed of diamond-shaped links, each of which, with hooks at its angles for connection, is one rigid piece.

Claim.—1. As a component part of a bed-bottom, a diamond-shaped link made of one piece, and provided with means of connection to the next adjacent link, substantially as described.

2. A bed-bottom composed of a succession of diamond-shaped links, each joined to the next longitudinal and transverse links by a rigid or non-elastic connection at the angles of the said links, substantially as described.

5,592.—Envelope.—RICHARD K. KUHN and THOMAS O. ATKINSON, Doylestown, Pa.—Patent No. 135,819, dated February 11, 1873. Application filed September 24, 1873.

One end is cut and folded to form an angular projection from the main pocket, which extension may be torn off without injuring the contents of the envelope.

Claim.—An envelope having one or more angular projections in continuation of the main pocket, adapted to be torn or cut off to open the package without injuring the contents of the latter, substantially as described.

5,593.—Suspender.—THOMAS O. POTTER and JOSEPH W. SMITH, Boston, Mass., assignors to THE BAY STATE SUSPENDER COMPANY.—Patent No. 116,093, dated June 21, 1871. Application filed February 26, 1873.

The shoulder-straps are connected by a cross-piece adjustable upon them lengthwise by means of a metallic sliding loop.

Claim.—1. A suspender and shoulder-brace combined, consisting of the shoulder-straps A A', the dorsal strap B, and the connecting-straps D D', when the front ends of the shoulder-straps are free, and when the dorsal strap is connected to each of the shoulder-straps at C, and also by means of connecting-straps D D', the whole being substantially as described.

2. The combination of the shoulder-straps A A', and dorsal strap B, when united together at C, with the connecting-straps D D' and their attachments E F F', whether these connecting-straps be adjustable or not, the whole arranged and operating substantially as described.

3. The combination of two straps, A and D, and the sliding loop F, substantially as described.

4. A strap, D, in combination with the devices F, each consisting of a loop united to a slide, and one at each end of the strap, as above described.

5,594.—Carving-Machine.—BENJAMIN J. TAYMAN, Philadelphia, Pa.—Patent No. 126,904, dated May 21, 1872; antedated May 8, 1872. Application filed August 4, 1873.

The arms D and D', having yokes transversely arranged and connected by loose screw-joints, admit of motions in every direction.

Claim.—1. The combination of the rods D and D', yokes E, E^1, and E^2, and joint-pins G and G', and wrist-joint b', for giving a shoulder-and-elbow movement, substantially in the manner and for the purpose above described.

2. The combination of the cutter-stock H, rod D', yoke E^2, joint-pin G', and wrist-joint b', substantially as set forth.

3. The combination of the sheaves *u*, *u*, *u*, and *u*, with the cutter-stock H, hand T, and bar D', having the movable wrist-joint b', for holding and guiding the hand, so as to keep it in line with the sheaves E^1 and E^2 during the lateral turning of the cutter-stock, substantially as specified.

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DIGEST OF FOREIGN PATENT LAWS.

PRUSSIA.

Report by Mr. T. N. Plunkett, of the British Legation.

The fifth paragraph of the fourth article of the Imperial Constitution of May 15, 1871, declares that questions concerning patents and patent laws are reserved to the Reichsrath, and are no longer to be dependent on the different governments which compose the German Empire. Nevertheless, no uniform legislation applicable to the whole of Germany has been as yet established.

On the 10th of May last a petition was presented to the Reichsrath requesting the Chancellor of the Empire to take advantage of this provision of the constitution, and to prepare a bill for introducing a general patent law for the whole empire. An animated and lengthy discussion then took place between the advocates of a patent system and its opponents, both of whom, however, agreed in recommending the petition to the notice of the government, on the ground that nothing could be worse than the existing state of things, and that a remedy of some kind was most urgent.

Dr. Banks, the reporter of the committee which had examined the petition, made use of the following strong expressions while recommending the house to adopt it:

"I think there is no authority in the Prussian State, not even that which is charged with the granting of patents, which is not of opinion that of all the systems of patent legislation the Prussian system is about the worst. . . . . Yes, gentlemen, there does not exist in this world a thing more motley and confused than the patent system of Germany. You have in Germany some states which, like Prussia, found their patent system on preliminary investigation, others which adopt the application system. You have some states—as, for instance, the palatinate of the Rhine—which have the most absolute form of simple application, as introduced in 1791 in the French Republic; in Alsace-Lorraine we have the modern French system; and, finally, we have also in Germany several states which, although possessing no legislation whatever respecting the granting of patents, nevertheless grant them all the same.

The inconvenience arising from this confusion has been keenly felt for years past. In the year 1868 an effort was made by the government of the North German Confederation to call the attention of the federal parliament to the matter. The message, however, of the chancellor, dated December 10, 1868, has so far produced no result, although it was freely alluded to in the course of the discussion, from which I have just made a quotation. In the meanwhile the confusion, which was found so intolerable, even before the creation of the empire, has been, of course, increased by the absorption of Bavaria, Würtemberg, Baden, and Alsace-Lorraine, with their different and contradictory legislations, into the common fatherland.

Matters of more thrilling and immediate interest have hitherto prevented the German Parliament from giving to the question of patents the attention which it deserves; but I have good reason to believe that it will again be mooted as soon as the Reichsrath reassembles, and that the government will again be urged to take steps for repealing all the existing laws on the subject, with a view to establishing a uniform and intelligible system of patent legislation in Germany.

The imperial government have not, as far as I am aware, compromised themselves by any direct expression of opinion in this matter.

The message, however, of 1868, although only professing to call the attention of the Reichsrath to the urgency of remedying the confusion in the existing patent arrangements of the North German Confederation, distinctly gave it to be understood that in their opinion the best solution of the question would be simply to abolish patents altogether.

Moreover, in the debate already mentioned, Switzerland and Holland—the two countries in which patents are not recognised—were frequently cited as examples, which it would be wise for Germany to follow.

It may therefore be expected that whenever the question is mooted again a very strong push will be made to induce the Reichsrath to settle it once for all, in a summary and conclusive manner, by repealing the various existing patent laws without passing any new one in their place.

Having offered these preliminary remarks upon patents in the German Empire, I will now proceed to give, as briefly as possible, a review of the principal points affecting the law and practice of the Kingdom of Prussia with regard to inventions.

The legislation of Prussia on these matters is based on a rescript of October 14, 1815, on various ministerial decisions as to the precise meaning of particular portions of it, which have been given from time to time when occasion arose; and also on the agreement come to in September, 1842, between the different States of the Zollverein respecting patents.

In the main, however, the practice in Prussia is as follows:

Patents can be obtained both for discoveries and for improvements; and also for the introduction into Prussia of inventions patented abroad.

New goods, new machines, new tools, and new modes of fabrication can be patented; but only on the condition that they are useful to industry and manufacture, and afford new means of industrial development.

Patents are never granted in Prussia for inventions of an artistic nature; the only excuse for a patent is that the invention shall have industrial value. No invention which is not entirely new, or which is not certain to be useful to industry, has a chance of receiving a patent, for the rules are administered with the greatest severity.

Articles or inventions patented abroad may also be patented in Prussia, provided, however, that no description of them shall have been published either here or elsewhere, and that no use shall have yet been made of the invention in Prussia.

This latter provision materially affects British inventors, and is a cause of constant vexation to them. Every patent which is granted in England is published with all its details in London in the official journal of the patent office. This, as well as every mechanical and industrial newspaper or periodical of any consequence published in the world, is regularly read at the department in Berlin, which is charged with the administration of the patent laws. This department subscribes to over one hundred such periodicals, the contents of which are carefully sifted, and the principal points entered into ledgers for future reference—an operation which I am assured by the director entails an enormous amount of labor on his subordinates.

When once the details of an invention have been published, either in Germany or elsewhere, officially or unofficially, before the application for the Prussian patent has been made in Berlin, it is invariably refused.

An article which is patented abroad may be patented in Prussia, if it fulfills the necessary requirements, by anybody.

No rights whatever are reserved to the original patentee, except in the case of patents taken out in other German countries.

Under the agreement concluded between the Zollverein States in 1842 when a patent has been given for an invention in any one of those States, it secures to the patentee the sole right of applying for a patent for the same article in all the other States of the Confederation; but it does not necessarily follow from this that the Prussian authorities will give patents in every case where other German governments have done so.

In Saxony, Bavaria, and Würtemberg, for instance, patents are much more easily obtained than they are in Prussia.

Patents are granted only to natives, or to the subjects of such countries as by treaty are entitled to most-favored-nation treatment. Therefore, under the treaty of commerce concluded in 1865, British subjects are entitled to take out patents in this country. Subjects of those foreign countries which are not entitled to most-favored-nation treatment, if they wish to patent their inventions in Prussia, must appoint a native as their representative, and have the patent made out in his name.

The application for a patent is made direct to the Minister of Commerce in Berlin, and must be accompanied by full descriptions, and, if necessary, also by models. These are, however, kept secret from everybody except from the persons whose special duty it is to examine and report upon them.

The applications are registered immediately on receipt at the ministry, and take their precedence accordingly.

Under the Ministry of Commerce is a special department called the Technical Deputation for Industrial Matters, to whom all these applications are referred. It is their duty to examine the models, descriptions, &c., to see whether patents for similar or kindred inventions have been already given, and to ask for any further explanations which they may require. They then decide absolutely and without appeal whether they will grant the patent or not. They fix the length of time for which the patent is to hold good, and have, moreover, the right of declaring whether they will give a patent for the whole invention or only for some portion of it.

This deputation consists, at present, of nine members, under the presidency of a director of the Ministry of Commerce, and meets once a week or oftener to examine the applications for patents which have been made to the minister.

Their verdict is communicated to the person who has applied for the patent, and he is allowed a period of six weeks to decide whether he accepts or not the conditions proposed by the deputation.

If he agrees to accept them, the patent is then issued under the signature of the Minister of Commerce.

The following conditions are invariably imposed in the case of every patent which is granted:

1. The patentee must give practical effect to his invention in Prussia within the time fixed by the minister, (usually six months, never more than a year,) on pain of forfeiting his patent; and he must produce before the end of that term an official certificate from the local police, or at least from some government employé, that his invention is or has been actually in work within the Prussian dominions.

2. If at any time during the period for which the patent is granted his invention shall have been unemployed during twelve consecutive months, the patentee shall forfeit all his rights.

3. The patent shall equally be forfeited if at any time afterward it can be proved that the invention was neither new nor original.

The period for which a patent is to run is laid down, specially for each case, in the rescript of the Minister of Commerce. The law is, that it shall not be less than six months nor more than fifteen years; but it is now usually fixed at three years.

A patent which is near expiring may, in some cases, be renewed; but the entire period for which it can last must never exceed fifteen years. Such prolongations, however, have lately been more difficult to obtain than they were formerly.

Unless in cases where the applicant himself demands a special exception, patents extend to the whole Kingdom of Prussia.

The publication of the fact of a patent having been granted to an inventor is made in the official journals free of cost. Merely the fact itself is mentioned of a patent having been granted for such a number of years to such or such a person, for such or such an invention. No details are entered into, and no description is given. The exact particulars of the invention are kept in sealed covers at the office of the Technical Deputation for Industrial Matters in Berlin; and, although in the patent commission itself there is a special proviso that the government do not guarantee secrecy, they practically never allow the secret to ooze out. It would indeed appear that everything connected with this department is conducted with the view of preventing the outside world from learning what takes place within its walls.

The expenses of taking out a patent in Prussia are almost nominal.

The application for a patent must be written on stamped paper, of 5 silber-groschen—say, 12 cents.

The answer of the Technical Deputation is given on stamped paper of 15 silber-groschen—say, 36 cents—and the patent itself, if granted, is liable to a stamp duty of 1 thaler—say, 73 cents. There is no further tax or duty whatever.

A patent can be sold or inherited like any other property, on condition, however, that the new proprietor shall be a Prussian, or a subject either of one of the Zollverein States or of a country entitled by treaty to most-favored-nation treatment. In these cases no notice need be given to the government, who always apply direct to the original patentee or his heirs.

Corporate bodies have the same rights as individuals in regard to the acquisition of patents.

A patent in Prussia gives to the patentee the exclusive right of working his invention—that is to say, the sole right of making the article in question; and also, in the case of machinery, the sole right of employing it when made. It does not give the right of prohibiting the sale or importation of articles which are like the article for which the patent has been obtained.

A patentee whose rights have been infringed can invoke the aid of the police to confiscate the pirated articles; but the offending party must be named before they can be seized; and it is only in case of a second offense that the articles in question can actually be confiscated. The decision in these questions lies, in the first instance, with the authorities of the "bezirk" (district,) with an appeal, in second instance, to the Minister of Commerce.

Claims for damages must be laid before the ordinary civil tribunal; and such claims may be made without the previous formality of a warning to the offending parties being required.

Patents which had been granted before 1866 by the Prussian Government, and by the former governments of Hanover, Hesse, Nassau, or Frankfort, and which have not yet expired, have force only in those special districts which at that time were under each of those governments; but all patents issued by the Prussian Government since 1866 have force throughout the whole monarchy as now constituted, unless in those few cases where, at the request of the patentee himself, a special reservation is made.

Through the kind intervention of the Imperial Department for Foreign Affairs, I have obtained the following return of the number of patents granted in Prussia since 1861.

A regular list of the applications for patents has been kept only since the 1st of April, 1870.

Return of the applications made and the number of patents granted.

Year.	Applications made.	No. of patents granted.
1861	No return.	102
1862	" "	74
1863	" "	71
1864	" "	69
1865	" "	64
1866	" "	60
1867	" "	103
1868	" "	83
1869	" "	63
1870	551 from 1st April.	74
1871	731	96
1872	817 up to middle of Nov.	Up to 1st November, 51

It will be seen from the above figures how very small is the number of patents annually obtained in Prussia; and, nevertheless, it is generally believed that this government would desire to grant fewer still, if possible.

Already, in a despatch dated August 5, 1863, the Prussian Government proposed to the Federal Diet at Frankfort to do away with patents altogether; and as the message of 1868, already alluded to, would tend to show that they had not altered their opinion in this respect, it would seem more than probable that ultimately the opponents of the patent system will obtain the solution for which they have so long contended.

In further corroboration of this desire on the part of the ruling authorities here, it is worthy of notice that a decree, dated the 13th ultimo, has lately been published, mitigating the amount of punishment to be inflicted for breaches of the patent rights in Alsace-Lorraine.

The patent system of that province still continues to be founded on the French law of July 5, 1844, hitherto in force there; but the penalties imposed by that law are abolished, and henceforth any breaches of the patent law will be punished only with the lowest punishment mentioned in the German criminal code.

All questions concerning the granting of patents in Alsace-Lorraine are henceforth to be settled directly by the President of the Province.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

FRANCIS B. RICHARDSON *vs.* HAMILTON D. LOCKWOOD.

[*Before Clifford and Lowell, Justices.—Decided August* 13, 1873.]

If a syringe has been previously known having a bulb with a screw upon it, by which a flexible tube could be attached to it, it is fatal to a patent which claims "so forming the connection between the bulb and its flexible tube that the bulb can be used separately with a jet pipe, as well as with its flexible tube, thus adapting the syringe to all the various operations for which it may be required, as described."

Even if those who made the prior syringe never thought of attaching a jet pipe to the bulb, that will not avail to save the patent.

Evidence of the prior use of the patentee's invention given by a witness who was not referred to in the answer, left out of consideration, although it might be said that it showed the state of the art.

[*Henry T. Fronk*, for complainant.
C. Austin Browne, for defendant.]

LOWELL, *J.*:

The claim of the plaintiff's patent, as reissued, is "so forming the connection between the bulb and its flexible tube that the bulb can be used separately with a jet pipe as well as with its flexible tube, thus adapting the syringe to all the various operations for which it may be required, as described."

This appears to be a very useful feature in a syringe, and it has been used by the defendant. The only question is, whether it is new. The patent is evidence of novelty, and there is little else in the case to prove it. On the other hand, it is testified by two witnesses for the defence that it has long been the habit of mechanics to connect tubes to bulbs by a screw, which is the mode adopted by the patentee. One of these witnesses, Mr. Shartle, testifies that syringes were made with a screw connection, by which different sorts of tubes could be attached to the bulb, and that they were in common use some years before the date of the complainant's invention. As, however, this witness was not referred to in the defendant's answer, some doubt may be entertained whether he can be relied on to support it. It may be said, in favor of admitting the evidence, that it merely shows the state of the art; but we think it safe to leave this piece of testimony out of consideration.

Our impression at the hearing was, that the Davidson syringe itself as made, and as described in the caveat, was an answer to the plaintiff's claim, and we are still of that opinion. But in order not to decide too hastily against the patent, and considering that if our ultimate opinion should remain the same the delay would not be injurious to either party, we have taken time, and have carefully examined again the evidence. We are satisfied that the opinion given upon the matter of fact in former suits between these parties, one of which was affirmed by the Supreme Court in 8 Wallace, 230, was sound, and that Davidson did make the precise form of syringe which he has always testified to, or, rather, that the two Davidsons made it; and that form includes a connection, by means of a screw, between the bulb and the tubes.

It may that the Davidsons did not perceive all the advantages which this mode of connection would give to a syringe. In their caveat they seem to consider that the chief value of making the syringe in parts is, that it may be easily cleaned and dried. But if they made the syringe, for whatever purpose, in this way, it seems to us they can allege that no one else is entitled to a patent for making one in that way. If, therefore, the proof is not clear and distinct that this feature was a matter of common knowledge, still it seems to have been known to the Davidsons. The identical piece of metal which they made is sworn to, and we do not think the evidence has ever been discredited.

Bill dismissed with costs.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

[*In equity.—Before Shepley, Judge.—Decided August* 1, 1873.]

JOHN KENDRICK *vs.* THOMAS A. EMMONS.

The mechanism in a heddle-machine which gages the size of the loop, as described in Ellis and Sladden's English patent, No. 117, of 1864, is an infringement, when used in this country, of the patent granted to Joseph S. Winsor, January 2, 1855, and reissued to him and his assignees February 11, 1873.

[*B. F. Thurston* and *W. W. Swan*, for complainant.
A. K. P. Joy, for defendant.]

SHEPLEY, *J.*:

This is a motion for a preliminary injunction by the assignee of the reissued patent No. 5,292, dated February 11, 1873, for an improvement in machines for making weavers' harnesses, the invention of Joseph S. Winsor, of Providence. The defendants use machines constructed substantially in accordance with the English patent granted to James Ellis and Joseph Sladden the 12th day of July, 1864, dated the 15th of January, 1864, and numbered 117, for the year 1864. The original Winsor patent was dated January 2, 1855; extended for seven years, and reissued, as above stated, in 1873.

Infringement is claimed of the third, fourth, and eighth claims of the reissued patent. The two machines are each marvels of mechanical ingenuity and invention. As a whole the English machine is clearly not substantially the same as the Winsor machine in construction or mode of operation. The harness produced by the English machine is, as a whole, a substantially different manufacture from that produced by the Winsor machine. But in the Winsor machine there is described a device called fingers, which are located between the side bands to which the heddles are attached, the office of the fingers being to gage the size of the eye or loop of the harness. These fingers are two pointed rods of metal, around each of which a half knot is tied, and the size of the eye or loop is determined by the distance by which the fingers are separated from each other. The bifurcated plate in the English patent, as well as the two rods substituted for it, and performing the same office as the bifurcated plate, accomplish in substantially the same manner and for substantially the same purpose what is accomplished by the fingers operating in the Winsor machine to gage the size of the eye. As described in the English patent, this "fork then drops in betwixt the yarn on each side of the noose, and which sets and holds the noose to its proper size and position, until the yarn is again drawn out to the lappers." And in another place in the patent reference is made to "a recess which the fork takes hold of and retains it until another draw-out of the yarn is effected, and another noose is formed in like manner, and so on."

The two machines were operated in the presence of the court, and from inspection of the respective machines in operation, the court is of opinion that the device in the English patent, which is described as a fork, bifurcated plate, or retainer, is an infringement of the third claim in the Winsor patent, which claims "the fingers located between the side bands and operating to gage the size of the eye." As this device in the English machine is used in combination with mechanism which operates to tighten or draw up the twine, out of which the next heddle is formed, the fourth claim of the reissued patent is also infringed.

Injunction to issue, unless defendant will give bond to account for such profits and damages as may be ascertained by final decree, and render into court the usual account of manufacture and sales.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,590.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

23,697.—Fastening Metal Hoops on Cotton-Bales.—Granted to JOHN T. BUTLER, November 15, 1859. Application filed August 7, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,698.—Machines for Folding Paper.—Granted to CYRUS CHAMBERS, Jr., November 15, 1859; and reissued August 12, 1873. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,697.—Electro-Magnetic Telegraphs.—Granted to MORSE G. FARMER, November 15, 1859; and reissued December 10, 1872. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,126.—Billiard-Table Cushions.—Granted to GEORGE D. SHARP, November 15, 1859; and reissued April 8, 1873. Application filed August 16, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,135.—Portable Pumps.—Granted to WILLIAM T. VAIL, November 15, 1859; reissued February 26, 1861. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,136.—Mode of Advertising.—Granted to EDWARD WEBB, November 15, 1859. Application filed August 18, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,139.—Pumps.—Granted to WILLIAM WORRY, November 15, 1859. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,145.—Cocks for Water-Closets.—Granted to DARIUS WELLINGTON, November 15, 1859. Application filed August 11, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,147.—Machine for Bundling Kindling-Wood.—Granted to WILLIAM L. WILLIAMS, November 15, 1859; and reissued October 4, 1870. Application filed August 14, 1873. Testimony closes October 14, 1873. Hearing October 29, 1873.

23,177.—Rubber Belting.—Granted to DARIUS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

23,178.—Making Rubber Belting.—Granted to DARIUS C. GATELY, November 22, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

23,202.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 29, 1859; and reissued July 2, 1867. Application filed August 20, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

23,243.—Water-Closet Basins.—Granted to WILLIAM ROOM, Sr., November 29, 1859. Application filed June 18, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,244.—Machines for Registering Hands.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 20, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,263.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. PERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

23,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

23,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1869. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

23,403.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

23,419.—Seed-Planters.—Granted to WILLIAM BRADNER, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

23,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

23,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 31, 1860. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

23,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 22, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,462.—Pipe-Molding.—Granted to John Ferth and John Ingham, December 30, 1859, and reissued April 26, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,467.—Screw-Taps.—Granted to William and Robert Fowne, December 30, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to James A. Lowe, December 30, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,512.—Nail-Plate Feeder.—Granted to John Newell, December 30, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to George Cook and Hannibal I. Kimball, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,580.—Harvesters.—Granted to John Gore, December 27, 1859, and reissued January 15, 1861. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to Jonathan P. Grosvenor, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to Samuel Lesso, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to Bradford S. Pierce and Mason R. Pierce, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to Benjamin F. Stuntevant, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. Hawes, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to Lester T. Hulbert, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to Francis C. Lowthrop, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,735.—Waste-Cocks of Hydrants.—Granted to George W. Robertson, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,805.—Manufacture of Boots and Shoes.—Granted to Francis D. Ballou, January 10, 1860, and reissued April 29, 1862. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,829.—Tool for Cutting Round Tenons.—Granted to Levi A. Dole, January 10, 1860. Application filed September 26, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to Samuel J. Oldroyd, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to George M. Cummings, January 24, 1860. Application filed September 29, 1873. Testimony closes December 22, 1873. Hearing January 7, 1874.

26,909.—Lamps, granted to George Nelson, January 24, 1860. Application filed October 16, 1873. Testimony closes December 22, 1873. Hearing January 7, 1874.

27,065.—Coffee-Mills.—Granted to John and Edmund Parker, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to John T. Lowt, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Singeing Pigs, granted to Abraham and Edward M. Denny, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,263.—Fare-Boxes.—Granted to John B. Slawson, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

25,796.—Improvement in Jacquard Machines, granted to Avery Babbett, October 16, 1859, (Helen M. Babbett, executrix.)

Claim.—1. Arranging two or more trap-boards in one frame in such manner that when all the said trap-boards, so arranged, are lifted for the purpose of opening the shed all the untrapped knot-cords may pass said trap-boards without obstruction, in combination with an ascending and descending suspension-board, substantially as above described.

2. In combination with the jacquard machine, the device represented on the sides of the machine for working the journals or parts of journals, consisting of the pin-wheel Z, shaft B, hooks *y y y y*, and the hooks *o o o o*, and the dog E, substantially in the manner and for the purposes specified.

3. Dividing the journals commonly used in two or three ply jacquard weaving, and working them in any required order, substantially in the manner and for the purpose above specified.

Disclaimer filed October 11, 1873.

Disclaims third clause of claim, as above set forth.

25,797.—Improvement in Harvesters, granted to Ephraim Ball, October 18, 1859. (Daniel Corbaugh, administrator.)

Claim.—1. The hinged plate G, constructed as shown and specified, in combination with the finger-bar D and brace-plate E, substantially as described.

2. The combination of the coupling-arm *i*, swiveled only at the point of connection with the main frame, in combination with the hinged plate G, hinged brace-plate E, and guide-piece F, substantially as set forth.

3. The guide-piece F, in combination with the brace-rod *f*, hinged plate G, brace-plate E, coupling-arm *i*, and chain *b''*, substantially as described.

4. The combination and relative arrangement of spur F with coupling-arm *i* and pitman *k*, as and for the purposes set forth.

5. The combination of the hinged plate G and adjusting-screw *s* with the slotted guide-piece F, hinged brace-plate E, and chain *b''*, arranged as and for the purposes set forth.

25,807.—Improvement in Hem-Folder, granted to Levrett Clark, October 18, 1859.

Claim.—The hem-folder composed of a straight gage, *a*, an adjustable plate, C, constructed as described, and a bar, A, the whole combined as described, either arranged as shown in figures 1, 3, and 4, or as in figures 2, 5, and 6, and operating substantially as herein described.

25,814.—Improvement in Sleeping-Cars, granted to John Danner, October 18, 1859.

Claim.—1. The combination of the hinged false back *d* with the permanent back *a*, as and for the purposes set forth.

2. Making each alternate back *a* with a false back, *d*, in combination with making each alternate back *a'* shorter than the backs *a*, and hinged to the seat *a'*, substantially as and for the purposes set forth.

25,843.—Improvement in Cultivators, granted to Thomas McQuiston, October 18, 1859; reissued May 16, 1871, numbered 4,383.

Claim.—1. The combination, in a walking straddle-row cultivator, of the following instrumentalities, viz.: Two wheels, E, tongue D, axle E, and two plow-beams, A A, each beam carrying a handle, and one or more shovels or plows, and independently connected or hinged by brackets C to the axle, so as to permit of their being raised or lowered independently or moved laterally by the handle, as set forth.

2. The combination, in a walking straddle-row cultivator, of the following instrumentalities, viz.: Two wheels, E, tongue D, axle E, two plow-beams, hinged as aforesaid, and rear connecting shackles or links F, all operating in combination, substantially as and for the purpose set forth.

3. The plates H, interposed between the shares G and standards *a'*, for the purpose set forth.

25,869.—Improvement in Weeding-Hoes, granted to James M. Adams, October 18, 1859.

Claim.—The arrangement of the two blades with the bifurcated handle, the whole being constructed in the manner and for the purposes herein set forth.

25,867.—Improved Machine for Covering Saddle-Trees, granted to John Maclure, October 18, 1859.

Claim.—The employment of an elastic bed or cushion, D, in combination with the cover and seat J, substantially as and for the purpose herein shown and described.

2. The arrangement and combination of the box B, adjustable sliding bars E, elastic cushion D, seat J, clamp K, and pressing-lever G, as and for the purposes herein shown and described.

DISCLAIMERS FILED.

25,796.—Helen M. Babbett, executrix of Avery Babbett, deceased.—**Improvement in Jacquard Machines,** dated October 16, 1859. Disclaims:

"The third claim in said specification."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 14, 1873.]

6,956.—Door-Knobs.—Joseph O. Hollis, Boston, Mass. Application filed October 2, 1873. Term of patent 3½ years.

6,957.—Rubber Boots.—Lewis L. Hyatt, New Brunswick, N. J. Application filed May 10, 1873. Term of patent 14 years.

6,958.—Stove.—John Martino, Philadelphia, Pa., assignor to Charles Noble & Co., same place. Application filed August 16, 1873. Term of patent 3½ years.

6,959.—Picture-Frames, &c.—John Nonnenbacher, New York, N. Y. Application filed September 19, 1873. Term of patent 3½ years.

6,960.—Statue.—John Rogers, New York, N. Y. Application filed September 4, 1873. Term of patent 14 years.

6,961.—Kite.—Samuel M. Simonds, Philadelphia, Pa. Application filed September 15, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date October 14, 1873.]

1,488.—Boot and Shoe Blacking.—Louis Amson & Co., New York, N. Y. Application filed September 27, 1873.

A group of a boot, bird, boy, and monkey. The words 'Jacquot & Co., brush-blacking,' above; the words 'Paris. Louis Amson & Co., New York, sole agents for the U. S.,' below."

1,489.—Blacking or Grease for Shoes, &c.—Louis Amson & Co., New York, N. Y. Application filed September 27, 1873.

"A group of a girl, gaiter, table, and box of blacking. The words 'Louis Amson & Co., New York, sole agents for the U. S.,' below; and the words 'Vve Bernard's French Glycerine Blacking,' in a circle."

1,490.—Barrels of Whisky.—Derby & Day, St. Louis, Mo. Case A.—Application filed August 30, 1873.

"A green ground, containing the name of the firm, 'Derby and Day,' and the words 'Sunny South.'"

1,491.—Corset-Steel Springs.—Francis Lee Egbert, New York, N. Y. Application filed August 26, 1873.

"'Cantbreaken.'"

1,492.—Shirt.—Korn, Lebrerman & Co., Philadelphia, Pa. Application filed September 23, 1873.

"'The Universal Shirt.'"

1,493.—Brushes.—James M. C. Martin, New York, N. Y. Application filed September 23, 1873.

"A boar's head with a paint-brush in his mouth."

1,494.—Clothes-Wringers.—Queen City Wringer Company, Cincinnati, Ohio. Application filed August 7, 1873.

"'Peerless.'"

1,495.—Baking-Powder.—Royal Baking Powder Company, New York, N. Y. Application filed September 23, 1873.

"'Royal.'"

1,496.—Stoves.—James Strain & Co., Philadelphia, Pa. Application filed October 15, 1873.

"'Anti-Clinker.'"

1,497.—Grinding-Mills.—Isaac Straub & Co., Cincinnati, Ohio. Application filed August 7, 1873.

"'Queen of the South.'"

1,498.—India-Rubber Boots.—The L. Candee & Co., New Haven, Conn. Application filed September 5, 1873.

"'Equimaux.'"

1,499.—Quicksilver-Flasks.—The Quicksilver Mining Company, New Almaden, Cal. Application filed September 20, 1873.

"the letter A straddling a circle."

1,500.—Window and Mirror Polish.—Horace M. Wade, Philadelphia, Pa. Application filed September 29, 1873.

"two stars arranged one within the other."

1,501.—Medicine.—John L. Graham, Pittsburg, Pa. Application filed October 9, 1873.

"the words 'Children's Health Restorer.'"

1,502.—Lubricating-Oils.—Leonard & Ellis, New York and Brooklyn, N. Y. Application filed September 26, 1873.

"'Valvoline,' and a crescent or half-moon."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date October 14, 1873.]

ORIGINAL PATENTS.

143,535.—Oxyhydrocarbon-Gas Burner.—John D. Averell, New York, assignor of part of his right to S. A. Joyce, Brooklyn, N. Y. Application filed December 18, 1872.

The tubes conducting the hydrocarbon-gas lead from a common chamber up to the exit of the oxygen, and are inclined toward each other at an angle of about eighty-five degrees.

Claim.—The combination, in an oxyhydrocarbon-gas burner, of the sphere A, hydrocarbon pipes and burners *a b*, and oxygen-burner B, said pipes and burners being so arranged with relation to each other as to produce a flat flame, as described.

143,536.—Tailor's Measure.—Joseph Beaudry, Montreal, Canada. Application filed April 1, 1873.

A flexible metallic strip, graduated on its edges, has a short fixed arm at a right angle near one end, to be placed snugly in front of a person's shoulder, while the strip is around the body; also, two adjustable graduated blades projecting in opposite directions, the longer down the back and having a transverse adjustable arm, with studs at each end for tapes, the shorter to bend over the shoulders. The main strip has tape-studs at the various points, from which it is desirable to take measurements.

Claim.—The tailor's scale, consisting of the flexible blade A, provided with the fixed arm *a*, graduations *b c*, and studs *s*, the flexible adjustable blades B C, graduated as shown, the transverse adjustable blade D, provided with the studs *t*, and the straps E, all constructed and arranged as shown.

143,537.—Door-Hanger.—Solomon L. Bignall, Chicago, Ill. Application filed June 23, 1873.

Claim.—The wrought strap A, provided with a groove, C, and bent over at its top to receive the hub G of the roller E, and to support the pivot D, as and for the purpose set forth.

143,538.—Machine for Bending Sheet-Metal.—Charles F. Brand, Philadelphia, Pa., assignor of one-half his right to Philadelphia Architectural Iron Company. Application filed March 11, 1873.

The stationary form-plate is beveled to form an acute angle when the lever-plate is brought down to a horizontal position. The clamping-bar is held down by eccentric levers.

Claim.—The combination of the beveled-edge lever-plate C and stationary bevel form-plate B with the bench A and clamping-bar F, for forming the angles *a b* of the sheets E, substantially as described.

143,539.—Churn-Dasher.—Israel B. Compton, Seward, Neb. Application filed January 4, 1873.

Claim.—The perforated tubular staff E open at its lower end, in combination with the horizontal tubes Y and upright tubes Z opening under the dash C, the whole designed to furnish passages for the air under the dash, substantially as and for the purpose specified.

143,540.—Car-Wheel.—Almond F. Cooper, Cambridge, Mass. Application filed April 7, 1873.

Improvement on patents Nos. 90,651 and 103,573, of 1870. The inner flanges of the divided hub are secured by means of a wrought-iron ring shrunk on the flanges.

Claim.—In combination with the web and hub-pieces of an elastic packed car-wheel, the wrought-iron ring, applied substantially as described, for the purpose specified.

143,561.—Boot and Shoe Channeling Machine.—Charles S. Dunbrack, Swampscott, Mass. Application filed July 21, 1873.

Claim.—In a machine for channeling and feather-edging, the combination of the knife a a^1 a^2 a^3, and the adjustable block b with the bed-plate c, all constructed substantially as set forth, and for the purposes specified.

143,562.—Wash-Bench.—Alson G. Emery, South Boston, Mass. Application filed August 6, 1873.

On the under side of the board are notches with inclined planes and recesses, into which the ends of the struts that are attached to the folding cross-legs rest when the bench is in use.

Claim.—In a folding wash-bench the locking-notches E E, provided with the inclined planes b b and recesses c c, and arranged in the top board A, and with the two sets of folding legs and struts applied together and to the said top board, all being essentially as set forth.

143,563.—Compound for Making Artificial Stone.—William E. Fenelew, New Orleans, La. Application filed June 23, 1873.

The block of stone, composed of the heavy and light cements, when taken from the mold is first exposed for twelve hours, then placed in a bath of silicate of soda for twenty-four hours, dried twelve hours, placed in a bath composed of a solution of carbonate of lime in muriatic acid for six hours, and finally exposed to the sun and air for two days, when it is ready for use.

Claim.—In the manufacture of artificial stone, heavy Portland cement for the outside and light American cement for the inside, compounded and treated in the manner described.

143,564.—Waffle-Baker.—Samuel S. Fitch, New York, N. Y. Application filed May 7, 1873.

The waffle or pancake is subjected to heat applied to its opposite sides simultaneously.

Claim.—As a new manufacture, pancake or waffle baker, having its jaws chambered, substantially as described, and for the reception of heaters, as explained.

143,565.—Cutter-Head.—Herman Fletcher, Louisville, Ky. Application filed February 23, 1872.

The cutting-blades are pivoted in the binding-collars. The cutting-edges, working in either direction, press outwardly, and the curved surfaces become eccentric, thus giving a clearance.

Claim.—1. The combination of the spindle A and collars c A with the pivoted cutters B, all constructed and arranged to operate substantially as described.

2. The spindle A, provided with the grooves d, in combination with the rings e A provided with tongues e, and the pivoted cutters B, substantially as set forth.

143,566.—Revolving Fire-Arm.—Sullivan Forehand and Henry C. Wadsworth, Worcester, Mass. Application filed April 5, 1873.

Claim.—1. The combination, with the cartridge-cylinder in a revolving fire-arm, of a stop or friction device actuated by the lock mechanism for retaining the cylinder in proper position when the piece is at half-cock, or when the cylinder is released by the cylinder-bolt, and before the advancing hand engages the cylinder-ratchet, substantially as set forth.

2. The combination, with the cylinder B, cylinder-bolt E, and its spring a, of the friction pin or stud I, substantially as and for the purpose set forth.

143,567.—Oil-Can.—William A. Foster, Fitchburg, Mass. Application filed August 21, 1873.

A measuring-chamber arranged in the bottom of the can is connected with the discharge-pipe. The can being turned from a vertical to a horizontal position, the discharge of oil is limited to the capacity of the measuring-chamber.

Claim.—1. The improvement in oil-cans consisting in the chamber d and tube e e', applied to the can, substantially as and for the purpose described.

2. In combination with the chamber d and its tube e e', the vent-tube g, having its lower end arranged, relatively to the chamber d, substantially as shown and described.

143,568.—Stay for Ships' Sails.—Charles Freeman, Brewster, Mass. Application filed August 27, 1873.

The sail is provided perpendicularly through its middle with a stay-rope, which is made fast to the mast-head, passes through eyes or grommets on the sail, and is attached by an eye to a traveler on the deck. By this means the sail has a support through its middle, and, when shifted, is prevented in a measure, by the stay, from whipping. A slit in the upper part of sail, provided with double-eyed hanks, allows the sail to be furled without disengaging the stay-rope.

Claim.—1. The combination of the stay b and the system of hanks or running-eyes a, arranged as described, with the square sail of a navigable vessel.

2. The combination of the stay b, the system of hanks or running-eyes a, the hook or traveler c, and the rail c, together and with the square sail of a vessel, all being arranged substantially in manner and for the purpose specified.

3. The sail as provided with the slit e and two or more double-hooked hanks, K, as described.

143,569.—Brick-Machine.—David W. Glendinning, Detroit, Mich. Application filed January 31, 1873.

Having a revolving drum rotated by a traction-wheel, and a press-drum adjustably pivoted thereto, the mud being fed into the hopper above, the mold-drum and press having a strike arranged to smooth the brick in one and scrape the adhering clay from the other, the mold-drum being provided with a tripping device for dropping the bricks as the machine moves over the ground. The rear part of the hopper is partitioned off to form a mud-box, regulated by a valve. Behind is a water-tank with pipe, regulating-cock, and perforated cylinder to wet the molds that the sand will adhere to them.

Claim.—1. In a machine of substantially the described construction, the mold-drum having the sectional molds N, bottom O, followers c, guides A, springs B, hooks m, latch n, ring o, bell-crank latches p, levers P, and bell-cranks R, combined and arranged as described.

2. The combination of the cam J, operated as described, with the peculiarly-formed spring h and the latch p, as described.

3. The combination of the water-tank, pipe, and sprinkler with the mold-drum, as described.

4. The combination of the water-tank, having its pipe and sprinkler, and the sand-box, having its valve, with the mold-drum, the parts being arranged as described, for the purpose set forth.

5. The combination of the strike X with the mold-drum and press-drum, the same being so arranged as to smooth the brick in one and scrape the adhering earth from the other, as described.

6. The combination of a mold-drum with a press-drum, the latter being made adjustable, substantially as and for the purpose described.

143,570.—Dumping-Wagon.—Robert Green and William J. Thomason, Raleigh, N. C. Application filed August 21, 1873.

Claim.—The thills D, connected to the sills B of the box A above and in front of the axle, in combination with the cross-bar E, spring-catch b, and releasing-lever F, all constructed to operate substantially as shown and described.

143,571.—Barrel-Head.—Alexander Harvey, Steubenville, Ohio. Application filed August 25, 1873.

Head is formed in three sections, the middle one V-shaped; the wide end held in the cross, and sharp end by a metallic plate.

Claim.—A barrel-head constructed with overlapping joints, and in which the parts are held in place by a metallic plate, in the manner substantially as hereinbefore set forth.

143,572.—Horse Hay-Rake.—William H. Hartley, Philadelphia, Pa. Application filed July 16, 1873.

Arms are so connected to a pivoted clearer-head and the toggle-levers, which look the supporting-wheel and pivoted rake-head, that the clearer-teeth first receive a downward motion to dump the accumulated hay and then rise with the rake-teeth.

Claim.—1. The lever M, lever N, and link Q, in combination with the rake-head C, levers F, and ribs H, substantially as and for the purpose set forth.

2. The two arms V jointed to each other, and one attached to the clearer-head S, and the other jointed to the lower inner angle a of the rake-head C, and operating as set forth, and for the purpose described.

3. The ribs H, sliding levers F, toggles J, hand-rod K, and foot-lever M, combined and operating substantially as set forth.

143,573.—Bung.—Hiram K. Hazlett, St. Louis, Mo. Application filed July 3, 1873.

The bushing has screw-threads inside and outside, and with a ledge upon the interior having a shoulder for the packing. A suitable key is inserted in the opening formed by the ledge for screwing the bushing in the barrel. The bung is sealed by the pouring of lead or wax into a dovetail recess, entering partly into the bushing and partly into the bung, and afterward suitably stamped.

Claim.—1. The bung B, consisting of the bushing C, provided with the threads inside and outside, as shown, and with the ledge D having the shoulders d d', &c., for the purpose described, the stopper E, constructed as set forth, and the washer J, all constructed, combined, arranged, and operating substantially as specified.

2. In the bung B, the recess K, as and for the purpose described and shown.

143,574.—Dead-Light for Steam-Boilers.—John C. Hoadley, Lawrence, Mass. Application filed July 19, 1873.

The outer disk and insulating chamber protect the inner disk from sudden changes of external temperature, while the inner disk protects the outer one from the hot water in the boiler.

Claim.—The boiler dead-light provided with the two glass disks A B and the insulating-space D, and the elastic packing C between them all, substantially as explained and represented.

143,575.—Shutter-Fastener.—Abram A. Hoagland and William Meeker, Oneonta, N. Y. Application filed July 15, 1873.

A hinged horizontal cylinder has a hopper above and an interior rotary shaft passing through its center, carrying mixing and feeding blades. A sliding gate below the lower mouth, when open, permits the mortar or clay to pass between two rolls beneath for a more thorough crushing, these having cleaning-scrapers.

Claim.—1. The combination, in the cylinder, of the part B, provided with hopper F, and the part C, having the sliding gate G, the parts being connected by hinge D, to form the cylinder, substantially as and for the purposes set forth.

2. In a mixing-machine, the ribs I and J, provided with the teeth or blades H or K, for attachment, respectively, to the cylinder and shaft, as and for the purposes set forth.

143,576.—Carriage-Spring.—George Hopson, Bridgeport, Conn. Application filed February 5, 1872.

Claim.—1. The spring-plates A A, having bearings C C, in combination with bolt F, when all are constructed as described.

2. The cup-bearings, formed by the projections B B forged to spring-plates A A, in combination with bolt F having head E, as described, and the cup-shaped nut E', substantially as set forth.

143,577.—Photographic Printing-Frame.—William H. Jacoby, Minneapolis, Minn. Application filed March 7, 1873.

By the particular construction and arrangement of the parts indicated in the claim positive pictures may be printed from negative plates, either upon porcelain or other surfaces, by contact in the usual manner, by the same frame without the addition, substitution, or removal of any of its parts.

Claim.—1. The combination of the movable or adjustable bed a, levers c, rods c^1, handles c^2, springs f, and clamping-rods g g, in the manner and for the purpose substantially as described.

2. The combination of the parts named in the preceding claim with the springs i i, substantially as and for the purpose described.

3. The combination of the parts named in the two preceding claims with the rests e, clamp A, when constructed and operated substantially as and for the purpose described.

143,578.—Rake.—John O. Jones, Boston, Mass. Application filed April 24, 1873.

An implement adapted to different grades of work.

Claim.—A hand rake-head formed of metal in one casting or piece, consisting of the two rows of teeth A B, the one fine, the other coarse, the central bar C, and the shank D, the same being constructed and adapted to be applied to a suitable handle, as herein shown and set forth.

143,579.—Cracker-Machine.—Gilbert J. Kingsbury, Rochester, N. Y. Application filed April 3, 1873.

Above the carrying-belt is suspended the picker or lifting roller in heads or hangers attached to the frame of the machine. Each end of said roller is provided with one or more enlargements, which have several points that are caused to impinge sufficiently upon the belt to secure the partial rotation of the roller at every movement of the belt. To the rear of the machine is attached a gathering-board on a horizontal line with a pivot in the roller about midway between the axis and top. To said board are attached rods. The free ends of said rods rest in grooves between the enlargement on the rollers, and serve to clear or lift up the dough-scraps. To said rear board is also attached a cutter to centrally divide the sheet of dough-scraps.

Claim.—1. In combination with the picker-roller B, a scrap cutter or divider, g, for the purposes set forth.

2. In combination with the pins i and roller B, the clearers b, constructed and arranged to operate in the manner and for the purposes set forth.

3. The picker teeth or pins i and roller B in cracker-machines, in combination with the dough-belt D, for the purposes set forth.

4. The combination, in cracker-machines, of the dough-belt D and primary roller B, with its picker-pins i, with the scrap or gathering board C, and clearers b, all acting conjointly as and for the purposes set forth.

143,580.—Baking-Powder for Bread.—John G. Kopping and John Weideman, Clinton, Iowa, assignors of one-half their right to Archibald B. Henry, same place. Application filed September 2, 1873.

Barley-malt flour, tartaric acid, cream tartar, soda, wheat flour, corn-starch.

Claim.—The baking compound, of the ingredients in the proportions stated, prepared in a dry state, to be mixed with the flour, all substantially as described.

143,581.—Fire and Water Proof Roof.—Joseph Long, Mechanicsburg, Pa. Application filed August 27, 1873.

Claim.—A fire and water proof roof composed of the boards A A A with the rabbets or grooves B B B sunk in the one side thereof, forming thereby the elevated edges or margins E E, which are closely joined and the joints covered with wooden caps D or zinc caps C, the boards thus joined being fastened to the laths F F of the building, and the whole roof thus prepared covered with a cement composed of equal portions of common paint and gum-shellac sanded and applied as shown at B' G, the whole combined, constructed, and used in the manner and for the purposes herein set forth.

143,582.—Shaft-Holding Attachment for Carriages.—Allen C. Maxfield, Biddeford, Me. Application filed August 19, 1873.

Designed to hold carriage-shafts in an elevated position when not in use.

Claim.—The combination of the hook a and spring b, applied to a carriage, as herein set forth, and for the purposes described.

143,583.—Fumigator for Hospital and other Uses.—Thomas J. Mayall, Boston, Mass. Application filed September 1, 1873.

Claim.—A portable fumigator for hospital and other uses, consisting of a shell or case, containing an under heating-chamber provided with a lamp, an upper chamber or receptacle to contain water, and an acid cup or vessel suspended within said chamber, the acid-cup and upper chamber being closed by a perforated cover common to both, as shown and set forth.

143,584.—Caliper.—William H. Miner, Boston, Mass. Application filed August 13, 1873.

One leg of the caliper has a curved slotted arm. Through the slot passes a pin, upon one end of which is a screw, upon which is a milled nut for clamping this arm to a collar near the middle of the pin. On the other half of the pin is a milled sleeve, the inner end of which is eccentric, and fits through a round hole in one end of a link, the other end of which is pivoted to the other leg of the caliper. The slot, screw, and nut are for approximate, the eccentric and link for minute, adjustment.

Claim.—In the calipers as described, the flat arm B, the rotary eccentric c, and head d, the arbor e, the shoulder f, the screw g, and nut A, arranged and combined together as set forth, and applied to one of the caliper-legs A A', and also to the slotted limb B of the other, all substantially in manner and to operate as specified, whether the calipers be provided with or be without the clamp-screw C and nut D, arranged with them as explained.

143,585.—Shutter-Fastening.—James A. Morris, Atlanta, Ga. Application filed September 5, 1873.

An annular rack of cast metal, having a series of cog-teeth or stops upon its upper surface, is rigidly attached to the shutter, near the bottom, so arranged as to have a rotary motion traversing through an opening in the shutter or door to which it is secured. There is also a drop-catch in a case attached to the inside of the shutter, the catch having a lifting pin or stud and a serrated or toothed face, engaging automatically with the teeth or cogs of the annular rack.

Claim.—The annular rack C, rigidly secured to the blind, in combination with the drop-catch F, held in the case E, as described.

143,586.—Hay and Cotton Press.—Joseph Müller, Nacogdoches, Tex. Application filed July 5, 1873.

The press is placed upon a bed-plate, which is connected with a weighing device, so that the weight of each bale may be uniform.

Claim.—The press A, so resting on a pivoted platform, A, as to operate in connection with an ordinary scale, substantially as described.

143,587.—Stone Pavement.—Thomas D. Owens, Pittsburg, Pa. Application filed September 9, 1873.

Claim.—The within-described pavement, composed of a bottom layer of broken stone, an intermediate layer of fine sand, and a top layer of stone-work, the interstices of which are filled with a suitable cement or bond.

143,588.—Separator for Thrashing-Machines.—Squire R. Perkins, Greenville, Mich., assignor to himself and Thomas J. Harrison, same place. Application filed April 21, 1873.

Grain is delivered from shoe, and then discharged by worm-conveyer into vertical leg of pipe L, whence it falls into a receptacle, while chaff is drawn by a fan through the tube, and discharged at spout M. Diaphragm S prevents chaff from being carried into fan-case.

Claim.—1. The combination of the fan R, the pipe L, provided with the spouts M and N, and hollow tube O, all constructed, arranged, and operating substantially as described and shown, for the purposes set forth.

2. The combination of the cams H, the rear supports J, and the shoe G, constructed, arranged, and operated substantially as described and shown.

143,589.—Corder for Sewing-Machines.—John G. Powell, Philadelphia, Pa. Application filed August 11, 1873.

The guides are formed from the metal of the spring, one open and curved to facilitate the entrance of the cord, and the corrugated part gives the spring strength.

Claim.—The corder herein described, consisting of the spring B attached to the presser, corrugated at B', and provided with the open guides C and C' having guiding-ears, as shown, all being constructed and operating as set forth.

143,590.—Candy-Cutter.—Francis Quinn, Keokuk, Iowa. Application filed August 13, 1873.

The reciprocating frame, carrying the knives, works at each end in gates, which slide up and down in grooves in an upright frame. A horizontal arm extends from the lower sides of each gate, on a line with, and just beneath, the knives. To the end of each arm is fixed a box containing sponges, saturated with oil, and scrapers, through which the reciprocating knives pass, and are thus cleaned and lubricated.

Claim.—1. The candy-cutter having cutters C C set in one reciprocating frame, D, and having feed-board G, with its cover H fitted to it, to slide in grooves, all substantially as set forth.

2. The candy-cutter having knives with both sides beveled to make the front and back thin and the center thicker.

3. The candy-cutter with each knife passing through oil-boxes or oilers to lubricate it.

143,581.—Refrigerator.—JEREMIAH ROHRER, Lancaster, Pa. Application filed August 21, 1873.

The cross-bars for supporting the ice are hollow, forming a continuous tube, connecting at one end with the water-tank placed at one side of the ice-chamber, and at the other end with a second coil or tube passing beneath the draining-slats, so that the water to be cooled is subjected to the refrigerating effect of both the ice and drip water.

Claim.—The arrangement of the tubular ice-rack H E G, in combination with the draining-slats L L′ L″, trough M, pipe N, and tank K, all constructed substantially in the manner and for the purpose set forth.

143,582.—Car-Axle Box.—LOUIS SCHULER, Chicago, Ill. Application filed August 2, 1873.

A pendulum-lever is turned down against the front of the axle-case, a rubber tent projecting through its inner face, covering the exterior opening of the oil-duct.

Claim.—The pendulum-lever E, pivoted to the box A, and provided with the inwardly-projecting washer *d*, with relation to the oil-duct *e* of the drawer D, as and for the purpose set forth.

143,583.—Car-Coupling.—JAMES SHISLOVE, Tiffin, Ohio, assignor of one-half his right to JOHN NELIGH. Application filed March 14, 1873.

When the pin is adjusted for automatic coupling its longest leg rests on a plate pivoted to the bottom of the draw-head. The plate has a stud projecting up from it, by which it is turned from beneath the pin when the link enters. The plate is held in position either by a spring or weighted lever.

Claim.—1. The pin B, bent of plain round iron, used in connection with, and supported by, the plate C, in the manner described, and for the purpose set forth.

2. The plate C and the crank-shaped lever *a*, constructed to operate substantially as described, and for the purpose set forth.

3. The combination of the draw-bar A, the pin B, the plate C, the lever *a*, the loop *c*, and the lever E, all constructed to operate substantially as described, and for the purpose set forth.

143,584.—Shoemaker's Pincher.—THOMAS B. SHELLY, Chicago, Ill. Application filed March 7, 1873.

The upper jaw is constructed in two parts or halves, one half being cast with the lower lever. The other is segmental and detachable, each section of the jaw having a pendent projection, which serves as a fulcrum when used in crimping or stretching leather.

Claim.—The construction and arrangement of the levers A B, jaws A′ B′ B″, and pendent fulcrums *b* connected by the key *c*, substantially as and for the purpose set forth.

143,585.—Combined Square, Protractor, Rule, Bevel, Plumb, and Level.—CHRISTIAN J. SHOFF, Osceola, Pa. Application filed September 12, 1873.

An ordinary spirit-level stock, with plumb-vials at each end, has a protractor inscribed upon one side, and two swinging arms, one slotted, which are adjustable and held by a clamp-screw passing through the stock at the center of the protractor-arc.

Claim.—The rectangular frame *a*, provided with the spirit-levels *c*, *d*, and *e*, pivoted rule *g*, and slotted movable rule *i*, and a clamping device, *h*, for holding the rules in position, substantially as shown and described.

143,586.—Thill-Coupling.—JOHN C. THOMPSON, New Haven, Conn. Application filed August 7, 1873.

Claim.—In a thill-coupling, the rubber cushion or spring made with the perforation *b*, substantially as and for the purpose specified.

143,587.—Hydrostatic and Electric Telegraph Cable.—FERDINANDO TOMMASI, Paris, France. Application filed November 20, 1872.

One or more pairs of fine copper tubes enveloped with insulating material, and provided with pistons at each extremity for transmitting hydrostatic pressure through the tubes alternately, are in connection with reciprocating armature-levers of double electro-magnets at each end of the double line, in such manner that the hydrostatic impulses are given by the transmitting-magnets, while the reciprocating pistons at the receiving station make and break local electric circuits. The cables may be used for electrical transmission, if desired.

Claim.—1. The combination of a system of double hydrostatic signaling-tubes with the reciprocating armature of double electro-magnets at each end of the line, substantially as and for the purpose hereinbefore set forth.

2. The combination of the same with the ordinary receiving apparatus of the electric telegraph, substantially as hereinbefore set forth.

3. The application of metallic or electrically-conducting tubes to a system of hydrostatic signaling-lines, so as to enable such cables to be employed either as mechanical or electrical telegraph-lines, as desired.

143,588.—Saw-Set.—MOSES E. TRUE, Oakfield, N. Y. Application filed September 5, 1873.

The two rests R and S are fixed, while the anvil or punch D is adjustable, to set different sized teeth.

Claim.—The anvil D, arranged adjustably upon the pivoted lever C, in combination with the fixed points or rests R and S upon the stock A, as shown and described, for the purposes set forth.

143,589.—Dice-Box.—JOHN TWAMLY, Troy, N. Y., assignor of two-thirds his right to PETER J. STRAIN, same place. Application filed April 11, 1873.

The globular chamber gives room for mixing the differently-colored balls. Only three at a time are visible through the glass tube, which should, after shaking, be held upright, as shown. The value of the throw is found by comparison with the marked color-scale upon the outside of the box.

Claim.—1. The globular or other formed chamber A, provided on its outer surface with differently-colored numbers, in combination with the transparent tube B and handle C, substantially as described.

2. In combination with the subject matter of the above clanes of claim, the balls *a a*, arranged to correspond in color with the figures on said chamber, substantially as set forth.

143,590.—Manufacture of Iron from Blast-Furnace Slag.—JOHN J. VINTON, Sharon, Pa. Application filed October 3, 1873.

Coke, oxide of iron, slag, and limestone, thrown into the cupola in succession and from time to time, as required.

Claim.—The herein-described method of reducing iron from the slag or refuse of blast or smelting furnaces, substantially as set forth.

143,591.—Surface-Coating to Hard Soap.—WILLIAM V. WALLACE, Boston, Mass. Application filed June 27, 1873.

Resin-soap, beef-tallow, wax or spermaceti; melt in a vessel, and add water. The soap is then dipped in the mixture and placed upon racks to dry.

Claim.—The application of a surface-coating to hard soap, when the soap is mixed or filled with soda or its equivalent, for the purpose herein described.

143,592.—Pneumatic Action for Organs.—THOMAS WINANS, Baltimore, Md. Application filed July 22, 1873.

The action, whether for the manual keys or stop or register draws, is balanced by equal wind-pressures upon both sides of the valve as well while at rest as when in action.

Claim.—1. A pneumatic action for organs, comprising the combination, with the pneumatic valves directly regulating the admission of air to the register-chests or the pipes of valves and inclosing valve-chambers, communicating on the one side with the source of compressed-air supply, and on the other side with ducts leading to said pneumatic valves, said parts being constructed and arranged to operate substantially as herein shown and described, so that whether the valves be opened to throw the said ducts in communication with the source of said compressed-air supply, or closed to shut off such communication and allow the air in the ducts to exhaust therefrom, the compressed air contained in the valve-chambers will at all times exert equal pressure on all parts of the valves so as to balance them.

2. The slide-valves, provided each with top, bottom, and intermediate ribs, as described, in combination with their valve-chambers, provided each with a corresponding number of ribs, the same being formed and arranged with relation to one another, substantially as shown and described, for the purposes set forth.

3. In combination with the said ribbed slide-valves and correspondingly-ribbed valve-chambers, arranged relatively to each other, as described, the manual-valve box containing a wind-chest opening into one of the valve-spaces formed in each valve chamber, and air-ducts or passages leading out of the other valve-space in said chamber to the pneumatic valves, said parts being arranged for joint operation in the manner herein set forth.

4. The ribbed slide-valves and their stationary ribbed partitions or plates, arranged on and carried by a breast-plate on the valve-box, provided with a longitudinal partition corresponding to the central ribs of the stationary plates, and formed below and above said longitudinal partition with apertures leading respectively from the lower valve-space of each valve to the wind chest of the valve-box and from the upper valve-space to the pneumatic air duct or passage, substantially as and for the purposes shown and set forth.

5. The combination, with the balanced slide-valves, the chambers for said valves, and the manual-valve box arranged together, substantially as described, of the pneumatic valves, one for each organ-pipe, arranged in the register wind-chests to play up and down in valve-chambers, communicating with their respective slide-valves by ducts or passages which, by means of said slide-valves, may be thrown into communication either with the source of compressed-air supply or with the external atmosphere, substantially as and for the purposes shown and set forth.

6. The pneumatic valve herein described, consisting of a stem provided with a head playing between guides and carrying an oscillating valve proper, and a base fitting and arranged to move up and down in a bearing-sleeve within a socket or air-chamber, and upheld by a spring, or otherwise, as specified, the said valve being arranged within the register wind-chest or the main wind-chest, as the case may be, and operated by the difference between the air-pressures in the said chamber and the wind-chest in which said valve is located, substantially as set forth.

143,593.—Apparatus for Cleansing Dyed Wool, &c.—JAMES E. ACKROYD, Chester, Pa. Application filed August 4, 1873.

The studs on the curved side of the tank are inclined so that the wool will rise over them when carried up by the blades attached to the truck, the blades being themselves curved so as to pass over the wool on the downward movement of the truck.

Claim.—The combination of a rolling or sliding truck or trucks, D, and blades F, with a tank having a curved side, B, with studs or blocks C or equivalent wire-netting on its inner surface, substantially as specified.

143,594.—Belt-Clamp.—ELEAZER AINSWORTH, Wilmington, Del. Application filed July 26, 1873.

Claim.—1. The combination, with clamps B having stop-pins *b*, of the right and left hand threaded rods D and nuts *d*, as shown and described, to operate as specified.

2. The clamp B, consisting of base piece B¹, with end recesses *a* and lugs *b*, top piece B² having slotted hole for opening and closing, and thumb-screws C for attaching them to belt A, constructed substantially as set forth.

143,595.—Portable Fire-Extinguisher.—ISAAC C. ANDREWS, New York, N. Y. Application filed July 5, 1873.

A ratchet-lever and rack-bar forces down a bow which, having projecting pins, strikes against the upper edge of the acid-vessel and, pushing it off the stationary stopper, allows it to tip, and as it approaches a horizontal position the V-shaped notches admit of its escape from the bow, and, dropping bottom upward, hangs suspended.

Claim.—1. The combination, with an acid-vessel resting on pivots *c*¹ *c*¹, and a stopper-cover, A F, holding it upright, of rack, pinion, and sleeve I J K, as described, so that the acid-vessel may be locked in an erect position.

2. The V notches or sockets formed in the opposite sides of the acid-vessel B for suspending it detachably, substantially as herein shown and described.

3. The stopper E for the acid-vessel B, attached permanently to the cover A, substantially as herein shown and described.

4. The toes *c*², formed upon the arms of the bow C, for detaching the acid-vessel B from the stationary stopper F by the downward movement of the said bow C, substantially as herein shown and described.

5. The combination of the rack-bar I, ratchet-lever J, and yoke E with the cover A and bow C, for operating said bow, substantially as herein shown and described.

143,596.—Bottle-Corking Machine.—JAMES ARMSTRONG, San Francisco, Cal. Application filed August 21, 1873.

The standard upon which the bottle is placed and the operating-rod of the corker are so united to one treadle as to move toward each other simultaneously. A cork-receiver, working loosely in guides, adapts itself to different-sized bottles.

Claim.—1. The self-adjusting cork receiver and guide, consisting of the hollow cylinder, flanged at *i i*, and working loosely in the guide K, so as to adapt itself to different-sized bottles, as set forth.

2. The oscillating lever G, having the connecting-rods F and O, uniting its opposite ends with the plate C and the plunger L, respectively, for the purpose of giving these parts a simultaneous movement toward each other, substantially as and for the purpose herein described.

143,597.—Refrigerator.—WILLIAM M. BAKER, Fortville, Ind. Application filed June 28, 1873.

Water from the ice-receptacle flows over an air-chamber, divided by partitions having openings at alternate ends to cause the air to take a circuitous route, and passes into water-chambers provided with deflectors on both sides. The object is to throw cold water against both sides of the water-chamber, thereby cooling both provision-chambers. The water-chambers are provided with faucets, and an air-chamber is in the rear of provision-chambers.

Claim.—1. The cold-water chamber D, having aperture *a* for the ice-water, and tubular passages *g* for ventilating provision-chamber B, as set forth.

2. The cold-air chamber G, having partitions *d* to produce perfect cooling of air, as described.

3. The combination of frame A, central provision-chamber B, cold-water chambers D, ice-chambers E, cold-air chambers G, air-spaces H, and side provision-chambers B′, arranged and connected substantially as and for the purpose described.

143,598.—Photographic Cameo-Embossing Press.—ERASTUS B. BARKER, Brooklyn, assignor to E. and H. T. ANTHONY & Co., New York, N. Y. Application filed October 16, 1872.

The press is provided with an elastic bed and a die operated by a forked cam-lever, said die having a central opening so that picture can be inspected while under pressure. Springs beneath the die serve to raise the same with uniformity after the pressure has been withdrawn.

Claim.—The springs A, acting between the bed *a* and die *g*, in combination with the removable elastic block *b*, changeable die *g*, and actuating lever *e*, and cams *f*, substantially as and for the purposes set forth.

143,599.—Harvesting-Machine.—EDWIN BAYLISS, JAMES O. BROWN, and FRANÇOIS T. LOMONT, Massillon, Ohio, assignors to themselves and PLINY F. HODGES, same place. Application filed January 17, 1873.

The cut grain falls upon an endless-apron platform, by which it is carried to the elevating aprons, and by them delivered upon the receiver in convenient reach of the binder.

Claim.—1. The hinged binders' platform E, provided with the hinged wing-board or guard E′, substantially as set forth.

2. The combination of the hinged binders' platform E with the binders' table D D×, the part D× being hinged, as shown, so that it can be let down into a vertical position and secure the platform in position when the parts are folded for transportation.

3. In combination with the elevating-aprons C C¹, the pivoted chute-board *c*×, arranged over the upper roller of the outer apron C¹, and adapted to be set at any required angle for deflecting the grain, substantially as set forth.

143,610.—Policeman's Baton.—SIMON BERRY, Urbana, Ohio, and JOHN W. MCDONALD, Houston, Tex. Application filed April 12, 1873.

Claim.—As a new article of manufacture, a policeman's club formed wholly of rubber or similar flexible material, the head and handle being solid and the stem with or without a metallic core, B, substantially as described.

143,611.—Sewing-Machine Table.—WILLIAM H. BOYER, Baltimore, Md. Application filed August 25, 1873.

The pegs are attached by flanges to the cover. Said pegs are hollow, and conical in the interior opening. A conical piece of rubber is inserted at the largest end, and forced through sufficiently far to reach beyond the lower end of the peg, so as to form a buffer.

Claim.—1. The combination of a machine-cover of a sewing-machine table with pegs having buffers, substantially as and for the purpose described.

2. The conically-shaped hollow pegs of a sewing-machine cover having flanges and rubber or other buffers, substantially as described.

143,612.—Churn.—JOSEPH L. BRITT and TROY R. BRITT, Raleigh, N. C. Application filed August 4, 1873.

Two uprights secured to the lid support the operating mechanism and extend into the churn, forming a bearing for a crank-shaft carrying two rotary dashers, which shaft is connected with and operated by a vertically-reciprocating dash-rod, the lower end of which extends below the rotary dashers, and is provided with a dasher.

Claim.—The rotating dashers, reciprocating dashers, and the operating-gear arranged in the frame C D, and said frame attached to the removable churn-top, substantially as specified.

143,613.—Apparatus for Filling Cans with Tomatoes, &c.—CHARLES S. BUCKLIN, Red Bank, N. J. Application filed September 27, 1873.

The can is supported in a holder whose downward movement is arrested by a stop at such a point as to bring the opening of the can in line with the filling-cylinder, when the piston is forced down by means of the treadle filling the can, after which the cut-off is forced down. Any surplus escaping is received in the inclined trough under the cylinder.

Claim.—1. The adjustable can-holder formed of the adjustable bar or plate E, the hinged frame H, the sliding cut-off plate I, the stop J, and the spring K, in combination with the tube C, substantially as herein shown and described.

2. The arrangement of the tube C, piston M N, guide O, cross-bar P, cords Q, treadle S, cord T, and weight V, in connection with the frame A and troughs B D, substantially as herein shown and described.

143,614.—Breech-Loading and Magazine Gun.—BETHEL BURTON and WINGFIELD G. BURTON, Brooklyn, N. Y.; said BETHEL BURTON assignor to said WINGFIELD G. BURTON. Application filed April 11, 1873.

A magazine-gun having means provided for throwing the crank-lever which operates the carrier into and out of gear with the bolt mechanism, by which the gun may also be adapted to be used as a single breech-loader, and thus reserving the charges in the magazine until required for more rapid firing.

Claim.—1. The bolt-sections D D², when constructed substantially as described, and adapted to be combined and locked together by a stop, T or T′, to keep them from turning when open and unlocked, in the act of closing the breech, as and for the purpose hereinbefore set forth.

2. The combination of the crank-lever G H, link Q, and carrier O, substantially as and for the purpose hereinbefore set forth.

3. The means, substantially as herein described, for changing the pivot or fulcrum of the crank-lever G H, consisting of an eccentric pin or screw, in combination with said lever, so that the arm H may be thrown into or out of gear with the breech-bolt, substantially as and for the purpose hereinbefore set forth.

4. A shifting fulcrum-lever, in combination with a breech-block and a cartridge-carrier, substantially as and for the purpose herein before set forth.

5. The spring-gate O′, pivoted or hung in such relation with the flange or lip on the carrier that its flange or lip, when pressed inward, will shut past the lip on the carrier, substantially as and for the purpose hereinbefore set forth.

6. The receiver having an opening, substantially as described, to prevent the cartridge from being thrown out in its passage from the magazine, substantially as and for the purpose hereinbefore set forth.

7. The piston P, provided with the rib *b* and lump *a*, in combination with the incline *b*¹ and lever-extractor, substantially as and for the purpose hereinbefore set forth.

8. The V-spring *s*, when combined with the trigger and crank-lever and operating as a trigger and friction-spring, substantially as and for the purpose hereinbefore set forth.

9. The combination of the combined nose-cap and band and the ramrod, substantially as and for the purpose hereinbefore set forth.

143,615.—Uterine Supporter.—Almeda Clark Byam, Hopkinton, Iowa. Application filed January 27, 1873.

A supplemental piece is attached to the cup of the pessary at one end, and to the lower part of the stem at the other, so as to afford additional support to the parts, and also to keep the pessary more securely in position.

Claim.—The supplemental piece E, attached to the cup of the pessary at one end, and to the stem at the other, all as and for the purpose described.

143,616.—Copy-Holder.—Walter R. Carter, Brooklyn, N. Y. Application filed August 9, 1873.

A sheet of manuscript is inserted between two horizontal bars, the ends of which are fitted in slots of vertical posts secured to a base. The sheets are kept in position by adjustable guides surrounding the bars.

Claim.—The guides D D, combined with two horizontal bars, A A, held in mortises of two posts, C C, as and for the purpose described.

143,617.—Peat-Machine.—Henry Clayton, Henry Clayton, Jr., and Francis Howlett, London, England. Application filed June 17, 1873.

The feeding-worm, kneading or masticating blades, and delivery-worm, with the cylinder which contains them, constitute a compound compressor and masticator, in which the peat (previously compressed by the rotating arms of the upright hopper) is masticated while it is in the compacted state resulting from its delivery, by the slow-pitch delivery-worm being less rapid than its feeding movement by the feeding-worm.

Claim.—1. The improvement in the art of manufacturing peat, substantially as before described, consisting of the following operations, viz: First, the compression of the peat. Second, the kneading or masticating of the peat while it is compressed or compacted. Third, the compression of the masticated peat into a continuous sheet. Fourth, the division of the said sheet into bricks, the said operations being performed successively in the order in which they are stated.

2. The combination, substantially as before set forth, of the following apparatus, viz: The upright hopper with its propelling-blades, the compound compressor and masticator, the molding-orifices, and the chopping-wire.

3. The combination, substantially as before set forth, of the following apparatus, viz: The compound compressor and masticator, the molding-orifice, and the roller-table with its trays.

4. The combination, substantially as before set forth, of the following apparatus, viz: The compound compressor and masticator, the molding-chamber, the series of molding-orifices, and the agitator in the molding-chamber.

5. The relative arrangement, substantially as before set forth, of the car-track, the upright hopper, the compound compressor and the masticator, the molding-orifices, and the roller-table.

143,618.—Clock-Calendar.—Arnold Frankfeld, New York, N. Y. Application filed April 26, 1873.

A four-year wheel with forty-eight teeth, and having the intervening spaces of varying depths, so as to form a pattern-wheel of the months, for the leap-year cycle, is hung upon the arbor of the month-wheel, with which it is connected by a lever pivoted thereto, which carries a pin engaging with the teeth of said four-year wheel, and disengaged by a stationary cam or projection on the frame-plate, at each complete monthly revolution. The outer end of the said lever projects more or less, according to the depth of the engaging recess, so as to allow a supplementary tooth on the twenty-four-hour arbor to move the month-wheel the additional amount required by the shorter months.

Claim.—The month-wheel *c* and year-wheel *e*, moving on the same arbor, in combination with the lever-dog *g* and propelling-pallets *a b*, the year-wheel *e* being constructed with spaces of varying depth, substantially as set forth.

143,619.—Double Stop-Movement for Watches.—Arnold Frankfeld, New York, N. Y. Application filed April 28, 1873.

A watch has two extra sets of stop minute and second hands, which sets may run independently of each other, or together, by engagement of their operating-wheels with the main train, effected by separate push-pins.

Claim.—The second-hands 1 and 2, connected, respectively, with the minute-hands 10 and 6, in combination with the double stop mechanisms and their respective push-pins, substantially as and for the purposes set forth.

143,620.—Plow.—Leonard C. Frost, Fredericksburg, Va. Application filed July 22, 1873.

For adjusting the beam of the plow vertically a cuff or clasp connected to the slanting standard surrounds the beam, engaging with a grooved plate, which is kept in position upon the side of the beam by a projection or tent, which enters the wood, allowing the plate to turn adjustably.

Claim.—1. The combination of a cuff and grooved iron, constructed substantially as herein described, with the beam and standard of a plow, as and for the purpose herein set forth.

2. The grooved iron A, having a tent upon its rear side, as and for the purpose substantially as described.

143,621.—Tag-Fastener.—John M. Goodridge, Norfolk, Va. Application filed August 16, 1873.

A double-barbed hook having a cross-bar at right angles to its shank, over which the tag is folded when the fastener is inserted.

Claim.—The combination of a hook having the cross-bar C with a tag, A, the two being connected as shown and described.

143,622.—Process of Preserving the Stubble of Sugar-Cane from Decay.—William Green, New Orleans, La. Application filed June 30, 1873.

Immediately after the cane is cut the stubble is cut smoothly near the surface of the ground and covered with three or four inches of soil, by which means the vitality of the stubble is preserved for the growth of the succeeding crop.

Claim.—The process of treating the stubble or stalks of sugar-cane, in the manner herein described, for the purposes set forth.

143,623.—Edge-Protecting Welt for Boots and Shoes.—John Green, Brooklyn, assignor to himself and Joseph Bach, New York, N. Y. Application filed September 6, 1873.

Claim.—The welt A for the protection of the shoe-upper, formed of a long narrow strip of leather or other material rabbeted on the upper side to receive the upper, and bent or molded to conform to the shape or outline of the sole, substantially as specified.

143,624.—Child's Carriage.—Lucinius Havasy, Hoboken, N. J. Application filed May 24, 1873.

The body is arranged so as to swing.

Claim.—The combination, with body A, of the arms B, rod C, standards D, frame F G, springs H, and frame E, all constructed and arranged substantially as and for the purpose described.

143,625.—Refrigerator and Cooler.—Canada D. Hicks, Bowling Green, Ohio. Application filed September 27, 1873.

The box is provided with doors in front and each end of its top, and is lined with galvanized iron or equivalent. In the middle of the box is placed a refrigerating-chamber made also of galvanized iron, which is so supported as to leave a space entirely around it, said refrigerating-chamber being designed to receive meats, bottles, &c. In the space at the ends of the box are placed vessels to receive ale, beer, &c., said vessels being so arranged as to leave space sufficient for ice, the space beneath the central refrigerating-chamber containing the ice-water.

Claim.—The outer box or case A B, the inner cooling-box C, and the cooling-vessels D, constructed and combined with each other, and provided with pipes and faucets, substantially as herein shown and described.

143,626.—Divided-Nut Device for Feed-Screws.—Frank A. Huntington, San Francisco, Cal. Application filed May 3, 1873.

The halves of the divided nut are opened and closed around the feed-screw by means of the inclines D passing under cleats on the sides of the nut.

Claim.—1. In combination with the divided nut C, the inclined planes D D, when constructed to operate upon the half-nuts by means of the lugs E, or an equivalent device, substantially as and for the purpose herein described.

2. The inclined planes D D, having the arms H, in combination with the operating-lever I, when constructed to open and close the half-nuts C, substantially as and for the purpose herein described.

3. In combination with the arm H of the inclined planes D D and the lever I, the spring J for retaining the planes in an elevated position, substantially as and for the purpose herein described.

143,627.—Cosmetic-Bottle.—Mary H. Huntington, Watertown, N. Y. Application filed September 27, 1873.

A cup is formed upon the bottle above its neck, and has an opening upon the side. When the bottle is lying upon its side this cup receives and holds a part of its contents for use.

Claim.—The combination of a cup, B, with a bottle or its stopper, having connection with the bottle, so as to receive and hold some of the contents of the bottle when the latter is placed on its side, and to return it to the bottle again when placed upright, substantially as specified.

143,628.—Child's Carriage.—John G. Kamphaus, Pittsburg, Pa. Application filed August 16, 1873.

Designed to avoid concussion and jolting.

Claim.—The bolster B, spring-block D, spring H, and rods G G, combined and constructed substantially as shown and described, for the purposes set forth.

143,629.—Mold for Glassware.—George H. Lomax, Somerville, Mass. Application filed July 30, 1873.

Molds the handle onto the blown ware before the ware is withdrawn from the mold, by means of the reservoir K, presser L communicating with handle-mold E.

Claim.—In a mold or apparatus for producing blow-over glassware, the combination, with the body-matrix, of the font or chamber K, presser L, and the handle-matrix provided with gates, substantially as described.

143,630.—Registering Steam-Gage.—Philo Maltby, Cleveland, Ohio. Application filed April 10, 1872.

An arm, attached to the index-spindle at the back of the gage, carries a screw pivoted at its extremities, so as to turn freely in its supporting-brackets. A small spur-wheel is connected with the screw at one end, so as to turn with it only in one direction; and when it is carried by the arm, under the sway of the steam pressure, past a stud out to a given limit of arc, the spur-wheel is turned, and with it the screw, thereby moving outward a traveling nut which holds a pencil, and thus marks, by an offset in the curve of oscillation, when the arm has been carried, by an excess of steam pressure, beyond the prescribed limit.

Claim.—The combination, in a gage, of the arm W, attached to the spindle H, screw W', spur-wheel X, steel point *y*, and its slide, with the pins *z* and the whiting or other coated glass of the case, all as and for the purpose specified.

143,631.—Wheel-Cultivator.—James F. Matchett and Perry W. Smith, Paris, Me. Application filed June 7, 1873.

The joints which unite the tongue, elevated axle, cross-bar, and posts are pivoted so that each side has a forward and backward movement, one side of the machine being retarded in proportion as the other is advanced, the wheels in all cases being parallel with the line of draft.

Claim.—The double bow C C, tongue D, cross-bar E, and arms F, all pivoted together and moving freely upon each other, in combination with the bent sectional axles B B, as and for the purpose described.

143,632.—Picket-Fence.—Robert H. McGinty, Moulton, Tex. Application filed May 17, 1873.

Pickets with wire stringers near top and bottom, embraced by links, are arranged in zigzag form, their tops inclining inwardly, with intermediate high posts inclining so as to form straight line for a wire-rider.

Claim.—The combination, with high posts and wire-riders, of stakes D, arranged in alternately reversed angles and with a wide post, B, at the vertex of these angles, but extended out alternately on opposite sides, as and for the purpose described.

143,633.—Mop-Holder.—Elon M. Naramore, Underhill, Vt. Application filed August 4, 1873.

A lateral head-piece is attached to the mop-stick, between which and a wire-clamp the mop is held. The wire-clamp is provided with coiled springs, which swing sidewise on pivots of the head-piece, and also with upward-extending parts, which are hooked to the sides of the handle.

Claim.—In combination with handle A and mop-head B the clamp C, which swings on pivots *d* of head B, and holds, by its spring action, the mop tightly thereon, substantially as and for the purpose described.

143,634.—Apparatus for Compressing Air.—Richard S. Pardee, San Diego, Cal. Application filed August 16, 1873.

A large chamber of suitable size and shape is placed in the surf so that the open end will receive the waves as nearly in a direct line as possible. The other end of the chamber has two passages, one of which communicates with a reservoir and has a valve opening outwardly, the other communicates with the open air and has a valve opening inwardly.

Claim.—The pressure-chamber A, provided with the two passages B and D, with their outwardly and inwardly opening valves C and E, the whole forming a hydropneumatic engine to be operated by the waves of the sea, substantially as herein described.

143,635.—Amalgamating-Pan.—Ira S. Parks, Virginia City, Nev. Application filed December 11, 1872.

Improvement on patent 113,791, April 18, 1871.

Claim.—The amalgamating-pan A, provided with the mullers B C, driven in the same direction, substantially as and for the purpose set forth.

143,636.—Car-Coupling.—Jason H. Payne, Roseville, Minn. Application filed May 17, 1873.

From a bent lever pivoted to the top of the draw-head depends a lever, which, when struck by the link, will force back the plate which holds up the pin; and the spring which holds the pin down, pressing on one arm of the bent lever, throws up the other arm, and with the depending lever so that it will be out of the way of the link after coupling is effected. This lever has a rule-joint near its lower end to allow of the link passing freely out of the draw-head. The operating parts of the coupling above the draw are covered by a hinged cap.

Claim.—1. The combination of the bent lever K, trigger-lever I, and spring H, substantially as shown and described.

2. The combination of the jointed trigger-lever I with the slide E and spring F, as shown and described, for the purpose specified.

3. The cap O, hinged at its rear end, and arranged to cover and protect the necessary coupling devices on the upper side of the draw-head, as set forth.

143,637.—Manufacture of Iron and Steel.—Edgar Pencham, Antwerp, N. Y. Application filed September 20, 1872.

The dross or cinder arising from the pig is drawn off either continuously or from time to time and replaced by a substance which will produce a pure cinder, or one free from the impurities common to the cinders arising from the pig.

Claim.—1. The process of purifying iron and steel, during its manipulation in the catalan forge-fire or puddling-furnace, by using flux, substantially in the manner previously described.

2. The use of lean hematite or specular ore as a flux for purifying iron and steel during their manipulation in the catalan forge-fire or puddling-furnace, substantially as described.

143,638.—Car-Coupling.—Wells D. Post, Gadsden, Ala. Application filed May 31, 1873.

The link is guided by a spring. The hook is enlarged at its pivoting to prevent the link passing beyond it and too far into the draw-head, and a spring is placed above the hook to keep it down in place.

Claim.—The draw-head A, springs D E, and hook C C C, combined, constructed, and relatively arranged as and for the purpose described.

143,639.—Lubricator.—John McLure Power, Port Discovery, Washington Ter. Application filed June 7, 1873.

Claim.—1. A transparent tube, J, connected with pipe-section B by end thimbles, in the manner and for the purpose described.

2. The combination, with a steam-forcing cup, A E H, and a pipe, B, leading to the part to be oiled, of an intermediate cross-pipe, C, having a glass, F, at each end, as and for the purpose set forth.

143,640.—Mechanism for Transmitting Power.—John Rankin, Binghamton, N. Y. Application filed December 11, 1872.

The friction-wheel, mounted on the shaft to be driven, is confined between the two similarly-shaped adjustable driving-wheels, which are provided with annular flanges for the retention of the belt, which passes over their periphery.

Claim.—1. The flat-faced, belted, and frictional driving-pulleys, when combined with the wheel to be driven, so as to hold it in equilibrium between the opposing driving-surfaces, and provided with the means described for holding the belt on, the whole constructed to operate substantially as set forth.

2. In combination with the belted and frictional driving-wheels and the interposed wheel to be driven, the combined set-screw holding devices, the whole arranged to operate substantially as and for the purpose described.

143,641.—Cotton and Hay Press.—David Reynolds, Prospect, Md. Application filed September 10, 1873.

The press-box has a door on top, which is opened and closed by the hand-lever, and a door on each side shutting outward and downward. From the follower extend two rods, which are connected with clutch mechanism. After the compression of the bale the follower is lowered by means of a rope connected therewith, passing over a roller and down within reach of the operator.

Claim.—The hay and cotton press consisting of the frame a, having the doors b g', levers c m, loops l c, rings n 3, link 5, arms 2 4, follower 1, roller 6, and rope 7, the parts all being combined and arranged for operation substantially as shown and described.

143,642.—Governor for Steam-Engines.—Carl Robert Rundvist, Stockholm, Sweden. Application filed February 15, 1873.

A variation in the speed of the engine increases or decreases the amplitudes of the oscillations of the pivoted plate, which latter transmits its motion synchronously to the weighted rod, by which the governor-valve is operated.

Claim.—1. The oscillating plate A and radial arms m n, combined with the shaft E and weighted lever F, substantially as and for the purpose described.

2. The weighted bar F, arranged in conjunction with the sliding shaft E and plate A, for the purpose specified.

143,643.—Bee-Hive.—John H. Shook, Normal, Ill. Application filed May 31, 1873.

The honey-frames and the comb-frames proper are supported upon the same perpendicular end piece, which is hinged to the external case.

Claim.—The honey-frames L, supported on the comb-frames K, as shown and described.

143,644.—Combined Indicator and Safety-Valve.—John Smith, Old Ford, England. Application filed February 11, 1873.

When the valve is first raised by pressure the escaping steam sounds a whistle. A further lift of the valve stops the whistle, the steam escaping through the hollow valve-stem, the spring inclosed in a perforated casing.

Claim.—1. The perforated cover U, plate S', and lock-case I, arranged in connection with the bolts and nuts, and with respect to the spindle and spring, as described, so that the air may circulate freely in contact with the spring and deprive it of its caloric, while no essential part can be tampered with.

2. The lever N, having the valve *n*, in combination with the valve-spindle C and the seat *j* of a whistle, substantially as and for the purpose described.

143,645.—Belt and Rod Cutter.—Lewis H. Smith, Stryker, Ohio. Application filed June 7, 1873.

The sliding cutter is provided with a friction-roller, upon which the cam-lever operates. A curved lever, fulcrumed at its middle, is connected to the main bar, one end of which bears upon the friction-roller, and the other end bent to cause the handle to press against it and separate the cutters.

Claim.—1. The combination of main cutter-piece A, sliding cutter C, eccentric lever D E, and curved lever F, substantially as specified, and for the purpose set forth.

2. The sliding cutter C, consisting of sleeve *c*, cutter *f*, arm *g*, and roller A, as specified.

143,646.—Car-Coupling.—Oscar Taylor, Grand Rapids, Wis. Application filed June 26, 1873.

The top portion of the draw-head is pivoted to the bottom portion, and is provided with rounded projections, which fit in corresponding grooves in the lower portion. A spring is attached to the lower portion in such a manner that when the upper portion is raised it will throw the arrow-head out of connection.

Claim.—The combination of the part A, provided with the recesses a^1 a^2 and square shoulder a^3, the part B, provided with the projections b^1 b^2 b^4 and the inclined or hooked shoulder b^3, and the springs E and F, substantially as herein shown and described.

143,647.—Piano-Action.—Frederick L. Traysser, Maysville, Ky. Application filed February 15, 1873.

To increase the ease of rapid repetition.

Claim.—1. The combination of the back-check and repeating attachment G I with the hammer and jack of a French grand action, when said parts are constructed and arranged substantially as specified.

2. The arrangement of the heel K of arm G, relatively to the head of the rod I, as described, to prevent the rebound of the key, substantially as specified.

143,648.—Pitman-Rod.—Samuel N. Wate, Jr., Danville, Pa., assignor to himself and Peter J. Adams, same place. Application filed September 6, 1873.

Capable of being adjusted to the distance between the wrist-pins.

Claim.—The rotary nut P, stationary screw M, and blocks I, combined with the straps B C, bolts N J, rod A, and brass F, as and for the purpose described.

143,649.—Evaporating-Pan.—David Watson, Mexico, Mexico. Application filed August 4, 1873.

The juice containing impurities flows into a channel and then into a filter, both on the outside of the evaporating-pan, from whence the filtered juice flows back into the pan. The juice is heated by steam passed through a coil of pipe in the bottom of the pan.

Claim.—The evaporating-vessel A, provided with the trough B around the top, and with the filter C, which communicates with said vessel by means of the passage D, as shown and described.

143,650.—Jig-Saw.—Marvin E. Weller, Fort Plain, N. Y. Application filed August 16, 1873.

The saw is connected to the cross-head by jaws so arranged as to allow of its ready removal or adjustment.

Claim.—1. The plate D having handle H, and the bar G connected with said plate by pivoted arms I, combined with arm F having the stud J, as and for the purpose set forth.

2. The spring T, and lever U, and rack V, when combined with jaws R R, movable against inclines S S, as and for the purpose specified.

143,651.—Register and Indicator.—Edward P. Wheeler, Corinth, Miss. Application filed September 25, 1873.

The impelling-rod of a distance-register is arranged with a stop and yielding trip, so that it can move the ratchet-wheel but one tooth at each revolution of the car-axle.

Claim.—1. The combination with the ratchet-wheels b b' and c, of a register for cars, vehicles, and other purposes, rod G, having a limited motion, and lever F, through which said rod projects, supported by spring D, as described, and for the purpose hereinbefore set forth.

2. The combination, with rod G, having limited motion, of spring D, lever F, and collar E, substantially as and for the purpose set forth.

143,652.—Feed-Gage for Printing-Presses.—Gordon Wilcox, Norwich, Conn. Application filed July 17, 1873.

The arm is made adjustable by means of the screw I and set-screw K. The side guide is attached to the feed-board by a dovetailed sliding joint, and is provided with an adjustable point, N.

Claim.—1. The combination of the cylinder E, slide H, adjusting-screw I, and set-screw K, as a front guide for a cylinder-press, substantially as described.

2. The combination of the cylinder E, slide H, adjusting-screw I, set-screw K, adjustable screw-point N, and post L, dovetailed upon the bar O, as a side guide, substantially as herein set forth.

143,653.—Watch-Key.—Francis E. Allen and Samuel G. Hall, Keene, N. H. Application filed August 15, 1873.

The pipe of a watch-key may be reversed in a socket in the handle, and is keyed from slipping while winding.

Claim.—The holder A having the longitudinal slot D, in combination with the removable and reversible key-barrel B having the lateral stud C, all constructed and arranged to operate substantially as and for the purpose specified.

143,654.—Distilling Pure Alcoholic Spirits.—Christian Andemark, Brooklyn, N. Y. Application filed July 17, 1873.

A double-acting pump is placed between the vessel which receives the liquids condensed from the mash-tuns and a vessel filled with animal or other charcoal. The suction-end of the pump assists in drawing off the vapors from the mash, and forces the condensed liquid through the charcoal, which purifies it. The spirit then goes to the rectifying-column, from which is produced pure neutral spirits.

Claim.—1. The arrangement of a double-acting pump, H, in combination with a set of mash-tuns with a receiving-cistern, G, a carbon-vessel, K, and a rectifying-still, O, all constructed and operating substantially in the manner herein shown and described.

2. The within-described process of distilling alcoholic liquids by forcing the products resulting from the vaporization of mash through a vessel containing carbon previous to introducing said liquid into the rectifying-still, as set forth.

143,655.—Sash-Holder.—Samuel I. Anderson, Philo Walden, and Ezekiel P. More, West Eaton, N. Y. Application filed September 20, 1873.

Claim.—The two-part frame A A, constructed with a recess, a, an inclined back, a^1, seat a^2, and inclined grooves b b, adapted to receive the friction-wheel B and its axis c, in combination with the shouldered hole f for receiving the spring-bolt C, as herein described and shown.

143,656.—Manufacture of Globe-Holders.—C. Henry Barney, Providence, R. I., assignor to George Mooney and James Shaw, Jr., same place. Application filed June 23, 1873.

The blanks are cut from sheet metal, with the several arms occupying parallel lines, and are then bent to the proper radiation by suitable dies.

Claim.—1. The method, substantially as described, of constructing radial-armed globe-holders, which consists in cutting them in one piece from sheet metal, with the several arms occupying parallel lines, and then bending them so as to occupy the requisite radial lines, as and for the purposes specified.

2. The cutting-die, substantially as described, for cutting blanks for radial-armed holders, with which the several arms can be cut on lines which are parallel, as and for the purposes specified.

143,657.—Mail-Pouch Holder and Catcher for Railroads.—Benjamin F. Bean, Pawling, Pa. Application filed May 16, 1873.

The crane by which the bag is supported is arranged to swing back automatically out of the way after the bag is removed.

Claim.—1. The crane A, provided with the hinged arm c, handle e, and spring g, in combination with the support or socket having the notched cam f, when arranged to operate substantially as herein shown and described.

2. In combination with the crane A, provided with the arms b c, the springs i, having their ends forked, and so constructed that said ends can play freely in all directions, as set forth.

3. The swinging frame D, consisting of the rod l, bar m, jaw E, and brace o, when attached to side of the car in the manner shown, and for the purpose set forth.

143,658.—Bag-Holder Weighing-Scale.—Azel H. Bell, Cedar Falls, Iowa. Application filed February 15, 1873.

The hinged top or platform of a scale mounted on a stand has on its under side hinged arms with grooved clamps so arranged as to hold open the mouth of a sack when the platform is raised to a vertical position, and thus to weigh its contents conveniently, while the top or cover, when down, forms the platform of an ordinary weighing-scale.

Claim.—1. In a bag-holder, the grooved bars I and pivoted bars J, attached to the platform E, for holding the mouth of the bag, substantially as shown and described.

2. The combination and arrangement of the platform E, bars B D, and scale-beam C, substantially as shown and described.

3. A platform-scale, having its platform E hinged to revolve upward, forming the supporting-arm of a bag-holder, substantially as specified.

143,659.—Pruning Implement.—Alexander P. Bettersworth, Carlinville, Ill. Application filed June 23, 1873.

Claim.—1. The combination, with the handle d, of the double levers f f and g g, the hook a provided with shank c, having a fulcrum connection with the levers g g at i i, and the sliding cutter b, all arranged as shown and described.

2. The combination of the spiral spring k, with the handle d, double levers f g, hook a, and sliding cutter b, as shown and described.

143,660.—Plow.—William Blackstone, Shelby county, Ill. Application filed July 25, 1873.

By a rock-shaft and lever, with slotted crank-arm, the rear of the plow is raised or lowered and permitted to move laterally, a rear hook working in the slot. The front end of the beam is operated by a long lever extending back to the workman, another vertically-jointed lever or handle attached to the beam serving to adjust the plow laterally by means of a horizontal rack-bar.

Claim.—1. Rock-shaft and lever B, with its slotted arm B', in combination with the plow-beam and rear connecting-hook, as and for the purpose described.

2. Lever No. 6 and connection P, in combination with lever No. 5, with joint S, and the plow-beam, as and for the purpose described.

3. The combination of the plow-beam, the rock-shaft, and lever B, levers 5 and 6, with their connecting-joints and slots, and ratchets 9 and k, as and for the purpose described.

143,661.—Hydraulic Hose.—Lyman R. Blake, Brooklyn, N. Y. Application filed March 24, 1873.

Claim.—The improvement in the manufacture of hydraulic hose consisting in first uniting the edges of the strip, as described, to form the tube, and then turning the tube, as described.

143,662.—Reducing Ores.—James H. Boyd, Chicago, Ill. Application filed April 4, 1873.

The fuel is placed in a coking-chamber to drive off the gases. The hot coked fuel is raked into a combustion-chamber, the flame and gases passing into a reducing-chamber, and thence to a roasting-chamber.

Claim.—1. The combination and arrangement of the coking-chamber A a, the combustion-chamber B, the reducing-chamber C with its separating-hearth, and the roasting-chamber D, substantially as specified.

2. In combination with a reducing-chamber or separating-hearth, the conduit or pipe M located substantially as specified, the overflow-pot N, and receiving-vessel P, substantially as specified and shown.

3. The combination and arrangement, substantially as specified, of the chambers A B C D, condensers E G, and fan F or its equivalent.

4. The combination of the fan F with a reducing-furnace provided with a condenser or condensers, substantially as specified, located in the rear of said furnace.

143,663.—Electric Apparatus for Signaling Between Railway-Trains.—Robert K. Boyle, New York, N. Y. Application filed August 28, 1873.

Arrangement of circuits, &c., substantially same as in Boyle's patent of August 12, 1873, substitutes soft-iron forked armature D for polarized armature of that patent in the switching devices.

Claim.—The soft-iron switch D, situated between two electro-magnets, C C^0, in combination with insulated anvils G G^0 G^a and sectional line-wires 16 17 18, &c., on the side of a railroad-track, and with keys g g^0 g^a, or their equivalents, attached to a locomotive, the whole constructed and operating substantially as shown and described.

143,664.—Spark-Arrester for Locomotives.—Michael Brassill, Hartford, Conn. Application filed August 27, 1873.

The large sparks and cinders are driven in contact with the corrugations upon the deflector, and thereby breaking them into small particles, thus avoiding the danger of damage by fire.

Claim.—The combination, with the head D D', of the smoke-stack A, having openings a a, rods B B, adjustable deflector C, with corrugations z z, and the screen E', all constructed and arranged substantially as and for the purposes herein set forth.

143,665.—Device for Forming Water-Traps.—William A. Butler, New York, N. Y. Application filed September 23, 1873.

The teeth of the bending-roller mesh with the teeth of the semicircular rack, causing the roller to rotate on its own axis at the same time it is carried around the material.

Claim.—The machine for bending tubes, forming water-traps, &c., consisting of the stationary semicircular grooved block A, grooved and toothed roller C, stationary gearing B, and fork or lever D, all combined and arranged to operate substantially as herein shown and described.

143,666.—Rotary Brush.—George Carlisle, Attleborough, Mass. Application filed July 3, 1873.

A metallic disk having concentric shoulders with holes or openings to receive the bristles, said bristles being confined in place by a wire running along said shoulders.

Claim.—A rotary brush composed of the metallic disk A, having the concentric shoulders h h, and holes or openings a a b b, for receiving the bristles B, said bristles being confined in place by the wire l, substantially as described.

143,667.—Corn-Husker.—George W. Care, Philadelphia, Pa. Application filed July 24, 1873.

Two rollers revolving in opposite directions, having longitudinal ribs and transverse grooves, so made that a groove in one is midway between two in the opposite roller.

Claim.—The within-described corn-husking rollers having recesses and intermediate teeth extending from recess to recess, and so arranged that the recesses of one roll shall be opposite to the teeth of the other roll, all as set forth.

143,668.—Rein-Holder.—John W. Clark, Pittsburg, Pa. Application filed March 31, 1873.

Claim.—1. The frame a, having stops A on the outer ends of the outer bars d to prevent the rein from slipping out of the slots, substantially as described.

2. The rein-holder, consisting of the frame a, with stops A, and the hand-loop f, substantially as and for the purposes described.

143,669.—Carriage-Top Joint.—John H. Combs, Stamford, Conn. Application filed June 7, 1873.

Claim.—The joint-sections A B, in elliptical form, in cross-section, in combination with the brace-rods D, of corresponding form, made adjustable and secured by set-screws, substantially as and for the purpose specified.

143,670.—Machine for Making Curved Earthen Pipes.—Ralph Connable, Jackson, Mich. Application filed September 24, 1872.

Mouth of die capable of adjustment so as to vary relative size of efflux upon either side of central dod.

Claim.—1. A machine for making curved pipes combining in its construction the following instrumentalities, viz: A die for forming the emerging plastic material into pipe, mechanical means, substantially such as described, for forming curvatures in the pipe by increasing or diminishing the velocity of efflux on different sides of the pipe-former, and means for instantly shifting the resistance from side to side without stopping the machine.

2. The core C and case D, combined with a lever, F, for adjusting them laterally with reference to one another, substantially as and for the purpose specified.

143,671.—Process of Making Curved Earthenware Pipes.—Ralph Connable, Jackson, Mich. Application filed August 22, 1873.

Claim.—1. The art of making curved pipes by forcing the plastic material from a receiver through an annular aperture contracted or obstructed on one side.

2. The method of making pipes from a plastic material with curves regulated at the will of the operator by varying the relative rate of discharge of the material on different sides of a pipe-forming die while issuing therefrom in a continuous stream.

143,672.—Striker for Paper-Ruling Machines.—James D. Connolly, Lincoln, Neb., assignor of one-half his right to Richard Doyle, Peoria, Ill. Application filed May 9, 1873.

The rear end of the pen-carriage is provided with dovetail blocks, into the recesses of which adjustable bracket-shaped posts are fitted, the lower ends of which are pivoted to the rear ends of the striker-frame, while their forward ends are loosely connected with said frame beneath the pen-carriage, midway its length, whereby the frame may be raised from the paper when the carriage is elevated. The adjustable posts are connected by a removable bar parallel to the pen-carriage, and upon said bar blocks are fitted to move laterally, carrying thin pen-setter bars to elevate the pens independent of each other by adjusting-screws fitted thereto. The forward ends of the setter-bars rest upon a rod, which connects with the forward ends of the striker-frame.

Claim.—1. The removable posts b b, provided with set-screws 1 1, in combination with blocks D D attached to the pen-carriage C, and removable bar F, all constructed and arranged to operate substantially as and for the purpose set forth.

2. The rods m m, adjustable by means of screws p p, and arranged to work in slots of blocks G G, which are laterally adjustable upon the removable bar F, having set-screws to hold the said blocks in position, all constructed to operate substantially as and for the purpose set forth.

143,673.—Culinary Boiler.—James H. Corey, New York, N. Y. Application filed May 29, 1873.

Claim.—The combination of the vessel A, globular chamber B, bent pipe C, and discharge-pipes D and H, all arranged to operate substantially as described.

143,674.—Paper-Bag Machine.—Luther C. Crowell, Boston, Mass. Application filed August 25, 1873.

The paper is cut longitudinally, intermittently pasted by the paste-wheels and scraper, the edges then being folded under and paste applied to them. Thence it passes over the cylinder c^2, between it and the cylinder f^2, when the bottom is folded, the bag-length cut off, and the edges pressed together. Then the bag passes over the printing-roll to the table, where it is automatically removed and counted.

Claim.—1. In combination with the paste-wheels o p, the doctor-bar t, intermittently brought into contact with such wheels, substantially as described.

2. The combination of the ratchet o^3, pawl n^3, guard s^3, pawl r^3, wheel p^3, and rocker-shaft m^3, for operating the bag-removing mechanism, substantially as described.

3. The combination of the paste-rolls o p, the intermittently-acting doctor t, the folding-fingers z, and rolls h g, substantially as and for the purposes set forth.

4. The combination of the paste-rolls a^2 b^2 with the cylinders c^2 f^2, substantially as shown and described.

5. The cylinder c^2, provided with the folder-bars n^2 and cutter-bars k, in combination with the cylinder f^2, and its jaws r^2 s^2, and edge v, substantially as shown and described.

143,675.—Gas-Retort.—Darius Davmon, New York, N. Y. Application filed April 9, 1873.

The core G is the return-pipe B causes the gas to spread into a thin stratum, and thus brings it into close contact with the heated surfaces of these pipes, by which the vapors passing from the retort are converted into gas. The core G is made removable, so that the condensed carbon may be readily cleaned from it.

Claim.—1. The arrangement, substantially as specified, of the pipe or opening C with the main retort A and return-pipe B, whereby the connection between said retort and return-pipe is established at or near the center of the retort.

2. The mouth-piece D, cast in one piece, and constructed to form upper and lower chambers D^1 D^2, provided with separate lids F F, in combination with the main retort A, the return-pipe B, and stand-pipe E, substantially as specified.

3. The drip-box M, formed by a depression of the upper chamber D^1 of the mouth-piece, in combination with the return-pipe B and stand-pipe E, essentially as herein described.

4. The gas-distributing core, pipe, or tube G, closed at its back end, and constructed to rest, at its bottom, upon the lower interior surface of the return-pipe B, leaving a gas or vapor space, A, at its sides and top, and arranged, in relation with the return-pipe, for use in concert with the main retort A, substantially as specified.

143,676.—System of Purifying Water Chemically and Mechanically.—Gustave Demailly, Brussels, Belgium. Application filed March 22, 1873.

The stream of water to be purified is first mixed with a stream of lime-water to precipitate the salts held in solution, by a wheel so constructed as to draw the lime-water from the producer, and at the same time to mix the two streams. The water then passes through a filter.

Claim.—The combination of the pipe A, lime-water producer B, wheel *d d'*, and filter D, substantially as and for the purpose set forth.

143,677.—Fire-Escape.—Carl Dietrich, Boston, Mass. Application filed August 13, 1873.

The extensible standards steady the series of lazy-tongs, and the braces at each corner of the lower platform steady the structure when elevated.

Claim.—1. The combination of the four braces U and their sustaining-ropes *l* with the platforms A F, lazy-tongs B B' and their operative nuts C C', and screws D D', arranged and applied together substantially as specified.

2. The combination of the four extensible standards O O O O, substantially as described, with the two platforms A F, the lazy-tongs B B' and their operative nuts C C', and screws D D', arranged and applied together substantially as specified.

143,678.—Harness Attachment for Hitching and Unhitching Horses.—Thomas J. Doble, Weehawken, N. J. Application filed August 21, 1873.

Claim.—1. The combination of the freely-vibrating and longitudinally-moving buckle G with the traveler-rod H and stock or body of the piece C carrying said rod, substantially as and for the purposes herein set forth.

2. The saddle-piece C, with its trace-rod E, controlled by a spring, *f*, traveler-rod H, and buckle G, in combination with the bed or shaft piece A and spring bolt or catch D, substantially as and for the purposes specified.

143,679.—Electric Vote-Announciator.—Thomas B. Doolittle, Bridgeport, Conn. Application filed July 28, 1873.

Circuit-closing key at each desk, swinging numbered plate in a frame corresponding to each desk. Closing key allows plate to fall, and at same time releases a ball, which rolls into a graduated glass tube. Secondary apparatus at another point may be put into same circuit, so as to announce vote at a distant place.

Claim.—1. The combination, in a voting apparatus, of the number-disks and ball-tubes, controlled and operated simultaneously through the medium of electricity, substantially as and for the purpose set forth.

2. In combination with the drop D, the prop P, armature A, and its magnet M, operating substantially as described, and for the purpose set forth.

3. In combination with an electrical voting apparatus, secondary indicating apparatus, in the same circuit with the voting apparatus, to indicate the state of the vote at other points, substantially as described, and for the purpose set forth.

4. The combination, with the recessed shaft *s* and ball-receptacle R, of the conducting-tube T and graduated indicator-tube, substantially as and for the purpose set forth.

5. The indicator-pin *v*, in combination with the spring s^3 and detent *d*, operating substantially and for the purpose described.

143,680.—Car-Coupling.—George Edmonds, New Orleans, La. Application filed June 30, 1873.

When the cars are coupled the projections on the under side of one draw-head fit in the grooves on the upper side of the other. The coupling-bars are so attached to the draw-bars that they may have the requisite amount of play, both vertically and longitudinally.

Claim.—1. A coupling-bar having the head L, with the recess *e*, pin *f*, jaw A, and grooved and beveled upper surface *n*, substantially as and for the purpose specified.

2. The arrangement of the bar *a*, pivoted and supported in a stirrup having the vertical spring, as shown, and connected with the draw-head by the stirrup P and pin *r*, said draw-head having the step H, against which the rear end of the bar *a* oscillates, substantially as described.

143,681.—Gage for Marking Cloth for Cutting.—Eliza E. Egery, Boston, Mass. Application filed July 11, 1873.

A shaft or axle has mounted upon it two bevel-edged disks with collars through holes, in which spring-catches take into circular indentations, a series of which are arranged upon the spindle, allowing the disks to be adjusted at proper distances apart. By means of a handle at the middle of the spindle the disks are rolled over a piece of cloth, the creases left by the edges being guides to cut by.

Claim.—The rod A, with its handle B, in combination with one or more rotary marking-disks, *d*, made adjustable upon the rod, and held from moving longitudinally thereon by a suitable catch or catches, substantially as set forth.

143,682.—Machinery for Finishing the Sole-Edges of Boots and Shoes.—Hadley P. Fairfield and William W. Meserve, Jr., Boston, Mass. Application filed March 15, 1873.

The shoe or last is attached to an oblong plate, having gear-teeth meshing into and driven by gear-pinions, which engage with similar devices on a slotted plate, the pinions turning on pins projecting from a block, which alternately rotates with the shaft, and also receives a horizontal movement of the length of the shoe by means of a crank-pin in combination with the slotted sliding plate.

Claim.—1. The intermittently-rotating and horizontally-moving slotted plate *r*, guide and stop rail or rails b^2, and crank-pin slide *v* for imparting movements to the boot or shoe, substantially as described.

2. In combination with the plate *r*, rail or rails b^2, and crank-pin slide *v*, the arms f^2, and levers k^2, arranged to operate substantially as described.

3. In combination with the plate *r* having rotative and horizontal movements, the plate *d* geared to and driven by the plate *r*, substantially as described.

4. The rails b^2 and crank-pin block *x*, made adjustable, substantially as and for the purpose described.

5. In combination with the trimming-cutter mounted as described, the guide-roll c^3, arranged substantially as shown and described.

6. The trimming-tool and guide-roll attached to arms extending from the spindle g^3, said spindle having capability of vertical rotative and forward and back movement, substantially as shown and described.

143,683.—Cock.—James W. Faxon, Boston, Mass. Application filed September 25, 1873.

Around the upper end of a valve-stem is arranged a perforated chamber, in which the steam escaping from the valve is contained, and all dripping of the water of condensation therefrom and tarnishing of the valve prevented.

Claim.—The cup or chamber *g*, in combination with the valve or cock and its vertical spindle *d*.

143,684.—Revolving Horse-Rake.—Moses K. Flory, Viola, Ill. Application filed September 2, 1873.

A hood, constituting the hand-hold of the handle, has pivoted in its upper side the locking-rod, and is pivoted to the lower and upper corner of the handle, and when bent down so as to form an angle with the handle retracts the rod and permits the rake to revolve.

Claim.—The horn or hollow handle H, spring L, handle G, catch I, and latch J, all constructed and arranged to operate in the manner and for the purpose specified.

143,685.—Screw-Cutting Machine.—Maurice B. Flynn, Brooklyn, N. Y. Application filed September 17, 1873.

The work-holder is composed of a bed sliding on the frame of the machine, upon which is mounted a transverse sliding plate, into which is swiveled a circular plate, which carries the holding-jaws. The dies are held in position on the end of the mandrel by means of two pins entering notches in their peripheries and a cap having notches to work over pins on the periphery of the mandrel.

Claim.—1. In machines for cutting screw-threads, the combination therewith of a holder for the work, composed of adjustable jaws *n*, a swiveling jaw-carrying center plate, *i*, and a transverse adjustable carrier, A, for the jaw plate, for joint operation with the slide *f*, and having their adjustments effected essentially as and for the purpose described.

2. The die or dies *w*, notched as described, in combination with the holding-pins *z z*, the holding-cap *z*, and the mandrel *s*, essentially as described, and to obtain the advantages stated.

143,686.—Cracker-Machine.—Joseph Fox, Lansingburg, N. Y. Application filed April 10, 1873.

The crackers are fed by the endless apron to the pressing-dies, and are ranged and rowed by means of a notched plate. Said notched plate or guide is mounted on two arms, which slide in slotted curved uprights, so that the guide has a downward and inward movement, and then an upward and outward movement.

Claim.—1. In a machine for making crackers, the combination, with an intermittingly cracker-feeding apron, B, of a movable guide, G, which will both line transversely and range longitudinally the crackers fed upon said apron, essentially as and for the purpose described.

2. The combination, in such a machine, of a movable longitudinally-ranging guide, G, for the crackers with a series of pressing-dies, A, and an intermittingly-feeding apron, B, essentially as described.

3. A rowing and ranging plate for the crackers, operated to carry it both downward and inward simultaneously toward the pressing-dies and apron, and to recede therefrom upward and outward, for the purpose described.

4. In a cracker-machine, the combination therein of a movable ranging and rowing guide, G, constructed and operating substantially as described, with the pressing and finishing dies A, a dofing-plate, O, an intermittently-moving feeding-apron, B, and an intermittently-acting presser, P, the several parts being constructed and arranged for joint operation substantially as herein specified.

143,687.—Manufacture of Boots.—William H. Ferguson, Forest, Ill. Application filed February 11, 1873.

Claim.—The tongue C, having its upper edges splayed off and arranged to extend half-way up the leg A on the inside, in connection with the lining D, arranged to extend down from the top of the leg over the lining, all constructed in the manner and for the purpose as herein shown and set forth.

143,688.—Heel for Boots, &c.—John B. Gerrard and Charles G. Schwarz, Philadelphia, Pa. Application filed December 30, 1870.

Claim.—1. As a new article of manufacture, a heel for boots and shoes consisting of glass or its equivalent, and adapted to be applied and secured as set forth.

2. The combination, with the heel, of an elastic cap, *k*, between which and the sole the heel may be clamped, as described.

3. The cap *k*, applied to the heel and having a nut, *z*, embedded in a projection, *t*, for the purpose set forth.

143,689.—Cooling-Coil for Liquids.—William Gee, New York, N. Y. Application filed August 21, 1873.

The liquid first traverses the outer pipe of the left-hand coil, returning by the inner pipe, thence by the inner pipe of the right-hand coil, returning by the outer pipe. Between the inlet and outlet of the outer pipe a plug is placed to direct the circulation.

Claim.—1. The combination, in a coil-cooler, of two pipes, A B, arranged one within the other, substantially as herein described, whereby the liquid to be cooled will circulate through the two pipes in succession, and in reverse directions.

2. The cooler composed of the two coils, each consisting of an inner and outer pipe, and connected substantially as herein described, whereby the circulation is first through the outer pipe of one coil, then through the inner pipes of both, and afterward through the other outer pipe.

143,690.—Heel-Burnishing Machine.—Charles W. Glidden, Lynn, assignor to James W. Brooks, trustee, Boston, Mass. Application filed August 25, 1873.

Rotating heel-burnishers, moving in opposite directions, independent of each other, act intermittingly and alternately upon the same point for the purpose of securing greater solidity of outer surface.

Claim.—1. In combination with the mechanism for jacking the boot or shoe in position, the burnishers *i i*, acting alternately and in opposite directions against the heel-edge, substantially as described.

2. In combination with the heel plate *a*, the hinged jack or last-pin *c*, jointed to the slide *c*, substantially as described.

3. The burnisher-frames *h h*, each having a yielding or sliding burnisher, *i* or *i*, and slides *m m*, substantially as shown and described.

4. In combination with the rotating burnishers, the guide-rail *q* operating to press or keep forward the burnishers, substantially as described.

5. In combination with the rotating burnishers, the cam-plates *r* h^2 for drawing back the burnishers.

6. In combination with the burnisher-frame *h*, the guide-plate a^2, pinion c^2, crank c^3 d^3, and gear-racks g^3, operating to intermittently actuate the frame, substantially as described.

7. In combination with the burnisher-frames *h h*, the sleeves *g*, pinions *w t*, and gear-segment *u*.

143,691.—Electrical and Thermostatic Fire-Alarm and Circuit Therefor.—John H. Guest, Brooklyn, N. Y. Application filed September 1, 1873.

Circuit-breaker in a normally-closed circuit revolved by clock-work controlled by a thermostat. Series placed in ordinary closed circuit without interfering therewith.

Claim.—1. The lever-detent *g*, resting against or upon a bulb containing quicksilver or other expansible liquid, or against a spring controlled by said bulb, the parts being so arranged that the expansion of the liquid by heat will cause the breakage of the bulb, and the consequent release of the detent.

2. The combination of the frangible thermostat H, detent-lever *g*, clock-train B, signal-wheel *b*, spring *d*, and closed electric circuit w^1 w^2, as and for the purposes specified.

3. The combination, with a closed telegraphic circuit, of one or more signaling apparatus, controlled by thermostatic or any suitable heat-indicating device.

143,692.—Locking-Latch for Doors.—Edward Halsey, San José, Cal. Application filed May 17, 1873.

A weighted lever operates upon the latch through the medium of an arm, which is itself operated by a lever, with index-finger turned by the knob. The latch-shank is combined with shoe-shaped tumblers.

Claim.—The combination of the lever B, the index-finger *a*, the thumb *b* with the weighted lever D, the pivot F, the finger *e*, the shoulder *f*, and the bolt G, the shoulder A, the pin *h*, the elbow I, the pins *j j*, the tumblers J J J, the pivot K, the slots *l l l*, the elbows *m m m m m*, the toes *o o o o o*, the stop P, and key-stop *r*, substantially as and for the purposes hereinbefore set forth.

143,693.—Base-Burning Stove.—Alfred Hathaway, Freetown, Mass. Application filed July 12, 1873.

Claim.—1. The adjustable magazine D, having the outer or external legs *c c*, in combination with the shell B, having the annular flange *b* surrounding the upper end of the magazine, and the screws *d d* passing through said flange and lugs, substantially as shown, and for the purpose mentioned.

2. In a base-burning stove, the adjustable case H having external lugs *f f*, carrying the ash-box E and fire-pot G, in combination with the base A and adjusting-screws *h h*, substantially as specified.

3. The means for adjusting the case, consisting of the toothed wheels *i i*, endless chain *m*, and lever-wheel J, substantially as described.

143,694.—Electric Railway-Signal.—Stephen C. Hendrickson, Brooklyn, E. D., N. Y. Application filed December 26, 1872.

Signal-disk revolved continously in one direction by a motor. Movement controlled by two electro-magnets, each being in a circuit from opposite ends of a section. One circuit being closed, an armature is withdrawn from a pin on shaft of signal, allowing signal one-fourth revolution; when it is stopped by armature of second electro-magnet, which, operated from its end of rail-section, permits another one-fourth revolution.

Claim.—1. The combination of a signal or signal-disk G, actuated by suitable mechanism, with two or more detents, *n n'*, operated alternately or successively by electro-magnetism, automatically in the manner and for the purpose herein specified.

2. The combination of an indicator or alarm, either or both, with the actuation of a semaphoric signal, substantially as and for the purpose herein specified.

143,695.—Scrubbing-Brush.—Carl Herold, Pittsburg, Pa. Application filed September 9, 1873.

A water-tight metal box is attached to the top of the brush, to be filled with water or suds, having an inlet and an outlet hole. A finger over the former regulates or stops the flow.

Claim.—As a new article of manufacture, the herein-described fountain scrubbing-brush, the reservoir B of which is provided with an inlet-hole, *b*, under the convenient control of the hand manipulating the brush, substantially as specified.

143,696.—Draft-Equalizer.—William W. Herman, Elkhart Ill., assignor to William T. Wylie, same place. Application filed May 24, 1873.

Claim.—The bar A, curved as shown, and pivoted, at its center, directly to the beam B, with its ends turned, and provided with pins *b* and swivel-hooks *d*, in combination with the levers C C, with projections *e* and notches *f*, the pivots of the bar A and levers C C being on a line with each other, all as set forth.

143,697.—Composite Roofing.—Ralph S. Jennings, Philadelphia, Pa. Application filed September 26, 1873.

Claim.—A roofing or roof-covering composed of wire-gauze covered on both sides with tarred paper, as herein described.

143,698.—Fare-Box.—Tom L. Johnson, Louisville, Ky. Application filed October 4, 1873.

The lower edges of the glass plates rest against the rear side of the box to receive and hold the fare for inspection. The upper two plates are moved independently of each other by means of their levers. The lower lever is so arranged that it moves all three plates. A chute is operated by its lever so that fare may be directed into either of two boxes. The box is held together by the lock-bolt K.

Claim.—1. The fare-box herein described, consisting of the side pieces A A with dovetailed top B and bottom C, blocks E G G', glass plates D D' I, and door J, all as and for the purposes herein set forth.

2. In combination with the side pieces A A, the screw K having the square part *x*, the stationary plate *b*, and movable plate *d*, all substantially as and for the purposes herein set forth.

3. The hinged or movable chute L, operated by means of the lever M, for the purposes herein set forth.

4. The combination of the glass plates P P^1 P^2, rock-shafts *f f* with arms *s s* and cranks A A, the slotted levers R R^1 R^2, springs *i i*, and slotted sliding bar *m*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

143,699.—Driver for Boot and Shoe Nailing Machines.—Asa S. Libby, Lawrence, Mass. Application filed August 14, 1872.

Claim.—The nail-driver made from round wire, having its driving end drawn into prismatic shape and hardened, substantially as described.

143,700.—Circuit for Printing-Telegraphs.—Landy T. Lindsey, Jackson, Tenn. Application filed March 26, 1873.

Each instrument has a ground-circuit which its own action breaks, throwing the circuit through next instrument of series, the instruments being thus brought successively into circuit.

Claim.—1. In a line of printing-telegraph having a series of instruments arranged in one circuit, the combination of a ground connection with each and every instrument of the series, substantially as and for the purposes herein set forth.

2. In a line of printing-telegraph having a series of instruments for operating the type-wheels, and a series of instruments for operating the printing mechanisms, the combination of a ground-connection with each and every printing-instrument through its type-wheel instrument, in such a manner that, as the lever of the type-wheel instrument completes its stroke, the said connection between the printing-instrument and the ground will be temporarily broken, for the purposes herein set forth.

143,701.—Regulator for Printing-Telegraphs.—Landy T. Lindsey, Jackson, Tenn. Application filed March 26, 1873.

Adds arm A and point B to regulator shown in patent No. 136,332, so as to restore main circuit with certainty once in every revolution.

Claim.—In combination with the correcting-wheel *g*, operating as described, the revolving arm A and point B, or their equivalents, for the purposes herein set forth.

143,702.—Printing-Telegraph.—Landy T. Lindsey, Jackson, Tenn. Application filed May 3, 1873.

Synchronism maintained by devices which break circuits of fastest-going instruments until all have reached a designated letter or space.

Claim.—1. The combination of the cam-wheel c^1 and the circuit-breaking bar *m* with insulating-roller *w*, for automatically breaking the circuit of the relay-magnet M, as herein set forth.

2. The combination of the cam-wheel c^3, circuit-changing bar a, with insulating-roller a', and the spring a^2, for closing a circuit through the magnet A^2 at the time when the unison-point is in contact with its stop, as herein set forth.

3. The combination of the lever h, prongs h^1 and h^2, with semi-hubs thereon, and the shifting-lever p, as and for the purposes herein set forth.

4. In combination with the printing-mechanism, the use of the magnet A^1 and its local circuit, controlled by a relay-magnet, for actuating the printing apparatus, as herein set forth.

143,703.—Domino.—BAZILE LOUINEAU, Sables D'Olonnes, France. Application filed February 28, 1873.

The spots upon the tablets are differently arranged from the usual game-tablets, and are in two different colors.

Claim.—The improved domino or tablet, the dots on each half of the face of the said tablet being marked in two different colors, substantially as herein described.

143,704.—Hinge.—HENRY MANNECK, New York, N. Y. Application filed February 18, 1873.

The hinge, with the eyes for the pintle, is made of a double thickness of sheet metal, the outer thickness extending beyond the inner at its edge, and bent under it to strengthen it. Tongues are cut and so bent out from the leaf that they can be passed through a pasteboard box and clinched upon the inner side to secure the hinge. By this construction rivets and screws are done away with.

Claim.—1. A sheet-metal hinge, each leaf of which consists of two thicknesses of metal, one of which is extended and folded over the edge of the other, and which, with its tubular portions, is formed from a single strip.

2. A hinge formed of sheet-metal, upon the leaves of which are cut tongues to fasten the hinge to the material to which it is applied, substantially as described.

143,705.—Piston-Packing.—THOMAS J. MAYALL, Boston, Mass. Application filed June 17, 1873.

Packing for piston-rods, &c., is made of canvas or other fabric, which is treated first with bees-wax or other lubricant, and then with rubber solution. The prepared fabric is then divided into strips, the longer edges of which are parallel with the warp, and these strips are then wound upon a mandrel or form in successive separate and independent layers, breaking joint with one another.

Claim.—1. Packing for pistons, piston-rods, steam-joints, and other uses, made of canvas or other fabric, treated first with bees-wax or other lubricant, and then with rubber solution, substantially as and for the purposes herein described.

2. The mode described of putting up the prepared fabric, the same consisting in dividing said fabric into strips, the longer edges of which are parallel with the warp or weft threads, as the case may be, and winding said strips spirally upon a mandrel or form in successive separate and independent layers, breaking joint with one another, as herein shown and set forth.

143,706.—Hoisting Apparatus.—NATHANIEL S. MCFARLAND, Williamsburg, N. Y. Application filed September 2, 1873.

The car travels in a single hoistway, having a box formed on top to receive the loose chain which passes over a pulley to a stationary chain-box in midway of the frame, and also connected by ropes or chains which pass over pulleys D, and secured to a vertically-sliding frame carrying the independent counterpoise of weights relatively to the car. In lowering the car a sufficient quantity of the chain from the stationary box is payed out into the car-box by pulling on the rope K to overcome the counterpoise-weights. To elevate the car its operation is vice versa.

Claim.—1. The combination of an independent counterpoise of invariable weight, F, relatively to the car, with the stationary chain box or chamber J, the car B, the hoistway A, the chain G, and wheel I, the whole being arranged for operation substantially as described.

2. The counterpoise constructed of a sliding frame, E, and independent weights F, in combination with the car B, chain G, wheel I, and stationary chain-box J, essentially as described.

143,707.—Potato Cutter and Planter.—LEMUEL J. MEWBORN, Kinston, N. C. Application filed July 9, 1873.

The potatoes, according to size, are dropped into tubes on the rear of the machine, where vibrating slides or cutters divide them as desired, and they fall into receptacles from which they are taken and placed in side hoppers, where revolving pocket-wheels pick them up, and carrying them over drop them into a trough which runs down and acts as an opener of the ground. A brush insures the right amount in each pocket; the surplus, falling off into a side trough, runs back into the hopper.

Claim.—1. The upward flanges p' on the rear side of seed-pockets p, and above the periphery of dropping-disk, as and for the purpose specified.

2. The inclined side channel S, leading back to the front of hopper, combined with a brush, R, as and for the purpose described.

3. The tube E, plate K, cutter F, and fingers H, constructed and arranged to operate substantially in the manner described.

143,708.—Railway-Rail.—BENJAMIN MYERS, Chicago, Ill. Application filed August 1, 1873.

Claim.—1. A reversible railroad-rail having twelve rolling-surfaces on heads A, flanged somewhat like the T-shaped rail, the periphery of one head serving as an elevated rolling-surface for a wide-gage track, and the flange or lateral side b of the adjacent rail serving as a rolling-surface for a narrow-gage track, substantially as shown and described.

2. The rail formed out of tubular metal, pressed into the shape shown, and having a channel, p, centrally through it for receiving a cable, E, substantially as described.

3. In combination with a rail having four heads, the wooden bridges B B, having the angular convex surfaces d and flat bearing-faces e, adapted to fit a concave space, c, and side surfaces b between the rail-heads and cross-ties, substantially as and for the purpose set forth.

143,709.—Washing-Machine.—FRANCIS M. NIXON and ENOCH N. BABCOCK, Lena, Ill. Application filed August 13, 1873.

To a rocking beater are adjustable handles having slots at their lower ends, which slide on the shaft, and are held by washers and nuts.

Claim.—The combination of the handles G, slotted at their lower ends, washers A, and nuts i with the shaft D and rocking beater E, all substantially as and for the purposes herein set forth.

143,710.—Grinding-Mill.—ROBERT PATTERSON and SUTTON PATTERSON, Newcastle-upon-Tyne, England. Application filed July 14, 1873.

Devices for adjusting the upper or runner stone as it wears away.

Claim.—The driver S combined with the adjustable lining T of the stone $G^{\times}$, when said lining is slotted and secured substantially as specified.

143,711.—Stand-Pipe for Water-Works.—GALEN W. PEARSONS, Ogdensburg, N. Y. Application filed May 24, 1873.

An air-pipe furnished with valves at either end, and arranged in the top of the stand-pipe to obtain pressure. By closing the valve, either by hand or automatically, the pressure in the stand-pipe is increased.

Claim.—An air-pipe or pipes furnished with valves operated either automatically or by hand, in connection with the top of the stand-pipe, substantially as and for the purpose herein set forth.

143,712.—Saw-Sharpening Machine.—EBENEZER W. PHELPS, Elizabeth, N. J. Application filed January 13, 1873.

The frame which carries the grinding-wheel has a universal movement, and can be adjusted to any desired position. The attachments are clearly defined in the claims.

Claim.—1. The combination of the swinging frame R, connected to the main frame by the brackets a a, and the sliding frame C, carrying the emery-wheel D, whereby the swinging frame can be adjusted to either side, and rocked up and down, and the emery-wheel given a lateral movement simultaneously, all substantially as set forth.

2. The adjustable swinging table G, for holding the saws while being gummed and sharpened, substantially as herein set forth.

3. The adjustable saw holder or support H, constructed as described, in combination with the cone-seat I, held on the support by means of the hook h, and eccentric lever J, substantially as and for the purposes herein set forth.

4. The counter-shaft holder, consisting of the standard N, with plate p and rim x, and the revolving pulley-holder O, with plate p' and groove y, substantially as and for the purposes herein set forth.

143,713.—Harrow-Tooth.—WILLIAM H. PLATT, Dayton, Ohio. Application filed November 16, 1872.

The tooth is made from a plate of metal cut into a semicircular form, and at the top it is turned at right angles, and provided with bolt-holes for securing the same to the frame.

Claim.—The harrow-knife having a quadrant edge curved downward and rearward, connected with the sides of the knife-plate by isometrically-curved bevels, and having its perforated upper portion bent at right angles therewith, forming the attaching-flange C, as specified.

143,714.—Shovel-Handle.—CHARLES POMEROY and JOHN D. OWEN, Mattoon, Ill. Application filed August 27, 1873.

The handle B is strengthened by a brace, D, inserted in it and bolted to the straps C C.

Claim.—The brace D, constructed substantially as described, in combination with the shovel and handle and straps C C, as and for the purpose set forth.

143,715.—Wagon-Seat.—ISAAC POWERS, Litingsburg, Mich. Application filed July 2, 1873.

Claim.—In combination with the seat A, the two springs B B, each bent, as shown, to form two prongs and two hooks, s s, and connected to the seat-bottom at each end by the keepers and together by the boards C C, all substantially as set forth.

143,716.—Car-Coupling.—GEORGE W. PUTNAM, South Glen's Falls, N. Y. Application filed June 26, 1873.

The link is provided at one end with a spring to lessen the shock attendant upon the meeting of the draw-head, and at the other with a hook and spring-bar for automatic coupling.

Claim.—The bar A, having a loop and spring plate at one end and a hook, z, and bar B at the other, all combined and arranged as and for the purpose herein set forth.

143,717.—Map Exhibiter and Cabinet.—WILLIAM A. RICE and GEORGE RICE, Framingham, Mass. Application filed March 24, 1871.

The invention constructed as indicated in the claims furnishes means whereby a large number of maps can be safely stored within a small compass, and yet so accessible as to render it the work of a moment only to place any one required in a suitable and convenient position for exhibition.

Claim.—1. The sash E'', provided with the map-rollers M and pivots e'', and made horizontally and radially adjustable within a suitable frame, substantially as and for the purpose shown.

2. The drums I'' and K'', provided with the map-rollers M, substantially as shown, and for the purpose described.

3. The rollers E, consisting of the hollow-metal cylinder or tube x', filled with a ribbed, grooved, or corrugated wooden bar, E', substantially as and for the purpose shown.

4. In combination with the hollow rollers M or bar G, provided with radial longitudinal slots, a map, or its equivalent, having secured to or within its edge a wire or rod, s', substantially as shown, and for the purpose described.

5. The cabinet A, provided with doors B, hinged sloping lid C, brackets D, and arranged to receive map-rollers E, when the several parts are constructed and arranged as set forth.

6. The vertical map-holder I, K, and K', constructed as described, and provided with the vertically-adjustable sash L and M, substantially as shown, and for the purpose set forth.

7. The construction and relative arrangement of the various parts of the map-holder as a whole, substantially as and for the purposes set forth.

143,718.—Hand-Tool for the Manufacture of Heels.—SMITH L. RIKER, New York, N. Y. Application filed August 16, 1873.

Claim.—1. The improvement in forming heel-blanks with a hand-tool, by punching and retaining the lifts in the same holder, and uniting them in the manner substantially as described.

2. The punch having the nail-tube f, driver i, and swiveling driver-stock k, arranged to operate substantially as described.

143,719.—Heel-Plate for Boots and Shoes.—GEORGE ROSE, Williamsburg, N. Y. Application filed April 25, 1873.

A metal disk revolves in an annular plate, which is secured to the heel of a boot or shoe. The disk is reversible, having a smooth wearing-surface on one side and with studs on the other to form an ice-creeper.

Claim.—The disk C, provided with pins c, and combined with a ring, B, and a frame, A, substantially as set forth.

143,720.—Car-Coupling.—EDWARD R. SCOTT, Noblesville, Ind. Application filed June 24, 1872.

The link, entering, throws the catch up out of the way until the link has passed far enough into the draw-head for the catch to fall within it. Then the draft-strain is equally distributed between the interior and exterior of the roof of the draw-head.

Claim.—In combination with a bumper provided with a slot, g, in its upper side, the angular latch herein shown, having the curved slot f, bearing-points b d, inclined surface e, and point c, and held to the bumper by the cross-piece c, all substantially as and for the purposes herein set forth.

143,721.—Folding Chair.—DAVID N. SELLEG, Newburg, N. Y. Application filed October 3, 1873.

The seat is hinged to the extensions of the front legs, and connected by hooks with the extensions of the rear legs. The arms are in three pieces, the upper one of the two front pieces being hinged to the front extension, and the lower one to the rear piece, which is at the other end pivoted to the rear extension.

Claim.—The folding chair constructed with pivoted legs A B, hinges V, seat S, hooks L, pins J, and the hinged arms M N G, substantially as shown and described.

143,722.—Compound Metal-Working Machine.—HIRAM B. SEVEY, Vienna, Me. Application filed September 15, 1873.

Claim.—The arrangement and combination of the bed or frame a, provided with the spring e and the cogged frame w, the arm b, having the projection t and cogs c, the shears d d', the eccentric g, with its cogs f, the links i j, hand-lever A, with its cogs v, bending device l, and die k, as herein set forth, to operate as shears and metal-bender.

143,723.—Rotary Steam-Engine.—LEVI M. SHAW and ALLEN S. BAKER, Evansville, Wis. Application filed April 8, 1873.

A revolving spherical case, with a diaphragm, is made in two halves, one being rigidly held, and the other at an angle, loosely, in journals. The shaft is hollow, and the angular section thereof has a central spherical projection, against which adjustable bearing-blocks with packing in them, and made wedge-shaped, bear. The piston-heads, secured to the loose section of shaft, are flat on their outer and inclined on their inner sides, and bear against the wedge-shaped blocks in revolving. The steam is admitted and exhausted alternately through the hollow-shaft sections on opposite sides of the bearing-blocks, through suitable ports.

Claim.—1. The combination of the inclosing-case, the piston-heads set at an angle, the connecting-diaphragm, and central disk and hollow shafts F d forming the steam-passage, all the parts being adapted to revolve together, substantially as described.

2. The combination of the shaft F having the piston-heads attached thereto, as described, with the case c c having an opening upon one side, as shown, the position of the piston-heads relative to the case being changed by the revolution of the case, as described.

3. The combination of the central disk, the diaphragm, and the oscillating bearing-blocks K^1 K^1, as described.

4. The engine described, consisting of the base A, standards B B, case C, constructed as described, piston-heads, diaphragm, and shafts, the case and its interior parts being adapted to revolve together, substantially as described.

5. The combination of the spherical projection e upon the shaft F, with the packing-ring g and adjusting set-screws, as described.

143,724.—Portable Pump for Mines.—WILLIAM E. SIDNEY, Knightsville, Ind. Application filed August 20, 1873.

Each valve-box has a pair of valves opening in opposite directions, by which arrangement the suction-pipe may be used as the discharge-pipe, or vice versa.

Claim.—1. A force-pump located on a portable truck, and provided with double valves, whereby its operation may be reversed, substantially as and for the purpose specified.

2. The valves k k' opening in opposite directions, and separated by the chains m and screw-caps n, substantially as described.

143,725.—Steam and Vacuum Pump.—ALONZO J. SIMMONS, Indianapolis, Ind.—Case B. Application filed May 14, 1873.

The cold-water valve-chambers, arranged under the main cylinders, are provided with bent or elbow jet-pipes leading from the said chambers, at or near the bottom thereof, toward the main cylinders, and assist in condensing the steam therein. A pipe with stop-cock connects the two valve-chambers and forms a communication between them for the purpose of filling the space in the one cylinder from the other, not before filled by vacuum.

Claim.—1. In combination with the cylinders A A' and valve-chambers B B' of a steam-pump, the bent or elbow pipes D D' within the cold-water chambers B B', and leading respectively from the valve-chambers B' B, at or near the bottom, to the valves in the bottom of the cylinders A A', as and for the purposes herein set forth.

2. In combination with the valve-chambers of a steam-pump, the pipe G, with stop cock A, connecting the two valve-chambers, and forming a communication between them, substantially as and for the purposes herein set forth.

143,726.—Needle and Shuttle Threader and Knife.—JOHN SLACK, Brooklyn, N. Y. Application filed June 5, 1873.

The hook may be used to draw the thread through the eye of the needle or shuttle, and the blade serves as a knife.

Claim.—As a new article of manufacture, the thread-cutting and threading instrument, substantially as described.

143,727.—Animal-Trap.—BENJAMIN F. SMITH, Philadelphia, Pa. Application filed July 30, 1873.

A pair of nipper-levers, centrally hinged together, and each carrying a circle of curved barbed points, is held in engagement by a spring. It is set by a notched arm fitting against a lug on the spring-trigger, which latter holds the bait.

Claim.—1. The spring-jaws A and A', armed with hooks a, in combination with the spring tongue or trigger B and notched arm c.

2. The combination with the jaws A and A' and their barbed hooks with the arms d and d' and spring w.

3. The series of barbed hooks a, confined to the jaws in the manner described.

143,728.—Car-Coupling.—EDWIN D. SMITH, Sutton township, Brome county, assignor of one-half his right to LEONARD FORD, Dunham, Canada. Application filed June 26, 1873.

The coupling is automatic, and uncoupling is effected by means of a lever and a chain which passes over a pulley.

Claim.—1. The combination of the flap D, rod F, spring G, lever H, chain I, and pulley J, as shown and described, for the purpose specified.

2. The springs L L in the recess B of the draw-head, in combination with the coupling-link, as shown and described, for the purpose specified.

143,729.—Machine-Gun.—CORNELIUS STEENLAND, Negaunee, Mich. Application filed July 17, 1873.

Claim.—1. The intermittently-rotating cartridge-cylinder C, provided with an even number of opposite rows of loading-chambers c, which severally contain pistons c^1, connected in pairs by rods c^2, substantially as and for the purpose set forth.

2. The combination of the intermittently-rotating cartridge-cylinder C c, connected pairs of pistons c^1, magazine D, and ram-rods F, substantially as and for the purpose specified.

3. The intermittently-rotating cartridge-cylinder C, provided with diametrically-opposite rows of loading-chambers c, and an equal number of rows of needles, e, arranged at right angles to the loading-chambers, substantially as and for the purpose specified.

4. The combination of the intermittently-rotating cartridge-cylinder C c e, provided with ratchets C^2, sliding bolts G^1, hammers G G^2 g, links g^1, and springs I, substantially as and for the purpose specified.

143,730.—Forceps for Snouting Hogs.—GEORGE SIPPERSON, Zionsville, Ind. Application filed August 6, 1873.

Claim.—The forceps having the corrugated and slotted jaw D and the jaw D, recessed and provided with the spring-plate G, being forked, all constructed and arranged for operation as and for the purpose specified.

143,731.—Snow-Plow.—BENJAMIN B. SWEET, Wilmington, Del., and JOHN NOBLE, Philadelphia, Pa.—Application filed August 25, 1873.

Claim.—A snow-plow in which are combined a furnace, A, a partition, D, extending into the nose of the plow, and a return flue-boiler, G, or its equivalent, whereby the whole of the products of combustion from the said furnace are directed first into the nose of the plow, thence to the rear end of the latter, and finally to the front, before making their escape, all substantially as and for the purpose specified.

143,732.—Stirrup.—NELS C. THOMPSON, San Francisco, Cal.—Application filed March 13, 1872.

Claim.—The described stirrup, having the parts A B C and rollers D combined, as and for the purpose described.

143,733.—Machinery for Removing Dirt from Skins.—CHARLES TURNER, Lenton, England.—Application filed January 16, 1873.

The skin is stretched over a drum and presented to the action of a series of brushes arranged spirally upon a shaft, the drum and shaft revolving in opposite directions.

Claim.—1. The combination of the swinging brush-frames E E^1 E^2, having brushes F^2 F^4, as described, with the set-screws I, block H, and springs H', as described.

2. The combination of the hand-lever E^2 with the wedge-bar K, substantially as described, for the purpose set forth.

3. The brush frame or frames, each carrying a brush-axle, F, bosses F^1 F^3, and brushes F^2 F^4, tie-bar E^3, blocks H, set-screws I, pulleys M, the weighted truck-carrying arms M, cam-axle K, and cams K', hand-lever L, and cylinder C', all operating substantially as described, for the purposes set forth.

143,734.—Planing-Machine.—JOHN UTTER, Central Falls, R. I.—Application filed August 18, 1873.

A clamp with segmental jaws is fitted to the bed of a planing-machine to hold the material at any angle.

Claim.—A device constructed substantially as and for the purpose described.

143,735.—Machine for Forming Seamless Cans.—MATTHEW VON CULIN, Philadelphia, Pa., assignor, by mesne assignments, to EWALD RIEDEL and JOSEPHINE E. ROEBLING, same place.—Application filed March 17, 1873.

Claim.—1. The method herein described for forming seamless cans or other ware with vertical sides from sheet metal, by first forming a vessel with flaring sides, and then, by one operation of a plunger, forcing the same through a die of the construction described, and retaining the same bend in the blank, substantially as set forth.

2. The flaring-mouthed die A, having the vertical portion a b, and a shoulder or offset at the bottom, in combination with the blank-holder C and plunger D, constructed as described, and for the purpose specified.

143,736.—Belt-Shifting Apparatus.—OLIVER H. WADE, East Bridgewater, Mass.—Application filed April 9, 1873.

An adjustable belt-guard, together with a sliding rod having a motion on its axis, so that the guard may be as near as desired to the pulley in all directions, and, being adjustable, will force the belt in the desired direction, and also allow it to twist into position to go on the next pulley.

Claim.—1. The turning-rod D, in combination with the arm P and belt-guard K, operating substantially as described, and for the purpose set forth.

2. The combination of the rod D, the sliding rod E, arm F, and the guard K, operating substantially as described, and for the purpose set forth.

143,737.—Splint-Plane.—HENRY L. WEAGANT, Morrisburg, Canada.—Application filed August 29, 1873.

The slat is perfectly formed at each cut, beveled and straightened, and receives the proper bend to facilitate its being woven.

Claim.—The combination of the plane-iron B and beveling-knives D D' with the governor F, spring G, and recess H, as and for the purposes set forth.

143,738.—Washer-Cutter.—HENRY E. WHIPPLE, Providence, R. I.—Application filed August 9, 1873.

A clearing-plate is provided, which holds the stock down upon the cutting-bed when the knives are withdrawn.

Claim.—1. The combination of a cutter-holder and a spring-spindle with a clearing-plate, substantially as and for the purpose specified.

2. The adjustable gage-screws, in combination with the cutter-holder and the clearing-plate, substantially as and for the purpose specified.

143,739.—Chimney-Furnace.—LEWIS WHITE, Waterbury, Conn.—Application filed July 14, 1873.

Smoke in a chimney heats air in three distinct chambers, which are, by means of tubes, connected with each other.

Claim.—1. The combination of the chimney with an air-box, B, air-supply pipe, smoke-chamber d, and smoke-pipe e, all arranged to operate substantially as described.

2. The trap A and gate f, connected with each other for simultaneous operation, and combined with the air-box B and smoke-passages d d, and with the air-chamber E, substantially as and for the purpose herein shown and described.

3. The box E, containing the register G, arranged to work together with the box B, with which it is connected, as and for the purpose specified.

4. The combination of the air-chamber G, containing the smoke-passage n, with the register p, air-conduit C, and lower air-box B, with which the air-conduit also communicates, as set forth.

REISSUE PATENTS.

5,595.—Treadle for Sewing-Machines.—SAMUEL B. BUSHFIELD, Baltimore, Md., assignor, by mesne assignments, to himself, ROBERT D. MORRISON, JOHN H. WARNER, and WILLIAM L. STORK.—Patent No. 140,677, dated July 8, 1873. Application filed September 23, 1873.

The treadle is connected with a stationary shaft and with the pitman by means of rubber sections.

Claim.—1. The elastic piece C rigidly attached to the shaft forming the support and fulcrum for the treadle A, substantially as and for the purpose set forth.

2. The combination of a treadle with the pitman E, having an elastic section, D, at or near its point of articulation to the treadle, in the manner and for the purpose substantially as specified.

3. The combination of the treadle A, elastic piece C, shaft B, and pitman E having an elastic section, D, all constructed to operate in the manner and for the purpose substantially as specified.

5,596.—Composition of Matter.—GEORGE F. J. COLBURN, Newark, N. J., assignor to WILLIAM M. WELLING.—Patent No. 73,094, dated January 28, 1868. Application filed August 22, 1873.

Claim.—A composition of shellac and asbestus, in about the proportions and substantially as set forth.

5,597.—Oil-Can.—JOHN G. EVENDEN, Chicago, Ill.—Patent No. 115,943, dated June 13, 1871.—Division A. Application filed August 22, 1873.

Claim.—1. The combination of a sheet-metal can, C, with a series of longitudinal wooden strips, W W, arranged around it with their edges parallel, but not in contact, said strips being clasped firmly against the body of the can by means of hoops h h, and supported by the wooden base B, substantially as and for the purposes specified.

2. The supporting-hoop i, constructed with the large wire at its upper edge, as described, and applied to the can, in combination with the strips W W, which rest upon it and bear against the under side of the wire or rib formed by it, substantially as and for the purposes set forth.

5,598.—Can for Oils, &c.—JOHN G. EVENDEN, Chicago, Ill.—Patent No. 115,943, dated June 13, 1871.—Division B. Application filed August 22, 1873.

Claim.—The can A B, made with a pitch top, in combination with a wooden casing or covering applied to the sides and bottom only, such casing terminating at its top where the pitch of the can commences, substantially as specified.

5,599.—Sheet-Metal Can.—JOHN G. EVENDEN, Chicago, Ill.—Patent No. 115,943, dated June 13, 1871.—Division C. Application filed August 22, 1873.

Claim.—1. The combination, with a pitch-top can, A B, of the tube E, opening at its lower end into the can, and open at its upper end to receive a stopple, said tube lying flat against the surface of the oblique breast, substantially as specified.

2. The arrangement of the vent upon the breast of the can equidistant from the lugs which support the bail, and in line with the hand-hold, substantially in the manner and for the purpose specified.

5,600.—Pitman.—FRANK R. GLASCOCK, Hillsborough, Ohio.—Patent No. 133,581, dated December 3, 1872. Application filed August 23, 1873.

The inner sides of each bearing are correspondingly beveled so that as the upper section is forced down by the key the lower section is laterally displaced, bringing the bearing closely against the journal.

Claim.—1. The combination of an upper and a lower box, C, joining each other at parallel lines e, projected at an angle or bevel from points tangential with opposite points of the circumference of the bore, the upper box being adapted to move vertically, and the lower laterally, as set forth.

2. The journal-boxes C C, constructed as described, in combination with the strap and rod D D', key E, and nuts f f', substantially as and for the purpose herein specified.

3. The combination of the boxes C C, strap and rod D D', with key and nuts, as set forth, with the wrist-pin B, having the oil-cavity b and its cap, and the oil-passages h h', substantially as herein described, for the purposes specified.

5,601.—Cultivator.—CYRUS M. HALL and DAVID E. HALL, Uniontown, Ill.; said DAVID E. HALL assignor to said CYRUS M. HALL.—Patent No. 27,627, dated March 27, 1860. Application filed January 5, 1873.

The cultivator-beams are mounted upon a frame, supported upon two wheels, in such a manner that the beams have both a horizontal and vertical motion independently of each other.

Claim.—1. In combination with the barbed share A, the revolving cutting-wheel or shield C, the periphery and arms of which have sharp cutting-edges, constructed and arranged substantially as shown and described, for the purpose set forth.

2. The combination of the hitch-bolt K, the bars m and n, the bolt s, and the axle-tree Y, and a suitable device for holding and operating the same as co-acting devices for rendering the point ends of the beams adjustable, both laterally and vertically independent of the motion of their rear ends and independent of each other, and for equalizing the draft of the machine, each constructed and all arranged substantially in the manner described and set forth.

3. The combination of the sliding bar x, provided with supports upon the rear face of the axle-tree Y and the pendent posts I I, as a device for communicating lateral motion to the ends of the plow-beams, and of allowing and guiding vertical motion thereof, independent of any motion of the front ends of the same, constructed and arranged substantially in the manner and for the purpose set forth.

4. The combination of the front sliding bar x, the front cross-piece F', the bars m and n, hitch-bolt K, bolt c, the levers a a mounted and pivoted to the front ends of the beams, as shown by the link l, as co-acting devices for moving the front ends of the beams laterally, and of giving them vertical motion, either together or independently of each other, and independently of the motion of the aft ends of the beams, each constructed and all arranged substantially in the manner and for the purpose described and set forth.

5,602.—Malt-Drier.—WILLIAM W. HUGHES, Philadelphia, Pa.—Patent No. 94,114, dated August 24, 1869. Application filed July 19, 1873.

Drying-chambers are arranged on a level with malting-floors. Each chamber is connected by a flue, with a corresponding fire-place below. Dampers are so arranged at the lower ends of the flues that the heated air from each fire-place may be admitted to its flue, or excluded therefrom and admitted to the adjacent flue. Slatted valves in the rear of the fire direct the draft of air more or less directly upon it, as desired.

Claim.—1. The combination, in a malt-house, of the floors of the drying-chambers, arranged on a level, or thereabout, with the adjacent growing or malting floors, the inclined partitions t, and apertures for the admission and escape of hot air from the drying-chambers, substantially as and for the purpose hereinbefore set forth.

2. The combination and arrangement of the fire-places e e^1 e^2, &c., flues p p, &c., and dampers r, that the heat from one or any number of the fire-places may be directed in the manner and for the purpose set forth.

3. The slatted valves s, arranged at the back of each fire-place, for the purpose of regulating the supply and direction of cold air into the same, substantially in the manner described.

5,603.—Bedstead-Fastening.—THOMAS W. MOORE, New York, N. Y., assignor to F. N. MOORE.—Patent No. 127,786, dated June 11, 1872. Application filed June 28, 1873.

A plate, a portion of which lies flush in a circular recess of the rail, this portion having a hub which fits into a deeper but smaller concentric recess. The remaining part of the plate projects, in the same plane, beyond the rail, and has on its back, perpendicular thereto, a diagonal flange, to be passed into a corresponding plate lying in a mortise of the post.

Claim.—1. The plate A, having the edges a and the hub C made on arcs of concentric circles, as and for the purpose described.

2. The plate A, provided with the projection F and flange H, having the form shown, and for the purpose specified.

5,604.—Bed-Bottom.—SAMUEL PEARSON, Cincinnati, Ohio, assignor to EMANUEL G. GORY.—Patent No. 49 434, dated August 15, 1865. Application filed September 3, 1873.

Along the head and foot pieces of the frame is a series of wire springs, each bent to a loop extending inward and upward, and hooking onto a pin which hangs loose through the slat, to render the latter reversible on the loop, between the sides of which it lies, and into which it can descend unobstructed. The loop has at its bottom a coil on each side, its extremities affixing it to the frame.

Claim.—1. The combination of the pin c with the slat C, substantially as described.

2. The spring E, having double helices with spaces between them, through which a slat the full length of the bed may pass without obstruction, substantially as and for the purposes described.

3. A bed-bottom in which the slats are disconnected from each other, and sustained by springs E having the bent stirrups d to prevent lateral displacement of the slats, substantially as shown and described.

4. I combination, a reversible slat, C, spring E, adjustable pin c, substantially as and for the purposes described.

5,605.—Stove.—JOHN G. WIDMANN, Yonkers, N. Y.—Patent No. 23,970, dated May 10, 1859; extended seven years. Application filed July 16, 1873.

A fire-space surrounding the magazine and the oven above it allows the products of combustion to ascend to a chamber over the oven, which is thereby heated. A tubular opening through the side of the stove and oven, and an opening in the bottom of the oven into the magazine, allows fuel to be introduced. Flues extend from the upper part of the magazine, to conduct gas rising from the fuel down to the place of combustion just above the grate.

Claim.—1. An oven for cooking purposes placed over or above a fuel-magazine of a base-burning stove, substantially as described.

2. An oven, E, placed over or above the fire, in combination with a base-burning fuel-magazine, casing F, fire-space G, and door c, substantially as described.

3. The chamber G^1 above the oven E, in combination with a fire-space, G, leading from a fire-chamber of a base-burning fuel-magazine, substantially as described.

4. The oven-bottom in a base-burning magazine-stove partly exposed to the direct action of the fire, substantially as described.

5. The combination of the oven-door c, the opening o through the oven-bottom E', the removable cover c', and the base-burning fuel-magazine, substantially as described.

6. Tubes or conduits leading from near the top of the magazine D, and extending down to the incandescent coals near its base, for the purpose of conducting the gases from above the fuel in the magazine and delivering them to the incandescent coal, substantially as described.

5,606.—Harvester.—THOMAS N. FOSTER, South Pass, Ill., assignor to HENRY H. DOUBLEDAY.—Patent No. 30,215, dated October 2, 1860.—Division A. Application filed March 16, 1872.

The cutter-frame, which is hinged to the tongue-frame so as to have a vertical movement independent thereof, is connected with the whiffletrees by a jointed draft-rod.

Claim.—The combination of the tongue-frame, vibrating on the main axle, and having the tongue rigidly connected thereto, the independently-vibrating cutter-frame, and the flexible draft-connection between said cutter-frame and the whiffletrees, substantially as described.

5,607.—Harvester.—THOMAS N. FOSTER, South Pass, Ill., assignor to HENRY H. DOUBLEDAY.—Patent No. 30,215, dated October 2, 1860.—Division B. Application filed March 16, 1872.

Guide-pulleys for the reel belt are arranged near the foot of the reel-post, which is supported on the hinged platform.

Claim.—The reel, adapted to follow the movements of the hinged cutting apparatus and grain-platform, in combination with guide-pulleys, arranged at or near the foot of the reel-post, for retaining the reel-band in proper working relation to the driving and reel pulleys, as described.

5,608.—Stationary Fire-Pipe for Buildings.—HENRY PALMIERI, New York, N. Y., assignor of one-half interest to GORDON MONGAM.—Patent No. 136,537, dated March 4, 1873. Application filed September 1, 1873.

The horizontal branch pipes project from the vertical pipe in a curved line to facilitate the passage of the water into them from the vertical pipe, and their ends are closed by screw-caps to make them air and water tight, and to protect the screw-thread of the base-connection.

Claim.—The combination, with a vertical conducting water-pipe, arranged upon the outside or inside of the wall, as described, of the series of curved connections or branch pipes, at different altitudes, provided with sealing-caps, substantially in the manner and for the purposes hereinbefore set forth.

5,609.—Side-Saddle Tree.—JACOB STRAUS, St. Louis, Mo.—Patent No. 103,101, dated May 17, 1870. Application filed October 4, 1873.

Securing elastic yielding connections between the saddle-tree bars and seat by metal straps, provided with lugs and semicylindrical grooves to receive the elastic connections. Also forming the pommel-lip of a spring-metal top and leather bottom.

Claim.—1. In combination with the tree-bars A and A, connected together by means of the strap B, and with the seat D, provided with the plate E, the links F and F', hinged together and to said strap and plate, substantially as and for the purpose specified.

2. In combination with the tree-bars A and A, seat D, and links F and F', the rubber springs G, arranged to operate in the manner and for the purpose substantially as shown.

3. In combination with the tree-bars A and A, the strap B, provided with the pivotal lugs b, and the straps C, provided with the semicylindrical grooves c, substantially as and for the purpose set forth.

4. The pommel-lip D", composed of the leather body d and spring or sheet metal covering d', substantially as and for the purpose shown and described.

5. As a new article of manufacture, a side-saddle having its several parts constructed and combined to operate substantially as and for the purpose specified.

FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant thereafter, unless he shall make a new application within two years from the date of notice of the original allowance.

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In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

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HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	408
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS, complete, about	3,500
ELECTRICITY, (in progress,) to July, 1871	888
TEXTILE, (in progress,) to July, 1871, about	4,200

OFFICIAL GAZETTE

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INTERNATIONAL PATENT CONGRESS.

VIENNA.

[The following letter of the President of the Patent Congress of Vienna, and the address (from phonographic report) of the Honorable J. M. Thacher, Assistant Commissioner of the United States Patent Office, and United States representative at said congress, are of sufficient interest to require their publication here. The resolutions of the congress are to be found on page 209 of the current volume of the OFFICIAL GAZETTE.—EDITOR.]

[Copy.]

42 PRATERSTRASSE 11,
VIENNA, *am 6 August*, 1873.

To the Honorable J. M. THACHER, *the Assistant Commissioner of the Patent Office, Washington:*

SIR: I beg leave to inform you that the Patent Congress, over which I have the honour to preside, passed this day, unanimously, the following resolution, and I hope that you will kindly consent to the request expressed by that assembly.

I have the honour to be, sir, your obedient servant,

C. WILLIAM SIEMENS.

Read and resolved to be sent:

"It has been publicly announced that the American Government, in consequence of an official notification from the Imperial and Royal Government, appointed the Honorable J. M. THACHER, Assistant Commissioner of Patents of the United States, to represent them at this Congress, but that Mr. THACHER, on his arrival, finding that the Austrian and other Governments were not officially represented, had declined to take his seat.

"In view, however, of the great interest for this Congress in the views and practice prevailing in the United States as bearing upon the questions now before us, this Congress respectfully ask Mr. THACHER to favour them with a statement of his views upon this subject, and that half-past two o'clock, on Thursday, the 7th inst., be appointed by the Congress for this purpose."

ADDRESS OF HON. J. M. THACHER BEFORE THE INTERNATIONAL PATENT CONGRESS.

Mr. President and Gentlemen:

I wish to return my hearty thanks to you for the invitation so courteously extended to me to address you here, and to assure you that my interest in the debates of this congress is not in the least affected by the fact that owing to unfortunate circumstances I have not participated actively therein. I regret exceedingly that I find myself placed in a position such that I have felt it would be improper for me to take my seat as an active member of the congress; but my sympathies—my whole heart—has been with you, and I hope that the final conclusions and resolutions of this congress will be fraught with great and important interests to the entire civilized world.

Permit me, gentlemen, briefly to explain what I understand to be the foundation of patent protection for inventions. And first, I believe that patent protection is founded in justice to the individual. One of England's greatest jurists has said, in substance, that it is universally conceded that man has the right of property in whatever he bestows labor upon. This was spoken with reference to manual labor, but when this principle is applied to invention, by so much as the mental faculties are higher than the physical, by so much does the individual seem to me to have a stronger and more righteous claim to property in the product of those mental powers than in the product of the physical. So, then, I am prepared to make this my first proposition—and I think it may be sustained before the whole world—that the protection of inventions by some good patent system is founded in justice to man himself, by granting to him the right of property in the product of the highest faculties which God Almighty has given to him. I should be glad to elaborate this point; it is one full of interest to us, full of interest to the great mass of inventors throughout the world, but there is so much pressing upon me in the short time which I can constant

to detain you from your legitimate discussions that I can only briefly notice this point with others. I wish to say simply this, that comparing the completeness of possession which the inventor has of his inventions with that which one has of the product of his physical powers, there can be found no higher right to the complete control of anything coming into the possession of man than that which he has to this product of his intellect. He has made it himself. If he keeps it to himself it is entirely and solely in his possession. No man can take it away; no process of law can extort it from him. He has a stronger and more valid right to it, based on possession, than even to his landed estates. Now, gentlemen, if this be the case, if man has such complete control over his invention, I can see no obligation on his part to impart it to others, unless it be for his own interest. I can see no obligation on his part to disclose it to others, unless he is permitted to control and use it as he would other property.

But I believe that patent protection is founded not alone upon individual right of property, but that it is based, secondly, on expediency, or a proper regard for the public good; in other words, that it is not only the right of the individual inventor to receive some protection, some legal recognition of his right to property in his invention, but also that the public welfare is advanced, and demands that he should thus be recognized. It is unnecessary before this assembly of intelligent men, who have thought upon and discussed these subjects, to say one word in support of this proposition. That inventions are beneficial to the world is conceded by all, both those who sustain the policy of patent protection and those who oppose it. The progress of the industrial arts is desired by every people. Now then, if progress in the industrial arts is desirable, and if inventions are conducive to that end, any system by which inventions shall be stimulated, and thereby greater and more substantial progress shall be attained, is a great and lasting public benefit. But patent protection is desirable on grounds of public policy, not only on account of the general benefits that arise from inventions, but because in this way only can inventors be induced to fully disclose to the public the products of their inventive genius. Give a man no protection, give him no inducement to disclose his invention, and how does he seek to secure some remuneration for the important discovery he has made? The only way open to him is to maintain it a secret. So long as he can keep it concealed from all the world and work it in secret he has some hope of securing benefit therefrom, but the moment he discloses it he loses dominion over it, and it becomes the property of mankind. So that if the inventor has no protection whatever his only hope of securing some reward for a valuable discovery is to keep it concealed and work it in secret. I need not stop long to prove the undesirability of such a practice; it is almost universally conceded. First and greatest of all objections to such a course is the fact that the manufacture becomes in this way one of the most odious monopolies that can be established, for just so long as the invention can be kept secret and can be practiced in secret, and is a desirable product, just so long can the inventor or manufacturer demand from the public whatever price he thinks best. An article may be held up in price, the public may be compelled to pay any demand, and the possession of the secret handed down from generation to generation, one of the most odious monopolies that can be suggested; or what would be equally disastrous, lost to the world entirely by the death of the inventor. It is necessary then to the progress of the arts, to the substantial welfare of the public, that measures should be adopted which shall induce the inventor to make the fullest disclosure possible of the invention he has made. But we have not reached those millennial days when men shall be influenced by motives of philanthropy alone. Unfortunately it is the pocket that controls men more or less in every station and in every country, and it is only from hope of reward, only from hope of substantial reward, that inventors, as business men, can be induced to disclose their discoveries, and thereby give them to the world as a public benefit. I say then, for the purpose of making the invention a public benefaction by securing its disclosure fully and completely to the world, open to all those who may wish to manufacture under suitable laws, some protection must be afforded, either by patent laws or by some other means.

Passing from this second fundamental principle, which I cannot stop to elaborate, the next inquiry is, if protection is just, and is desirable on the ground of public policy, what is the best system for securing the rights of the inventor and promoting the public welfare? Well, the only means, except by patents, that has been suggested with any show of reason, or really with any support, is that of giving the inventor a certain gross sum as a reward for the disclosure of his invention. It seems to me that the moment this plan is presented to practical minds its defects must be apparent. In the first instance it is impossible to determine the value of an invention when it is first made. Why, the history of inventions in our country, and in all others, so far as I know, is to this effect—that some of the most important have been least valued when first disclosed. The facts are familiar to you, and I need not refer to instances. All through the history of inventions in the world we find instances of inventors struggling from year to year to introduce their inventions. Some of them have gone down to the grave impoverished by their exertions, by the expense of time and money which they incurred in their attempts to convince the public that they had produced something valuable, and it has been left for future generations to take up their inventions, introduce them, prove their great utility to the world at large, and receive the reward. I think, then, it is utterly impracticable to determine the value of an invention when it is first disclosed. Suppose it might be approximately determined, the inventor on the one hand might at times receive too large a reward, for not only does history show that inventions have been under-estimated at first, but what has appeared to be valuable and promised to be of great utility and benefit to the world has sometimes proved to be utterly useless. And, on the other hand, if the invention be under-estimated, and the inventor sees it coming into general use without adequate reward to himself, the injustice done him is great, and the stimulus to further effort is taken away. The impracticability of this means of rewarding the inventor for his time and expense, it seems to me, must be so patent to every practical mind that it needs no further comment, and I dismiss it with the remark that, so far as our country is concerned, I believe it would be utterly impracticable and impossible to establish such a system there.

The grant of letters patent for a limited term is the only other mode which has been adopted as the means of rewarding the inventor and benefiting the public. It appears to me to be the only just and practicable manner of securing these ends. The inventor being secured in the exclusive right to his invention has a fair opportunity to place it on the market the same as any other property, with the hope that the demand will be such as to afford remuneration for his time and expense, while to the public is secured the full disclosure of the invention and its introduction into use. It may seem to follow from what has already been said that the inventor's right must be indefeasible; but just here the public good comes forward and demands that a perpetual monopoly shall not be created, and, therefore, that the exclusive privilege shall exist only for a reasonable term of years.

But there are important considerations to be taken into account in establishing a system of protection by patents. What are some of the elements of a good patent system? I say, first, that patents should be granted only for new and useful inventions; for new inventions only, because no man has the right to enter the public domain and obtain an exclusive privilege for what is already public property; and for useful inventions only, because no man has the right to obtain an exclusive privilege for that which will not work a substantial benefit to the public at large. Now, it seems to me that these propositions are so self-evident that they hardly need elaboration. They must commend themselves to the common sense of mankind to such an extent that they hardly need argument in their support. Grant that the inventor has the right of property in his invention, and that right exclusive, and it necessarily follows as a corollary to this proposition that he cannot have an exclusive right to whatever already belongs to another or to the public. Grant, too, that he should have an exclusive right to his invention, but that he should have that exclusive right only because public policy demands that he should have protection for his property, and it necessarily follows as a corollary of that proposition, that he should not have an exclusive protection for that which is injurious to the public. I think, gentlemen, I may leave this point with the assurance that it is generally accepted by you, for I am happy to know that in the resolutions you have already adopted it is distinctly recognized and asserted.

I pass, then, to a second point, and say that patent protection should be granted only to the original and first inventor. This may seem to be included in and to follow necessarily from the first proposition, and yet a moment's reflection will show that it is not so included, for if the law of any country should permit the introducer of the invention of another to secure an exclusive right thereto, the first requirements—to wit, that patent protection should be granted for new and useful inventions only—would not be violated. I therefore maintain, as a second requirement, that patent protection should be given to the original inventor only. This appears to follow logically and conclusively from the first proposition suggested—to wit, that patent protection is founded in justice to the inventor in his natural right as an individual to the product of his mental faculties. If that is so, he alone has that right, and he alone, or his legal representatives, can have the right to exclusive patent protection. Therefore, if he disclaims that protection—if he says "I do not wish to obtain any exclusive privilege for this invention, but prefer to give it to the world," it belongs not to some introducer, who takes it from one country and carries it to another, but to the *public*. I know of no legal right, of no legal principle, by which the mere introducer of an invention from one country to another can justly obtain an exclusive right to such invention. The natural right belongs to the inventor only; and, if he neglects to secure it for any reason whatever, it reverts to the public, and should become a part of the public domain. In former times there may have been reason for encouraging the bringing of inventions from one country to another by favoring mere introducers. In the then imperfect means of communication commercial transactions were attended sometimes with great difficulties, and even great danger; and it can readily be seen that it would be just and politic for a government, in order to secure the advantages resulting from the transfer or communication of a foreign invention to its own inhabitants, to grant some exclusive privilege to the introducer thereof. But in these days, when means of communication have been so largely and so wonderfully improved, so that two continents can exchange ideas in the twinkling of an eye, and citizens are continually passing from one country to another, and mingling freely with each other, the reason for the extension of such privilege no longer exists; and I believe that no country has a just right longer to hold out any encouragement to the introducer of a foreign invention by granting to him any exclusive right therein. The moral effect of such a provision of law should not be forgotten. Perhaps we have seen more of it in America than you have here upon the Continent, owing to the greater number of our inventions, and the greater number of patents which we grant. While we give no exclusive privilege whatever to the introducer of a foreign invention, there are some countries which do extend this privilege, and there are men who make it a business to carry inventions from one country to another. Now, I know of nothing in connection with patents that has so decidedly an immoral influence upon general business habits as this practice. These persons, some of them our own citizens, and some of them citizens of other countries resident with us, watch the issue of patents from our office, and immediately upon such issue *steal* the valuable inventions—I cannot apply a milder term—and carry them to other countries as mere introducers, to the great injury of the rightful owners. One of our leading attorneys, a few days before I left Washington for this country, told me that but a week before a gentleman came into his office and suggested that, as he had a large practice before the Patent Office, and was taking out patents for inventors every week, he would like to arrange with him so that if anything came which was valuable it would be communicated so soon as patented, to be taken to those countries granting privileges to the introducer, and the profits divided. Can one conceive a more immoral practice? I appeal to you, gentlemen, as business men, can you imagine a

more vicious and demoralizing practice than this? I am happy to say that the attorney told me he instantly rose, opened the door, and suggested to that gentleman that he should find his way out of the office as soon as possible.

But I proceed to say, thirdly, that I believe the two requirements suggested can be complied with only by establishing a preliminary examination. I do not know but here I shall meet some objection. It seems to be a point upon which some of my friends disagree. But it appears to me so logically necessary that I can hardly conceive that a man, granting the two propositions that a patent should be granted only for a new and useful invention, and only to the original inventor, can fail to arrive at the conclusion that there must be a preliminary examination; otherwise, how are you to know that you are not infringing upon the public domain by granting the patent? How do you know whether you are granting it to the inventor or the introducer? You may establish a form of oath for the applicant, but we know that false oaths are sometimes readily taken, and a man who is willing to steal the invention of another will not hesitate long to swear that it is his own. It seems to me absolutely necessary that the granting of patents should be attended by a prior thorough searching investigation to determine whether the invention is new and useful, and whether the privilege is sought by the true and original inventor.

If an examination is necessary, by whom shall it be made? It can be made by the inventor, by his attorney, or by a corps of official experts appointed by the government for that purpose. Let us consider for a moment by which of the three ways it is probable the greatest measure of justice may be secured. I think it will be granted by every gentleman that the more disinterested the tribunal the more impartial will be its decision. If this be so, the inventor is not the man to make a preliminary examination, and determine whether his invention is new and useful, for if any of you gentlemen have had experience in patent offices, either in obtaining patents or in granting them, you will probably agree with me that inventors, as a class, very generally fail to see the difference between their own inventions and those of others. It is natural that it should be so—the father is always proud of his child. I think, then, you will concede that the inventor is not that disinterested party who should determine whether he has the right to a patent. Although his attorney is somewhat farther removed from an interest in the invention, still, as a matter of business, he must be more or less influenced by the wishes of his client; and in his discussions with that client over the result of his examination he must necessarily yield to some extent to the opinions of the latter. He is working for a fee, and that fee frequently depends very much upon the opinion that he gives. We all know how this comes about. It results from an unfortunate weakness of human nature; and, although we might wish it were different, we are compelled to take circumstances as they are. It seems to me, therefore, that this work should be done by some person more completely disinterested than either the inventor or his attorney. It follows, then, that there must be some body of experts, call them examiners or what you will—some official body of experts—to take this question into consideration, and determine between the public on the one hand and the inventor on the other. For we must remember that a patent is somewhat in the nature of a contract, by which in exchange for the full disclosure of the invention on the one hand, the public on the other agrees that the inventor shall have for a certain number of years a monopoly or exclusive right to its manufacture and use. To determine what is just and equitable between the inventor and the public, what better tribunal can there be than a corps of examiners appointed by the government, and entirely disinterested in the question at issue? Given such a corps of experts, with scientific attainments sufficient to enable them to determine intelligently questions relating to the working of a mechanical or chemical invention, and also such legal knowledge as shall enable them to properly construe description and claims, entirely disinterested in the result, and it does seem to me that we should have reason to expect them to hold the scales of justice evenly between public right on the one hand and individual right on the other, and that their decisions would in general be more satisfactory to all parties interested than those of any other body of men. I believe, then, not only that the grant of a patent should be preceded by a prior careful examination, but also that it should be made by disinterested persons appointed for that purpose by the government of the country in which the patent is issued.

This method will also be much cheaper for the patentee than when he seeks the services of a professional expert outside of officials. The cost of patents in the United States, as compared with that in England, bears me out in this assertion. The cost of making an examination in our country is a mere trifle of $15, (£3,) while in England I suppose it is from £10 to £50, or even £100, according to the reputation of the expert employed. Some members of this congress have had experience in different countries, and can state more accurately the relative cost in each. While the expense of an examination in America is less than in any other country, I believe I am safe in saying the work is performed equally as well, and with as reliable results.

With the provision for official preliminary examination there should be coupled a liberal system of appeals. An examiner may sometimes err in judgment, and the grant of a patent should never rest upon the decision of one man. Let there be provision for appeal, so that the decision of the first tribunal, if adverse, may be reviewed once or more, and the rights of all will be amply protected by a patent system as nearly perfect, in my opinion, as can be devised.

But I wish to add, in general terms, that whatever system may be adopted in any country, to be really beneficial, it must be liberally administered. A system of preliminary examinations, although judiciously organized, may be so conducted as to become one of the greatest hardships to which an inventor can be subjected. Prussia affords an illustration in point. Prussia has an examining system which might answer every purpose, but is so administered that it is a common saying among inventors in America that the examination in Prussia is for the purpose of refusing patents for all inventions. And in that country where it seems to me inventions should be fostered and cherished, and where we might expect the most remarkable results from the

scientific and technical knowledge of her people, we find, in fact, the fewest inventions made and patented; perhaps I ought not to say *made*, but certainly the fewest inventions patented. Her inventors seek other countries, where their rights are more generously accorded and their hope of reward has better foundation, while foreign patentees have been taught by the experience of others to shun her patent office as a delusion and snare.

The full benefit of a patent system can be obtained only when liberally administered, and by this I mean to include not only liberality in the granting of patents, but also a liberal policy toward the inventor subsequent to such grant. Give the inventor all to which he is entitled, even though the invention should seem small, and then let the judiciary so construe the patent as to fully protect his rights and encourage his efforts. Such a course will be found in the end to be the best, not only for the patentee, but also for the public. The matter of judicial action in relation to patents may be outside the province of this congress, but I cannot forbear an allusion to it in passing, for it must necessarily have an important influence upon the success of a patent system in any country.

Permit me now to refer briefly to our patent system in America, for I suppose it will be interesting to you to know something of its workings, although I find less necessity for explanation on my part than I expected. Many of our German friends in this congress appear to have a full understanding of our system, a just appreciation of its beneficial influence, and I cannot commend it more strongly than they have already done. The history of patent protection in America is almost coincident with our existence as an independent nation. The first American Congress in 1790 enacted a law for the protection of inventions based upon the principles which I have already suggested. This law was amended from time to time as public interests seemed to demand. It was not until 1836, however, that our system as it now exists may be said to have been established. In December of that year the Patent Office, with all its records, was destroyed by fire. During the session of Congress that year the patent law was carefully revised, and a new law enacted which has not been materially modified by subsequent legislation. By the law of 1836 the Patent Office was completely organized, a corps of examiners established, and all the machinery of our system, as it now exists, put into operation. We may therefore be said to have taken a new departure in 1836, for up to that time the working of the office had been somewhat irregular, the preliminary examinations desultory in character, and the number of patents granted small in comparison with subsequent results. Since 1836 the development of inventive talent and the advancement of the industrial arts among us has been marvellous even to ourselves. The number of patents granted since 1836 is about 140,000. I happen to have in my hand a copy of our OFFICIAL GAZETTE for 1st July, 1873, and I find the number of the last patent of that date to be 140,567. The number of applications for patents has steadily increased from year to year, until it now averages from 20,000 to 21,000 per annum, and the number of patents granted annually is from 13,000 to 15,000. To perform the work of examining this large number of applications, the corps of expert examiners has been increased from time to time, until it now numbers about 100—to wit, 24 principal examiners, and the same number of first, second, and third assistant examiners, together with a special examiner of trade-marks and also of interferences. The clerical force has been correspondingly increased, so that the officials of all grades now employed in the office may be stated in round numbers as about 500.

The bare statement of the number of patents granted since 1836 is sufficient to bear me out in the statement that our system has proved to be a most remarkable stimulant to inventive genius, not only in our own country, but throughout the world. But you will very naturally inquire, how many of these patents are valuable? Of course it is impossible to obtain statistical information that shall be entirely reliable on this point, but my official experience has given me such data that I am enabled to form an opinion approximately correct. I have discussed the matter with others, and have sought information from manufacturers, patentees, and legal gentlemen who have made a specialty of the practice of patent law, and I think I do not exaggerate at all when I say that one-half of the patents granted in our country may be considered remunerative. Now I do not wish to be understood by this that one-half of these 140,000 patents have brought fortunes to the pockets of the patentees. They have become remunerative to a certain extent—that is, they have paid expenses and something more. A small proportion of them have become largely remunerative, and the patentees, or their representatives, have obtained large fortunes from them. I think, therefore, it may be said that the influence of our system upon inventions and inventors themselves has been beneficial beyond all expectation.

But you will also ask, what has been the influence of our patent system upon the manufacturing interests of our country? I have taken occasion to make some inquiries upon this point also. A short time before I left Washington the Secretary of State sent out to inventors, manufacturers, and others interested in patents, a series of inquiries, among which were some as to the influence of our patent system upon manufacturing interests of the country. With scarcely an exception, so many of our manufacturers as responded answered that the patent system was beneficial, beyond all manner of doubt, to the manufacturing interests of the country. It is estimated, both by myself and others who are qualified to judge of this matter, that at the present time from six to seven eighths of our enormous manufacturing capital is based upon patents, either directly or indirectly. In fact it is almost impossible to organize a company for manufacturing purposes in America without first securing the control of patents for some valuable invention.

I think, then, that we may be said to have reached this conclusion, that our inventors, patentees, and manufacturers have all been benefited greatly by our patent system. At the same time the public welfare has been greatly promoted by the general introduction of many valuable inventions, which otherwise would have remained undeveloped, and by the cheapening of many articles by the invention of new and improved modes of manufacture. At the same time we believe the whole world has been benefited by the liberality of our law. We make no distinction between foreign and native

applicants, but invite inventors from the whole world to give us the benefit of their inventive genius upon the same liberal terms that we grant to our own citizens, putting upon them no restriction as to time or place of manufacture, or introduction of the invention into public use.

But, gentlemen, while saying this, I do not wish to commend our system above others in all its details. We do not seek to engraft it upon that of other countries; indeed, it seems to me that it would be unadvisable for this congress to suggest for general adoption the patent law of any one country. But we should be glad if the deliberations of this congress should result in the acceptance of a few principles like our own, and the recommendation of those principles as the proper basis for patent legislation in the different countries here represented.

These principles I have already suggested. Should they be adopted and sent forth to the world with the indorsement of this congress, I believe important reforms may in time result therefrom. But the details of a patent system should be left to the different countries to work out for themselves.

Gentlemen, I congratulate you upon the assemblage of this congress, and trust that your deliberations may result in substantial benefit to the world. It may be some time before the reforms you seek are secured; but the agitation of these questions has here been inaugurated in such a manner that, if continued hereafter, success must eventually crown these efforts. To this end let me express the hope that you will not adjourn without establishing a permanent committee as the representative of this congress, so that an organization may be created by means of which the discussion of this subject may be continued from time to time until finally civilized governments shall become convinced of the righteousness and expediency of the principles here advanced, and there shall be universal recognition of the rights belonging to, and the public benefits conferred by, the inventors of the world.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,599.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,177.—Rubber Belting.—Granted to DENNIS C. GATELY, November 28, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,178.—Making Rubber Belting.—Granted to DENNIS C. GATELY, November 28, 1859. Application filed August 18, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,209.—Manufacture of Paper-Pulp.—Granted to JOHN B. PALMER and GARDINER HOWLAND, November 29, 1859; and reissued July 2, 1867. Application filed August 30, 1873. Testimony closes October 21, 1873. Hearing November 5, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOCK, Sr., November 29, 1859. Application filed June 10, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,339.—Water-Wheels.—Granted to JAMES F. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1860. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 12, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FENTH and JOHN INGHAM, December 20, 1859, and reissued April 28, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KENDALL, December 27, 1859. Application filed August 28, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,580.—Harvesters.—Granted to JOHN GOSS, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEEDS, December 27, 1859. Application filed September 29, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STUNTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 20, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,908.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,943.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,953.—Lamps, granted to GEORGE NEILSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOMINSKY, January 31, 1860, and reissued March 28, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,035.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Singeing Pigs, granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 9, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,263.—Fare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

25,874.—Breaking-Machine, granted to GEORGE H. BABCOCK, October 25, 1859.

Claim.—1. In combination with mechanism for conveying the sheet, the use of rubbing-cylinder E and brush F, one or more of each, for the purposes and operating substantially in the manner herein described.

2. The use of one or more stationary rubbers, H, or their equivalents, for the purposes specified.

3. The wires *s s s s*, or their equivalents, for freeing the brush from the powder.

4. Constructing the griper in the manner described, whereby to obtain the advantages above set forth.

5. Inclosing the rubbing and brushing cylinders in a case for the purpose of retaining the powder and preventing waste.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 21, 1873.]

6,962.—Grape-Arbor.—CHARLES H. CRUMP, Boston, Mass., assignor to WILLIAM E. BAKER, same place. Application filed September 29, 1873. Term of patent 7 years.

6,963.—Clock-Pendulum.—HENRY J. DAVIES, Brooklyn, N. Y. Application filed June 16, 1873. Term of patent 3½ years.

6,964.—Breast-Pin, &c.—GEORGE W. LOOMIS and ALFRED T. GOODELL, New York, N. Y. Application filed September 25, 1873. Term of patent 3½ years.

6,965.—Cooking-Stove.—EDWARD MINGAY, Boston, Mass., assignor to BOSTON AND MAINE FOUNDRY COMPANY, same place. Application filed September 3, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date October 21, 1873.]

1,503.—Sauces.—ANGIOLO P. AGRESTA, and ANTONIO MEUCCI, New York, N. Y. Application filed July 9, 1873.

"a circle with rays; a human face within it, and with three legs in running position extending out from it in different directions, the letters 'A. M.' on the left hand, and the 'M.' being on the right hand, side of the sun."

1,504.—Razors.—HERMANN BOKER & Co., New York, N. Y. Application filed October 11, 1873.

"an elliptical figure, inclosed by an ornamental border of curved and other lines, with the words 'O. K.'"

1,505.—Rubber Goods.—MARY A. CATELY, New York, N. Y. Application filed June 10, 1873.

"A cut of a sea-shell with the letters L. P. R. G. in a monogram. The words 'La Perle Rubber Goods,' 'New York.'"

1,506.—Champagne.—W. CHILLINGWORTH & SON, London, England. Application filed August 21, 1873.

"'Carte Bleue' on a blue card or label."

1,507.—Umbrellas.—A. M. and R. DAVIES, New York, N. Y. Application filed September 15, 1873.

"a 'Sunburst,' and the number '142' in the central space."

1,508.—Preserved and Canned Food.—GORDON & DILWORTH, New York, N. Y. Application filed October 11, 1873.

"An oval figure inclosing an oval space traversed by a band nd bow, and surrounded by a fancy border."

1,509.—Oatmeal.—JOHN MCCANN, Beamond Mills, near Drogheda, Ireland. Application filed August 11, 1873.

"a sheaf of oats tied with a band, the words 'John McCann, Beamond Mills,' and a wreath of shamrocks."

1,510.—Snap-Hooks.—THE NEW YORK WIRE-SNAP COMPANY, New York, N. Y. Application filed October 2, 1873.

"A snap-hook with the words 'New York Wire-Snap Co.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date October 21, 1873.]

ORIGINAL PATENTS.

143,740.—Paper-Feeding Machine.—JOHN T. ASHLEY and FREDERICK ASHLEY, Brooklyn, N. Y. Application filed May 24, 1873.

The paper is placed in the tray A^1, which has previously had its side and back pieces adjusted to the size thereof. The tray and paper are then run into the part A of the frame upon bed A^2. The machine is then set in motion through the shaft S, when the picking-up fingers become exhausted of air by means of an exhausting-engine connected with the nozzles of the trunk B. This causes the fingers to pick up the topmost sheet of paper from the pile on the tray, and to hold it until carried, by a movement imparted to the trunk by the cam *a*, to the rollers E and dischargers *i*, which convey the sheet to the feed-board L. The dischargers *i*, being flexible and disk-shaped, tend to smooth the sheet as it passes under them. As the sheet moves on the feed-board the side-registering device *t* draws it over to the side guide L^1, and the front registering devices t^1 move it forward to be ready for the gripers of the cylinder S of the printing-press. While this operation is proceeding the elevating-screws *g g* are turned sufficiently, by the agency of the endless chain H^1, pawl and ratchet-wheel, and worm-gearing, to cause the table and paper to rise a distance equal to the thickness of a single sheet of paper.

Claim.—1. Picking-up fingers adjustably applied to and combined with a movable trunk, B, substantially as described.

2. Picking-up fingers C' C', arranged longitudinally with respect to the sides of the feeder for picking up the sides of the sheets, substantially as described.

3. The combination of one or more forward-projecting fingers, C C, for picking up the front edges of the sheets, with the longitudinal fingers C' C', for picking up the sides of the sheets, substantially as described.

4. The guides J' J' on longitudinally-moving trunk-carriers J J, combined with arms I and cams on the shaft *c* for vibrating these arms, and with springs s s^2, substantially as described.

5. The depressing-hooks n^1, eyes n^x, levers n^2, springs s^1, and cams *l*, combined with the vertically-movable trunk B, for depressing this trunk and its picking-up devices at the termination of the back strokes of the same, substantially as described.

6. The feed-board L, composed of laterally-adjustable sections *m*, substantially as described.

7. The adjustable feed-board side guides L^1, substantially as described.

8. The longitudinally-rotating and laterally-adjustable registering-fingers t^2 t^1, working over the adjustable guide-rests *w w*, leading from the feed-board to the impression-cylinder S, substantially as and for the purpose described.

9. The extended bracket-nuts g^1, attached to the sides of the adjusting table-bed A^2, which moves up and down within the part A of the frame, in combination with the elevating-screws *g g*, worms g^2, worm-wheels g^3, and a ratchet and pawl, all arranged outside of the frame of the machine, substantially as and for the purpose herein described.

10. The paper-tray A^1, having side and back pieces a a^1, which are adjustable, applied upon a table-bed, and made removable from said bed at pleasure, substantially as and for the purpose described.

11. Flexible pipes *d' d'*, combined with laterally-adjustable picking-up fingers on a trunk, B, substantially as described.

12. A circular flexible discharging device confined between concave clamps, for the purpose set forth.

13. The laterally-adjustable and laterally-rotating flexible finger *t*, combined with the side guide L^1 and feed-board, substantially as described.

143,741.—Tuck-Creaser for Sewing-Machines.—SYLVESTER P. BABCOCK, Adrian, Mich. Application filed May 17, 1873.

The material to be creased rests on the stud on the plate. The presser-plate is forced down against it by the presser-arm, and further movement of the arm turns the rocker-arm so that its forked or notched end pinches the fabric against the presser-plate.

Claim.—The movable pressure-bar C and plate $C C^1$, the latter carrying the stud *d*, the plate C^2, parts E E, presser-arm F, spring *e*, and tie-piece *f*, the creaser-bar H, creaser-plate I having the rock-shaft *h* journaled in its lugs *i i*, the rocker-arm J having a notch, *j*, in its shorter arm, and the spring *k* in connection with the base-plate A and gage-plate B, constructed and operating as and for the purpose set forth.

143,742.—Sewing-Machine Table.—JOSEPH BENNER, Philadelphia, Pa., assignor to NESBITT D. STOOPS and JOHN B. MYERS. Application filed August 27, 1873.

Arms are pivoted on each side of the table-top, which swing around and engage with lug-bearing plates which are attached to both ends of the cover, thereby supporting the cover as an extension.

Claim.—The combination of the swinging arms C C, brackets D D, and plates E E, with the table-top A and the ends of the cover B, substantially in the manner and for the purpose above described.

143,743.—Endless Band.—LEONHAM BINNS, Oakenshaw, near Bradford, England. Application filed August 25, 1873.

The core is obtained by winding sufficient material after the manner of skeining, and then properly securing the ends. Strands of suitable material are then either wound, woven, or braided around it to form a covering.

Claim.—Endless bands, cords, or ropes, made complete and entire by first forming the core of a suitable number of strands and then covering said core, substantially as described, with strands of fibrous material or wire wound around it.

143,744.—Spring for Wagons.—DAVID A. BOYLE, Attica, Ohio. Application filed June 18, 1873.

To avoid lateral and end play, the center of the seat being held rigidly in place by the roller-rod.

Claim.—In combination with the seat A, spiral springs G, and spring-board F, the rods D D, plates *d d*, roller-rod C, and brackets B B, all constructed as described, and for the purpose set forth.

143,745.—Coal-Breaker.—HEZEKIAH BRADFORD, Reading, Pa. Application filed April 8, 1873.

Claim.—1. The method of breaking coal by concussion in a revolving cylinder containing lifting shelves or blades and perforations for discharging the coal as broken, substantially as set forth.

2. A revolving cylinder of perforated staves, bound together by hoops, and connected to open heads, in combination with the lifting shelves or blades, the supply-chute, and the delivery-lifter *m*, substantially as set forth.

3. The screw-blade or sectional blades, in combination with the revolving perforated cylinder and lifting shelves or blades, substantially as set forth.

143,746.—Anti-Freezing Fire-Extinguisher.—WILLARD C. BRUSON, Chicago, Ill. Application filed January 30, 1873.

The generating-tank is surrounded by a larger tank, the space between them being filled with suitable non-conducting filling. The chargers containing the chemicals are placed one above the other in cases within the generating-tank, all the parts being insulated from each other by non-conducting material.

Claim.—1. In combination, the cases A L A F and tank E of a fire-extinguisher, with the interposed non-conducting packing, as set forth.

2. The combination and arrangement of the two chargers I and S within the same case E of a fire-extinguisher.

3. The chargers I and S, arranged one above the other, with a packing, J, of non-conducting material between them.

4. The case L A F, constructed with two parts to contain the two chargers I and S, and made detachable from the case A, as and for the purpose set forth.

143,747.—Wagon-Brake.—WILLIAM PERSLEY BUCKNER, Union county, Tenn. Application filed August 23, 1873.

Claim.—In combination with the sliding tongue B, provided with hole *e* and pin *d* for arresting its backward movement, and the crank-shaft D, connected with the rubber-bolster E by rods F, the connecting-rod C, jointed at one end directly to said tongue, and at the other end to said crank-shaft, as shown and set forth.

143,748.—Fastening for Coffins.—WARREN S. CRANE, Rome, Ga. Application filed September 10, 1873.

A curved slot in a swinging plate, which is secured on the lid, passes around the head of a screw which passes up through from the body of the coffin. A cap on the swinging plate covers the slot, thus forming a concealed fastening.

Claim.—The combination of the cap E and slot G, perforated plate F, and screw C as a coffin-fastening, substantially as described.

143,749.—Washing-Machine.—GEORGE G. CURTISS, Rochester, N. Y. Application filed March 17, 1873.

A washing-machine constructed in ordinary form, with its upper roller and bed, with an equalizing-spring of one piece of wire connected with the journal-boxes, and by a coil to the cross-bar, by which the rolls are held and allowed motion for passing through the clothes being washed.

Claim.—The automatically-acting equalizing-spring F, when composed of wire, and so made and applied as to be retained in position with relation to the roller B, cross-bar D, and follower-boxes *c*, without screws, bolts, or other similar appliances, in the manner and for the purposes set forth.

143,750.—Steam Fire-Engine.—WILLIAM C. DAVOL, Jr., Fall River, Mass. Application filed August 27, 1873.

A circular perforated pipe is placed around the bottom of the boiler; water flows through it onto the burning cinders on the ground.

Claim.—The combination of the conduit B and foraminous or perforated ring C with the fire-box of a steam fire-engine, all being substantially as set forth, and for the purpose of protecting its wheels, as specified.

143,751.—Pump.—JACOB EDSON, Boston, Mass. Application filed September 18, 1873.

The cover of the air-chamber has an inwardly-projecting flange, which prevents the escape of the air, and a projection which acts as a stop to a projection on the stuffing-box, preventing the latter from turning when the pump is in operation. Pipes leading to different parts of the ship are so arranged that a single pipe can be used to connect any one of them to the mouth-piece of the induction-port.

Claim.—1. In combination with the shaft *a*, the stuffing-box *f*, having a lug, *g*, and the stationary projection A on the cover *i*, as and for the purpose set forth.

2. The combination of the curved beam *e*, shaft *a*, and stuffing-box *f*, as and for the purpose set forth.

3. The cover *i*, provided with the projecting flange *l* and perforated bolt-sockets *m m m m*, as herein set forth and described.

4. The movable induction-tube *r*, in combination with the mouth-piece *p* and one or more pipes, *q q q q*, as and for the purpose described.

5. In combination with the mouth-piece *p*, flange *s*, and one or more pipes, *q q q q*, the hooked bolt *t* and nut *u*, or their equivalents, for the purpose herein shown and described.

143,752.—Car-Coupling.—FRANK A. FLEMING, Curwensville, Pa. Application filed March 12, 1873.

The bar C has hinged to it, by means of a shoulder-joint, the link D, which may rest on said bar when not in use, or be thrown forward to enter the approaching draw-head. The coupling-pin rests in a cavity in the bar C in such a manner that it can be driven back by the entering link, and thus couple automatically.

Claim.—1. The bar C, pivoted at its rear end to the draw-head, and carrying the link D at its front end, hinged thereto by the shoulder-joint *d*, substantially as shown and described.

2. The swinging coupling-pin E, with its rounded head *e* engaging with the crescent-shaped depression *c* and the inclined hole C^2 in the lower side of the bar C, substantially as shown and described.

143,753.—Sample-Bottle.—SAMUEL H. GILMAN, New Orleans, La. Application filed September 26, 1873.

A thin extension is formed upon one side of the bottle, with direct communication between this extension and the interior of the bottle proper. This allows the light to pass through a thin film of the liquid so that its quality may be the better determined.

Claim.—The new article of manufacture, a sample and testing bottle, constructed with a thin extension of its interior or chamber, said extension being in full communication with the main chamber of the bottle, substantially as and for the purpose described.

143,754.—Apparatus for Refining Sugar and Sirup.—SAMUEL H. GILMAN, New Orleans, La. Application filed September 26, 1873.

The object is to heat the saccharine solution to any given temperature before it reaches the bone-black or filtering medium.

Claim.—1. A filter or purifier composed of the cylinders A and B, the inner one being filled with bone-black or other purifying agent, and the outer one with water to be heated, substantially as set forth.

2. The inverted cone at the bottom of the vessel B, into which the solution to be filtered is first received before passing up through the bone-black or purifying agent, substantially as described.

3. The feed-pipe *j*, immersed in hot water, substantially as and for the purpose described.

4. The draw-off cock C, substantially as and for the purpose described.

5. The combination of the vessels A and B, hot-water chamber E, feed-pipe *j*, and steam heating or blow-up pipe G, substantially as and for the purpose set forth.

143,755.—Manufacture of Alkaline Carbonate.—HECTOR DE GROUSILLIERS, Berlin, German Empire. Application filed October 2, 1873.

Chloride of sodium or potassium, together with an alcoholic solution of carbonate of ammonia are introduced into a closed vessel lined with lead and heated by steam until a pressure of five atmospheres is obtained, whereby the alkaline carbonate is precipitated, the chloride of ammonium remaining in solution.

Claim.—The process for the production of alkaline carbonates from their haloid salts, by treating the latter with carbonate of ammonia dissolved in strong alcohol or wood spirit, substantially as hereinbefore described.

143,756.—Car-Coupling.—JOSEPH GUM, Marseilles, Ill., assignor of one-half his right to FREDERIC KANE, same place. Application filed January 7, 1873.

The distance of the plate C from the draw-head is regulated by the V-shaped bar D and loop E' of the strap *d*.

Claim.—1. The adjustable bent or Y-shaped device D, secured to the bumper-shank by means of the strap *d*, having loop E', in combination with the combined link and pin lifter, constructed substantially as herein shown and described.

2. The combined link and pin lifter, consisting of the plate C, having the arms *b* hinged to the bent rod D, the loop I pivoted to the arms *b* between the plate C and rod D, the transverse bar H having the handles K, the arm G' supporting the loop I, and the bent or Y-shaped adjustable device D secured to the bumper-shank by means of the loop E' of the strap *d*, all substantially as and for the purpose specified.

143,757.—Wrench for Bung-Bushings.—GEORGE W. HARRIS, New York, N. Y., assignor to GEORGE W. GILBERTS, same place. Application filed April 19, 1873.

A tapering plug, operated by a handle, is provided with spiral threads and a longitudinal furrow with an eccentric surface. A roller, arranged and pivoted lengthwise, is caused to move over this eccentric surface, which gradually forces the opposite side of the plug into the bush.

Claim.—1. The combination, with the tapering plug A having a longitudinal furrow, C, in one side, of the roller D, connected to the plug, and moving on the eccentric surface *a* in its furrow, substantially as and for the purpose specified.

2. A friction-wrench or key, of the character described, the tapering plug A of which is provided with spiral threads *a*, substantially as and for the purpose specified.

143,758.—Dumping-Platform for Railroad-Cars.—JOHN W. HARRISON, Niles, Mich. Application filed August 9, 1873.

To be used upon the running-gear of cars and wagons.

Claim.—1. The combination of the strip A', frame B B, C C C, friction-rollers *x x*, bulk-heads F F, and the shaft D, having pinion-wheels *d d*, all substantially as and for the purpose set forth.

2. The combination of the sliding floor K, clog-bars L L, gage-bars M M M, pivot-shaft N, and rollers *n n*, all substantially as and for the purpose set forth.

143,759.—Pump.—AARON L. HATFIELD, Clyde, Ohio. Application filed July 25, 1873.

The piston-rods are connected to the pitmen by links and jointed guides, the latter being hung on a bolt passing through the stock.

Claim.—The combination of pitmen F F, guides D B, links E E, rods C C, and guides *i i*, as and for the purpose specified.

143,760.—School-Desk.—CHARLES J. HIGGINS, Indianapolis, Ind. Application filed May 10, 1873.

The desk end is formed of one piece of wood, having the lower part slotted and bent so as to form a sufficient base, and having the central part solid.

Claim.—As a new article of manufacture, a bent wood desk end formed of one piece, having the lower part slotted and bent so as to form a sufficient base, and having the central part solid, substantially as specified.

143,761.—Steam-Trap.—JAMES W. HODGES, New York, assignor to himself and JOHN W. HARWAY, Bay Side, N. Y. Application filed February 21, 1873.

A tubular slide valve fits over a seat with suitable openings to allow the condense water to escape. Said valve is operated by a float attached thereto, and so balanced that it operates with equal freedom under any pressure. The case has several chambers, and the speed of the discharge-water is regulated by suitable screw plugs or valves.

Claim.—1. The openings 3 in the tube *i* above the tubular seat *o*, in combination with the tubular seat *o*, openings *h*, float *l*, and chamber *g*, substantially as set forth.

2. The arrangement of the partitions *e f* in the vessel *a*, to form the chambers *g h k*, in combination with the stop-plugs *v w*, and blow-off cock *x*, float *l*, and tubular valve *i*, substantially as set forth.

143,762.—Cooking-Range.—WILLIAM HOPKIN, Jr., Philadelphia, Pa. Application filed March 5, 1873.

A series of rising and diving hot-air flues, warmed by the side and back plates of the oven of the range, connect with the air-space partly surrounding the chimney, for purpose of supplying warm air to apartments above.

Claim.—The combined arrangement of the fresh-air flues E E and hot-air flue C, with an air-heating range, the said flues being constructed to operate together, substantially as and for the purpose hereinbefore set forth.

143,763.—Car-Axle Box.—WILLIAM B. HOWE, Troy, N. Y. Application filed August 1, 1873.

An oil-receptacle, with its inlet-tube, is cast solid with the box. Wick-tubes, having perforations in their lower end, are arranged to be inserted beneath the box. Metallic wicks are used, which are made of volute spiral spring combined with common flat cotton wick.

Claim.—1. In combination with a housing, D D, the oil-reservoir E, having its upper shell *a a'* made solid with the housing and box, and inclining from the lateral sides of the same downward toward their juncture, central with the housing, and directly beneath and parallel with the lower side of the axle to be lubricated, and an oil-receiving cup, G, communicating with the oil-chamber H, with its mouth on a plane with the lowest dip of the top shell, substantially as and for the purpose set forth.

2. A lubricator consisting of a wick-tube, J, with a closed bottom, *c*, and ports *p p*, and a wick, M, having an elastic support, and provided with a ball or screw-threaded base, for application to an oil-box from beneath, substantially as shown and described.

3. The combination of the extension-tube K with the wick-tube J, carrying an elastic supported wick, substantially as and for the purpose set forth.

4. The volute metallic-fabric wick M, composed of alternate coiled sheet metal *m* and fabric *n*, substantially as and for the purpose set forth.

5. The combination of a lubricator consisting of a wick-tube having a closed bottom and feeding-ports, and a wick having an elastic support, with an oil-box made with a housing, when said lubricator is applied from beneath, substantially as and for the purpose set forth.

143,764.—Gate-Hinge.—Wesley Hull, Fort Wayne, Ind. Application filed August 11, 1873.

Attaching to one plate or leaf of the hinge a horizontal frame, bent at right angles, so as to carry on its opposite sides two conical-shaped friction-rollers.

Claim.—The hinge-plate or leaf B, provided with the horizontal frame F or its equivalent, bent at right angles, and carrying on its opposite sides the two conical-shaped friction-rollers R R, in combination with the spiral or anger plate S and spiral tracks T T of the hinge-plate or leaf A, all constructed, arranged, and operating substantially in the manner and for the purpose set forth and described.

143,765.—Gasalier-Extension.—Liverus Hull, Charlestown, Mass. Application filed August 18, 1873.

The clamping device, for holding the central sliding portion of a gasalier at any required depression, is made adjustable.

Claim.—The adjustable friction apparatus, substantially as described, consisting of the lever F, one or two jaws, G G, the spring H, screw I, and nut K, all combined and arranged as set forth.

143,766.—Sewing-Machine.—George W. Hunter, Washington, D. C., assignor of part of his right to Wm. F. Stone, Henry M. Baker, and James H. Vermilye, same place. Application filed June 7, 1873.

The needle-bar is attached to one end of the cam-slotted piece that receives the crank-pin, and the cam is of such shape that as the needle penetrates the cloth the crank-pin is in a line with the needle-bar. A guide projecting from the slotted piece enters a groove in the head, and serves to steady the movement of the slotted piece and needle-bar.

Claim.—1. The combination of the cam upon the driving-shaft, the forked connecting-rod, provided with its spring and fixed fulcrum, and the feed-lever, provided with its adjustable fulcrum, substantially as and for the purpose set forth.

2. The combination of the straight driving-shaft A, the vibrating arm B^3, and the angularly-bored cylindrical sleeve L with its attached cam $B^{2\prime}$, for operating the shuttle and the connecting-rod of the feed mechanism, substantially as shown and described.

3. The combination of the needle-bar, the slotted cam, and cam-guide, when arranged substantially as shown and described, so that the needle-bar may be caused to move near that side of the needle-head which is next to the operator.

143,767.—Wheelbarrow.—Joseph M. Jones, Paris, and James L. Jones, Lexington, Ky. Application filed August 30, 1873.

Claim.—In a wheelbarrow, a sliding wheel to work in slots in the hangers, from a point forward of the bed to a point under its center, to be operated by crooked or inclined handles, substantially as above described.

143,768.—Filter for Oils, Acids, &c.—Josiah Jowitt, Brooklyn, N. Y. Application filed January 24, 1873.

Claim.—The vacuum-chamber V, steam-pipe S, and escape-cock E, in combination with the check-cock C and cock A, all arranged and operating substantially in the manner and for the purpose set forth.

143,769.—Pump.—Stephen Lane, Jr., Englewood, N. J. Application filed September 12, 1873.

The valves upon the pistons work independently of each other, from the outward ends of the pistons.

Claim.—In combination with the cylinder A, induction and eduction ports E and D D, and pistons B B', the valves *d* and *e*, arranged to work independently of each other from the outward side of the pistons, all constructed and operated substantially as described.

143,770.—Process of Lining Oil-Barrels with Glue.—Edward W. Leggett, New York, N. Y. Application filed September 22, 1873.

Prepares glue from any suitable glutinous substance, which is allowed to attain a certain liquid consistency, and is then applied directly to the inside of the cask, &c., when, after due evaporation, the cask is lined thoroughly, when a pressure of steam, generated by the heat applied, is sufficient to force the fluid into the pores and recesses of the wood.

Claim.—The within-described process of coating or lining the inside of barrels, casks, &c., with glue, wherein the glutinous material, instead of being produced by reduction from a previously solid state, is permitted to attain only a certain liquid consistency, and is then applied to the package and permitted to harden thereon for the first time, substantially as herein set forth and described.

143,771.—Sealing-Wax Package.—William J. Lumb, Zanesville, Ohio. Application filed October 3, 1873.

An ordinary box, of paper fabric, is filled with melted wax. While the wax is cooling it adheres firmly to the sides of the box.

Claim.—As an article of manufacture, the within-described sealing-wax package, composed of the box A, wax B, which has been poured in a melted state into the box, and permitted to harden therein and adhere to the sides thereof, and the cover C, substantially as described and shown.

143,772.—Collodion Compound.—John A. McClelland, Louisville, Ky. Application filed June 12, 1873.

A loose plate of zinc lines each wall of the mold; a strip of iron is placed on the bottom of the mold; upon the latter one or more pads of absorbent material; next, sufficient collodion to give a block of the desired size, coated upon the top and bottom with thin paper; and finally absorbent pads and metallic plate. Pressure is then applied, and may be continuous or intermittent.

Claim.—1. The process of drying said converted preparations by the alternate application of pressure and exposure to the atmosphere, to admit of the escape of the solvents.

2. Pads of felt-cloth or other absorbent material, employed to absorb the solvents of said converted preparations while the latter are under pressure.

3. Pads of felt-cloth or other absorbent material, employed to absorb the solvents of said converted preparations while the latter are under pressure in a closed vessel.

4. Paper or other equivalent material, employed to protect said converted preparations from contact with the pads or walls of the mold, substantially as and for the purpose specified.

143,773.—Lumber-Marker.—Washington Merritt, Weymouth, Mass. Application filed September 24, 1873.

Claim.—As a new or improved manufacture, the described timber-marker, consisting of the detachable gouge-blade C, and the separate handle B, and shank A provided with the blade-seat and shoulder, the studs, and clamp-screw, all constructed and arranged as set forth.

143,774.—Sewer-Inlet Trap.—George R. Moore, Philadelphia, Pa. Application filed September 25, 1873.

Within an outer case is placed a sediment-receiving box, B, held in place by corner guides and supports *b*. A screen and mouth-piece are placed above the receptacle, and a tight joint effected by mortar or cement.

Claim.—1. The improved sewer-inlet, consisting of an outside casing, A, a removable sediment-receptacle, B, and a removable flaring mouth-piece, C, extending at its inner edge low enough into the receptacle B to form a foul-air trap, and at the same time having its upper rim so fitted to A that a tight joint can easily be made with any kind of mortar or cement, all the parts being arranged substantially as shown.

2. The box B with rings *c c*, in combination with the guides *b b b b* and outside casing A, substantially as shown.

3. The flaring mouth-piece C, jointed to the casing A by the cement joints *a a*, substantially as shown.

143,775.—Horse Hay-Fork.—Aaron J. Nellis, Pittsburg, Pa. Application filed August 22, 1873.

The seat for the stop, which limits the slide between the sheath and the rod carrying the projecting and retracting barbs of a harpoon-fork, is formed to one side of the joint between the hinged jaws, so as not to be interfered with by the blows caused by discharging the elevated load.

Claim.—The solid or unjointed seat *g'*, formed by the hole *e'* in one of the jaws of the hay-elevator described, substantially as and for the purposes set forth.

143,776.—Wheel for Vehicles.—James O'Connor, Jackson, Mo. Application filed July 7, 1873.

Claim.—A wheel provided with spokes *b*, having their lower ends made in a conical concavo-convex form, with straight grooved sides, in combination with the hub A, constructed with an annular groove, *a*, in which the spokes are fitted, and the flanges *a a'*, having ribs *e*, which extend into the grooves *f* in the spokes, substantially as and for the purposes shown and described.

143,777.—Draft-Cock for Soda-Water and Other Liquids.—James D. O'Donnell, Washington, D. C. Application filed October 3, 1873.

In one position of the horizontally-working valve a small stream of fluid is allowed to pass through an orifice into a receiving-vessel. In another position a larger stream passes through another orifice against a ledge provided to obviate the splashing usually incident to the operation of such cocks.

Claim.—1. The combination of the tube B, the horizontally-working valve D, having two orifices, the one of which is enlarged at its outer end, with the valve-seat C provided with lug *k*, washer *w*, cylinder *a*, and nut F, substantially as and for the purpose specified.

2. The combination of the horizontally-working valve D, provided with two orifices, washer *w*, cylinder *a*, the tubular eccentric stem *g*, and the ledge E, substantially as and for the purpose specified.

3. The combination of the casing A, the tube B, the valve-seat C, lug *k*, the washer *w*, the valve D, provided with two orifices, one of which is enlarged at its outer end, and provided with stem *r*, with the hand *b*, the washer *x*, the tubular eccentric stem *g*, the ledge E, and nozzle G.

143,778.—Manufacture of Stemmed Glass-Ware.—John Oesterling, Wheeling, W. Va. Application filed September 9, 1873.

Portion of stem cast with bowl and portion with foot joint when united being in stem.

Claim.—A stemmed article of glass-ware in which the joint between the bowl and the foot is formed in the stem, substantially as described.

143,779.—Washing-Machine.—Noah J. Parsons, Cortland, N. Y. Application filed June 25, 1873.

To the sides of the machine, on the standards, are hung, by rods, segmental bars, and on these the journals of the rollers of the wash-bed are placed. The journals are held in their proper relative position by metallic plates so cut on the lower edges as to cap the journals.

Claim.—The combination of the movable segmental bars *c c*, plates D D, and rollers F F, substantially as and for the purpose set forth.

143,780.—Card and Ticket Printing Press.—George E. Peck, Du Quoin, Ill. Application filed April 21, 1873.

Bed reciprocates vertically to stationary platen. The inking-table I is attached to the bed, and moves up and down with it. The vertical movement of the bed causes lateral reciprocation of the inking-roller frame by means of compound lever L K. To give a dwelling impression an elastic washer, A, is placed between nut *g* and tumbling-box G. The card-holder is a frame, M, the sides *m* of which are adjustable. The cards are fed forward by a feeder, P.

Claim.—1. The moving bed C, crank F, pitman E, and elastic washer A, constructed and combined substantially as set forth.

2. The combination of a moving bed, C, with an adjustable ink-table, attached to and moving therewith, and the lever K, jointed at one end to a stationary part of the frame, and at the other linked to the ink-roller, with the connection-rod L jointed to said moving bed and lever K, as and for the purpose set forth.

3. The card-holder M, constructed with plates *m* made laterally adjustable, the pressure-board Q, and the compressing-spring R, substantially as set forth.

143,781.—Horseshoeing-Machine.—Charles H. Perkins, Providence, R. I., assignor to The Rhode Island Horseshoe Company, same place. Application filed September 5, 1873.

A clamp or presser fixed to a shaft carried by the sliding table, and having attached a lever carrying a friction-roll that rides up an inclined way. The heel of the shoe is clamped and held while the rollers operate on the toe, and is released after the operation is performed, and a drag, held down by a weight, slips over the toe, and, on the return of the table, removes it from the die.

Claim.—In a horseshoe machine, the combination of the sliding bed C, the presser-bar *c*, the lever-arm F, and track G for clamping a horseshoe-blank to the bed near the heels while the toe is being plated out, substantially as described.

143,782.—Horseshoe-Machine.—Charles H. Perkins, Providence, R. I., assignor to The Rhode Island Horseshoe Company, same place. Application filed September 5, 1873.

The bar, cut to the proper length, is placed between the spring-guides S S', and two swages, F F', advance and compress the metal near the ends, after which the former I advances and bends the metal by carrying it between the rollers N N', which are thrown forward to form the heel, by inclines, pressing outward the ends of two levers, to which the rollers are attached.

Claim.—The combination and arrangement of the swages F F', sliding pattern-block I, stationary blocks H H', and laterally-moving bending-rollers N N', substantially as described, whereby the operations of swaging the ends of a bar-blank for a horseshoe and bending the same can be consecutively performed, as set forth.

143,783.—Machine for Crimping and Folding Leather.—George Platts and Joseph Walden, Newark, N. J. Application filed May 3, 1873.

The folding-blade presses the folded edge of the leather into the groove between the ram and shoulder, and holds it until the ram is moved forward, pressing it firmly against the shoulder, establishing the form of the fold.

Claim.—1. The shoulder, the ram, the gage, and the folding-blade, combined, as shown and described, to perform the functions in folding and pressing the leather herein set forth.

2. The heating attachment, in combination with the shoulder and ram, substantially as described.

143,784.—Carpet-Fastener.—Bradley D. Kestad, Glen, N. Y. Application filed December 16, 1872.

The carpet-fastener is constructed to be attached to the base or mop board by hinges, and has upon its lower side pointed hooks, in a recess or rabbet, which, by turning down the hinged device, pass through the carpet, and is firmly held to the floor by screws.

Claim.—The combination of the recess B, hooks *c*, and hinges H with the edge-strip S and the screws T, whereby the said strip, when hinged directly to the base board, will be capable of turning the hooks toward the same and permit the edge of the carpet to enter the recess in the said strip, substantially as and for the purposes set forth.

143,785.—Spindle-Bolster.—George Richardson, Lowell, Mass. Application filed September 22, 1873.

Claim.—The bolster provided with the reservoir or trough *a*, one or more capillary inducts, *c*, one or more helical grooves, *b*, and the educt *d*, constructed substantially as specified.

143,786.—Jack for Nailing, &c., Boots and Shoes.—John G. Ross, Philadelphia, Pa., assignor of one-half his right to Thomas P. Smith and Samuel S. Smith, same place. Application filed November 25, 1872.

The last is constructed in two parts, both detachable, the toe-piece being made adjustable by means of a screw-rod. The last-standard is attached to a swivel-plate which is hinged to the top of a platform or table.

Claim.—1. A jack having detachable heel and toe pieces E and E', in combination with the plate D, provided with a regulating-rod, F, substantially in the manner and for the purpose set forth.

2. The inclines *k k* of the head *i* of the screw-rod F, in combination with the pins *l l*, for the outward movement of the toe-piece E', substantially as and for the purpose specified.

143,787.—Lawn-Mower.—William Sellers, Haverhill, Mass. Application filed September 24, 1873.

A circular cutter is mounted upon laterally-adjustable fingers attached to a common plate, the whole capable of vertical adjustment.

Claim.—1. The improved lawn-mower, as described, the same consisting essentially of the frame A A, driving-wheels B B, supporting and guide wheel C, the rotary cutter-carrier and its series of knives, and the turning finger-plate G, constructed, arranged, and combined together substantially in manner as shown and described.

2. In a lawn-mower provided with a turning finger-plate, as described, the combination, with the latter, of the guide and supporting wheel C, substantially as described.

143,788.—Chain Suspension-Bridge.—Edward W. Serrell and Edward W. Serrell, Jr., New York, N. Y. Application filed April 1, 1873.

The supporting-cable is formed of links placed side by side, and connected at the joints by a joint-bolt passing through all the links. In order that the cables may hang in inclined planes converging toward the bridge, as in wire suspension-bridges, and yet not suffer unequal strains, the saddle-blocks supporting the cable at the several points are made with inclined seats, normal to the suspension-rods and perpendicular to the plane in which the cable hangs, by which construction said suspension-rods draw on the joint-pins at right angles thereto, with a direct pressure on the saddle-blocks.

Claim.—1. A saddle connecting the two portions of a chain cable at the tower, made with eyebolts, arranged substantially as set forth, so that the chain between the towers may hang in a plane that is inclined to the vertical, substantially as set forth.

2. The saddle for the intermediate tower of the chain suspension-bridge, made with a convex surface inclined at a right angle to the plane of the cable, substantially as set forth.

3. The chain cables for bridges hanging in inclined planes, so as to be closer together at the bottom of the catenary that at the towers, and the joint-pins perpendicular to such inclined planes, substantially as set forth.

143,789.—Grand Piano.—George Sieck, New York, N. Y. Application filed July 31, 1873.

The frame has deep braces, the pull of the strings being arranged lengthwise, centrally of its width, and the sound-board attached directly to the frame allows the whole to rest upon lugs inside the shell or case of the instrument.

Claim.—The iron frame for grand pianos having the longitudinal braces A, B, C, D, and E, arranged in relation to the plane of the strings as set forth; in combination with the solid sounding-board H and wrest-plank J, substantially as herein described.

143,790.—Railway-Rail-Joint Fastening.—George A. Sturgis, Delhi, N. Y., assignor to himself and Dexter Pettehill, same place.—Case A. Application filed May 2, 1873.

Claim.—The combination of the plates B C, constructed as described, and rail A, screws *a a* and *d*, and nuts *a' a' d'*, and the single bent spring-key *g* holding the several nuts, all substantially as and for the purpose described.

143,791.—Car-Coupling.—Philip Swinerord, Middleburg, Pa. Application filed July 10, 1873.

The coupling-link has a beveled head, which, when it strikes in the narrow portion of one of the slots in the slide which works in grooves in the draw-head just behind the series of openings, wedges the slide up and passes into the wider portion of the slot, and the narrow portion catches behind the link-head. To uncouple, an angular lever is used, one arm of which rests beneath the bottom of the slide, and to the other arm chains are attached, one leading to the platform of the car and the other to the engineer.

Claim.—1. In a draw-head having a series of jaws, B B' B'', the vertical slide C, having a series of slotted openings, and the bent lever M, the whole adapted to the link G, and constructed and combined substantially as and for the purpose set forth.

2. In a draw-head having a series of jaws, B B' B'', the vertical slide C, bent lever M, chains P Q, the whole constructed and combined substantially as and for the purpose set forth.

143,792.—Pantaloons.—EDWARD T. TAYLOR, Philadelphia, Pa. Application filed June 19, 1873.

Pantaloons provided with short vents at the hip portions, having adjusting tabs and buckles.

Claim.—The combination of the side openings or vents O and O', tabs or straps T and T', adjusting-buckles B and B', and facing-strip F, all combined and arranged to operate substantially in the manner and for the purpose herein shown and described.

143,793.—Endless-Chain Propeller.—THEODORE TEED, Alexandria, Va., assignor of one-half his right to L. H. CHANDLER and C. P. CULVER, Washington, D. C. Application filed March 26, 1873.

The curved shape of the paddles prevents the lateral displacement of the water, and their incline with reference to the belt serves to buoy the boat and to facilitate their lift out of the water.

Claim.—The endless belt C, having the paddle *c c c c*, of the peculiar form and inclination shown and described, substantially as and for the purpose set forth.

143,794.—Automatic Fire-Extinguisher.—ISAAC P. TICE, New York, N. Y. Application filed January 28, 1873.

The reservoir swings on a bracket, and is held in an upright position by means of stops attached to the reservoir and to the wall, and a combustible line which passes over pins fastened to the walls to a point where it is secured. In case of fire, the line would be burned, when the reservoir would be reversed, causing the chemicals arranged therein to unite, and the gas evolved to be discharged through the alarm and escape pipe.

Claim.—The combination of a gas-generating apparatus, in which the gas-producing materials are caused to mingle by the reversal of the apparatus, with a combustible line communicating with all parts of the space to be protected, so that the burning of the line will permit the automatic reversal of the apparatus, and the consequent liberation of a fire-extinguishing gas, as shown and described.

143,795.—Heating-Drum.—ISAAC P. TICE, New York, N. Y. Application filed March 1, 1873.

Both the heated air and the products of combustion are carried into the chimney-flue and through the heating-drum.

Claim.—The furnace B, having the draft-pipe *k*, and the radiating-chamber *n n*, having the outlet and inlet pipes *l* and *m*, in combination with the flue E and radiators C, to produce the effect described.

143,796.—Wash-Boiler.—LEWIS W. TAUBENDELL and FRANK CURTIS, Owego, N. Y. Application filed June 19, 1873.

Claim.—The detached spouts B, in combination with the adjustable perforated false bottom C, formed in sections, and connected with wire springs, the extensions of which form legs, substantially as shown and described.

143,797.—Corn-Husker.—JOHN URE, Saginaw, Mich. Application filed September 10, 1873.

Upon the table which supports the husking mechanism is placed a sliding frame, for holding the stalks and bringing them within convenient reach of the operator.

Claim.—1. The arrangement of the table A with seat B and the slides C, having standards D D, for the purposes herein set forth.

2. The combination of the table A, seat B, slides C, standards D, bar E with foot-piece G, spring *a*, arm *b*, knife *f*, and rods *d*, all substantially as and for the purposes herein set forth.

143,798.—Machine for Gumming the Edges of Elastic Shoe-Gores.—JOSEPH WALDEN and GEORGE PLATTS, Newark, N. J. Application filed April 7, 1873.

The jaws *c c'* have their bearing in the ends of the trough I, which is partly filled with liquid gum. The jaws are immersed in the gum, raised, and opened to admit the edge of the fabric, when it is properly gummed on both sides and ready for insertion between the vamp and lining of the shoe.

Claim.—The gumming-jaws *c* and *c'* and gum-trough I, made and combined with reference to each other, to gum the fabric, as set forth.

143,799.—Game Apparatus.—PERSBURY WEST and GEORGE S. LEE, Worcester, Mass. Application filed June 6, 1873.

Wire pockets fastened to the ground, something in the order of croquet-arches, are played at with balls and mallets.

Claim.—1. The combination and relative arrangement of the devices marked and described as throne, castles, and bastiles, for playing an outdoor or field game, substantially as and for the purpose set forth.

2. The combination and relative arrangement of the devices marked and described as sortie, porte, throne, castles, garde, and bastiles, for playing an outdoor or field game, substantially as and for the purposes set forth.

3. The combination, with the parts A and B, of metal or other suitable material, constructed and combined together as shown and described, of the part *d*, to form a bastile and sections of the throne and castles, substantially as and for the purposes set forth.

143,800.—Reciprocating Churn.—EMERY T. WHEELER, Canelton, Ind. Application filed April 24, 1873.

Two vertical vibrating dashers, journaled in a frame on top of the churn-cover, are operated by a horizontal rod provided with two studs, which engage with a cam-wheel on the end of a horizontal driving-shaft. The rod is pivoted at its ends to wrist-pins on collars which surround the dasher-shafts.

Claim.—The construction and arrangement, with relation to a churn-cover, A, of the paddle-shafts B B, each carrying a slatted paddle, C, the frame D D', crank-shaft E, cam-wheel F, collars *a a*, connecting rod *b*, with studs, and wrist-pins *c c*, as and for the purpose set forth.

143,801.—Dandy-Roller for Paper-Machines.—JOHN WHITEHEAD, Manchester, England. Application filed July 21, 1873.

Claim.—The dandy-roll constructed with the bent or ring-shaped wires, arranged in planes radial to the axis of the roll, and secured by solder to the central shaft of the roll, and to the wires constituting the outer or circumferential portions provided to sustain the wire-cloth covering, substantially as and for the purpose specified.

143,802.—Apparatus for Lowering Weights.—THOMAS WRIGHTSON, Teesdale Iron Works, Stockton-on-Tees, England. Application filed September 13, 1873.

Coupled to a lever-beam is a piston working in a small hydraulic cylinder, in such manner that the piston must rise in the cylinder to allow the bell, which is coupled to the other end of the beam, to descend, and this is regulated by opening a valve in a pipe leading from one end of the cylinder to the other to allow water to pass at any required speed.

Claim.—1. The combination, substantially as before set forth, of the bell, the locking-rod, and stop, the hydraulic cylinder, the piston therof, and the regulating-tap.

2. The combination, substantially as before set forth, of the bell, the locking-rod, and stop, the hydraulic cylinder, and piston, and the means for forcing water beneath the hydraulic piston.

143,803.—Child's Carriage.—ALBERT F. R. ARNDT, Detroit, Mich., assignor to himself and W. DOELTZ, same place. Application filed June 21, 1873.

The ends of the handle are locked within the sockets by means of spring-catches.

Claim.—The socket B *d*, handle C *a'*, and spring-catch D *a*, combined and applied to a child's carriage, as and for the purpose described.

143,804.—Office-Slate.—CORNELIUS BOYLE, Washington, D. C. Application filed September 16, 1873.

Claim.—In combination with a frame or backing, A, the slate *f*, pivoted thereto by screws or journals *g*, arranged to pass through and slide up and down in slots *h* in said frame, for the purpose of drawing out and inclining said slate, so as more easily to be written upon, and of returning it to its recess, substantially as described and shown.

143,805.—Shutter-Fastening.—JAMES P. BUSH, Boston, Mass. Application filed August 18, 1873.

An elbow-lever, formed with a slotted end, and operating as a gravitating catch, is pivoted within a recess in the lower stile of the blind, and operated by a chain. The fastening has a stop-plate on the under side of the stile, and two catches.

Claim.—The elbow-lever C, provided with the operative chain F, and pivoted within a recess in the lower stile or part of the blind, and having a slot, G, in its lower end, in combination with the stop-plate H and the two catches D E, arranged in manner as specified, all being to operate as explained.

143,806.—Brick-Machine.—JOHN D. BUSH, Elyton, Ala. Application filed April 21, 1873.

A horizontally intermittingly rotating mold-table, an intermittingly-rotating receiving table, G, stationary table J, pressing and discharging plungers operated by means of tappet and tappet-wheel, a stop-bar, R, for holding the table during the pressing and discharging operation, said lever being provided with an anti-friction roller, and operated by means of a toe on plunger *g'* and the spring-finger *v* on bar R.

Claim.—1. The pressing-plunger *b'* and discharging-plunger *g'*, in combination with the intermittently-rotating mold-table G, stationary table or bed J, and receiving-table T, all arranged and operating substantially as described.

2. The double cam-shaft D, tappet *j*, and tappet-wheel *a*, combined with the pressing and discharging plungers *b' g'* and mold-table G, substantially as described.

3. The stop-bar R, provided with an anti-friction-roller, *s*, and operated by means of the toe *t* on the plunger *g'*, and the spring-finger *v* on the said bar R, substantially as described.

143,807.—Valve for Steam-Engines.—ADAM CARR, Paterson, N. J. Application filed August 1, 1873.

A plate with inlet and outlet ports is arranged between the main valve and the seat, and operated by tappets on the piston-rod. A piston-valve connected to the back of the main valve operates it, and the exhaust therefrom is opened at the same instant that the steam is cut off. A pipe connects the exhaust and steam-pipe with the cylinder, so that the steam-chest can be removed without disconnection.

Claim.—1. The ports S S in the valve-seat of the cylinder a, in combination with the connections for the pipes *w* and *s* upon opposite sides of said cylinder, substantially as described.

2. The slide-valve a, provided with the ports 12 and 14, and the secondary valve *i*, with the ports 11, 13, and 15, constructed and arranged as specified, so that the motion of the main valve a closes the port to the valve-moving cylinder *g*' or *g*², and simultaneously opens the exhaust from that cylinder, as and for the purposes specified.

143,808.—Ferry-Boat for Trains of Cars.—FRANK CAZE, New Orleans, La. Application filed August 9, 1873.

Claim.—The combination, with a navigable float or the hull of a vessel, of a vertically-adjustable deck or platform extending the entire length of the vessel, and carrying a railroad-track, substantially as and for the purposes set forth.

143,809.—Building-Block.—FRANCIS W. COLBY, Streator, Ill. Application filed April 11, 1873.

The perforation is available for flues, and the adjacent cavity is closed at the bottom for strength.

Claim.—The improved building-tile, having the open inner cell A and the outer cell B provided with a bottom, substantially as described.

143,810.—Oil-Can.—WILLIAM G. COWELL, Wallingford, Conn. Application filed August 30, 1873.

Consists of an oil-can with a heating-pipe attachment passing through it to conduct steam or other hot vapor or fluid in at the top and out at the bottom; also of an ejecting-pump, used for the purpose of pumping the oil into other small cans for use.

Claim.—The combination, with an oil-can, of a pump, C, and a pipe, B, the latter entering near top and passing down by the side of and under the pump C, as described, to maintain the oil in a state of sufficient fluidity to pass through and be discharged by said pump.

143,811.—Apparatus for Puddling Iron.—JOSEPH DAVIES, Knoxville, Tenn. Application filed August 9, 1873.

The puddling-tool is mounted near the middle on a support in front of the furnace. The tool can revolve within its support. The support slides laterally on its stand, and the stand is pivoted to swing toward or from the furnace, whereby universal motion of the tool is attained.

Claim.—The puddling-tool shaft D, pulley C, jointed revolving and sliding stand C' F, and the slotted and jointed bench H, combined and arranged substantially as specified.

143,812.—Smoke and Spark Conduits for Railroad-Trains.—THOMAS DE CODEZO, New York, N. Y. Application filed August 21, 1873.

A funnel-formed pipe in front of the uptake is inclined and combined with a pipe extending over the cars, and opens into the uptake above the level of the bottom of the conduit-pipe. This pipe is provided with elastic joints of flexible fire-proof material, having an internal spiral coil, and connected with the pipe by bayonet-joints.

Claim.—1. In combination with the uptake and pipe B, a funnel-formed pipe, E, opening in front of the uptake, inclined and opening into the uptake above the level of the bottom of the pipe B, substantially as set forth.

2. In combination with the uptake and sectional pipe B, the connections C, formed of a flexible fire-proof casing and internal spiral coil C², and connected with the pipes B by the bayonet-joint C¹, substantially as set forth.

143,813.—Vehicle-Wheel.—DANIEL DERRICK, Orwell township, Bradford county, Pa. Application filed October 2, 1873.

Claim.—The combination of the hub *c*, having the perforated flanges *c*, spokes *d*, and recessed nuts *e* in the felloe, substantially as shown and described.

143,814.—Machine for Forming Hat-Frames.—BIAGIO ERTOLA and ANGELO CASELLI, New York, N. Y. Application filed April 12, 1873.

The lower die is rotated by a crank-pin and lever working in a spirally-grooved vertical shaft. The upper die is supported in a sliding frame, to the lower cross-bar of which is attached a pivoted pressure-lever. The material is fed from a reel to the dies by means of a pair of feed-rolls, and passes in contact with a sponge fed from a trough by which it is damped. The bonnet-form is covered from the web by a rotating knife swiveled to the lower die.

Claim.—1. The grooved or slotted vertical shaft B, pin D, foot-lever E, and spring F, in combination with the circular table G for folding and rotating the lower form or mold H, substantially as herein shown and described.

2. The combination of the circular table J, short shaft K, cross-bar L, rods M, cross-bar N, foot-lever O, springs Q, and levers R, with the table G, grooved or slotted shaft B, pin D, foot-lever E, and spring F, for applying the pressure while allowing the molds or forms to be rotated together, substantially as herein shown and described.

3. The device for damping and feeding the hat material, consisting of the arms W, rod V, frame X, water-vessel Y, perforated pipe Z, rod B', sponges A', and adjustable elastic rollers C', substantially as shown and described.

4. The combination of a revolving knife, E', with rollers C' and formers H I, for clamping the fabric, as and for the purpose specified.

143,815.—Automatic Railroad-Signal.—JANE D. EVANS, West Chester, Pa., executrix of HENRY S. EVANS, deceased. Case B. Application filed July 29, 1873.

A signal-arm operated by chains passing over a shaft from which it projects, and connected with levers extending under the rails. A trip-wheel upon one side of the engine moves different levers, according to the direction the train is going. Each signal is connected with and operates another at a distance.

Claim.—The arrangement of the signals C, connecting chains or wires D, chains or wires F, levers G and H M, and the inclines K and L with each other, substantially as herein shown and described.

143,816.—Grinding-Mill.—PRICE EVANS, New York, N. Y. Application filed August 4, 1873.

Stationary stone pivoted upon its support, so that it can be turned in a horizontal position for dressing.

Claim.—A fixed stone, J, combined with a standard, L, as described, the former turning vertically in and horizontally with the latter.

143,817.—Harness-Mounting.—THOMAS FAWCETT, New York, N. Y. Application filed May 5, 1873.

Claim.—The terret-ring *a*, having the inside-edge grooves *c c* and intermediate rib, combined with the leather covering *d*, having its edges fitted in said grooves, and the inner ring *e*, having its edges forced down upon the leather edges, in the manner and for the purpose described.

143,818.—Child's Carriage.—THOMAS GALT, Rock Island, Ill. Application filed August 30, 1873.

Claim.—The body of a child's perambulator mounted on the frame with rockers, so that it can be used as a cradle, and provided with hooks to prevent rocking, substantially as specified.

143,819.—Slide-Valve Mechanism.—EBENEZER E. GILBERT, Montreal, Canada. Application filed May 10, 1873.

Within end tubes formed in the slide-valve two guide-rods, closely fitting therein, are held movably in position between guide-brackets to permit it to lower itself as fast as the friction causes wear. The auxiliary valve, operated by means of a rock-shaft connected by a pitman to the reciprocating rod of the piston, (arranged alternately to admit steam between the aforesaid guide-rods and end tubes,) is so constructed as to form a cushion for the prevention of noise.

Claim.—1. The combination, with main valve C, having end tubes D², of guide-rods D¹, having flanges *d* arranged loosely in brackets *b*, as and for the purpose described.

2. The auxiliary slide-valve E, having the subjacent cavities *e e* and partition *e*¹, combined with the main slide-valve C, having passage *g*, and recesses *f' f'*, and tubes D² with passages *f*, as and for the purpose set forth.

143,820.—Wheel for Vehicles.—JOSEPH H. GLOVER, Freedom, Ky. Application filed June 28, 1873.

The tire may be readily removed and replaced and tightened by the contraction and expansion of the wheel, and the wheel may be lubricated without being taken off the axle.

Claim.—The rim I, made convex upon its inner side, and concave upon its outer side, in combination with the forked spokes E, the plate D, the plates F, nuts G, and tube A, substantially as herein shown and described.

143,821.—Flour-Bolt.—WILLIAM GOSEHORN, Waterloo, Pa. Application filed July 19, 1873.

Flour is bolted through stationary cloth by centrifugal force, imparted by the rotating fans, which also cools the material and prevents cloth clogging.

Claim.—The rotary fans *g h h' i* on vertical shaft, combined with a stationary vertical cloth, C, as and for the purpose described.

143,822.—Ice-Cream Freezer.—MILLER F. GRAVES, Sunbury, Pa. Application filed August 9, 1873.

The perforated tube permits direct contact between the cooling medium and the cream-vessel, but prevents the falling of the ice, &c., when the cream-vessel is withdrawn.

Claim.—The tube B, placed between the ice and cream-vessel, reticulated or side-perforated, as and for the purpose described.

143,823.—Implement for Edge-Trimming Soles.—ARTHUR P. HAZARD, North Bridgewater, Mass. Application filed September 2, 1873.

Claim.—1. The gage D, having compound adjustments, as described, in combination with the blade B, the furcated block C provided with the guard *c*, chip-throat *b*, and clamp-screw *e*, substantially as and for the purpose set forth.

2. In a sole-trimming device, constructed as set forth, the guard *c*, as made with a convex bearing-surface, as and for the purpose stated.

143,824.—Steam Pumping-Engine.—WILLIAM CLEVELAND HICKS, Summit, N. J. Application filed May 23, 1871.

On the shaft of a steam-pump is secured a gear-wheel, meshing into a pinion on a secondary shaft. This shaft is provided

with a weighted lever, which is to assist the revolution or reciprocating movement of the piston, over its centers.

Claim.—The combination, substantially as set forth, of a steam-cylinder, with its piston, piston rod and valve, and valve apparatus; a water-cylinder, with its valves, piston, and piston-rod, connected with said steam-piston and piston-rod; a crank, and a continuously-revolving crank-shaft provided with a toothed gear, with a counter-shaft provided with a pinion having one half the number of teeth meshing into said gear in the said main crank-shaft, and also provided with a crank to which is connected a weight or spring, in such manner as to cause the crank on the main shaft to pass over its centers, substantially in the manner described.

2. The combination, substantially as herein described, of a reciprocating piston-rod, connected to a crank on a revolving crank-shaft, provided with a toothed gear, with a counter-shaft provided with a pinion having one-half the number of teeth meshing into said gear on the main crank-shaft, and also provided with a crank to which is connected a spring or other elastic force, in such manner that the said spring is strained by the revolution of the main shaft, and exerts its force in the opposite direction to cause it to pass its centers twice each revolution, substantially as herein set forth.

143,825.—Safety-Valve.—James Hoffman, Belvidere, N. J. Application filed February 8, 1873.

The safety-valve is raised and steam admitted into a cylindrical space in which a loose piston is fitted, which rises independent of the valve, and allows steam to escape through side apertures in the cylinder.

Claim.—The enlargement B of the escape-pipe, with lateral escape-passages C, above the seat of the safety-valve, and the valve F combined with the valve D, substantially as specified.

143,826.—Corn-Planter.—Charles Hutchins, Aubrey, Kans., assignor to himself and Abram Large, same place. Application filed August 30, 1873.

To the front bar of the main frame is pivoted an additional frame, carrying the seed-dropping mechanism and the driving and marking wheels, which are raised from the ground at pleasure by a foot-lever. The main frame rests upon wheels having concave rims for covering the seed.

Claim.—1. As an improvement in corn-planters, the combination of main frame A, having concave wheels C, lever L, and seat M, with the pivoted frame B, having plows F and the seed-dropping and row-marking mechanism, substantially as specified.

2. The combination of cross-beam E, pivoted frame B, hoppers G, slide-pieces H, and springs *g*, with front wheels C, having notched pieces *h'*, forming the seed-dropping mechanism, as described.

143,827.—Reciprocating Engine.—Samuel J. Jones, Helena, Montana, Ter. Application filed May 31, 1873.

The shuttles are thrown by steam admitted between them and the piston, and, by contact with the pins, operate the valves governing the ports opening into the atmosphere. The steam thus admitted is condensed to form a vacuum, into which the piston is forced by atmospheric pressure.

Claim.—1. The cylinder C, constructed with steam-inlet ports L M, water-port N, and air-ports F G', combined with a reciprocating piston, B, and disks D E, to allow the piston to be operated by steam, air, and water, in the manner described.

2. The disks D E, arranged loosely on rod C, and on each side of piston B, combined with the pins K, for the purpose of operating the valve mechanism, as set forth.

3. The springs U V, arranged one on each side of piston B, and both upon the rod C, to take up the shock from the impact of piston upon the disks, as specified.

143,828.—Car-Coupling.—Richard Lloyd, Cleveland, Ohio. Application filed July 5, 1873.

The coupling-bars are so jointed to the draft-bars that they may be capable of elevation, but not of depression, and the inner faces of the hooks are V-shaped to prevent accidental uncoupling when turning curves.

Claim.—The coupling-bars B, provided with V-shaped and inclined or dovetailed shoulders *b'* upon their upper and lower sides, and at different distances from the points of said bars, and jointed to the ends of the draw-bars A, substantially as herein shown and described.

143,829.—Machine for Scouring, Glassing, or Setting Leather.—Frederic A. Lockwood, Winthrop, Mass. Application filed June 9, 1873.

Claim.—1. In machinery for scouring, glassing, or setting leather, or beaming hides, the combination, with the table or bed for supporting the skin, of a tool carrier or stock arranged and operated to move or travel to cause the tool or tools carried by said stock to properly act upon the skin substantially as shown and set forth.

2. In machinery for scouring, glassing, or setting leather, or beaming hides, the combination, with the work-supporting table or bed, and a tool carrier or stock capable of variable movements over said table, and mechanism for imparting said movements to said stock, of a sliding head carrying said tool-carrier and its operative mechanism, and vertically adjustable with respect to the table, substantially as and for the purposes shown and set forth.

3. In machinery, the combination, with the tool-carrier and its operative mechanism, of an expansible crane supporting said parts, substantially as and for the purpose shown and set forth.

4. In combination with the expansible or variable frame or crane G, and rod or shaft H, the swinging beam I, whereby a uniform altitude of the stock or carriage, with respect to the plate D or other support of the crane, is maintained, substantially as and for purposes stated.

5. In combination the plate D or its equivalent, variable crane G, and beam I, substantially as and for purposes stated.

6. In combination the carriage K and the variable crane G, substantially as and for purposes stated.

7. In combination with the crane G and the rod H or its substitute, the pulleys *f f*, &c., or their equivalents and bands *g g*, &c., for imparting motion to the tool-stock, substantially as and for purposes stated.

8. In machinery for scouring, glassing, or setting leather, or beaming hides, the combination of a rotary work-supporting bed or table and a tool carrier or stock, arranged and operating to move in any direction over or with respect to said table, substantially as and for the purpose shown and set forth.

9. The epicycloidal wheels M and O, for imparting reciprocating motions to the tool-stock in a horizontal plane from the rotary motion of the shaft or rod H, substantially as and for purposes stated.

10. The channels Q, formed, as described, with a central partition or guide, *n*, substantially as and for purposes stated.

11. The latches *p p*, or their equivalents, in combination with the channels Q, substantially as and for purposes stated.

12. In combination with the tool-stock B and channels Q, the ears *l' l' l' l'*, or their equivalents, for determining the altitude of each tool during its traverses, substantially as and for purposes stated.

13. The brush *w*, mounted within or upon the tool stock or carrier, substantially as herein shown, whereby it may be raised or lowered with respect to the tools, substantially as and for purposes stated.

14. The combination of the knocking-over or tripper arms *c'* and spring-latches *f'*, or the equivalents of the same, whereby, while the tool-stock is in motion, the raising or lowering of the brush may be effected, substantially as and for purposes stated.

15. The combination, with the latches *p p*, of the bails or handles *g'*, or their equivalents, whereby, while the tool-stock is in motion or otherwise, the course of the ears *l l'* and tools are changed with respect to two portions of the groove Q, substantially as and for purposes stated.

16. In machinery for scouring, glassing, or setting leather, or beaming hides, a carriage susceptible of universal freedom of motion and supporting a tool-stock, and a tool-stock traversing such carriage in reciprocating rectilinear movements, substantially as and for purposes stated.

17. In machinery for scouring, glassing, or setting leather, or beaming hides, a tool-stock reciprocating in an arbitrary horizontal path upon a suitable carriage, and one or more tools or tool-holders under the arrangement and for operation as shown and described, so that during the reciprocation of the stock the slope of the tools with respect to the stock may be varied, in order not only that the tool may be lowered upon the skin when moving in one direction, and raised therefrom when moving in the opposite direction; but, if desired, elevated entirely above the skin and out of action during both traverses, substantially as and for purposes stated.

18. The grooves *f'*, for guiding the tool stock in a horizontal path, in combination with the channels Q and latches *p p*, substantially as and for purposes stated.

19. The combination, in a machine for scouring or setting leather or working hides, of a brush capable of being lowered into working position or raised therefrom, and one or more reciprocating tools which are susceptible of acting upon a skin or traversing a path above such skin and free from contact, substantially as and for purposes stated.

143,830.—Lubricating Pulley.—J. King McLanahan, Hollidaysburg, Pa. Application filed August 1, 1873.

The wire feeder is secured to the inner periphery of the wheel, and the tube to the hub of the pulley. By the revolution of the pulley the oil within the chamber will be thrown against the wire feeder, and thus carried to the journal.

Claim.—The wire feeder *d*, in combination with the tube *b*, connected with the inner periphery of the wheel within the oil-box B, as shown and described, to operate as specified.

143,831.—Seal-Lock, &c.—Daniel K. Miller, Philadelphia, Pa. Application filed July 14, 1873.

The spring-tumblers are provided with notches so inclined in respect to the direction of the movement of the fence on the dog or bolt as to automatically eject the said dog or bolt in locking. The bolt or hasp is also provided with a recess for the reception of a seal, and the device for destroying or defacing the said seal is arranged so as to move with the said bolt or hasp.

Claim.—1. A lock having spring-tumblers with notches inclined in respect to the direction of the movement of the portion of the dog or bolt adapted to the same, and serving as automatic ejectors for the said dog or bolt in locking, all substantially as described.

2. A seal-lock in which the seal and the device for destroying or defacing the same are attached to and move with the bolt or hasp, substantially as herein described.

143,832.—Seed-Planter and Fertilizer-Distributer.—Richardson Montfort, Butler, Ga. Application filed May 24, 1873.

The hoppers and feeding-shoes are so formed that, when the shoes are raised, the feed can be entirely stopped, if desired, when moving from one point to another.

Claim.—The vertically-adjustable supplementary distributing hoppers G and an adjusting apparatus, as described, in combination with the stationary receiving-hoppers I, having a form at their lower ends corresponding with that of the movable hoppers, whereby the discharge of seed may be regulated in quantity or entirely arrested, as set forth.

143,833.—Means of Keeping Open the Navigation of Canals, &c.—John Mullaly, New York, N. Y. Application filed April 11, 1873.

Claim.—1. A vessel provided with a furnace, boiler, superheater, and tank, or equivalent device, for discharging superheated steam into or upon the water of the river or canal, for the purpose of raising the temperature of the said water to prevent the formation of ice, as set forth.

2. A boat or movable water-vessel provided with a furnace or heater, and with external radiating pipes, arranged substantially as shown, to receive heat from said furnace or heater and diffuse it into or upon the water of a navigable stream for the purpose of keeping the navigation open, substantially as specified.

3. A boat or movable water-vessel provided with a furnace, steam-generator, and means for discharging steam into or upon the water in sufficient quantities to open or prevent the closing of navigation on canals or other navigable streams in winter, substantially as and for the purpose specified.

143,834.—Machine for Melting Snow.—John Mullaly, New York, N. Y. Application filed April 11, 1873.

Movable plates are so combined with the furnace that they may be alternately heated and lowered, and against which the snow is thrown by a revolving brush-cylinder.

Claim.—The combination, in a machine for melting snow, of a furnace, a movable plate or plates receiving heat from said furnace, and a brush or brushes so arranged as to throw the snow against said plate or plates to be melted, substantially as specified.

143,835.—Toy Block for Object-Teaching.—Nicholas Muller, New York, N. Y. Application filed July 5, 1873.

Claim.—The combination of two sets of toy blocks, one being formed of acute-angled and the other of obtuse-angled blocks, all the sides which embrace the obtuse and smallest acute angle being equal, as set forth, whereby pentagons, pentagrams, and an almost infinite variety of proportional geometrical forms can be constructed.

143,836.—Standard for Stools, Tables, &c.—Samuel H. Newcomb, Port Williams, Nova Scotia. Application filed June 28, 1873.

The legs are hinged together and to a central shaft, and are provided at their outer top ends with projecting lugs, which enter recesses made in the under side of the supporting-top. Wedged-shaped pins on the shaft enter corresponding holes in the legs, and secure the connection between the shaft and legs.

Claim.—The hinged legs *a*, the center shaft *b*, and the support B, constructed and combined, as shown and described, to form a stand for a piano-stool, center-table, work-stand, clothes-rack, or analogous article.

143,837.—Car-Starter.—Benjamin F. Oakes, Milford, Me. Application filed May 31, 1873.

To the short arms of a T-shaped lever, which may be attached to the draw-head of a car, are pivoted clamping-levers, the ends of which have a grooved foot to clamp the rail. By moving the main lever horizontally, the car may be either drawn or pushed.

Claim.—The lever B, having a head adapted to be pivoted directly or indirectly to the draw-head of a car at its middle, and provided at each end with an arm, D, having a gripe, F G H, so that the lever may be vibrated horizontally to each clamp-arm, acting alternately to hold the rail and give purchase to the operator, as set forth.

143,838.—Street-Sweeping Machine.—Lemuel J. O'Connor, Chicago, Ill. Application filed August 23, 1873.

An adjustable train of gearing connects the main driving-wheel with the shaft of the brush, which is adjusted vertically by a sliding rack-bar without interrupting the rotary motion of the brush. A curved sheet-metal hood is placed over the brush, and is connected with the fan by a pipe, through which the dust and dirt are drawn.

Claim.—1. The curved hood E, arranged over and covering the front upper portion of the rotary brush or broom, and having a pipe, U, connected to it at the center, and leading upward to the fan, as shown and described.

2. The arrangement of the driving-wheels N O P said bars Q with the sweeper-shaft and the adjustable supports F, substantially as specified.

143,839.—Automatic Gate.—George W. Olbert and William Young, Barr's Store, Ill. Application filed July 19, 1873.

A pendent gate is connected by cranks and rods with treadles arranged parallel to and on opposite sides of the road, which treadles, when depressed by the wheel of a vehicle, swing the gate up and clear of the passage-way.

Claim.—The combination, with the gate-frame A, of the gate B, cranked shaft C, connecting-rods E, and treadles F, substantially in the manner described.

143,840.—Milk-Cooler.—James Pearl, Lawrenceville, N. Y. Application filed July 19, 1873.

The water-chamber is formed by an upper and lower surface of sheet-metal, painted on both sides to prevent oxidation, and having longitudinal partitions pierced at the ends to form a continuous channel.

Claim.—The two metallic plates clamped over and under the section B by a bolted top and bottom, in the manner described, to enable all parts of the device to be conveniently taken to pieces cleaned, and again readily put together.

143,841.—Paint Compound.—James Quarterman, Flushing, assignor to Adaline M. Ingersoll, Brooklyn, and Fredk. J. J. Quarterman and Elizabeth Quarterman, Flushing, N. Y. Application filed April 16, 1873.

A.—Water, nine gallons; soda-soap, eight pounds. Dissolve by heat, and use hot.

B.—Water, nine gallons; sal-soda or borax, two and a quarter pounds; gum-shellac, four ounces; molasses, two and a half pints; sugar, three pounds. Dissolve by heat; use cold.

C.—French zinc or white lead ground in linseed-oil, one hundred pounds; boiled linseed-oil, four gallons; japan-varnish, one gallon; patent drier, two pounds; ultramarine blue, half ounce; turpentine, two gallons; formula B, four gallons; formula A, two gallons. Mix well, and is ready for use.

Claim.—As a new article of manufacture, a liquid paint composed of the ingredients herein described in formulæ A B C, and compounded and prepared in the manner specified.

143,842.—Sectional Steam-Generator.—David Renshaw, Philadelphia, Pa. Application filed February 4, 1873.

A tubular chamber around the reverberatory furnace, forming a base, and also a mud-drum, communicates with the hollow shell and suspended segmental pipes, which latter are cast together in sections, forming a furnace-chamber and generator, and are surmounted with the usual steam-drum.

Claim.—The combination of the base B, the sections A' E, made with the projections and caps *a*, and the steam-drum G, placed outside, substantially as shown.

143,843.—Sectional Steam-Generator.—David Renshaw, Philadelphia, Pa. Application filed February 4, 1873.

Claim.—1. The internal section E, formed of a continuous curved pipe with inner arches F', as described, said arches being of less diametrical dimensions than the pipe E, so as to produce circulation, as specified.

2. In a reverberatory furnace, the combination of the sections F, formed of a continuous curved pipe, made with the inner arches F', the tubular water-chamber E, and steam-drum B, substantially as shown.

143,844.—Sectional Steam-Generator.—David Renshaw, Philadelphia, Pa. Application filed February 4, 1873.

Claim.—1. The flat stay-bolted sections D, arranged laterally within the furnace, and crossing the longitudinal center thereof, and having communication with the longitudinal water-chambers beneath, said sections being arched above and below, substantially as shown and described.

2. The combination of the reverberatory furnace and steam-drum E with the flat stay-bolted sections D, arranged laterally within the furnace, and crossing the longitudinal center thereof, and having communication with the longitudinal water-chambers beneath, said sections being arched above and below, substantially as shown and specified.

143,845.—Sectional Steam-Generator.—David Renshaw, Philadelphia, Pa. Application filed February 4, 1873.

Claim.—1. The base C, constructed of flat sections, stay-bolted, as set forth, being of the same width as the upper part of the furnace, and connected therewith by means of flanged projections, substantially as set forth.

2. The horizontal internal sections E, constructed as shown, each section extending from the front to the rear of the furnace, and communicating with the base and upper sections by means of the curved pipes *e e'*, as described.

3. The combination of the base C, upper sections B, inner sections E, and drum F, substantially as specified, said base C and section B being of the same width and stay-bolted, and each of the sections E extending from the front to the rear of the furnace, as specified.

143,846.—Superheater.—David Renshaw, Philadelphia, Pa. Application filed February 4, 1873.

Steam enters at the branch pipe, ascends the larger pipe D, where the volume is broken, and again broken into jets on passing through the perforations into the superheating globe, where the temperature becomes equalized, and the steam superheated passes off through the eduction-pipe to the cylinder, the said eduction-pipe being smaller than the induction, for the purpose of retaining the steam longer in the superheater.

Claim.—1. In a superheater, an induction-pipe, arranged partly above and partly below the grate, substantially as specified.

2. In combination with a supply-pipe of a superheater, an induction-pipe of greater diameter than said supply-pipe, as and for the purpose set forth.

3. In combination with an inner induction-pipe, a superheater, receiving steam from the former, as specified.

4. The induction-pipe, constructed as described, with perforations, in combination with the superheater, within which it is arranged, substantially as and for the purpose set forth.

5. The superheater-globe, provided with an inlet and outlet extension, as described, the latter being of less capacity than the former, for the purpose specified.

143,847.—Electric Clock.—Frederick J. Ritchie, Edinburgh, Scotland. Application filed October 8, 1872.

The pendulum-rod, suitably insulated, and, in connection with subsidiary dial movements, actuated by means of electro-magnetic attraction of its bob, vibrates between two spring-contact points for reversing the current, and operates the escapement or ratchet wheel by a gravitating impulse-pallet on one side, with a notched detent arm on the other side.

Claim.—1. The insulated springs B C, with their respective connections d^5 e^1, in combination with master pendulum A and the connection e^3 a^3 to one or more sympathetic clocks, as herein specified.

2. The positive detent M′, as constructed with notch k, in combination with ratchet-wheel L, pendulum F, and impulse-pawl M, as shown and described.

143,848.—Tenoning-Machine.—William M. Sack, Oakland, Cal. Application filed January 24, 1873.

The wide tenons previously formed on the ends of the rail are cut by rotary cutters moved to the middle, while a boring-tool is automatically moved up to bore the slot in the middle for the end of the slat-bar to fall into.

Claim.—1. The tracks *b b*, with their adjustable permanent frames *c c* and sliding frames E E, in combination with the rod *d*, with its right and left hand screws and screw-rod A, operated from the rod by means of the toothed wheels *f f*, substantially as and for the purpose above described.

2. The adjustable frames *c c*, in combination with the sliding frame E with its short shaft *f*, cutter *g*, and stop bar I, substantially as and for the purpose above described.

3. The operating crank-shaft I, with its fixed arm *m*, the extremity of which is connected with the screw-rod A and universal joint *o*, substantially as and for the purpose above described.

4. The transverse vertical frame S, with its sliding frame *w*, carrying the vertical shaft V with its hollow screw-tipped auger Z and its operating mechanism, substantially as and for the purpose above described.

5. A machine for relishing the end rails of blind-frames, the same consisting of two adjustable sliding frames, E and C, carrying revolving cutters, and a vertical transversely-moving frame carrying a vertical side-cutting auger, all constructed, arranged, and operated substantially as and for the purpose above described.

143,849.—Mode of Securing Wheel-Hubs to Shafts.—Edwin Sanford, Hartford, Conn. Application filed July 19, 1873.

The bore in the hub is larger than the shaft, having grooves in which the gibs or keys secure the wheel and true them on the shaft by set-screws.

Claim.—The screws E, nuts G, and gibs D combined, as described, with the hub A, having three or more radial and equally-distant inside grooves, C, as and for the purpose described.

143,850.—Measuring-Faucet.—Jacob Schalk, Jr., Guttenberg, N. J. Application filed June 14, 1873.

A tank has an interior measuring-chamber, the plug of whose outlet-cock projects inside, terminating in a gear-wheel which takes into another gear on the plug of its inlet-cock. Opening the outlet closes the inlet and opens a vent-tube connected therewith, and vice versa.

Claim.—1. The two cocks, having their hollow plugs terminating in the open frames E J, connected by gears K L, in combination with reservoir and interior measure B, substantially as described.

2. The vertical cock D, operated by a gear connection with an outlet-cock of measure B, in combination with the air-tube G, substantially as described.

143,851.—Hot-Air Furnace.—Charles J. Shepard, Brooklyn, N. Y. Application filed January 16, 1872.

Claim.—1. The combination of the grate G and fire-bed I, located as described and shown, with the dome K, for the purposes stated.

2. The suspended ash-pit F placed between the flues D^2, substantially as shown.

143,852.—Stove-Pipe Thimble.—Thomas D. Slauson, Havana, N. Y. Application filed August 16, 1873.

The inner casing is designed to project through the plastering of the wall, while the adjacent end of the outer casing is notched or slit, so that when the slit portions are bent at right angles they form a support for the mortar of the plastering between the ends of the lath and the inner casing. The outer casing is perforated for ventilation, and it is secured to the inner one by metal strips.

Claim.—The stove-pipe safe, consisting of outer casing B, with face-pieces D and side apertures *a*, inner casing C, connected by strips E, and held thereby in position in partition A, arranged substantially as and for the purpose described.

143,853.—Truck for Carrying Bricks.—Robert A. Smith, Newburyport, Mass. Application filed June 25, 1873.

Designed to transport bricks from a molding-machine to a brick-yard, or from a brick-yard to a kiln.

Claim.—The transporter I, provided with the transverse bearers *l* and the folding plank or shelves *m*, combined with carriage-platform *a*, substantially in manner and to operate as described.

143,854.—Spring-Bed.—Samuel Smith and John H. Gill, Williamsburg, N. Y. Application filed July 25, 1873.

The top and bottom portions of the bed have helical springs between them, each formed of a pair joined at their apices, their bases above and below. Some of these are in cases of the same outer form for the purpose of stability.

Claim.—The cases D and coiled conical springs E, in combination with the bottom and top straps A B of a spring-bed, substantially as herein shown and described.

143,855.—Revolving Fire-Arm.—William S. Shoot, Ilion, N. Y., assignor of one-half his right to E. Remington & Sons, same place. Application filed August 2, 1873.

Claim.—1. As an improvement in revolvers, the barrel, bridge-stop, lock-frame, and upper portion of the handle made of a single piece, in combination with the guard-strap, united thereto by a longitudinal joint, substantially as described.

2. The center-pin C held in place by the spring *l* of the ejector-rod I, substantially as described.

3. The center-pin C, provided with the projecting guide or eye *d*, in combination with the sliding ejector I, the said parts being constructed and arranged to operate as set forth.

4. The recoil-shield F, provided with an opening, *b*, in its edge, and arranged to turn in rear of the cylinder far enough to open or close the passage through which the cartridges are inserted or removed, substantially as described.

5. The rotating shield F, having on its face a projection, *a*, which extends in a reduced or narrow strip around the central hub on which the shield turns, substantially as and for the purpose set forth.

6. The shield F, in combination with the spring *n*, arranged to hold the shield in position when opened or closed, as set forth.

7. The stop L, provided with the rounded shoulder or projection *p*, in combination with the spring *o* located upon the hammer, said parts being constructed and arranged to operate substantially as described.

143,856.—Grate for Stoves, Furnaces, &c.—Samuel Smyth, East Bridgewater, Pa. Application filed July 19, 1873.

The two-part grates are revolved by means of connecting-gearing on the ends of the shafts upon which they are mounted, so that they separate and allow the clinkers at the bottom of the fire to drop, while the curved bars or rear portions of the grates are brought into position between the falling clinkers and the coal above, which is thereby sustained.

Claim.—The two-part grates *d* with the curved bars *a*, and each sectional grate mounted on a separate shaft and capable of being rotated, as and for the purposes set forth.

143,857.—Watchmaker's Staking-Tool.—John Stark, Waltham, Mass. Application filed June 25, 1873.

The standard is arranged eccentrically, with the bed and the arm carrying the tool provided with a slot and set-screw for adjustment with either of two or more rows of concentric holes arranged in the bed.

Claim.—1. The improved staking-tool, constructed substantially as described, viz., with a slotted arm, B, and its clamp-screw E, combined with the guide A, as explained, and with an arm-supporter or post, C, arranged eccentrically on the stationary bed D, at or near the edge thereof, all as shown.

2. Two or more series of bed-holes, arranged concentrically with the post C or the pivot of the slotted arm.

143,858.—Alarm Safety-Valve.—Ferdinand Stehle, Brooklyn, N. Y., assignor to himself, Herbert S. Jewell, and Edward M. Jewell, same place. Application filed March 6, 1873.

The valve is held down by removable weights in a case which surrounds the valve-stem. Steam lifts the valve, passes through the case, and blows the whistle. A push-pin is used to raise the valve.

Claim.—The pressure-alarm composed of the whistle surrounded by a perforated cap, *i*, and attached to the cover *l* of the cylinder *d*, in combination with the case *e*, removable weights and valve *b*, that are within the cylinder *d* and above the valve-seat, and the push-pin *o*, the parts being secured by the locking-rod, as set forth.

143,859.—Pen and Pencil Case.—Charles H. Streightoff, New York, N. Y. Application filed September 27, 1873.

The slots are so arranged that the case may be extended farther when the pencil is drawn in than when it is out.

Claim.—The slot c^1 of the inner sliding tube E, made with an offset, c^2, in the middle part of the tube E, and with its rear part parallel to but not in line with its forward part, substantially as herein shown and described.

143,860.—Check-Rein.—George J. Townley, Parma, Mich. Application filed May 24, 1873.

The check-rein, which is indirectly attached to the driving-reins, acts upon the forehead of the horse, through the head-stall.

Claim.—The check-rein *a*, pulley *e*, and strap *f*, in combination with the head-stall of a horse, when arranged to operate as and for the purposes described.

143,861.—Picture-Frame.—John L. Warren and John W. Addersley, Detroit, Mich. Application filed March 6, 1873.

The fillet is made of a separate piece, which is afterward inserted in a rabbet of the body, and permanently attached thereto by brads, glue, or both.

Claim.—The combination of the molding A, having the rabbet *a*, with the fillet A′, as and for the purpose described.

143,862.—Lightning-Rod.—Joseph S. White, Juliustown, N. J. Application filed May 31, 1873.

The rod, having the form of an I-beam, is joined at its ends by means of a slot in the central or web portion of each, allowing them to interlock when the said webs are at right angles to each other. The ends are secured together by rivets or pins.

Claim.—A lightning-rod composed of sections grooved on two opposite sides, split at each end in a plane bisecting the grooves, and having full faces on the other sides, as described, so that they will form a rectangular joint, in the manner described.

143,863.—Process of Forming Orifices and Necks on Glass Articles.—Joseph Wing, Boston, assignor to New England Glass Company, East Cambridge, Mass. Application filed August 6, 1873.

Article—lamp, for instance—being formed, a portion of hot glass is placed on spot where orifice and neck are desired, which softens the glass underneath and renders it fit for manipulation with a proper perforating or forming tool.

Claim.—The above-described process of forming the filling necks and orifices on glass lamp-fountains, &c., the same consisting in superimposing at the desired point of the fountain, when formed, a quantity of molten glass, sufficient to form the neck, and subsequently inserting the superimposed and the underlying portions in manner as stated.

143,864.—Mold for Glass Lamp-Fountains.—Joseph Wing, Boston, assignor to New England Glass Company, East Cambridge, Mass. Application filed August 6, 1873.

Mold constructed to form central tube of an argand lamp complete with body of fountain at one operation.

Claim.—In a mold for forming glass argand-lamp fountains, constructed substantially as described, the core F, the spindle or auxiliary core *e*, and the male die or pressor D, constructed, combined, and operating together in manner and for the purpose set forth.

143,865.—Preparing Soluble Cotton for the Manufacture of Collodion.—Henry T. Anthony, of New York, N. Y., assignor to E. and H. T. Anthony & Co., same place. Application filed October 7, 1873.

The cotton is prepared by the acid mixture, washed and dried in the usual manner, after which it is subjected to the fumes of ammonia or other volatile alkali, to neutralize any remaining free acid.

Claim.—The method of preparing soluble cotton by subjecting the same to volatilized alkali after the ordinary acid treatment and washing, substantially as set forth.

143,866.—Mold for Sealing-Wax.—Isaac L. Baker, Dayton, Ohio. Application filed April 11, 1873.

Claim.—The grooved metallic plate A and congealing-bars C, constructed and arranged substantially as described, and for the purpose set forth.

143,867.—Grinding-Mill.—John G. Baker, Philadelphia, Pa., assignor to The Enterprise Manufacturing Company, same place. Application filed July 5, 1873.

Devices for securing grinding burr and shell in casing, so as to be readily removed when necessary.

Claim.—1. The combination, substantially as described, of the fixed shell G and its lugs with the slotted lugs and recesses in the upper and lower halves of the casing, between which the said shell is retained, as set forth.

2. The combination of the flange F′ of the shell with the partition N, cast in the upper portion A of the casing, and forming, with the said flange, a chute, as set forth.

143,868.—Ventilator for Buildings.—George E. Barker, Philadelphia, Pa. Application filed August 2, 1873.

The vitiated air flows down through adjustable openings around the hot-air pipe into a conduit-pipe leading to the chimney, within which pipe is arranged a valve, to allow the hot air, when the room becomes too warm, to pass out.

Claim.—In combination with the hot-air flue A and its ventilating-plate D and register-plate *d*′, the surrounding vitiated-air chamber B and exit-pipe b^{10}, and the surrounding series of openings in the floor-plate with their annular register-plate *d*′, the said parts being constructed to operate substantially as and for the purpose set forth.

143,869.—Washing-Machine.—John Bennett, El Paso, Ill. Application filed May 27, 1873.

In a rectangular box is a wash-board resting upon Z-shaped springs. Above is a rubber moved by arms that move in wire guides attached to side boards on the top of the box.

Claim.—The combination and arrangement of the wash-board H, having the Z-shaped side pieces, rubber head F, brackets F^1 F^1, rails F^2 F^2, guide-rods *g g*, attached to the removable guide-boards G G, and the wash-box A, all constructed and operated substantially as and for the purpose set forth.

143,870.—Machine for Making Earthenware Pipe.—James Bingham, Philadelphia, Pa., assignor to himself, F. L. Carnell, and D. K. Carnell, same place. Application filed February 19, 1873.

A cylinder in which clay is put in at the top and forced down by propelling-knives attached to a central revolving shaft, through a die at the bottom to form the pipe.

Claim.—1. The combination of the cylinder A with flange *b*′, the die D with flange *b*, the core E, ring *a*, and rods *d e*, all constructed substantially as and for the purposes set forth.

2. The combination of the cylinder A with shaft B and stirrers C C, the die D, core E, ring *a*, clamps G G, and knives H H, all constructed and operating substantially as set forth.

143,871.—Knife Polisher and Sharpener.—Theodore Bootsmann, Tompkinsville, N. Y. Application filed July 1, 1873.

Claim.—The strips G G, of hardened steel or equivalent material, attached to the jaws C D, which strips are arranged on the side of such jaws, and intersect each other when the same are closed, so that the sharpening and polishing processes may be accomplished simultaneously.

143,872.—Apparatus for Transferring Embroidery-Patterns.—Charles Bordas, New York, N. Y. Application filed June 14, 1873.

Apparatus for transferring embroidery-designs from a perforated pattern, which is held at the proper tension in a hinged frame upon a table. The blank sheets to receive the transferred design are placed upon the table under the perforated pattern on the frame. As the pattern is printed on each one the frame is opened, and it is removed in order to print the next, and so on.

Claim.—1. A frame, B, a removable clamp, H, and a sliding clamp, L, combined with a table, A, to enable the pattern-sheet to receive tension, in the manner described.

2. The eyes S, the cord C, and the spiral springs R, combined to enable the clamp to be conveniently adjusted to the proper degree.

3. A sheet-stretcher, L, constructed with a ribbed bed-piece, and provided with a grooved and hinged clamp, as, and for the purpose specified.

143,873.—Means of Raising Floating Timber and Loading Vessels therewith.—Adam Bulman, Newburg, N. Y. Application filed April 19, 1873.

Claim.—The floating steam-scow C^1 C^2 C^3 with hoistways Y^1 Y^2 E E, carriages D^1 D^2, with rollers *e e*, yokes T^1 T^2, with the attachments to hold the scow to the vessel, in connection with steam-engine B, boiler C, and hoisting-rigging Q, substantially constructed as described, and for the purpose as specified.

143,874.—Manufacture of Cast-Iron for Car-Wheels, &c.—Charles Burgess, Portsmouth, Ohio. Application filed September 9, 1873.

Claim.—1. The composite cast-iron herein described, consisting of fined or partially-refined cast-iron and soft-gray cast-iron fused together, substantially as set forth.

2. The combination of a fined or partially-refined cast-iron with a soft-gray cast-iron for the production of chilled castings, or for other purposes.

143,875.—Composing-Stick.—Leopold Buschmann, Newark, N. J., assignor to William Quail, New York, N. Y. Application filed September 4, 1873.

Claim.—The combination, with the angle or knee B of a composing-stick, of an adjustable stop or shoulder, G, to prevent said angle or the back from yielding to the pressure of the type as the lines are composed or justified, substantially as described.

143,876.—Grain-Bag.—William B. Carlock, Wareham, Va., assignor to himself and John Graham, New York city. Application filed March 25, 1873.

At a suitable point near the mouth of the bag a strong cord is inserted, by hand or otherwise, in a shed consisting of a few of the warp-threads, and so woven into the fabric as to effect a secure connection, while at the same time the ends of the cord are left free to serve as tie-strings. To prevent it from slipping lengthwise, a knot is formed on the part of the cord which is incorporated with the fabric.

Claim.—A woven bag having a knotted or bunched string placed under and secured by the warps in the process of weaving, as herein specified.

143,877.—Machine for Shaving Shingles.—Thomas H. Carter, Bremen, Ky. Application filed September 11, 1873.

The shaving-knives are placed in pairs around a circular table and the shingles forced through between them by rotating driving-arms.

Claim.—1. The combination described, with a supporting-table, B, of pairs of knives H, guides F G, spring I, and rotary drivers E, for the purpose specified.

2. The combination, as described, with a radial driver, E, of blades H, set in the direction of chords less than the diameter of the circle in which the driver is rotated, to enable the blades to shave the shingle gradually from butt to point, as specified.

3. The combination, with table B, of a series of knives, H, and a series of drivers, E, the knives and drivers being each at uniform distances apart, but there being a less number of one than the other, as described, so that no two pairs of knives can operate simultaneously, but must act upon their respective shingles at different times.

143,878.—Card-Mount.—James H. Catherson, Philadelphia, Pa. Application filed March 20, 1873.

The card-mount as constructed admits of the picture being readily and accurately centered.

Claim.—1. A card-mount consisting of the rear portion A', having a slot, *s*, for admitting the picture, and the front portion A, which has an opening for the exhibition of the picture, and which conceals the said slot, all as set forth.

2. The said card-mount, having an opening, *c*, for the display of the picture in its front portion, and an opening, *b*, in the rear portion for the adjustment of the picture, as specified.

143,879.—Shaft-Coupling.—RODNEY S. CATHCART, Cincinnati, Ohio. Application filed August 11, 1873.

Claim.—1. The sections A and A, provided with studs *c*, the collar B, the recesses *b*, and the spurs *b'*, in combination with each other and with the shaft ends E, provided with the openings *a*, substantially as and for the purpose specified.

2. The sleeve A, constructed in interlocking sections, as shown, and provided with the studs *a*, the collars C and C, fitted upon or over said sleeve, and the bolts D passing through said collars, combined with each other, and with the shafts E provided with the openings *c*, substantially as and for the purpose set forth.

143,880.—Dressing-Pad.—LOUIS G. CHAPDT, New York, N. Y. Application filed April 3, 1873.

Claim.—1. A self-feeding pad so constructed that a fresh supply of the bronze powder, or other dry coloring matter contained therein, is obtained by a blow or pressure of the pad in the hand of the workman upon the material operated upon, substantially as described.

2. The hollow holder A, combined with the brush-stock B, with or without springs C, substantially as described.

143,881.—Alarm-Clock.—DAVID M. CHARTERS, Xenia, Ohio. Application filed August 29, 1873.

A lamp-lighting apparatus is operated by a suitable arrangement of levers and rods connected with an alarm-clock, or will be operated at any time if a supplementary trip is pulled, by means of either of a number of cords or chains attached thereto, which cord or chain is afterward designated by a collar which is moved thereon.

Claim.—1. The levers *c d*, spring *e*, and rods 9 2, actuated directly by cam *g* and arm of lever *d*, arranged in connection with an alarm mechanism, substantially as and for the purpose set forth.

2. The slotted slide or carriage 4, in combination with the serrated clamp 5, springs 3 and 6, rod 2, and frame 1, constructed and arranged as and for the purpose specified.

3. The lamp *n* and clamp *o*, in combination with the slide or carriage 4, clamp 5, springs 3 and 6, and connecting-rod 9, as and for the purpose herein set forth.

4. The catch 7, in combination with the spring 8, frame 1, rods 2 and 9, when constructed and arranged for operation as and for the purpose set forth.

143,882.—Apparatus for Raising Water.—LORENZO CHASE, Portland, Me., assignor of one-half his right to CHAS. W. CARSON, same place. Application filed September 24, 1873.

Steam is admitted alternately into two air-chambers, forcing the air therefrom through pipes leading to the water-chambers, from which the compressed air forces the water through a discharge-pipe. The air-chambers have valves for the admission of air, and a steam-exhaust valve which is common to both.

Claim.—1. Two or more chambers, provided with suitable openings and apparatus for the automatic and alternate admission of steam and air, in combination with two or more water-chambers provided with ingress and egress openings and valves, substantially as and for the purpose specified.

2. The construction and relative arrangement of the air-chambers A and A', provided with the air-passages H and *a* and steam-ports *d* and E, and the water-chambers I and I', provided with the water-passages *i* and *k*, and discharge-pipes K and L, substantially as and for the purpose shown.

143,883.—Valve for the Waste-Pipes of Sinks.—JOHN CHILCOTT, Brooklyn, N. Y. Application filed April 25, 1873.

Claim.—The oscillating valve B, perforated as described, its perforated segmental seat *s*, the packing C, the central pin or stud F, and the nut N, all combined and organized substantially as described, for the purpose set forth.

143,884.—Water-Ejector.—HUGH COLL, Millvale, Pa. Application filed August 22, 1873.

The receiving-chamber is formed by a diaphragm extending across the lower portion of the shell, and having an opening at the rear end of the steam-nozzle. The discharge-chamber is circular in cross-section, the eccentric portion of the shell being the receiving-chamber.

Claim.—1. A siphon-pump in which the receiving-chamber is formed by means of a diaphragm extending across the lower portion of the shell, such diaphragm forming part of the shell, and having an opening, *c*, at the rear of the steam-nozzle, whereby the water is admitted into the discharge-chamber, substantially as described.

2. The shell *d*, cast in one piece, of a regular spherical form, in cross-section, having a diaphragm, *c*, which, with the upper portion of the shell, forms a circular discharge-chamber, *b*, of smaller diameter, the receiving-chamber *a* being the lower or eccentric portion of the shell, substantially as described.

143,885.—Chalk-Holder for Billiard-Tables.—HUGH W. COLLENDER, New York, N. Y. Application filed August 12, 1873.

Claim.—1. A chalk-box or receptacle for billiard-table, composed of a stationary holder suitably patterned and located, and provided with a cover, which, when closed, forms part of the holder, and covers its contents.

2. A stationary chalk-box provided with an automatically-closing cover or lid, substantially as described.

143,886.—Wagon-Jack.—ALFRED G. COOLEY, Hillsborough, Ohio. Application filed April 3, 1873.

Claim.—The combination of the lever A, bar B, plates C, lugs *c*, and rest D, substantially as and for the purpose set forth.

143,887.—Feeding Device for Middlings-Purifiers.—ROBERT CRAIK, Money Creek, Minn. Application filed March 25, 1873.

Conveyer regulates the feed of the middlings to the stones to be reground.

Claim.—The conveyer G, with a series of secondary flights, *o o*, for feeding the middlings evenly to the pipe P, as herein described.

143,888.—Revolving Shelf.—JOHN DANNER, Canton, Ohio. Application filed September 15, 1873.

A series of shelves are secured to a frame having several sides, which is supported by and turns on a series of flanged wheels which run upon a circular track laid upon the floor.

Claim.—The revolving shelf herein described, and composed of the frame *a b*, shelves *c*, flanged wheels *d*, and circular rail *e*, constructed and arranged to turn or revolve without any central shaft or support, as described and represented.

143,889.—Coffee Substitute.—EDWARD DUGDALE, Griffin, Ga. Application filed October 13, 1873.

Claim.—As a new article of merchandise, the partially-carbonized persimmon (*Diospyros Virginiana*) seed, either reduced to minute particles or entire, as and for the purposes set forth.

143,890.—Coffee Substitute.—EDWARD DUGDALE, Griffin, Ga. Application filed October 13, 1873.

Claim.—The process of separating the seed of the persimmon (*Diospyros Virginiana*) from the pulp or fruity substance, cleansing it, partially carbonizing and fitting it to be reduced to minute particles, or used entire, as the base or constituent element of a beverage, substantially as set forth.

143,891.—Means for Fastening Buttons.—ISAAC F. EATON, Brooklyn, N. Y., assignor to himself and EDWIN BOLITHO, same place. Application filed March 24, 1873.

A button has its shank flattened parallel with its face. The flattened portion is slotted to receive a metallic ribbon, which secures it to a shoe or other article.

Claim.—The combination of the button having its shank flattened parallel, or approximately parallel, to its face, and the metallic ribbon, substantially as and for the purpose herein set forth.

143,892.—Button-Fastening.—ISAAC F. EATON, Brooklyn, N. Y., assignor to himself and EDWIN BOLITHO, same place. Application filed August 4, 1873.

Claim.—The button-fastening composed of a loop or eye on the button, a flat link applied thereto, as described, and a metallic ribbon fitting in a pocket provided in the edge of the shoe or garment to which the button is applied, substantially as herein set forth.

143,893.—Turning-Tool.—JOSEPH W. ELLIS, Camden, N. J. Application filed June 17, 1873.

At the front is an adjustable cutter for reducing the rod to the proper size to enter the bushing, when it is acted upon by two adjustable cutters, one of which can be guided, when required, by a plate, K, having upon it a form or guide engaging with a pin on the cutter-holder, which is made to follow the shape of the groove. The plate K is moved within the stock by connecting it to the head of the lathe.

Claim.—1. The combination and arrangement, substantially as described, of the bushing D and cutters C^1 and C^2 with their adjusting mechanism, consisting of the mandrels G G' and screws H H', as and for the purpose set forth.

2. In combination with the cutter C^1 and mandrel G, the guide-plate K, provided with a screw, L, as and for the purpose set forth.

3. The central shoulder *l* on the end of the mandrel G', for the accurate setting of the cutter C^1, substantially as described.

4. The lever F, in combination with the stock A, cutter C^1, holder G, and form-plate K, substantially as and for the purpose set forth.

5. The combination-tool, constructed substantially as described.

143,894.—Car-Coupling.—JOAB ENCS, Chicago, Ill. Application filed August 7, 1873.

Improvement on patent No. 89,203. The sliding block has a recess on each side, and a stop-bolt passes through the draw-head and the recesses.

Claim.—The sliding block F, having the open recess D L K I and slots H H at the sides of said sliding block, in combination with the bolts T T, extending through the draw-head and said slots, the whole being constructed, arranged, and operated in the manner and for the purpose set forth.

143,895.—Scroll-Sawing Machine.—MICHAEL FOLEY, Appleton, Wis. Application filed June 13, 1873.

Two saws are operated by cranks placed at the opposite ends of a shaft, in such a manner that when one saw is ascending the other is descending, the saws being connected at their upper ends by a band passing over pulleys, and which is strained by an adjustable tightening-pulley.

Claim.—In combination, the hanging frame E, provided with the pulleys K K', slides F, F', and G, the latter having pulley L, lever M, and ratchet N, the bats J, saws O O', slides P P', pitmen V V', and shaft S, provided with crank-wheels T T', constructed and operating substantially as and for the purposes hereinbefore set forth.

143,896.—Steering-Propeller.—FRANK G. FOWLER, Bridgeport, Conn. Application filed November 22, 1870.

Varying the pitch of the propelling-surface of the blade.

Claim.—The curved steering-propeller blade A, in combination with the arms, eccentric, and sleeve of a steering-propeller, substantially as and for the purpose herein set forth.

143,897.—Bag-Holder.—NEWTON A. GREENGER, Coopersburg, Pa. Application filed July 22, 1873.

A bar having a slide and adjustable hinged arms can be applied to any ordinary truck as a bag-holder.

Claim.—The bag-holder, consisting of the bar *b*, slide B, and hinged and adjustable arms *a a'*, constructed and adapted for application to a truck, as set forth.

143,898.—Screw-Cutting Attachment for Lathes.—WILLIAM GLEASON, Rochester, N. Y., assignor of one-half his right to KIDD IRON WORKS COMPANY, same place. Application filed, September 22, 1873.

The pivoted lever B is connected at its lower end to a double rack, into which works a pinion on the shaft that closes the divided nut on the feed-screw of the lathe. The feed-screw of the tool-stock is longitudinally adjusted to withdraw the tool from the work by means of the cam-groove *g* on the face or upper end of lever B operating upon a projection or pin on the sleeve *a* on the feed-screw *b*.

Claim.—1. As an improvement in screw-cutting attachments to lathes, the cam-lever B, in combination with the sliding sleeve *a*, feed-screw *b*, and tool-stock *h*, all acting conjointly, substantially as and for the purposes set forth.

2. The longitudinally-adjustable tool-stock feed-screw *b* and adjusting-cam B, or its equivalent, in combination with the shear-nut N and intermediate mechanism, operating conjointly, substantially in the manner and for the purposes set forth.

143,899.—Machine for Burnishing the Heels of Boots and Shoes.—CHARLES W. GLIDDEN, Lynn, Mass., assignor to JAMES W. BROOKS, trustee, Boston, Mass. Application filed September 3, 1873.

Claim.—1. In combination with a boot or shoe holding mechanism, a series of pivoted rotary burnishers, held against the heel as they pass by the curved edge thereof, and away from said heel as they pass by the breast of the heel.

2. In combination with the burnisher-levers *w*, the ligature spring s^6 and the cam-plate *z*, for actuating the levers, substantially as described.

3. The gas-tube g^6 and jet or flame orifices h^3, in combination with the series of rotary burnishers, arranged and operating substantially as described.

4. The method of burnishing boot and shoe heels, consisting in subjecting the curved heel-edge to the progressive frictional action of a series of burnishers passing over its contour from breast to breast without break.

5. In combination with the rotary burnisher-levers *w*, the stationary cam-plate *z*, substantially as described.

143,900.—Tobacco-Knife.—ISAAC S. GOLDMAN, Winterset, Iowa. Application filed January 18, 1873.

The knife is attached to a lever pivoted centrally, and acts with a fixed upper blade, both blades being detachable for the substitution of other antagonizing tools, a twine ball being arranged in a cavity in the frame immediately over the tool-end, and the loose end passing out through a front perforation or bore.

Claim.—The frame E F B, centrally recessed to receive the lever G, and having a hollow front, B, to receive a ball of twine, and also adapted to hold interchangeably the cutting and pressing tools, as described, the several parts being constructed and arranged as specified.

143,901.—Clothes-Pounder.—SAMUEL F. HAWLEY, Sandy Hill, N. Y., assignor to himself and JAMES M. WHITMOR, same place. Application filed September 6, 1873.

Within a cone-shaped pounder is another of the same form, but much smaller in size, and projecting below it. It is attached to a cylinder that slides on the handle, and has a spiral spring, which allows to yield by pressure and spring back to its place when relieved.

Claim.—The pounder constructed as described, having pounders B and C, rigid stem A, and sliding stem D, and spring E, the smaller being forced upward by a downward stroke, and forced downward by the spring when raised, all arranged for operation as and for the purpose specified.

143,902.—Treadle.—LEOPOLD HEINS, Brunswick, Ga. Application filed October 10, 1873.

The treadles are connected by links to levers, the inner ends of which are pivoted to the frame. To the opposite ends a chain is secured. The chain passes over a grooved pulley secured on the fly-wheel shaft. The pulley, by means of a pawl and ratchet, is locked to the shaft when turned in one direction. To one of the levers is attached a weight. One of the treadles is used to raise the weighted lever, which, in descending, imparts rotary motion to the grooved pulley.

Claim.—1. The combination of the treadles C C', pivoted levers D D', weight J, chain *k*, and wheel or pulley G, all substantially as and for the purposes herein set forth.

2. The combination, with the wheel G, operated by the chain *k* and levers D D', as described, of the ratchet-wheel *f*, pawl *i*, and cog-wheel I, or its equivalent, substantially as and for the purposes herein set forth.

143,903.—Track-Circuit for Electric Railway-Signals.—STEPHEN C. HENDRICKSON, Brooklyn, N. Y. Application filed April 25, 1873.

Connection to rail formed by a copper plate, to which conducting-wire is soldered, bent around rail, and interposed between it and its chair.

Claim.—The metallic plate F, in combination with the rails A or A' of a railroad-track and the conducting-wire or conductor W, substantially as and for the purpose specified.

143,904.—Registering Attachment for Printing-Presses.—ANTON HILDEBRENER, New York, N. Y. Application filed July 31, 1873.

As the bed or platen A moves back and forth on the ways B, the fingers on the shaft C are moved up and down by a pinion on the end of the shaft, gearing with a rack, and thus rocking the shaft.

Claim.—The reciprocating platen A, carrying the shaft C, having one or more pointers, *c d*, and a pinion, *g*, which gears with the rack-bar A, all combined and arranged to operate substantially as described, for the purpose specified.

143,905.—Corn-Planter.—WILLIAM HOUSE, Aurora, Ind. Application filed September 4, 1873.

The dropping-wheel is operated by a pitman connected to an adjustable pin in a rotating disk within the driving-wheel, the disk having notches to engage with a pawl within the wheel, by which motion of the seed-slide is produced only while the machine is moving forward.

Claim.—In combination with the reciprocating seed-slide H A and recessed ground-wheel R r S of a corn-planter, the pitman I, M, rotating disk N *n* O, one or more apertures, P, stud-shaft Q, pawl U, and spring V, when arranged with reference to each other, and adapted to operate in the manner herein explained.

143,906.—Reciprocating Churn.—ABIEL D. HUNTLEY, Smyrna Mills, assignor of one-half his right to BENJAMIN F. NICKERSON, New Limerick, Me. Application filed October 29, 1872.

A bisected dasher-shaft having spiral beaters is detachably secured around a longitudinal driving-shaft within the churn. To the extremities of said shafts are pulleys, over which pass, in opposite directions, belts operated by two treadles. A vertically-adjustable frame is secured to the side of the churn for steadying the operator.

Claim.—1. The longitudinally-bisected sleeve G, provided with spirally-arranged arms *d d*, and held on the shaft *b* by pins and hooks or other equivalent means, substantially as and for the purposes herein set forth.

2. The arrangement, with the shaft *b*, of the belts E E', wheels H H', shaft b^1, straps *f f'*, and treadles J J', all substantially as and for the purposes herein set forth.

3. The up-and-down adjustable frame I, arranged on the box A, as and for the purposes herein set forth.

143,907.—Stench-Trap.—JAMES P. HYDE, New York, N. Y. Application filed March 5, 1873.

The pipe where the followers bear is oval. Two wedge-like pieces project from opposite sides of the pipe and serve to close the corners when the two sides are pressed together.

Claim.—1. The arrangement of an india-rubber or elastic pipe, B, in a suitable casing, when the upper and lower ends of said elastic pipe are circular, and the central part of said pipe is made oval or elliptical in its horizontal section, substantially in the manner and for the purpose set forth.

2. The arrangement of the projecting tongues or pointed lips *c c* in the inside of the central part of the pipe B, substantially as and for the purpose hereinbefore set forth.

143,908.—Pipe-Wrench.—DAVID D. INGHAM, Manistee, Mich. Application filed July 8, 1873.

A serrated block formed to fit within the hooked end of the stationary jaw is pivoted eccentrically thereto.

Claim.—The tool described, having the shank A', with the pivoted eccentric B, and serrated jaw D, combined and arranged as described, for the purpose set forth.

143,909.—Combined Brake and Starter for Street-Cars.—CORNELIUS L. IRVING, Indianapolis, Ind. Application filed April 25, 1873.

To operate the starter the handle must be moved one way; and to operate the brake the handle must be moved the other way.

Claim.—1. The combination of the cone and socket frictional cylinder attached to the front axle, with the spring-pawl and ratchet-cylinder attached to the rear axle, and the elliptic spring, substantially as and for the purpose specified.

2. The combination of the ratchet *r'*, the pawls *r''*, and spiral springs *r'''*, substantially as shown and described.

3. The combination of the elliptic spring *s*, rod *w*, and shifter *p*, with the cone and socket frictional cylinder, substantially as set forth.

143,910.—Fleur-Belt.—Rebecca J. Mortehland, Nevada, Mo., administratrix of Joseph G. Kaufman, deceased. Application filed April 11, 1873.

Belting-reel with interior beaters revolving in the opposite direction from that of the reel.

Claim.—In combination with the bolt B, the wire beater constructed as shown, and revolving in a direction opposite to that of the bolt, substantially as set forth.

143,911.—Cotton-Bale Tie.—Benjamin Kimball, St. Louis, Mo. Application filed October 2, 1873.

The fastening-plate has a rectangular slot cut in one end for the reception of one end of the band, while upon the other end of the plate two lugs are formed, between which the tongues upon the other end of the band are secured.

Claim.—The combination of the plate A, having a slot, *b*, and ears *a a'*, hoop D, provided with one or more tongues, E, constructed for joint operation substantially as and for the purpose shown and specified.

143,912.—Kiln for Drying Lumber.—Stephen R. Kirby, Detroit, Mich., assignor to Jesse Hoyt, New York, N. Y. Application filed August 11, 1873.

An exhaust-steam pipe is arranged in the blast-trunk to heat the air in it. The blast-trunk opens into a kiln on either side by means of branches provided with dampers. The saturated air is admitted to exit-flues by means of valve-plates *b b'*.

Claim.—1. The arrangement of the exhaust-steam pipe C within the blast-trunk F, and with relation to the blast-fan E, tubular heater A, and casing D, substantially as and for the purpose set forth.

2. The combination of the blast-trunk F, the kilns G G, in pairs, the transoms F' F', gates *d d*, flues I, and valve-plates *b' b'*, all constructed and arranged substantially as described and shown, for the purpose set forth.

143,913.—Name-Plate for Stoves.—Philip Klotz, Baltimore, Md., assignor to Bentley C. Bibb, same place. Application filed September 15, 1873.

Claim.—The supplemental plate *a*, attached to a stove and provided with openings *b b*, in combination with the name-plate *d*, having the lugs *c c* on its rear face, substantially as described, and for the purpose set forth.

143,914.—Machine for Compressing and Punching Heel-Blanks.—Richard C. Lambart, Quincy, Mass., assignor to The Shoe-Machinery Manufacturing Company. Application filed September 25, 1873.

The die-opening, into which the heel-blank is pressed, is of the shape of the finished heel, its flaring sides admitting of lateral compression. As the blank is forced down awls perforate it for the reception of nails, which are to secure it to the sole of a boot or shoe.

Claim.—The die-plate *e*, having the flared receptacle *f*, awl-plate *h*, stripper-plate *k*, and follower *n*, when combined and arranged to operate substantially as shown and described.

143,915.—Vapor-Burner.—John C. Love, Philadelphia, Pa. Application filed April 4, 1873.

The tube incasing the valve-stem is drawn out so thin at its lower extremity that it may be compressed by the hollow conical projection forming part of the nut movable upon the tube, and thereby pack the valve-stem. The induction-pipe is placed in close proximity to the vaporizing-chamber, having a notch cut therein to allow play for the air-regulating nut-valve. The nut-valve moves upon the thread of the main tube, which thread also serves for attaching the vaporizing-chamber, and attaching both to regulating-chamber.

Claim.—1. The within-described metallic packing for valve-stems for gas-burners, consisting of a conical tubular projection, *y*, of the valve-casing, embracing the said stem, and arranged to be tightened upon the same by the corresponding conical projections *d d'* of a nut, H, adapted to the threaded exterior of the casing.

2. The tube I, so combined with the other portions of the burner that its single screw-thread *x* shall serve the threefold purpose of securing the same to the valve casing, of receiving the nut-valve K, and of securing the upper portion of the burner to the said tube, all substantially as specified.

3. The combination, substantially as described, of the nut-valve K with the supply-pipe A, recessed at *y* to permit the operation of the said nut-valve.

143,916.—Mold for Fancy Buttons.—Frederick Maass, Newark, N. J. Application filed September 13, 1873.

The mold for a button has a hole through its center, and is provided with radial grooves on its outer surface. A cord is passed through the hole and drawn into the grooves, and the fabric for covering it may thus be secured without sewing.

Claim.—1. The grooves *a'*, formed in the outer surface of the molds A, substantially as herein shown and described.

2. The cords or threads C, in combination with the grooves *a'* of the molds A, for securing the cover B in place upon said molds, substantially as herein shown and described.

143,917.—Machine for Boring and Facing Cylinders.—John MacDonald, Boston, Mass. Application filed June 26, 1873.

The mandrel *a*, chucked to a lathe face-plate, and rotating with it, carries a tool-holder that may be permanently attached to it at any point, to face the end of a surrounding cylinder, or that may be gradually fed along on the mandrel to turn the interior of the cylinder, the tool for the first operation being gradually set out by the feed-screw *d*, co-operating with a worm-wheel keyed to a shaft connected to the cutter, while the translatory movement for effecting the second operation is caused by clamping the feed-screw with a divided nut attached to the cutter-head; the screw being constantly rotated, while revolving, by a pinion keyed upon it whose teeth interlock with those of a stationary gear-wheel.

Claim.—In combination with the cutting-tool, the mechanism, substantially as described and shown, for imparting to it successively revolving and shifting movements and revolving and radial movements, for the purposes set forth.

143,918.—Article of Food from Cider.—Schuyler W. Mahan, Middlebury, Vt., assignor to himself and Charles E. Cardell, same place. Application filed September 22, 1873.

Claim.—A composition of cider, flour, and sugar, subjected to evaporation and clarification by means substantially as set forth.

143,919.—Churn.—John Masten, Lee, Ohio, assignor of one-half his right to J. P. Coe, same place. Application filed June 14, 1873.

Two vertical dasher-rods, each carrying an ascending series of dashers, and each inclined outwardly toward the bottom, so as to move in line with the conical sides of the churn; said rods operated by pitmen connected with bent cranks from a train of gearing, the dashers passing each other in the reciprocal movements of the rods.

Claim.—1. In a churn, the two dasher-rods C C', diverging from each other at their lower ends, and provided with dashers *c*, and operated by alternate up-and-down strokes, substantially as specified.

2. The arrangement of the wheels I G G' with the bent cranks F F', and connecting-rods E E', working in a vertical plane, the fly H, and the double dash-rods C C', all as herein shown and described.

143,920.—Relief-Valve for Fire-Engines.—Alvarado Mayer, Detroit, Mich. Application filed June 3, 1873.

The pressure in the main pipe becoming too great raises a supplemental valve, which in its turn raises a second valve, this last affording exit to the water, the pressure of which upon a piston attached to the relief-valve stem holds the valve to its seat; pressure being removed the relief-valve rises and the water is allowed to escape.

Claim.—The construction and arrangement of the water-way A, cylinders B B^1, cap B^2, stem C, having the passage *b c c'* formed in it, and carrying the relief-valve D, and pistons F F', with relation to the return-pipe E, cylinder G, rod H, valve I, spring J, arm K, and valve L, substantially as and for the purpose set forth.

143,921.—Bosom-Pad.—Helen M. Millar, Louisville, Ky. Application filed July 17, 1873.

Claim.—The extension-pads B B and shoulder-straps C C, in combination with the busts A A, when constructed and arranged substantially as and for the purpose hereinbefore set forth.

143,922.—Manufacture of Asphalt Pipe.—Adolph Müller, Jersey City, N. J. Application filed September 20, 1873.

The sheets of which the pipe is formed are composed of two layers of strips of veneers, at right angles and sewed together.

Claim.—A pipe constructed of strips of wood veneers sewed together in two layers at right angles and coated with asphalt, substantially as and for the purpose specified.

143,923.—Gage-Cock.—Albert A. Murray, Baltimore, Md. Application filed August 15, 1873.

The valve and seat are arranged with openings to correspond with each other, when the valve is rotated about the stem and is provided with a spiral spring around the stem, that yields sufficiently to allow the ready rotation of the valve, and yet holds it in any desired position.

Claim.—The cock-valve A and seat B, the former arranged to rotate about the stem *b*, and having a passage, a^3, in combination with a spiral spring, D, that yields sufficiently to allow readily the rotation of the valve, and yet hold it in any position desired, as and for the purpose described.

143,924.—Filter.—Godfrey S. Neff, Rochester, N. Y. Application filed June 30, 1873.

The reservoir is bottle-shaped, the neck passing through a hole in the center of the water-pan, and constituting the air-pipe.

Claim.—The combination, in a filter, of the reservoir C and water-pan D, made of stone or earthenware, when the reservoir is made bottle-shaped, and its nozzle extends through a central hole in the water-pan and forms the air-pipe, as herein shown and described.

143,925.—Paper-Bag Machine.—James S. Ostrander, Dayton, Ohio. Application filed July 3, 1873.

The rollers *d d'* and *e e'* are located within the header and at a suitable distance from each other, that the feed-rollers may look between them so that they hold the header in place and serve as friction-rolls to the paper-tube. The header is made adjustable by means of interchangeable sides.

Claim.—1. In combination with feed-rollers D D' and knife B, the header E, fitted with rollers *d d' e e'*, and connected and operating substantially in the manner and for the purpose specified.

2. The header E, having interchangeable sides or edges *g*, substantially as and for the purpose specified.

3. The combination of the knife B, header E, fitted with rollers *d d' e e'*, and feed-rollers D D', the roller D' turning in horizontally-adjustable bearings, substantially as and for the purpose specified.

143,926.—Apparatus for Holding Box-Toes for Boots and Shoes.—David H. Packard, North Bridgewater, Mass. Application filed September 26, 1873.

Claim.—1. In an apparatus for forming boxes for the toes of boots and shoes the combination of the block D, having one or more male dies, G, the sliding clasp J, and the female die, formed in two parts, B C, the whole being constructed to operate as and for the purpose set forth.

2. The adjustable gage-plate O, in combination with the male die G, the clamp-plate J, and the female die B C, as and for the purpose set forth.

143,927.—Loom-Shuttle.—Carl L. F. Pfeffferkorn and Wilhelm Auer, Manchester, N. H. Application filed August 20, 1873.

To stop the loom and prevent "float" when an obstruction occurs in the shed, the weft-thread is severed by means of a cutting instrument placed in a case in the side of the shuttle, and consisting of two jaws or blades pivoted together, one of said jaws being operated in one direction by a spring, and in the other by a trigger-lever so placed as to come in contact with a broken warp thread or other obstruction.

Claim.—The movable jaw *c'*, having the extension *d* formed with a curved bearing-surface, in combination with the fixed jaw *c*, the spring *a*, and pivoted lever *b*, all constructed and arranged and confined within the metal case F, as herein shown and described.

143,928.—Apparatus for Treating the Eye.—Merritt F. Potter, Kanesville, Ill. Application filed September 23, 1873.

A column of water, by its own weight, forces a portion through a tube into a cup of proper shape to fit the eye. For water various other liquids may be substituted, and used for bathing the eye.

Claim.—The combination of the cup C for fitting over the eye, flexible tube B, and reservoir A, to form a fountain eye-cup, as set forth.

143,929.—Thill-Coupling.—Joseph M. Pusey, Wilmington, Del. Application filed September 8, 1873.

Claim.—1. The clip B *b b'*, rubber spring D, and thill or pole iron A *a*, in combination with the pin E, having an eccentric part, e^2, and concentric journals *e* and e^1, one of which is of greater, the other of less, diameter than the eccentric part, substantially as and for the purpose specified.

2. In a thill-coupling of the character stated, the eccentric pin E *e* e^1 e^2, provided with a handle, $E' e^3$, in combination with the spring-catch F, substantially as and for the purpose specified.

143,930.—Hobby-Horse.—John Reinhart, New York, N. Y. Application filed August 15, 1873.

Claim.—1. The swinging lever B having an auxiliary brace, E, for supporting the body A, in combination with the shaft C, spring F, and base D, substantially as and for the purpose specified.

2. The elastic braces E, in combination with the swinging lever B, body A, base D, and spring F, arranged to operate substantially as set forth.

143,931.—Spark-Arrester.—Jackson Richards and Jacob Merkel, Philadelphia, Pa. Application filed September 20, 1873.

Claim.—1. The combination and arrangement of the pipes C and E and conical breaker F with the casing of a smoke-stack, substantially as and for the purpose set forth.

2. In combination with the casing A, a breaker and the perforated pipe E, larger at the bottom than at the upper end, for regulating the draft through the space *s*, and also for turning the sparks to the casing A in their descent, to prevent their falling down into the exhaust, substantially as specified.

143,932.—Car-Coupling.—Timothy W. Ryan and Timothy D. Ryan, Matmas City, Ohio. Application filed May 13, 1873.

The slotted coupling-pin is struck by the ball on the opposite draw-head, and thrown back far enough to allow the ball to pass its point.

Claim.—The coupling-pin *d*, having slot A, in combination with the ball *c* and pyramid *e*, substantially as specified.

143,933.—Plumb and Level.—Samuel Sanderson, New Bedford, Mass. Application filed August 9, 1873.

The frame of a pendulum-level has perforated lugs for fitting it upon a spindle of a spinning-machine, in order to adjust the spindle properly.

Claim.—The combination of the graduated and weighted dial A, and the bar B having flanges *a a*, with marks *a' a'* and perforated lugs *b b*, all substantially as and for the purposes herein set forth.

143,934.—Apparatus for Teaching Geography.—Joseph Schindler, Jersey City Heights, N. J. Application filed August 15, 1873.

Two hemispheres attached to a card, above which painted representations of said spheres are shown, to convey to the learner the idea of the globular shape of the earth.

Claim.—A card or plate for teaching geography, provided with the planispheric maps B C, and hemispheric maps B' C', arranged substantially as described.

143,935.—Circuit-Closer for Railroad-Signals.—George H. Snow, West Meriden, Conn. Application filed May 24, 1873.

Beveled end of I, when pushed up by lever B, closes key L. Piston J is attached to I, and slides in cylinder K. Small air-passages connect upper and lower ends of cylinder so that the fall of J is retarded by the slow escape therethrough of the air confined below it, thus keeping circuit closed for some time.

Claim.—1. The combination, with the key-lever L of a circuit-closing instrument, of a piston, J, and cylinder K, substantially as described.

2. The air-cushion formed in the top of the cylinder K by means of the piston J and the passage P, substantially as described.

3. The air-passages O, Q, and P, communicating with the interior of the cylinder K above and below the piston J, in combination with the piston J and key-lever L, substantially as described.

4. The adjustable valve R, which controls the return of the air from the part of the cylinder below the piston to the part above the piston, substantially as described.

5. The combination, with the outer end of the track-lever B, of a spring, E, whereon the track-lever rests, substantially as described.

6. The packing device H, arranged upon the track-lever, so as to close the opening G of chamber F, substantially as described.

143,936.—Rotary Engine.—James C. Spencer, Phelps, N. Y., assignor of two-thirds his right to Jabez K. Babcock, Caseius M. Miller, and Edwd. C. Hoff, same place. Application filed August 26, 1873.

Claim.—1. The combination, in rotary steam-engines, of the shafts B, geared together, and rotary segmental pistons A, with the contractible heads H and H', and shell or case C, for the purposes set forth.

2. The heads H and H', divided vertically, and provided with an intervening adjustable wedge, D, in combination with the segmental pistons A, for the purposes set forth.

143,937.—Bee-Hive.—John H. Stockwell, Bronson, Mich. Application filed September 5, 1873.

The entire body of frames moves out of the case intact, when they may be opened like the leaves of a book; but, when unhooked, the floor beneath them divides into three equal parts, the close back being hinged so as to let its right and left sections fold backward. Each individual frame, being pivoted in rear to the floor and, by a flange, into the top of the back-board, may be lifted independently from its place.

Claim.—1. The honey-frame B made in separate sections, *b*, turning like leaves on, and lifting singly off, the pivots b^3 *d'*, as and for the purpose described.

2. A bee-hive case in sections, A^1 A^2 A^3, the end ones hinged to the middle one at the back, and provided in front with strips D D, that project over a recess, *d*, of the middle one, as and for the purpose set forth.

143,938.—Malt-Steep.—William W. Stoll, Brooklyn, E. D., N. Y. Application filed October 2, 1873.

The elevator-belt runs under a pulley situated in the well and over one or more pulleys on the growing-floor. The doors between the steeps and well are retained in place by lever-braces consisting of two arms having hooks at their ends catching under studs secured in lugs which project from the door-frame and a central pointed rod which bears on the door.

Claim.—The arrangement of an elevator, working in a well, which is situated between two or more malt steeps, and communicates with each of these steeps by one or more apertures in the partition-walls between the steeps and the elevator-well, substantially as shown and described.

143,939.—Evaporating-Pan.—Georgs W. Stoker, Philadelphia, Pa. Application filed September 30, 1873.

The hollow grate-bars are connected by a lateral pipe which receives the circulating liquid before it enters the hollow bars, and acts as a mud-pipe when such a device is needed.

Claim.—1. In combination with the evaporating-pan A, provided within its double bottom with the chamber D, the hollow grate-bars L, and pipes K and M, substantially as and for the purpose specified.

2. In combination with the pan A, hollow grate-bars L, and the pipes K and M, the pipes N, substantially as and for the purpose shown.

143,940.—Manufacture of Paper-Stock.—ALFRED T. STUDEVANT, Mount Pleasant, N. Y. Application filed January 30, 1873.

A set of elastic rubbers, spirally disposed upon a revolving drum, rub the shavings, introduced at one end, against the rough gauze interior lining of the cylinder and feed them out in a disintegrated state.

Claim.—1. The process of reducing wood cuttings, shavings, or fibers to a condition to be worked into paper-pulp by rubbing them over a rough surface or bed by means of elastic rubbers without passing them through such surface or bed, substantially as herein described.

2. The combination of the cylinder A, having a rough lining or surface, and the elastic rubbers C C, arranged as herein described, substantially for the purpose set forth.

143,941.—Harrow.—CHRISTIAN SVENZEN, Blair, Neb. Application filed February 26, 1872.

A series of cylinders having short radial teeth are set in a frame, forming side runners, with cross-bars connecting them at each end, the radial teeth interlocking with each other. A draft-ring is attached to each end, so that the harrow can be drawn in either direction. The runners are rounded off at both ends and upon both sides. The journals being upon one edge the harrow can be reversed to go to and from the field without having the teeth in contact with the ground.

Claim.—The reversible harrow, as described, consisting of the rounded runners and connecting-bars, the toothed cylinders, the seat and removable cover, the cylinders being journaled at the upper edge of the runners to prevent the teeth coming in contact with the ground when reversed.

143,942.—Grading-Level.—JOHN THORNLEY, Charlottesville, Va. Application filed July 21, 1873.

An ordinary spirit-level has arranged vertically at one end an adjustable rack-bar worked by a pinion with milled-headed shaft. The rack-bar has an adjustable extension piece which, when not in use, is contained in a socket in the bar.

Claim.—In combination with the graduated rack-bar D, operated by pinion C, or equivalent, and clamped by screw E, the extension-bar F, arranged to slide in and out of the same, all applied to a level, A, as shown and described, to operate as specified.

143,943.—Fetter for Cows' Tails.—CHARLES F. TOLLES, Nashua, N. H. Application filed July 23, 1873.

Two clamps connected by a chain; one can be applied to the tail of the cow while the other is put upon the tendons of the hind leg. A spring in each clamp forces its jaws together, and they can be held open by means of a bolt operated by the thumb.

Claim.—The apparatus, substantially as described, consisting of the two-jawed clamps A B, their connecting-chain C, actuating-springs D D, and holding mechanism, all arranged and combined substantially in the manner and to operate as specified.

143,944.—Elevator.—OTIS TUFTS, Boston, Mass. Application filed September 3, 1873.

The auxiliary rope is used only when the main check-rope fails to operate. A lever and clamp mechanism is so arranged that, should the car in ascending meet with an obstruction, the clamp will bind the check-rope and stop the car.

Claim.—1. In combination with the car and its check-rope, the auxiliary stop-rope *g*, having its stops *h i* arranged, respectively, above and below the stops *f f* on the rope *e*, substantially as described.

2. In combination with the car a and its check or stop rope, the clamp *k*, arranged to operate substantially as described.

143,945.—Apparatus and Process for Treating Petroleum.—SAMUEL VAN SICKEL, Titusville, Pa. Application filed July 8, 1873.

To separate the gas from petroleum so as to produce only gas and oil, the oil remaining in the still, that which is carried off being condensed in a column, in the lower part of which are steam-pipes, the oil flowing back to the still.

Claim.—1. The process hereinbefore described of treating crude petroleum with the resultant product of only oil and gas, by effecting the condensation of the oleaginous vapors, and the immediate return of the condensed product to the body of oil in the treating-chamber, and carrying over only the uncondensable gases, substantially as set forth.

2. The arrangement of the condensing apparatus described above, the treating-chamber, with a direct communication from the latter through the former, and in suitable position for the direct reflow of the condensed product, substantially as set forth.

3. The combination of a vertical chamber, *f*, for treating crude oil, furnished at or near its lower end with a pipe or pipes for the admission of steam, and a condensing-chamber arranged above, with condensing-pipes for condensing the oily vapors, and a gas-pipe from the dome or chamber above for carrying off the uncondensed gases, substantially as set forth.

4. The combination of the treating-chamber, the condensing apparatus above, the gas-pipe and steam-jet or vacuum apparatus, arranged and combined substantially as set forth.

5. The combination of the treating-chamber *f*, condensing-flues *c*, pipe *h*, condenser *m*, and jet-pipe *l*, arranged substantially as set forth.

6. In combination with the oil-treating and condensing-column *c*, the supply-pipe *g*, the delivery-pipe *p*, and one or more steam-pipes *o*, substantially as described.

143,946.—Construction of Houses.—WILLIAM WARD, New York, N. Y. Application filed May 20, 1873.

Claim.—In a double tenement house, on a single circumscribed lot of ground, the broken wall X X X X X, so constructed, substantially as described, as to apportion off the corresponding space in successive stories to each dwelling alternately, and give to each tenement both front and rear space on each floor, as set forth and shown.

143,947.—Overalls.—EMIL WEIL, New York, N. Y., assignor to STERN & Co., same place. Application filed August 4, 1873.

Short elastic bands are inserted in the waistband in front and provided with a buckle. A flap covers the front opening, and is held in place by one of the elastic bands passing through an opening in it.

Claim.—The overalls A, having band-piece B and flap E *a*, combined with end-buckled elastic bands C, as described, whereby buttons are rendered entirely unnecessary.

143,948.—Car-Starter.—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed June 3, 1873.

Advantage is taken of the momentum of a moving car, in the act of stopping it, to raise one end of the same, so that when the brakes are released the weight of the raised end will operate to start the car forward.

Claim.—1. The lifting-lever D, and its link D′, actuated by the axle C′ through the medium of the rod E, chain F, wheels H H′, and rack-bars J J′, acting on teeth which are on the said axle C′, substantially as described.

2. The eccentric H′ and its winding-up wheel H, acted upon by the axle C′, and an arm, *b*, and rack-bar L, for raising one end of the car-body, substantially as described.

3. The eccentric H′ and its winding-up wheel H, applied to shafts which have their bearings in a longitudinally-movable frame, G, in combination with the lifting-lever D and link D′, and with the rack-rods J J′ and teeth *c c′* on the axle C′, substantially as described.

4. The vertically and rotary movable brake-rods *n* and the tubes *k* with the teeth and notches *v v′*, combined with the rack-bar L, arm *b*, and the eccentric wheel H′ for bringing the winding-up wheel H in contact with the axle C′, for the purpose described.

5. The rack-bars J J′, connected to the bar E and acting on the axle C, substantially as and for the purposes described.

143,949.—Fruit-Drier.—JOHN WILLIAMS, South Haven, Mich. Application filed March 8, 1873.

Claim.—The air-trunk A, having partition B and adjustable openings in its upper part, shafts D D, chain-wheels and endless chain F, frames G, and dampers *b b*, as described.

REISSUE PATENTS.

5,610.—Treating Offal, Flesh, Entrails, &c., for Preservation, Manure, &c.—WILLIAM ADAMSON and CHARLES F. A. SIMONIN, Philadelphia, Pa., assignors to WILLIAM ADAMSON.—Patent No. 119,000, dated September 19, 1871.—Division A. Application filed October 8, 1873.

Claim.—The extraction of animal oils and fats by hydrocarbon vapors in a closed vessel, substantially in the manner described.

5,611.—Drying Offal, Entrails, Flesh, &c., for Preservation, Manure, &c.—WILLIAM ADAMSON and CHARLES F. A. SIMONIN, Philadelphia, Pa., assignors to WILLIAM ADAMSON.—Patent No. 119,000, dated September 19, 1871.—Division B. Application filed October 8, 1873.

Claim.—The process of drying flesh, offal, &c., by subjecting it, in a closed vessel, to hydrocarbon vapors, as set forth.

5,612.—Manure from Offal, Flesh, &c.—WILLIAM ADAMSON and CHARLES F. A. SIMONIN, Philadelphia, Pa., assignors to WILLIAM ADAMSON.—Patent No. 119,000, dated September 19, 1871.—Division C. Application filed October 8, 1873.

Claim.—A manure or manure ingredient consisting of flesh, offal, or other animal matter deprived of its fatty constituents and retaining the ammonia, as set forth.

5,613.—Press.—RICHARD EDMOND, New York, N. Y., assignor to THE UNITED POWER-PRESS COMPANY.—Patent No. 142,220, dated August 26, 1873. Application filed October 10, 1873.

Claim.—1. The stops *c*, mounted on a right-and-left-hand screw-spindle, which acts, by means of toggle-levers, on the follower, said stops being contiguous to the sides of a single standard rising from the follower of a press through the head-block, substantially as and for the purpose specified.

2. The disks *b b*, having projecting hubs mounted loosely upon the endless screw H contiguous to the standard E, and retained in place by stops *c*, in combination with the toggle-levers F, traveling nuts G, and follower D, all constructed and operating as herein shown and described.

5,614.—Furnace.—DAVID HARGER, Des Moines, Iowa.—Patent No. 70,537, dated November 5, 1867. Application filed September 30, 1873.

Claim.—The method of facilitating the combustion of fuel in furnaces by means of a forced blast of air supplied to the furnace through a pipe or duct extending below and crosswise of the grate-bars, and provided with apertures, located opposite the openings between the grate-bars, to direct the several jets of air discharged therefrom to pass obliquely up through the spaces between the grate-bars and traverse the fuel, substantially as hereinbefore shown and set forth.

5,615.—Wagon-Spring.—EDMOND P. MCCARTHY, San Francisco, Cal., assignor to himself and JOHN B. GRANT, same place. Patent No. 90,861, dated June 1, 1869. Application filed September 13, 1873.

Claim.—1. The elastic elliptical spring F, constructed substantially as and for the purposes herein described.

2. The bolt E, having the enlargement H, in combination with the spring F, substantially as and for the purpose set forth.

5,616.—Bale-Tie.—MARY ANN MCCOMB, Memphis, Tenn., administratrix of DAVID MCCOMB, deceased.—Patent No. 15,142, dated June 17, 1856; extended seven years; reissue No. 4,993, dated July 16, 1872. Application filed April 28, 1873.

Claim.—1. In combination with the hooked ends of metallic ties, a slotted link for the purpose of keeping said ends in position, and assisting to prevent the opening of the hooks by the expansive force of the bale, substantially as specified.

2. The method of baling cotton or other like material by means of a slotted link or tie-plate and metallic ties having their ends bent into hooked form, and held in position by said link and the expansive force of the bale, substantially as is shown.

3. The method of baling cotton or other like material by means of metallic ties having their ends of hooked form, substantially as described, so as to permit of their being united by a sidewise motion, as set forth.

5,617.—Cotton-Bale Tie.—JOHN MCMURTRY, Lexington, Ky., assignor to FREDERIC COOK.—Patent No. 58,445, dated October 2, 1866. Application filed June 7, 1873.

Claim.—1. A bale-tie formed by the attachment of one end of a metallic band or strap to the other by looping it into or onto or engaging it with the same, the end thus engaged with the other being confined in position by the expansive force of the bale.

2. A metallic bale-band having one end formed into a plain or half-twist loop for the reception or interlocking of the other, substantially as hereinbefore described.

5,618.—Varnish for Coating Photographic Negatives.—JOHAN WOLFGANG MORGENHEIER, Sheboygan, Wis.—Patent No. 109,833, dated December 6, 1870. Application filed September 15, 1873.

Composition No. 1.—Gum-sandarac, dissolved in absolute alcohol, with turpentine and oil of lavender. Composition No. 2.—Gum-camphor dissolved in alcohol and ether. Mix the two compositions.

Claim.—A varnish for producing a matt or ground glass surface on photographic negatives and glass, compounded substantially as set forth.

5,619.—Explosive Compound.—ALFRED NOBEL, HAMBURG, Germany, assignor, by mesne assignments, to THE GIANT-POWDER COMPANY, San Francisco, Cal.—Patent No. 78,317, dated May 26, 1868. Application filed October 14, 1873.

The explosive substance—nitro-glycerine—and an inexplosive porous substance, such as silicious earth, are brought together to form a composition which is more safe and convenient for transportation, storage, and use.

Claim.—The combination of nitro-glycerine with infusorial earth, or other equivalent absorbent substance, as a new explosive compound.

5,620.—Exploding Nitro-Glycerine.—ALFRED NOBEL, Hamburg, Germany, assignor, by mesne assignments, to THE ATLANTIC GIANT-POWDER COMPANY, San Francisco, Cal.—Patent No. 50,617, dated October 24, 1865; reissue No. 3,378, dated April 13, 1869; reissue No. 4,616, dated March 19, 1872. Application filed October 14, 1873.

Claim.—1. A charge of gunpowder, gun-cotton, or other easily igniting and exploding substance, surrounding a tube or case containing the charge of nitro-glycerine, as a means of exploding the same, substantially as hereinbefore described.

2. The charge of gunpowder, gun-cotton, or other easily igniting and exploding substance, surrounded by a nitro-glycerine charge, and combined therewith as a means of exploding the same, substantially as and for the purpose hereinbefore described.

3. A nitro-glycerine igniter or exploder, consisting of a tube or case inclosing a minute portion of nitro-glycerine, together with lime and water, or other equivalent substances, which, by combining, will evolve the requisite heat to explode the nitro-glycerine therein, substantially as and for the purposes hereinbefore described.

4. An igniter or exploder, consisting of a tube or case containing rocket-powder mixed with a minute portion of nitro-glycerine, and furnished with a fuse or other means of setting fire to the igniting charge, substantially as hereinbefore described.

5. An electric spark, or heat generated by electricity, within the charge of nitro-glycerine, as a means of promoting an impulse of explosion therein, substantially as herein before described.

6. A capsule or percussion-cap furnished with a suitable means of firing or exploding the same, and suitably arranged in relation to the nitro-glycerine, so as, by its detonation, to impart the necessary impulse of explosion thereto, substantially as hereinbefore described.

7. An igniter for producing the explosion of nitro-glycerine, consisting of a case, of wood or other suitable material, for holding the initial explosion-charge, closed with a cork or plug, and a fuse or other means of ignition, substantially as hereinbefore described.

5,621.—Method of Exploding Nitro-Glycerine.—ALFRED NOBEL, Hamburg, Germany, assignor, by mesne assignments, to THE ATLANTIC GIANT-POWDER COMPANY, San Francisco, Cal.—Patent No. 50,617, dated October 24, 1865; reissue No. 3,377, dated April 13, 1869; reissue No. 4, 815, dated March 19, 1872. Application filed October 14, 1873.

Claim.—1. The mode of utilizing nitro-glycerine as an explosive by means of fire, heat, electricity, or an initial explosion communicated to the mass under a condition of confinement, so as to produce an instantaneous explosion of the entire mass, substantially as described.

2. The mode of utilizing nitro-glycerine as an explosive by means of effecting an impulse of explosion by the detonation of an explosive substance communicated to the mass under a condition, so as to produce an instantaneous explosion of the whole mass, substantially as described.

5,622.—Electric Signaling Apparatus for Railroads.—FRANK L. POPE, Elizabeth, N. J., assignor to himself, STEPHEN C. HENDRICKSON, Brooklyn, N. Y., and JAMES N. ASHLEY and JAMES D. LINCOLN, Greenville, N. J.—Patent No. 129,425, dated July 16, 1872. Application filed May 28, 1873.

System of semaphoric and block signaling, wherein the rails form part of the circuit.

Claim.—1. The arrangement of the ends of two abutting rails of a railroad-track on separate chairs or supports upon a sleeper, whereby metallic contact between the said rails is prevented and the extent of an electrical circuit limited, substantially as and for the purpose herein specified.

2. The combination of a stationary alarm or audible signal, an electro magnet or magnets, a battery, and one or more rails of an insulated section of railroad-track, so arranged relatively to each other that, so soon as a metallic connection is formed between the said rails, as by the axle and wheels of a locomotive or car, the mechanism which actuates the alarm will be caused to operate, substantially as described.

3. The combination of a visual or semaphoric signal, an electro magnet or magnets, a battery, and one or more rails of an insulated section of a railroad-track, so arranged relatively to each other that, as soon as a metallic connection is formed between the said rails, as by the wheels of a locomotive or car, the said signal will be moved, substantially as specified.

4. The combination of the following elements: A visual or semaphoric signal, *L′*, an audible or sounding signal, Q, both under the control of one or more electro-magnets, a battery, and an electrical circuit composed in part of wire and in part of one or more rails of an insulated section of railroad-track, substantially as specified.

5. The combination of the following elements: A visual or semaphoric signal, moved in one direction by one or more electro-magnets and in the other direction by a spring or its equivalent, a suitable mechanism for multiplying the motion derived from the armature of the said electro magnet or magnets interposed between said armature or armatures and the signal, and an electrical circuit composed in part of one or more rails of an insulated section of a railroad-track, substantially in the manner and for the purpose herein specified.

6. The combination of the circuit-closer *m n* with the electrical circuit 4 5 6 H H′ G, substantially as and for the purpose herein specified.

7. The combination, with an insulated rail, which, in conjunction with wires or conductors connected thereto, forms part of an electric circuit, and an adjacent insulated or uninsulated rail of a railroad-track, and a parallel fish bar or bars provided with bolts passing through such bars or rails, of a suitable intervening or interposed non-conducting material, whereby the insulation between said adjacent rails is maintained, and the extent of an electrical circuit, formed in part of one or more rails of a railroad-track, thereby limited, substantially as set forth.

8. The combination of a suitable insulating material, *q*, with the bolts *p p*, whereby the said bolts are insulated from the rails R R′ or from the insulated fish-plates *s s*, substantially as and for the purpose herein specified.

9. The combination with the electrical circuit, composed of wires and the ordinary rails of a railroad-track, and the axles and wheels of a railroad-train, of an electro-motor for operating a signal or alarm, substantially as and for the purpose herein specified.

10. An electro-motor composed of the stationary magnets S S and S′ S′, the revolving magnets T T and T′ T′, and the commutators X and X′, when said two revolving magnets, and also the two commutators, are arranged at right angles to each other, whereby an audible alarm may be operated, without interfering with the action of a magnet, which serves to actuate a semaphoric or visual signal included in the same circuit.

5,623.—Dental Instrument.—Ira A. Salmon, Boston, Mass.

Patent No. 62,504, dated February 26, 1867. Application filed October 11, 1873.

This dental plugger is so arranged that blows are struck when one end is forced against the filling to be compacted, and also when a pull is given with a hooked point attached to the other end. The trip and incline, as well as the hammer and spring, can all be slid out from the outer case, with their relative positions unaltered.

Claim.—1. A combination composed of the hook, or its equivalent, the spindle, the hammer, and mechanism, substantially as described, or its equivalent, for operating such hammer, as and for the purpose set forth.

2. The combination as well as the arrangement of the direct-pressure and back-action pluggers with the hammer, its case, and mechanism for operating such hammer, substantially as and for the purpose specified.

3. The construction and arrangement of the trip *l*, spring-catch *p*, shoulder *h*, hammer *a*, spindle *B*, and incline *m*, permitting the case covering them to be removed without disturbing their relative positions, and this independent of the back-action plugger, substantially as set forth.

5,624.—Machine for Manufacturing Auger-Bits.—James Swan, Seymour, Conn., assignor to Richard P. Bruff.

Patent No. 78,709, dated June 9, 1868; reissue No. 4,516, dated August 15, 1871. Application filed July 24, 1873.

Claim.—1. The combination of clamping-jaws, having dies formed to receive the screw-thread of an auger, with a rotative die for upsetting the auger lips, the jaws and die acting in conjunction to draw the lips, and the combination being substantially as shown and described.

2. The described method of forming or drawing the lips of augers, the auger-blank being first clamped in jaws formed to receive the auger-screw, (the lips extending beyond the jaws,) and the lips being then upset and drawn against the ends of the jaws by the rotative and forward action of a die, the ends of the jaws being formed to shape the lips under the action of the die.

3. The combination of the clamping-jaws B and the stationary or female dies formed therein; the die J, to operate in conjunction with said stationary dies, to bend, compress, and draw the lips of the blank; mechanism to impart to die J reciprocating rotary movements upon its axis; mechanism to force said die J gradually and rectilinearly up to and against the auger-bit, and the spring, or its equivalent, to suddenly force said die away from said bit, the combination being such as to effect the operations here ascribed to it, in the manner substantially as hereinbefore described.

4. The combination of the arbor H and supporting and guiding frame, mechanism to impart to said arbor a rectilinear and also a rotary movement, the spring I, arranged as described, to impart to said arbor reciprocal rectilinear and rotary movements in opposite directions, the die J, the clamping-jaws B, and the stationary or female bit-swaging dies upon or within said jaws B.

5. The combination of cam N, rotating wheel K having vertical pin *d*, arbor H having horizontal pin *e*, the hub *d'* having pin *f*, and the hollow standard G having pin *g*, all arranged substantially as described, to turn the stock *d'* exactly one quadrant of a circle, and no more.

5,625.—Shutter-Fastening.—Benjamin D. Washburn, Boston, Mass.—Patent No. 94,363, dated August 31, 1869. Application filed July 26, 1873.

The ends of the screw-case are projected, and in the projections are slots to pass over the ends of the catch, so that said catch may not be twisted while screwing the case into the blind. The slots in the case at each end also extend laterally for a short distance in the sides of the case.

Claim.—1. The combination, with the catch-piece, of the screw-threaded shell or case, provided with slots 3 and 4 formed in the sides and lengthwise of the shell, at the respective ends thereof, substantially as and for the purposes described.

2. The screw-threaded shell or case, having recessed projecting lips B C, in combination with the catch-piece, substantially as and for the purposes set forth.

3. The combination, with the shell or case A, provided with the external screw-thread *a* and lips B and C, of the catch part D and operating-spring, substantially as and for the purposes set forth.

5,626.—Machine for Crozing and Chamfering Staves.

Henry Welds, Newark, N. J., assignor to Edward Holmes and Britain Holmes, Buffalo, N. Y.—Patent No. 36,186, dated August 12, 1862. Application filed May 29, 1873.

The barrel is placed in two revolving chucks, and the ends of the staves crozed and chamfered by rotating cutters provided with suitable cutting-tools.

Claim.—1. In a barrel crozing and chamfering machine, the combination, with the revolving ring or chuck H, which receives and holds the stave-cylinder, of a driving-wheel engaging with the periphery of the revolving ring, and imparting motion thereto for rotating the stave-cylinder, all constructed and arranged substantially as hereinbefore set forth.

2. The combination, with the revolving ring or chuck and driving-wheel, of the bearing D, surrounding and protecting the same from chips and dirt, substantially as hereinbefore set forth.

3. The combination, with the revolving rings H, of the relatively stationary guides N, for facilitating the chucking of the stave-cylinder, substantially as hereinbefore set forth.

4. The combination, in a barrel crozing and chamfering machine, with the longitudinally-adjustable bed-plate and bearing for the revolving ring or chuck receiving thereto, of the bearings C C of the shaft of the cutter-head, made transversely adjustable on said bed-plate, substantially as hereinbefore set forth.

5. The combination, with the revolving ring or chuck which holds the stave-cylinder, of the driving-wheel and adjustable bearing for the shaft of the latter, by which said driving-wheel is thrown in and out of gear simultaneously with movement of the cutter-bearings, substantially as hereinbefore set forth.

6. The combination, with bed-plate B, revolving ring H, and bearings C D, of the driving wheel and shaft (*f*, arm *l P*, and connecting-link *l*, by which the wheel *i* is adjusted simultaneously with the cutter-head, substantially as hereinbefore set forth.

7. The combination, with the bed-plate B and bearings C C, of the cutter-shaft, the lever *c*, link *c'*, and spring-catch P, substantially as hereinbefore set forth.

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The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

Copy of classification in full for the use of subscribers furnished on application.

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Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 26, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture.	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	408
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS, complete, about	3,500
ELECTRICITY, (in progress,) to July, 1871	888
TEXTILE, (in progress,) to July, 1871, about	4,800

BOUND VOLUMES OF PATENTS.

The Office is now prepared to furnish to subscribers the monthly volumes of patents at $125.00 per annum, bound in half-sheep.

In these volumes the specifications are in full, the type of the same size as the printed patents and records; the drawings are in full, but are one-half the size (linear) of those attached to the patents and bound up for record; the illustrations are four on a page, but *fac-similes* of the originals, with the headings and signatures.

The volumes are the same size as the patents and the OFFICIAL GAZETTE, and have an average of 800 pages of specifications, 200 of drawings; total of each volume about 1,000 pages. They commenced with the issue of July 2, 1872, being the successors in this form of the weekly volumes of patents published under the joint resolution of Congress, passed January 11, 1871, which discontinued the publication of the illustrated annual report of the Commissioner of Patents, and provided for the publication in lieu thereof of complete copies of the specifications and drawings of patents issued subsequently to June 30, 1869. Under this resolution the volumes were to be placed for free public inspection in the capital of each State and Territory of the United States, and in the clerk's office of certain of the federal courts. The Commissioner is also authorized by the resolution to "furnish a complete set of such specifications and drawings to any public library which will pay for binding the same into volumes to correspond with those in the Patent Office, and for the transportation of the same, and which shall also provide proper custody for the same, with convenient access for the public thereto, under such regulations as the Commissioner shall deem reasonable."

After filling the requisition as provided above, a surplus remains which the Commissioner now offers at the rate of $125.00 per annum—say, 1,000 pages per month: 9,000 pages of specifications, 3,120 pages of drawings—12,720 pages.

TO CORRESPONDENTS.

Persons ordering drawings of patents, or making inquiries in regard to patents, must always state the name of the inventor, subject-matter, and date. In making inquiries in regard to applications for patents letters must state the name of the applicant, subject-matter, and date of filing. In ordering drawings by classes, under the subject-matter index of September, 1871, (furnished gratis on application,) it will be understood that the Office cannot take upon itself to make selections of certain lines of inventions, embracing portions only of the patents in the classes as specified. The number of classes has been made as ample as the conduct of the business in this office will readily permit. An order should, therefore, embrace the entirety of a given class or classes. They cannot be subdivided unless ordered specifically by number, name, and date.

The cheapness of the copies, and the comparatively small number of patents in each of the one hundred and seventy-six classes, render an order by class by no means an onerous undertaking.

COPIES OF SPECIFICATIONS AND DRAWINGS.

Persons desiring copies of all specifications and drawings of any particular class of patents can purchase them at the rate of ten cents each, and have them mailed, free, to their address, as soon as possible after the patents are issued, by leaving a deposit of not less than three dollars with the Commissioner of Patents. The index of classes for subscribers, date of September, 1871, is furnished gratis to any applicant.

In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

Copies of the specifications and drawings of design patents will be furnished by the Patent Office at the cost of making them. All orders should be addressed to the Commissioner of Patents, Washington, D. C.

OFFICIAL GAZETTE

OF THE

United States Patent Office.

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PATENT CONGRESS AT VIENNA.

It will be seen, by referring to the OFFICIAL GAZETTE of August 26, 1873, (vol. 4, p. 209,) that by the last resolution the congress perpetuated itself by the appointment of a standing committee. This committee met the day after the adjournment of the congress and transacted the following business:

At a meeting of the executive committee, (appointed by the International Patent Congress to carry out the resolutions of the congress, passed on the 4th, 5th, 6th, 7th, and 8th of August, 1873, with power to add to their number,) held on Saturday, the 9th of August, Baron von Schwarz Senborn, honorary president of the congress, in the chair.

Present—Dr. William Siemens, president of the congress; Th. Webster, Q. C.; Mr. Hamilton Hill, Mr. Eugen Langen, Dr. v. Rosas, Mr. Dr. Jannasch, Dr. H. Grothe, Dr. Weinmann, Dr. jur. Rosenthal, Syndicus Dr. André, Hofrath v. Engerth, Professor Blake, Mr. Carl Pieper, C. E.

It was resolved—

1. That the Honourable J. M. Thacher, Mr. B. B. Hotchkiss, and Mr. S. Remington, of the United States, be added to the committee.
2. That Baron von Schwarz-Senborn be President of the Executive Committee, whether residing at Vienna or elsewhere.
3. That Dr. William Siemens be requested to write a preface or introduction to the proceedings of the congress, to be dedicated to Baron von Schwarz-Senborn. (Dr. W. Siemens acceded to the request.)
4. That Mr. Carl Pieper, C. E., of Dresden, be the General Secretary of the Executive Committee.
5. That Dr. v. Rosas, of Vienna, be Treasurer of the Executive Committee.
6. That Dr. Rosenthal, of Colorne, and Dr. v. Rosas act as special assistants to the General Secretary for the publication of the proceedings.
7. That the members of this committee residing in foreign countries constitute special committees of their respective nationalities, with power to add to their number, to carry out the resolutions of the congress, each local committee to be empowered to enroll members, call meetings, and collect subscriptions of one pound sterling, or upward, per annum, to be accounted for to the General Secretary and Treasurer, and to do such acts as may be necessary for carrying out the resolutions of the congress.
8. That the President and General Secretary prepare by-laws, to be submitted to a general meeting for approval.

BARON V. SCHWARZ SENBORN.
CARL PIEPER, *General Secretary.*

By reference to the seventh resolution (supra) it will be seen that the members of the committee residing in foreign countries are authorized to organize branch associations. Steps will be taken to carry out this work in this country.

DIGEST OF FOREIGN PATENT LAWS.

PERSIA.

REPORT OF MR. R. F. THOMSON, OF THE BRITISH LEGATION.

In reply to your lordship's circular of the 14th of August last, I have the honor to state that no law exists in this country respecting inventions. Everybody here is free to invent or imitate.

PORTUGAL.

REPORT BY MR. WM. DORIA, OF THE BRITISH LEGATION.

On the 17th of March, 1868, the present law in force was published for regulating the concession of patents, and regulations were laid down in the Civil Code for the protection of public interests against the too excessive exercise of particular privileges granted by patents, and the regulations were assimilated more to those adhered to in other countries granting such patents.

It is, therefore, to the Civil Code that reference must be made for those provisions of the law which protect patent rights from being infringed. The punishment to be awarded to those persons who infringe these

rights is to be found inscribed in the Penal Code of the country.

Patents are granted for a term of years not exceeding fifteen, to the inventor or discoverer, to enjoy during that time the right of property.

From the right of property to an invention is derived the exclusive right of producing or manufacturing the articles which constitute the said invention. Persons making additions to their inventions enjoy the advantage of the additional improvements, and they may apply for a French patent.

The exclusive right of property over inventions is secured by the administrative laws and regulations—that is to say, by the laws having reference to movable property, except in cases where the patent has been granted gratuitously, or in return, as compensation, for service performed.

The publication of patents, their drawings, models, and specifications, which are required for obtaining the concession, must be shown gratuitously to every one who desires to see them. Applicants, by payment, can procure copies. On the government devolves the duty to announce officially what patents have fallen into the dominion of the public.

Patentees who have been injured by the infringement of their patent can institute a criminal suit, or enter a civil action to recover damages.

The right of property conferred by a patent is transmissible by will to heirs and successors.

A register of all patents is kept in the Department of Public Works.

A tax of 120,000 reis is exacted on granting a patent for fifteen years, equivalent to about $140.00. Of this amount 75,000 reis, or $88.00, is set apart for a fund for the advancement of industry. The remaining sum is absorbed in stamps and fees paid to government.

Medicines, articles of food, simple changes in the form of an object patented, and ornaments are excluded from obtaining patents.

The civil governor of the district is charged with the duty of granting patents, on whom devolves the duty also of forwarding to the Office of Public Works information for their due registration.

An invention which involves danger to public safety is prohibited from obtaining a patent.

A foreigner can only obtain a patent subject to the rules laid down by the Civil Code of Portugal, and that also only for the period of time before it falls under the dominion of the public, in conformity with those rules.

No concession of patent* for an improvement of an article already patented is granted, except to the patentee himself, during the first year after the patent is granted. Application by another person may be made before the expiration of the year to the proper department, where such application will be taken into consideration.

This provision is to insure to the first applicant the preference over other persons, with the exception of the original patentee, who always has the preference accorded to him, provided his application is also made during the first year.

* Exclusive right to import foreign patents is not granted; only the privilege for their manufacture in Portugal is guaranteed by patent.

The punishment awarded by the Penal Code to persons who infringe patent rights is subjection to a fine, which is imposed by the judge at his discretion, varying from 30,000 reis to 300,000 reis, or from $35 to $350, and the confiscation of the articles which have been employed in the violation of the patent.

For losses sustained by the patentee through the infringement of his rights, he can obtain indemnity by a civil action.

The number of patents granted during the last six years amounts to 119, as shown by the following table:

	Patents.
1867	22
1868	17
1869	32
1870	32
1871	11
1872	14
Total	119

There is in Portugal a feeling generally so much in favor of a system of protection, that I think I am warranted in assuming that it will be some time before the principles of free trade can make an advance toward a more extended view of the advantages to be derived from the abandonment of the protectionist system; and as there is much affinity between the principles on which the oppouents of free trade base their opinions and those held by the partisans of patent rights, any proposal for the abolition of patents in Portugal would, I think, be met with much opposition, showing that public opinion is not in favor of abolishing the system.

RUSSIA.

REPORT BY MR. FORD, OF THE BRITISH LEGATION.

Patents may be obtained for all kinds of discoveries, inventions, and improvements of general utility, or a process of carrying on any art, trade, and manufacture.

Patents are granted without being guaranteed by the government.

The law admits of patents for inventions that are privileged abroad.

Patents for inventions that are already known, but not privileged abroad, are granted only in case of exclusive utility, taking into consideration the expenses required for introducing them.

By the 152d Article of the Russian Code of Laws, vol. xi, relating to manufacturing industry, persons obtaining patents are bound to bring the patented invention, &c., into operation in Russia before the expiration of the fourth part of the time granted by the patent, and a notification of the fact of the invention being carried out must be made to the Department of Interior, Trade and Manufactures in the course of the six months following, and the exact locality stated where the invention is being carried out, otherwise the patent becomes public property. The declaration of the carrying out of the invention must be certified by the proper local administration.

The Department of Trade and Manufactures, on receipt of an application for a patent, accompanied by documents, delivers at once to the applicant a certificate of acknowledgement for such documents.

In cases in which a patent is not granted, the applicant is reimbursed the amount of the tax fixed for the patent, less the charges incurred on account of stamps, postage, and advertisement in the public newspapers.

Any patentee who may change his own invention by making an improvement in it, may take out another patent for such alteration by paying a new tax; but in every case a notification, together with a special description of the improvement, must be made to the proper department on the subject.

Any person making an improvement on an invention already patented can only obtain a special patent for such improvement after having come to terms with the holder of the original patent.

2. *Formalities.*—The petitioner must present to the Department of Interior, Trade and Manufactures—

(1) A petition stating the time for which the patent is desired, and the subject to which the invention refers. If the invention has been patented abroad, the date on which a patent was granted for it must be stated, as well as the number of years for which it has been granted, or for which a prolongation of it is intended. It must likewise be stated whether the patent has been granted in a country in which the payment of the tax is made annually, as is the case, for instance, in Belgium.

(2) An exact description of the object for which the petitioner wishes to obtain the privilege or patent, specifying all the principal details, advantages, and the way of employing it, with the plans and drawings respecting it. If, for a clearer explanation, it should be necessary to add to the description a model, the petitioner is bound to forward it.

A translation of the description must be furnished in the Russian language.

(3) A receipt certifying the payment of the duties, according to a fixed rate.

3. *Duration.*—The duration of a patent is reckoned from the day on which the patent is signed.

Patents for inventions belonging to the applicant are granted for three, five, or ten years—the longest term.

Patents for the introduction of foreign inventions cannot exceed the term of the privilege granted abroad to the inventor; at all events cannot exceed six years, unless the petitioner be the inventor himself, in which case he may obtain a patent for a term of ten years.

4. *Tax.*—The duties for discoveries, inventions, and improvements belonging to the applicant for the patent are:

For three years, 90 roubles=$71.49; for five years, 150 roubles=$119.16; for ten years, 450 roubles=$357.48.

For the introduction of foreign inventions:

For one year, 60 roubles=$47.66; for two years, 120 roubles=$95.33; for three years, 180 roubles=$142.99; for four years, 240 roubles=$190.66; for five years, 300 roubles=$238.32; for six years, 360 roubles=$285.98.

5. *Transfer of patents.*—The patentee may transfer the patent to another person, wholly or partly, or be in partnership with some one else; but the law prohibits either to cede it to any company of shareholders, or be in partnership with it, without being specially authorized by the government.

6. *Loss of rights.*—The causes of forfeiture are:

(1) If the invention has not been fully carried out before the expiration of the fourth part of the time granted by the patent.

(2) The want of novelty.

(3) Proof that the patentee falsely gave out the invention or discovery for his own, and if the real inventor claims it.

(4) The deficiency of the specification, or a dissimulation of the essential parts, indispensable for procuring the declared results.

(The expiration of patents is published in the newspapers.)

7. *Infringement.*—The patentee has a right to prosecute counterfeiters, and to claim damages in respect of the infringement of the patent.

COMMISSIONER'S DECISIONS.

ORISON UNDERWOOD.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Orison Underwood for patent for* IMPROVEMENT IN BOOTS AND SHOES.—*Decided October 31, 1873.*]

Invention being established, and the claims properly limited, the small amount of invention or degree of improvement will not prevent the granting of a patent.

THACHER, *Acting Commissioner:*

This invention consists in alleged improvements in the means of attachment of metallic heels to boots and shoes. Applicant presents two claims, the first of which is as follows:

The flanged heel A, the plate A', the insole D, and the outer sole E, arranged and connected by means as described.

This is the broader claim of the two, and if allowable, it follows necessarily that the other is also, for it comprehends the same parts with more limitations.

The difference between the arrangement of the parts embraced in the claim quoted and that shown in the patent of Prescott, cited by the Examiner, is in the location of the heel-plate between the insole and the outsole, which latter is carried into the heel by the applicant, to afford a better hold for the fastening-screw. It is obvious, I think, that the heel will thereby be more securely fastened to the boot than if the outsole terminated at the heel-breast, as in Prescott's device; and this is the object sought.

The question is, whether the extension of the outsole thus into the heel for that object amounts to an invention?

Where different means are employed, and a better result obtained, it can seldom be soundly assumed that an invention has not been made. These points are the uniform and sure tests of invention, the only condition in applying them being that the difference in the result or in the means must not be frivolous or insignificant. Clearly neither difference in this case is of that character, however easily it may seem to have been arrived at, starting from the stand-point of the previous condition of the art. The invention is not great, probably, yet, tried by the only safe criterion, I think it is an invention. This being established, and the claims being properly limited, the amount of invention exhibited or

the degree of improvement made is not a matter worthy of much consideration.

In discussing a case of similar character—*Ex parte Samuel Toomey, Commissioner's Decisions*, 1869, p. 102—Commissioner Fisher said: "These claims are very limited, and in their present form are not anticipated by the references. As the fastenings thus described seem to be more complete and efficient than those referred to, and to obviate some of the objections to prior devices, I do not care to weigh too nicely the degree of invention exercised in the changes which applicant has made." In *Carr* vs. *Rice*, 1 Fisher, 198, the Court said: "The law does not require the patentees to prove their discovery to be useful to any eminent or large degree. It is sufficient if it produces an improved article."

The decision of the Board of Examiners in Chief must be overruled.

BLOOMFIELD BROWER.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Bloomfield Brower for patent for* DESIGN FOR INKSTANDS.—*Decided October 28, 1873.*]

A square inkstand with its angles chamfered, and a square-headed movable stopper with its angles similarly chamfered, held not to constitute together a patentable design for a single article of manufacture.

The ordinary use of an article for the form of which a design patent is sought is a controlling consideration in determining whether or not it presents proper subject-matter for a design patent.

As the ordinary use of an inkstand and stopper requires their separation, they do not present such a fixed unit as to constitute them a single design.

The relative positions of connected parts to constitute a design ought to be uniform and fixed, because, as a rule, a design is essentially unitary and unvarying in character. It cannot embrace alternates or equivalents of form, but is arbitrary and unchangeable.

THACHER, *Acting Commissioner:*

Applicant claims a "design for a glass inkstand and stopper of glass, made square, with equally chamfered edges, substantially in the manner above described."

The edges or angles of a square inkstand are all chamfered, and the chamfers are all of equal width. A square stopper-head is provided, having its edges or angles all similarly chamfered. The photographic illustration filed exhibits the square chamfered stopper in the chamfered inkstand in such a position that the sides of the squares are parallel with each other.

The Examiner holds that the bottle and the stopper are separate articles, and exhibit separate and independent designs. On the other hand it is maintained in behalf of the applicant, in substance, that while this is true in one sense the two have an intimate relation respecting the harmony of their individual forms to produce an esthetic effect when they are brought together for use or display, and are presented to the eye as a unit. He alleges that he has made the stopper-head of the form of the inkstand in conformity with a law of fitness or correspondence relating to forms to be connected or conjoined, from which what is pleasing to the eye, and what we naturally term beautiful, results. There is apparently some force in this reasoning; but it should be remembered that the ordinary use of an article, for which a design is presented, is a controlling consideration in determining whether or not the design is proper subject-matter for patent as such.

The object of an inkstand and stopper is to preserve the ink for use; but whenever it is being used they must be separated. The stopper must be removed, and that destroys the design alleged to be constituted by the two. There is not, therefore, such a fixed unity of design, considering the ordinary use of an inkstand and its stopper, as to constitute the two separable and often separated parts a single design.

Another consideration of importance is, that the relative positions of the two parts when connected ought to be uniform and fixed in order to constitute a design, which is, as a general rule, a thing essentially unitary and unvarying in character. A design cannot embrace in its scope alternates or equivalents of form. It is arbitrary and unchangeable, either by the separation or the rearrangement of its features. In this case it is obvious that there is nothing in the construction presented to preserve the alleged design shown, even when the stopper is in place, for it may be turned out of parallelism with the square of the stand, whereby the esthetic effect described will be violated and the original design destroyed. It would then be like a capital misplaced on the shaft of a column.

It is not denied by the applicant that a design for an instand and a stopper-head, respectively, might be patented. The exterior of the stand and the stopper, being individually ornamental and novel in form, would each present subject-matter for patent. The two permanently united, or so constructed as always to occupy the same relative positions to each other, might also, no doubt, present subject-matter for patent, were such a union consistent with their ordinary use; but neither of these conditions is found in this case. I therefore concur with the Examiner that a division of this application is necessary. The inkstand and stopper, as presented, do not constitute a single unitary design for an article of manufacture.

The Examiner's decision is affirmed.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,599.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,243.—Water-Closet Basins.—Granted to WILLIAM BOCH, Sr., November 29, 1859. Application filed June 10, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,244.—Machines for Registering Music.—Granted to HENRY F. BOND, November 29, 1859. Application filed August 29, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,262.—Journal-Boxes for Saw-Mill Carriages.—Granted to WM. M. FERRY, November 29, 1859. Application filed August 30, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,276.—Manufacture of Rubber Hose.—Granted to THOMAS J. MAYALL, November 29, 1859; and reissued October 22, 1872. Application filed August 19, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,321.—Molding for Metal Casting.—Granted to JOHN P. BROADMEADOW, November 29, 1859. Application filed August 15, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,327.—Nursing-Bottles.—Granted to FRANCIS J. LA FORME, November 29, 1859, and reissued January 14, 1868. Application filed August 27, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,329.—Boot and Shoe Tips.—Granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, and August 4, 1868. Application filed August 22, 1873. Testimony closes October 28, 1873. Hearing November 12, 1873.

26,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,401.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 28, 1869. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 12, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FERTH and JOHN INGHAM, December 20, 1859, and reissued April 28, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873 Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL L. KENDALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GORE, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEEDS, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STUNTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 15, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,905.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NELSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOMINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTLER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closed January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closed January 6, 1874. Hearing January 21, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 20, 1873. Testimony closed January 27, 1874. Hearing February 11, 1874.

27,436.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closed February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Slinging Pigs, granted to ABRAHAM and EDWARD M. DERBY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closed December 30, 1873. Hearing January 14, 1874.

31,262.—Pare-Bezes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closed December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

25,936.—Improvement in Cut-Off Valves of Steam Engines, granted to EDWARD R. ARNOLD, November 1, 1859.

Claims.—1. Making the tappet C, Fig. 4, and the ends of the jointed valve-rods D D', Fig. 3, inclined in a direction at right angles to their lines of motion, and combining and arranging them substantially as herein set forth.

2. The combination of the regulator with a tappet, constructed and operated substantially as described, for the purpose specified.

25,978.—Improvement in Tackle-Blocks, granted to ISAAC E. PALMER, November 1, 1859; reissued September 8, 1863, numbered 1,534; reissued April 11, 1865, numbered 1,932; reissued December 8, 1868, numbered 3,226.

Claim.—The construction of a tackle-block and pulley, whereby the rope or fall, when desired, may be clamped between a portion of the pulley and a portion of or surface connected with the block, substantially as herein described, by simply leading it in a direction oblique or lateral to the plane of revolution of the pulley, without tying, or the use of dogs or movable stops, or any other means of fastening.

25,984.—Improvement in Braces for Bits, granted to N. STOFFORD, November 1, 1859; reissued April 23, 1867, numbered 2,576.

Claim.—1. A bit-stock constructed with a tapered socket transverse to the arm or portion of the stock in which it is formed, and said arm slitted along its center line so as to divide said socket lengthwise into two equal parts to form an expanding socket, substantially as and for the purpose described.

2. The slitted socket A, constructed with the inward projections or lips *d d* at its larger end, to close over the shoulders of the bit-shank for the purpose of retaining said shank within the socket when clamped, substantially as set forth.

3. Arranging the socket A of a brace with a slot, *c*, as described, in combination with a thumb-screw, D, and slips or projections *d* or their equivalents, substantially as and for the purpose set forth.

23,003.—Improvement in Telegraphic Machines, granted to GEORGE M. PHELPS, November 1, 1859.

Claim.—1. Producing from a magneto-electric battery the momentary electric currents required for actuating the printing mechanism by giving momentary motion to the armature or other current-inducing part of the magneto-electric battery by means of a set of finger keys, which, when depressed, are controlled in their action upon the current-inducing part of the magneto-electric battery by a mechanical contrivance which constantly moves in harmony with the uninterruptingly-revolving type-wheel, substantially as herein described.

2. Increasing the capability of the instruments for telegraphing by an increasing the speed of the transmitting device and type-wheel in relation to the motion of the parts which perform the printing that two or more types shall pass the platen while the printing mechanism is acting once, as herein described.

3. Turning the cylindrical platen, while each impression is being made, by means of rings of teeth R and T upon the type-wheel and platen, as and for the purpose herein set forth.

4. Making a revolving wheel or shaft, U or *i*, turn the corrector M, armature C, or another wheel or shaft, a certain fixed distance with the same speed as itself, at any time, and any desired number of times, by the use of a ratchet-wheel, V or A, catch W or *f*, guide X or *h*, and detent K or *e*, all arranged together and with the said driving and driven wheel or shaft for conjoint operation, as herein set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date October 28, 1873.]

6,966.—Toy Target.—SAMUEL HAHN, Philadelphia, Pa., assignor of one-half his right to SIMON OPPENHEIMER, same place. Application filed June 7, 1873. Term of patent 3½ years.

6,967.—Handle of Spoons, Forks, &c.—BERNHARD D. BRIEDERHAUS, New York, N. Y. Application filed October 11, 1873. Term of patent 7 years.

6,968.—Fly-Traps.—DAVID K. THOMPSON, Clark, Pa. Application filed September 22, 1873. Term of patent 14 years.

6,969.—Spoons and Forks.—GEORGE WILKINSON, Providence, R. I., assignor to GORHAM MANUFACTURING COMPANY, same place. Application filed August 29, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date October 28, 1873.]

1,511.—Shingles.—LA MOTT M. BLAKELY, New York, N. Y. Application filed October 6, 1873.

"A within a border."

1,512.—Flour.—HAXALL, CRENSHAW & Co., Richmond, Va. Application filed October 22, 1873.

"'CRENSHAW, 196, Richmond, Va.'"

1,513.—Flour.—HAXALL, CRENSHAW & Co., Richmond, Va. Application filed October 22, 1873.

"'HAXALL.'"

1,514.—Preserved Fish.—OCEAN TROUT COMPANY, Port Monmouth, N. J. Application filed September 10, 1873.

"a fish, with the words 'Ocean Trout,' 'Packed by the Ocean Trout Co., Port Monmouth, N. J.,' and 'pickled.'"

1,515.—Glass Shades, Cylinders, and Similar Glass Goods.—S. J. PARDEMUS & Co., New York, N. Y. Application filed October 16, 1873.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date October 28, 1873.]

ORIGINAL PATENTS.

143,950.—Axle-Box for Vehicles.—COTTON H. ALLEN, St. Louis, Mo. Application filed March 17, 1873.

The interior frictional surface of the box is comparatively small, and a spiral groove for oil is formed.

Claim.—An axle-box composed of a helically-wound wire interiorly and a cast-metal external wall cast upon the said wire, substantially as described.

143,951.—Salt and Pepper Dredge Combined.—THOMAS B. ATTERBURY, Pittsburg, Pa., assignor to JAMES S. ATTERBURY and THOMAS B. ATTERBURY, same place. Application filed October 3, 1873.

A double-chambered dredge, with a partition extending above its upper rim to form a closing aperture between the salt and pepper apertures in the cover, with the apertures some distance outside of the vertical axis of the chambers.

Claim.—The within-described combined salt and pepper dredge with a partition, *b*, extended up beyond its screw-fastening, in combination with the cover or top which is perforated on two sides of its vertical axis, and fits snugly down upon said partition, substantially as and for the purpose described.

143,952.—Grindstone-Hanger.—SOLOMON L. EIGHALL, Chicago, Ill. Application filed June 19, 1873.

Claim.—The solid pitman-shaft A B, provided with a bearing, C, for the anti-friction rollers to travel on, with a collar, F, and a removable shaft, E, which shaft supports a collar, I, and jam-nut H for hanging the stone in place, as set forth.

143,953.—Grain-Sampler.—JAMES J. BOM, Ranteul, Ill. Application filed September 10, 1873.

A triangular metal instrument, constructed to puncture a sack of grain, being hollow and having several compartments, has a slide, which is removed after the instrument is entered. When the compartments are filled the slide is closed over them and the instrument is withdrawn, and then, the slide being withdrawn, the samples at various depths can be seen.

Claim.—The combination of the receptacle A, provided with the compartments and point C, with the cover B, constructed as shown, substantially as and for the purpose set forth.

143,954.—Utilizing Gas as a Motive Power.—OGDEN BOLTON, Jr., Chartier's township, Allegheny county, Pa. Application filed July 17, 1873.

To the chamber in which the explosions of mixed gases take place is connected a pipe for communicating the power of the explosion through a column of water, and an independent pipe for resupplying the chamber with water after each explosion.

Claim.—The combination of a chamber for the explosion of gaseous or non-gaseous explosives, an independent supply-pipe for supplying water thereto between explosions, and a pipe for communicating, by water-pressure, the power of the explosion, substantially in the manner set forth.

143,955.—Guide for Sewing Shoes.—HIRAM BOND, Haverhill, Mass., assignor to MOSES HOW, same place. Application filed July 31, 1873.

For guiding the edges of two pieces of leather, to be sewed with a lap-seam. A disk attached to the cloth-plate guides the edge of the lower piece, and a disk applied to an arm fastened to the needle-head guides the edge of the upper piece, the presser-foot resting between the two.

Claim.—The combination of the two guides A and B, arranged in relation to the sewing mechanism substantially as described.

143,956.—Metallic Piston-Packing.—WILLIAM A. BOYDEN, Harrisburg, Pa. Application filed September 20, 1873.

Claim.—The series of wedges B, provided with springs D, combined and arranged with the piston-head A, having openings *a* and inclines *g*, the follower E, packing-ring C, and intermediate ring F, substantially in the manner and for the purpose set forth.

143,957.—Ice-Pick.—SIDNEY S. BOYNTON and DANIEL KEEFE, Peoria, Ill. Application filed October 1, 1873.

Claim.—The ice-pick and chisel or plane A, having a series of large triangular cutting-points, with sharp sides or lateral edges from point to crotch, or angle between each point, substantially as described.

143,958.—Spring-Wagon.—GEORGE A. BEICH, Towanda, Pa. Application filed August 20, 1873.

Claim.—The single metal springs C, in combination with the journaled brackets D and side spring-bars B, all constructed substantially as and for the purpose specified.

143,959.—Bucket.—RUTH T. BROWN, Newport, Ky. Application filed October 7, 1873.

The bucket has one flat side with a projecting hanger, the round or curved side has several pockets for holding brushes, soap, cloths, &c., for scrubbing purposes:

Claim.—The house-cleaning bucket herein described, composed of bucket A, and pockets C D E, and box or tray F, all substantially as and for the purpose set forth.

143,960.—End-Gate for Wagons.—THOMAS A. BROWN and JOHN L. BROWN, Roanoke, Ill. Application filed July 15, 1873.

The end box, pivoted to the sides of the wagon bottom, is designed to open only upward.

Claim.—The combination of the box B, pivoted rods *e e*, staples *f f*, wagon-box A, staple *a*, hook *d*, and staple *h*, said box pivoted at *i i* to the wagon-sides, all substantially as and for the purpose set forth.

143,961.—Billiard-Table Cushion.—SOLOMON BRUNSWICK and HENRY BOEHLINGHAUS, Sr., St. Louis, Mo.; said BOEHLINGHAUS assignor to said BRUNSWICK. Application filed June 11, 1873.

A steel spring-plate, fortified by a second cloth-covered steel plate, is placed behind an outer sheet of rubber. A rubber deadener is placed above and to the rear of the outer steel plate to receive its impact in ferrible shots.

Claim.—The billiard-cushion described, having the steel-plate springs *e e'*, rubber covering E, and buffer D, constructed and arranged as and for the purpose specified.

143,962.—Pruning-Hook.—JOHN CHRISTY, Clyde, Ohio. Application filed October 3, 1873.

The hook is furnished with a curved extension behind the regular curve, and also in rear of the vertical tang. This allows the other blade to be connected by means of a slot and link. The shank and tang of the last-named blade is connected by a link to a point below the tang of the movable blade. The cut is effected by pulling down upon the handle.

Claim.—1. The double bend in the hook above the tang, one bend being in rear of and the other in front of the tang, as and for the purpose described.

2. The combination of the hook with its two bends, C C^2, and tang C^1, as described, the pivoted slotted plate D with convex edge, the shouldered lever E, the connecting-rod F, and the handle A, substantially as described.

143,963.—Earth-Auger.—ERASTUS H. CLARK, Appleton, Wis. Application filed August 1, 1873.

The rimming-knives turn on pivots so as to be adjustable in and out, and the adjustment is limited by a slot and bolt. The pods carry conical cutting-knives, and open laterally on hinges to discharge the earth. They are retained in position by the spring-bolts E E, pins F, and key G.

Claim.—1. The peculiar construction of the rimming-knives M M and the mode of attaching them to the auger by means of bolts N N serving as pivots for the knives to turn on, and an oblong slot in the knife, through which a bolt, Q, passes to admit of setting the knife out or in.

2. Ball pieces E E, in combination with shaft A and pin F and key G, substantially as described.

3. Cylinders C C, hinged to bar B, in combination with knives H H, substantially as described.

143,964.—Meldback.—GEORGE D. CLEAVELAND, Flint, Ind., assignor of two-thirds his right to HORACE E. DAVIS and LUCIUS W. HALL, same place. Application filed July 19, 1873.

Designed to permit the disengagement of the horse in case of accident.

Claim.—The tube A, with slot *b*, piston F, and stirrup or ring G, in combination with the shafts E E, substantially as and for the purpose set forth.

143,965.—Pavement.—SAMUEL J. DAVENPORT and JOHN WARD, Albany, N. Y. Application filed November 23, 1872.

The earth bed is rammed or pressed, and a layer of concrete of coal-tar and coarse gravel is laid on it. The stones are then set in the concrete, and the interstices between them are filled nearly to the top with concrete of the same materials as the bed, after which the whole surface of the stones and concrete filling is sluashed with liquid coal-tar, and the top layer of distilled tar and fine gravel or coarse sand is laid on and rolled, the coal-tar acting as a binding cement between the top layer and stones and concrete filling.

Claim.—1. In a pavement, the combination of the upper fine concrete dressing D and coarse concrete interstices *a*, with the stones C, elastic concrete bed B, and packed earth bed A, substantially as and for the purpose set forth.

2. In a concrete stone pavement having the interstices of the stones filled with concrete, and a top dressing, D, the slushing of the top surface of the pavement immediately after the filling of the interstices and before the application of said top dressing with coal-tar, applied either cold or hot, as described, for the purpose set forth.

143,966.—Spring-Equalizer.—HORACE DAVIS, Berlin, Wis. Application filed May 29, 1873.

To the spring-clips are pivoted the short arms of equalizing-levers, the upper ends of which are secured to the bolster by means of links.

Claim.—The slotted spring-clips C embracing the axle B, in combination with the elliptic spring A, the bent or V-shaped levers E, having the connected arms *c'*, and pivoted to the clips, and the short pivoted links *d*, all constructed and arranged to operate substantially as and for the purpose specified.

143,967.—Upright Piano-Forte.—GEORGE H. DAVIS, Boston, Mass. Application filed July 23, 1873.

Claim.—1. The combination of the shelf *a* and flange C with the metallic frame A, the wooden straining-pin bar B, and the back frame D, all being arranged and applied together substantially as set forth.

2. The combination of the series of wooden plugs *d*, or harmonic connections, with the perforated flange C, the metallic frame A, the straining-pin bar B, and the back frame D, all being connected and arranged essentially as specified.

143,968.—Chain-Machine.—JAMES DAYKIN and WILLIAM B. CASE, Cleveland, Ohio. Application filed December 4, 1871.

The blank is pushed through the loops formed on the ends of the preceding link. These loops rest against a die having lateral projections, around which the blank is bent by the levers, the points *w w* on which crimp the link at *y*. A slide is next pressed forward and bends the front end of the link, forming the curve A. A forked lever, *k*, bends the ends of the wire around the pin L, forming the loops for the next connection.

Claim.—1. The removable die *t*, arranged relatively to the head E and slide B, as shown and specified.

2. The levers F G provided with projections *m m*, in combination with head E and removable die *t*, as specified.

3. In a chain-machine, the levers F G, provided with projections *m m*, treadle C, and slide B, in combination with removable die *t*, head E, and lever K, when combined, arranged, and operating as herein specified and set forth.

143,969.—Guide for Shoe-Sewing.—LAURENS EMMANUEL DE WARU, Baltimore, Md. Application filed May 26, 1873.

The guide is formed of wire and attached to the cloth-plate close to the needle, and is adapted to guide the quarters of a shoe so that the curved portions forming the heel are correctly lapped and guided to the needle, which stitches them together. In passing through the guide the material is free to rise and fall.

Claim.—The double gage B C D, formed of wire and arranged, with reference to the needle and cloth-plate, as and for the purpose set forth.

143,970.—Bottom for Beds, &c.—JULIUS DEBUSSER, New York, N. Y. Application filed August 8, 1873.

One frame supported on another by springs, each of which is formed of a piece of wire coiled in the middle, with one straight end attached above, the other below. To the top frame is stretched a bottom composed of longitudinal coils of wire worked laterally

into each other, each having a straight longitudinal wire passed through it.

Claim.—The combination of woven-wire bottom I, binding J, lengthwise wires K, upper frame A B, under frame C D, and springs E, constructed substantially in the manner and for the purpose described and set forth.

143,971.—Steam Elevator.—THOMAS W. EATON, Chicago, Ill. Application filed February 19, 1873.

One end of a cord or chain is fastened to mechanism connected with a shaft operating a reversing-lever, and the other end, after passing around sheaves on the main post and on the cage, and also on a bar on the head-piece of the cage, is secured to the said post. The bar is held in place by springs and pawls, so that the cord or chain referred to is straight, but in case the hoisting-rope breaks or becomes slack the cord is pulled from a straight line, and this, acting on the beforementioned mechanism, operates the reversing-lever.

Claim.—1. The cord or cable *o*, when so arranged and connected with the elevating apparatus that through it the reversing-lever of the engine can be operated, substantially as specified.

2. The lever *c d* and bar A, in combination with the bar *e* and cord *o*, substantially as and for the purpose specified.

3. The movable pulley *n*, in combination with the cable *o*, substantially as and for the purpose specified.

4. The combination of the cord *o*, pulley *s*, and latch *r*, for the purpose of operating the reversing-lever of the engine, substantially as specified.

5. The combination of the pulleys *s u*, latch *r*, and cord *v*, substantially as and for the purpose specified.

143,972.—Brick-Machine.—ABIAL ELLIOT and JAMES O. WOODWARD, Taunton, Mass. Application filed April 28, 1873.

Mold-carriage remains stationary until the mold reaches its proper position, and comes in contact with a projection connected with mechanism which engages and moves the carriage forward to deliver the mold under the plunger. An expressing-chamber provided with a pivoted bottom, which swings when obstructed. Also a spring applied to the shaft which operates the reciprocating carriage, so that should a stone obstruct the mold under the plunger the spring will yield to avoid breakage.

Claim.—1. A reciprocating carriage, O, for advancing the empty mold under the expressing-chamber, in combination with mechanism for operating the carriage brought into action by the mold itself on reaching its proper position to be carried forward, substantially as and for the purpose described.

2. The false mold or clog-cutter M, in combination with the expressing-chamber C and fastenings 18, whereby obstructions may be removed from the expressing-chamber by allowing M to drop without taking the chamber apart or removing the plunger, as set forth.

3. The rod *a*, provided with the yielding spring *s* and gear *m* E, in combination with the carriage O, so as to allow it to yield when obstructed, as set forth.

143,973.—Stove-Pipe Thimble.—VALENTINE FATH, St. Louis, Mo. Application filed May 19, 1873.

The thimble is formed in longitudinal sections, which are put together by means of notches in the edges, which allow their intermediate portions to be bent in alternate directions. The thimble has an inner flange to prevent the pushing in of the pipe, and an outer one which prevents the pushing in of the thimble. It is also held in place by springs.

Claim.—1. A thimble, A, formed in sections, and united by V-notches, as and for the purpose set forth.

2. As an improved article of manufacture, a thimble, consisting of the parts A A having outer and inner flanges *a a*^{1}, notches *a*^{2}, springs C, applied as and for the purpose set forth.

143,974.—Horse-Power.—LUTHER R. FAUGHT, Philadelphia, Pa. Application filed October 3, 1873.

The endless chain upon which the circular flanged track is supported has both vertical and horizontal rollers which bear against both vertical and horizontal flanges of the tracks. The beveled wheels, by means of which the power is transmitted to the band-pulley, are arranged within a yoke which can be either vertically or laterally adjusted.

Claim.—1. The horse-power ring-rack, with its draft-levers attached to its outer edge, in combination with the endless intermediate marginal traveling support C, which bears with rolling-surfaces both laterally and vertically between the rack D and the base B, substantially in the manner described.

2. The endless-chain support C, with its horizontal and vertical trains of rollers or wheels *a a*^{1}, substantially as described.

3. The swinging yoke H of the horse-power herein described, in combination with the bearing and stay piece J^3, applied on removable supports of the platform A, within the ring-rack D, substantially as and for the purpose described.

143,975.—Tuck-Creaser for Sewing-Machines.—WILLIAM J. FAULKNER, Chicago, Ill. Application filed May 24, 1873.

The forward end of the spring creasing-arm is coiled and bent to form an inclined space to fit over the lip on the blade, and its end is then extended, forming an arm or lever against which the arm operated from the needle-bar strikes, and as the notched portion engages the fabric the coiled portions of the arm roll somewhat and rub the cloth against the lateral faces of the blade.

Claim.—1. A tuck-marker provided with the blade *a*, and with the yielding and rolling arm B provided with the inclined space *a*^{1}, arranged above the blade *a*, and with the lever B^1 extending laterally from the said arm, substantially as and for the purposes specified.

2. In a tuck-marker, the combination and arrangement of the blade *a*, coiled-spring arm B provided with the inclined and inverted V-shaped notch *a*^{1}, and arm or lever B^1, and arm C, all substantially as and for the purposes specified.

143,976.—Loom-Shuttle.—MILLARD F. FIELDS, Lawrence, Mass. Application filed June 16, 1873.

The spring-piece of the split spindle has an elbow at its free end, which elbow is so arranged between a friction-roll on one side and an india-rubber piece and the spindle-head on the other that it is bent outward to hold the cop when the spindle is within the shuttle, and is relaxed when the spindle is turned up to receive the cop. The degree of curvature to be given to the spring-piece is regulated by an adjusting-screw.

Claim.—The shuttle-spindle A, provided with the spring-piece B with its elbow *f*, in combination with the friction-roll C, the rubber support D, and the adjusting-screw *c*.

143,977.—Kitchen and Ironing Table.—JONATHAN GOOD, Lancaster, Pa. Application filed August 13, 1873.

The body of the table is made with inclined sides, as a box, with openings at the ends for holding an ironing-board. A cover is hinged at one side, on the under side of which rods may be attached for airing the ironed clothes.

Claim.—1. A box-table and ironing-board, J, combined, when said table is provided with a tilting lid or top, with the appliances shown and specified, said box having a drop-lid, E, in front, and the top of the ends C boxed out to receive the said ironing-board J, so as to be covered by the top, which board is made detachable and adjustable, the whole substantially arranged as shown, for the purpose specified.

2. In combination with the under side of the hinged top of said box-table, the bracket-lugs P P, drying-rods Q Q Q, catch-plates M to receive the hooks L on the extension-wings K, together with the turn-holders N, all on said under side of the top, arranged in the manner and for the purpose set forth.

143,978.—Stop-Cock Boxing.—WILLIAM H. GRAHAM, St. Louis, Mo. Application filed September 22, 1873.

The boxing is extensible and has a square chamber containing two valves, which, when closed, rest on a lug in the center and exclude dirt, &c., from the lower part of the boxing. The cap is jointed to an arm which is pivoted in an offset of the case, which incloses the arm when the cap is thrown back.

Claim.—1. The extension stop-cock box E, having lug *f*^{1}, in combination with box A having running slot F and side slots *f*, as and for the purpose set forth.

2. A stop-cock box, A, having square chamber B and valves *b b*^{1}, as and for the purpose set forth.

3. The cap C, hinged to arm *c*^{1}, and offset D, in combination with stop-cock box A, as and for the purpose set forth.

4. The combination of stop-cock box A, cap C, arm *c*^{1}, offset D, and square chamber B having valves *b b*^{1}, as and for the purpose set forth.

143,979.—Folding Seat.—JOHN H. HALL, Chicago, Ill. Application filed January 15, 1873.

The edges of the contiguous slats of the seat and back are curved so as to fit close together, and the seat hinge-pintle is arranged at a point coinciding with the center of the circle of which the curved edges of the slats are a part, and in a line between the upper and lower faces of the seat-slats.

Claim.—In a folding seat provided with a back, the curved edges G and H of the contiguous slats of the seat and back, in combination with the seat hinge-pintle, arranged at a point coinciding with the center of the circle of which the said curved edges are a part, and in a line between the upper and lower faces of the seat and near the said curved edges, substantially as and for the purposes specified.

143,980.—Hydraulic or Air Car-Brake.—WILLIAM M. HENDERSON, Philadelphia, Pa.—Case B. Application filed September 22, 1873.

Dish-shaped diaphragms, with rams or plungers, are directly connected with the brake beams and shoes, and fluid-pressure is applied or relieved through a tube at the bottom of the vessel in which the diaphragms are arranged. An air-vessel is applied to the diaphragm-vessel when an elastic fluid is used to moderate the action of the brake-shoes.

Claim.—1. The combination of dish-shaped diaphragms, with rams or plungers directly connected with the brake-beams and brake-shoes, substantially as and for the purpose described.

2. The combination of the air-chamber H with the vessel A, dish-shaped diaphragms B, and rams D having brake-beams E directly connected therewith, substantially as and for the purpose set forth.

143,981.—Machine for Interlocking Cartridge-Shells with Bullets.—ALFRED C. HOBBS, Bridgeport, CONN. Application filed January 15, 1873.

A hollow rotating mandrel, A, in line axially with two reciprocating punches, G I; a rotatable crimping-disk, B; a cartridge receiver and adjuster, L, and an intermittingly-rotating feed-wheel, E, so combined that the cartridges carried by the wheel are dropped one by one into the receiver, whence, after descending somewhat, punch G forces them into the mandrel, where they are caused to revolve in contact with the crimping-disk, which has been brought to bear upon it.

Claim.—1. The combination of the revolving hollow spindle or mandrel A, crimping wheel or disk B, and reciprocating punches G I, arranged and operating substantially as and for the purpose herein specified.

2. The feed-wheel E, constructed as described, and operated by the ratchet-wheel *f*, pawl *g*, cam plate or arm A, and movable pin or stud *i*, substantially as herein specified.

3. The arm *l*, having a sliding movement on the driving-rod H, in combination with the stops *o* and *r* and spring *p*, substantially as and for the purpose herein specified.

4. The receiver or holder L, constructed and operating substantially as described, in combination with the feed-wheel E and punch G, substantially as and for the purpose herein specified.

5. The combination of the tappets *y* and *z* on the reciprocating rod H, the angle-lever M, catch-bolt N, and vibratory lever O, substantially as and for the purpose herein specified.

143,982.—Automatic Fastening for Sashes, &c.—JOSEPH HOLLELY, Brooklyn, assignor of one-half his right to HAMILTON E. TOWLE, New York, N. Y. Application filed May 16, 1872.

A tripping-lever is arranged so that one end engages with the bolt and holds it in the unlocked position, and the other end projects from the case so that it will come in contact with the object to which it is to be fastened and force it into the case, thereby releasing the bolt and allowing it to be thrown into the locked position by the action of the spring.

Claim.—The combination of the tripping-lever T and spring S with the pivoted bolt or catch B, all arranged and operating substantially as and for the purpose herein specified.

143,983.—Watch-Case Spring.—ULYSSES A. JUVET, Glen's Falls, N. Y. Application filed June 27, 1873.

The two watch-case springs are secured to the plate upon which the movement is fastened.

Claim.—The springs D and E, with grooves *h h* and ears *j j*, fastened to the plate B, substantially as and for the purpose herein before set forth.

143,984.—Water-Wheel.—JOSEPH F. KIRKHART and JAMES RAMSAY, Long Creek township, Decatur county, Iowa. Application filed September 16, 1873.

Claim.—1. The upper and lower tiers of buckets H H^1, separated by a space, S, so that the water, after passing through the upper tier of buckets, falls through the separating space upon the lower tiers of buckets, substantially as described.

2. The cap A, provided with chutes *b* at each of the corners, and gates B and their operating devices C, *c*, *d*, *d*^{1}, E, and F, in combination with wheel G, substantially as described.

143,985.—Punching and Shearing Machine.—JACOB KISSEL, Cassopolis, Mich. Application filed July 18, 1873.

Claim.—1. The combination of the lever B, coupling or connection D, lever G, link J, and rod E, with the frame of the machine and the punch, as shown and described.

2. The link or rod J, operated by the lever G, connection D, and lever B, in combination with the shears O P, as shown and described.

143,986.—Piano-Action.—FREDERICK KOTH, North New York, N. Y. Application filed July 11, 1873.

To get an easy repetition; also dispenses with a hammer-cushion rail.

Claim.—In combination with a piano-forte action, the hammer-butt H, plate L, lever P, screw M, and spring N, when constructed and arranged to operate in the manner and for the purpose set forth.

143,987.—Lining for Horse-Collars, &c.—ISAAC LINDSLEY and JOHN MACKINTOSH, Pawtucket, R. I. Application filed July 24, 1873.

Non-felting hair, curled, stitched or otherwise secured to a backing, the hair to come in contact with the skin of the animal.

Claim.—Linings of harness and other equipments for horses and other animals, made of the materials and in the manner substantially as described.

143,988.—Feed-Regulator for Injectors.—JEREMIAH A. MARDEN, Boston, and THEOPHILUS S. SMITH, Somerville, assignors of one-third their right to THEOPHILUS GILMAN SMITH, Somerville, Mass. Application filed November 30, 1872.

Combines with an injector, a chamber with diaphragm, the rod of which has a rack at its lower end, into which a pinion gears that operates a valve in the feed-pipe. A spring is arranged on the stem between the diaphragm and the rack to balance the pressure, and may be adjusted. As the pressure increases or decreases on the diaphragm the regulating-valve is opened or closed.

Claim.—In combination with an injector, *a*, and pipes *b b*^{1}, the chamber A, diaphragm B, rod C, spring D, rack R, pinion F, shaft F^1, and regulating-valve G, arranged and operating substantially as and for the purposes specified.

143,989.—Feeding Device for Grinding-Mills.—SIDNEY MIDDLETON, Dunkirk, Ind., assignor to himself and JACOB TROOP, same place. Application filed May 24, 1873.

Screw in feeding-tube delivers regularly to stone; hinged wings attached to upper end of screw sweep material into feeding-tube.

Claim.—The central screw feeder E, provided with hinged wing feeders J J, in combination with the spindle G and hopper D, substantially as and for the purpose set forth.

143,990.—Padlock, &c.—DANIEL K. MILLER, Philadelphia, Pa.—Case A. Application filed September 16, 1872.

Two independent sets of vibrating tumblers are operated by a single sliding key, and a dog adapted to notches in all the tumblers is arranged to hold the bolt in the locked position. A spring, attached to one of the tumblers, is arranged to bear against the dog so as to throw it (the dog) into the notches of the tumblers when the latter are properly adjusted. A cam-like incline on one of the tumblers serves to force the dog out of the tumbler-notches and into a notch in the bolt, when the bolt is moved into the locked position.

Claim.—1. The combination, in a lock, of two or more sets of vibrating tumblers, A B, operating independently, and arranged to be adjusted by a single sliding key, and a dog, D, adapted to notches in all the tumblers and to the bolt, as set forth.

2. The combination, with the dog D, of one or more tumblers having springs and cam-like inclines for moving the said dog in opposite directions, substantially as described.

143,991.—Stave-Jointing Machine.—CHARLES MURDOCK, Sarnia, Canada. Application filed January 24, 1873.

A horizontally-moving carriage carries a vibrating vertical stave-clamp, by means of which the edges of the staves are alternately presented to a circular saw.

Claim.—1. The adjustable cross-beam D, in combination with the slotted bar 4 and clamping-frame F, constructed and arranged to operate in the manner substantially as and for the purpose described.

2. The combination, in a stave-jointing machine, of the guide-ways or tracks B B with the traveling carriage C and trucks *b*^{2}, with the upright frames E, F, and P, in the manner and for the purposes substantially as described.

3. The vibrating clamping-frame F, upright frame P, having trucks *b*^{2}, and adjustable slotted bar 4, in combination with the curved transverse track-plate D$'$ on the reciprocating carriage, in the manner and for the purpose substantially as described.

4. The vibrating clamping-frame F, having the pendant 3, in combination with the stop 2, constructed and arranged in the manner and for the purposes substantially as described.

5. The treadles 6 and connecting-rods 6$'$, in combination with the overbalanced pivoted swing-stops N, in manner and for the purpose substantially as described.

6. The cam G and bolt *g*, combination with the slotted pivoted bars H and lug 8 on frame F, in the manner and for the purpose substantially as described.

7. The curved spring clamp-bar O, having the adjustable stop I thereon, in combination with the bilge-block M and clamping device, substantially as described.

8. The combination of the hand-lever K, pivoted to frame F, and lower link J, the connecting-rod *k*, arm K$'$, and upper link J, with the clamp-bar O, when the links J are pivoted to the bar O and form toggle-joints with the lever K and arm K$'$, substantially as described.

9. The automatic vibrating gages L L, when operated by the act of clamping or releasing the stave by means of the hand-lever K, connecting-rod *k*, and tappet-arms R R, and intermediate actuating parts, substantially as described.

10. The presenting the inside of a curved stave on an angle to the edge of the jointing-saw A$''$ by means of the vibrating clamping-frame F and reciprocating carriage C, substantially as described.

11. A stave-machine, such as herein described, and composed of the saw A$''$, in combination with the reciprocating carriage C, carrying the upright frames E, F, and P, with the clamping, holding, gaging, and stopping devices, constructed and arranged to operate as shown.

143,992.—Machine for Sawing Staves.—CHARLES MURDOCK, Sarnia, Canada. Application filed November 19, 1872.

A reciprocating and oscillating table is so arranged in connection with a barrel-saw as to automatically set and feed to the saw the blocks from which the staves are formed.

Claim.—1. The bars or guides *b*^{3}, attached to the forward end of the vibrating table B, and supporting the bolt from which the staves are to be sawed, in combination with the reciprocating carriage C, constructed and operating substantially in the manner and for the purpose described.

2. The combination of the dogs *p*, springs *s*, and presser-bar P$'$ on transverse guard P, supported on vibrating table B, with the rests or posts P$''$ on frame A$'$, substantially in the manner and for the purpose described.

3. The combination of the reciprocating carriage C, friction-rollers *c*, and bumpers *c*$'$ with the grooved sides of table B and stops *b*^{4} thereon, in the manner and for the purpose described.

4. The combination of the revolving pulley 3, having pinion 4, intermediate gear-wheel 5, vibrating gear-wheel 6, friction-pulley 7, and friction-pulley 8 on shaft I, and its train of gear-wheels 9, 10, and 11, with rack-bar C$'$ and reciprocating carriage C, substantially as and for the purpose described.

5. The bolt-holding dogs C$''$, when arranged to be above the top, forward of, and traveling with the reciprocating carriage C, in combination with the vibrating table B, substantially as shown.

6. The friction-clutch wheel 3$''$, revolving cone-pulley 3, and pinion 4 thereto attached, pinions *k*, toothed wheels K, cams G$'$, and friction-wheels A, in combination with the vibrating table B, in the manner and for the purpose substantially as described.

7. The automatic setting device, consisting of the revolving pulley 3, friction-clutch wheel 3$''$, shaft 4, pinion 4$'''$ on shaft 4, gear-wheel 4$''$ on crank-shaft 4$'$, and crank *i*, giving a reciprocat-

ing motion to bumper *j*, in combination with the vibrating arm *f* on shaft I, constructed and operating substantially as and for the purpose described.

8. Regulating the thickness of staves to be sawed by means of the combination of the bumper *j* and vibrating arm *f*, the hand-lever *f*², with its spring-catch *s* and notched plate *f*³, adjustable connecting-rod *f*⁴, and vibrating frame *d*², operating in the manner substantially as described.

9. The combination of the lever O, pivoted bent arm *o* and pawls *r* and *r'*, with the ratchet-wheel I', in the manner and for the purpose described.

10. The shield S, attached to shaft *b*, and arranged, with relation to the saw D', substantially in the manner and for the purpose described.

11. The adjusting of the table B longitudinally upon shaft *b* by the movable boxes *m*, and the shaft *b* and table B vertically by means of the temper screws *n''* and *n'''*, substantially as described, by which means both the diameter of the circle to be sawed in the stave and the table are adjusted to leave a clear space outside the saw-kerf on the upper side of the bolt, as shown.

12. In a stave-sawing machine having an upright shaft and horizontal saw, a step box constructed in the manner, and having the means for removing the step-pin and adjusting the shaft, substantially as and for the purposes set forth.

13. The transverse piece B' of table B, having the projecting edge *b''* and all its parts constructed in the manner substantially as and for the purposes described.

143,993.—Windlass.—WILSON NEWCOMB, Baltimore, Md., assignor of one-half his right to NATHAN W. ALLEN, Boston, Mass. Application filed September 10, 1873.

The cable passes from the chain-head down around a pulley journaled in the sliding frame, from thence backward over another pulley, which is journaled in a frame having elastic side supports, the object being, in cases of sudden strain, that the sheave may have a lengthwise movement.

Claim.—1. The independently-sliding sheave G, frame H, and springs *h'*, in combination with the sliding carriage of the windlass, as set forth.

2. The independently-sliding sheave G and sheave G', operating together, as and for the purposes set forth.

3. In combination with the ratchet-wheel E of the chain-head, upon or within the sliding carriage as described, the arms *b* and *b'*, rod *m*, bell-crank *n*, and link *n'*, the said arms *b b'* being provided with pawls, substantially as specified.

143,994.—Shutter-Worker.—FREDERICK W. NICHOLS, Lynn, Mass. Application filed September 19, 1873.

A pair of self-locking hinges, provided with a horizontal shaft extending through the window-frame, and operated by a knob from the inside.

Claim.—In combination with the blind-hinge C C, a lifting device, L, operated from the inside of the window for raising the blind to unlock the movable from the stationary portion of the hinge, substantially as described.

143,995.—Waste-Cock for Outlet-Valves.—SVEN J. OLSSON, Chicago, Ill. Application filed July 17, 1873.

The nozzle is provided with an escape-valve, which is operated by the expansion and contraction of the pipe attached to it, and is secured to the coupling by bolts passing through ears on each of them.

Claim.—A waste-cock consisting of the combination and arrangement of the nozzle A provided with the ears *a a*, and with the shoulders *a'* and *a''*, and having its inner end screw-threaded, the coupling D provided with the ears *c c*, the tube B provided with the plug B', and having the tubes or ports *s s* therein, the packing *c''*, the nut C, the bolts E E, and the nuts F F, substantially as and for the purpose specified.

143,996.—Door-Gong.—CHARLES W. PENFIELD, New Britain, assignor to JOHN P. CONNELL, Kensington, Conn. Application filed August 12, 1873.

A slide having longitudinal but no lateral motion carries a hooked spring-pawl which catches over the end of a short arm of the hammer-lever, so that when the slide is pulled the gong is sounded, but when it slides back the hook slips over the end of the short arm to resume its place.

Claim.—The combination of the slide *d* having longitudinal but not lateral motion, pawl *e*, and hammer-arm bearing the arm *i*, all substantially as described.

143,997.—Combined Cotton Chopper and Cultivater.—ALBERT F. ROBERTS, Knoxville, Tenn. Application filed March 15, 1873.

The plows and chopping-hoe are hinged so as to have a free vertical and lateral movement.

Claim.—1. The cam H provided with the slot X, in combination with the pin *a*, rods I and K, sleeve *f*, standard L, and hoe M, when arranged and operated substantially as shown and described.

2. The cam H, pin *a*, rods I and K, sleeve *f*, standard L, and hoe M, arranged and operated as shown and described, in combination with the vertical and lateral swinging plows provided with right and left shares, and connected by the bar *i*, substantially as and for the purposes shown and described.

143,998.—Gas-Retort Mouth-Piece.—THOMAS F. ROWLAND, Brooklyn, N. Y. Application filed October 15, 1873.

The tilting-catch has a projection at the end opposite the hook, which projection receives the impact of the cross-bar, causing the catch to fall forward and engage with the bar when the door is closed. The ogee curve of the door provides a cavity for the reception of the guard-lip, and corrects any expansion of the door that would tend to strain the parts or cause leakage.

Claim.—1. The lip B², in combination with the conical bearing-surface B², and projecting forward thereof, so as to serve in guarding the same, substantially as and for the purposes herein specified.

2. The circular door C, formed with an ogee section extending uniformly quite around the center, as and for the purposes herein specified.

3. The tilting catch E E¹ E², in combination with the cross-bar D, and arranged to operate relatively to the door C of the retort and the tightening means G, as herein specified.

143,999.—Paper-Drier.—EDMUND A. SEELEY, Scotch Plains, N. J. Application filed January 27, 1873.

Claim.—1. An apparatus for drying paper boards, composed of the following elements, viz., a drying-chamber, a rack which in either of its extreme positions closes its passage-way in the front wall of the drying-chamber, and a tramway, or its equivalent, extending beyond the drying-chamber, to facilitate the transit of the rack.

2. The rack D, the end board D¹ of which has a hinged flap, *d'*, substantially as and for the purpose specified.

144,000.—Extracting Oleine from Fatty Matters.—CHARLES F. A. SIMONIN, Philadelphia, Pa., assignor to WILLIAM ADAMSON, same place. Application filed October 1, 1873.

Claim.—The process, substantially as herein described, of separating the oleine from the stearine of fatty matter through the agency of hydrocarbon.

144,001.—Fire-Engine.—JAMES A. SINCLAIR, Bridgeport, Ohio. Application filed February 25, 1873.

The engine consists of four cylinders connected at their bottoms by pipes with a cylinder having an induction pipe, and at their upper ends with pipes which center together in an air-chamber. The engine is arranged within a water-tank, which is secured to a frame that can be attached to a carriage.

Claim.—The engine consisting of the cylinders *c c*, pipes *d i l*, air-chamber *n*, and hand-levers *o*, when all are combined to operate substantially as described.

144,002.—Mouth-Piece for Steam-Boiler Furnaces.—CHARLES STEWART, Worcester, Mass., assignor of one-half his right to WILLIAM ALLEN, same place. Application filed October 1, 1873.

Claim.—1. The mouth-piece E E¹ for steam-boiler furnaces, the parts thereof being constructed and combined with the furnace-front D, substantially as herein shown and described.

2. The combination, with the front D in a steam-boiler furnace, of a sectional mouth piece, comprising two or more sections, the edges of which are matched to each other with flanges and grooves, whereby, while the parts are held firmly to each other, either section can be removed without disturbing the other section, substantially as and for the purpose set forth.

144,003.—Extension-Rule.—EMERY D. WATERBURY, Mason City, Iowa. Application filed July 21, 1873.

Two rules, one slotted, slide by each other, guided by a clamp at the end of each. A clamp-screw holds them together when slipped out of the clamps, and allows radial and angle adjustment. In the outer end of each is a knife-hinged apur.

Claim.—The manner of constructing a combination extension-rule with clasps A A and hinged apur E, substantially as described in the foregoing specification and accompanying plate.

144,004.—Spinning-Ring.—JOSEPH W. WATTLES, Canton, Mass. Application filed September 24, 1873.

The curved bearing-surface above the race of the ring is for the yarn passing through the traveler to be borne against, so that sufficient friction may be produced upon it to secure compact winding of the bobbin. The recesses serve to clear the yarn of motes or lumps.

Claim.—1. A spinning-ring having its circular projection *b* made or provided with the curved bearing-surface *c*, as described, extending from the top of the projection to the inner edge of the race *a*, and to operate in connection with a traveler, as set forth.

2. A spinning-ring made or provided with the traveler-supporting projection *b* and the curved bearing-surface *c*, and with one or more recesses, *e*, arranged in the latter, all being and operating substantially as specified.

144,005.—Locomotive Air-Brake.—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed July 18, 1873.

The drive-wheels of a locomotive are combined with brake-shoes and a brake-cylinder, this having a pipe-connection from the main reservoir, and the piston-rod connected to levers which actuate the shoes. The steam-pipe is provided with a three-way cock and a double pipe, so that steam may be taken from the reservoir or the boiler direct. Cocks in the brake-cylinder are provided to let off the steam.

Claim.—1. In combination with the drive-wheels of a locomotive, the brake-shoes *d*, a brake-cylinder with a pipe-connection from the main reservoir, and a piston-stem connection to the levers which actuate the shoes, substantially as set forth.

2. The brake-cylinder *b* operating by atmospheric pressure, the locomotive drive-wheels B, and brake-shoes *d*, in combination with each other and with the interposed piston-stem and beat-lever connections, substantially as set forth.

3. In combination with a locomotive-boiler and drive-wheels, the steam-pipe *m*, three-way cock *g*, double pipe *s*¹, brake-cylinders *b*, cocks *c*, and lever-connections to the brake-shoes, substantially as set forth.

144,006.—Steam and Air Brake.—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed July 24, 1873.

A triple valve is arranged with a line of brake-pipes, auxiliary reservoir, and brake-cylinder, so that by the introduction of compressed air or steam the auxiliary reservoir will be charged and the brakes let off, and when the air is let off from the pipes an opening is made from said reservoir to the brake-cylinder.

Claim.—1. The combination of the triple valve A B C, seated as described, the valve-case connection E, above the valve A, to an air-supply pipe, a connection, F, between the valves A B with an auxiliary reservoir, a connection, G, below the valve B, with the brake-cylinder, substantially as set forth.

2. A triple valve arranged, in combination with a line of brake-pipe, auxiliary reservoir, and brake-cylinder, so that by the introduction of compressed air or steam the auxiliary reservoir will be charged and the brakes let off, and when the air is let off from such pipes an opening will be made from the auxiliary reservoir to the brake-cylinder, substantially as set forth.

144,007.—Railway-Switch.—EDWARD P. WHEELER, Corinth, Miss. Application filed September 6, 1873.

The switch is shifted by the approaching train by the contact of a projecting arm from locomotive or car, which depresses a vertical lever, said lever imparting motion to the switch-rails through toggle-joint connections with the movable rails.

Claim.—The double-crank lever I', connected with lever E' by the toggle-joint L, in combination with the pivoted rod N, toggle-joint H, pivoted rod G, and the double-crank lever I, connected with the lever E by the toggle-joint J, substantially as and for the purpose hereinbefore set forth.

144,008.—Car-Coupling.—WILLIAM M. WERWELL, Portland, Me. Application filed May 1, 1873.

The pin is grooved, and is held from being entirely extracted from the draw-head by a bolt working in the groove. The pin-hole is enlarged at its rear and the enlargement filled by a removable plate that in case the pin should become bent so as not to be readily withdrawn, the difficulty is overcome by the removal of this plate. The screws which hold the plate in position also limit the motion of the spring-bolt which supports the pin.

Claim.—1. A draw-bar of a railway-car, constructed and provided with the axial or central bore C and bolt F and spring H, and the pin E, with the plate *d*, for permitting the removal of a bent pin, substantially as and for the purposes stated.

2. The pin E, with its channel or groove *e*, in combination with the plate *d*, draw-bar A, and spring-bolt F, substantially as and for the purposes stated.

144,009.—Manufacture of Iron and Steel from Granulated Iron.—CHARLES WOOD, Tees Iron Works, Middlesborough-on-Tees, England. Application filed September 13, 1873.

The charge is worked in the ordinary rotary puddling-furnace, by which means the temperature to which the granules are submitted is uniform. Every portion of the metal is in succession brought in contact with the lining, and in turn exposed to the action of the flame.

Claim.—The improvement in the art of puddling granulated iron, consisting in causing the granules to rotate consecutively while exposed to flame, substantially as before set forth.

144,010.—Forming Metallic Cases for Cartridges, Caps, &c.—STEPHEN W. WOOD, Cornwall, N. Y. Application filed April 17, 1873.

Forming cases for cartridges by electro-deposition of the metal composing it, upon or in a form or mold of the required size and shape.

Claim.—1. The process of forming metallic cases for cartridges and other articles by the electro-deposition of the metal of which it is composed, substantially as herein specified.

2. A metallic case for a cartridge formed by the electro-deposition of the metal of which it is composed, as a new article of manufacture.

144,011.—Cartridge for Fire-Arms.—STEPHEN W. WOOD, Cornwall, N. Y. Application filed March 18, 1873.

Fibrous body and base coated with metal.

Claim.—A case for a cartridge composed entirely or in part of paper or other fibrous material, covered with metal, substantially as herein set forth.

144,012.—Metallic Cartridge-Case.—STEPHEN W. WOOD, Cornwall, N. Y. Application filed August 29, 1873.

Hard-metal re-enforce, enveloped or covered by electro-deposition, which forms the cylindrical body.

Claim.—A metallic case for a cartridge re-enforced with and having a hard-metal base in intimate connection and contact therewith, as herein described.

144,013.—Railway-Car Brake.—LUTHER ADAMS, Mattoon, Ill. Application filed July 12, 1873.

A friction-wheel, notched to catch the axle and slotted to receive the brake-chain, is borne against the car-axle by springs, upon which the bearings of the friction-wheel are mounted.

Claim.—1. The combination, with the brake-chain, of a notched friction-disk, E, spring-plate H F, lever M, and spring K, having a stirrup or bearing-point, L, substantially as shown and described.

2. The combination, with the disk E and springs H K, of the pivoted block Y having lug Z, the plate W carrying block X, and the sliding bar or bumper S, substantially as shown and described.

3. The combination of the hand-wheel *a*, bevel-gears *c d*, feathered bar S, finger *e*, and spiral spring W V, as and for the purpose specified.

144,014.—Railway-Switch.—GEORGE F. BEATTY, Boston, Mass. Application filed August 16, 1873.

An arrangement of main rails and guard-rails at a switch-junction, designed to prevent the train from getting off the track, whether the switch be properly adjusted or otherwise.

Claim.—The main rails A, having the outward bend C, the inside long guard-rails B, having the inward bends F, and the short guard-rails D and F, and the switch-rails I G, all combined and arranged substantially as specified.

144,015.—Car-Coupling.—WILLIAM CHARLES BROOKS, Stoneham, Pa. Application filed April 19, 1873.

The lower side of the draw-head is in the form of a lever, and is held in place so as to force the hooked end of the coupling-bar to engage with the hook on the upper side of the mouth of the draw-head. Uncoupling is effected by means of a pin operated by a lever extending to the side of the car.

Claim.—The draw-head having subjacent lever D E, spring F, and pin H, combined with a hook-link, G, to allow the latter to enter, be caught, held, and released, in the manner described.

144,016.—Felt Roofing.—EDWARD CHURCHILL, St. Thomas, Canada. Application filed August 22, 1873.

The roofing felt or paper is saturated with a mixture of about three parts paraffine to one of coal-tar.

Claim.—1. As a new article of manufacture, a roofing paper or felt saturated with paraffine and coal-tar, substantially as herein described.

144,017.—Middlings-Purifier.—WILLARD A. CLARKE, Milwaukee, Wis., assignor of one-half his right to E. P. ALLIS & Co., same place. Application filed June 19, 1873.

Construction and arrangement of devices for regulating and exhausting the air-currents that act upon the middlings in different parts of the machine.

Claim.—1. In combination with a bolt-reel, a series of automatic valves, applied and operating substantially as shown, to control the admission of air through the bolt-cloth into the reel, and a fan arranged to exhaust the air from the interior of the reel, substantially as shown and described.

2. The reel B, provided with the inside cylinder or lining *i*, having holes *j* and valves *k*, in combination with the stationary cam *n*, or its equivalent, for operating the valves.

3. In combination with the reel provided with the lining and valves, as set forth, the surrounding casing *g*, provided with the opening A, and a fan arranged to exhaust the air from the reel, as set forth and shown.

4. In combination with the body A, provided with the fan C, passage *c*, vacuum-chamber *d*, passage *e*, and casing *g*, with its opening A, the reel B, provided with the lining *i* and automatic valves *k*, substantially as shown and described.

5. The bolt-reel inclosed within the tight casing *g*, having the opening A, in combination with the passage H, communicating with said opening, and the fan C, arranged to exhaust the air from both the reel and the passage, said parts being constructed and arranged as shown, so that the air-currents act upon a small portion only of the cloth at one time.

144,018.—Grain-Basket.—GEORGE P. COAN, Wyandotte, Mich. Application filed July 14, 1873.

The basket is made of upright splints, an outer top wooden hoop, an inner top iron hoop, and an outer central iron hoop. The lower ends of the splints are secured between two metallic disks.

Claim.—As a new article of manufacture, the basket herein described, wherein the splints A, wooden hoop *a*, wire hoops *b c*, and metallic disks *c d* are arranged and secured together, as described.

144,019.—Blind-Stop.—JOHN H. CRAMPTON, Norwich, Conn. Application filed October 2, 1873.

A small rack-bar is attached to the operating-rod, and is moved by turning an endless screw.

Claim.—The frame or housing D, endless screw E *e*, guided rack-bar G *g*, and link H, combined and arranged as and for the purposes herein specified.

144,020.—Spring for Chairs, &c.—WILLIAM T. DOREMUS, New York, N. Y. Application filed September 27, 1873.

A spring is composed of two rubber blocks having a U-shaped bar passing in one direction and interposed between the two blocks, and another U-shaped bar encircling both blocks and passing in the opposite direction, and the blocks held together by a yoke and bolts connecting said yoke with the outer U-shaped block.

Claim.—An improved spring, formed by the combination with each other of the two rubber blocks A, the U-bar B interposed between the blocks A, the U-bar C passing around both blocks A, the yoke or plate D, and the bolts E, or equivalent, substantially as herein shown and described.

144,021.—Umbrella.—James H. Dugan and George Moncrief, Stoneham, Mass. Application filed July 26, 1873.

The notch-pieces holding the ends of the ribs and stretchers revolve between stationary collars upon the stick and runner so as to allow the frame to rotate.

Claim.—The rib and brace notch-pieces B and G, stationary collars D, E, I, and J, stem K, and runner H, all combined and arranged substantially as and for the purpose set forth.

144,022.—Extension-Trunk.—Gustav Engelman, New York, N. Y. Application filed September 13, 1873.

Claim.—1. The hinged extension-pieces C D, and the corner-blocks E E, constructed as described, in combination with the parts A B of an ordinary trunk, substantially as herein shown and described.

2. The hook-hinges I and eyes J, for connecting the top of the trunk to the lower part or the extension, as required.

3. The lock-hasp G made with two keepers to adapt it for use either with or without the extension, substantially as herein shown and described.

144,023.—Machine for Cutting Cloth.—Nathaniel C. Fluck, Gloucester, England. Application filed March 22, 1873.

The cloth to be cut in stripes or samples is placed on a board which slides between two ribs on a bed-plate. The board is moved by a ratchet pivoted in a shoe which slides on a metal bar affixed to one edge of the movable board. The ratchet is operated by means of a pivoted bar connecting its long arm to a transverse piece that serves as a guide to knife, and which is connected at each end by hinged arms with the bed-plate. The guide is swung up and forward, and its connecting-rod causes the ratchet to nip the bar, and moves the board until the shoe carrying the ratchet strik-s a stop, when the guide is swung back and down on the cloth to hold it while being cut.

Claim.—1. The combination of the bed-plate A, movable board B, guide C, connecting-rod O, and pawl D, substantially as described.

2. The combination of the bed-plate A, movable board B, guide C, connecting-rod O, and pawl D, of an adjustable stop, E, and a scale, F, substantially as specified.

3. The combination of the shoe Q, pawl D, spring R, and the rod O with the movable board B, the cutter-guide C, and the hinged arms H, substantially as specified.

144,024.—Steam-Generator.—Elbridge Goddard, St. Louis, Mo. Application filed May 24, 1873.

The steam-generator is provided with inclined circulating-pipes connected at the front and rear as near the bottom as possible, whereby a constant and rapid circulation is kept up, depositing the mud and sediment in the drums.

Claim.—The combination, with a steam-generator, of the circulating-pipes C C′ and the connecting-pipes c c' c'' c''', the said circulating-pipes being arranged inside the fire-walls, and having their rear ends lower than their forward ends, and their connection with the generator being such that they take the water from and introduce it into the generator at the ends, and as near the bottom thereof as possible, substantially as shown and specified.

144,025.—Accordion, &c.—Fendrick Goetze and Donat Müller, New York, N. Y. Application filed June 21, 1873.

A slider, arranged to range the length of the instrument, has a loop to embrace the wrist of the performer.

Claim.—The combination of sliding holders M with the key-boards of a wind-instrument in which the bellows is actuated by the instrumentality of the key-boards, substantially as specified.

144,026.—Toy Horn.—William A. Harwood, Brooklyn, N. Y. Application filed September 6, 1873.

The parts of the mouth-piece and reed-block are of cast metal, and adapted for readily putting together, the reed being fastened in place by forcing on the outer cap, thus binding the metal about the base of the reed.

Claim.—1. A mouth-piece for horns, composed of the inside piece A B and outside piece G H, constructed and combined substantially as specified.

2. The slit C, arranged in the part A of the reed-piece relatively to the part B for securing the reed, and formed in the casting of the said piece, substantially as specified.

3. The reed secured in the slot of the reed-piece by compressing the metal on the reed by the part A forced on said reed-piece, substantially as specified.

4. The combination of the reed-piece A B, outside piece G H, and the reed D, substantially as specified.

5. The mouth-piece cast with a socket, I, and attached to the horn-tube F by forcing the latter into said socket, substantially as specified.

144,027.—Desk-Cover.—Jacob Heymann, Boston, Mass. Application filed February 18, 1873.

The wooden slats are connected on their inner sides by strips of sheet-steel, and are rendered capable of being moved backward and forward by means of grooves or guides on the sides of the desk.

Claim.—In the manufacture of semi-flexible covers for desks and other similar articles of furniture, the combination of the slats or strips A^1, strips of sheet-steel A^2, and grooves B^2 or guides formed in or affixed to the sides B^1, substantially as set forth.

144,028.—Billiard-Table Leveler.—David H. Hill, South Chester Pa. Application filed September 6, 1873.

Claim.—The billiard-table leveler, consisting of bolt-screw C, having button d, and hand-wheel D, socket B, and foot A provided with rim or flange a, substantially as and for the purpose described.

144,029.—Railroad-Rail.—Asa Johnson, New York, N. Y. Application filed March 12, 1873.

The center bar A is of steel, the side bars B B of rolled iron, and the base C is cast on them. The bars break joints, and are secured by bolts and nuts, the whole forming a continuous compound rail.

Claim.—A railroad-rail formed of the center bar A, side bars B B, and base C, constructed and arranged substantially as herein set forth.

144,030.—Pyrotechnic Signal.—Alexandre Lamarre, Paris, France, assignor to Gratiot Washburne. Application filed July 26, 1873.

Linseed-oil reduced by boiling to a glue is united with the chlorates and other substances used to produce different-colored light for use in pyrotechnic signals.

Claim.—The combination of the within-described linseed-glue with the chlorates and other chemicals usually employed in the production of compositions of matter for producing signal-lights and other pyrotechnic lights, substantially as and for the purpose herein set forth.

144,031.—Trimming.—Welwood Murray, New York, N. Y.—Case A. Application filed May 24, 1873.

Claim.—As a new article of manufacture, a trimming of muslin or other suitable material, consisting of a strip, either single or double, with groups of cross-plaits B and plain portions C, the plaits being at a right or any other angle to the strip, substantially as specified.

144,032.—Trimming.—Welwood Murray, New York, N. Y.—Case C. Application filed May 24, 1873.

Side-plaited trimming having the plaits folded in different directions at the margins, and with or without puffing between the edges in the center of the trimming.

Claim.—As a new article of manufacture, the trimming herein described, consisting essentially of the reverse-side plaits, either with or without the puffs, substantially as described.

144,033.—Trimming.—Welwood Murray, New York, N. Y.—Case D. Application filed May 24, 1873.

The box-plaits on one side of the trimming are midway between those of the other side, and the two side plaits that form one box-plait on one margin are merged into two box-plaits on the other margin.

Claim.—As a new article of manufacture, the trimming herein described, consisting essentially of the reverse box-plaits, either with or without the puffs, substantially as shown and set forth.

144,034.—Car-Coupling.—Laurent Ruel, St. Johnsbury, Vt., assignor to himself and Jullien Demers, same place. Application filed August 27, 1873.

The pin is suspended from a yoke which surrounds the draw-head, and is held down by a spring. When set for automatic coupling, a spring depending from the yoke on one side rests upon a ledge or projection, G, on the side of the draw-head, and is forced from its position by the opposing draw-head striking a slide, H, a projection, K, on this slide forcing the spring from the ledge.

Claim.—The yoke C, spring E, coupling-pin D, catch F, shoulder G, slide-rod H, cam K, spring I, chain or line c, and the windlass L, combined with the platform A and the draw-bar B, substantially as, and to operate as, specified.

144,035.—Fence-Post.—John Scott, Antwerp, N. Y., assignor of one-half his right to Robert Gill, same place. Application filed April 5, 1873.

A fence-post consisting of a base-board transverse to the fence; two inclined pieces, one secured to each extremity of the base, crossing, and pivoted near their tops. Two half-length pieces are secured a third of the distance from each extremity of the base, both crossing, and pivoted at their centers, and secured at their tops at about the middle of the first-named inclined pieces, with a horizontal piece resting on their tops, and secured to the said longer inclined pieces.

Claim.—A fence-post formed by the combination of the inclined braces A A, crossing near their top, the brace C, the cross-braces D D, and sill B, when constructed and arranged substantially as shown and described.

144,036.—Wrench.—Elphalet S. Scripture, Brooklyn, E. D., N. Y. Application filed May 2, 1873.

The nut is made of hardened steel, and provided with notches in its periphery, forming cutting-lips. The main bar is made of soft metal, so that the strain on the nut will cause it to cut into and take a firm hold on the bar.

Claim.—1. In combination with the jaw having the hardened-steel nut or screw E, the soft-metal bar A, as and for the purpose set forth.

2. The relief-groove f, formed in the face of the soft bar A, in combination with the screw or hard nut E, as and for the purpose set forth.

3. In combination with the rack-bar A, the nut E, provided with the grooves or notches A forming the cutting-lips, as shown and described.

144,037.—Cotton-Planter.—Pierpont Seymour, East Bloomfield, N. Y. Application filed June 27, 1871.

The seed-box is provided with vertical hinged agitators that reach from the top to the bottom, and fill the space transversely. Below these is a bar having fingers extending upward into the seed-box, which bar has a vibrating motion.

Claim.—The plate or plates B, pivoted at a', and depending within the hopper A, in combination with each other and with the stirring-rod C and its pins b b, suspended beneath the hopper by the rods c c, the whole arranged and operating substantially as and for the purpose described.

144,038.—Car-Coupling.—Xavier St. Pierre, Ophir City, Utah Ter. Application filed August 30, 1873.

The jaws are held in contact with the head of the coupling-bar by means of a bifurcated locking device, the arms of which surround the draw-head. The coupling device is raised by a bell-crank lever, which is held by a catch projecting from a shaft which has an arm near its lower end, so connected with one of the jaws that when the locking device is raised one of the jaws will be drawn aside to allow a free egress of the coupling-bar.

Claim.—1. The combination of the locking device K with the coupling-jaws B and the coupler J, substantially as specified.

2. The combination of the elbow-lever O, catch R, rock-shaft S, and arm T with the locking device K and one of the coupling-jaws, the arm T being connected to jaw by a rod and link, all substantially as specified.

144,039.—Apparatus for Extinguishing Fire in Buildings.—John D. Sutter, Chicago, Ill. Application filed February 7, 1873.

Water is introduced into a stand-pipe from a main in the street, or from a fire-engine, through a coupling near the ground, and is admitted to horizontal branch pipes passing through the floor-joists, and provided with regulating-valves, connected by levers and cords with operating-cranks located in a locked closet near the ground.

Claim.—The arrangement of the cocks C, levers b d, cords D, shaft e, and crank f, with relation to the branch pipes A', box E, and stand-pipe A, having a T-coupling, a, as and for the purpose set forth.

144,040.—Horse-Power.—John S. Tadlock, Belmont, Tex., assignor to himself and J. M. Howell, same place. Application filed August 16, 1873.

The endless chain, inclosed within two cog-wheels and drums, rests upon the central drum, the cogs of which engage with the cogs of the former, permitting the endless chain to tilt to different inclinations.

Claim.—1. The combination of the endless chain A, drums B, wheels C and D, and the pinion-wheels G, shaft F, and pulleys H, substantially as specified.

2. The combination of the drum E with the wheels D and chain A, substantially as specified.

3. The endless chain A, drums B, and wheels C, combined in a truck, and arranged for shifting from side to side, and to different inclinations on the wheels D, substantially as specified.

144,041.—Bobbin-Holder for Spooling-Machines.—Asel M. Wade, Lawrence, Mass. Application filed September 8, 1873.

The trough holds a bobbin to be unwound, and the yarn from it passes up and against one side of the friction-arm, which can be turned on its pivot to vary the angle at which the yarn is drawn off, and consequently its tension. By passing the yarn down through the slot in the bottom of the trough, and then up, its tension is further increased.

Claim.—1. The combination of the trough A and the adjustable friction-arm B, all being substantially as specified.

2. The spooling-machine trough A, made or provided with the slot d through its bottom, such being as and for the purpose as explained.

3. The combination of the trough A and its supporting-arm C, pivoted together and provided with the clamp-screw e and nut f, as set forth.

144,042.—Suspenders.—Joseph W. Wattles, Canton, Mass. Application filed September 29, 1873.

The front button-straps of suspenders are each composed of two straps. The inner end of each strap passes through a loop on the shoulder-strap buckle, and is attached to the cross-bar of a friction-slide upon the other strap, whereby the button-straps are "compensating" and adjustable in length.

Claim.—The friction-slides B B′ and the two straps A A′ of a pair of front button-straps, arranged and combined together and with the buckle C of the shoulder-strap, substantially in manner and so as to operate as specified.

144,043.—Stove-Damper.—Rumen Worster, Central Falls, R. I., assignor of one-half his right to Nathan N. Knight, same place. Application filed August 23, 1873.

A collar is provided on the inner edge of the rim of a damper, and there are two series of apertures or gas-escapes, one on each side of the collar. An adjustable check-piece holds the rim in the pipe by pressure on its inner surface, and also serves as a stop to the central disk or damper proper.

Claim.—1. A brace-rimmed damper having two series of gas-escapes, E and F, upon the inner and outer circle respectively, substantially as and for the purposes specified.

2. The combination of the rim A, collar D, disk C, and check-piece G, the whole constructed, arranged, and operating in the manner substantially as described.

144,044.—Harrow.—Milas K. Young, Glen Haven, Wis. Application filed August 23, 1873.

Two flat pulverising-bars in front and one wide bar in the rear are joined by chains, to which intermediate bars are hung, having inclined cutting-teeth, the ends of the toothed bars alternately approaching each other. The seat is borne upon a spring-board attached to the front and rear pulverising-bars by standards.

Claim.—1. The pulverizer-bars A G, oblique bars B C D E, cutters F, and draft-chains L, combined as and for the purpose described.

2. The seat K, spring-board L, and the standard M, arranged, in combination with the front bar A and the hind bar G, substantially as specified.

144,045.—Printing-Telegraph.—George L. Anders, Boston, assignor to E. B. Welch, Cambridge, Mass. Application filed December 18, 1872.

Independent type-wheel and printing-escapements actuated by one mainspring. Type-wheel controlled by polarized electro-magnet charged by currents of alternating polarity. Magnet controlling printing mechanism remains charged during the rapid alternations, but allows such to act only during a complete cessation of current.

Claim.—1. A polarized electro-magnet for releasing, in a step-by-step motion, the type-wheel impelled by mechanical power, by passing currents alternating in their polarity rapidly through it, in combination with an electro-magnet controlling the printing mechanism, and placed in the same circuit with the polarized electro-magnet and excited by the same currents, and arranged to attract and hold its armature until a sufficient interval between the pulsations occurs to release the arm, and allow the press mechanism to operate and effect an impression, substantially as described.

2. In a printing-telegraph, the combination, with the printing mechanism and the type-wheel mechanism, of the one mainspring actuating both, substantially as and for the purpose set forth.

3. The arrangement of springs X′ X″, of brass or other non-magnetic material, of suitable strength or thickness, on each side of the polarized armature X, for the purposes set forth, substantially as described.

4. The sliding unison bar B, having serrated edges, in combination with the latch a, pivoted spring-lever f, and spring e, all arranged and operating substantially as described.

144,046.—Flue-Cleaner for Boilers.—Jacob Arbenbuter, Petroleum Centre, Pa. Application filed September 11, 1873.

The scrapers are hinged at one end to the sliding cap; in the middle by knuckle-joints to the shaft. In pushing the scraper forward through the flue the friction and the action of the knuckle-joints cause it to expand against all sides of the flue.

Claim.—The combination of the scrapers C hinged at one end to the sliding cap B, and the knuckle-joint s hinged to the shaft A and the scrapers C, substantially as and for the purposes set forth and described.

144,047.—Steam-Generator.—William C. Baker, New York, N. Y. Application filed July 3, 1873.

The water passes from circulating-pipe through the coil in the furnace into the water and steam drum, where there is space for the steam to separate; then circulates downwardly to the lowest and coolest end of the drum, and then by pipes back to the circulating-pipe. The coil rests upon a hollow bar, through which air circulates to keep it cool.

Claim.—1. The arrangement of the water and steam drums, circulating-pipes b, feed-water and circulating pipe c, pipe d, and coil e within the fire-chamber, and connecting with the drum a, substantially as and for the purposes set forth.

2. The hollow bar r, through which the atmosphere passes, and which separates the fire-space and rests upon the division-wall o of the ash-pit n, in combination with the circulating-coil e, that rests upon said bar r, and is connected with the water and steam drum, substantially as and for the purposes set forth.

144,048.—Valve-Motion for Gates and Hydrants.—Perkenah Ball, Worcester, Mass. Application filed October 9, 1873.

Claim.—1. The method, substantially as described, of operating a valve—that is to say, by means of a right-and-left-hand screw, and one or two pairs of arms or levers, G, or G and G′, and nuts g g', for the purposes set forth.

2. The combination of a valve, F, and its actuating mechanism with the valve-seat, in such manner that the movement of the former from or toward the latter shall be at right angles to the face of the latter, and with a regularly increasing and decreasing velocity during said movements, for the purposes described.

144,049.—Spark-Arrester.—James Bardsley, Akron, Ohio. Application filed September 30, 1873.

The lifting-pipe in the smoke-chamber, the tapering pipe at upper end of smoke-pipe, and the inverted cone are provided with laterally-arranged studs to break the ascending sparks and cinders and deflect them.

Claim.—The combination of the inverted cone E, supported above the tapering pipe D, and the lifting-pipe B located at the base of the smoke-stack C, when the surfaces of all are provided with alternately-arranged studs *a*, in the manner and for the purpose specified.

144,050.—Smut-Mill.—Heman A. Barnard, Moline, Ill., assignor to The Barnard and Leas Manufacturing Company, same place. Application filed June 25, 1873.

Arrangement of the trunk, valve, chamber or screen-box, and scraper with the scouring-case and surrounding air and dust space. Deflecting shield prevents screenings from being drawn up into fan-chamber.

Claim.—1. The trunk F, valve Y, opening G, and chamber A, arranged, in relation to the space U and scraper I, substantially as and for the purpose set forth.

2. The shield N, of semicircular form, fitted in the opening M, and extending downward nearly to the scraper I in the chamber A, substantially as and for the purpose specified.

3. The combination, with the chamber or screen-box A and its interior revolving scraper I, of the separating-trunk F, discharge-box K, and fan L, substantially as and for the purpose herein set forth.

144,051.—Can-Opener and Pipe-Cutter.—Daniel A. Barnes, Chicago, Ill. Application filed October 22, 1873.

The end of the cutter-handle carries projecting points, which are made to rest in grooves in a concave shield. The cutter-blade projects outwardly from the handle, at a short distance from the end which serves as a fulcrum. The shield passes over the surface of the can or pipe to be cut, serving constantly as a movable fulcrum to the knife as it passes around the cylinder in cutting.

Claim.—1. The cutter provided with the projecting bearing-points and the centrally-arranged slot, as described.

2. The slotted shield adapted for movement over the can or cylinder, as described, for the purpose set forth.

3. The combination of a cutter having bearing-points and a blade, arranged substantially as described, with a shield having bearing-sockets and a fastener, substantially as described.

144,052.—Draft-Equalizer.—John P. Beckenbaugh, Springfield, Ill. Application filed May 26, 1873.

Claim.—In a three-horse equalizer, the angle-plates B B′, having oblique branches attached to the whiffletree in the direction of lateral strain on each side, the chain-pulleys and the journal-pins *e* passing through the angular portion of the plates B B′, with or without the division-plates E, said parts being constructed, combined, and arranged as specified.

144,053.—Ice-Cream Freezer.—Rudolph P. Beil, Peoria, Ill. Application filed August 9, 1873.

Claim.—In a revolving ice-cream freezing apparatus having double walls A *a*, the cream-vessel D having the shaft E attached to the bottom, and provided with socket to receive the nipper *h*, in connection with braces C and covers B, H, and G, provided with loop *i* to receive the scraper F, all constructed and arranged to operate as shown and set forth.

144,054.—Ventilator and Pipe-Hole Plate for Tents.—Robert Brien and William Brien, Jersey City, N. J. Application filed September 20, 1873.

Claim.—The ventilator or pipe-hole plate B, valve F, springs G, and cord H, combined and attached to a tent-cloth, or to a piece of cloth to be sewed to the tent-cloth, substantially as specified.

144,055.—Watering Streets and Roads.—Isaac Brown, Edinburgh, North Britain. Application filed May 5, 1873.

Claim.—A soft-metal punctured pipe, A, arranged adjacent to a street-pavement, and protected by slotted guards D, as specified.

144,056.—Middlings-Purifier.—Clark S. Fuller and Harvey J. Burdick, Oswego, N. Y. Application filed October 6, 1873.

Air-chamber with openings and valves for admission of air into the bolt at various points around its circumference. Diaphragm for arresting and deflecting any light particles of the middlings that may have been partly raised by the air-current back on the bolt-cloth, while the fibrous particles are forced through the diaphragm or carried around the edge thereof by the air-current. Brushes for clearing the meshes of the bolt-cloth and diaphragm.

Claim.—1. A reel-bolt arranged within a casing having double walls, forming an air-chamber between them, with the inner walls provided with openings arranged around the reel, for directing air into it, substantially as and for the purpose hereinbefore set forth.

2. The arrangement, within a reel-bolt having an air-current through the same, of the diaphragm E, of less diameter than the bolt, substantially as and for the purpose hereinbefore set forth.

3. The combination, with a reel-bolt and diaphragm, E, of a clearing-brush, F, loosely suspended from the shaft, so as to sweep the face of the diaphragm, substantially as herein before set forth.

4. The combination, with a reel-bolt, of a clearing-brush, G, loosely suspended from the reel-shaft, so as to sweep the cloth of the bolt, substantially as hereinbefore set forth.

144,057.—Device for Forming Water-Traps.—William A. Butler, New York, N. Y. Application filed October 7, 1873.

The faces of the roller C and the former or bending-mandrel A are concave or convex, or vice versa. The gear-teeth *b* on the roller engage with the teeth of the stationary semicircular rack B, producing a drawing-friction on the surface of the blank while bending it over the former.

Claim.—The machine for bending semi-tubes into shape for water-traps, &c., and consisting of the semicircular block A, toothed roller C, stationary gearing B, and fork or lever D, the edges of the block A and roller C being of such form that a semi-annular space, *d*, is formed between them, all operating substantially as described.

144,058.—Power-Hammer.—John C. Butterfield, Chicago, Ill. Application filed September 11, 1873.

The helve is bored longitudinally its entire length, and from this bore laterally to the tubular springs, for the purpose of introducing currents of air through the springs, which are either separately adjustable or not. The spring D is designed to assist the spring E in raising the hammer. The helve oscillates independent of the yoke.

Claim.—1. The combination of the independently-vibrating helve A, oscillating beam C C′, and diagonally-arranged springs D and E, substantially as and for the purpose specified.

2. The combination of the independently-vibrating helve A, oscillating beam C C′, and springs D, E, and F, either separately adjustable or not, substantially as and for the purpose specified.

3. The tubular springs, in combination with the helve A, also made tubular for the introduction of a cold air blast, which passes by lateral ports through the springs, substantially as and for the purpose specified.

144,059.—Power-Hammer.—John C. Butterfield, Chicago, Ill. Application filed September 22, 1873.

The cross-head bearing the helve carries two tapering centers, into which bear pointed centers H H′, which pass through slides that are adjustable horizontally. Motion is communicated to the hammer-helve through a yoke passing over the journals of the cross-head and curving down under the helve, against which springs on the yoke press. The front or upper part of the standard is arched, and to it is adjustably secured a spring-buffer that gives force to the blow of the hammer. The front end of the yoke is attached, by means of a universal joint, to a connecting-rod driven by an adjustable eccentric.

Claim.—1. The combination of the yoke K, springs L and L′, helve F, and buffer M, substantially as and for the purpose specified.

2. The combination of the slides I and I′, horizontally adjustable on the standards B, and steel centers H and H′, passed through the slides and applied to the cross-head of a power-hammer, substantially as specified.

3. The cross-head composed of two parts, G and G′, and applied laterally to clasp the helve, when made in the form and working upon centers, substantially as and for the purpose specified.

4. The eccentric and its rod, and the yoke K, in combination with the connecting universal joint, composed of the coupling S and pins *s* and *s′*, whether said pins be tapering or not, substantially as and for the purpose specified.

5. The compound eccentric composed of the fixed eccentric O, having a concentric head, O′, with an annular T-shaped groove, o^1, and eccentric P, adjustable on the fixed one, and held in position by bolts *o*, substantially as specified.

144,060.—Water-Heating Apparatus.—Thomas M. Carroll, Independence, Iowa. Application filed July 10, 1873.

A heater adapted to be placed in a water or other tank. The draft, smoke, and feed pipes are located upon the top of the fire-box to avoid joints below the water-line. The draft-regulator may consist of a perforated tube guided upon the draft-pipe by a bent spring.

Claim.—The fire-box A, smoke-pipe D, fuel-pipe C, and draft-pipe B provided with a regulator, the said pipes being connected directly to the top of the fire-box, all constructed and arranged as and for the purpose specified.

144,061.—Method of Making Footed Glass Bowls.—Elijah G. Cate, Wheeling, W. Va. Application filed May 17, 1873.

The entire article is made at one stroke of plunger in a suitably-shaped mold.

Claim.—The hereinbefore-described method of forming footed glass bowls entire, in a suitable mold, by one stroke of the plunger.

144,062.—Blind-Slat Fastener.—Amos F. Champlin, Westerly, R. I. Application filed April 26, 1873.

Claim.—In connection with a blind, the spring *c*, having the fastening-center *d* and the ends *e*, curved flatwise toward the blind-slats, and provided with the ratchets *z* on their under or concave faces, to engage with the armed edges *p* of the said blind-slats, as specified.

144,063.—Device for Opening Oysters.—Douglas M. Cleary, Baltimore, Md., assignor of one-half his right to Joseph F. Broadbent, same place. Application filed September 2, 1873.

A knife with a weighted head is provided with a stem above it and a spring arranged in a guide-box, and operated by a treadle and connecting-rod.

Claim.—1. The weighted knife-head *c*, provided with the upward-projecting stem *d* and spring *e*, arranged between the top of the box *x* and the shoulder *m*, as described and shown.

2. The treadle connecting-wire *p*, arranged as described, in combination with the weighted knife-head *c*, as described, and for the purpose set forth and shown.

144,064.—Paper-Ruling Machine.—Horatio T. Cliff and John E. Martin, Detroit, Mich., assignors to George H. Smith, Thorndike Nourse, and Noah D. Lapham, same place. Application filed July 31, 1873.

A bracket, provided with a stud projecting at right angles therefrom, is attached to the under side of the frame to support a disk which rotates upon said stud and carries upon its face adjustable cams and a segment, the former of which, through a rod and spring-pawl, operates the pen-beam, while the latter, through similar devices, operates a crank-shaft, to which the striker or stops and a sheet-presser roll are attached.

Claim.—1. The bracket G, stud *c*, pinion H, ring *d*, adjustable cams J, lever K, rod L, and lever M, constructed and arranged with relation to the frame A and spur-wheel B′ to operate the pen-beam F, substantially as described and shown.

2. The rock-shaft N, frame S, roller T, arm O, rod P, and lever Q, operated by the segment I on the pinion H, substantially as and for the purpose set forth.

144,065.—Potato-Bug Exterminator.—Charles Cole, Chatfield, Minn. Application filed March 22, 1873.

Claim.—The narrow constricted cloth pocket *n*, expanding at its throat into two flaring wings, *m*, distended on a hoop, *b*, attached to a handle, *a*, extended across over the throat of the pocket, and holding in the hoop at its end to give a forked shape to the wings, substantially as specified.

144,066.—Type-Casting Machine.—James M. Conner, Greenville, N. J. Application filed September 20, 1873.

The pulley F has a uniform rotary motion, and is connected to the cam-shaft which carries the mold, by means of a slotted lever and crank, in such a manner that the shaft remains stationary for a certain period, giving a "dwell" to the mold.

Claim.—1. The pulley F, having an independent motion from the cam-shaft *g*, in combination with crank *q*, lever *k*, and the mold-carrying lever E of a type-casting machine, substantially as set forth.

2. The screw *o*, slotted lever *k*, pulley F, and crank *q*, in combination with the cam-shaft *g* and mold-carrying lever E of a type-casting machine, substantially as and for the purpose set forth.

144,067.—Spindle.—Lewis C. Crocker, Hopedale, Mass. Application filed September 26, 1873.

A sleeve or tube is encircled by a band or ring of felt, and is fitted within the step, the felt serving as a strainer to exclude dirt or dust from the bearing, while the cap fitting over the tube prevents dust or dirt from entering between the spindle and the tube.

Claim.—The tube d with its band or ring *e* of felt, in combination with the step A, and spindle b with its cap *f*, constructed to operate substantially as and for the purpose set forth.

144,068.—Horse-Stall for Steam Fire-Engine Houses.—William C. Davol, Jr., Fall River, Mass. Application filed July 19, 1873.

Within a rectangular room stalls are arranged with their backs toward the rear wall, sufficient being left next the wall for the horses to pass around and enter their respective stalls. The mangers are fixed in the stall-corners adjoining. The stall exit-doors are to the right and left of these, opening outwardly.

Claim.—In the improved steam fire-engine stable, the stall induction-passage B, each stall A, the manger M, the door D, doorway *d*, and the engine-room or space E, combined, constructed, and arranged substantially as described and represented, each stall at its rear and opening into the induction-passage B, as explained.

144,069.—Carriage-Top.—Charles A. Dearborn, New Bedford, Mass. Application filed July 19, 1873.

Claim.—The sheet-metal corner-plates B, for buggy-tops, having a longitudinal curvature corresponding with the radius of the top and a transverse curvature fitting the rounded corners of the bows, substantially as specified.

144,070.—Lamp.—Robert E. Dietz, New York, N. Y. Application filed March 21, 1873.

The lamp-font, inkstand, or other vessel has grooves in its lower end adapted to receive pins which project from the detachable base. The base is provided with a spring-bottom, which tends to hold the parts in position.

Claim.—The grooved projection *a* of the vessel, in combination with the recess *d* of the base, the pins *c c*, and the elastic bottom of the said vessel.

144,071.—Starching-Machine.—Alexander M. Dolph, Cincinnati, Ohio. Application filed October 6, 1873.

Two elastic rollers are secured on shafts that extend beyond the frame of the machine, and are driven by gearing and drawn together by levers, operated by a rod and treadle, and released by springs.

Claim.—1. The shafts A, A′, E, and K, gear-wheels C and C, pinions G and G, pivoted frame-bars D and D, and compression-rollers F and F, when constructed and combined to operate in the manner and for the purpose substantially as specified.

2. In combination with the pivoted frame-bars D and D, and the shafts and rollers E and F, respectively, the bars H and H, rod I, treadle K, and springs L, substantially as and for the purpose shown.

144,072.—Whip-Socket.—John W. H. Doubler, Alden, N. Y. Application filed August 28, 1873.

Claim.—1. The arm A, provided with clamps at its upper and lower ends, as set forth, in combination with the short arm, having clamps at its upper and lower ends and hinged to the arm A, substantially as described.

2. The arm A, provided with the curved projections C C, embracing the standard of the dash-board, in combination with the projecting piece O, curved at its outer end and attached to the arm A, as and for the purpose set forth.

144,073.—Whip-Socket.—John W. H. Doubler, Alden, N. Y. Application filed August 28, 1873.

A vertical bar is provided with left-and-right-hand clamps at the top and about the center, respectively, and with a half-socket or seat for the butt of the whip to rest in.

Claim.—The whip-socket, composed of the bar A, having the inclined half-socket or seat B and the right-and-left-hand clamps or curved arms C and D, substantially as shown and described.

144,074.—Spike-Bar.—George Douglass, Bridgeport, Conn. Application filed August 16, 1873.

The jaws of the bar are made double and removably attached to the lever.

Claim.—A spike-bar having its jaws made separate, and removably attached to the lever, substantially as shown and described, and for the purposes set forth.

144,075.—Process for Destroying Ants.—John J. Dulany and Henry Dreyer, Oakland, Tex. Application filed August 30, 1873.

A deep hole is bored with an earth-auger into the center of the main ant-hill, and a diagonal tube inserted reaching the main hole near the bottom. The main hole is partially filled with dry wood or other combustible matter and ignited, air being supplied by means of a large bellows through the diagonal pipe. When the combustion is complete poisonous gas producing chemicals are introduced and the orifice of the main hole closed, and the blast continued till the gas penetrates the entire interior of the burrow.

Claim.—The process of destroying ants by blowing poisonous vapors into their cells, in the manner described.

144,076.—Propeller for Cars.—George W. Earl, New York, N. Y. Application filed September 1, 1873.

Spur-wheel on car engages with the coils of a spiral wire between the tracks and propels the car when it revolves.

Claim.—1. The combination of a spiral spring, located between the rails of a track, with a rotary spur or toothed wheel on a car or other vehicle, substantially as described.

2. The spur-wheel G, having the cranks I I′, in combination with levers K K′, cords or chains J, pulleys M, in connection, and a spiral spring between the rails of a railroad-track, substantially as and for the purpose set forth.

144,077.—Loom for Weaving Pile Fabrics.—James C. Ellison, Philadelphia, Pa., assignor to himself and David N. Rothermel, same place. Application filed September 22, 1873.

The warp-threads are formed into pile-loops by means of hooks arranged upon a horizontal bar having a compound reciprocating movement, by which the hooks seize, raise, retain, and release the warp-threads placed within the range of their action. A positive let-off mechanism is combined with the hook-bar.

Claim.—1. The combination, in a loom carrying a special set of warp-threads controlled by special heddles, of a system of hooks and mechanism, substantially as specified, for imparting to the said hooks the within-described movement, for the purpose of seizing the said warp-threads, forming them into loops, and retaining and releasing the same, all as set forth.

2. The bar B and its hooks, and the rods B^1, adapted to blocks B^2, which are arranged to slide on guides *d d*, in combination with cranks D D, the pins of which enter quadrangular openings in the said rods B^1, all substantially as set forth.

3. The combination of the rods B^1, carrying the bar B with its hooks, and the cranks D on the shafts H, to which an intermittent reciprocating movement is imparted, all as and for the purpose set forth.

4. The bar B and its hooks, having the within-described movements, in combination with the positive let-off motion by which the special warp-threads are controlled to accord with the requirements of the hooks.

144,078.—Suspension-Pulley.—John A. Evarts, West Meriden, Conn., assignor to Bradley & Hubbard, same place. Application filed September 24, 1873.

Flat metallic springs are secured between the yoke and the sides of the pulleys. An adjusting-screw is attached to the yoke, by means of which the tension of the springs is regulated.

Claim.—The combination of the springs C with the pulleys B, substantially as and for the purpose specified.

144,079.—Lock for Fire-Alarm Boxes, &c.—J. Murray Fairchild, New Haven, Conn. Application filed July 9, 1873.

A tumbler or dog is arranged so as to engage and hold the principal key after the bolt has been withdrawn. To release said

key an auxiliary key is inserted in another key-hole and the tumbler or dog raised, when the principal key may be removed.

Claim.—1. The auxiliary tumbler F arranged to be operated by the principal key, and to engage the bit of the said key after the bolt is withdrawn, and prevent its removal from the lock, substantially as described.

2. In combination with the auxiliary tumbler F, constructed to engage the principal key after the bolt is withdrawn, the auxiliary key G, for operating the said tumbler to free the principal key, substantially as described.

144,080.—Chair.—GEORGE FELDKAMP, Cincinnati, Ohio. Application filed August 13, 1873.

At the joints on the under side of the seat-frame a brace or cleat is secured, having a socket passing through it and into the seat-frame to receive the tenon of the chair-leg. The brace or cleat is also provided with a dovetailed tongue that engages with a corresponding mortise in the seat frame.

Claim.—1. The combination of the socket-cleat D, secured to the frame A B and crossing the joint C, and leg L passing through the socket-piece and into the frame at a point removed from the joint C, all as specified.

2. The combination of the cleat D with tongue or tenon *a*, and the seat-frame A B with corresponding mortise *b*, as and for the purposes set forth.

144,081.—Spark-Arrester.—JAMES L. FERRY, South Brunswick, assignor to himself and ISAAC S. BUCKALEW, Jamesburg, N. J. Application filed February 21, 1873.

The perforated plate, formed into a series of parallel corrugations, is fitted and united to the shell of the boiler between the tube-plate and chimney for the purpose of arresting the sparks.

Claim.—The perforated plate E, formed into a series of parallel corrugations fitted and united to the shell of the boiler between the tube-plate B and chimney C, all as set forth, for the purpose specified.

144,082.—Bottle-Protector.—ORRIN FITZGERALD, Dexter, Me. Application filed May 13, 1873.

A block of wood of proper length and shape has a hole extending longitudinally through it for the reception of the neck of the bottle.

Claim.—A bottle-protector bored out for the reception of the neck of the bottle, and corresponding in length with the neck and in exterior form with the body of the bottle, substantially as set forth.

144,083.—Potato-Digger.—ELIAS T. FORD, Stillwater, N. Y. Application filed November 27, 1872.

The machine is mounted upon two wheels. A pair of vine-straighteners are attached to the forward end of the frame, and just beneath and a little in rear of the axle-tree are a pair of plows or cutters, which face inward. Immediately in rear of these is a revolving digger having a series of fingers set obliquely to the line of draft, and upon the side toward which the potatoes are thrown is placed a reciprocating screen, which separates the soil from the potatoes.

Claim.—1. The vine-straightener, consisting of the combined diverging beams I', pivoted to or upon the pole A', and provided upon their rear lower ends with the shovels K' and guide-bars *k*, all combined and arranged substantially as and for the purpose specified.

2 The slatted or barred receiver O and *o*, constructed as shown, and combined with the tined separator U and *u*, which has a reciprocating motion in a line with the draft, substantially as and for the purpose specified

3 In combination with the rotary digger, the loosening-plow F, provided with the guide bars or rods *f*, which are secured to and extend rearward, upward, and inward from the same, substantially as and for the purpose shown.

4. A rotary digger, revolving in a vertical plane, having an oblique angle to the line of draft, and provided with radial arms, the tines of which from front to rear are arranged upon a plane having an angle of about forty-five degrees with relation to said plane of motion, and which radially extend outward and slightly rearward in a forward curve, substantially as and for the purpose set forth.

5. The construction, combination, and relative arrangement of the loosening-plows, rotary digger, and reciprocating separator, substantially as and for the purpose shown and described.

6. The means employed for suspending the separator U and *u*, and imparting thereto a horizontally-reciprocating motion, consisting of the pivoted bars V and W, the rod X, the pivoted lever Y, and the cam-grooved disk Z and *z*, all constructed and combined to operate substantially as and for the purpose specified.

7. In combination with the main frame and pole section, the levers B' and C', pivoted together, and connected with said parts, in the manner and for the purpose substantially as shown.

144,084.—Manufacture of Music-Box Cylinders.—ARNOLD FRANKFELD, New York, N. Y. Application filed October 11, 1873.

To make the duplication of music-box cylinders, of a particular toothing, easy and accurate.

Claim.—A pattern-cylinder receiving within it the music-cylinder, and provided with holes at places corresponding to the position where the pins are to be placed in the music cylinder, and through which holes the music-cylinder is bored or marked, as specified.

144,085.—Composition for Preserving Dead Bodies.—JOHN M. GALLAGHER, Carthage, N. Y. Application filed September 13, 1873.

Claim.—A disinfectant compound formed of alum, chlorate of potash, corrosive sublimate, and alcohol, in the proportions set forth.

144,086.—Apparatus for Dispensing Soda and Mineral Waters.—WILLIAM GEE, New York, N. Y. Application filed September 12, 1873.

A stand-pipe divided into two compartments receives all the supply and draft pipes into one of them and the waste-pipe in the other. The waste-pipe and the wall of the compartment inclosing it are perforated at such points that water may be drawn off free from scum or sediment.

Claim.—1. The combination, with a cooler or draft-stand for soda and mineral waters, of the stand-pipe having two compartments, one for the waste-pipe and the other for the delivery-pipes of the soda and mineral waters, substantially as and for the purpose herein set forth.

2. The combination of the waste-pipe D, perforated with holes *e e*, as described, and its compartment *a* of the stand-pipe, perforated some distance below the waste-pipe holes with holes *f f*, essentially as and for the purposes specified.

144,087.—Method of Laying off Shoe-Uppers.—CONRAD GLANVILLE, San Francisco, Cal. Application filed August 13, 1873.

Claim.—The within-described pattern or method of cutting uppers for shoes, in which the rear edges of one piece are laid off against the front edge of the next, and the tops all laid in the same line, as set forth.

144,088.—Steam-Generator.—WILLIAM GOLDING, New Orleans, La. Application filed May 13, 1873.

Steam is generated by means of heated masses of metal placed in the closed chamber. Intended for street-cars.

Claim.—A steam-generator having within its water-space a closed chamber, A, for the reception of heated masses of metal, substantially as and for the purpose specified.

144,089.—Shuttle-Box-Operating Mechanism.—ROBERT B. GOODYEAR, Wilmington, Del., assignor to himself and JOHN GREENHALGH, Philadelphia, Pa. Application filed August 29, 1873.

The shuttle-box supporting-rod is pivoted to the vibrating stepped lever, moved by the vibrating pawl on the reciprocating slide-rod. A projection from the box-rod rests on the edge of the cam-lever, and these parts are always in contact when the boxes descend or are at rest. The pawl is moved from the pattern-cylinder.

Claim.—1. In a drop-box loom, the combination, substantially as described, of a pawl, A, controlled by a pattern wheel or chain, the stepped lever B, and the rod D, supporting the drop-boxes, and hung to and deriving its upward movement from the said lever B.

2. The combination, substantially as described, with the drop-box rod D, of the lever F, acted on by a spring or weight, and formed with a series of cam-like inclines and shoulders for facilitating the proper adjustment of the said rod, and for sustaining the same after adjustment.

3. In a drop-box loom, the combination, substantially as described, of the stepped lever B, the stepped cam-lever F, the pawl A, controlled by a pattern wheel or chain, and the drop-box rod D, hung to said lever B.

144,090.—Balanced Slide-Valve.—OTTO H. GROSSBERG, Ferrysburg, Mich. Application filed July 15, 1873.

The openings in the valve, in connection with the opening in the fixed plate, are to allow the exhaust steam to form a cushion in the opposite end to that in which live steam is admitted to the cylinder. The live steam enters the port that is usually used for the exhaust.

Claim.—1. The valve B provided with the openings F *i i*, and the plate C provided with the channel *j* and ports H H, constructed and arranged in the steam-chest D with relation to the induction E, side pipes G G, and eduction K, substantially as and for the purpose set forth.

2. The valve B, working under the plate C, and provided with the cavity or opening F for conveying steam from the induction E to the ports G G alternately, substantially in the manner described.

3. The arrangement of the openings *i i* in the valve B with relation to the channel *j* in the plate C for cushioning the exhaust side of the piston with steam from the other side thereof as it approaches the end of each stroke, substantially as described.

144,091.—Suspenders.—SAMUEL HAMM, Philadelphia, Pa. Application filed September 13, 1873.

A pair of suspender button-straps are cut from a single piece in such a manner that the tongue-piece, which is cut out from between the two straps, is doubled up and folded over to secure the ends of the shoulder-straps.

Claim.—1. The piece B, constructed of a single piece, as shown and described, to form the straps *b b* and tongue C.

2. In combination with the piece B, having the straps *b b* and tongue C formed of a single piece, the bands A A, substantially as shown and described.

144,092.—Saw-Set.—HUBERT C. HART, Unionville, Conn. Application filed August 22, 1873.

The oscillating lever-guard *d* is elevated and depressed by means of the set-screw *e*, and clamps the saw firmly while the tooth is being set by the jaw *b'*.

Claim.—The combination of the handle *a* having the jaw *a'* and finger a^2, the handle *b*, lever b^1, and the oscillating lever-guard *d* d^2 d^3, with its screw *e*, the whole constructed, arranged, and designed for operation and use substantially as described.

144,093.—Whip-Socket.—JOHN HERBERLING, Mount Pleasant, Ohio, assignor of one-half his right to CHARLES L. MCCOY, Wheeling, W. Va. Application filed July 29, 1873.

Claim.—The combination of the short socket C, with a recess in its back, and the extended curved plate A, with its lower curved end extending into the recess in the socket C, the plate A being secured to the dash-board, and the socket C pivoted to said plate, all substantially as set forth.

144,094.—Fastening for Pocket-Books.—FREDRICK HEILES, New York, N. Y. Application filed August 20, 1873.

The face-plate is made in two conforming sections, the upper one being rigidly attached to a base-plate, while the lower one is pivoted to the same base, and acts as a spring-catch, having a projecting perforated tongue, which is concealed by the upper section. When the spring-catch is drawn back, its perforations come opposite to those of the upper section to admit the barb attached to the closing flap.

Claim.—In a fastening for pocket-books, the jaw *c*, pivoted at one end upon the case A, forming a continuation of its face-plate *d* when closed, in combination with the spring *d'*, locking-arm *f*, and barb *h*, all constructed as herein shown, for the purpose specified.

144,095.—Foot-Warmer.—WILLIAM HEIKENBUTTEL, Brooklyn, N. Y. Application filed September 27, 1873.

Two orifices are provided, so that when hot water or hot sand is poured in at one air may pass out at the other.

Claim.—The foot-warmer herein described, consisting of the earthenware vessel A provided with depressions *a a*, passages *b c*, and a transporting-handle, substantially as and for the purpose specified.

144,096.—Eyelet for Harness-Traces.—NICHOLAS HIATT, Plum Hollow, Iowa. Application filed September 15, 1873.

Claim.—The bar B, provided with the eye C and head or clip D, and secured within the end of a tug or trace, A, substantially as and for the purposes herein set forth.

144,097.—Faucet.—PAUL HILLE, Union, N. J.—CASE B. Application filed June 27, 1873.

A plate provided with converging perforations is adjusted at the exit of a faucet, in order to cause an even flow of fluid therefrom, and concentrate the steam.

Claim.—The combination, with a faucet, of the convex plate arranged in its mouth, and perforated with converging holes, substantially as and for the purpose specified.

144,098.—Governor for Steam-Engines.—JOHN C. HOADLEY, Lawrence, Mass. Application filed August 1, 1873.

Slotted arms, connected and working together on a pin, are attached to a slide and sleeve working up and down on two additional arms in the pulley or fly-wheel. The sleeves have on them adjustable weights at right angles, which, by the centrifugal force, cause the sleeves to move away from each other, while two bow-springs, when the speed slackens, produce counter movements of the sleeves.

Claim.—1. The slotted arms *g g*, the stud *i*, and slide *k*, arranged and combined together and applied to the eccentric F, the fly-wheel or pulley B, and the sleeves *c c*, provided with the connected springs *d d* and the weights C, all essentially as specified.

2. In the governor, the two series C C of weights, and supporting-arms d' d' d' d', constructed and arranged with the two sleeves, as explained.

3. In combination with the slotted arms *g g*, applied to the sleeves *c c* and slide-stud *i*, as set forth, the counterbalance weights or projections *r r*, such being for the purpose specified.

144,099.—Sower, Planter, and Cultivator.—SQUIRE D. HOPKINS, Milford, Kan. Application filed February 27, 1873.

This is a convertible machine that may be used simply as a cultivator, or seeder, or corn-planter. There are three shares in each gang. The middle one is provided with a seed-tube, and this can be set forward, so as to become an opener, while the other two act as coverers.

Claim.—1. The combination of plow-yoke H, frame G, plow-beams N N, and lever I, when arranged and operating as shown and described.

2. The combination, with each other, of the three plows u' u^2 u^3 in one group, when the middle plow, u^2, is made movable lengthwise between the others, as set forth.

144,100.—Screw-Threading Machine.—ELI HORTON, Windsor Locks, Conn. Application filed January 21, 1873.

The bed *b*, supporting the head and tail stocks, is reciprocated by a screw beneath. A revolving shaft *d*, obliqued to the bar to be cut, which is hung between the centers, carries a milling cutter, that forms the thread as the bar is moved with the bed. The bar is revolved in the same direction as the cutter by gear connections. The lower edge of the cutter revolves in a pan of oil.

Claim.—The combination of the tail-stock, the cutter-shaft *d*, running underneath the tail-spindle b^4, the cutter *c*, and the oil-box *g* underneath the cutter, all constructed, arranged, and designed to operate substantially as described.

144,101.—Cuff-Holder.—GEORGE W. JAMES, Jersey City, N. J. Application filed October 6, 1873.

The bent spring-plate is hooked into a loop upon the coat-sleeve, and the edge of the cuff is clamped between its ends.

Claim.—The cuff-holder consisting of the spring-plate C and loop *c*, constructed substantially as described and shown.

144,102.—Railway-Switch.—SAMUEL H. JENKINS, Nashville, Tenn. Application filed May 3, 1873.

The switch is of that class in which double switch-rails are simultaneously shifted in opposite directions by a long shaft with cranks and pitmen, thus dispensing with the use of frogs. In this case the shifting-lever which operates the shaft is heavily weighted, the weight falling against inclined pillow-blocks in the two positions which it assumes, where it is retained by spring-catches and a spear-shaped latch. This arrangement, while retaining the switch sufficiently under ordinary circumstances, allows the same to yield under an emergency, when wrongly placed, the train pressing the rails into parallelism, and throwing the weighted lever over to the opposite pillow-block, thus setting and holding the switch automatically.

Claim.—1. The combination and arrangement of the pivoted rail E, shifting-bar H, and crank-rod F, having one of its cranks, *b*, and its weighted lever K in the same plane with each other, and the latter resting upon an inclined pillow-block, L, substantially as and for the purpose set forth.

2. The pillow-blocks L L, weighted lever G, spear-headed catch *d d*, clamp-springs *e e*, or their equivalents, in combination with rod F, cranks *b c*, bars H I, and switch-rails C C and E, all arranged as and for the purposes set forth and described.

144,103.—Cask for Transporting Oils, &c.—WILLIAM JENKINS, The Willows, Abergavenny, England. Application filed October 11, 1873.

The cask is covered with felt, which is coated with lime or chalk wash to prevent leakage and render the felt less absorbent of heat.

Claim.—A wooden cask, covered either wholly or partially with felt, or other equivalent material of a compressed fibrous character, for the purpose specified.

144,104.—Slate-Frame.—ALBERT H. JOCELYN, New York, N. Y. Application filed June 25, 1873.

The artificial or other slate slides into grooves in the frame, which it supports, and is held therein by a peg or cord. Two or more slates can be used.

Claim.—1. The combination of the diaphragm D with the side and end pieces A A and B B of the frame, and the slot or slots *b* for the removable slate or slates, said diaphragm serving to brace the frame pieces together, and to form a back or support to the slate or slates, essentially as herein described.

2. The combination, with the slot or slots *b* in the frame, of the cross-hole *d* and the slate or slates C, substantially as and for the purpose herein set forth.

144,105.—Heating-Stove.—JOSEPH JOHNSON, Harrisburg, Pa. Application filed October 26, 1871.

The sliding plate H', with its flange A, regulates the quantity of heat to be radiated into the room in which the stove is placed, as well as the quantity to be discharged into an apartment above.

Claim.—1. The combination, with the casing of the stove and with the space G, of the heating-chamber E, arranged as set forth.

2. The combination of the casing D, the permanent heating-chamber E, the slides H and H', and the annular space G communicating with the upper rooms.

3. The combination, with the casing of the stove, of slides H H', having inner flanges A, and adjustable to form chambers of varying extent, as set forth.

144,106.—Toy Money-Box.—CHARLES C. JOHNSON, Somerville, Mass. Application filed July 10, 1873.

When open to its fullest extent the door remains open and the figure holds a plate to receive any coin that may be offered. Upon moving the door slightly, to pass the point at which the spring holds it open, the door is automatically closed by the same, the figure depositing the money in the vault to the rear.

Claim.—1. The toy bank having the partition *f*, with its money-slot *v*, and the image *o* and its plate *p*, operated by the spring *r*, to carry the money through the slot *v*, and to close the door, when the said parts are combined and arranged substantially as shown and described.

2. In combination with the door and image *o*, the wire link *w*, arranged to move the image as the door is opened and closed, and to hold the door in open position, all substantially as shown and described.

3. In combination with the rods *g*, the inclines *k* for securing the rods, substantially as shown and described.

4. The spring *r*, in combination with image, for throwing it inward and shutting the door, and with the spring-link to hold the door open, all substantially as shown and described.

144,107.—Shifting Top for Vehicles.—MARTIN B. KELLER, Penn township, (near Litiz,) Lancaster county, Pa. Application filed July 5, 1873.

A seat so constructed that either the back or sides can be

combined with the seat, whether or not a top is permanently attached to the sides.

Claim.—The seat A, with its shouldered offset a extending around three sides, and provided with catch-plates B B B' B' and latches C, in combination with the detachable back and sides E and braces D D D' D', arranged substantially in the manner and for the purpose set forth.

144,108.—Peanut-Roaster.—DANIEL KELLOGG, Ypsilanti, Mich. Application filed August 22, 1873.

The basket has a metallic bottom surrounded by a downwardly-projecting flange, to which is secured a chamber in which is hung upon gimbals a lamp for heating the bottom of the basket. A damper or valve may be interposed between the lamp and this metal bottom to regulate the heat. A revolving stirrer is provided above the bottom plate. The whole apparatus is furnished with a knapsack-sling for convenience in carrying.

Claim.—A peanut-roaster consisting of the body A, bottom B, cover C, flanged stirring-ring D D', crank b, flange E, diaphragm H provided with the slats I, base-chamber F, lamp G, and sling J, substantially as and for the purpose set forth.

144,109.—Bonding-Machine.—SMITH W. KIMBLE, Springfield, Ill. Application filed September 13, 1873.

The arm g^3 of the segment G carries friction-rollers E (bearing on the material) and e bearing under the arm D of the frame B.

Claim.—A vibratory segment provided with slotted arms, between which are placed the side rolls F and reciprocating top roll E, combined, as described, with a curved convex former, C, and a superposed bar, D, the subjacent surface of the latter gradually approaching the top of the former from front to rear, as set forth.

144,110.—Fish-Grappling Spear.—JONAH W. KNAPP, Cross River, N. Y. Application filed July 12, 1873.

Striking the fish near the joint of the jaws instantly springs them to seize the prey; the jaws may also be sprung at the will of the fisherman by an S-lever operated by cords attached to a sliding sleeve upon the handle.

Claim.—1. The combination of a cam, N, with jointed springs C, grappling-hooks A, and the devices for opening and setting said hooks, the cam being so arranged that it relaxes the tension of the springs preparatory to the opening of the hooks, substantially as specified.

2. The arrangement of the rock-lever cam N, rod G, the rods and chain or cord I, and the sleeves E F, for restoring the tension of the springs after setting the hooks, substantially as specified.

3. The combination of the tripping-rod T with the jointed spring-actuated grappling-hooks A and stock, substantially as specified.

4. The combination of the adjustable clip O, springs C, cam N, rock-lever H, and the spear-stock, substantially as specified.

144,111.—Saw-Jointer.—SAMUEL D. KNIGHT, Bryan, Ohio. Application filed August 13, 1873.

Claim.—A device for jointing long saws, consisting of the slotted file-holder a, having legs to form an extended bearing on both sides of the saw-blade, and provided with set-screws f g, as shown and described.

144,112.—Construction of Tunnels and Sewers.—GEORGE KNOLL, San Francisco, Cal. Application filed January 17, 1873.

The tunnel is made of bricks, numbered for curvature, formed with tongues for matching, and pierced with holes for the reception of the longitudinal supporting-rods upon which they are strung. The structure is thus bonded together without mortar. An extensible brace, C, is placed transversely in the structure for sustaining gas and water pipes laid therein.

Claim.—1. The structure S, built with numbered bricks B B', through the bodies of which rods or tubes r r are run longitudinally so as to string several together for preserving the shape of the structure, substantially as and for the purpose herein set forth.

2. The compound adjustable braces C, provided with necks n n', flanges b b', and curvatures z z', in combination with the tongued and grooved bricks B B' and longitudinal rods r r, substantially as and for the purpose hereinbefore set forth.

144,113.—Splicing Fence-Rails.—DANIEL W. KNOWLES, Hotchkissville, Conn. Application filed August 27, 1873.

The joints are covered on top and bottom by flanged metal plates, connected together by bolts and nuts. The upper plate of the top rail is extended laterally, and provided with a socket for top of post. The upper plate of the lower rail is also extended laterally, and provided with an elongated perforation for reception of lower end of post.

Claim.—The herein-described fence-rail coupling, consisting of the plates C D with their flange e, and formed with a socket or perforation to receive the post, substantially as described.

144,114.—Combination-Padlock.—WILLIAM C. LANGENAU, Cleveland, Ohio, assignor of one-half his right to JOHN ADAM LANGERT, same place. Application filed September 22, 1873.

The notched disks are held in contact with the stud or driving wheels by means of an oscillating plate having curved projections that bear against the supporting-plate of the said disks. By turning the oscillating plate in one direction its curved projections will enter notches in the supporting-plate, and allow a spring to throw the notched disks out of contact with the stud-wheels when the combination can be changed as desired.

Claim.—The plate K, fitted to move on stud L, having the curved projections k k, combined with subjacent plate H having notches A A A, as and for the purpose described.

144,115.—Tassel-Top.—HENRY C. LEES, Camden, N. J., assignor to ELIZABETH F. LEES, same place. Application filed April 19, 1873.

Claim.—A tassel-top composed of a number of separate blocks, A B C, &c., inclosed in a continuous braided cover, F, substantially as herein described.

144,116.—Reciprocating Winnower.—ERASMUS LOMBARD, Plymouth, Mich., assignor to himself and AUGUSTUS H. COLBY, same place. Application filed April 8, 1873.

Claim.—1. In a grain-separator, the arrangement of the shoe to vibrate on a central axis, substantially as shown and set forth.

2. The combination of the centrally-pivoted shoe D with the friction-roller e, arranged to roll in recess e', and link H, lever G, and cam-grooved fan-shaft F, as described.

144,117.—Hoop-Lock.—THOMAS E. LUCAS, Chesterfield, N. C. Application filed July 19, 1873.

The ends of the hoop are split and secured in conical receptacles by wedges.

Claim.—1. The wedge-shaped sockets C, connected by the plate D, and arranged opposite with a space, E, between them to admit of the insertion and removal of the wedges D, as shown and described.

2. The combination of the block I and screw J with the sockets C C, as and for the purposes described.

144,118.—Hand Washing-Rubber.—AUSTIN S. MANN, Pittsburg, Pa. Application filed October 13, 1873.

Two rollers are pivoted in a suitable frame, to which is attached a hollow handle for containing water that may pass through openings onto the clothes to be washed.

Claim.—1. A hand washing-rubber composed of one or more rubbing-rollers and a hollow hand-piece, forming a reservoir, F, substantially as and for the purpose specified.

2. A hand washing-rubber composed of one or more rubbing-rollers and a hollow hand-piece, having covered passages f f, central port f^1, and small discharge-holes f^2, substantially as and for the purpose specified.

144,119.—Beer-Drawing Attachment for Casks, &c.—SAMUEL MARKS, San Francisco, Cal. Application filed June 28, 1873.

Consists of a receptacle, having a controllable valve and a porous plug in it, arranged between the key and the point of drawing the beer, whereby more or less of the gas is allowed to escape from a small quantity of the beer in the receptacle.

Claim.—The vessel B, having suitable connections for receiving and drawing off the beer, in combination with the porous plug D and controllable valve A, substantially as described, for the purpose set forth.

144,120.—Means for Operating Heavy Guns.—ALEXANDER MONCRIEFF, Culfargie, Scotland. Application filed June 29, 1870.

Claim.—1. The construction of the parts herein described, whereby the air is hermetically inclosed in a reservoir, and the action thereof controlled by a stop back-valve for retaining the air-pressure when the gun has descended after firing, and by a by-pass, provided with a valve for allowing the air-pressure to effect the raising of the gun-carriage.

2. The air-pump N, when constructed and combined as described, with the air-vessel I and cylinder E, for the purpose of furnishing air to the air-vessel and water to the cylinder, as may be required.

144,121.—Organ Reed-Board.—WILLIAM MUNROE, Worcester, Mass., assignor to THE MUNROE ORGAN-REED COMPANY, same place. Application filed August 26, 1873.

The roof of the reed-cells is a glass plate slid into grooves, holding it firmly in place.

Claim.—In combination with the openings d of the cells of a reed-organ, the glass plate e, substantially as and for the purpose described.

144,122.—Fire-Escape.—SAMUEL MUMBET and EMIL ZUBENBUHLER, Philadelphia, Pa. Application filed June 7, 1873.

The block around which the rope passes is readily detached from the box, so that the rope can be taken off or put on at pleasure and the block replaced in the box.

Claim.—The combination, substantially as described, of the detachable grooved block A' with the box D and its lid E.

144,123.—Bit-Stock.—D. APPLETON NEWTON, New York, N. Y. Application filed September 16, 1873.

The jaws for retaining the shank of the bit are made convex in outline between a and b, which, in connection with opening bevels at c, touch the shank at two points.

Claim.—A bit-stock having jaws with the faces of their grooves formed crowning between the points a and b, substantially as shown and described.

144,124.—Toy Building-Block.—ABRAHAM OSBORNE, Jr., Baltimore, Md. Application filed September 23, 1873.

Claim.—1. The toy building-blocks and pieces A B D, herein described, when constructed in the manner and for the purpose specified.

2. The jointing-block D, provided with holes d' d', in combination with end-tenoned connecting-pieces, as and for the purpose specified.

144,125.—Wrecking Apparatus.—MILO OSGOOD, Cleveland, Ohio. Application filed August 4, 1873.

A separate device, adapted to clamp and hold a cable under tension, formed a cable-clutch, is combined with ropes and buoys so as to be adjusted upon and hold the cable drawn around a sunken wreck. Also, in combination with the encircling cable, a dog or hook held in contact with the vessel by buoys until the hoisting apparatus is attached, when they serve as an additional or auxiliary hold upon the wreck.

Claim.—1. The cable-clutch consisting of the sheave I and pawls J, in combination with the sheaves b and side plates, substantially as and for the purpose set forth.

2. The pawls J and ropes K, in combination with the ropes M and sheaves b, substantially as and for the purpose set forth.

3. The cable-clutch connected with the buoys, in combination with the cable A, operating conjointly, substantially as and for the purpose set forth.

4. The dog D, hinged to the cable by the eyebolt a, in combination with the cable and chain C', substantially as and for the purpose set forth.

144,126.—Shutter-Fastening.—JULIUS PARKER, Meriden, Conn., assignor to CHARLES PARKER, same place—Case B.

Application filed September 24, 1873.

The cylindrical case of a shutter-fastening is cast with a flange upon one end and a series of teeth or serrations upon the other end.

Claim.—The barrel A, when cast with the flange C upon one end, and the teeth c upon the other end, and inclosing the lever B, in combination with the collar E, having a single screw-thread cast upon its inner edge, so as to engage the teeth c, substantially as described.

144,127.—Hoe.—HARRISON PARKMAN, Philadelphia, Pa. Application filed July 24, 1873.

The hoe-blade is grooved from the center to the point, the broad part being flat, the cap which secures the blade to the handle sinking into the depression or groove. The handle-socket and tenon are angular in form.

Claim.—1. The combination, with the hoe-blade A B, having a central groove and rib, of the cap-plate I and handle-socket G, provided with tenon F, as shown and described.

2. The improved hoe-blade, formed of the wide straight-edged part B, and the pointed end A, provided with a rib, e, ridge C, and inclined sides, as and for the purpose specified.

3. The handle-socket G, made of rhombic form in cross-section, and arranged with the angles coinciding with the sides or edges of the hoe-blade, as and for the purpose specified.

144,128.—Chuck.—LEANDER PARMELEE, New Haven, Conn., assignor to himself and MERRITT HINE, same place. Application filed October 1, 1873.

The jaws D are made capable of grasping tapering spindles by being pivoted to the levers C, and are held parallel to the axis of the chuck, to prevent displacement, by the disk F, said disk being pressed forward by the spring N.

Claim.—The head A, having two or more levers, C C, arranged therein, provided with a spindle, B, and conical sleeve E, and the jaws pivoted upon the forward end of the lever, combined with the disk F in the rear of the said jaws, and a spring-pressure thereon, substantially as herein set forth.

144,129.—Cigar-Box.—ELIAS C. PATTERSON, Rochester, N. Y. Application filed October 23, 1873.

The cover is in two pieces hinged at the outside, one being wider than the other and lapping upon each other flush by means of rabbets in each. One cover is free to open to show the cigars, while the other holds them in the box, and is secured by means of metallic fastenings at the ends thereof. The revenue-stamp is applied to the wide part of the cover in the rabbet, and extends downward over the metal fastenings, and thence under the box.

Claim.—The cigar-box A, having lids B and C, constructed as described, in combination with the bent metallic fastener e e, over which the revenue-stamp is applied, and button I, or its equivalent, as and for the purpose set forth.

144,130.—Lamp.—JULIUS A. PEASE, Boston, Mass. Application filed August 8, 1873.

Adapted to burn adamantine, &c. An auxiliary tray holds a supply of burning material to feed the wick until the main portion of the material becomes sufficiently melted.

Claim.—1. The cup or tray C, having a central sleeve terminating in a spreader, substantially as and for the purpose specified.

2. The cup or tray having a central sleeve, in combination with the outer reservoir, provided with a central cylinder, and the wick-tube and its reservoir, substantially as specified.

144,131.—Nut-Lock.—SANFORD PRATTFIELD, Ipswich, Mass. Application filed August 20, 1873.

The nut is beveled on its inner surface, and the fish-plate grooved. A metallic washer is interposed between the plate and nut, and rests against the edges of the groove in the plate.

Claim.—The nut provided with the opposite bevels b b, in combination with the connection-bars A A', grooved longitudinally, and washer E, all being constructed, arranged, and applied together substantially in manner as shown and described.

144,132.—Lamp.—ORSON M. PERKINS, Meriden, Conn., assignor to EDWARD MILLER & Co., same place. Application filed April 30, 1873.

The socket, by which the lamp-bowl is connected to the pillar, is provided with a screw-thread corresponding to the screw-thread of a gas-fixture, independent of the nut by which the bowl is secured to the pillar.

Claim.—In combination with the bowl A of a lamp, and the cup D carrying the nut s and stump E, a threaded socket formed in the bottom of the lamp or attached to the said cup, substantially as set forth.

144,133.—Ice-Elevating Track.—ANTHONY PFUND, New York, N. Y. Application filed October 10, 1873.

Claim.—A slide constructed of a series of arms, B, which radiate from a central column, A, and support spiral stripe a, and a spiral rail, c, substantially as shown and described.

144,134.—Wrench.—LYMAN B. PRINDLE, Bantam Falls, Conn., Application filed July 12, 1873.

The jaws are arranged in a slotted cross-piece, and clamped at the desired point by thumb-screws.

Claim.—In a brace-wrench, the laterally-slotted transverse bar B, in connection with the lateral clamp-screws and the jaw-blocks, having biting shoulders e and hook projections d, the latter entering the slots of the bar B, and performed to engage with said clamp-screws, substantially as specified.

144,135.—Protection for Underground Telegraph-Wires.—EDWARD D. PRITCHARD, New York, N. Y. Application filed September 4, 1873.

A trough or tube filled with layers of solid beds, having upon their upper surfaces continuous grooves for the reception of line-wires, is provided at proper points with lateral chambers into which the grooves and wires turn from, and return to, the main trough upon short beds, alternate ones only of which are used as line-beds, the others being removable, to afford access to the wires.

Claim.—1. The chambers E, arranged upon opposite sides of the case A, and forming a continuation of the case or beds B, substantially as described, for the object specified.

2. The combination, with the bed or beds B and chamber or chambers E, of a movable grooved slide, substantially as described.

3. The case A, having the grooved chambers E arranged upon its opposite sides, in combination with the grooved beds B B and doors F, substantially as and for the purpose described.

144,136.—Shearing-Machine.—JOSEPH K. PRIEST, Nashua, N. H., assignor to himself, R. T. SMITH, JOHN G. BLUNT, and WILLIAM EARL, Jr., same place. Application filed March 26, 1873.

An equalising-plate forms a free bearing for the rear ends of the cutter-carrying arms, and is adjustable by a flanged screw acted upon by a spring. The cutters are notched at their points, and afterward "struck up" to form a concave or hollow bearing upon the comb. The universal gear employed is a spur-wheel having teeth which project beyond the disk, and a pinion hung so as to gear into the outside ends and insides of the said teeth.

Claim.—1. Two or more cutter-carrying arms, l, pivoted to a laterally-vibrating bar, G, in combination with the rear-bearing adjustable equalising-plate J, substantially as described.

2. The plate J, substantially as described, applied upon the cutter-adjusting device s of a shearing or clipping machine, for the purpose set forth.

3. The combination of spring S with the flanged adjusting-screw s and a bearing-plate for the cutter-carrying arms l, substantially as described.

4. V-shaped cutters, notched at w, substantially as described.

5. The shearing or clipping cutter applied to its arm, as described, and finding a flat bearing upon the comb-plate B by rocking free of the arm which carries it, as and for the purpose set forth.

6. The spur-wheel g, with its projecting or offsetting teeth, in combination with the pinion h, arranged to gear with it and permit the universal movement, as herein set forth.

7. The combination of the gearing g h, constructed as described, with the shields D and E, forming the elbow-joint between the driving and the crank shafts of shearing and clipping machines, substantially as described.

144,137.—Windmill.—SAMUEL H. RADWAY, Berlin, Wis. Application filed August 22, 1873.

The driving-wheel is so placed that its pitch-line will be at the prolongation of the axis of the turn-table. To compensate for the inclination of the upper section of the vertical shaft it is loosely coupled to the lower section.

Claim.—1. The arrangement of the geared driving-wheel of a windmill upon its shaft so that its pitch-line will be at a prolongation of the axis of its turn-table, substantially as and for the purpose set forth.

2. The construction and arrangement of the driving-wheel F, pinion J, and shaft H, with relation to the driving-shaft E and vertical shaft G, substantially as and for the purpose set forth.

144,138.—Machine for Dressing Staves.—JOHN J. RALYA, Cleveland, Ohio. Application filed June 18, 1873.

Devices are employed independent in their operation, so that when a stave thicker on one edge than on the other is fed in the rolls D are forced apart to conform to the section of the stave, which is presented directly in line to the knives.

Claim.—The blocks *a* and racks *c* on each end of each roll, in combination with the pinions *d*, springs *g*, and rolls D, substantially as set forth.

144,139.—Boring-Machine.—Benjamin F. Rea, Moses Pyke, and David M. Rennor, South Bend, Ind.; said Pyke assignor to said Rea and Rennor. Application filed August 2, 1873.

For boring holes at any distance apart, and either in wood or metal, by a simple change of the boring-bit.

Claim.—The combination of the shafts J and O O, provided with the bit-holders, with their respective bevel-gears, the frames G and H, and the adjusting-screws P, the several parts constructed and arranged substantially as described, for the purpose set forth.

144,140.—Floor-Clamp.—Henry J. O. Reed, Salem, Mass. Application filed August 30, 1873.

The pin C being inserted in a hole in one of the joist-timbers the eccentric curved surface *b* will force the plank to its place, the point *f* of the dog D retaining it in position.

Claim.—The floor-board set, consisting of the clamping-head A, bars B B, strengthening-plates *c c* with pivot-pin C, and the pivoted reversible retainer D, substantially as shown and described.

144,141.—Hydraulic Cushion for Water-Pipes.—William Ricketts, Cincinnati, Ohio. Application filed July 3, 1873.

A rubber diaphragm rests upon a metal disk corrugated on its upper surface and supported in a chamber connected to the pipe by a suitable spring, thus acting as a gentle cushion to yieldingly resist the ramming effects of the water.

Claim.—1. In connection with the interior of water-pipes, the elastic disk F and corrugated or indented plate D *d* operating in conjunction, substantially in the manner as and for the purpose specified.

2. In connection with the interior of water-pipes, the elastic disk F, corrugated or indented plate D *d*, and rubber or metallic spring G, operating in conjunction, substantially in the manner and for the purpose specified.

144,142.—Box-Clamp for Tobacco-Presses.—Thomas L. Robertson, Madison, N. C. Application filed October 4, 1873.

Claim.—The clamp formed of two blocks, A B, made of hard wood, notched across the grain upon their inner sides, and held together by two or more bolts, C, substantially as herein shown and described.

144,143.—Horse Hay-Fork.—Byron B. Rockwell, Waterford Mills, Ind. Application filed September 15, 1873.

The hoisting-rope is attached directly to the locking-levers, so that, when unlocked, the upper ends of the tine-extensions are brought toward each other, and the tines thereby made to release the elevated load.

Claim.—The combination, with the arms A A and tines B B of a hay-fork, of the locking-bars C C′ and the latch G, the bar C′ being provided with the projection *f*, and the two bars pivoted together at *e*, and having the hoisting-rope connected to them at said pivot, all substantially as and for the purposes herein set forth.

144,144.—Belt-Hole Cover.—Toppan P. Rodgers, Taunton, Mass. Application filed September 27, 1873.

To be secured over the belt-hole, and prevent rubbish and dirt from falling through the belt-hole upon the floor underneath.

Claim.—An improved belt-hole cover, formed of the parts A a^1 a^2 a^3 a^4, B b^1 b^2 b^3 b^4, and C c^1 c^2, said parts being combined to operate in connection with each other, substantially as herein shown and described.

144,145.—Pad for Pile-Trusses.—John L. Rowe, New York, N. Y., assignor to himself and Jacob A. Shermann, same place. Application filed September 25, 1873.

A hollow pad, of rubber, is inflated and held against the rectum by suitable attachments. It is furnished upon one of its sides with a pocket to hold medicaments.

Claim.—1. The inflated rectum-pillow made with loops *f f* for connecting the same to the straps, the parts being constructed and applied substantially as set forth.

2. The rectum-pillow and pocket, combined substantially as set forth.

144,146.—Corn-Ground Marker.—James H. Rykerson, Clayton, Ind. Application filed June 28, 1873.

The frame consists of a center beam, the front end of which rests upon a center-wheel, and the rear end carries a cross-beam and handles. Two diverging curved beams are bolted near the middle of center beam, their free extremities being furnished with a furrow-opener and a foot-piece to smooth the bottom of the furrow.

Claim.—1. In a corn-field marker, the detachable and adjustable guide or auxiliary marker H, substantially as specified, and for the purpose mentioned.

2. The marking-plow K and auxiliary marker H, united together by a bolt, in combination with the pivoted and slotted standard G, side braces E, and brace-rods P, substantially as specified.

144,147.—Instrument to Loosen Dried Fruits.—John F. Schmeltzer and Joseph M. Roberts, Winona, Minn. Application filed May 3, 1873.

Two spiral prongs turn in the same direction, and united at the upper parts in a shank and handle.

Claim.—The fruit-loosening instrument, consisting of two opposite spiral prongs turning in the same direction, and gradually expanding to encompass a cone-shaped space, said prongs being tapering in form to their points, and united at their upper ends into a shank having a cross-head, substantially as shown and described.

144,148.—Sounding-Plate for Musical Instruments.—Albert Schoenhut, Philadelphia, Pa. Application filed October 2, 1873.

The pieces or plates are cut from rolled bar-iron of the proper length, and then rapidly revolved, first with gravel and then with sawdust, to remove the scale but not the outer skin of the plates.

Claim.—A sounding-strip consisting of wrought-iron treated in the manner described.

144,149.—Building-Block.—Raphael M. Seldis, New York, N. Y. Application filed September 27, 1873.

Claim.—A building block made in the form of a cube or parallelopipedon, in two or more segments, fitted together by tongues and grooves, or by dowel-pins and sockets, with or without the tongue *g* and groove *h*, substantially in the manner herein shown and described.

144,150.—Apparatus for Depilating Animal Carcasses.—David H. Sherman, Jersey City, N. J. Application filed January 27, 1873.

A cylindrical apparatus having interior spring-arms converging toward the center. The animal is lowered into and through this cylinder.

Claim.—1. The hog-cleaning apparatus consisting of the vertical receiving and delivering cylinder, armed on its interior with downwardly-inclined scrapers, as herein shown and described.

2. The open trunk or conduit herein described, suspended from a scalding table or floor, and having a receiving-table at its lower end, upon which the cleaned carcass is delivered by the momentum of its own gravity, substantially as described.

3. The spring stripping-arms provided with spoon-shaped acting points to prevent injury to the skin, as herein shown and described.

4. In combination with the vertical trunk, provided with scrapers, as herein described, the endless hooked chain, as and for the purpose specified.

144,151.—Combined Frier and Broiler.—George Smith, Williamsburg, N. Y. Application filed March 19, 1873.

This broiler is composed of a vessel with a hinged lid and an interior perforated flange, upon which rests a gridiron having grooved bars and a nozzled edge, its handle projecting through the wall of the vessel.

Claim.—The broiling device herein described, consisting of the vessel A with its hinged lid, perforated rim D, and the broiler G with grooved bars and nozzle, constructed as shown and described, as and for the purpose specified.

144,152.—Machinery for Making Clothes-Pins.—John B. Smith, Sunapee, N. H. Application filed September 12, 1873.

The blanks, being fed on an endless belt automatically to the lathe-heads, are grasped and turned to the proper outline, and released to drop out below.

Claim.—1. The combination of the shaping-knife A, swinging knife-bed H, the adjustable lifting-and-lowering rod H^2, lever I, and cam F with a suitable frame, A, substantially as and for the purposes described.

2. The combination of the automatically-swinging knife-bed H, chamfer-cutter *i*, and rider-gage *i′*, substantially as and for the purposes described.

3. The automatic uncentering-hammer 5 and its operating connections G *g g′*, substantially as shown, and for the purpose described.

4. In a clothes-pin machine, the automatically-oscillating feed-table L′, in combination with the spindles C C^1, as and for the purposes set forth.

5. The endless feed-belt *l′*, in combination with the oscillating table L′, ratchet-wheel M, counterbalanced pawl *l*, and frame L, all constructed, arranged, and operating substantially as and for the purposes described.

6. The shaping-knife A, oscillating spindle C, movable stop J *j*, uncentering-hammer 5, endless feed-belt *l′*, oscillating feed-table L′, all combined and automatically operated substantially as and for the purposes set forth and described.

144,153.—Locket.—Samuel J. Smith, New York, N. Y. Application filed July 2, 1873.

Claim.—The combination of the two frames A A, secured together by the pins *e* and *f*, the box pivoted thereto by the pin *e*, as described, the stop piece *a* abutting against the pin *f*, substantially as and for the purpose herein specified.

144,154.—Sawing-Machine.—Edward H. Stearns, Erie, Pa. Application filed April 14, 1873.

The material is fed through the machine by rotating serrated disks suspended above and acting upon the material between the saws of the gang.

Claim.—1. The sheet-metal toothed disk or disks D′, arranged relatively to and in combination with the circular saws D, and operative conjointly therewith, substantially in the manner and for the purposes set forth.

2. The combination of one or more disks, D′, swinging frame H, arbor *d*, and gear-wheels d^1 d^2, relatively arranged substantially as set forth.

3. A guide or gage, *e*, having an inclined slot, e^2, at its rear end, in combination with a pin, *i*, and a recess in the feed-table, having an incline, *e*, substantially as set forth.

144,155.—Rotary Shears for Metal.—Melvin Stevens, Brooklyn, N. Y. Application filed September 9, 1873.

The cutting rings or disks are kept in contact by an end pressure applied to the ends of the rollers, and are so arranged as to carry one edge of each strip down and the other edge up.

Claim.—The rotary shears, made of two rollers, each formed with a shaft, cutting-rings, and intermediate cylindrical washers, when the shears are arranged, as set forth, to carry one edge of each strip down and the other edge up, and the cutters are all kept in contact by an end pressure given to one of the rollers, substantially as set forth.

144,156.—Hand Shower-Bath.—David Stirling, Eaton Rapids, Mich. Application filed August 11, 1873.

A perforated rose-head with a vent-tube is connected to a tapered sleeve adapted to fit over the neck of a bottle, the whole forming a hand shower-bath, which, when inverted, delivers a supply of air through the tube on the top of the fluid, so that it will flow freely out of the rose.

Claim.—The tube *a*, in combination with the rose A of a hand showering-vessel, substantially as described and shown.

144,157.—Self-Adjusting Telegraph-Relay.—Joseph H. Stowell, Winona, Minn. Application filed July 9, 1873.

Steel rods D pass through perforations in armature C, both being attracted by the magnets A. C and D are connected to opposite ends of a rocking-spring, E. Thus the tension of *s* is always proportionate to the strength of the current acting in the magnets.

Claim.—1. The combination of the magnets A, perforated armature C, wires D supported on suitable rocking post, spring E, and suitable connecting-cords, substantially as set forth.

2. In combination with a relay-magnet, a rocking spring, E, connected to two distinct armatures operated by one magnet, substantially as set forth.

144,158.—Evaporating-Pan.—George W. Storer, Philadelphia, Pa. Application filed October 14, 1873.

A steam-heated pan having wooden sides is constructed in sections for convenience of manufacture and transportation.

Claim.—1. The wooden sides E, fitted into the groove *e″* of the bottom A, and secured to or within said groove by means of the bolts H and caps I, substantially as and for the purpose specified.

2. In combination with the mitered ends of the side pieces E, the angle-plates F and bolts G, substantially as and for the purpose shown.

3. The hereinbefore-described evaporating-pan, having a sectional hollow metal bottom and wooden sides, said parts constructed and combined in the manner and for the purpose substantially as specified.

144,159.—Evaporating Pan and Plant for Salt Manufacture.—George W. Storer, Philadelphia, Pa. Application filed September 30, 1873.

A series of tanks, pans, and a drier are arranged conveniently around a boiler or other steam supply. The brine is heated and cooled in the tanks to deposit impurities transferred and evaporated in the pans, the salt removed to the drier, where it is showered with saturated brine, and subjected to air-currents induced by an exhaust connected with the bottom of the drier.

Claim.—1. The vessel D, provided with a reticulated bottom, *d*, and the base E, provided with the chamber E′ and waste-opening H, constructed and combined with each other, and with suitable water-showering and air-exhausting apparatus, substantially as and for the purpose shown.

2. The precipitating-tanks C and C′, the evaporating-pans B and B′, the drier D and E, and the showerer I, arranged as shown, and combined with suitable steam-generating and air-exhausting apparatus, substantially as and for the purpose shown and described.

144,160.—Paper-Folding Machine.—Robert J. Stuart, Yonkers, N. Y. Application filed November 16, 1872.

The paper is fed by belts over a folding-knife, which, rising, doubles it through the jaws of the lower nippers into the bight of the upper nippers, which, rising, extend the doubled sheet in vertical position, when the lower nippers seize its lower edge. The two pairs are now swung together, folding the sheet a second time. A horizontal knife now advances to form the last fold, the nippers being released, and deliver the sheet onto the tapes, which feed it out.

Claim.—1. In combination with the tapes C to advance the sheet, the folding-knife M, and jaws K L and *r r*, G H and *p p*, (one of which is adjustable to make the first fold,) constructed and operating substantially in the manner described.

2. The combination, with the knife M and jaws *r r* K L, of the nippers *p p* G H, for holding the sheet in position for the second fold, constructed and operating substantially in the manner described.

3. The combination, with the folding-knife M, jaws *r r*, and nippers *p p*, of the swinging arms G H and K L, for making the second fold, constructed and operating substantially in the manner described.

4. The combination of the nipper-arms K L with the jaws *p*, to form the bight or double for the third fold, substantially in the manner described.

5. The combination, with the swinging arms G H K L, jaws *r r*, and nippers *p p*, of the knife P for completing the third fold, substantially in the manner described.

6. The nippers *r* and *p*, constructed to automatically hold and release the sheet, substantially in the manner described.

144,161.—Elevator.—Jerome B. Sweetland, Pontiac, Mich. Application filed September 9, 1873.

One end of the guide-rod is attached to a lever which engages with a rack secured to the frame. A peculiar-shaped frame is combined with the carriage, by means of which wheelbarrows may be held securely while being elevated.

Claim.—1. The combination, with the beam A and windlass-bed C, of the guides B B, levers D D, and ratchet-bars *a a*, substantially as and for the purposes herein set forth.

2. The hooked arms G G, constructed as shown, and hinged or pivoted to the carriage E, substantially as and for the purposes herein set forth.

3. The combination of the beam A with pulleys *n n*, guides B B, carriages E E, rope *m*, and the windlass, all constructed and arranged substantially as and for the purposes herein set forth.

144,162.—Stopping Mechanism for Drawing-Frames.—Jerome C. Taft, Pawtucket, R. I. Application filed August 18, 1873.

Should the sliver break, the trumpet and its lever will fall and raise the clutch, so that the dog will be caught and held by one of the smaller clutches, and the machine be stopped. A bench in the sliver causes the clutch to be lowered, with a like result.

Claim.—The combination, with the trumpet *a* and its lever *g*, of the semicircular clutch *b*, containing the smaller clutches *c*, *d*, *e*, and *f*, and the rotating dog *w*, all in the manner and for the purposes described.

144,163.—Elastic Connection for Flexible Tubing.—William B. S. Taylor, New York, N. Y. Application filed October 15, 1873.

The elastic connection has a varying internal diameter, and its largest end is of sufficient length to turn back and lap over the binding-cord, to make a neat joint.

Claim.—The elastic connection for flexible but inelastic tubing, constructed and adapted to be fitted and secured to said tubing, as herein shown and set forth.

144,164.—Saddle-Tree.—Andrew Teas, Cincinnati, Ohio. Application filed February 8, 1873.

Claim.—A saddle-tree having the flanges *f* and alternate raised and sunken recesses B D, substantially as and for the purpose specified.

144,165.—Portable Fence.—Clayton A. Thomas, Bellbuckle, Tenn. Application filed August 16, 1873.

To an inclined brace, having its lower end on the ground and its upper end bearing against the second rail from top, are secured two short braces, which incline upwardly and downwardly, and, after passing between two of the central rails, cross each other to form a locking device.

Claim.—The triangular brace consisting of the post D and extensions G G, having the notches or depressions *a a′* for fastening between two adjacent rails of the fence-panel, substantially as and for the purposes specified.

144,166.—Child's Carriage.—William H. Towers, Boston, Mass. Application filed September 30, 1873.

Claim.—1. The guiding and driving shafts B, formed in the the shape of sled-runners, and attached at one end to the movable axle C, and having a bar, *d*, pivoted to their ends, so as to allow one of the shafts to be pushed forward and the other drawn back, as and for the purpose set forth.

2. The shafts B, connected by a bar, and adapted to be used as the driving and guiding shafts of a carriage, or as runners for a sled, as set forth.

3. The guiding and propelling shafts B, in the form of sled-runners, with a loose connection with one axle and a fixed connection with the other, substantially as and for the purpose set forth.

4. The braces *g* and handle H, of the form shown, combined with the body A and levers B, to convert the carriage into a sleigh, as set forth.

5. The carriage formed by combining the removable and reversible body A with the pole *b*, guiding-levers B, and running-gear, as set forth.

144,167.—Fall for Parlor-Organs.—William O. Trowbridge, Newton, assignor to Mason and Hamlin Organ Company, Boston, Mass. Application filed September 25, 1873.

A front fall or lid for covering the keys, consisting of a quarter section of a hollow cylinder, supported and swinging upon radial arms pivoted at each end of the key-board.

Claim.—A parlor-organ or similar instrument having a rigid curved fall, *d*, fixed to arms *h*, and pivoted to operate substantially as described.

144,168.—Hammock-Support.—Otis Tufts, Boston, Mass. Application filed August 16, 1873.

Two pairs of rods, each rod sliding on the other to the distance between the floor and ceiling, into which position they are

clamped by a lever having pawls working into a ratchet on the upper rod. These levers are hinged to a coupling-box fastened to the upper end of the lower rod, and also subserve the purpose of counteracting the strain of the hammock, which is attached to a hook on the upper end of each.

Claim.—1. The combination of the rods *a b*, couplings *c*, hooks *n*, and rods *e*, connected and operating to support a hammock, substantially as shown and described.

2. In combination with the rods *a b*, coupling *c*, and its locking-pawl, the buttons A *h*, substantially as described.

3. In combination with the rods *a b*, the brace-rod *o*, and its lifter-pawl *p*, and the coupling *c* with its supporting-pawl *f*.

144,169.—Oyster and Other Dredges.—Joseph Walker, Ludlow, Ky. Application filed August 27, 1873.

A dredge for gathering coals, oysters, &c., by a combined pitch-fork and pointed spade-frame attached to the mouth of a chain or other bag for collecting the loosened-up materials.

Claim.—The described dredging-scoop, consisting of the metallic frame A *a* C C′, converging bars F F′ G, forwardly-projecting prongs I I′, chain bag or basket H, suspending-bail D, and handle B, when arranged and adapted to be operated in the manner explained.

144,170.—Scarf-Clasp.—A. Richard Weiss, Brooklyn, N. Y. Application filed August 20, 1873.

Plates of spring-metal, one of which is bent over the other at its edges, are placed inside of the loop, and hold it in place on the free ends of the scarf by compression.

Claim.—A scarf-slide provided in its interior with two elastic blades, *a a′*, constructed substantially as described, for compressing and confining the free ends of a scarf when inserted therein, as set forth.

144,171.—Pump.—Edward Carlile Wharton, Philadelphia, Pa. Application filed October 9, 1873.

To free the pump from water, two arms are placed on the dividing-plate, which raise the upper valves on the full stroke of the seat-plate. The lower valves are raised by chains, which connect them to the seat-plate.

Claim.—1. The arms H, adapted to open the valves B on the full stroke of the seat-plate, as set forth.

2. The connections J of the seat-plate and lower valves, adapted to open said valves on the full stroke of the seat-plate, as set forth.

3. The arms H and connections J, in combination with the seat-plate and the upper and lower valves, substantially as and for the purpose set forth.

144,172.—Paper-Machine.—Charles Whealen, Dayton, Ohio, assignor to himself and Calvin L. Hawes. Application filed September 11, 1873.

The wire-cloth apron is above the felt. The weighted roller Q serves to cleanse this apron.

Claim.—1. The wire-cloth apron O, stretched around the upper pressing-roller P, and rollers S T, in combination with the felt D and lower pressing-roller I, as and for the purposes shown and described.

2. The weighted deflecting-roller Q, in combination with the apron O and rollers P S T, as shown and described.

3. The shield X, in combination with the apron O, roller P, and felt D, as set forth.

144,173.—Gaiter.—Mortimer M. Wheeler, Galena, Ill., assignor of one-half his right to James Jones, Dodgeville, Wis. Application filed May 9, 1873.

The upper portion of the quarters is made of a single piece of leather, and is secured to the seamless upper, which has a tongue or stay-piece turned up at the outside of the heel.

Claim.—The seamless piece D, in combination with the upper A, made in one piece, and provided with an opening and with a tongue at its heel, said tongue being turned up and sewed to the seamless leg-piece to stiffen and strengthen it, substantially as described.

144,174.—Steam-Engine Valve-Gear.—Jerome Wheelock, Worcester, Mass. Application filed July 10, 1873.

A cut-off valve and valve are each operated by a valve-spindle which partially rotates on its axis, and are combined with a latch-link for connecting the two valves, and a cam-lever which, by the governor, is made to control the connection of the latch-link with the cut-off valve. The valves are provided with hardened journals and fitted to hardened bushings in the bonnet. The valve-spindle has an inclined shoulder bearing against the inclined end of the bushing for adjusting.

Claim.—1. A cut-off valve and a valve which controls the induction of steam from the cylinder, each of which is operated by a valve-spindle, which partially rotates reciprocally on its axis, in combination with a latch-link for connecting the two valves, and a cam-lever which, by the movement of the governor, is made to control the connection of the latch-link with the cut-off valve, substantially as described.

2. A double-acting valve for controlling the induction and eduction of steam to and from the cylinder, and a cut-off valve, each arranged to be operated by a reciprocally-rotating valve-spindle, in combination with a latch-link which connects the two valves, and a cam-lever controlled by the governor, and arranged to effect a disconnection of the latch-link with said cut-off valve, substantially as described.

3. The combination of a semi-rotating valve with a hardened journal fitted thereto, and hardened bushings fitted to the bonnets F, and to receive the journals, substantially as described.

4. The combination, with the bonnets F and the valve-spindles, of the longitudinally-adjustable bushings, substantially as described.

5. The combination of the valve-spindle with the inclined-faced shoulder adjacent to its inner end near the head of the valve, and the bushing, which is provided with a recess at the end for receiving the shoulder, substantially as described.

6. The combination of the eccentric bolt *k* with the latch-link and its actuating crank-lever, substantially as and for the purposes described.

144,175.—Faucet.—Joseph White, Philadelphia, Pa. Application filed August 29, 1873.

A bifurcated spring is arranged to press downward upon the grooved plug of a faucet, said spring being held in place upon a threaded stud on the body of the faucet by means of a screw.

Claim.—1. The spring F, having a bifurcated end, as shown, in combination with the grooved faucet-plug D and faucet A, substantially as and for the purpose specified.

2. In combination with the faucet having the spring F arranged to press upon the plug D, and the screw *c* to hold said spring, the threaded stud *c′* upon the body B, as and for the purpose specified.

144,176.—Loom Shedding Mechanism.—Isaac L. Wilber, Taunton, Mass. Application filed August 16, 1873.

In combination with upright heddle-levers, each provided with two arms at or near its pivotal point, so arranged as to embrace and to be positively operated by the rolls of a pattern-chain, horizontal notched spring-arms, loosely pivoted near the upper ends of the heddle-levers, are so arranged as to lock said levers when in their extreme position, and after the shed is formed.

Claim.—The notched spring-levers *e*, in combination with the upright harness-levers *d*, arms *l m*, and pattern-chain, and operating substantially as described.

144,177.—Cap for Scissors-Points.—Carrie W. Williams, New York, N. Y. Application filed September 22, 1873.

A rubber cap is connected by a cord and suitable catch to the bows of the scissors, and is used to protect the scissors-points from injury.

Claim.—The combination of the elastic cap B, the cord C, and catch *c′* or its equivalent, all as described, for the protection of the points of the scissors.

144,178.—Watchmaker's Lathe.—Charles V. Worrd, Waltham, Mass. Application filed April 16, 1873.

A sliding sleeve, with conical interior, is forced over a set of chuck-jaws of corresponding exterior by a powerful spring, and drawn back, when it is desired to release the jaws, by means of a combination of levers and treadle.

Claim.—1. The combination and arrangement of the gage-clutch *l*, sleeve *m*, nut *q*, spring *r*, mandrel *f*, and nut or collar A, substantially as shown and described.

2. The combination of the sliding clutch-sleeve *m*, spring *r*, for throwing forward said sleeve to close the chuck, the lever *t u*, link *v*, and lever *w n*, as and for the purpose set forth.

REISSUE PATENTS.

5,627.—Cooking-Stove.—James Easterly, Detroit, Mich.—Patent No. 113,643, dated April 11, 1871. Application filed July 19, 1873.

A portable cylindric magazine has an elliptical base extended laterally to feed fuel to an oblong fire-box. Attached to it, so as to cover several boiler-holes, is a curved base containing illuminating windows.

Claim.—1. A portable magazine-feeder for a stove, provided with a supporting-base, B, which is in form similar to a segment of a hollow cylinder or a segment of a hollow elliptical figure, and adapted for covering a plurality of boiler-holes, the said base being attached to and removable with the magazine-feeder, substantially as described.

2. The reservoir A of the portable feeder, constructed with a lower laterally-extended end, C, for evenly distributing the fuel in an oblong fire-box, substantially as described.

3. The combination of the windows *c* with a portable magazine, A, substantially as described.

4. In a portable magazine-feeder, the combination of a magazine which is circular in horizontal section along a portion of its length, and elliptical in horizontal section along another portion of its length, with a crown-shaped base which is attached to the magazine and portable with it, substantially as and for the purpose described.

5. A portable base-burning fuel-supplying apparatus, with a jacket around its magazine, holes *n n*, and apertures *p p*, substantially as shown and described.

5,628.—Harness-Pad.—John Hughes, Newark, N. J.—Patent No. 91,747, dated June 22, 1869. Application filed August 5, 1873.

Claim.—1. The plate B, fastened to the frame by a socket and by a screw, F, in combination with the nut C for holding the hook A, substantially as described.

2. The frame E for a harness-pad, with depressions in its upper and under sides for the reception of the plate B and nuts G for the terrets, as described.

3. The welt N, secured upon the bottom pieces O P by a single seam in a flat condition before being applied to the pad, in the manner and for the purpose specified.

4. In an iron frame for harness-pads, the holes L L, through which to pass the nuts after the pad is made up, substantially as described, for the purpose specified.

5. The removable plate K for closing the openings at I, as described, and for the purposes set forth.

5,629.—Harness-Pad.—John Hughes, Newark, N. J.—Patent No. 74,691, dated February 18, 1868. Application filed August 5, 1873.

Claim.—1. In an iron frame for a harness-pad, as described, the socket or recess for the nut H of the check-rein hook, as and for the purposes set forth.

2. In combination with the frame, as described, the strips B B for attaching the bottom and binding to the frame, substantially as described.

3. In combination with the iron frame of a harness-pad, the flexible pieces or foundations F, as described.

4. The braces K K, or their equivalents, as and for the purposes specified.

5. The binding and the bottom piece, stitched together in a flat condition before being applied to the frame, in combination with an interposed form, substantially as described.

6. The frame A, provided with recesses E E for screw-nuts, and with or without the rabbets B B, and holes V V, as and for the purpose set forth.

5,630.—Coupling and Steering Apparatus.—John McCreary, Middletown, Pa.—Patent No. 129,844, dated July 23, 1872. Application filed October 11, 1873.

Claim.—1. The combination of the two boats A and B, the steering-chain *c*, passing around sheaves or pulleys, and around the windlass C, or its equivalent, the overhanging guard or bumper on the stern of the forward boat, and the chain D attached to opposite points on the stern of said boat and to the stem or central part of the bow of the rear boat, so as to form a universal joint between them, and keep them coupled and centered, substantially as shown and described.

2. In combination with the boats A and B and the coupling and steering mechanism herein described, the claw-hooks A A, for attaching and adjusting the coupling and steering chains, substantially as set forth.

5,631.—Revolving Fire-Arm.—Jacob Ruperteus, Philadelphia, Pa.—Patent No. 43,906, dated July 19, 1864. Application filed May 9, 1873.

A detachable extracting-pin is arranged in the tubular base-pin, upon which the cylinder revolves. A rotating recoil-plate, E, is arranged in rear of the cylinder, which has a notch upon its edge, through which the nose of the hammer strikes the cartridge. It also has a gate upon its side, through which the cartridges are introduced into the cylinder, which, when closed, prevents them from falling out. A spring on the front side of the trigger extends up and engages with notches on the rear face of the plate to hold it in the position desired.

Claim.—1. The combination, in a fire-arm having a many-chambered revolving cylinder or barrel, of a fixed tubular base-pin and a detachable shell-discharging pin, as specified.

2. A breech-piece, E, intervening between the rear end of the barrel and the frame, and arranged to turn substantially as set forth.

3. The notch *m*, formed at or near the edge of the said breech-piece, as set forth, for the purpose specified.

4. The combination of the said movable breech-piece with the door G or its equivalent.

5. The said movable breech-piece, with its notches *t* and *q*, in combination with the spring I.

5,632.—Apparatus for Teaching Music.—Lewis A. Seward, San Francisco, Cal.—Patent No. 96,151, dated October 26, 1869. Application filed September 16, 1873.

An upright frame, supporting bars representing one or more music-staves, has at the bottom a key-board sufficiently raised to be readily visible, and which may or may not be connected with the manual of an instrument which will sound the tones of the respective keys upon their being pressed.

Claim.—1. A musical staff, D E F G H, constructed as described, provided with the wires *i* or equivalent, in combination with movable notes and rests, substantially as and for the purpose herein described.

2. The combination of an upright or partially upright supplemental key-board with the ordinary horizontal key-board of pianofortes or other like instruments, when the former is used in connection with vertical standards *c c*, on which are fixed transverse bars D E F G H, and front elastic strips *d e f g* h, provided with mechanical appliances for attaching removable notes, rests, &c., and means of connection with the horizontal keys of the instrument, substantially as herein described.

3. The frame C, having the cross-bars D E F G H, with or without the front strips *d e f g* h, and provided with the upright or partially upright key-board, when the parts are constructed substantially as described, and for the purpose specified.

4. The combination of upright or partially upright supplemental key-board with a horizontal key-board, when the two are connected by links and trackers, or equivalent connections, substantially as and for the purpose described.

5,633.—Mode of Attaching Knobs to Screws.—Charles H. Trumbull, Marlborough, N. H.—Patent No. 77,350, dated May 5, 1868. Application filed October 6, 1873.

A screw-shank, of uniform size throughout, has a gimlet-point at each end, and a groove or slot running along one side. One end of this screw is passed into the knob, and keyed securely therein by a wedge inserted in the slot. The other end is then turned into a drawer or other article to which a knob is to be attached.

Claim.—1. A knob attachment, consisting of a screw, as represented, without any central projection or shoulder, having gimlet-points at its opposite ends, and a groove arranged with and in the thread, substantially in manner, and for reception of a key, as specified.

2. A knob, composed of a head or body, B, a grooved screw, A, and the key C, all constructed and arranged substantially as set forth.

5,634.—Machine for Thrashing and Hulling Clover.—James Bradley and James Nicholas, Gomer, Ohio.—Patent No. 138,556, dated May 6, 1873. Application filed August 30, 1873.

A part of the feed-board may be adjusted so as to direct the grain to the shoe or to the hulling-cylinder, as may be desired, and is connected to the roller of the endless carrier by means of a crank and connecting-rod, by which it receives oscillations to prevent choking.

Claim.—The combination of the crank K, connecting-rod L, and crank M with the feed-board J and the roller of the straw-carrier, substantially as specified.

5,635.—Die for Cutting out Ornamental Forms of Paper.—Adolph Dalkemamp, Brooklyn, E. D., assignor to Jacob J. Nicholl, New York, N. Y.—Patent No. 137,063, dated March 25, 1873. Application filed August 21, 1873.

The female or pattern die A is of soft metal, while the male die B is of hard. The pattern-die is supplied with many slender pins protruding through it and flush with its face, which are pushed up as the dies are brought together, and, descending by gravity as the dies separate, force out the delicate figure of paper. The waste material in the male die is removed by similar pins mechanically raised.

Claim.—1. A pair of matched cutting-dies, one of hard and the other of soft metal, operating together to cut paper and analogous material, as herein specified.

2. In combination with dies A B, operating as specified, the clearing-pins *m*, sinking out of the way when the dies are acting, and protruded when the dies are separated, so as to expel the thin material by acting on thickly-distributed points on its surface, as herein specified.

5,636.—Manufacture of Steel Castings.—William Kelly, Louisville, Ky., assignor of one-half interest to Thomas C. Coleman.—Patent No. 122,253, dated December 26, 1871. Application filed January 21, 1873.

Claim.—1. The process herein described of preventing cracking, porosity, or other defects in steel castings by the employment of copper, or its equivalent, in a mold of sand, or other suitable material, substantially as herein set forth.

2. The process of pouring fluid steel into a mold while in a vertical position, with its thinnest edge uppermost, having the pouring-gate fixed thereon, and turning the same soon after pouring into a horizontal position to allow it to cool, substantially as and for the purpose set forth.

3. The flask mounted on journals, substantially as described, so that when turned over, the clamps being released, the drag, with the castings, will be thrown forward and thus free the casting from binding.

4. In the apparatus, the combination and arrangement of the flask with the floor-frame, the copes, the clamp-bar, set-screw, and trigger, all constructed substantially as described, for the purpose set forth.

5,637.—Mold and Core for Casting Steel.—William Kelly, Louisville, Ky., assignor of one-half interest to Thomas C. Coleman.—Patent No. 132,637, dated November 5, 1872. Application filed January 21, 1873.

Claim.—1. In combination with a copper flask or mold, or the equivalent of copper, the employment of sand, spring-metal, or any other suitable yielding cores, substantially as and for the purposes set forth.

2. The detachable gate and stirrup, substantially as and for the purpose set forth.

3. The tongs, center-fastenings, and steady-pins, substantially as and for the purpose set forth.

5,638.—Magic Lantern.—Lorenzo J. Marcy, Philadelphia, Pa.—Patent No. 92,330, dated July 6, 1869. Application filed May 31, 1873.

A magic lantern having a flame-chamber with its walls separate from the outer shell, and with transparent ends. Apertures in the bottom and top of this chamber allow the entrance of air and the escape of the products of combustion and heated air. Between the flame-chamber and lens-tube and reflector are air-passages.

Claim.—1. In a magic lantern, an outer case constructed substantially as described, with an opening through its top for the passage of the chimney, and with flanges attached to the chimney, forming the only connection between the two, to prevent overheating and leave an air-space between the case and chimney, as set forth.

2. The combination, substantially as set forth, of the outer case and its flanges with the inner case and its chimney, whereby the inner case is attached to the outer one above the flame-chamber through the medium of the flanges only, for the purposes specified.

3. The combination, substantially as described, of the open base, the open-bottomed tubular outer case, elevated above the base and connected thereto by short side flaps only, and the open-bottomed inner case, connected to the outer case by side flaps, to afford a firm support to the inner case, prevent overheating, and leave an air-space between the cases, as set forth.

4. The construction of a case, substantially as set forth, with a slotted diaphragm or deflector-plate, dividing it into a lamp-chamber and flame-chamber.

5. The combination, substantially as set forth, of a case, a slotted diaphragm or deflector-plate, and a lamp (without chimney or case) sliding under said diaphragm or deflector-plate.

6. The combination, substantially as set forth, of the flame-chamber, the chimney, and its deflecting-flanges, for the purposes specified.

7. The combination, substantially as set forth, of the lamp, the ribbed slotted diaphragm or deflector-plate, and the perforated metal screens under said ribbed portion of the lamp, to secure a bright, steady flame.

8. The construction, as set forth, of the base, the outer case, and the inner case with openings in their ends, constituting a lamp-chamber.

9. The base constructed as described, with guides or ways in which the lamp-case slides and is held.

10. The connection of the objective tube and base by means of pins *f*, loops *l*, and a spring-hook, *h'*, substantially as set forth.

11. The flame-chamber having glass ends, arranged so that an air-passage having an outlet, *p*, is left between the front glass H' and the lens-tube.

12. In a magic lantern, a flame-chamber constructed substantially as hereinbefore set forth, with opaque walls and transparent ends, and with openings for entrance of air and for the escape of the heated products of combustion, whereby a clear, steady flame is obtained without the use of a glass chimney.

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DIGEST OF FOREIGN PATENT LAWS.

SAXONY.

Report of Mr. J. H. Burnley, of the British Legation.

In compliance with your lordship's circular instructions of the 14th August, 1872, on the subject of the patent laws of Saxony, I have now the honor to report to your lordship the views of the Saxon government in this matter.

Baron Friesen, in a note addressed to me on this subject, gives the opinion of his government as follows:

"Considering the small extent of territory over which the legal effects of a Saxon patent extend, its owner will generally not derive much benefit, unless he has, at the same time, taken out one in Austria, Prussia, and the other great states. Another serious drawback is this, that, owing to this small extent of territory, descriptions of inventions are never published at once in Saxony, in order to allow the patentee time to obtain a patent in the neighboring states. This he is obliged to do if he wishes to secure a larger field of operation; otherwise his invention would soon be imitated in these states. As a natural consequence, it happens that Saxon manufacturers never know for certain and early enough for what inventions patents have been already secured in Saxony. With this exception the working of the patent laws has proved to be generally satisfactory.

"The number of patents taken out has been continually increasing; but so has the number of lawsuits; and it occurs now much more frequently than formerly that patents have to be canceled. The difficulty of deciding what is really a new invention is continually increasing. At the same time the majority of patents taken out every year are not by Saxons, but by Englishmen, Americans, and Frenchmen.

"Generally speaking, the opinion of Saxon manufacturers is much less in favor of patents than it used to be. Of the five chambers of commerce existing in Saxony, three (those of Leipzig, Zittau, and Plauen) have decidedly pronounced themselves in favor of an abolition of the patent laws, because they maintain that the advantage derived from them by individuals is much less than the injury which they do to free trade.

"The Dresden chamber of commerce is likewise more against patents than in favor of them, while the Chemnitz chamber, which represents chiefly the interests of the owners of iron foundries, alone advocates the maintenance of patents, with this proviso, however, that they should, in future, take effect throughout the whole extent of the German Empire; that the inventions for which they are taken out should be previously examined, and that full publicity should afterward be given to them. All, however, agree that it would not do for a small manufacturing state like Saxony to be the first to introduce changes into its legislation on this subject.

"Altogether the Saxon government is of the opinion that patents of invention are not of such great moment, either for good or for evil, as many people suppose. It is, therefore, thought that the decision on the question, either way, should be deferred until public opinion pronounce its final verdict, and that it should be left to the imperial government to take the lead in the matter, especially as the legislation on patents has in any case been assigned to the Empire. If, therefore, imperial legislation should some day decide upon the abolition of patents, whether by coming to an understanding on the subject with England and the United States or not, the conviction is generally entertained that this measure would not do any serious harm to industry."

I have the honor further to inclose two copies with translation of the patent laws of Saxony.

Inclosure 1.

Order in council of January 20, 1853, concerning the granting of patents of invention.

Section 1. Patents are granted only for such objects of industry which are really new and peculiar—that is to say, which, before the day on which the patent is

issued, have neither been produced within the territory of the federal states of Germany nor have been sold or made known there in any way, nor have been described in works published, either in Germany or abroad, in such a manner as to enable any competent person to produce them.

No patents are granted for medical drugs of whatever description; for new methods of preparing medicine; for cosmetics; articles of food, including those articles of luxury destined for consumption; all kinds of samples and patterns, as well as for general scientific fundamental truths.

SEC. 2. Patents may also be granted for improvements made upon articles which have already been patented; however, as long as the patent taken for the original invention is in force, the person who has introduced an improvement of the same can only avail himself of his patent if he has acquired the right of making use of the first invention from the original patentee.

SEC. 3. Natives as well as foreigners may apply for a patent. If a foreigner who is not a subject of one of the German federal states applies for a patent, he has at once to mention the name of a Saxon subject, residing in Saxony, who is to be his representative; at the same time, he has to show in his application that this representative of his agrees to undertake this office. The latter is then considered as the patentee in every respect as soon as the patent is granted.

SEC. 4. The rights which a patent confers upon the person who has obtained it, may be transferred to another person. The latter has, however, no right to claim protection for his privilege unless he is a subject of one of the German federal states.

SEC. 5. For an article the inventor of which is a subject of one of the German federal states, and has obtained a patent for it in one of these states, a Saxon patent is granted only to the inventor himself, or to the person who may have succeeded to his rights.

SEC. 6. The patentee has the right to demand that, throughout the Kingdom of Saxony, nobody should be allowed, without his consent, to manufacture the article, or carry out the invention, or apply the method of manufacture, or use the machine or tool for which the patent was taken. This right of prohition by no means extends to the importation of such articles which happen to be like the one that has been patented, or to the sale of the articles patented; nor is it forbidden to make use of the inventions patented, provided they do not consist in methods of manufacture or in machines or tools used for manufacturing purposes.

SEC. 7. This right of prohibition cannot be made use of against such persons who may have become acquainted with the article patented before the patent granted for it was issued. The patent does not, at the same time, confer the right of making a regular trade out of the manufacture or application of the article patented; in this respect the patentee is, on the contrary, entirely subject to the existing general regulations. Moreover, in carrying out his invention, the patentee is, at all events, bound to observe all the general or special rules which have been laid down in this respect with a view of securing public health and safety. In like manner he has to submit to the special directions which it may be thought necessary to issue for the same purpose in his particular case, owing to the peculiar nature of the invention to be carried out by him.

SEC. 8. Every patent is, in the first instance, granted for a period of five years, which begins to run from the day on which the document in question is issued. The latter may, however, be prolonged for another period of five years, if the patentee applies for it at the home office, at the latest, four weeks before the day on which the patent would otherwise expire. He has, in this case, to inclose the patent which he wishes to be prolonged, together with the sum of money to be paid for the prolongation. (See *Order in Council of January* 26, 1866, No. 4.) The latter is then inscribed on the patent itself.

SEC. 9. A patent is granted in Saxony only on condition that the invention for which it has been taken should be carried out or made use of in the Kingdom of Saxony within one year from the day on which the patent has been issued. This respite may, however, be prolonged if the patentee applies for it at the home office at least four weeks before the day on which it would otherwise expire. He has, in this case, to inclose the patent in question, together with the sum of money to be paid for the prolongation of the said respite. (See *Order in Council of January* 26, 1866, No. 2.) At the same time he is obliged to show that he has been prevented from carrying out his invention by obstacles which it was not in his power to remove. The prolongation of the patent is then inscribed on the patent. If the proposed prolongation cannot be granted, the sum of money which had been sent in for it is returned to the patentee, with the exception of the fee to be levied for the sentence to be delivered.

SEC. 10. Every patent ceases to be valid—

(*a*) If the time for which it was granted has expired;

(*b*) If it is canceled. This is done if it can be proved—

(*aa*) That at the time when the patent was granted the article patented was not new and peculiar in the sense of section 1;

(*bb*) That the patentee has rendered himself guilty of making false statements concerning the question to which country he belongs;

(*cc*) That the inventor of the article patented had already taken a patent for it in another German federal state, while the person who has taken the patent in question in the Kingdom of Saxony is neither the inventor himself nor his successor;

(*dd*) That the description and its appendices presented at the home office, according to Section 15, do not contain a complete or correct statement of the invention;

(*ee*) That the invention has not been carried out or made use of in the Kingdom of Saxony within the space of time mentioned in Section 9.

SEC. 11. As the object of the patent is always to be considered as an indivisible one, the patent has to be canceled, even if the circumstances mentioned in section 10 under *aa*, *cc*, *dd*, and *ee* should apply only to a portion of the article patented.

SEC. 12. The circumstance mentioned in section 10 under *aa* is to be considered as not existing if only some individuals have been acquainted with the invention before the patent was granted for it, and have kept their knowledge of it a secret.

SEC. 13. Every one has a right to propose to the home office that a patent should be canceled. He is, however, in such a case, obliged to prove that one of the circumstances mentioned in section 10 under *b* has really occurred. If he cannot prove this, he has to pay the expenses which may have arisen in the matter as far as he has occasioned them. The question whether a patent ought to be canceled or not has to be decided by the home office.

SEC. 14. Applications for a patent to be granted, or for the prolongation of a patent already taken out, or for a prolongation of the time allowed for carrying out an invention for which a patent has been taken, have to be addressed to the home office and to be presented to it. Whoever wants to apply for a patent has to inclose—

(*a*) A description and (according to the nature of the invention) either a drawing or a model of the object for which he wishes to obtain a patent. These must be of such a nature as to enable any competent person to carry out the invention, showing at the same time, distinctly, how far the article in question may be considered as new and peculiar;

(*b*) The amount of the fees to be paid according to No. 1 of the order in council of January 26, 1866. These fees will in no case be returned.

SEC. 15. The applicant is then informed by the home office (a copy of the present order in council being at the same time handed over to him) whether and to what extent his application has been successful or not; in the former case he is, at the same time, summoned to pay, within a fixed space of time, the tax and stamp duty prescribed by the order in council of January 26, 1866, under No. 2. If this sum is not sent in in time, the applicant is supposed to have given up his intention of taking a patent. If, on the contrary, the sum in question is sent in in time by the applicant, the document conferring upon him the patent applied for is immediately handed over to him.

SEC. 16. The granting, prolongation, or canceling of a patent, as also the prolongation of the time allowed for carrying out an invention patented, is published in the *Leipziger Zeitung*.

SEC. 17. The descriptions, drawings, and models sent in by the patentee are carefully kept under lock and key at the home office during the whole time for which the patent is granted. After the expiration of the same, or if the patent is canceled, the home minister has a right to dispose of them as he pleases. In particular he is, in such a case, entitled to publish them.

SEC. 18. Every patentee is entitled to demand from the authorities protection against all encroachments upon the privilege which his patent confers upon him in accordance with section 6 of this order in council.

The means of coercion to be employed for this purpose, as well as any other measures which may be thought necessary, are the same as those which, according to law, are to be employed in the case of other industrial privileges having been encroached upon, as far as the peculiarities of the case do not necessitate a modification of the same. If a person accused of having encroached upon the rights of a patentee denies the truth of this assertion, either on the ground that the article or the industrial process which have been designated as an encroachment upon the privilege of the patentee are not identical with the article or industrial process for which the patent has been taken out, or because he (the accused) thinks he has a right of impeaching the validity of the patent, contending that it is either altogether null and void, or, at least, with regard to the special point in question; and if the dispute becomes thus one of those controversies which, according to the law of January 30, 1835, sub. D, are to be decided by the administrative authorities, the proceedings prescribed by law for matters of this kind are to be instituted. The authorities have then to decide, according to the particular circumstances of the case, whether the administrative measures taken for the protection of the rights of the patentee shall, for the present, be revoked, or whether they shall be provisionally maintained until the point in dispute has been settled.

SEC. 19. If the question whether the article in dispute is identical with the article for which a patent has been taken, cannot be decided without consulting the descriptions, drawings, and models deposited at the home office, the latter are to be handed over to the competent authorities upon their demand, all those measures of precaution being at the same time taken which the peculiarities of the case may seem to warrant. If the said authorities require to hear the opinion of experts in order to enable them to pass a judgment on the above-mentioned question of identity, these experts must particularly engage themselves to keep the secret, unless they are regularly sworn in for the performance of such duties.

SEC. 20. If, in the cases mentioned in section 18, it is contended that a patent is altogether null and void, so that, according to section 10, it would have to be canceled, if the reasons for which it is impugned should prove to be founded on truth, a report has to be made to the home minister, and the decision of the same to be awaited, even if no express proposal has been made that the patent should be canceled.

SEC. 21. The costs arising in matters connected with the granting and prolongation of patents of invention have to be paid down, at the office of the home ministry, at the rate fixed by the order in council of January 26, 1866. As for the rest, the same principles and regulations concerning the payment of fees have to observed in matters connected with patents as those which are observed in other matters belonging to the sphere of action of the administrative authorities.

SEC. 22. All patents of invention which will hence-forward be granted in our name by the home minister, in accordance with the full powers hereby once for all conferred upon him, have to be judged by the contents of the present order in council. From the moment that the patentee receives his patent he has to submit to all the clauses of the present order in council, which are, in fact, to be considered as the conditions on which the patent has been granted to him.

To which all those whom it may concern will have to conform.

INCLOSURE 2.

Order in council of January 26, 1866, *concerning the fees to be paid for the granting and prolongation of patents.*

The following fees have to be paid for the granting and prolongation of patents:

1. Every person applying for a patent has to pay—

For the opinion to be given by experts on his invention, 5 thalers..... $3 65
Accessory fees, levied at the office of the home ministry, for the copying of documents, &c., 2½ thalers..... 1 82
Total, 7½ thalers..... 5 47

This sum must be paid on the very day on which the application for the patent is presented.

2. When the patent applied for is granted to the applicant for five years, he has to pay—
Stamp duty, 5 thalers..... $3 65
Price of the patent itself, 15 thalers..... 10 95
Total, 20 thalers..... 14 60

3. On applying for a prolongation of the time allowed to him for the carrying out of his invention the patentee has to pay—
Stamp duty, 1 thaler..... $0 73
Accessory fees, levied at the office of the home ministry, for the copying of documents, &c., 3 thalers..... 2 19
Total, 4 thalers..... 2 92

4. On applying for the prolongation of his patent for another period of five years the patentee has to pay—
Stamp duty, 5 thalers..... $3 65
Accessory fees, levied at the office of the home ministry, for the copying of documents, &c., 2½ thalers..... 1 82½
Price of the prolongation of patent, 42½ thalers..... 31 02½
Total, 50 thalers..... 36 50

Concerning the fees to be levied for intermediate enactments caused by any flaw which may be found in the documents presented to the home ministry, as well as in the cases mentioned in sections 9 and 13 of the order in council of January 20, 1853, the general regulations referring to this subject have to be observed.

As for the rest, all documents presented to the home office in matters connected with the granting or prolongation of patents have to be written on stamped paper, of which all those whom it may concern are specially reminded, many contraventions having of late taken place against this clause.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

L. C. CHASE *vs.* EDWARD WESSON *et al.*

[*In Equity.—Before Shepley, Circuit Judge.—Decided October 18, 1873.*]

The complainant having been long in the enjoyment of his patent, a preliminary injunction was ordered restraining the defendants from infringing it, notwithstanding affidavits were filed showing that articles embodying the alleged invention had been in use before the complainant made it, there being evidence to the contrary, and none of the articles being produced.

[*George E. Burton*, for complainant.
George L. Roberts, for defendants.]

SHEPLEY, *J.*:

Limiting the first claim in this patent to that only which was invented by the patentee—*i. e.*, his device, as described in his specification, of such a mode of attaching a halter dee or other harness-ring to a halter or harness-strap by means of rivets, in the described mode, passing through holes in the described flanges of the dee or ring without the necessity of sewing, and dispensing with the use of any other material to form the "lap," in the mode and for the purpose described—the patent is for a different invention from that described in the patent to Samuel C. Hawkins, No. 21,674, granted October 5, 1858, which is relied upon to prove want of novelty in complainant's invention.

No exhibit is produced of any such harness-ring with two flanges as some of the affiants on the part of respondents testify were in use before the date of the complainant's invention. The affidavits introduced by the complainant throw very grave doubt upon the question of the existence of any such devices at the dates indicated. These doubts are greatly confirmed by the omission to produce as exhibits in the case any such harness-rings as the witnesses describe, which could easily have been produced if they had existed and been in use for so long a time. It is not, therefore, at this stage of the case, necessary to decide what effect they would have upon the plaintiff's patent if the court were satisfied of their prior use.

As the plaintiff has been long in the enjoyment of his rights under the patent, and there is no doubt upon the question of infringement, the injunction will issue as prayed for in the bill, until the further order of the court.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,590.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,339.—Water-Wheels.—Granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, and May 13, 1873. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,491.—Mode of Applying Sulphurous-Acid Gas in the Defecation of Saccharine Liquids.—Granted to NANCY POINDEXTER BRASHEAR, executrix of ROBERT B. BRASHEAR, deceased, December 6, 1859, and reissued October 22, 1860. Application filed September 4, 1873. Testimony closes November 4, 1873. Hearing November 19, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELIZABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,416.—Seed-Planters.—Granted to WILLIAM BLEMING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,434.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to ESTHEL DUNTON, December 20, 1859, and reissued December 11, 1860. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 12, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FISHER and JOHN INGHAM, December 20, 1859, and reissued April 26, 1860. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,513.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

6,589.—Harvesters.—Granted to JOHN GOSS, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEEDS, December 27, 1859. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Persons Ware.—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STUBTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 10, 1860. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,823.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,880.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROSSER O. MELDRUM and AMOS B. PARSON, January 24, 1860. Application filed October 28, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,950.—Lamps, granted to GEORGE NEILSON, January 24, 1860. Application filed October 16, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOMINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 20, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,022.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTLER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 3, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,135.—Soldering-Irons.—Granted to ANSEL BURBANK, February 4, 1860. Application filed November 3, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,436.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOVE, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,962.—Pare-Bones.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

DISCLAIMERS FILED.

24,484.—Improvement in Apparatus for the Manufacture of Paper-Pulp.—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissue No. 998, dated July 3, 1860; reissue No. 2,731, dated August 13, 1867. Disclaimer filed June 20, 1873. Disclaims:

"That part of the claim in said specification which is in the following words, to wit: '2. The employment of the perforated diaphragm *g g*, when arranged substantially as described, to protect the pipes *h h*, and to strain the liquid from the stock, as and for the purpose above described.'"

94,434.—Improvement in Apparatus for the Manufacture of Paper-Pulp.—Granted to JOSEPH B. PALMER and GARDNER HOWLAND, June 21, 1859; reissue No. 996, dated July 3, 1860; reissue No. 2,730, dated August 13, 1867. Disclaimer filed June 20, 1873. Disclaims:

"That part of the claim in said specification which is in the following words, to wit: '1. The employment of two boilers in the reduction of paper-stock, so arranged in respect to each other that the steam-heat remaining in one, after the boiling process has been completed, may be transferred to the other boiler in which the boiling process is being commenced, in combination with the pipes or other means by which such steam-heat is thus transferred, substantially in the manner and for the purpose above described,

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 4, 1873.]

6,970.—Carpet.—JOHN BROWN ALDEN, Worcester, Mass. Application filed October 1, 1873. Term of patent 7 years.

6,971.—Gas-Burner.—EDGAR R. BEACH, Philadelphia, Pa. Application filed October 21, 1873. Term of patent 3½ years.

6,972.—Stove.—RICHARD A. CULTER and DAVID C. PROCTOR, Peoria, Ill. Application filed August 19, 1873. Term of patent 14 years.

6,973.—Bracket.—OTTO F. FOGELSTRAND, Kensington, Conn., assignor to HART, BLIVEN & MEAD MANUFACTURING COMPANY, same place. Application filed June 30, 1873. Term of patent 7 years.

6,974.—Match-Safe.—WALTER A. HAYNES, Everett, assignor to himself and STEPHEN BADGER, Charlestown, Mass. Application filed October 1, 1873. Term of patent 7 years.

6,975.—Goblets, &c.—JAMES HOBBS, Bellaire, Ohio, assignor to himself and BELMONT GLASS-WORKS, same place. Application filed October 4, 1873. Term of patent 3½ years.

6,976.—Goblets, &c.—JAMES HOBBS, Bellaire, Ohio, assignor to himself and BELMONT GLASS-WORKS, same place. Application filed October 6, 1873. Term of patent 3½ years.

6,977.—Stove.—HENRY S. HUBBELL and ALFRED S. HUBBELL, Buffalo, N. Y. Application filed October 10, 1873. Term of patent 7 years.

6,978.—Stove.—HENRY S. HUBBELL and ALFRED S. HUBBELL, Buffalo, N. Y. Application filed October 10, 1873. Term of patent 7 years.

6,979.—Heating-Stoves.—JOHN MAGEE, Chelsea, Mass., assignor to THE MAGEE FURNACE COMPANY. Application filed July 29, 1873. Term of patent 7 years.

6,980.—Floor Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, Philadelphia, Pa. Application filed October 13, 1873. Term of patent 3½ years.

6,981.—Floor Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, Philadelphia, Pa. Application filed October 13, 1873. Term of patent 3½ years.

6,982.—Paper-Boxes.—EDWARD C. MOORE, Yonkers, N. Y., assignor to TIFFANY & Co., New York, N. Y. Application filed August 4, 1873. Term of patent 7 years.

6,983.—Glass Bottles.—JOSEPH W. PHILBROOK, West Roxbury, Mass. Application filed October 24, 1873. Term of patent 14 years.

6,984.—Carpet.—CHARLES A. RIGHTER, Philadelphia, Pa., assignor to DORMAN, MAYER & Co., same place. Application filed October 21, 1873. Term of patent 3½ years.

6,985.—Bottles.—NEHEMIAH SLEEPER, Burlington, N. J., assignor to SLEEPER, WELLS, and ALDRICH, same place. Application filed September 11, 1873. Term of patent 7 years.

6,986.—Overshoes.—GEORGE WATKINSON, New Haven, Conn., assignor to L. CANDEE & Co., same place. Application filed June 27, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date November 4, 1873.]

1,516.—Ladies' and Children's Shoes.—KENNY & MCPARTLAND, New York, N. Y. Application filed October 30, 1873.

"two medallions, one overlapping the other, bearing the firm name and address, 'Kenny & McPartland, New York,' disposed upon both."

1,517.—Whisky.—LIVINGSTON & Co., San Francisco, Cal. Application filed October 25, 1873.

"the words 'Pride of Kentucky,' and the letters 'S. L. F.,' of which the middle letter, L, is surrounded by a square, arranged in diamond shape around the same."

1,518.—Stoves.—THE UNION STOVE AND MANUFACTURING COMPANY, Pittston, Pa. Application filed September 27, 1873.

"'Pittston Cook.'"

1,519.—Knit Scarfs or Tippets.—JOHN W. TUTTLE, Watertown, Mass. Application filed October 31, 1873.

"'VEILNUBIA.'"

1,520.—Refined Petroleum.—C. WEST & SONS, Baltimore, Md. Application filed October 21, 1873.

"the figure of a Maltese cross with the letters A. S. O, printed across the face of it."

1,521.—Toy Wheels.—SAMUEL T. WHEELWRIGHT and CHARLES L. LOCKE, Buffalo, N. Y. Application filed September 27, 1873.

"the figure of a star, with the words 'Wheelwright and Locke, Manufacturers, Buffalo, N. Y.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date November 4, 1873.]

ORIGINAL PATENTS.

144,179.—Harvester.—HENRY A. ADAMS, Sandwich, Ill. Application filed May 13, 1873.

The driving-wheel is loose on its axle, which is vertically adjustable by means of a rack and pinion. It is held at the proper height by a pawl engaging with the rack.

Claim.—The traction-wheel A, hub *a*, collars D carrying dogs *d*, pinions C, and cogged segments E, in combination substantially as specified.

144,180.—Grain Separator and Scourer.—SAMUEL W. ANDREWS and LEWIS GODFREY, Greenville, assignors of one-half their right to O. G. VANDERHOOF, Knoxville, Tenn. Application filed September 19, 1873.

The grain first passes through a screen; then it enters a blast-separator, whence it is directed to a cockle-separator and scourer, or it may pass immediately to the scourer, and thence through a second blast-separator to the place of final discharge. Automatic valves control the force of the blast.

Claim.—1. The horizontal scouring-cylinder *p*, having scourers *o*, constructed with longitudinal rasping ridges and arranged eccentrically, as described, in combination with the peculiarly-perforated scouring-case *q*, as specified, for the purpose set forth.

2. The suction-fan F, central wind-chamber H, and wind-trunks $T T^2 T^3$, arranged and operating as described, in combination with the blast-separators B E, dust-chambers U, screenings-chamber G, and grading-chamber V, for the purposes shown.

3. The combination and arrangement, in the blast-separator B, of the intersecting vertical and inclined grain-discharge and blast orifices $v v^2$ and the passage *u*, into the wind-trunk formed on a line equidistant between the outer ends of the two orifices and equal in capacity to both, as described, for the purposes stated.

4. The enlargement *u'*, in the blast-separator B, and the second set of orifices and passages beneath the same, substantially as and for the purpose specified.

5. The combined arrangement, in a grain-cleaner, of a preliminary blast-separator, B, a cockle-separator, C, receiving the grain and cockle from the former, and a scourer, D, receiving the grain from the cockle-separator, substantially as herein described.

6. The cut-off *t*, arranged as described, in combination with the hoppers $s^2 s^3$, for conducting the grain from the blast-separator B through the cockle-separator C or directly to the scourer D, as set forth.

7. The automatic governor or blast-equalizer consisting of the valve L within the wind-chamber H, the valve-pivot *e* with external arm e^2 and adjustable weight e^3 thereon, and the piston J K within a cylinder, I, in combination with the gage-aperture *d*, arranged and operating substantially as specified.

8. The automatic door or valve M in the bottom of the wind-chamber H, constructed and arranged to be held closed by the force of the blast and to open under the weight of accumulations in the chamber, in combination with the drawer N beneath the same in the dust-chamber U, by which the heavy particles which settle in both chambers may be taken from the machine, as set forth.

9. The combination and arrangement of the parallel shafts S S^2 S^3 and pulleys P P^2 P^3 P^4 P^5, for driving the several parts of the apparatus in unison by simple band-and-pulley connections, as described.

10. The combination, in a grain-cleaner, of a screening-shoe, A, a preliminary blast-separator, B, a cockle-separator, C, a scourer and polisher, D, and a final blast separator or grader, E, arranged and operating substantially as herein described, for the purposes set forth.

144,181.—Scroll-Saw.—JOSEPH ATKINSON, Burlington, N. J. Application filed March 15, 1873.

The saw is secured between the ends of two vibrating arms, and then strained by the action of a cam.

Claim.—Holding and adjusting the saw-blade G by aid of the pin *c*, arms *d d*, slide *e*, plates *f f*, eccentric *g*, lever or arm A, pin *i*, fastener H, screw or rivet *l*, and set-screw *m*, in combination with the arms E E', substantially as and for the purpose set forth.

144,182.—Artificial Crowns for Teeth.—JOHN B. BEERS, San Francisco, Cal. Application filed September 27, 1873.

A hollow crown of gold is lined with enamel, and secured by cement over a screw inserted in the natural tooth.

Claim.—1. The hollow metal crown or shell A, for the purpose above described.

2. The hollow metal crown or shell A, when filled with a porcelain enamel or other substance, substantially as and for the purpose above described.

3. A shell or hollow crown secured upon and around the projecting portion or neck of a tooth by means of the screw *c* and a suitable cement, substantially as above described.

144,183.—Railroad-Car Heater.—BARTHOLOMEW BERGHAUSEN and AUGUST LOUIS KIESLING, Cologne, Germany. Application filed January 11, 1873.

The portable fuel-tray or fire-chamber is generally placed under the car-seat. It is adapted to burn a peculiar fuel, which evolves but little smoke or flame. The air-draft comes through a depending open-mouthed hood. The exit-draft pipe passes down through the car-bottom. The seat-front has a guard to protect the clothing of the passengers.

Claim.—The tubes *a* and *b*, fuel-tray *c*, tube *d* provided with adjustable mouths *e*, and tube *f* provided with a suction apparatus, *g*, all combined and operating together, as described.

144,184.—Furnace for Reducing Ores Containing Precious Metals.—JAMES H. BOYD, Chicago, Ill.—Case A. Application filed October 14, 1873.

The pulverized ore is fed into the right hand or upper cylinder, where it is heated and agitated in contact with air, but out of contact with the flame or products of combustion. As it passes through this cylinder it gradually approaches a greater heat, and is almost completely desulphurized, the metal in the form of oxides falling into the second revolving cylinder, where it is exposed to the direct action of flame from the reducing-hearth, being tumbled about by the revolving ribbed cylinder as before. Fluxes are here added to free the lead and permit it to carry down the precious metals. The mass, at a high heat, is delivered to the reducing-hearth, the metals and heavier slags arranging themselves according to gravity in the several hearths. The matt is subjected to liquid lead in the hearth near the grate, and tapped thence into the overflow-pot.

Claim.—1. The combination and arrangement, substantially as shown and described, of the inclined revolving ribbed cylinders C D and reducing-chamber B, constructed and operating in the manner essentially as described.

2. The reducing-chamber B, provided with the hearths *b b' b''*, bridges *c c' c''*, and ducts *b*, substantially as specified.

3. The combination and arrangement of the fire-grate A, reducing-chamber B *b b' b''*, cylinder C, and cylinder D, all inclosed by the furnace-walls, substantially as specified.

4. The combination of the cylinder C, friction-rollers *o o*, cogged rim T, cog-wheel S, shaft *q*, spider *r*, cylinder D, worm P, shaft *p*, and screw Q, substantially as specified.

5. The arrangement and combination of the ingress *k*, air-space K, arches *m m'*, compartment J, air-space M, and grate A, with the reducing-chamber B, cylinders C and D, and compartment J', for the purpose of warming the air to supply the grate, substantially as specified.

6. The combination and arrangement, with relation to the cylinders C D and reducing-chamber B, of the funnel-pipes E E' E'', for feeding in at various points the pulverized ore and fluxes and reducing agents during the operation of the furnace, substantially as specified.

7. The combination of the reducing-chamber B, divided into the hearths *b b' b''* at different levels, the ducts *d*, conduct or pipe *e*, and overflow-pot W, whereby the height and flow of the metals in the reducing-chamber may be regulated, substantially as specified.

144,185.—Apparatus for Feeding Fuel to Ore-Reducing Furnaces.—JAMES H. BOYD, Chicago, Ill.—Case B. Application filed October 14, 1873.

Above the grate and reducing-chamber is an inclined feed-way, heated by the waste heat arising from the furnace, terminating in a small coking-chamber on a level with the grate, and guarded by a trap-valve. A rocker-arm, suspended before the fire and fitted with curved fingers, is actuated by mechanism so as to swing toward the fire with a sudden drop motion at intervals, by which means the coal crowding down is scattered over the fire.

Claim.—1. The combination and arrangement of the hot-air chamber D above the grate A, and reducing-chamber B, the inclined E, coking-chamber G, and a mechanism for casting the fuel from the chamber G upon the grate, substantially as specified.

2. The combination of the curved fingers K, shaft *k*, crank-piece *m*, bar *n o*, and cam M, substantially as specified.

3. The combination of the curved fingers K, trap H, chamber G, inclined way E, and mechanism M *o n m k i*, substantially as specified.

144,186.—Furnace for Reducing the Ores and Extracting the Precious Metals.—JAMES H. BOYD, Chicago, Ill.—Case C. Application filed October 14, 1873.

The overflow-pot is made with outlets which may be bridged or heightened by a sliding gate, so as to regulate the feed from the reducing-hearth and direct the liquid matt into either a cupelling-furnace on one side or a warming or waste pot upon the other, as may be desired.

Claim.—1. The combination and arrangement of the reducing-furnace A B O D and the cupelling-furnace E D' with the overflow-pot G, the exit-flue J from the cupelling-furnace being located to open into the reducing-chamber, and with or without the warm-air pipe J', arranged to draw the air-supply for the grate of the cupelling-furnace from an air-space, A', warmed by the waste heat of the reducing-furnace, whereby the bullion may pass, while still hot, from one furnace to the other, and the waste heat of both furnaces may be utilized, substantially as specified.

2. The overflow-pot G, fitted with the slides *i i* and ways or spouts *g g*, in combination with the reducing-furnace, cupelling-furnace, and receiving-pot F, substantially as specified.

3. The combination and arrangement of the two inclined feed-ways H H', provided with the division-ridge A, with the grates D D', substantially as and for the purpose specified.

4. The combination and arrangement of the reducing-furnace and cupelling-furnace, conjoined and arranged substantially as specified, that the bullion may be drawn, while still hot, from the reducing-chamber directly into the cupelling-furnace, to save re-heating the bullion for cupellation.

144,187.—Machine for Cutting the Heads of Fence-Pickets.—ANDREW BURNHAM, Revere, Mass. Application filed May 24, 1873.

A cutter is adjustably attached to a vibrating lever secured to a bed, upon which the picket to be pointed is placed. A movement of the lever forms one side of the point, when the picket is reversed and the other side cut in a similar manner.

Claim.—1. The bed *a*, lever *b*, and holder *d*, when constructed, combined, and arranged to operate substantially in the manner described and shown.

2. The cutter-holder *d*, having stop *n*, and formed to receive lever *b*, and with cap *p*, provided with parallel grooves to receive the cutter *c*, substantially as described and shown.

144,188.—Car-Replacer.—JOHN G. BURKHARDT, Brooklyn, N. Y. Application filed October 8, 1873.

A longitudinal groove on the under side of the replacer permits of its being placed over the rail. The wheel is guided to one side or the other, as required, by the pivoted tongue in the front end of the replacer.

Claim.—The portable shoe or frog A, herein described, having a longitudinal groove, J, on the under side, and grooves D, D', F, and G on its upper surface, in combination with a pivoted tongue, C, substantially as and for the purpose set forth.

144,189.—Harvester.—STEPHEN D. CARPENTER, Madison, Wis. Application filed September 5, 1873.

The rake is connected to the outer rear corner of the platform by a series of jointed arms, and is guided, by slots and grooves in the platform, by means of rollers attached to the rake. A binder's box and table are supported upon the frame at the rear inner corner.

Claim.—1. The slot I and groove *o*, arranged in relation to each other, substantially as described, for the purpose of guiding and directing the movements of the rake D, as set forth.

2. The rake D, in combination with the rod *c*, said rod having one end hinged to the rake, with its opposite end hinged to the side of the machine, at or near its rear end, and provided with a series of intermediate joints, independent of the joint-rod *b*, and arranged to operate as described, to assist in guiding and controlling the rake in its movements, as set forth.

3. In combination with the rake D, having the pointed rod *c* hinged to its rear end, the finger-piece R hinged to the rake at its front end, and attached rigidly to the joint-rod *b*, the said parts being constructed and arranged to operate substantially as described.

4. The box *e*, with its binding board P arranged at the corner of the platform and at right angles to the rake during its backward movement, for the purpose of enabling the binder to receive the bundle from the rake in a compact form, as herein set forth.

144,190.—Breech-Loading Fire-Arm.—HORACE A. CASTLE, Ilion, N. Y. Application filed August 26, 1873.

Claim.—1. The spring thumb-lever B, pivoted to the top of the stock at *a*, extended forward of the recoil-shield A', and terminated in the locking-tongue *b*, which enters the recess *d*, in combination with barrels hinged at *c* to the frame of the arm, and with the curved or segmental-shaped socketed piece G, and the slotted pivoted pin J, the piece G being attached to the barrels and passed through a curved slot, *g*, and the pin to the thumb-lever B, and passed through the recoil-plate A' into the socket *g'*, all substantially as herein described, and for the purpose set forth.

2. The U-shaped spring-extractor S with hooked ends *r*, constructed to take hold of two cartridges at the same time, and adapted to be inserted through the breech and held in place, substantially in the manner described.

3. The combination of the U-shaped spring-extractor S *r*, passed through the recoil-plate A', pin J, and strap *s*, the pin J serving to prevent the extractor moving too far forward when the barrels are thrown down on their hinge, and the strap preventing it moving too far back when the barrels are thrown up against the breech or recoil-plate, substantially as described.

144,191.—Spinning and Twisting Machine.—HENRY A. CRAPIN, Bridgeport, Conn. Application filed July 25, 1873.

The device which draws and twists the yarn is placed in an oil cup or reservoir, and provided with devices which keep up a circulation of oil to lubricate the moving parts, but prevent it reaching the yarn. There is also a compact arrangement of the parts making up the whole machine.

Claim.—1. A drawing and twisting device combined with an oil-reservoir, and having oil-reboptacles and discharge-passages in and through revolving pulleys E' E, and in which the long hollow tube of said pulleys are arranged relatively to each other and to the upright hollow shaft, which carries on its upper end the drawing-pulley a, as described.

2. The combination of the specified drawing and twisting device with an oil-reservoir having attached to it the stationary tube s, which passes up through the moving parts and protects the yarn from being soiled by the oil as it passes through on its way to the ring and traveler, substantially as described.

3. The combination of the drawing and twisting device, ring and traveler, building device, and spindle, substantially as described, and for the purpose set forth.

144,192.—Stove-Pipe Damper.—EDWIN C. CHAPMAN, Lacon, assignor of one-half his right to JAMES M. HORTON, Chicago, Ill. Application filed September 5, 1873.

The arms E are retained in position between the ribs upon the button and upon the damper-plate, by their contact with that portion of the stove-pipe through which they pass and upon which they rest.

Claim.—The damper B, provided with the spindle C and with the ribs a a, in combination with the button D and the arms E, substantially as and for the purposes specified.

144,193.—Carriage-Cover.—EDSON H. ELLIOTT, Charlestown, Mass. Application filed April 30, 1873.

The arrangement of cords and pulleys, referred to in the claim, is for raising and lowering the tent which shelters the carriage.

Claim.—The ball d, the collapsing-tackle consisting of lines f g and pulleys e h, and the supporting and lifting tackle consisting of the lines r l m and pulleys n o p q, all arranged and operating substantially as shown, and for the purpose described.

144,194.—Tobacco-Drying House.—EZEKIUS W. ELLSWORTH, South Windsor, Conn. Application filed June 28, 1873.

The air enters the drying-house through openings around its base, and is deflected upward by the partitions which pass through its center and at right angles to each other, in order to utilize the wind from any quarter. The partitions do not extend to the roof, but the upper part of the house is unobstructed, for the free horizontal circulation of air.

Claim.—A tobacco-shed or drying-house which is divided into four compartments by the longitudinal and transverse partitions, as above described, and which is open or in one compartment above the partitions, to allow a free and uninterrupted circulation of air in the roof, as set forth.

144,195.—Car-Wheel.—GORDON ELMSLIE, Toronto, Canada. Application filed March 27, 1873.

A single curved plate wheel, one side plain, the other side having large curved ribs extending from the hub to the flange; also smaller ribs extending from the flange part way to the hub.

Claim.—A car-wheel having the outer surface of the web A plain, large curved ribs B extending from the rim C to the hub D, and small curved ribs E, arranged and formed substantially as and for the purpose specified.

144,196.—Consecutive-Number Printer.—ROBERT M. EVANS, Buffalo, N. Y. Application filed May 17, 1873.

A case is provided with several numbering-wheels made type-high, which are moved so as to present consecutive numbers by means of levers and a pawl and ratchet, the levers being operated by coming in contact with the platen of the press when the impression is made.

Claim.—In combination with the type-wheels of a consecutive-numbering apparatus, the pivoted lever L, lever J, with its lugs M, spring O, pawl H, and ratchet-wheel J', all constructed and arranged for operation substantially as and for the purpose described.

144,197.—Glove-Fastener.—LUCIUS FARRIS, San Francisco, Cal. Application filed July 26, 1873.

Claim.—A glove-fastener consisting of the buckles b b and hinged self-adjusting plates C, one having the projecting eye f, when united by the chain d, substantially as and for the purpose described.

144,198.—Pastern-Halter for Stitching Horses.—JOHN C. FORD, Montreal, Canada, assignor of one-half his right to AUSTIN D. CABLE. Application filed September 4, 1873.

A strap or collar to be secured around the pastern-joint of the fore foot, and having an additional strap extending upward and secured to the harness or shaft.

Claim.—As a new article of manufacture, a pastern-halter, to be applied as described, the same consisting of the combination of the ring B and halter A B, constructed in the manner specified, for the purpose set forth.

144,199.—Planing-Machine.—LUMAN GOULD, Norwich, Conn. Application filed May 9, 1873.

The pressure-bar is made removable horizontally to reach the cutter-head.

Claim.—The combination, with the pressure-bar or plate N and its standards N' N'', of the slotted flange 10, stationary flange 12, slotted pieces O and P, and fastening screws or bolts 15 and 17, substantially as and for the purposes set forth.

144,200.—Lantern.—EDGAR K. HAYNES, Boston, Mass. Application filed October 9, 1873.

An improvement upon patent 136,004. The air-deflecting plate is provided with a series of holes to permit the passage of water. To counteract the effect of currents of air passing through these holes, a second dished plate is located above the first.

Claim.—1. The annular dished plate g, provided with a central hole, g^1, for the passage of the burner therethrough, and holes g^2, arranged, constructed, and operating substantially as shown and described.

2. The combination of a curved dished plate, f, and an annular plate, g, substantially as and for the purposes shown and specified.

3. In a lantern such as described, the annular plate g, annular deflector A, and perforations a^2 arranged in relation to a plate, f, and the wick-tube, substantially as set forth.

144,201.—Volute Spring.—PERRY G. GARDINER, New York, N. Y. Application filed October 13, 1873.

The plate is formed with longitudinal grooves or channels upon its face, which are largest toward the butt, and then gradually taper and fall away toward the opposite end of the plate, where at last they flatten out and leave the face of the plate flat and smooth a sufficient distance to form a part of the smaller or innermost coil of the spring.

Claim.—1. A spiral volute spring constructed from a plate having a gradual taper or thinning from near one end toward the other end, and with the grooves upon one face of the plate gradually diminishing from end to end, substantially in the manner described.

2. The tapering plate and grooves, as described, having the smooth and gradually-thinning end b of the butt, and the smooth face c at the opposite end of the plate, beyond the grooves, substantially in the manner and for the purposes set forth.

144,202.—Scraper.—SOLOMON HORNEY, Richmond, Ind. Application filed August 4, 1873.

The draw-bar is attached by means of a rod passing through the ribs in the back of the scraper, which turns on the rod and is held in position for scraping by means of a notched bar which engages the upper edge of the scraper. The handles are pivoted to the rear of the scraper, and are also connected with it by adjustable straps, which allow the position of the scraper to be changed so that it can be used as a scoop. When the scraper is reversed to discharge its load it rides along the ground on spring-runners.

Claim.—1. The spring-runners H, attached to the scraper for the purpose of holding the same off the ground while discharging its load, substantially as described.

2. The beam A, having the draw-bars B B attached, said bars being pivoted to the ribs M by means of the rod N, or its equivalent, the scraper revolving upon said rod, substantially as described.

3. The handles C, attached to the ribs M, in the manner shown, in combination with the straps I for adjustment, whereby the scraper may be placed in position to operate as a scoop, substantially as described.

144,203.—Condensing Apparatus for Marine Steam-Engines.—JOHN HOUPT, Springtown, Pa. Application filed August 2, 1873.

The jet-condenser is combined with a refrigerator for condensing the exhaust steam, and a hot-reservoir with a priming-reservoir to fill the former, a hot-well, and the pump, so as to use the water as fresh as possible by continually using the condensed exhaust steam. With these are combined two dividing-valves, one above the other, and connected to the jet-condenser for the purpose of saving all the fresh water and using it over again.

Claim.—1. The combination, with a jet-condenser, A, of the refrigerator B, the reservoirs F and f', the hot-well D, and the pump E, the said parts being constructed and arranged together substantially as and for the purpose hereinbefore set forth and described.

2. The dividing-valve chamber G, with its dividing-valves g' and g'', in combination with the jet-condenser A, refrigerator B, hot-well D, surface condenser I, expander and cooler K, surface condenser L, save-all condenser M, air-pump H, the governor-valve 10, the self-closing valve i', and the check-valves g^4 g^5 in the pipe Q, the said parts being arranged to operate together substantially as set forth, for the purpose of saving all the fresh water of condensation, for using over and over again in the jet-condenser A and the steam-generator of a marine-engine, as described.

144,204.—Governor for Steam-Engines.—JOHN E. HUGOU, Richmond, Ind. Application filed August 18, 1873.

Claim.—The combination of the cylindrical valve H, having the slot K, cross-head M, and threaded valve-stem P, with the cylindrical case B, provided with pin I, and chamber B, all constructed substantially as and for the purpose set forth.

144,205.—Governor.—JOHN E. HUGOU, Richmond, Ind. Application filed October 17, 1873.

The cylindrical chamber in which the valve operates is made in a separate piece and provided with ports. The arms of the rotary valves are arranged with packing-plates in order to secure, by the pressure of the steam, a perfectly tight joint.

Claim.—The combination of the cylindrical valve-seat C, placed in the chamber B, the valve K, having the arms H, and packing-plates E, with the ports G, all arranged and operating substantially as described.

144,206.—Machine for Slicing Dried Beef.—ANTHONY IAKE, Lancaster, Pa. Application filed September 8, 1873.

A platform having vertical posts has a sliding frame, which has a knife placed in an oblique position, and is adjusted by thumb-screws and slotted wedges.

Claim.—1. The oblique knife E, arranged in a vertically-sliding frame, D, and made adjustable by means of a movable piece, G, in combination with the grooved guides A' A', frame A, holding-bed B' C, and base B with its ledge P, the whole substantially as and for the purpose shown and specified.

2. In combination with a knife, E, and frame D, the adjusting piece G, with its attached plate L, screw-bolts and thumb-screws K, and slotted wedges I J, substantially arranged in the manner and for the purpose shown and set forth.

144,207.—Railway-Switch.—GEORGE KERCH, Centreville, Mich. Application filed August 11, 1873.

The rails are held by the stud D on the sleeper and the projection a on the bar E. The bar is provided on its lower side with a curved projection, c, which rests in the channel H in the sleeper between the ears F, and the bar and sleeper are secured together by a bolt passing through holes in the ears and a groove on the upper side of the bar.

Claim.—1. The combination of the bar E, having the groove b, with the bolt d and ears F, substantially as shown and described.

2. The sleeper A, provided with the channel H, to receive the arch e of the bar E, substantially as specified.

3. The combination of the bar E, constructed with the arch e, groove b, and projections a, with the sleeper A, provided with the channel H, ears F, bolt d, and stud D, substantially as specified.

144,208.—Faucet.—ASHEL D. KING, Granville Corners, Mass., and JUSTUS W. KING, Bridgeport, Conn. Application filed April 21, 1873.

A slide is pivoted, by means of a screw, to the bushing, and, as it closes, is held firmly against said bushing by a spring, the whole operating to exclude foreign substances.

Claim.—The combination of the pivoted cover c, screw, and spring e with the receiver B, as described.

144,209.—Saw-Gage.—GEORGE W. KIRBY, Detroit, Mich. Application filed June 24, 1873.

Two bars are adjustably secured upon opposite sides and parallel with the cutting-edge of the saw, and are designed to limit the depth of the cut.

Claim.—The arrangement of the bars D, constructed with the threaded end E and dovetailed grooves F, cross-bar C, and nut e, substantially as shown and described.

144,210.—Bolt for Prison-Doors.—THOMAS LAIOR, Toronto, Canada, assignor to EDWARD CROSSMAN, same place. Application filed September 1, 1873.

A rotating shaft carrying projecting lugs passes along just over the top of the cell-door. By rotating this shaft, through bell-cranks or racks and pinions, the keeper may, in his own room, lock every cell-door in the prison. This fastening is added to the usual locks and bolts.

Claim.—The dogs D upon the lock-shafts A, whether operated through the rack and cog-wheels or the bell-cranks and levers, as shown, and combined to form a fastening for prison-doors, as described.

144,211.—Grain-Separater.—SAMUEL LESSIG, Sr., Reading, Pa. Application filed February 1, 1873.

The primary separating-screen, the sieve-box, and the intermediate chute are connected together and receive their vibration by means of a special arrangement of levers and links.

Claim.—The combination of the separator A with the vibrating chute C and the sieve-box D, by means of the two pairs of long jointed levers b^1 b^2, the pair of short jointed levers b^3, and connecting-links b^4 b^5, substantially in the manner and for the purpose herein set forth.

144,212.—Revolving Blackboard.—COMFORT B. LYON, Buffalo, N. Y. Application filed October 9, 1873.

Claim.—1. The combination, with a central standard and supporting-arms or their equivalent, of a series of blackboards, B, pivoted at the center of the upper and lower edges thereof, so that either end of any one of the boards can be arranged in conjunction with either end of any adjacent board, and thereby form one continuous surface, substantially as and for the purpose herein-before set forth.

2. The combination, with the pivoted boards B and supporting-arms C C', of the tie-rods d, substantially as and for the purpose hereinbefore set forth.

3. The combination, with the supporting-arms and boards C B, of the pivot-bolt g and flanged plate A, as and for the purpose hereinbefore set forth.

4. The combination, with the standard A and socketed base D, of the screw f and collar and braces f h, substantially as hereinbefore set forth.

5. The combination, with a central standard, of a series of

pivoted blackboards, B, when the lateral or abutting edges are rounded and grooved so as to look together, as herein shown and described.

144,213.—Faucet.—JOHN MCKENNA, ALEXANDER MCKENNA, and THOMAS MCKENNA, Pittsburg, Pa. Application filed August 29, 1873.

Within the hollow plug of a faucet a piston, squared in one part, is arranged to act as a wrench for turning said plug and to force a small stream of liquid through an orifice and pipe connecting with the piston-chamber, either during the passage of said liquid through the main opening in the plug or after the closure thereof. A spiral groove upon the plug connects at one end with a tube arranged in the barrel of the faucet, and at the other with an air-channel in the body of said faucet, in order to permit the admission of air during the operation of the device.

Claim.—1. The tubular key A, having therein a transverse partition, s, arranged beneath the axial line of the shank B, in combination with a plunger, K, operating entirely above said partition, and with the openings w and P, and the small pipe d, as and for the purposes set forth.

2. A tubular key, A, having fitted therein a plunger, K, in combination with an air-vent, S, extending through the shank B, and down around the outside of the key, and terminating or having its mouth below the piston-chamber, as and for the purposes set forth.

144,214.—Gear-Cutting Attachment to Lathes.—THOMAS O. MILLS, Rockford, assignor of one-half his right to WILLIAM H. MILLS, Freeport, Ill. Application filed June 20, 1873.

The cross-head F, in which the gear-holding mandrel L is located, is adjustable vertically by the screw G; and the frame C, that supports the cross-head and all the operating parts, is hinged to the base-plate A at point b, and may be turned over in the plane of the axis of the mandrel and fixed at any angle in said plane to the base-plate.

Claim.—1. The hollow index-mandrel I and tapering gear-mandrel L, in combination with the sliding cross-head F, substantially as and for the purposes described.

2. The bent arm M, secured to and moving with the cross-head F, in combination with the index-plate J and point O, substantially as described.

3. The index point or screw O, in combination with the screw or nut N, jamb-nut N', and fork m, substantially as described.

144,215.—Compound for Cleaning Metals, &c.—WILLIAM Z. MOORE, Vallejo, Cal. Application filed September 11, 1873.

Spanish whiting, aniline red, and oil of sassafras.

Claim.—The compound herein described, when employed in about the proportions given, substantially as and for the purpose described.

144,216.—Beefsteak-Tenderer.—JAMES S. MORRIS, Masterstown, Pa. Application filed August 29, 1873.

In a suitable frame are arranged two grates; to the frame is pivoted another, having a suitable lever. To the upper frame are attached a number of comb-shaped knives that pass between the grates and enter the meat placed between them.

Claim.—A series of knives, B, secured in frame F, in combination with the grates G and H, constructed and operated in the manner described, for the purposes set forth.

144,217.—Hoisting-Engine.—FRANK MURGATROYD, Cleveland, Ohio. Application filed September 4, 1873.

Small trunk-engines operate a drum-shaft having winch-heads, to which are attached adjustable cranks for operating bilge-pumps.

Claim.—The bases B B, cast with bed-plate A, the engines C C, shaft D, loose pinion F, brake-wheel G, clutch H, uprights M M supporting the drum and winch-heads, all combined and operating substantially as described.

144,218.—Shuttle-Actuating Mechanism for Looms.—JOHN R. NORFOLK, Salem, Mass. Application filed April 9, 1872.

The shuttle is moved positively by means of a reciprocating pulley, with which the shuttle-carriage is suitably connected by cords or belts. To produce the required accelerated and retarded movement of the shuttle the cams, which actuate the pulleys through the connecting levers, belt, and shaft, are irregular in form, and the pulleys are grooved both spirally and helically, like the fusee-wheel of a watch.

Claim.—The spirally and helically grooved wheel I, connected, by cord or straps, with the shuttle-moving device, in combination with the cams F, levers G, and pulley I, the whole constructed, arranged, and operating substantially as described.

144,219.—Hammock-Support.—FRANCIS PAINE, Deerfield, Mass., assignor to himself, HENRY A. AXTELL, and FREDERICK B. KEEVAN. Application filed September 5, 1873.

Two light portable rods, bent to the same arc, are hinged at their ends to admit of their opening sufficiently for a ground-support, the hammock being suspended from hooks at the hinges. A socket in the middle of each rod permits of their being folded for easy transportation.

Claim.—1. A portable hammock-frame consisting of the braces a a, hinged together at their ends, and adapted for the attach-

ment and suspension of a hammock by means of suitable hooks or rings, substantially as described.

2. The braces *a a*, hinged together at their ends, forming a frame to which to attach and suspend a hammock, and arranged with a joint at *b*, so that one part of each brace may be disconnected from the other part, substantially as set forth.

144,220.—Steering Apparatus.—MICHAEL R. PERKINS, Portsmouth, N. H. Application filed October 9, 1873.

The tiller has a sleeve sliding upon it, which sleeve has a downwardly-projecting arm provided with a roller upon its end, which travels in a groove transversely across the deck. The tiller ropes are connected at their ends by swiveled links to the sleeve and pass through pulley-blocks to the barrel of the steering-wheel. By this means the leverage is least when the tiller is amidships and increases in proportion as the tiller is moved to starboard or port.

Claim.—1. The sleeve H, sliding on the after end of the tiller, and having the arm A^1 and roller A^2, engaging with the groove J, substantially as and for the purpose described.

2. The links *l*, for connecting the blocks and tackle, in combination with the sleeve H, substantially as shown and described.

144,221.—Railway-Rail.—MICHAEL R. PERKINS, Portsmouth, N. H. Application filed May 9, 1873.

The two sections of the compound rail are separated by a paper packing, the object of which is to relieve the rail from lateral and vertical concussion.

Claim.—The section 1, having broad bearing-surface 6, in combination with section 7 and paper packing 5, extending continuously between the sections, arranged to prevent lateral as well as vertical concussion, and neutralize the action of frost, heat, and moisture, substantially as shown and described.

144,222.—Door-Check.—MICHAEL R. PERKINS, Portsmouth, N. H. Application filed October 8, 1873.

A T-headed bolt is combined with a slotted and hinged bar. When the bar is turned back against the door-post the door is securely fastened, but when it is turned out it permits the door to stand partially open. Until the door is entirely closed the fastening cannot be so manipulated as to allow the door to open sufficiently wide to admit a person.

Claim.—The bolt C, formed with the T-shaped head *c*, in combination with the slotted and hinged bar D, substantially as shown and described.

144,223.—Door-Securer.—WILLIAM H. PHIPPS, Poquonock, Conn. Application filed October 6, 1873.

A small portable device is made of metal, knuckle-shaped, with a slot in the upper side, in which a lever operates, and a spear or pointed spur, which is so pivoted to the lever that the spear is moved up and down by the swinging of the lever.

Claim.—The combination of the knuckle *a*, spear *b*, and lever *c*, all constructed and operating substantially as described.

144,224.—Railway-Switch.—HENRY H. POTTER, Sterlingville, N. Y. Application filed September 25, 1873.

The switch is operated by the action of the flange of the wheel of an approaching train, which comes in contact with the crooked levers *d* or *d'*, said levers being fulcrumed between the rails of the approaching tracks in proper chairs, which are sunk into a tie.

Claim.—The levers D *D'*, formed with the points *d d'*, pivoted in depressions in the chairs A, curved so as to pass under the rails A' B, and having their ends attached to the bar G, substantially as and for the purpose shown and described.

144,225.—Flour-Sifter.—GEORGE PURPLE, Cameron, Mo. Application filed June 9, 1873.

Claim.—The beaters *d*, when provided with coiled wires *f*, in combination with shaft *b*, crank *c*, sleeve *a'*, and cylinder *a*, as and for the purpose specified.

144,226.—Machine for Feeding Horseshoe-Nails.—SILAS S. PUTNAM, Boston, Mass. Application filed July 9, 1873.

A hopper with an inclined reciprocating bottom and a vertical moving slide. The nails are carried up against an apron, *i*, and drop between the guide-plates. A sliding bar inclines the head toward the conveyer, and a reciprocating rack underneath engages with the points and carries the nails forward. A pin, 42, on an arm, *p*, stops the nail at the end of the rack until an arm, *a'*, is brought forward and raises the pin. The nail, being clamped by said arm, is drawn forward by it; and, by means of a spring and notch in the plate, the inclined side of the nail-head is turned outward. Opposite a passage in the guide the nail is dropped, and enters a compartment in an intermittently-revolving wheel, where it is clamped, carried around, and the jaw opened, releasing the nail, and delivering it to other mechanism for finishing.

Claim.—1. In combination with the hopper E and the slide *g*, the inclined reciprocating plate *h*, operating substantially in the manner and for the purpose set forth.

2. The swinging arm A, with its plate or apron *i*, in combination with the slide *g* and the guide-plates C D, operating substantially in the manner and for the purpose described.

3. The reciprocating slide or plate E, in combination with the guide-plates C D, operating substantially as and for the purpose set forth.

4. In combination with the guide-plates C D, the reciprocating toothed bar Q, or its equivalent, for carrying forward the nails, substantially as described.

5. The reciprocating slide S, with its notched arm a^1 and spring 48, in combination with the guide-plates C D and the arm *p*, operating substantially in the manner and for the purpose set forth.

6. The adjustable guide-piece d^1, placed within the groove or passage b^1, as and for the purpose set forth.

7. The yielding block s^2, fitting into a notch in the guide-plate D, in combination with the arm s^1 and its spring 48, for turning the nail, substantially as described.

8. In a machine for automatically feeding or delivering forged or partially-made horseshoe-nails to other machinery, the intermitting-revolving carrier T, provided with a series of compartments or jaws for receiving and holding the nails, in combination with the pins 55 and spring-arms q' s', or equivalent devices, for opening the jaws to receive the nails and release them at the proper times, substantially as set forth.

144,227.—Ships' Windlass.—GEORGE H. REMINGTON, BARTON D. THAYER, and JOSEPH P. MANTON, Providence, R. I. Application filed June 27, 1873.

The single wheel located between the wildcats is connected with adjustable friction-nippers, or pawl and ratchet, by means of which arrangement the pump-brakes for operating the windlass can be located abaft instead of forward of the bits.

Claim.—1. In combination with a windlass-shaft for working the same, the single wheel F, and ratchet or friction pawls K K' applied to the sides thereof, substantially as described.

2. The wheel F, constructed with ratchet-teeth R on its periphery for a pawl-gear and double-flanged rims *b b*, in combination with sliding blocks I and ratchet or friction pawls K K', substantially as described.

3. The combination of a windlass-pump brake-head, L, constructed with slotted sectors *h h*, with the sliding blocks I, and links *d d'* for maintaining the proper position of the pawl or ratchet gear for all variations of the length of the stroke, substantially as described.

144,228.—Portable Fence.—GEORGE ROBINSON, Chillicothe, Mo. Application filed April 21, 1873.

The bars of one panel have oval openings to receive the tenons or projection of bars of the next panel, so that when adjacent sections of the fence are brought toward a straight line a firm bearing will be produced upon the tenons and the end brackets, this position being maintained by a brace inserted in gains in a pair of corresponding bars. The bars are pivoted to the brackets, and accordingly adjustable, as well as the brace, to uneven ground.

Claim.—The bars A, provided with the projections D and apertures E pivoted to the battens B and F, in combination with the brace I, when arranged and operated substantially as shown and described.

144,229.—Cut-Nail Machine.—JACOB RUSSELL, Providence, R. I., assignor, by mesne assignments, to himself and WILLIAM SPRAGUE. Application filed February 17, 1873.

The guide-bed G is made to move laterally and vibrate angularly by means of the sectors E E' and the racks F F'. The sliding nipper-carriage is moved forward by a pawl and ratchet. The nipper-jaws are pivoted in a standard, *b*, and are made with curved beaks, which are forced together by means of a cam, *c*, operated by the lever *d*.

Claim.—1. The guiding-bed G, with guiding-edges adjacent to its forward end, in combination with the sliding nipper-carriage and the mechanism for laterally moving the bed bodily at each end to and fro, substantially as shown and described.

2. The combination of the vibrating sectors E E', the pivoted racks F F', and the guide-bed G, substantially as described.

144,230.—Stove-Door.—AMBALOM S. SHONTZ, Quincy, Ill, assignor to COMSTOCK, CASTLE & CO., same place. Application filed July 14, 1873.

In a double stove or furnace door one is pivoted to swing vertically, and the other hinged to swing laterally. The upward-swinging door is provided with a rabbet on its lower edge, which fits a corresponding recess in the upper edge of the other door when both are closed, and makes a tight joint. Either door can be opened independently of the other.

Claim.—The door C, pivoted to swing vertically, and provided with rabbet B, in combination with the door A, hinged to swing laterally, and provided on its upper edge with a recess to receive the rabbet *b*, substantially as shown, and for the uses specified.

144,231.—Sulky-Harrow.—PETER SPEELMON, Knox, Ind. Application filed September 15, 1873.

A wheel-harrow having triangular sections hinged together, the central raising-lever having an adjustable slide for one of its connecting-rods. Foot-levers and connecting-rods for raising the sides of the sections for avoiding obstacles.

Claim.—1. The adjustable attachment *g*, in combination with rods *l l'* and the sectional harrow, as and for the purpose set forth.

2. The combination of standards P P', levers *s s'*, rods *r r'*, *t t'*, and foot-levers F F' with the sectional harrow and levers *l l'*, substantially as set forth.

144,232.—Non-Conducting Filling for the Walls of Dinner-Pails, &c.—OSCAR M. STILLER, Cleveland, Ohio. Application filed July 18, 1873.

Claim.—A filling or packing for use in dinner-pails, &c., as a non-conductor of heat, composed of lamp-black with or without an admixture of hair or other fibrous material, substantially as described.

144,233.—Corn-Planter.—JOSEPH STATZ, Cross Plains, Wis. Application filed April 7, 1873.

A rectangular frame is mounted upon two wheels, and the seed-boxes and seeding apparatus mounted thereon. One of the wheels has a driving-gear, and this puts in motion a pinion and crank-shaft, universally jointed, by which the seed-slides are worked.

Claim.—The combination, upon a suitable frame, of the seed-boxes E E with slides G G, connected at their front end, by couplings *d d*, with the levers H H, and the inner ends of said levers connected, by a single coupling, I, with the pitman J, the crank-shaft *f* with universal joint *e*, shaft *k*, pinion *m*, and cog-wheel K, all constructed and arranged substantially as and for the purposes herein set forth.

144,234.—Attachment for Soda-Fountains.—OSCAR F. STEDMAN, Westfield, N. Y. Application filed October 25, 1873.

The draft of a soda-fountain is secured upon the smooth surface of the discharge-pipe by a rubber band expanded by a nut.

Claim.—1. As an attachment for the draft-arm of a soda-fountain, the nozzle *a*, nut *c*, and rubber band *c*, in combination with the discharge-pipe, substantially as set forth.

2. An attachment for the draft-arm of a soda-fountain, consisting of a nozzle, *a*, a valve, and an extended tube, which serves to conduct the gas and soda-water down to the bottom of the tumbler, substantially as specified.

3. The combination of a compound valve for soda-fountains with the extended draft-tube *g*, substantially as shown and described.

4. The combination of a nozzle, *a*, nut *c*, band *c*, valve, and tube, arranged for operation substantially as set forth.

144,235.—Car-Propeller.—ROBERT STEEL and SAMUEL AUSTIN, Philadelphia, Pa., assignors of one-half their right to JOSEPH LEEDS, same place. Application filed December 20, 1872.

A heavy steel spring is arranged to revolve the axle by means of intermediate gear-wheels meshing into a gear-wheel secured to the axle. The power is modified at will by means of clamping-brake levers, the curved ends of which embrace a friction-disk on the axle, the brake-levers being opened or closed by a screw-shaft.

Claim.—In combination with a railroad-car, one or more coiled springs, A A, cog-wheels I I and K K, ratchet-wheels D D, spring-pawls F F, brake O, and bar S, all the parts being arranged to operate substantially in the manner described, and for the purposes set forth.

144,236.—Harrow.—ADONIRAM J. STEWART, Chillicothe, Mo. Application filed July 10, 1873.

A harrow provided with a series of spring-teeth supported on pivoted bearings in longitudinal beams provided with slides for adjusting the angle of the teeth, the slides being operated by means of a rock-shaft, lever, pawl, and ratchet.

Claim.—The spring harrow-teeth C, supported on bearings in the beams A, in combination with the slides G, operated by the rock-shaft M, provided with lever P, ratchet O, and pawl N, substantially as shown and described.

144,237.—Washing-Machine.—JOHN C. STEWART, Eureka, Ill. Application filed August 19, 1873.

In a suitable vessel is a false bottom with perforations. Above this are two plungers, working alternately, formed of shallow inverted boxes having divisions that form cells, in which are pins for pressing the clothes.

Claim.—The two shallow inverted boxes E E, having division-plates *f*, forming cells, in combination with the pins *g* and the perforated false bottom B, substantially as and for the purpose set forth.

144,238.—Paper Bag.—ORSON W. STOW, Plantsville, Conn. Application filed February 17, 1873.

Both sides of the bag have projecting portions, so that it may be opened without being turned over. One side of the bag is folded in and pasted, and the other is lapped over so as to form a double bottom without cutting the corners.

Claim.—1. A paper bag having its edges at the mouth corrugated and laid together in the manner and for the purpose described.

2. A straight-bottomed bag wherein the bottom is pasted and folded as set forth, so as to produce a double-bottomed bag, uncut at the corners, substantially as described and shown.

144,239.—Dropping-Platform for Harvesters.—PETER WARNER, Gilead, Mich. Application filed August 16, 1873.

The pivots of the extensible and tilting platform are supported in adjustable arms.

Claim.—The pivoted platform or table having its bearings supported in adjustable arms, and arranged to operate substantially as and for the purpose described.

144,240.—Car-Brake.—WILLIAM WARWICK and HENRY C. DUGGAN, Pittsburg, Pa. Application filed September 6, 1873.

Claim.—1. A brake-bar composed of a center-beam, A, bound with a wrought-iron strap, B, which wholly encircles it, and has massive ends for the attachment of the clogs, substantially as specified.

2. The brake-bar composed of the parts A B *b b* and wrought-iron clogs C, substantially as and for the purpose specified.

3. The clogs or brake-blocks C, constructed with center-bearings c^1 c^1 and a cross-bar, c^2, in combination with the shoes D provided with hook-formed lugs *d d'*, and the locking-bolt E, substantially as and for the purpose specified.

144,241.—Steam-Boiler and other Furnace.—WILLIAM WESTLAKE, 65 Mornington Road, Regent's Park, (administrator of CASIMIR SCHEMIOTH, deceased,) assignor to JOHN HEAD, Ipswich, England. Application filed August 6, 1873.

In front of the furnace are arranged two compressing feeding-rollers, adjustable by compressing-levers and weights, with a feeding-table, upon which the straw, &c., is placed and fed into the furnace, and combined therewith is a tank with oil or like material, which may be mixed with the straw, &c., to assist in burning it.

Claim.—The combination and arrangement, substantially as before set forth, of the furnace, the furnace-mouth, the compressing feeding-surfaces, and the feed-table, said surfaces being arranged between the furnace-mouth and the feed-table.

144,242.—Comb-Holder.—EVERETT E. WHEELER, South Norwalk, Conn. Application filed September 26, 1873.

The comb is held in a slot in the holder so that only a part of the teeth of one side project therefrom.

Claim.—A holder for fine-tooth combs, constructed substantially as and for the purpose described.

144,243.—Construction of Steam-Vessels.—THOMAS WINANS and WILLIAM LOUIS WINANS, Baltimore, Md. Application filed September 15, 1873.

Claim.—A steam-vessel constructed substantially on the plan patented by Ross and Thomas Winans, October 22, A. D. 1858, No. 21,917, and having a flat bottom, as herein described, so as to reduce the draft thereof, as set forth.

144,244.—Sand-Band for Vehicle-Axles.—JAMES B. WINCHELL and HARVEY W. RUGG, Benton Harbor, Mich. Application filed September 11, 1873.

Claim.—1. The sand or mud guard A A', made of two parts, which overlap one another, and are constructed to be put upon the axle, behind the collar thereof, and fastened together in that position, substantially as and for the purpose set forth.

2. The sand or mud guard made of two overlapping parts, and with a depression on its inner face, for the purpose of enabling it to serve as a scraper to the inner surface of the back hub-band.

3. The combination of the mud or sand guard, constructed with a depression on its inner face, and the bell-mouthed back hub-band, substantially as described.

144,245.—Baling-Press.—GEORGE WINSHIP, Atlanta, Ga., assignor to himself and ROBERT WINSHIP. Application filed September 1, 1873.

Claim.—The press with tie-blocks *g'* dovetailed upon its beams B', and with upright rods *e* passing up from its bottom E, and looping over grooved portions of the tie-blocks, and with arching rods *e' e'* passing through the tie-blocks over the beam J, all constructed and combined substantially in the manner and for the purpose herein described.

144,246.—Door-Check.—JACOB RADER, Olathe, Kans. Application filed September 13, 1873.

A slide, arranged in a recess in the edge of a door or gate, carries two legs pivoted to the lower edge. These two legs are forced outward by means of a spreader or stop, over which they work, as they are forced against the floor or ground. The two stops brace the door against movement in either direction.

Claim.—1. The movable stop-legs A A and spreader C, combined and arranged in a cavity of gate or door, as and for the purpose described.

2. The slide B, having the legs A A pivoted to the lower end and the lever I pivoted to the upper end, as described, to enable the said legs to be forced into the ground.

144,247.—Cultivating-Plow.—WILLIAM RAGSDALE, Otsego, Ohio. Application filed August 9, 1873.

The standard has an offset to afford seats for two kinds of plows, the lower one for a small plow designed to run under the surface in an almost horizontal position. The upper projection forms a seat for the larger plow, which throws the earth toward the rows of plants.

Claim.—The standard G *g'*, constructed as described, and combined with the foot E, as and for the purpose specified.

144,248.—Propelling Canal-Boats and other Vessels.—LOUIS RASTET, New York, N. Y. Application filed June 14, 1873.

Claim.—The propeller-wheels B B, combined with close channels A A, inclined downwardly from bow to stern, and receiving the water from the surface in front of the boat and discharging it at the rear, as described, whereby the surface-waves from the front of the boat that tend to cause the washing of the banks are prevented, as and for the purpose set forth.

144,249.—Hot-Air Draft for Furnaces.—ENOCH BOUGHTON, South Norwalk, Conn. Application filed August 6, 1873.

A pipe, arranged in connection with the steam-space of a boiler, is coiled beneath the furnace-grate, after being turned downward and outward, for the retention of the moist or surcharged steam, and then arranged to discharge the superheated steam about the port, by which the air to support combustion is admitted by a perforated cross-pipe in the front.

Claim.—1. The combination of the pipe B, coiled as described, and turned downward and outward at C, and arranged under the grate, with the discharge-pipes A A having openings *a a*, for the purpose specified and shown.

2. The method herein described of drying and heating steam, for mixing the air-draft of a furnace to promote and assist combustion, by means of the retaining and coil pipe B in connection with discharge-pipes A A and discharge-openings *a a a*, arranged as specified and set forth.

144,250.—Guano and Seed Distributer.—JAMES H. BOYD, Plain, S. C. Application filed July 19, 1873.

Between the seed-hopper and the plow-tube or drill-tooth is a shaking-shoe, operated from a toothed driving-wheel by means of a rod or lever.

Claim.—A plow-tube, A I, and shaking conveyer F, combined with seed-hopper E, as and for the purpose described.

144,251.—Scissors.—HORACE S. BREEDEN, Barry, Ill. Application filed October 4, 1873.

Two eyes are upon one shank, while the end of the other shank is merely rounded so that the thumb may readily press it down. A metal band, working in a groove near the pivot, fastens the blades together when not in use.

Claim.—1. As a new article of manufacture, the combined scissors and clippers, having a shank with two rings, and a spring acting on the other curved shank, to be used and operated substantially as described.

2. The curved shank of the scissors having a pivoted spring-catch, in combination with the ring-shank, having a recess with slotted extension for locking the blades into closed position, for the purpose set forth.

144,252.—Walk-Edger.—ISAAC V. BROWER and JOSEPH C. HIGGINS, Millstone, N. J. Application filed July 26, 1873.

A drum, to which is secured a circular cutter, is placed upon one end of an axle, on the opposite end of which is an ordinary wheel. The drum rotates by coming in contact with the turf, which is cut off in narrow strips and turned back by a share. A gage prevents the plow from entering the earth too deep.

Claim.—The drum F, circular cutter G, plow H, and gage I, arranged near one end of an axle, D, having a wheel, E, at the other end, in the manner and for the purpose described.

144,253.—Pipe-Tongs.—JAMES R. BROWN, Cambridgeport, Mass., assignor to himself and HAZEN P. HUNTOON, same place. Application filed October 1, 1873.

The adjusting-screw is connected to the hooked jaw by a swivel, and is incapable of an endwise movement relative to said jaw.

Claim.—The adjusting-screw D, arranged to screw into or through the fulcrum-pin C, and pivoted in and connected with the hooked-jaw lever A, all substantially as described and represented.

144,254.—Composition for Removing and Preventing Incrustation in Steam-Boilers.—CHARLES BURFITT, Surrey House, New Wimbledon, England. Application filed July 26, 1873.

The composition consists of oak-galls, Australian bark, Irish moss, filtered water, and soda, and when in block-form glue is added.

Claim.—A compound for removing and preventing incrustation in steam-generators, consisting of oak-galls, Australian bark, and Irish moss in about equal parts, the quantity of water and preparation being as described.

144,255.—Plow.—EDWARD CARTWRIGHT, De Witt, Neb. Application filed October 16, 1873.

The share lies nearly flat with the ground; the standard is high, and the mold-board convex and very narrow, diminishing in width to its termination, and rising gradually from the heel of the share.

Claim.—The point or lay *a*, having a flat cutting-edge and a convex surface, in combination with the mold-board *g*, made convex its entire length, and contracting and diminishing in width to its termination, substantially as shown and described.

144,256.—Door-Spring.—HENRY CODY, New York, N. Y. Application filed July 26, 1873.

A combined door-spring and hinge has within the shell or casing a circular spring, a pair of swinging jaws clasping around a central stud, and an arm carrying a roller upon its end, the two together serving as a spreader.

Claim.—The combination described of the circular spring B, jaws C C, and vibratory jaw-spreader H I, whereby the door is held open or closed.

144,257.—Car-Coupling.—WILLIAM R. COOVERT, London, Pa. Application filed February 3, 1873.

When the block which engages the head of the coupling-hook is raised it carries with it the auxiliary pin.

Claim.—The pivoted latch-block G, pin N, and hook H, in combination with the chain T, arm S, shaft O, ratchet Q, and pawl R, whereby the said block and pin may be raised together, and the hook thereby disengaged, as set forth.

144,258.—Lozenge-Cutting Machine.—GEORGE H. COPPING, Toronto, Canada. Application filed March 22, 1873.

By placing the cutting and printing devices upon the same frame and operating them from beneath by means of the cam-wheels and vertical rods perfect harmony of time and character of movement are attained, and a single presser-head serves both the cutting and printing devices.

Claim.—1. The combination of vertically-moving printing devices with vertically-moving cutters, both being positively and simultaneously lifted by the same lifting mechanism, to print as well as to cut from the under side of the sheet of dough.

2. The mechanism comprising the bevel-wheels K L, diagonal shaft M, worm N, and worm-wheel O, for communicating motion to the apparatus P P' Q Q' from the first-motion shaft C, as described.

3. The vibrating head V, constructed substantially as described, in combination with the slotted arm 1, fixed stop or pin 4, and the pawl and ratchet-wheel for feeding the sprea *f*.

4. The described mechanism for giving to the head V its vibratory movement, consisting of the stud R, rod S, arm T, and shaft U, as arranged and described.

5. The combination, with the vibrating head V, operating above the sheet of dough, of the system of printing trough and rollers beneath the sheet, such system having a positive vertical intermittant motion in addition to the rotary motion of the rollers, the whole substantially as specified and described, and for the purposes set forth.

144,259.—Metallic Cornice and Gutter.—JOHN B. CORNELL, New York, N. Y. Application filed October 4, 1873.

A mode of strengthening sheet-metal gutters and cornices by means of a corrugated metal plate between the lining and the outer cover in lieu of wooden planks.

Claim.—The employment of channel-iron bed-plank B for supporting the lining of gutters, cornices, and roofs, when the outer cover is thin sheet metal, substantially as specified.

144,260.—Car-Starter.—ARCHIBALD H. CROSIER, New York, N. Y. Application filed September 6, 1873.

Claim.—The combination, with the axle of a car-truck, of the levers J J' *u*, frame I, gear-wheels P Q R D, and clutch mechanism G F H, to operate in the manner and for the purpose described.

144,261.—Water-Wheel.—GATES CURTIS, Ogdensburg, N. Y. Application filed October 4, 1873.

A solid conical bonnet or cap is placed on the supporting-case and provided with the requisite number of apertures for admitting the water. The gate-ring is also conical and supported on the bonnet and arranged with inclined upper and lower rims, which form extensions of the curved rims of the wheel.

Claim.—The bonnet gate-ring E, made with inclined rims E', which carry the chute-pads F, with the outwardly-curved chutes F', and having openings *b'*, arranged over corresponding apertures *b* of the bonnet or cap D, for regulating the flow of the water, as described.

144,262.—Die for Pressing Hats.—JASON DEAPER, Barre, Mass. Application filed September 30, 1873.

A semicircular groove is formed in the die when cast, to receive a steam-pipe, which is secured in position by filling up the groove with molten metal, &c.

Claim.—The die *a*, having the groove or recess *c* formed in it to receive the pipe *c*, the pipe being secured in position by filling up the groove with molten metal or other suitable material, substantially as shown and described.

144,263.—Adjustable Scaffold.—JOHN DILLON, New York, N. Y. Application filed September 13, 1873.

A combined scaffold and ladder, arranged to be readily expanded into a painter's scaffold, adjustable to different heights, or compactly folded for transportation, the detached parts serving as step and extension ladders.

Claim.—1. The truss A B, formed of two parts hinged together, and having an intermediate recess, *c*, combined with supporting pieces braced by hinged top board d^1, as and for the purpose described.

2. The connecting top boards d d^2 of parts A B, having vertically-adjustable bolts *f* for guiding longitudinally-connecting supports, as described.

3. The recessed rear part B, connected with sliding pieces B' by screw cross-rod *p*, and washer-plates o^3, substantially as set forth.

144,264.—Combined Extension Measuring-Rod and Divider.—GEORGE H. DISCHER, Mobile, Ala. Application filed August 30, 1873.

A measuring-rod composed of three sections, the central having guides in which the terminal sections are adjustable longitudinally and may be clamped. The sections have in each end sockets for points or pencils.

Claim.—1. A combined extension-rod and tram, constructed as herein shown and described.

2. The combination of the point and pencil, arranged in the ends of the extension-pieces C D, with center piece A, for the purposes set forth.

144,265.—Device for Dressing the Sides of Nuts.—ISSACHAR DODG, New Market, N. H., assignor of one-half his right to ORRIN MURRAY, same place. Application filed August 9, 1873.

To the bed-plate are secured, by bolts passing through slots, two carriers, on the inner faces of which cutters are fastened that correspond to the form of the nut. The cutting-dies have double cutters, one within and below the other. The nut is carried down by a plunger.

Claim.—1. The finishing-dies E having the inclined and additional cutting-edge *e'*, in the manner and for the purpose substantially as described.

2. The dies E having angular or beveled edges on one side, fitting into dovetail or angular recesses in the jaws D, and secured therein by means of the beveled block *f* and screw bolt and nut *f'*, substantially as described.

3. The movable and adjustable jaws D with their dies or cutters E, in combination with the base-plate C, when constructed in the manner and for the purposes described.

144,266.—Watch-Gear-Cutting Machine.—AGOSTINO DURENI, New York, N. Y., assignor to himself, GUISEPPI ROSSI, and FRANK E. MILLER, same place. Application filed July 7, 1873.

The cutter, attached to the laterally and perpendicularly adjustable swinging carriage D, is adjusted to the gage R on the sliding carriage K, which carries the gear to be cut, and the gear carried on the adjustable carriage K is adjusted to the gage P, attached to the fixed bed or support of the machine.

Claim.—1. The combination, with the swinging adjustable carriage D and the several working parts mounted upon and carried by it, of the adjustable carriage K and the several working parts mounted upon and carried by it, as and for the purpose specified.

2. The combination of the swinging gage P with the cutter-head F and its attachments, and the chuck *f*, as and for the purpose specified.

3. The combination of the swinging gage R with the chuck *f* and cutter-head F and its attachments.

144,267.—Combined Over Bosom and Collar.—ISAAC T. DYER, Canton, Me. Application filed October 3, 1873.

A "dickey" having a spring in the band to clasp around the neck.

Claim.—The over-bosom C, provided with a spring neck-band, A D, substantially as and for the purpose set forth.

144,268.—Balanced Slide-Valve.—JOSHUA EVERED, Muskegon, Mich., assignor to himself and JOSHUA DAVIS, same place. Application filed September 13, 1873.

The slide-valve is provided with a packing-ring fitting into a sleeve-bearing against the steam-chest cover, and has an interior cylinder having a piston which is set out by a spring against the inside of the sleeve.

Claim.—A slide-valve having an outer cylinder, D, and an interior cylinder, H, a sleeve, F, and piston G, arranged substantially as and for the purposes described.

144,269.—Fender.—GILES F. FILLEY, St. Louis, Mo. Application filed September 22, 1873.

A fender or foot-rest is inserted between brackets or continuations of the end plates of a stove.

Claim.—The combination of front and back plates A and B, brackets or projections D D', and foot-rest C, substantially as and for the purpose set forth.

144,270.—Watch.—ARNOLD FRANKFELD, New York, N. Y. Application filed April 29, 1873.

A removable sectional plate, supporting the balance and escapement and their bridges, is let into the front plate.

Claim.—The quarter-plate *d* and disk *e*, carrying the balance and parts of the escapement, and removable from the plate *a*, substantially as and for the purposes set forth.

144,271.—Locomotive.—JAMES S. FRENCH, Alexandria, Va. Application filed June 7, 1873.

Claim.—1. The pair of adjustable grooved driving-wheels C C, in combination with the common driving-wheels B B and the connecting-rod *d*, substantially as described, for the purposes set forth.

2. The combination of the common driving-wheels B B with the grooved driving-wheels C C, the connecting-rod *d*, the curved guide *m*, and the hoisting apparatus E or its equivalent, substantially as and for the purposes herein described.

3. One or more pairs of ordinary driving-wheels connected with a pair of wedge-shaped grooved driving wheels, which may be lifted above the rails, or pressed down upon the rails, at the will of the engineer, substantially as described.

144,272.—Land-Roller.—WILLIAM H. GROW and CRAWFORD M. SLOAN, Darien, Kans. Application filed June 21, 1873.

The hollow cylindrical rollers are formed of staves drawn together and secured by rods running through each one transversely, and firmly secured by nuts. The tires of the wheels fit into grooves formed in the inner periphery of the cylinders.

Claim.—1. In combination with an axle and wheels, the sectional cylinders A of a land-roller, having inner peripheral grooves for receiving the tires of the wheels, as shown and described.

2. In a land-roller, the cylinders A, formed of staves or sections *a b*, connected by the rods *c* and nuts *e*, arranged as shown and described.

144,273.—Machine for Shaving Leather.—DAVID Y. HAAS, Hepler, Pa. Application filed August 30, 1873.

The knife is mounted upon a frame, which is made adjustable to provide for varying thicknesses of leather.

Claim.—1. A machine for shaving leather composed of the bed A, adjustable frame D, roller F, and presser-bar G, arranged to operate substantially as shown and described.

2. In combination with roller F, the hinged frame D carrying knife M, and having mortised tongue H, of the slide I, provided with the inclined bar J, all as shown and described, to operate as specified.

3. The tongue H and bar J, in combination with the slide I, as and for the purposes described.

4. The gage K, in combination with the slide I, for the purpose described.

144,274.—Self-Closing Telegraph-Key.—WILLIAM HOCHHAUSEN, New York, N. Y. Application filed October 3, 1873.

Key-lever hung in a yoke so as to have a lateral motion. Yoke hung in the ordinary bearing, for the vertical motion. Key, when not in use, is thrown laterally, by a spring, against circuit-closing point *r*.

Claim.—The telegraphic key in which the lever is mounted upon two centers, to allow of a lateral as well as of a vertical movement, in combination with the circuit-closing points *r s*, substantially as and for the purposes set forth.

144,275.—Spark-Arrester.—JAMES HUGHES, Scranton, Pa. Application filed October 11, 1873.

Two perforated plates of equal size are arranged adjustably, one over and the other beneath the central opening of two perforated rings, also of equal size. The whole held in position by means of bolts.

Claim.—The combination of the two equal-sized perforated rings A and the two equal-sized perforated circular plates B with each other adjustably, substantially as herein shown and described.

144,276.—Slide for Extension-Tables.—JESSE KING, Oswego, N. Y. Application filed September 6, 1873.

The ends of the slide-bars are provided with arched slide-plates having short extensions, which are inclined inwardly, and which slide in similarly-inclined grooves of the adjacent slide-bars.

Claim.—As an improvement in slides for extension-tables, the combination of slide-bars A, arched side-plates B having extensions B' running in inclined grooves *b*, and bars A, all arranged as and for the purposes described.

144,277.—Cement Pipe-Traps.—ALBERT A. LOVELL, Worcester, Mass. Application filed August 25, 1873.

A central core is made of plaster or other easily-frangible material. Around this the trap is cast, and the core then chipped out. Iron stripes may be embedded in the core, and projecting therefrom to facilitate its removal.

Claim.—A cement trap for drain-pipes and other purposes formed in one piece, substantially as described and set forth.

144,278.—Axle for Vehicles.—LEWIS MARTIN, Oswego, N. Y. Application filed March 29, 1873.

The sections of the axle are stamped from blanks.

Claim.—1. The hollow metallic axle, constructed of two sections clamped together, one above the other, by shrunken collars and through-bolts, substantially as described.

2. The hollow sectional axle, bound together by through-bolts, having partitions to form oil-reservoirs at either end, and also to prevent the escape of the lubricating material through the bolt-holes, substantially as set forth.

144,279.—Cooking-Stove.—JOHN MCMASTER, Dayton, Ohio. Application filed March 4, 1873.

A plate or rack for the bottom of an oven of a cook-stove, sliding in ribs or guides, which also act as supports when it is drawn out. A bracket in the side of the stove can be turned under the plate thus drawn out, for additional support.

Claim.—1. The oven-rack C, constructed and arranged with reference to the oven and ribs *s* and *c*, substantially as described.

2. The adjustable rib *c'*, constructed and arranged substantially as and for the purpose specified.

3. The bracket K, as arranged with reference to the side of the stove and the rack C, substantially as described.

144,280.—Slate-Washer.—JOHN G. MURRAY, Matteawan, N. Y. Application filed June 3, 1873.

Claim.—As a new article of manufacture, a slate-washer consisting of a block of compressed felt, *a*, in combination with a suitable inclosing case or box, *c*, substantially as shown and described.

144,281.—Cotton Chopper and Cultivator.—MANSFIELD L. NEARE, Double Bridges, Tenn. Application filed March 22, 1873.

The cultivator-shovels are secured to the standards by means of bands passed through slots formed in the shovel-blades.

Claim.—The bands *a* passed through slots in the shovels M, and secured in the notches of standards L, by means of screw-bolts, as shown and described.

144,282.—Slide-Valve.—ARCHIBALD S. NELSON, Connellsville, Pa., assignor of one-half his right to HIRAM F. HAMMON, same place. Application filed June 3, 1873.

Two additional openings are arranged in the valve-seat, and two in the valve, by which means the steam is more quickly admitted into the cylinder, and a full opening is given with a shorter stroke, thereby avoiding friction and expense.

Claim.—The valve-seat 1, having extra receiving-ports 5 5 opening into ports 2 and 3, in combination with the side-valve 6, having two openings, 7 and 8, so placed as to open the ports 3 and 5, or the ports 2 and 5, when taking steam, and close the opposite port 5 when exhausting, as herein shown and described.

144,283.—Match-Box.—MORRIS L. OHUM, Philadelphia, Pa. Application filed June 21, 1873.

The match-boxes are attached to the "rose" or "bracket-back" of a gas-bracket.

Claim.—In combination with the bracket of a gas-burner, one or more match safes or boxes attached permanently to the bracket-plate, substantially as shown and described.

144,284.—Composition for Purifying Illuminating-Gas.—SAMUEL P. PARHAM, New York, N. Y. Application filed September 13, 1873.

Claim.—The composition for purifying illuminating-gas, produced of sawdust, lime, copperas, oxide of iron, and water, substantially in the manner and in the proportions specified.

144,285.—Printing-Telegraph.—GEORGE M. PHELPS, Brooklyn, N. Y. Application filed April 8, 1873.

Printing and type-wheel mechanisms run by independent motors. Type-wheel controlled by polarized electro-magnets, through which alternating currents pass. Printing-magnet made with prolonged poles, and with core surrounded by non-magnetic envelope to retard magnetization. Is charged, releasing printing mechanism, upon a prolonged closing of circuit on current of either polarity.

Claim.—1. In a printing-telegraph, a shaft, that by its revolution actuates the printing-lever and impression-pad, in combination with a let-off mechanism applied to that shaft, and an armature and electro-magnet that are energized by a pause with the circuit closed to hold the type-wheel in position while the printing takes place, substantially as set forth.

2. A printing-telegraph, in which the step-by-step movement of the type-wheel is regulated by two electro-magnets, and the printing is effected by a revolving mechanism, in combination with a third electro-magnet in the same metallic circuit that is rendered operative by a pause with a closed circuit and the let-off mechanism for the impression, substantially as set forth.

3. A type-wheel that is revolved by a spring or other motor, and a recoil-escapement connected with the armature of an electro-magnet, in combination with a unison-stop that arrests the rotation of the type-wheel only when the said type-wheel arrives at the correct unison position, substantially as set forth.

4. A magnet made with prolonged poles to retard the accumulation of magnetic energy, in combination with the printing-lever and the armature for moving or controlling the movement thereof, substantially as set forth.

5. A magnet with a non-magnetic metallic tube surrounding the core, in combination with the printing mechanism, for the purposes and as set forth.

144,286.—Balance.—EDWARD C. PICKERING, Boston, Mass. Application filed August 9, 1873.

A balance-beam, suspended by thin steel plates or springs, has a spirit-level arranged upon it, and has from its short arm two scale-pans suspended, one above the other, and upon its long arm are two adjustable weights.

Claim.—In combination with base-frame B and pillars *b*, the scale-beam C, with spirit-level D and adjustable weights E E′ at one end, and scale-pans F F′ at the other end, substantially as and for the purpose described.

144,287.—Clock-Escapement.—ALOYS PLATT, New York, N. Y. Application filed August 16, 1873.

The pendulum hangs behind the frame, through a slot in the back of which it is connected with a swinging arm, which bears the impulse-pallet, and a transverse pivoted arm which strikes another swinging arm, bearing the detent-pallet, and forces it away from the escape-wheel at each vibration.

Claim.—1. A spring-pressed swinging bar, B C, that engages the escape-wheels, provided with a side stud, E, operated by an arm, F, as and for the purpose described.

2. The arm G, having pallet K at the lower end, pivoted to the frame at H, and connected with the pendulum through slot J, as and for the purpose set forth.

3. The pin *b*, passing through a slot of bar G, and combined with the arm F, as and for the purpose specified.

144,288.—Door-Latch.—OREN B. RAND, Kalamazoo, Mich.—Case C. Application filed August 9, 1873.

Improvement on patent No. 140,269, June 24, 1873. The operating parts are inclosed in a shell, and so arranged as to be attached to the face of the door, instead of mortising into it. A crooked lever with unequal arms, and knob-handle extending outside the casing, operates the bolts, the handle being stayed by a suitable catch, while a spring-catch is attached near the bottom to look into the lower bolt.

Claim.—The crooked lever D, catches C C′, links L, and friction-rollers F, in combination with the rods R, bolts B, and springs S, all arranged on the face of the door so as to work the bolts at either or both ends, when constructed, arranged, and operated as described and shown, for the purpose set forth.

144,289.—Blackboard.—JAMES REBER, Nebraska, Ohio. Application filed July 26, 1873.

A blackboard of three portions hinged together is mounted to rotate upon a standard, and is adjustable therein as to height. The board may be inclined and fixed at any point within a quarter of a circle, or the whole board set horizontally and used as a table-top, with the side leaves folded down like table-leaves or not.

Claim.—1. The adjustable folding blackboard, consisting of frame or stock A, rack and ratchet mechanism C *a*, and blackboard B, pivoted arm D and hinged bow-lever E, arranged and operated substantially as and for the purpose described.

2. The blackboard B, consisting of central leaf B¹ with hinged side leaves B², and lever T, pivoted to bolts *l*, and set by thumb-screws *m*, substantially as set forth.

3. The T-shaped arm D, turning on rack C, and having guide-slot with thumb-screw A to adjust bow-lever E, and producing any inclination of board B, as described.

144,290.—Churn-Dasher.—GEORGE RIDLER, Richardsville, Iowa. Application filed July 26, 1873.

The dasher consists of two pairs of bars, each pair transverse to the other, thus forming a solid hub at the center in which the dasher-rod is inserted. Each bar is wide beneath and inclines on both sides to an acute edge above, and is hollowed beneath in like manner, so that an end view shows them V-shaped.

Claim.—The dasher M formed of bars crossing each other, as specified, said bars made V shape with V-grooves in their under side, as and for the purpose specified.

144,291.—Farm-Gate.—JACOB C. ROHRER, Gomer, Ohio. Application filed June 21, 1873.

A gate which swings horizontally in either direction, or slides past the hinge-post so as to open half its width through a secondary frame, with pulleys for the upper rail to glide upon, said secondary frame fortifying and balancing the whole gate in its swinging movements.

Claim.—The frame A, consisting of vertical pieces *a a′*, oblique side pieces *e f*, rollers *i i*, and lateral piece *g*, the said parts being constructed and arranged substantially as and for the purpose described.

144,292.—Machine for Riving Shingles.—CHARLES SHELMANDINE, Jefferson, N. Y. Application filed September 13, 1873.

The shingle or stave bolts are placed upon a vertically-reciprocating table, and split into pieces of the desired thickness by being forced against a series of knives.

Claim.—1. The combination of the movable table A, stationary blades B, one or more sets of movable blades, C D, and mechanism for operating the table and the sets of movable blades successively, substantially as specified.

2. The double-toothed rack A′, pinions B′, catch-bolt C′, and spring D′, combined and arranged substantially as specified.

3. One or more blades, C D, bars S, cross-heads T, bars V, toothed bars W, and pinions X, combined and arranged substantially as specified.

4. The combination of the yoke Q′ and discharger K′ with the table A and splitting-blades, substantially as specified.

144,293.—Car-Coupling.—WARREN B. SNEDAKER, Syracuse, N. Y. Application filed April 19, 1873.

To uncouple, the lid upon which the long arm of the lever abuts is raised and the link may be drawn out, when it carries forward the long arm a quarter turn. In this position it is held by a weight-bar acting on pins which pass through the short arm. The link, on re-entering to couple, strikes the short arm and throws it back until the long arm has passed behind the abutment on the lid.

Claim.—The combination of forked bar J with pivoted hook C, cover G, and link B, substantially as shown and described.

144,294.—Process of Manufacturing Paper from Grains.—CHARLES V. STERLIN and JOSEPH STERLIN, New York, and HENRICH A. HAAM, Brooklyn, N. Y. Application filed February 15, 1873.

Claim.—The process of preparing grain-fiber for bleaching and for being subsequently manufactured into paper by passing the moistened fiber on wire-gauze sheets between compressing-rolls; secondly, water-washing it on sieves; and thirdly, macerating it in caustic alkali, as set forth.

144,295.—Slide-Valve.—WILLIAM STEPHENS, Pittston, Pa. Application filed August 4, 1873.

A wedge-shaped valve between two walls, with inlet and outlet ports, is provided at top and bottom with channels for the admission of steam, which is to prevent leakage and also to balance the valve.

Claim.—The valve A, having flanges G G, combined with walls B, having the upper and lower steam-channels I I, arranged as and for the purpose described.

144,296.—Furnace for Steam-Boilers.—UMIAH B. STERLING, Madison, Ind. Application filed December 19, 1872.

A plate, with air-tubes and overlaid with fire-brick or tiles, is provided in place of the grate-bars, and forms a cover for a hot-air chamber connected with the draft. A system of pipes extends above the hot-air chamber and back under the boiler in the combustion-chamber, and said pipes are connected by hollow perforated castings, by which hot oxygen is supplied. The carbonic-acid gases are drawn from the uptake by an exhaust-fan and returned to the hot-air chamber.

Claim.—1. The combination of a close perforated fire-bed, F, and a close hot-air chamber, D, which receives a blast of air through a heated pipe or pipes, H H, substantially as herein specified.

2. The combination, with the close hot-blast-supplying chamber D, of hot-air-supplying pipes *c c* and hollow perforated castings A A in the combustion-chamber A, substantially as herein specified.

3. In combination with the hot-air chamber D, pipes H, H, and I, plate F, and tubes *a a*, the device consisting of the system of pipes L and M, valve *i*, and an ordinary exhaust-fan, when arranged substantially in the manner shown, and for the purpose set forth.

144,297.—Link-Guide for Car-Couplings.—WILLIAM WARDNER and WILLIAM L. D. JOHNSON, Crosbyborough, Ky. Application filed June 14, 1873.

The link-guide is carried forward by a weight suspended from its rear end. When the draw-heads meet the guide is forced back out of the way, and is caught and retained by a spring-catch lever. This lever is operated to release the guide from the side of the draw-head.

Claim.—The hinged and grooved curved frame D, the sliding curved frame E, the supporting and adjusting frame F, and hand-screw G, the chain, weight, and roller J, M, K, and the pawl and spring O P, in combination with the bumper-head A, substantially as herein shown and described.

144,298.—Car-Coupling.—JAMES M. WELLS, Painesville, Ohio. Application filed April 18, 1873.

The link is guided by means of the pin, which has a shoulder about at its center which rests upon it and balances it on a fulcrum in the mouth of the draw-head. The degree of elevation or depression is regulated by another projection on the pin, which rests on an incline formed on the top of the draw-head about the pin-hole. The catch-bar B is held from connection with the link by a pawl which catches in a notch in the side of the draw-head, when the bar is raised and remains until it is forced away by the head of the entering link.

Claim.—1. The combination, with the bumper A, notched at *b*, of the catch-rod B and pawls C, as and for the purpose described.

2. The combination, with the bumper A, having slot *a*, notches *b*, fulcrum O, and planes *c c*, of the pin D, all constructed as described.

144,299.—Eaves-Trough Hanger.—THOMAS G. WILLIAMS, Akron, Ohio, assignor to WILLIAM WARNER & Co., same place. Application filed August 9, 1873.

Claim.—An eaves-trough hanger having prolonged end C, adjustable vertically in clamp E, and turned over to hold the trough at any elevation desired, thus avoiding the use of an adjusting-screw.

144,300.—Grave-Covering.—JOSEPH R. ABRAMS, Greenville, Ala. Application filed August 8, 1873.

Claim.—1. The combination, with a cement or other artificial grave-mound, of the plate D, supported directly or indirectly upon subjacent arches A placed across the grave, as and for the purpose described.

2. The combination, with arches A and plate D, of the intermediate frame B, as and for the purpose described.

3. The plate D, constructed, as described, with oval recess *d*, to support therein the edges of the cement shell or mound with face *d′*, as set forth.

4. A grave-mound plate, D, having the head-plate F secured detachably, as and for the purpose specified.

144,301.—Hemp-Brake.—JOHN F. ADAMS, Lexington, Ky. Application filed April 28, 1873.

A small cylinder is journaled so as to be let into the face of the table. Stripe are longitudinally set upon this cylinder, their faces radial to its axis, their backs convex. The flax is fed to this cylinder, which presses it and carries it down and delivers it between two unequal drums having the same kind of stripe which whip the material and draw it out, one end of it being held by the operator.

Claim.—The combination of the cylinder D with the two drums E and G, all of different sizes, and each provided with the ribs *a a*, said cylinder and drums revolving at different rates of speed, as and for the purposes herein set forth.

144,302.—Stocking-Supporter.—ALEXANDER C. ADAMS, Cambridge, Mass. Application filed September 24, 1873.

A combined shoulder-brace and stocking-supporter.

Claim.—As a new article of manufacture, the combined stocking-supporter and shoulder-brace, consisting of the shoulder straps or loops *a a*, and their back connection *b*, and pendent stocking-sustaining straps B B C C C C′, all arranged as specified.

144,303.—Stocking-Supporter.—ALEXANDER C. ADAMS, Cambridge, Mass. Application filed September 11, 1873.

A spring-pin for attaching a suspender-strap to a stocking.

Claim.—As a new article of manufacture, the sock-supporter attachment composed of a single wire, pointed, crossed, and bent in the manner, and provided with helices, all substantially as described and represented, and for the purpose set forth.

144,304.—Portable Stall for Horses.—JOHN W. ADAMS, Rockville, Ind. Application filed September 27, 1873.

Double posts for the head and foot, the ends of the stall side boards to pass between each pair and rest on transverse pins, which hold the pairs of posts together. Brackets on the sides of the boards receive splines or keys to hold the boards together. These splines may be driven into the earth or secured to a floor. One of the rear half-posts is pierced for attachment to a joist or rafter above. Pins through the head-posts serve to support a trough.

Claim.—A portable stable-stall constructed as described, and consisting of the double upright beams A and B and the boards C C′ C″, with their fastenings, substantially as set forth.

144,305.—Horse Hay-Rake.—ALEXANDER AMOS, Potsdam Junction, N. Y. Application filed June 3, 1873.

A bell-crank lever, pivoted at its angle to the rake-head, bears on its rear horizontal arm the presser-bar, and its other arm serves as a hand-lever to operate the presser-bar, and has a hook to interlock with the lifting-lever, and thus hold the teeth in an elevated position, when desired.

Claim.—1. The thimbles A, having the sockets *a′*, made to run parallel with and to the front of bar B, so as to obtain a fulcrum on the latter, by which the teeth can be sprung into the grooves *b b*, in connection with the shank C, constructed so as to permit the teeth to lie squarely against the same, substantially as and for the purposes set forth.

2. The curved lever F, having sockets *e e* to receive the removable handle *d*, in combination with the hooked lever G, presser-bar H, lever D, having an angular arm provided with holes, and lifting-bar E, the whole constructed and arranged substantially in the manner and for the purpose set forth.

144,306.—Horse Hay-Rake.—ALEXANDER AMOS, Potsdam Junction, N. Y. Application filed September 16, 1873.

A latch is used to lock together the presser-bar, the rake-teeth, and the dumping or lifting bar, which, without it, swing independently.

Claim.—1. The latch *f*, in combination with connecting rod or bar *g*, supporter *e*, bar A, and teeth *b*, constructed and operating substantially as and for the purpose set forth.

2. The thimble *c*, having the continuous groove *e* running along the under side thereof from eye *a*, and terminating above in a cavity or depression, *r*, to receive the tooth and its hooked end, substantially as set forth.

144,307.—Sash-Molding.—RALPH L. ANDERTON, New York, N. Y. Application filed October 4, 1873.

Claim.—The above-described sash-molding, constructed of the wooden sash-box head A, incased in the sheet-metal covering B, and containing in the groove in its upper surface an edge or portion of the metal bar C, to or upon which the said covering is fastened, as and for the purposes set forth.

144,308.—Plow.—AUGUST ANSCHUTZ, ANTON SEIDEL, and MICHAEL WEBER, Livingston county, Mo. Application filed July 21, 1873.

The base or foot of the plow is widened by a fender encircling it, and supports not only the usual standards, but a shaft to which the plow is attached, which revolves sufficiently to throw the furrow either to the right or left.

Claim.—1. The foot F, provided with the fender E and shield H, for the uses and purposes specified.

2. The foot F, provided with the fender E and socket or journal F′, in combination with the revolving standard I, lever L, and ratchet E, substantially as shown and described.

144,309.—Drop-Light and Hanger.—GEORGE F. BLAKER and WILLIAM F. CRITER, Philadelphia, Pa. Application filed September 5, 1873.

The sliding pipes are located outside the supply-pipe, and are governed by a sliding weight, the whole being inclosed by a tube above the distributer.

Claim.—1. The combination of the supply-pipe E′, main pipe C, and sliding pipe E, said main and sliding pipes being apart from each other and not concentric, and located within the covering-tube G, as specified.

2. The covering-tube G, located above the body D of an extension gasalier, and inclosing the counterbalancing-weight, said weight being connected to the sliding pipe by cords and pulleys, and moving vertically within the confines of said covering-tube, substantially as and for the purpose set forth.

3. The combination of the main pipe C and sliding pipe E, said pipes being apart from each other and non-concentric, with the counterbalancing-weight F connected with said sliding pipe by cords and pulleys, as shown, all of said parts being located within the covering-tube G, as specified.

144,310.—Process of Preserving and Condensing Milk.—GAIL BORDEN, White Plains, and JOHN G. BORDEN, South East, N. Y. Application filed October 30, 1873.

Heat above 212° Fahrenheit and condense *in vacuo*.

Claim.—The process of preserving condensed milk, consisting in heating it above 212° Fahrenheit, so as to destroy any germs of fermentation, and then condensing it by evaporation, substantially as set forth.

144,311.—Condensed Milk.—GAIL BORDEN, White Plains, and JOHN G. BORDEN, South East, N. Y. Application filed October 30, 1873.

This product has the consistency of ordinary condensed milk, but, by a preliminary heating, so as to raise the temperature above 212° Fahrenheit, fermentation is prevented.

Claim.—The manufacture or product of condensed milk, rendered preservative by heating the milk under pressure to a degree

above the boiling-point, or above 212° Fahrenheit, by the process and operation, and substantially as herein set forth.

144,312.—Boot-Tree.—THOMAS BRANIGAN, Beloit, Wis. Application filed October 4, 1873.

Invention consists in the novel arrangement of well-known devices, as definitely set forth in the several clauses of claim.

Claim.—1. In a boot tree, the sliding front B, rod a^2, nut b^2, follower A, and hook i substantially as and for the purpose specified.

2. The combination of the sliding front B, foot part C and D, substantially as described.

3. The rod E, lever a^2, spring-dog o, skeleton frame G, nuts a^3, arms z z, and follower f, substantially as and for the purpose set forth.

4. The parts A, F, and S, in combination with the rod E, skeleton frame G, nuts a^3, arms z z, and follower f, substantially as specified.

144,313.—Wood-Grinder.—JAMES BRIDGE, Augusta, Me. Application filed May 10, 1873.

A stationary millstone or plate, A, is placed in a case, and over it a rotating wheel, C. Both are provided with a series of knives or bars, a a, which extend beyond the periphery of the wheel C and approach the sides of the case, leaving spaces b b open at the top, and carving an ducts, through which the circulating material, mingled with water and projected outward by centrifugal force against the side of the case, is thrown upward and, falling upon a stationary plate H, begins its circuit anew. Material is fed through a spider, E.

Claim.—The combination of the rim or vat B, stones or plates A C, having knives or blades a a extending beyond the edges and forming channels b b, the circumferential inclined bench B', and the covering-plate H, all constructed and arranged substantially as and for the purposes herein set forth.

144,314.—Magic Lantern.—ALBERT G. BURNY, Philadelphia, Pa. Application filed July 7, 1873.

A magic lantern with a lamp-chamber, having a slotted sliding cover so arranged that different kinds of lamps or burners may be used. Also a hood, partly surrounding the frame, to carry off the heat, and a picture-holder adapted to various kinds of pictures.

Claim.—1. The combination, substantially as described, of the slotted slide A with the combustion-chamber of a magic-lantern apparatus, for the purpose specified.

2. The combination, substantially as described, with a magic-lantern apparatus, of a reversible picture-holder, D, provided with an adjustable stop, j.

3. A hood, d, arranged within a magic lantern, in respect to the burner, as and for the purpose set forth.

144,315.—Medicated Pad or Belt.—ALMOND F. COOPER, Cambridge, Mass. Application filed October 2, 1873.

Claim.—As a new article of manufacture, a porous pad or belt containing a compound of alum ($Al_2O_3,3SO_3+KO,SO_3\times24HO$) and borax, ($NaO,2BO_3+10HO$,) as and for the purpose set forth.

144,316.—Machine for Cutting and Working Stone.—HERBERT COTTRELL, Newark, N. J. Application filed July 29, 1873.

The tool-carrying frame is combined with feed mechanism adapted to move said frame in any desired direction, and also a carriage provided with an upright stone-carrying plate adapted to be set nearer to or further from the tool, as desired, as well as to be turned on a vertical axis to adjust its upright face at any required angle with respect to the tool. The said supporting-plate also is provided with adjustable and detachable centers, similar to those in a turning-lathe, to be used in turning columns, and for like work.

Claim.—1. The combination, with the tool-carriage and screw-threaded shafts for feeding the same vertically and horizontally, of the tension or feed pulleys imparting rotary movement to said shafts, and constructed and operating substantially as shown and described, so that at the times and under the conditions specified the peripheral portion of one or the other of said pulleys may slip on its hub, and thus permit the rotation of the feed-shaft driven by said pulley to be retarded for the purposes stated.

2. The feed or tension pulleys, in combination with the reversing-fingers, driving-pulleys, and cones for varying the relative speed of said driving-pulleys, arranged and operating together substantially as and for the purposes shown and set forth.

3. The stone-carrying truck or car, arranged to run on a track extending in front of the cutting devices, and combined with mechanism whereby it may be locked and fixed in position on the track in front of said cutting devices, substantially as shown and described.

4. The combination, with the truck or car, of the V center rail between the track-rails and the beveled clamps carried by said truck, and cam-shaft for operating the same, substantially as herein shown and set forth.

5. The upright stone-supporting plate or frame, supported and held on the truck or car, and adjustable thereon with respect to the cutting mechanism, substantially as herein shown and set forth.

6. The truck or car and stone-supporting plate, slotted to receive a bolt or pin which holds it to the truck, permits the said plate to be adjusted bodily toward and away from the cutter, and serves also as an axis upon which the plate may be turned to set its face at any desired angle in a vertical plane with respect to the cutter, in combination with end dogs on said adjustable plate for clamping it to the truck in the desired position, substantially as shown and set forth.

7. In combination with the upright stone-supporting plate, the adjustable and removable centers for turning columns and for similar work, substantially as herein shown and set forth.

144,317.—Stone-Sawing Machine.—HERBERT COTTRELL, Newark, N. J. Application filed May 8, 1873.

Claim.—1. The above-described endless metallic running band, in combination with sections or pieces of steel placed at intervals in the edge of said band, in which sections of steel carbons are partly embedded, and present a projecting cutting surface, substantially as set forth.

2. The endless metallic running band with carbon-armed sections, in combination with upper and lower pulleys, the periphery of which is covered with a yielding or elastic substance, substantially as and for the purposes set forth.

144,318.—Stone-Cutting Tool.—HERBERT COTTRELL, Newark, N. J. Application filed August 21, 1873.

A stationary beveled disk is combined with a revolving diamond-cutter. When the cutter is fed against the stone the beveled disk breaks off that portion of the stone left outside of the kerf.

Claim.—The combination of a revolving diamond or carbon armed circular cutter and a stationary wedge or beveled disk applied to and operating in connecting with said cutter, substantially as herein before described.

144,319.—Centrifugal Machine for Draining Sugar.—PHILIPP CRAMER, Jersey City, N. J. Application filed October 7, 1873.

The sirup, charged with crystals, is received in the upper chamber of the basket, and, by centrifugal force, is delivered through the channels and ducts near the outer edge of the partition to the basket proper, where it forms an annular wall supported by a flange at the bottom of the basket, from whence it is removed by an adjustable scoop.

Claim.—1. The revolving basket of a centrifugal machine, in combination with the receiving surface chamber G and the cover F, provided with ducts for forcibly delivering the sirup and sugar in streams against the sides of the basket, substantially as described.

2. The revolving basket provided with an annular sugar-receiving shelf, H, and arranged to be accessible from below, for the ready removal of the sugar from the shelf while the machine is in motion, substantially as described.

3. The revolving basket with the annular shelf, in combination with the discharging scoop or scraper, substantially as described.

4. In combination with the base of a spindle-standard in a centrifugal machine, the elastic cushion between the base and the floor or platform, and the bolts and their elastic cushions below the floor, substantially as described.

5. The spray-pipe N, in combination with a basket having a closed top and an open bottom, substantially as described.

144,320.—Machine for Making Weavers' Harness.—JOHN H. CROWELL, Providence, R. I., assignor to himself, JOHN KENDRICK, and JOSEPH H. KENDRICK, same place. Application filed June 26, 1873.

The rocking loose-rods are provided with eccentric protuberances, which cause the heddle-twines to be longer on one side than on the other, so that the side bands to which the twines are fastened are arranged at one side of the axis of the heddle-shaft.

Claim.—The rocking loose-rods A A' of a machine for making weavers' harness, having eccentric protuberances H H' for the purpose of making the heddles longer upon one side than the other, substantially as described.

144,321.—Cultivator.—SEBERT CRUTCHER, Little Mount, Ky. Application filed September 6, 1873.

The frame consists of a center-beam and two end pieces, the forward one being arched, and the plow-beams are attached to the ends of this arch by link-joints. Branched standards are attached to the rear ends of the land-sides by a hinge-joint, and pivoted to the cross-beam above.

Claim.—The straddle-row walking-cultivator, composed of the frame C D E, and plows whose beams are at their forward ends connected by link-joints to the bar C of the frame, and whose land-side bars H' and I' are pivoted to the fixed pendent arms F and G of the bar E of the frame, substantially as and for the purpose specified.

144,322.—Meat-Press.—JACOB I. DANFORTH, Newburyport, Mass. Application filed August 23, 1873.

Any fat escaping through the joints made between the cylinder and base is confined within the space bounded by the flange, and drips through the perforated base into a pan arranged beneath the base.

Claim.—The base A, having an annular series of perforations, 10 10, in combination with the flange i, cap D, and cylinder B, as and for the purpose set forth.

144,323.—King-Bolt for Vehicles.—JOHN DEBELE, Plantsville, Conn., assignor of one-half his right to "THE ATWATER MANUFACTURING COMPANY," same place. Application filed August 25, 1873.

Claim.—The king-bolt A, B, C, and D, having its body and head loosely connected together so as to form at each point of connection a joint which is flexible in either direction, substantially as and for the purpose specified.

144,324.—Billiard-Cue Tip.—GEORGE W. DICKINSON, Saratoga Springs, N. Y. Application filed August 27, 1873.

The ordinary leather tip has an outside facing of rubber, to avoid the necessity of chalking it.

Claim.—A billiard-cue, A, having a leather tip, a, cemented to its outer end, and a tip of thin rubber, b, cemented to the outer face of the leather tip, all as and for the purposes set forth.

144,325.—Tidy-Pin.—GEORGE DOOLITTLE, Bridgeport, Conn. Application filed August 21, 1873.

A flat sheet is countersunk to receive a tongue which is hinged upon it, and which carries a curved pin that passes through an opening in the countersunk part and pierces the article underneath.

Claim.—In combination with the sheet-metal leaf A, provided with the plate a, the tongue B, and pin C, all constructed and arranged to operate substantially as and for the purpose set forth.

144,326.—Thread-Cutter for Sewing-Machines.—NOAH EVINGER, Sanford, Ind. Application filed June 17, 1873.

A knife with a thumb-piece is riveted to the under side of an elastic strap hooked to the bed-plate. The knife may be turned out and up from the bed-plate to cut the thread.

Claim.—An attachment for sewing-machines, consisting of the elastic strap provided with hooks, knife, and thumb-piece, all combined to operate together as an and for the purposes described.

144,327.—Seed-Dropper.—JOHN M. FONDEN, Springfield, Ill. Application filed July 22, 1873.

A star-wheel is acted upon by a cam-slide turning the pocket-disk, the wheel and disk being separated by a perforated plate and attached to a common shaft. A pivoted cut-off works in a recess in the plate above the pocket-disk, and is held in place by a spring.

Claim.—1. The cut-off G, pivoted in a recess on the under side of the plate E, and provided with the leg n, to be operated upon by a spring, p, as and for the purposes herein set forth.

2. The combination, with the box E, of the fixed plates C E, supported on the bottom A, and separated by the corner-posts d d, the wheels D J, arranged upon one shaft, and in the spaces above and below the plate C, and the slide H with openings x y, as shown.

144,328.—Removing Acids from Leather.—MICHAEL W. FEY, Guyandotte, W. Va. Application filed August 20, 1873.

Claim.—The process of removing acid from previously-tanned hides by immersing them in a solution of salt and bicarbonate of soda, in the manner described.

144,329.—Middlings-Purifier.—CLARK S. FULLER, Oswego, N. Y. Application filed October 20, 1873.

Middlings, after being subjected to a scouring or beating action between a rotating brush and concave, are thrown out into an exhaust-chamber, in which the fibrous particles and other light impurities are separated and carried off by the air-currents, while the heavier granules or good middlings descend by gravity into discharge-hopper at bottom of chamber.

Claim.—1. The combination of the brush B and concave C with an exhaust-chamber, through which the middlings are thrown by the brush, substantially as and for the purposes set forth.

2. The combination and arrangement in an exhaust-chamber, and with the beater and concave B C, of the beater and concave L M, substantially as and for the purpose hereinbefore set forth.

144,330.—Ore-Pulverizer.—SMITH GARDNER, New York, N. Y. Application filed October 30, 1873.

One shell of the mill, and also the beaters, is lined and covered with burr-stone, so as to prevent any particles of iron from wearing off and mixing with the quartz or other material which is pulverized.

Claim.—1. A case or shell lined with burr-stone or other hard mineral substance, substantially such as described.

2. Beaters faced with burr-stone, glass, porcelain, or other like material.

3. The adjustable arms and beaters described.

4. The method described of facing the beaters, by means of dovetail and bevel, so as to hold the facings when the machine is moving.

5. The combination of the lined case or shell a and c, the adjustable arms and beaters i i and k k, the adjustable openings o o, and discharge-opening q, all combined and arranged substantially as described.

144,331.—Combined Condenser and Feed-Water Apparatus.—JEREMIAH S. GIBSON, Martinsburg, W. Va. Application filed October 17, 1873.

The pump and injector are connected with the tender by suitable pipes, which pass through the spirals and connect with the perforated pipe in the steam-space of the boiler. For the purpose of preventing priming, cold water is injected by the injectors, the connection to the pump being closed.

Claim.—1. The pipe C, having its front end passing through the smoke-arch and connected with the perforated pipe E in the boiler, in combination with the pump C and supply-pipe D, substantially as and for the purposes described.

2. The combination of the injector H and pipes F, G, and H with the perforated pipe E, arranged in a boiler, as and for the purpose herein set forth.

3. The combination of the pump C and its pipes with the perforated pipe E and the injector E, with its pipes, arranged substantially as shown, and for the purposes herein set forth.

144,332.—Railroad-Chair.—DAVID M. GRAHAM, Evansville, Ind. Application filed September 16, 1873.

The chair A embraced the web and boot of the rail, and the two sections interlock under the rail, and are held in place by means of flat keys passing through them and through corresponding slots in the ends of the rails.

Claim.—The chair or joint-supporter provided with apertures b and beveled parts c, in combination with keys C and D, and slots e in the ends of the rails, substantially as and for the purpose set forth.

144,333.—Hemmer for Sewing-Machines.—JOHN M. GRIMES, Delavan, Ill. Application filed July 7, 1873.

The jointed supporting-arms allow movement of the gage-plate toward or from the scroll for hems of different widths.

Claim.—1. The extensible jointed supporting-arms C and D between the plates E e^2, and connected to them, as and for the purposes set forth.

2. The adjustable sewing-machine hemmer, having the stationary longitudinally-slotted plate A^2 with an index-mark a^2, thereon, the cloth-turner B with the turning-tongues b', the movable gage-plate E, tongue F, and the extensible jointed arms C and D, substantially as shown and specified.

144,334.—Waistband-Fastening for Pantaloons, &c.—JOHN A. HAARVIG, Chicago, Ill. Application filed July 12, 1873.

Claim.—The combination, with the recessed plate C, having the hems c, of the hook-plate D, having the aperture r in the tongue, and the spring-finger v, arranged to press the hems c into the aperture r, substantially as specified.

144,335.—Flat-Iron Heater.—JOHN F. HALL, Albia, Iowa. Application filed October 11, 1873.

The heater has a removable bottom. When it is removed, the iron is supported by its handle, which rests upon the edges of the slot in the cover.

Claim.—1. The removable bottom C, when used in connection with a sad-iron heater, substantially as set forth.

2. The combination, in a sad-iron heater, of the plate A, slotted swinging cover A', chamber B, and removable bottom C, the parts being arranged substantially as and for the purpose set forth.

144,336.—Wash-Boiler.—ROBERT J. HARRISON, Raleigh, N. C., assignor of one-half his right to JAMES Q. WILLIAMS, same place. Application filed August 11, 1873.

The boiler is provided with a continuous interior flange provided with an inclined seat to support the false bottom. Curved ribs are attached transversely to the inside of the cover to keep the clothes clear of the upper passages for the circulating water. A reversible wire frame is employed to retain the clothes on the false bottom or to elevate them near the top.

Claim.—1. The boiler A, having the continuous horizontal interior flange F, the latter provided with inclined seats f, in combination with the false bottom G, having the upturned inclined rim or flange g, substantially as and for the purpose specified.

2. In combination with the boiler A, having the end passages E, the cover A, having the transverse curved ribs U, substantially as and for the purpose specified.

3. The concave valve S, resting over the orifice E, and provided with depending bent lugs T, in combination with the cover B, substantially as and for the purpose specified.

4. The frame V, provided with the projecting portion W, and adapted to confine the fabrics on the bottom of the boiler, or elevate the same above the bottom, substantially as described.

144,337.—Combined Lead-Pencil and Rubber Eraser.—JOSEPH ILLFELDER, New York, N. Y. Application filed August 26, 1873.

Claim.—The combination of a conical lead-pencil, a rubber eraser, attached to the head of said pencil, and a conical supporting-sleeve, loose on the pencil, and removable therefrom, but held in position, when pushed up to encircle and surround the rubber eraser, by being wedged or jammed onto the enlarged part of the pencil, substantially as shown and described.

144,338.—Spring Bed-Bottom.—JOSHUA S. JUDSON, Austin, Minn. Application filed September 13, 1873.

The bottom is in two independent sections, and is hung at the ends to the bedstead by hooks and elastic rings.

Claim.—The sectional bed-bottom B, end pieces b, elastic springs D, hooks b', and eyes c and frame C, when the several parts are constructed and adapted to operate in the manner set forth.

144,339.—Trestle for Painting Gensk-Shelves, &c.—WILLIAM M. KNAPP, Muncie, Ind. Application filed April 19, 1873.

The legs of the trestle are connected at their upper ends by a casting having sockets on its under side for the reception of the legs, and a suitable distance above the lower ends of the legs is a platform supported by rods, which connect and brace the legs. The table rests upon a revolving shaft, which passes through the center of the casting, and bears in a cup within a cross-brace

above the platform. A cross-bar provided with guide-rods is placed at one end of the table, and is elevated or depressed by a crank-screw. Two of the legs are provided with wheels, and on one of the other two is a casting, to which is attached a handle for moving the truss.

Claim.—1. The arrangement of the legs A A, casting B with sockets *a a* and collar *b*, the platform C, and rods *d d*, substantially as and for the purposes herein set forth.

2. In combination with the trestle A B C, the wheels J, casting K having steps *h h*, and the handle L, all constructed and arranged substantially as and for the purposes herein set forth.

3. The cross-bar H, with guide-rods *f f* and crank-screw I, arranged on the table of a painter's trestle, substantially as and for the purposes herein set forth.

4. The revolving table G with shaft E, in combination with the trestle A B C, all constructed and arranged substantially as and for the purposes herein set forth.

144,340.—Manufacture of Traveling-Bags.—JOHN W. LEE, Newark, N. J. Application filed July 3, 1873.

The material for the hem or pocket and that for the bag are sewed together by machine, and the metal jaws are afterward inserted and hinged together. The hem may also be made on the part which forms the bag proper, and the jaws inserted in the same manner.

Claim.—1. The herein-described mode of attaching the body of the bag to the frame or jaws—that is to say, by first forming a hem or pocket along the edge of the mouth, and then inserting the jaws separately into said hem or pocket, and finally hinging the jaws together, as herein set forth.

2. The hem or pocket made from a separate piece, and secured to the body and the lining by one or more rows of stitches, the same being prepared, as described, previous to the insertion of the jaws, substantially as set forth.

144,341.—Pattern for Cutting the Uppers of Shoes.—GEORGE LEINROTH, Philadelphia, Pa. Application filed July 7, 1873.

A pattern having three sets of size-graduations marked upon it is used to form an auxiliary pattern of the desired size and shape.

Claim.—The pattern A, with the "size"-graduations B, "instep"-graduations C, and auxiliary graduations D, adapted for operation with the pattern E, substantially in the manner and for the purpose set forth.

144,342.—Curtain-Fixture.—HENRY E. MARCHAND, Pittsburg, Pa. Application filed April 4, 1873.

Vertical rollers are arranged each side of the window to receive the curtains that are drawn horizontally across the window. The two curtains are connected together by suitable fastenings on their ends. When the curtains are released from their fastenings, they are wound up by elastic cords which are attached to the grooved sheaves on the ends of the rollers.

Claim.—In a curtain-fixture, the rollers B C, each provided with a curtain having fastening devices G G, in combination with an operating-spring, L, for closing the curtains, the whole constructed and arranged substantially as described, and adapted to be arranged vertically upon the side of the window, as set forth.

144,343.—Milk-Cooler.—EDMOND MARTIN, Potsdam, N. Y. Application filed March 27, 1873.

A crank-screw is placed at the end of the pan for elevating the same. A tube, having at one end branch tubes perforated on their under sides, conveys water into the vat. The pan is set on blocks in the bottom of the vat.

Claim.—1. The milk-pan B, provided at one end with screw E, substantially as and for the purposes herein set forth.

2. The combination of the vat A with blocks D D and pipes G H, the pan B with screw E, tubes *a d*, and rubber sleeve *d*, all constructed and arranged substantially as and for the purposes herein set forth.

144,344.—Saw.—ERNEST MAEX, New York, N. Y. Application filed April 25, 1873.

The teeth are formed of hard steel blades, secured in a frame to which the handles are attached, the teeth being removed from the frame for sharpening, when necessary.

Claim.—1. A saw composed of a series of blades, B, secured together in a clamp, A, substantially as shown and described.

2. The sleeves C, provided in their ends with notches *c*, in combination with the clamp A, blades B, and handles D, substantially as shown and described.

144,345.—Blow-Pipe.—JOHN E. MCCLURE, San Francisco, and DANFORTH H. AINSWORTH, Salinas, Cal. Application filed August 30, 1873.

The blow-pipe has two chambers connected by a narrow passage. The lower chamber contains the liquid. The upper one receives the vapor and discharges it through the ejector.

Claim.—A blow-pipe consisting of two connected chambers, a *b*, having the front convexities *b'* and the intermediate air-space *c'*, the ejector E being located on the upper, and the flame impinging upon the lower, of said convexities, as and for the purpose specified.

144,346.—Cultivator.—ALLAN S. MCDONELL, Orgeode township, Canada. Application filed June 10, 1873.

Forked tongue hung to centrally-pivoted frame near the axle or center. Toothed cylinder and fixed meshing-teeth in rear, worked by endless chain from wheel geared to central wheel on axle. Adjustable seat, and center-wheel for regulating depth of cultivation.

Claim.—1. A cultivator having its frame A mounted centrally on two wheels, with an adjustable center-wheel, H, supporting its rear end, and having the rotating toothed cylinder J suspended in bearings from the rear end of said frame, in combination with the fixed teeth, all constructed and arranged to operate substantially as described.

2. In combination with the frame A having the cylinder J and teeth arranged to operate as described, the adjustable seat V, and the tongue hinged to the frame at or near its center, whereby more or less weight can be applied to the cylinder, and the frame with its attachments be left free to follow the undulations of the surface, as set forth.

144,347.—Car-Axle.—GEORGE W. MELTMORE, Janesville, Wis. Application filed October 6, 1873.

To adapt car-trucks to tracks of different gages.

Claim.—In combination with the sleeve A and bearing-block G, the collar C, constructed to operate substantially as and for the purpose set forth.

144,348.—Evener for Wool-Cards.—CHARLES F. MORRISON, Thompsonville, Conn., assignor to himself, JAMES MORRISON, GEO. S. HARWOOD, and GEORGE H. QUINCY. Application filed April 26, 1873.

For operating upon the roping delivered from the side of the doffer of a wool-card. Two pair of rolls belted together so as to run at the same speed, have between them a movable trumpet, which, when the roping runs too thick or too thin, sets in motion mechanism to increase or decrease the speed of the rolls, so as to take material faster or slower from the doffer.

Claim.—In side-drawing or roping machines for wool-carding engines, the combination, with drawing and delivery rolls revolving at the same rate of speed, of automatic evening mechanism brought into operation by variations in the size of the sliver, to increase or decrease, as the case may be, the speed of both sets of rolls simultaneously and in unison, substantially as and for the purposes shown and set forth.

144,349.—Chair.—JACOB MORRISON and HENRY M. HUTCHINSON, Philadelphia, Pa. Application filed September 20, 1873.

The seat-frame is connected to the spring-bearing frame by a hinge. Each section of said hinge is formed of a base having side pieces or lugs through which the swivel-pin passes. The elliptical spring has end-bearings in the extensions of the lower section of the hinge, and its arch presses against the base of the upper section of the hinge. To one of the extensions of the lower hinge is secured an inclined plane, between which and the spring is arranged a block which is pressed forward by a screw, so as to increase or decrease the tension of the spring.

Claim.—1. In combination with the hinge D, the elliptical spring E, said spring having end bearings in the extensions of the lower section D^2 of the hinge, its center or bow pressing against the base of the upper section of the hinge, substantially as set forth.

2. In combination with the hinge D and spring E, the movable block F and inclined plane D^3, substantially as and for the purpose specified.

144,350.—Elevator for Buildings, &c.—GAORG MÜLLER, New York, N. Y. Application filed March 17, 1873.

An eccentric-lever is attached to the cross-head of the car and connected with rods, which operate safety-pawls engaging with teeth on a rack-bar, to stop the descent of the car.

Claim.—The spring-pawls *h h*, rods *h h*, cross-heads *f*, and eccentric-lever *i*, attached to the car, in combination with the racks G *a*, arranged so that the operator may govern the downward movement of the car at any point by the lever, all arranged to operate as and for the purpose specified.

144,351.—Car-Brake.—WILLIAM HAYLOR, Mildmay Park, England. Application filed July 16, 1871.

Claim.—1. The combination of the chain G extending beneath a series of cars and brake-shoes S, levers H H D P P^1 P^{2}, beam C, and springs M, arranged upon each car so as to be operated, as set forth.

2. The combination, with the braking-lever D, of the trigger *i* and its movable weight *i'*, to operate as set forth.

144,352.—Cannula-Point for Syringes.—EDWARD B. NIMMO, Brooklyn, N. Y., assignor to SHEPARD & DUDLEY, New York city. Application filed October 24, 1873.

The points of a hypodermic syringe are made of an alloy of aluminum and copper.

Claim.—A cannulated point or needle for syringes made of an alloy of aluminum and copper, substantially as herein specified.

144,353.—Shaft-Hanger.—REINHARD R. ONTON and WILLIAM CAVERT, Sterling, Ill. Application filed October 3, 1873.

Claim.—1. The combination, with the beam B, of the top bar of the hanger-frame A, provided with slots *b* and ears *c*, the bolts and nuts *c d*, and set-screws C, for adjusting the hanger-frame longitudinally, and at the same time locking the nuts on the bolts which secure the frame to the beam, all substantially as herein set forth.

2. The combination, with the pivoted yoke D and pivoted shaft-bearing E, of the detachable drip cups G G, provided with ears *m m*, and connected to the yoke D by means of pins *i*, for receiving the drippings from the shaft-bearing irrespective of the position in which the shaft is placed, substantially as herein set forth.

144,354.—Wood-Grinder for Paper-Pulp.—MARVIN S. OTIS and MARVIN E. OTIS, Rochester, N. Y. Application filed October 18, 1873.

Two conical grinding-stones are mounted in a box upon parallel shafts, and in such proximity to each other that they will touch at their major diameters, while at their minor diameters the widest part of a recess is formed. Into this recess a wedge-shaped rest passes, upon which the wood to be ground is supported. Said rest also extends back-ward from the recess and forms the bottom of a box or channel through which the wood is fed by corrugated feed-rollers located in it. The upper roller is yielding; the lower one, which protrudes through the bottom of the channel, is fixed upon a sleeve having a flange upon one end and a loose pulley just beyond it. Through the sleeve a shaft passes, which also has a flange, and this just beyond the loose pulley. Upon the other end of the shaft is a hand-wheel, by turning which the flange of the shaft may be drawn toward or moved from the loose pulley and flange of the sleeve. The loose pulley serves to separate the flanges. A small wheel below gives motion to the pulley by belt or by direct gear, and thus to the shaft and sleeve, when their respective flanges are brought to bear against this pulley by means of the hand-wheel. The whole constitutes a variable feed.

Claim.—1. The two conical grinding-stones A on shafts *a*, revolving over toward each other, in combination with the wedge-shaped rest B, upon which the wood is fed to the grinders, substantially as described.

2. In combination with the rest B, which forms the bottom of the box or channel B", and which rest is wedge-shaped at its end extending between the grinders, the fluted vertically-yielding feed-roller *e* and stationary feed-roller *e'*, substantially as and for the purpose described.

3. The sleeve C, having the flange *b'*, and carrying the loose friction-wheel F, in combination with the shaft *c* and its flange *b*, and hand-wheel I, constituting a variable feeding device, substantially as described.

4. The two conical grinding-stones A, each provided with curved furrows H, running longitudinally upon its periphery, said furrows being curved for the purpose of grasping and drawing in the wood, and giving it a shearing cut diagonally across its fiber, substantially as described.

5. In combination with the conical grinders A, the troughs D', fixed by one edge to the inside of the cover D, for the purpose of catching and conveying to the sides of the stones such ground wood as may have been thrown up by them, thus preventing any regrinding, substantially as set forth.

144,355.—Hot-Air Furnace.—ANTHONY PFUND, New York, N. Y. Application filed October 2, 1873.

Three bonnets are placed over a furnace. Between the first and second is a smoke-chamber, and between the second and third a hot-air chamber. Outside of the third bonnet is an air-chamber communicating with the open air. Cool air can thus be admitted without roasting upon the fire and heated gases.

Claim.—The combination in a furnace of the bonnets D E F, smoke and air chambers *d*, fire-chamber B, ash-chamber C, case or wall A, and a controlling damper or valve, substantially as herein shown and described, for the purpose specified.

144,356.—Valve for Water-Pipes.—D. GOFFE PHIPPS, New Haven, Conn. Application filed August 27, 1873.

Claim.—The herein-described valve for water-pipes, consisting of the valve-chamber proper and the valve working therein, the said chamber formed with projections or necks C concentric with the valve-seats, and the interior of the necks, from the valve-seats outward, lined with cement, substantially as described.

144,357.—Device for Retaining Fire in Stoves.—EDWARD Y. ROBBINS, Cincinnati, Ohio. Application filed September 18, 1873.

The tile or cover may be operated by either a fixed or a detachable rod.

Claim.—The fire-cover G, composed of a piece or pieces of non-conducting material, strengthened by the rod H, and provided with the metallic frame *g* and eye J, said cover being adapted to rest on the surface of the fire, in combination with the oven-plate D of a cooking range or stove, all as herein set forth, for the purpose specified.

144,358.—Vacuum-Pan for the Manufacture of Sugar, &c.—JOHN B. ROOT, New York, N. Y. Application filed March 10, 1873.

Vapor from the vacuum-pan is carried down into the heating-jacket and coil by the steam-jet, which acts as an exhaust object to utilize the heat of the vapor.

Claim.—The combination, with an evaporating-vessel, of a system of vapor and steam pipes and continuous coils, substantially as herein described, whereby the vapor of the evaporating liquid shall be forced into the steam-heating coil or jacket applied to the same vessel, or their equivalent, by a jet of high-pressure steam, substantially as and for the purpose herein set forth.

144,359.—Carpenter's Gage.—ELIAS SAHM, Greenville, Pa. Application filed April 22, 1873.

A gage-bar has two scriber-points, one of which is adjustable, and an adjustable graduated cross-arm. The arm is for locating, and the points for marking out, mortises.

Claim.—The graduated arm A, in combination with the points 1 and 2 and the sliding rod B, the head F, and the graduated arm E, constructed as described, for the purposes set forth.

144,360.—Cattle-Stanchion.—CALVIN W. SAWDEY, Pecksville, N. Y. Application filed July 26, 1873.

The stanchion, swinging from a shaft on top, has stops below to limit its movements from front to rear of a trough. The front of this trough is hinged, and may be let down on the plane of the bottom of the trough.

Claim.—The cattle-stanchion, having the standards A, feed-box B, forward swinging stanchions or frame, the fixed edge-bar G, and the hinged rear door K, substantially as specified.

144,361.—Fire-Escape.—DANIEL A. SCOTT and ARTHUR W. HEITZ, Calais, Me., assignors to PATRICK CURRAN and EDWARD CURRAN, Milltown, New Brunswick, and MARIA LOUISA WHITNEY and ARTHUR W. HEITZ, Calais, Me. Application filed June 23, 1873.

The safety-belt is attached to the person making the descent, and the endless rope, which passes through the pulley-block attached to the building, is passed around the projecting pin A by the person descending, to afford the requisite friction.

Claim.—The within-described fire-escape, consisting of the block A, endless rope B, safety-belt C, and rendering-pin D having the shank *h*, all constructed and arranged substantially as and for the purposes herein set forth.

144,362.—Spring Cushion, Mattress, &c.—DAVID M. SELLEG, Newberg, N. Y. Application filed September 23, 1873.

Spiral springs are secured at both ends within a casing of burlaps. Hair or moss is inserted between the springs, and around the whole is a cushion of hair or moss.

Claim.—The casing B, in which the springs S and hair, moss, or other material are placed, and which sags down between the rows of springs, in combination with the outer inclosing covering or casing F, the parts being constructed, arranged, and combined substantially as shown and described.

144,363.—Turbine Water-Wheel.—ISAAC SHERCK, Fremont, Ohio. Application filed April 25, 1873.

The sluice is so formed that its inner wall adjacent to the wheel rests so closely against the latter as to be nearly tangent to it, while its exterior walls extend forward, but passing beyond the point of juncture of the inner wall, thus forming a guide to direct the water from the sluice against the buckets, at the same time acting as a fender to hold it there until it has expended its momentum, after which it is discharged at the side of the wheel.

Claim.—1. The sluice G, triangular in horizontal section, provided with the sliding gate H against its inner wall, and the inclined cheek-plates I at its delivery-port, in combination with the wheel F, vertically serrated at its periphery, as described, and so arranged, relatively to the latter and the other sluices G, that water will be delivered at the side immediately after and in line with the impact, substantially as set forth and shown.

2. In combination with the sluice G, the cheek-plates I, inclined upward in the direction of the current, as and for the purpose substantially as described.

3. The arrangement of the sluices G, with their fender-plates *g'*, relatively to the wheel F and to each other, so that immediately after the water has delivered its impact, it is discharged at the side in continuation of the line of its impact, substantially as set forth and shown.

144,364.—Rubber Eraser.—GREENLEAF STACKPOLE, Elizabeth, N. J. Application filed April 25, 1873.

A circular block of rubber is hung on a spindle in a semi-circular case, which in turn is pivoted in a similar case. The rubber may be turned to present a new surface, and its holder rotated so as to wholly incase it.

Claim.—The shells A and B, when provided with the rubber C, the whole being held together by the rivet D, substantially as and for the purpose set forth.

144,365.—Washing-Machine.—MOSES W. STAPLES, Richmond, Va. Application filed September 11, 1873.

A water-tank has a semi-cylindrical base, on which are inclined ribs. Above these is a hollow revolving cylinder, having overlapping slats arranged obliquely on its surface, with a door for admitting the clothes to be washed.

Claim.—The combination, in a washing-machine, of a hollow revolving cylinder, B, consisting of overlapping slats *a* and inclined ribs or flanges *b*, arranged within the outer casing, as specified.

144,366.—Treadle for Sewing-Machines.—WILLIAM H. STEWART, Brooklyn, N. Y., assignor to himself and ALFRED ROBINSON, Morristown, N. J. Application filed April 26, 1873.

The treadle is adjustable vertically by means of sliding pivots, which are arranged in the sides of the frame, and horizontally by means of sliding foot-pieces arranged upon the treadle-yoke in such manner as to bring the axis of motion on a line with the axis of the ankles.

Claim.—1. The treadle-yoke *f*, suspended by the links *d* and swinging upon the pivot-pins *i* that are adjustable vertically in the slots of the yoke and frame *a*, substantially as and for the purposes set forth.

2. The foot-piece *g*, adjustable horizontally upon the treadle-yoke *f*, in combination with the adjustable pivots and treadle, substantially as and for the purposes set forth.

3. The arm *m* and adjustable connection for the pitman to the sewing-machine crank, in combination with the swinging sewing-machine treadle-yoke and the foot-piece, substantially as set forth.

144,367.—Harvester.—CULVIN S. STONE, Indianapolis, Ind. Application filed July 29, 1873.

The rake-head is journaled on a sliding bar, which is made to reciprocate by means of levers connecting it to a belt moving around pulleys at the rear corners of the slotted platform. The teeth are locked in an elevated position for raking by a spring-catch, which is automatically released at the inner end of the platform, when a spring on the rake-head restores the teeth to a horizontal position beneath the slats.

Claim.—The self-raking mechanism consisting of the platform provided with the projections *b* and *i*, the chain-band rotating on pulleys, the rod *w*, the toggle-joint *r*, the sleeve *v*, the rake-bar *t* provided with bearings *u*, the rake T, the spring-catch *z*, and the spring *x*, all combined and working together as described.

144,368.—Last-Block Fastener.—NELSON B. STREETER, Groton, N. Y. Application filed October 31, 1872.

Claim.—The last-block *b*, with a recess, *d*, and the pivoted latch *g*, having an enlarged head or projection, in combination with the last *a*, having an opening in its top to received the head of the latch, substantially as shown and described.

144,369.—Process of Extracting Sugar from Molasses.—JOHN B. THOMS, Baltimore, Md., assignor of one-half to SAMUEL ECCLES, Jr., same place. Application filed June 11, 1873.

Boils the molasses in a vacuum down to "proof" or to a less degree of concentration, then storing the product for any period not less than a month, and completing the operation by treating the concentrated product for the separation of sugar in a centrifugal or other apparatus.

Claim.—The described process for arresting and preventing the deterioration of the sugar-making properties of molasses, for increasing the percentage of sugar product, and for prolonging the sugar-making season, or rendering the extraction of sugar from molasses a continuous operation, at the will of the manufacturer, through all seasons of the year, substantially as set forth.

144,370.—Seal-Belt.—JAMES R. THOMSON, Buffalo, N. Y.—Case B. Application filed April 22, 1873.

Claim.—The beaded belt-piece A, having a seal-opening, *a'*, in combination with the bar B, having a portion bent at right angles, and a seal-opening, *a'*, substantially as and for the purpose set forth.

144,371.—Hame.—JAMES THORNTON, Wellsville, and EMMIT G. LATTA, Friendship, N. Y. Application filed October 2, 1873.

Claim.—1. The strap corrugated and applied to the hame so as to prevent exterior and interior corrugations for the loop, strap, or clevis-bolt, substantially as and for the purpose hereinbefore set forth.

2. The combination, with a hame and loop, *c*, of a corrugated strap or plate which has the outer or extreme corrugation *e* projecting beyond the intermediate ones so as to form stops for the loop, substantially as hereinbefore set forth.

144,372.—Grate-Bar.—PHILIP UMHOLTZ, Tremont, Pa., assignor of one-half his right to AUGUSTUS UMHOLTZ, same place. Application filed September 16, 1873.

The upper surface of the cross-bars is an inch or more above the web of the bar, to protect it from heat. The cross-bars are free ended to permit expansion, grooved in top to hold ashes, and set obliquely to prevent the scrapers from removing said ashes or being caught between them.

Claim.—1. The combination of the longitudinal bearing-bar A and the cross-bars B, whether grooved or flat-topped, arranged diagonally across said bar A, and projecting above the same, substantially as shown and described.

2. The combination of the cross-bars B, with longitudinal grooves in their top sides, and having their ends free, and the longitudinal bearing-bar A, substantially as shown and described, for the purposes set forth.

3. The combination of the cross-bars B, having longitudinal grooves in their top surfaces, and projecting above the bearing-bar A, with that bearing-bar, substantially in the manner and for the purposes shown and described.

144,373.—Manufacture of Dolls.—ISAIAH F. WALKER, Central Falls, R. I. Application filed June 28, 1873.

A secondary stuffing is introduced, being applied just before the outer skin is laid on, in order to prevent the painted surface from cracking from accidents and violence.

Claim.—In the manufacture of dolls, the combination, with the external webbing, the internal cloth forms, and the inner packing, of the secondary or outer stuffing between said forms and said external webbing, substantially as specified.

144,374.—Machine for Tapping Gas and Water Fittings.—CALEB C. WALWORTH, Boston, Mass. Application filed March 15, 1873.

The fittings are clamped in the jaws of the vise, which is pivoted on a slide, and thrown back after the thread is cut, and the tap withdrawn by a scroll-cam acting on a lever that revolves a shaft, to which the slide is connected by a link. The movement of the taps is changed by means of two loose belt-pulleys revolving in opposite directions, which are made to revolve the shaft, alternately, by a friction-pulley sliding on the driving-shaft.

Claim.—1. The combination of the series of nuts *a*, screws *d*, gears *g h*, shafts *i i*, gears *h l*, and pulley-shafts *m*, substantially as shown and described.

2. In combination with the leading-screws *d* and the gears *g h h l*, shafts *i*, and pulley-shafts *m*, the sliding clutch-pulleys *s t* and loose belt-pulleys *q r*, arranged substantially as shown and described.

3. In combination with the shaft *p*, loose belt-pulleys *q r*, and sliding clutch-pulleys *s t*, the cross-shaft *u*, shipper-forks *v*, collar *x*, and arm w^2, for automatically effecting the slide movement of the pulleys.

4. The combination of box o^2, spring p^2, collars q^2 r^2, stops or screws s^2 s^3, collar *x* with its shoulders *y z* and arm w^2, shaft *p*, and pawls o^2 b^2, arranged and operating, substantially as described, for changing the shipper-lever.

5. The combination of cam v^2, lever q^2, shaft u^2, link l^2, and pulleys o^2 s^2, arranged substantially as shown and described.

6. The vise mounted, as shown and described, on the slide v^2, and operating in the manner set forth.

7. The combination, with the head d^2 and screws c^2 j^2, of the washer-plate g^2, slot i^2, handle f^2, and pin z^2, substantially as described.

144,375.—Die for Forging Offsets or Stay-Ends for Carriages.—DARIUS WILCOX, Birmingham, Conn. Application filed October 22, 1873.

Claim.—The dies herein described, constructed and operating substantially as specified, for forging offsets or stay-ends for carriages, in the manner set forth.

144,376.—Fruit-Basket.—WILLIAM R. WILCOX, St. Joseph, Mich., assignor to himself and A. W. WELLS & CO., same place. Application filed October 4, 1873.

Springing from the top of the basket are two curved supports or protectors, which cross each other in right angles, and are secured to the basket by wires.

Claim.—The supports *b b'*, constructed and arranged as described, in combination with a fruit-basket or box, and secured thereto by wires *c c*, substantially as set forth.

144,377.—Snow-Plow for Railroads.—CHARLES L. WOOD, Calais, Me. Application filed March 21, 1873.

The snow is lifted in sections, and, after being carried up the inclined flues, is discharged at the sides of the plow, the exits of all the flues being on the same horizontal line. The plow is to be heated by steam.

Claim.—In a snow-plow, the combination of the hollow sides, top, and bottom with the hollow partitions B and C C, the partitions forming flues which have their exits on the same horizontal line, substantially as and for the purpose set forth.

144,378.—Steam-Boiler.—JAMES R. WORSWICK and EDWARD LEWIS, Cleveland, Ohio. Application filed August 6, 1873.

The rear end of the return-flue boiler is provided with a bonnet arranged with water-ways connected to the steam and water spaces in the boiler by means of pipes, for the purpose of producing a more perfect circulation, and thereby increasing the steaming capacity of said boiler.

Claim.—1. As a means for inclosing the rear end of a return-flue boiler, a bonnet or head provided with water-ways, which are connected with the upper and lower portions of the boiler, substantially as and for the purpose specified.

2. In combination with the boiler A, constructed as described, the bonnet K and pipes M, N, and O, when arranged to operate in the manner and for the purpose substantially as shown.

REISSUE PATENTS.

5,639.—Snap-Hook.—CHARLES B. BENTON, New Haven, Conn.—Patent No. 55,650, dated May 29, 1866. Application filed September 24, 1873.

Claim.—The hook A and eye B, constructed with the single cheek *c*, combined with the latch *e*, constructed with a corresponding cheek, *f*, the two said cheeks forming two sides of a chamber, *a*, within which the spring is placed to hold the latch in closed position, substantially as set forth.

5,640.—Steam Vacuum-Pump.—WILLIAM BURDON, Brooklyn, N. Y.—Patent No. 135,301, dated January 28, 1873. Application filed September 13, 1873.

Claim.—1. A steam-engine, a steam vacuum-pump, and a water-wheel, so combined that the exhaust steam from the engine is used to operate the pump, and the latter is made to supply the water-wheel with water, whereby the exhaust steam is converted into an auxiliary to the engine, substantially as and for the purpose set forth.

2. Two or more steam vacuum-pumps attached to the exhaust-pipe of a steam-engine, said pumps having steam-inlet valves, in combination with a valve-operating shaft, and with mechanism for reducing the speed of said shaft, the various parts being so arranged that one vacuum-chamber will always be open to receive the exhaust steam from the engine, substantially as described.

5,641.—Steam Vacuum-Pump.—WILLIAM BURDON, Brooklyn, N. Y.—Patent No. 141,540, dated August 5, 1873. Application filed September 11, 1873.

Two or more vacuum-pumps are arranged upon a single longitudinal pipe connected by a suction-pipe which receives its water at one end from the reservoir, and are each provided with a steam-inlet valve, the lever of which is operated by wipers upon the revolving shaft. Said valves are assisted in their descent by means of springs.

Claim.—1. Two or more steam vacuum-pumps, each having a steam-inlet valve, in combination with the exhaust-pipe of a steam-engine and a revolving shaft provided with wipers, so arranged that the steam-inlet valves are opened in regular succession, as and for the purpose described.

2. Two or more steam vacuum-pumps, each having a steam-inlet valve, in combination with a revolving shaft, in which wipers are fixed for operating the steam-inlet valves, substantially as described.

3. The combination of the operating-shaft, the wiper, and the valve-lever, substantially as described.

4. The combination of the operating-shaft, the wiper, the valve-lever, and the spring operating the valve-lever, substantially as described.

5. A suction-pipe arranged horizontally, and receiving its water at one end, in combination with two or more steam vacuum-pumps, provided with steam-inlet valves and a valve-operating shaft, the various parts arranged to prevent the water-hammer, substantially as described.

5,642.—Mechanism for Shearing Caps.—RICHARD COOKE, New Hartford, N. Y., and THOMAS HANFORD, Norwich, Conn. Patent No. 119,449, dated October 3, 1871.—Division A. Application filed April 19, 1873.

The cap to be sheared is fitted to the block, which is adjustable with reference to the rotary shearer so as to present the cap to its knives or blades. The block is turned by hand as desired.

Claim.—The shearer N and leger-knife T, in combination with the movable cap-supporting block E, as and for the purposes described.

5,643.—Apparatus for Rendering Fats and Deodorizing the Gases.—HENRY S. FIRMAN, New York, N. Y.—Patent No. 136,827, dated March 18, 1873. Application filed October 14, 1873.

The digester is provided with a central hot cylinder, which receives air from a heating-chamber placed over the furnace. Fresh air is admitted to the forward part of the heating-chamber. The products of combustion are deflected and caused to pass around the chamber by a downwardly-projecting curtain. The foul gases, after leaving the condenser, enter the furnace through a perforated pipe.

Claim.—1. In combination with a steam rendering-tank, the internal hot-air drum or chamber, and the independent means for heating it and regulating its temperature, substantially as described.

2. The combination of the centrally-located drum J, the connecting-pipe K, having a suitable regulating device, and the independent furnace L, as described.

3. The hot-air chamber or drum inside of a rendering apparatus, having a tube passing from the furnace into the lower end of said chamber or drum, and a pipe passing from the top of said hot-air chamber or drum into the stack or chimney, for the purpose of creating a circulation of air through the hot-air chamber or drum, substantially as described.

4. The moldings or projections, or their equivalents, adapted to check the gases at the instant of their delivery into the fire, to aid and facilitate their combustion, as herein shown and described.

5. The arch or upper portion of the furnace formed with one or more downward or downwardly-inclined projections, Q Q, substantially as and for the purpose set forth.

6. The outlet-pipe *r*, located at or near the top of the heated-air drum, and connecting the same to the chimney or stack, as described.

7. The employment of the radiated heat from an inclosing jacket heated by steam, in combination with the radiated heat from an internal hot-air chamber, substantially as described.

8. In combination with the furnace L and heating-chamber O, the hot-air flue X for conveying the heated air and gaseous products of the furnace L, as and for the purpose set forth.

9. The retort or delivery pipe P, either perforated or close, arranged along the top and center of the furnace L, as and for the purpose set forth.

10. Mixing hot air from the drum J with the vapors and gases evolved in the rendering-tank before burning in the furnace, as set forth.

11. The shield or curtain B, in combination with the furnace L and heating-chamber O, for checking the flames and heated products until perfect combustion has occurred, substantially as set forth.

12. The arrangement of the pipe U for withdrawing air from the heating-chamber O, and mingling it with the condensed vapors and gases before burning the same, substantially as set forth.

13. The use of charcoal, or its equivalent, in the retort, as a deodorizer of the noxious gases and vapors from a rendering apparatus, as described.

5,644.—Step-Cover and Wheel-Fender for Carriages.—JOHN W. GOSLING, Cincinnati, Ohio.—Patent No. 62,404, dated February 26, 1867. Application filed June 24, 1873.

Claim.—1. In combination with the step D and door C, the plate E attached to the door, to operate as a step-cover when the door is closed, and a wheel-fender when the door is open, substantially as and for the purpose specified.

2. A combined step-cover and wheel-fender for carriages, consisting of the flexible plate E, the upper end of which is attached to the carriage-door, and the lower end to the step, all being combined to operate as a step-cover, wheel-fender, and a spring-connection to retain the door in the opened and closed positions, all substantially as set forth.

5,645.—Metallic Seam for Uniting Materials.—JEREMIAH KEITH, Providence, R. I., assignor to T. K. REED, East Bridgewater; said REED assignor to A. B. KEITH, trustee, Boston, Mass.—Patent No. 110,921, dated January 10, 1871. Application filed October 23, 1873.

Claim.—A seam formed of metal fastenings, the adjacent points of which are twisted together, substantially as shown and described.

5,646.—Saw-Hanging.—LAWRENCE MORRISON and ARCH G. HARRIS, Allegheny City, Pa.—Patent No. 101,492, dated April 5, 1870.—Division A. Application filed July 24, 1873.

Claim.—1. A pitman-head having outer jaws A A, to which the wrist-pin is attached, and inner adjustable jaws C C, carrying the catch or guide pins B B, substantially as shown and described.

2. A pitman-head having outer jaws A A and inner adjustable jaws C C, combined with an adjusting-screw, E, substantially as shown and described.

5,647.—Saw-Hanging.—LAWRENCE MORRISON and ARCH G. HARRIS, Allegheny City, Pa.—Patent No. 101,493, dated April 5, 1870.—Division B. Application filed July 24, 1873.

Claim.—An open-bottomed saw-buckle, constructed substantially in the manner shown and described.

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Copy of classification in full for the use of subscribers furnished on application.

Aërated liquor apparatus 1
Air and gas engines 2
Amalgamators, ore-mills 3
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Artificial limbs, &c. 5
Baking 6
Baling-presses 7
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Blowers 12
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Bolts, nuts, rivets 14
Bookbinding 15
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DIGEST OF FOREIGN PATENT LAWS.

SWEDEN.

REPORT BY MR. NASSAU JOCELYN, OF THE BRITISH LEGATION.

The law regulating the issue of Letters Patent for inventions in Sweden is dated August 19, 1856, and is as follows:

SECTION 1. Letters Patent convey to the holder the right during the term for which the patent is granted, and to the exclusion of others personally, or by substitute, at any place within the Kingdom, to practice and employ the invention and produce the articles for which the patent is granted, and to offer such articles for sale; the said holder being bound to observe the enactments contained in existing statutes relative to the manufactures and sales of goods, yet without being bound in connection with the enjoyment of the aforesaid rights to acquire the position of master tradesman or citizen. Patent rights shall be considered the lawful property of the holder, and may consequently be bequeathed and inherited or transferred, by any kind of legal document, to another person, together with all the rights conferred by the Letters Patent.

SEC. 2. Letters Patent may be obtained—

1. On new inventions connected with industry or art;

2. On improvements upon previous inventions connected with industry and art, provided always that no innovation be thereby caused on patent rights already granted.

Letters Patent shall not be granted for medical preparations, or for inventions of such a character that their employment would evidently be at variance with existing laws, the public safety, or good morals. Neither shall any person, by Letters Patent, obtain the exclusive right of employing in a general manner a new principle; but only to employ the ways and means for the application of any invention, which are stated and described in the application for the patent.

SEC. 3. Letters Patent may be granted for terms of not less than three years, and not exceeding fifteen years, according to the character and importance of the invention.

SEC. 4. Inventors only, whether Swedes or foreigners, shall be entitled to Letters Patent, pursuant to the foregoing enactments.

SEC. 5. If any person shall have obtained Letters Patent abroad, upon any invention, and in connection with it have been compelled to publish a specification of the manner of employing it, he may, nevertheless, also obtain Letters Patent upon such invention in this Kingdom for a specified term, pursuant to section 3, yet not for a term beyond the date at which the patent granted abroad shall expire.

SEC. 6. Any inventor desiring Letters Patent shall deliver an application to that effect to the royal and national board of trade; which application, in addition to describing the subject in question, shall contain a plain declaration whether the invention for which the Letters Patent are required is a new one, or whether it constitutes an improvement upon any invention already employed, and also a statement of the term for which the applicant desires to enjoy the patent rights. Likewise it must contain a correct and complete specification of the invention, and the manner in which it is to be employed, together with the detailed drawings or models, when such are requisite. The said descriptions and drawings shall be delivered, sealed, to the board, and be opened when the application for the patent is taken into consideration; after which they shall be kept in the chancery of the board, and be accessible to those who wish to consult them. If the applicant be not in a position to deliver a complete description immediately, he shall state such inability in his appli-

cation. The board will then grant the applicant, by protocol—which, after being previously posted, shall be issued—an extension of one month from the date of posting such protocol, within which term the applicant shall deliver the said description; and the board shall postpone its decisions until the expiration of the term so allowed. Should the applicant fail to appear with the said specification within the appointed term, his application shall become void. This, notwithstanding, the applicant shall not be precluded from delivering in a new application to the board on the same subject. The application referred to in this section shall, in the event of the applicant not living in the Kingdom, be delivered by some person resident in Sweden, whose name and place of abode shall be sent in to the board of trade for registration, and who, before the application can be taken into consideration, shall, together with his name and place of abode, also hand in to the board a power of attorney from the applicant, empowering him to act and plead on the applicant's behalf in all that relates to the said patent.

SEC. 7. The documents connected with the application having been completed and handed in to the board of trade, in conformity with the previous section, the board shall proceed to the consideration of the matter, and, provided no hinderance in pursuance of this statute exists, shall issue Letters Patent on the invention notified. The Letters Patent shall comprise the main contents of the application; the specification handed in, with reference to the drawings or models, provided such have been annexed; the term for which the patent is granted; the rights conferred by the Letters Patent; and also the obligations incumbent upon the holder of the patent as a condition for the enjoyment of the patent rights. And, further, the Letters Patent shall declare that the said patent shall not be considered to convey an assurance that the invention is new, or that it can be employed with advantage.

SEC. 8. If two or more applicants apply for Letters Patent on an invention of the same character, that applicant shall be entitled thereto who shall have first handed in complete documents to the board of trade.

SEC. 9. When Letters Patent are ready to be delivered to the applicant, the fact shall be announced by means of a notification, to be posted in the outer room of the board of trade. The Letters Patent shall be dated on the day upon which this notification is posted; and the term for the enjoyment of the patent shall commence from such date.

SEC. 10. The person to whom a patent has been granted shall be bound—

1. To make the Letters Patent publicly known by publishing them in full three times in the *Post Tidning*, (the official gazette;) and that said publication shall be effected within two months from the day on which the notification of the Letters Patent being ready for delivery shall have been posted;

2. To produce evidence before the board of trade, within two years from the last-mentioned day, that he is actively employing the patented invention; the said two years may, however, be limited by the board to one year; and also, on representation then made, be extended to a term not exceeding four years, according to the character and scope of the invention;

3. To produce evidence in like manner, every year during the whole term of the patent, that the invention continues to be employed.

SEC. 11. If the holder of the Letters Patent wishes to transfer his patent to another person, he shall notify his intention to the board of trade, who will issue a resolution to that effect; and the new holder shall be reminded in the said resolution of the obligations incumbent upon him in connection with the continued enjoyment of the said patent. If Letters Patent be transferred to any person residing out of the Kingdom, he shall be bound to provide an attorney, in the manner enacted in the latter clause of section 6.

SEC. 12. If Letters Patent be obtained on an invention of a similar character to any previously patented or employed by another person in this Kingdom; or if the holder of a patent deliver an incorrect or so incomplete a specification of the manner and means which should be employed in the use of his invention, that reliable guidance be not afforded for forming a judgment of the real character of the invention; or if the holder of the patent falsely state himself to be the inventor; or if a patented invention prove dangerous to the public safety and health, or conduce to anything at variance with good morals, then any person who shall consider his rights to be infringed, and the public prosecutor, when the public advantage requires it, may institute an action against the Letters Patent so issued, before the public court of justice, at the place where the holder of the patent resides; or, if he reside out of the Kingdom, at the place where his authorized attorney resides; and, in the event of any of the above causes of complaint being established, the court shall order the patent to be canceled; in which case a copy of the said judgment shall, without loss of time, be sent in to the board of trade, which, after the said judgment shall have obtained legal force, shall proceed in the manner prescribed by section 16.

SEC. 13. If, in the opinion of the holder of a patent, any other person shall, subsequently to the granting of the said patent, unlawfully employ the patented invention, the said holder of the patent may enforce his rights by suing such person before a public court of justice at the place where the accused resides. If the holder of a patent prove that his rights have been infringed, as aforesaid, the offender shall be subject to a fine for the first offence of not less than 100 rix dollars, (equal to $111 50,) and not exceeding 200 rix dollars, Swedish currency, (equal to $223;) and should the offence be repeated, to a fine of not less than 200 rix dollars, and not exceeding 400 rix dollars; and on each occasion full compensation for damages shall be given to the holder of the patent. One-half of the fine shall be paid to the holder of the patent, who alone shall be entitled to commence such actions, and the other half to the poor of the parish in which the person who is fined resides. The said fine shall, in default of payment on the part of the person sentenced, be commuted to "simple" imprisonment, in conformity with the rules for such commutation established by law.

SEC. 14. If, in the prosecution before a court of justice of any action for the infringement of a patent, it should be found that the invention in respect of which such patent has been granted, was known and employed in the Kingdom before the application for the patent had been handed in to the board of trade; or that the holder of the patent had handed in an incorrect or so imperfect a description of the manner and means which should be employed in the use of the invention, that reliable guidance be not afforded for forming a judgment of the real character of the invention; or that the holder of the patent has falsely stated himself to be the inventor, the defendant shall in every such case be acquitted.

SEC. 15. Letters Patent shall be forfeited and canceled—

1. If the holder of the patent shall neglect to perform any of the prescriptions contained in the aforesaid section 10;

2. If in consequence of any suit such as those referred to in section 12, a court of justice order the patent to be canceled.

SEC. 16. It shall be the duty of the board of trade, both in those cases in which the patent rights have been forfeited or canceled, and also when the term for which Letters Patent have been granted shall have expired, to publish in the official gazette that the said Letters Patent have become null and void.

SEC. 17. Whenever in this statute the period of one month is stated, it is to be understood as containing thirty days.

SEC. 18. This statute shall be in force after the 1st day of October next; after which date the enactments not in operation on the same subject shall cease to be in force, without, however, affecting the legal rights already conferred in existing patents. On February 22, 1867, an additional provision was made with regard to the tenth section of the above act. It imposed upon all persons desiring to take out Letters Patent the obligation of not only proving, within two years of their issue, that the invention had been in full work, but that it had been so worked within the Kingdom of Sweden. The validity of the patent, during the whole of its term, depends, moreover, upon the annual reiteration of this assertion. The above period of two years may likewise, in virtue of this act, be reduced to one year, or extended to four, at the option of the board of trade.

The issue of patents by the government has existed only since the year 1834; before which time the King alone was empowered to grant a monopoly, or *privilegia exclusiva*, for the working of an invention. It was only granted on account of inventions of great importance and undoubted public utility, and was consequently of rare occurrence.

It will be seen from the foregoing acts that the issue of Letters Patent is altogether in the hands of the board of trade, from whose decision, with regard to the merits of an invention, there is no apppeal. This board consists of four members and a president, who is allowed to give a casting vote when necessary. Their deliberations in matters referring to patents are generally aided on technical questions by a consulting expert, at present an intelligent officer of engineers; and the time which elapses between the application, accompanied by the necessary specification and drawings, &c., and the issue of the Letters Patent seldom exceeds one month.

No patent is granted for more than fifteen years, and its duration is determined by the board, according to the evidence which they may have obtained as to its merits and relative importance.

The expense of taking out a patent is very trifling. Five rix dollars, say $5.57, are paid for every year for which the patent is granted by the board, the whole sum being paid in advance; and, besides, a stamp duty of 9½ rix dollars, equal to about $10.60, the amount being entered as received in the Letters Patent when signed.

The board of trade, in considering the claims of an inventor to a patent, do not inquire into their validity, but merely as to the individual merits of the invention. The onus of proving the patent valid rests solely with the patentee; and should a fraud have been committed by him and be proved against him, the patent is simply canceled by the court of justice, according to the provisions of the act, without further consultation with the board.

It is obvious that unusual facilities are offered by this system to persons who wish to patent improvements upon the inventions of others, however trivial they may be, no documentary evidence being required to prove the consent of the original inventor to the grant of the new patent. Practically, however, the board keep a sharp eye upon such petitioners, and by far the greater number of their applications are rejected without mercy, almost universally, indeed, when the originator of the idea improved upon is working his patent principally in Sweden.

The general feeling seems to be that it is unquestionably desirable to maintain the grant of patents in this country. In the annual sittings of the Diet there are not wanting members to raise objections against them; but these are usually received either in silence or with unmistakable signs of disapprobation by the Chamber, and are made by men of comparatively little influence in that assembly. On the whole, therefore, the community at large appear to agree that it is better for the public to pay a patentee for his invention than that the budget of the country should be increased by so large an item as that of the rewards which inventors would naturally expect to receive from the government in compensation for the privilege of enjoying, for a time at least, the exclusive profits to be derived from their ideas and from their labors.

COMMISSIONER'S DECISIONS.

JOHN AND JAMES DOBSON.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief, in the matter of the application of John and James Dobson, for patent for* DELIVERY AND DRAWING HEADS FOR WORSTED CARDS.—*Decided October 21, 1873.*]

Although a combination of an endless apron and a delivery-head composed of three rollers has been employed in preparing cotton for spinning, it is patentable to employ like devices in preparing wool for spinning, since it required a special adaptation of the drawing-head for that purpose.

LEGGETT, *Commissioner:*

Applicants claim—

In preparing wool on cards for combing and delivering the sliver from a number of cards through one delivery, the combination of endless apron B and a delivery-head composed of three pairs of rollers, as shown and described.

They are cited by the Examiner to the patent of W. B. Leonard, which shows an endless belt and a delivery-

head composed of three pairs of rollers, to be used in the same connection and for the same purpose, except that they are intended to receive and deliver a cotton bat instead of a woolen one. The delivery-head for cotton would not serve for wool, on account of the difference in the nature of the fibers of the two substances. So, of course, applicants must employ a delivery-head adapted to wool.

The Examiner says that such delivery-heads are old; but it appears that precisely such heads have not before been employed, nor have drawing-heads for wool been employed in this connection. They are shown, so far as this record exhibits, as applied to the treatment of yarn, but not to the manipulation of sliver. Applicants have adopted the general plan already in use for treating cotton, for treating wool; but to do this, special adaptation of a drawing-head was required. Therefore, the plan being advantageous for treating wool as compared with the old plan of balling, invention must be presumed. It may safely be predicated on such a change followed by such results as are set forth.

The decision of the Board is, therefore, reversed, and a patent will be granted.

DAVIS, EDSON, *et al.*—*Interferences.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the applications of Richard H. Norris, David P. Davis, James B. Edson, and Richard C. Blake, for patent for* IMPROVEMENT IN RECORDING STEAM-GAGE.—*Decided October* 18, 1873.]

The applicant who first produced a perfect-working specimen of the invention in dispute, adjudged the prior inventor, although another had conceived it before him and made a drawing of it, which he had explained to another person, but had shown no diligence in reducing it to practice.

LEGGETT, *Commissioner:*

Norris and Blake have taken no testimony, and the record-dates upon which they rest take them practically out of the controversy, which remains between Edson and Davis. Edson filed his application June 27, and Davis September 26, 1871. Exhibit I, filed by Edson, is a complete gage embodying the invention in dispute, and is conceded by Davis to have been made in August, 1870. Edson rests his case mainly on this exhibit and admission. Davis does not maintain that he made a gage like this previous to August, 1870, or, indeed, until July, 1871; but sets up that he conceived the idea of such an invention in 1866, and afterward explained it to his brother. His brother's testimony, however, does not corroborate this statement. Nothing tangible is produced showing that he made the invention before 1871, a year after Edson is admitted to have perfected it.

Exhibit D, a very imperfect pencil-sketch purporting to be from his diary of 1866, is too dubious evidence to be relied on. But admitting the conception of the invention by Davis in 1866, which is not satisfactorily proved, he does not show reasonable diligence in perfecting, embodying, and reducing it to practice. The caveat and patent of Davis nowhere exhibit this invention, and he fails in every respect to satisfactorily make out his case.

The decision of the Board awarding priority of invention to Edson is affirmed.

STANTON AND PERLEY.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of John W. Stanton and Henry C. Perley, for patent for* IMPROVED MODE OF EXTINGUISHING FIRES IN OIL-TANKS.—*Decided October* 20, 1873.]

The patent for extinguishing fire in oil-tanks by covering the oil with carbonic-acid gas, introduced beneath and allowed to rise to the surface, awarded to the party who first effected it by mixing in the tank under water the chemical re-agents for forming the gas, although his competitor had anticipated him in the better method of forcing the gas from a reservoir outside into the oil.

LEGGETT, *Commissioner:*

The invention in controversy relates to extinguishing fires in oils or other inflammable liquids by the use of carbonic-acid gas. It consists in a mode of depositing the gas—which is non-combustible and lighter than oil and heavier than air—upon the burning surface of the oil, so as to form a stratum which will separate the oil from the atmosphere that supports combustion. This has heretofore been attempted by forcing the gas through the flames upon the burning surface, but without success. The draft of the fire prevented its successful deposition. Both these applicants conceived the idea of introducing it from beneath, and letting it rise through the oil to the surface. Stanton, who was first to hit upon this idea and carry it into execution, generated the gas by the admixture of the proper chemical elements in the bottom of the oil-vessel beneath a stratum of water. Perley formed his gas outside, and injected it into the bottom of the oil-vessel. It is admitted that Stanton preceded Perley in what he did; but it is maintained in behalf of Perley that Stanton did not conceive nor perfect the real invention until after Perley did—that is, he did not form the gas outside and inject it into the oil and let it rise to the surface. The gist of the invention, however, is the introduction of the gas successfully upon the burning surface of the oil from below. The time and place of forming it are immaterial to this mode of introducing it for the extinguishment of the flames. The generation of the gas either in or out of the vessel containing the oil is not new, and whether formed within or injected within the vessel, it alike rises to the surface and extinguishes the fire. The plan of its deposition on the surface through the action of gravitation comprehends all of the invention.

The decision of the Board awarding priority to Stanton is, therefore, affirmed.

CHARLES H. TOLL.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Charles H. Toll, for patent for* IMPROVEMENT IN SACKING BROOMS.—*Decided October* 21, 1873.]

An ordinary paper bag used for sacking brooms cannot be claimed as an invention independent of the process of sacking.

It is common to adjust the height of parts of machinery by providing holes into which the bolts may be inserted by which they are suspended, and to adjust the height of the pressing-box in a machine for sacking brooms by these means is not patentable.

LEGGETT, *Commissioner:*

The second claim in this application has been allowed by the Examiner and the third by the Board, with the condition—which I approve—that the word *constructed* be inserted before the word "substantially" in said claim.

The first and fourth claims have been rejected by both of these tribunals. These claims are as follows:

1. For the purpose of sacking brooms, the sack F, when made independent of the process of sacking, substantially as herein described.

4. The manner of adjusting the compressing-box, substantially as and for the purposes set forth.

The sack F is an ordinary paper sack with nothing novel or peculiar in its construction. The fact that it is employed to cover a broom does not make it new or patentable.

"The manner of adjusting the pressing-box" does not constitute an invention. The trough C is pivoted on bolts on each side, and several bolt-holes are provided, and the bolts are placed in one or another to raise or lower the trough, as desired. This is the ordinary "manner of adjusting" in common use in all classes of machinery, and is old and well known. No doubt, as the Board have suggested, a claim might be allowed in this or another application for the mode of sacking brooms here indicated. But the first and fourth claims are obviously not such as can be properly granted.

The opinion of the Board correctly expresses my views in this case, and it is accordingly affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

[*In equity.—Before Blatchford, Circuit Judge.—Decided September* 25, 1873.]

JOHN BACHELDER *vs.* WILLIAM J. MOULTON *et al.*

[*Solomon J. Gordon* and *George Gifford*, for complainant. *Theodore Ongley* and *Andrew Boardman*, for defendants.]

BLATCHFORD, *J.:*

The reissued Letters Patent granted to the plaintiff December 12, 1865, for an improvement in sewing-machines, and on which the motion for a provisional injunction in this case is made, were the foundation of the suit of *Potter* vs. *Braunsdorf*, (7 Blatchf., C. C. R., 97,) decided by this court on final hearing. Every question necessary or pertinent to the decision of the present motion was considered in that case, and disposed of adversely to the defense. Since that time such reissued patent has been, by an act of Congress, approved July 14, 1870, (16 U. S. Stat. at Large, 656,) extended for seven years from the 8th of May, 1870.

The sewing-machine of the defendants in the former case was called the Ætna machine, and employed, as a perpetual feeding device, a cylinder moving intermittently by revolving on a horizontal axis, and so arranged that the cloth laid horizontally upon it and was partially supported by it. Such cylinder was situated immediately in front of the needle, and was provided with a roughened surface, which acted from below, through an aperture in a horizontal table, upon the under surface of the cloth to be fed, and operated, in feeding, in combination with a yielding curved pressure-foot, which was pressed from above, by a spring, upon the upper surface of the cloth, such foot also acting as a needle-stripper. The Ætna machine was provided, also, with the other devices necessary to make up the combinations covered by the first, second, third, fourth, fifth, sixth, and eleventh claims of the Bachelder patent—namely, a reciprocating eye-pointed needle and a reciprocating needle-carrier, moving substantially in vertical planes; a horizontal holding surface provided with a throat for the passage of the needle, (such holding surface forming part of the supporting bed,) and a table, a part of which was so arranged, with reference to the feed, as to receive and aid in supporting the material in its passage from the feed. In the Ætna machine the material could be fed perpetually while it was supported horizontally, and a seam of any length could be sewn without requiring the sewing to be stopped at any time to attach a fresh portion of the material to the feeding instrument. This is a material feature distinguishing the Bachelder machine from those which preceded it. The Ætna machine had, it is true, a capacity beyond that of the Bachelder machine—namely, that of sewing a seam of any desired curvature, arising from the fact that, in the Bachelder machine, the material is impaled on pins, while, in the Ætna machine, the roughened surface of the feeding-cylinder engaged with the material only to such extent as was necessary to move the material forward, but not to such extent as to prevent the free lateral turning of the material by the operator during the process of feeding, so as to produce a curved or angular seam. But this, though an improvement on Bachelder's invention, embodied that invention.

The machine of the defendants in the present case is known as the Whitney sewing-machine, and uses, as a perpetual feed, what is known as the feed of Allen B. Wilson. That feeding arrangement was covered by two patents issued to Wilson, which have now expired. One of them, reissue No. 346, issued January 22, 1856, was extended, and expired November 12, 1871. It covered, in its claims, four features of invention: First, the described method of causing the material to be sewed to progress regularly by the joint action of the surfaces between which it is clamped, and which act in conjunction; second, holding the material at rest by the needle, or its equivalent, in combination with the method of causing it to progress regularly; third, arranging the described feeding-surfaces in such relation to the needle that they, or one of them, shall perform the office of stripping the material from the needle; fourth, so mounting and attaching one of the feeding-surfaces to some other part of the machine that it may be removed or drawn away from the other surface at pleasure. The other patent, reissue No. 414, issued December 9, 1856, was extended, and expired November 12, 1871. It covered, by one of its claims, a combination of three elements—namely, a table or platform to support the material to be sewed, holding it for the action of the needle, and presenting it properly to the grasp of the feeding apparatus—a sewing mechanism proper consisting of a needle and shuttle, or their equivalents, and a mechanical feed, automatic, and causing the cloth to progress regularly, to which the cloth is not attached, and so grasping the cloth that it may be turned and twisted by the hand of an operator, such twisting not interfering with the regular progression of the cloth. The feed of Wilson consists of two surfaces or bars which clamp the material. The material is advanced and moved forward under the needle, to receive the stitches, by the joint operation of such two surfaces or bars. One of such bars has a rough surface and a lateral motion. The other has a smooth surface and no lateral motion.

The machine of the defendants has Bachelder's hori-

zontal holding-surface, in having a small horizontal round plate, through slots in which teeth on the reciprocating feed-bar project upward, on which plate the material immediately about the needle rests, so as to be borne up horizontally under the thrust of the needle, such plate being perforated with an opening or throat for the passage of the needle.

The machine of the defendants has Bachelder's receiving-plate, in that portion of the said round plate which receives and supports the material as it passes from the feed.

The machine of the defendants has Bachelder's yielding pressure-holder, in having a spring pressure-foot near the needle, which rests on the upper surface of the material, and holds the material to the bed on which it is supported, the pressure-foot adapting itself to variations in the thickness of the material.

The machine of the defendants has a reciprocating eye-pointed needle, and a reciprocating needle-carrier, substantially like those of Bachelder.

In all these particulars in which the Ætna machine was like the Bachelder machine, the defendants' machine does not differ from the Ætna machine. This embraces all particulars except the feed. In the defendants' machine the cloth is advanced regularly and horizontally, by an intermittent motion, through the joint action of the rough surface of the moving bar beneath and the surface of the pressure-foot above. It is apparent that, in the arrangement and operation of the defendants' feed, and its relations to other co-operating parts of the machine, there are the following material features in common with Bachelder's machine: The cloth lies horizontally on the feeding device, and a portion of the surface of the cloth which lies immediately in front of the needle and of the horizontal holding surface is supported by the feeding device during the act of feeding. The material is fed perpetually, so that a seam of any length can be sewn without removal or replacement of the parts of the machine. The material is delivered, with a seam sewn in it, upon the receiving-plate.

In the Bachelder machine, different portions of the belt are feeding at different times, as, in the Ætna machine, different portions of the cylinder were feeding at different times, while, in the defendants' machine, the same part of the feeding-bar always acts in feeding. But this difference is immaterial. The action, in feeding, of the parts employed at any one time in feeding, is the same in the two machines, so far as the essence of Bachelder's invention of a perpetual feed is concerned. So, too, it is an immaterial difference, that, in the Bachelder machine, the feeding device is always in contact with the material, and always aids in supporting it, while, in the defendants' machine, the feeding device is not always in contact with the material, and, therefore, only aids at intervals in supporting it. Equally immaterial is it that, the defendants' feeding-bar, being provided with a roughened surface instead of with impaling-pins, seams of any desired angularity or curvature can be sewn in the defendants' machine, while such seams cannot be sewn in the Bachelder machine. But this is the same difference which existed between the Ætna machine and the Bachelder machine. The increased capacity given to the machine by the facility of turning and twisting the material, due to the absence of impaling-pins, is an improvement, but the vital features of Bachelder's arrangement are retained. The feeding device of the defendants has a horizontal surface, which, at the time of feeding, aids in supporting the material, and thus makes the feeding possible, and is a perpetual feed, and delivers the material to and upon the receiving-plate.

The point most strenuously urged on behalf of the defendants is, that heretofore suits have been brought in many of the courts for infringements of the reissued patents of Wilson before mentioned, Nos. 346 and 414; that the defendants in those suits have set up the prior existence of the Bachelder machine, and the prior granting of the Bachelder patent, as destroying the novelty of the above-recited claims of the Wilson patents; and that it has been uniformly held that there was nothing in the Bachelder machine or the Bachelder patent to invalidate those claims. These decisions of the courts are urged as decisions that the feeding arrangement of Wilson and the feeding arrangement of Bachelder do not interfere with each other, and consequently that the use of the feeding arrangement of Wilson cannot infringe the Bachelder patent. But this is not a logical conclusion from what was decided in the cases referred to. All that was decided in those cases was, that the claims of the Wilson patents covered inventions which were not to be found in the Bachelder patent—inventions beyond anything found in the Bachelder patent, being the inventions claimed in the Wilson patents; but there was no decision that a machine constructed according to the descriptions contained in the specifications of the Wilson patents did not embrace inventions claimed in the Bachelder patent. No such decision could have been made, because no such question was involved. The principle properly applicable to the decision of the question involved in the present motion is a familiar one in the patent law. Bachelder had no right to use Wilson's improvements without Wilson's consent. Wilson, on the other hand, had no right, in constructing a machine containing his own improvements, to embody therein the improvements patented by Bachelder without Bachelder's consent.

Nothing is shown which anticipates Bachelder's inventions on the point of novelty. The plaintiff's title and the validity of his claims are free from doubt and have been established, and the infringement by the defendants' machine is clear.

An injunction must issue on all the claims.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,590.—Defecating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 2, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,408.—Composition for Kindling Fire.—Granted to ELISABETH BELLINGER, December 13, 1859, and reissued August 7, 1866. Application filed September 15, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,410.—Seed-Planters.—Granted to WILLIAM BLESSING, December 13, 1859. Application filed August 27, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,454.—Dispensing with Switches on Railroads.—Granted to WILLIAM WHARTON, Jr., December 13, 1859, and reissued April 3, 1860. Application filed September 13, 1873. Testimony closes November 11, 1873. Hearing November 26, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 12, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FERTH and JOHN INGHAM, December 20, 1859, and reissued April 28, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,518.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GORE, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEEDS, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON B. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STURTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 20, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860; and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NELSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOSHINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTLER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KIESLER and WILHELM ROSENBROCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ABNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 26, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,262.—Fare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,006.—Improvement in Corn-Planters, granted to E. C. ALLEN, November 8, 1859.

Claim.—The arrangement of the various parts of the seeding-machine herein described, when the whole are constructed and combined for operation conjointly as and for the purposes in this specification herein set forth.

26,028.—Improvement in Apparatus for the Manufacture of Gas, granted to L. D. GALE, November 8, 1859; reissued March 8, 1870, numbered 3,872.

Claim.—1. The vapor-generator A, filled with hydrocarbon liquids by any suitable means, and provided with a vapor-pipe, *i*, leading into a decomposing-chamber, E, substantially as set forth.

2. The combination, in a hydrocarbon-gas generator, of an inner retort closed at both ends, with a space between it and the inner wall of the outer retort, whereby the hydrocarbon (solid or liquid) is first vaporized in the inner retort, and passes from thence into the space between the retorts to form a fixed gas, substantially as set forth.

3. The combination, in a hydrocarbon-gas generator, of two or more retorts, A^4 A^5 A^6, arranged together with a gas-back or decomposing retort, K, and exhauster L, wherein the retorts A^4 A^5 A^6 vaporise, retort K decomposes, and the exhauster L withdraws the gas, substantially as herein described.

26,030.—Improvement in the Manufacture of Gas, granted to L. D. GALE, November 8, 1859; reissued March 8, 1870, numbered 3,873.

Claim.—The treatment of all solid and liquid hydrocarbons by first converting the volatile portions to vapor at a temperature below a cherry-red heat, and forcing the vapor so generated into contact with a red-hot surface, and instantaneously removing the gas thus generated to prevent destructive decomposition, and thus form a permanent or fixed gas.

26,060.—Improved Machine for Making Box-Joints, granted to JAMES SIMPSON, November 8, 1859.

Claim.—1. The combination of the hollow bit *r*, the cutters *w* and d^2, or their equivalents, operating, as set forth, to form the tenons *a*.

2. In combination with the above, the auger-bit r^2, operating, as described, to form the holes *c* to correspond with the tenons *a*, as set forth.

26,090.—Improvement in Paper-Folding Machines, granted to CYRUS CHAMBERS, Jr., November 15, 1859; reissued August 12, 1873, numbered 5,533.

Claim.—1. A drop-roller, co-operating by direct contact with one of the folding-rollers in feeding the sheet, as specified.

2. The grooved folding-roller H, in combination with the vibrating guides 9 9 attached to the rock-shaft F, for the purpose of registering by a positively-acting mechanism the forward edge of the sheet as it enters the machine, as specified.

3. The curved bars 3, arranged to project beyond the surface of the folding-roller, for the purpose of raising or bearing off the sheet from the folding-roller, as set forth and shown.

4. The folding-blade J hung on eccentrics and moving in an arc around one of the folding-rollers, as and for the purpose specified.

5. The combination of the tapes, rods, and stops, arranged in the manner described, for the purpose of corrugating the sheet and presenting it properly to the action of the folding-blade, as set forth.

6. The bent bars 13 and 22, in combination with the folding-rollers grooved to receive their curved ends, for the purpose of turning or conducting the paper, in the manner stated.

7. The combination of the bent bars with the straight bars and adjustable stop, arranged substantially in the manner described.

8. The combination of the bent bars with the tapes and stop for the purpose specified.

9. The combination of the oscillating gate with the packing-box, provided with a yielding slide, and having the rear edge of its bottom board rounded, in the manner and for the purpose set forth.

26,097.—Improvement in Electro-Magnetic Telegraphs, granted to MOSES G. FARMER, November 15, 1859; reissued December 10, 1872, numbered 5,181.

Claim.—1. The combination of a circuit-preserving key with an electro-magnet having two coiled wires on each limb of the electro-magnet, or with two electro-magnets to operate upon one and the same armature-lever.

2. In an instrument for double transmission, the combination of an electro-magnet, or its equivalent, with the continuity-preserving key when the arrangement is such that said key can be operated by an independent circuit, either main or local, which has included in it either a finger-key or any other well-known circuit-closing device for operating it, substantially as represented in Figs. I, VI, and VII of the drawing.

3. The combination of a rheostat or adjustable shunt with a receiving-instrument, so arranged that any desired portion of the current upon the main-line wire can be allowed to pass through the receiving-instrument.

4. The combination of a circuit-preserving key with an electro-magnet having two wires coiled upon each of its limbs, and with a rheostat or other well-known device for regulating the amount of current which shall flow through one of the coils.

26,135.—Improvement in Portable Pumps, granted to WILLIAM T. VOSE, November 15, 1859; reissued February 26, 1861, numbered 41, (whole No. 1,146.)

Claim.—The combination of a foot-stand, stirrup, or rest, as set forth, with a pump-barrel, in manner substantially as described.

26,136.—Mode of Advertising, granted to EDWARD WIEBÉ, November 15, 1859.

Claim.—The above-described mode of exhibiting advertisements, when operated automatically, substantially in the manner set forth.

26,139.—Improvement in Pumps, granted to WILLIAM WRIGHT, November 15, 1859.

Claim.—1. The construction of the pump, by the application of an auxiliary barrel to the working or bucket barrel, and connecting both barrels by a double-beat valve, thus effecting a combined opening through the auxiliary and the bucket valves, with a minimum lift of said valves greater than the area of the pump itself, and obviating, to a great degree, the frictional resistance that would be produced by passing all the water through the pump-bucket valves alone, preventing all throttling, and permitting the engine to work more regularly and economically, substantially as described.

2. The placing of one pump above the other, when made as above described, and connecting both together, and passing the load of one through the working and auxiliary barrels, and the bucket and auxiliary valves of the other, and vice versa, thus allowing the engine to have complete control over the column of water, substantially as described.

26,145.—Improvement in Cocks for Water-Closets, granted to DARIUS WELLINGTON, November 15, 1859.

Claim.—The employment or use of the valve *b* and plunger B, connected by the stem *c*, placed within a suitable cylinder, A, and arranged relatively with the supply and discharge pipes D E, to operate as and for the purpose set forth.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 11, 1873.]

6,987.—Drinking-Glasses, &c.—THOMAS G. COOK, Philadelphia, Pa. Application filed March 7, 1873. Term of patent 7 years.

6,988.—Cellarette.—ADOLPH S. ELLISON, New York, N. Y. Application filed October 30, 1873. Term of patent 3½ years.

6,989.—Printing-Types.—HERMAN ILSENBURG, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place. Application filed July 17, 1873. Term of patent 14 years.

6,990.—Printing-Types.—HERMAN ILSENBURG, New York, N. Y., assignor to DAVID WOLFE BRUCE, same place. Application filed July 17, 1873. Term of patent 14 years.

6,991.—Oil-Cloth.—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SONS & CO., same place.—A. Application filed October 9, 1873. Term of patent 3½ years.

6,992.—Oil-Cloth.—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SONS & CO., same place.—B. Application filed October 9, 1873. Term of patent 3½ years.

6,993.—Oil-Cloth.—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SONS & CO., same place.—A. Application filed August 8, 1873. Term of patent 3½ years.

6,994.—Oil-Cloth.—HENRY KAGY, Philadelphia, Pa., assignor to THOMAS POTTER, SONS & CO., same place.—B. Application filed August 8, 1873. Term of patent 3½ years.

6,995.—Picture-Frames, &c.—JOHN NONNENBACHER, New York, N. Y. Application filed September 19, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date November 11, 1873.]

1,522.—Gold Pens.—CALVIN M. FISHER, New York, N. Y. Application filed November 1, 1873.

"two pens crossing each other at the middle, with the letters 'P. G. Q-P.' in the angles."

1,523.—Clothes-Wringing Machines.—HALEY, MORSE & CO., Boston, Mass. Application filed November 6, 1873.

"'Novelty.'"

1,524.—Ice.—KNICKERBOCKER ICE COMPANY, New York, N. Y. Application filed November 3, 1873.

"'Rockland Lake Ice.'"

1,525.—Thermometer-Tubes.—THE BUFFALO DENTAL MANUFACTURING COMPANY, Buffalo, N. Y. Application filed September 24, 1873.

"a red stripe extending along the back of the white ground commonly employed in the thermometer-tubes."

1,526.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill. Application filed November 6, 1873.

"B. W. Raymond.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date November 11, 1873.]

ORIGINAL PATENTS.

144,379.—Railway-Switch.—FINELLA M. ALEXANDER, Washington, D. C., administratrix of JOSEPH BELL ALEXANDER, deceased. Application filed February 6, 1872.

The switch is actuated from the train by means of a shifting roller-arm mounted on a vertical axis so as to be turned to the right or left at will of the engineer. This operates an oscillating frame extending between the rails for some distance in advance of the switch, which frame depresses the switch-connection on one side, and brings it into use on the other, the same being held firmly in position by the flanges of the wheels operating on the locking pieces L L'. The hand switch-levers are used to change the switch without interfering with its automatic action. The switch-connections are sometimes journaled to the rocking frame instead of being rigidly attached thereto.

Claim.—1. The right and left locks or guard-rails L L', independently journaled, and operated, in concert with the switch-rails C C', by the rocking of the bed-frame A B B, substantially as described and represented.

2. The hand-switches shown in Figs. 3 and 4, for independent action on the switch-rails, without affecting the control of the same by the engineer of a subsequently-approaching train.

3. The switch-rails C C', arranged to oscillate on the supporting-bars B B, as shown in Fig. 6.

4. In combination with the oscillating frame A B E E' and switch-rails C C', the arm *a*, mounted on a vertical axis in bearings *d d*, and adjustable in the manner shown, so as to place the roller *c* on either rail E or E', as required.

144,380.—Can for Fruit, &c.—MELLEN BRAY, Newton, Mass. Application filed October 11, 1873.

The V-shaped groove is formed to serve as a guide for the knife to cut the can, and the top is so formed that after it has been severed from the can it can be turned over and again be used as a cover.

Claim.—1. A metallic can, for hermetically sealing fruits or other substances, having the V-shaped groove B' formed in and extending around the vertical wall of the can near its top end, substantially as described.

2. A can, for hermetically sealing fruits or other substances, provided with the ring B of thinner metal of the same kind as the body of the can, and having formed therein the groove B', substantially as described.

3. The cover C, having its center portion of a diameter to fit the interior diameter of the inwardly-projecting rib formed in the body of the can A or ring B, raised or struck up, substantially as described, for the purposes specified.

144,381.—Bench-Plane.—WILLIAM H. BROWN, Worcester, Mass., and DAVID F. WILLIAMS, Woonsocket, assignors to BAILEY TOOL COMPANY, Woonsocket, R. I. Application filed April 12, 1873.

The set of the cutting-bit and the adjustment of the cap are regulated by set-screw F and a cam which holds the bending-plate.

Claim.—1. In a bench-plane of the character described, an adjusting-screw, F, working in an ear, *c*, formed on or attached to the cap, combined with the presser-plate B, provided with the grooved head *b*, substantially as and for the purpose set forth.

2. The eccentric A, presser-plate B with lugs *e e*, grooves *f f*, and set-screw *d*, in combination with the cap or plane-iron.

3. The presser-plate B, with lugs *e e*, in combination with cap C *e*, set-screw F, and grooves *f f*, substantially as described.

144,382.—Reed-Organ.—RILEY BURDETT, Erie, Pa. Application filed July 26, 1873.

The back set or sets of reeds are dispensed with to make room for the sounding-board of the steel vibratore.

Claim.—1. The sounding-board C, in combination with the steel bar G, steel vibrators, jack F, cam D, and dog E, or their equivalents, for the purpose specified.

2. The combination of the socket-board B with the reed-board I and reed-seats J J, when said parts are arranged substantially as described.

144,383.—Saw-Sharpening Machine.—THOMAS M. CHAPMAN, Old Town, Me. Application filed June 6, 1873.

The clamping-jaw is swung vertically, clear of the saw. Friction-rollers are attached to each jaw, those on the stationary jaw being operated to advance the saw, without removing it from the vise, by means of a foot-treadle and intermediate gears.

Claim.—1. In combination with the stationary jaw *c*, the vertically-swinging jaw *f*, attached to the arm *e*, and clamped to the jaw *c* by the set-screw *g* on the end of said arm, substantially as set forth.

2. The feeding devices, as set forth—to wit, the friction-rollers *i i i*, feeding-rollers *h h*, with their shafts and gears *l n* and shaft *m*, bevel-gear, and shaft *p*, connecting them with the loose treadle *q*, whereby motion is transmitted to said rollers, all arranged as herein set forth, for the purposes described.

3. The combination of the feeding devices with the swiveling standard, as described.

144,384.—Calendar-Clock.—CHARLES M. CLINTON and LYNFRED MOOD, Ithaca, N. Y. Application filed May 8, 1873.

The time-movement and calendar are connected by a pinion which shifts axially, and has a crown-ratchet forming part of a clutch, so that they may be set independently. The day-dial is semicircular, with two concentric rows of figures, to which the long and short opposite arms of a single hand point respectively and alternately. Hour and month indicators are attached to the setting mechanism of the calendar.

Claim.—1. The detaching pinion *c*, arranged between the time-movement and the calendar-movement, substantially as set forth.

2. The wheel *c*, knob *d*, arm or cam *c''*, and spring *c'*, in combination with the detachment ratchet *c*, whereby, by a key or equivalent means, we adjust, either backward or forward, the calendar independently of any motion of the time-movement, substantially as set forth.

3. The setting disk or wheel *f*, for the purpose of setting the calendar to the clock at any hour of the day, as described.

4. The stationary or revolving disk *o*, with numbers on it for four years, and a pointer, *q*, either revolving or stationary, when used in combination with the spring-ratchet *e*, for the purpose of setting the calendar to the right year in reference to leap year by the winch on the shaft of the cog-wheel *s*, or equivalent revolving means, substantially as set forth.

5. The dial *k*, arranged with two rows of figures, as described, and its pointer *j*, when made with one long and one short arm, and operating as set forth.

144,385.—Combined Lunch-Box and Shopping-Bag.—CHARLES C. COBLEIGH, Brighton, Mass. Application filed August 4, 1873.

A lunch-box having several receptacles that can be inclosed, and fitting in a bag that can be used for other purposes.

Claim.—A lunch-box and shopping-bag, consisting of the rectangular bag E, the box A, the food-receptacles C D, and the receptacle B for liquids, separated by the removable partition *e*, all constructed and arranged substantially as and for the purpose set forth.

144,386.—Car-Coupling.—CHARLES C. CONVERSE, Erie, Pa. Application filed July 14, 1873.

One of the coupling-pins is pivoted to the top of the draw-head, and the other to the cross-bar. The cross-bar is pivoted in one side of the draw-head, so that by raising it the lower pin is released, or by depressing it the upper one is allowed to swing out of the draw-head. The coupling is automatic, as the pins are free to swing backward when struck by the link.

Claim.—The combination, in a draw-head, A, of the pins B B', and pivoted cross-bar C, substantially as described.

144,387.—Clothes-Line Reel.—GEORGE F. CORLISS, Mansfield, Ohio. Application filed September 24, 1873.

In a casing is journaled a wheel for a cord and weight, and a rack or reel for the line, the cord of the wheel winding on the reel, with a strip to bear the line onto the reel, and a pipe for it to pass through the casing.

Claim.—The combination of the wheel D, shafts E and F, cord *d*, rack H, pipe *x*, and strip M, when arranged and operated substantially in the manner and for the uses and purposes shown and described.

144,388.—Head-Block.—PERLEY M. CUMMINGS, Lyons, Iowa. Application filed September 12, 1873.

The devices for moving the setting-knees are adjusted so as to operate them individually or simultaneously.

Claim.—1. In saw-mill head-blocks, the feed-bar, composed of the parts A, A^1, and A^2, in combination with head-blocks E, all constructed, arranged, and operating in the manner described.

2. The arrangement and combination of the quadrant-plates D D, feed-bar in parts A A^1 A^2, guides C C′, levers *d d′*, and connecting-bars *e e*, substantially as and for the purpose specified and described.

144,389.—Railway-Car Truck.—JESSE DARLING, Whistler, Ala. Application filed August 31, 1872.

The wheels revolve upon fixed axles, secured at each end to spring-seats, each wheel being provided with two pipe-boxes inserted from each end of the hub around the fixed axle. Springs are inserted between the seats at the ends of the axles and pedestals attached to the frame of the car.

Claim.—The combination, in a railroad-car, of the frame A B, pedestals C, springs D, spring-seats E, fixed axles G, and wheels H, all constructed and arranged substantially as shown and described, and for the purposes set forth.

144,390.—Air-Compressor.—HORACE H. DAY, New York, N. Y. Application filed March 21, 1873.

The cylinder is composed of an outer and inner shell, having a water-way between them divided by a spiral brace and cross-bars or lugs, to secure as great agitation of the water as possible.

Claim.—The water-way, Fig. 2, the cross-bars or lugs, Fig. 5, the spiral brace or flangee, which connect the outer and inner shell, in combination, when used in cylinders for compressing or working off air or other aeriform bodies, the whole united and operated in the manner set forth.

144,391.—Cradle.—CHARLES A. FENNER, Mystic River, Conn. Application filed April 7, 1873.

A cradle constructed with ends connected by diagonal stripe, loosely riveted to allow easy play, in form of lazy-tongs, with its bottom pivoted to cross-pieces to allow it to contract in folding, by which it may be opened for use or contracted into a small space for transporting. The connection on its upper side is by links, by which the ends are given a sloping form.

Claim.—1. The links E^1 E^2, connecting the ends A^1 A^2 with the latticed sides B C, arranged as shown, so that as the parts are closed together the ends will approximate a parallel position, and as they are extended the ends will assume an inclined position, as specified.

2. The grooved cross-pieces M m, in combination with the bottom lattices G H, side lattices B C, and the connected ends A^1 A^2, adapted to serve as herein specified.

144,392.—Grave-Mound Cover.—BENJAMIN HUNTER, Philadelphia, Pa. Application filed October 21, 1873.

To prevent the mound washing away and sinking from rains.

Claim.—A grave-mound cover having a groove or gutter, C, around its lower edge, and provided with one or more outlets, *a*, substantially in the manner and for the purpose set forth.

144,393.—Steam-Boiler Furnace.—SAMUEL KEYES, Bennington, Vt. Application filed June 7, 1873.

Claim.—The combination of a horizontal boiler, A, fire-chamber B, fire flue C, surrounding the boiler, sheet-like space I over the flue C, chamber M under the fire-chamber, and passages *e* and *k k* for directing external air into and through the space I, and thence into the chamber M, substantially as described.

144,394.—Cotton-Opener.—RICHARD KITSON, Lowell, Mass. Application filed April 7, 1873.

For preventing cotton being forced down between the bars with the dirt and waste, and for reducing the volume of air which is produced when such air-ports are located above the beater and near the feed-rolls.

Claim.—In a cotton-lapper, such as herein described, air-ports A forward of the beater and the rack, as specified, and opening into a space or compartment communicating with the beater through the spaces between the forward bars of the rack, all in the manner and for the purpose set forth.

144,395.—Shuttle for Sewing-Machines.—JOHN KNOX, Three Rivers, Mich. Application filed July 21, 1873.

By arranging the bearing-cap at the hinged end of the thread-guide the bobbin is held securely and easily against any possibility of displacement.

Claim.—The combined thread-guide and latch, when the cap-block *c* is arranged adjoining the hinge, in combination with a retaining-notch, *f*, to receive the extremity of the arm, as set forth.

144,396.—Compound of Bitumen, Ore, &c.—PEYTON LEA, Goliad, Tex. Application filed January 8, 1872.

About ten per cent. of bitumen, finely divided, is suspended in twenty-four per cent. of water; to this sixty-six per cent. of pulverized ore is added. The mass is treated by compression and evaporation to remove the water, the result being a dense compound of bitumen, ore, &c.

Claim.—The new compound of bitumen and ore, or ore with its admixtures as found in natural deposits, or these with metallic substance added thereto when necessary, the proportions of the solid pulverized ore, or pulverized and granular material and with the bitumen, being about as specified, and the compound being as and for the purpose set forth.

144,397.—Mixing Mineral and Fossil Substances with Bituminized Clay to Form a Plastic Material.—PEYTON LEA, Goliad, Tex. Application filed February 24, 1872.

Bitumen and water are thoroughly mixed, and then metallic ore is pulverized and embedded in the mixture. The water is now expelled by evaporation, and the mass is made compact by pressure.

Claim.—The new compound or product of bitumen, clay, and mineral or fossil substances, or both fossil and mineral substances, the proportions of the bitumen and of the firm materials being about as set forth.

144,398.—Machine for Cutting Cobble-Stones.—HEZEKIAH LOMBARD, JOSEPH P. MORRILL, and LEROY A. SWEATT, San Francisco, Cal. Application filed March 15, 1873.

Claim.—The combination of pivoted head B and stationary bed A, provided with cutters E E, held apart by an intermediate spring, F, and operated as and for the purpose described.

144,399.—Key-Cap for Key-Beard Instruments.—JOHN P. LORD, Manchester, N. H. Application filed May 5, 1873.

The porcelain, glass, or other cap has flanges at each end, in which fit projections made upon the key for the purpose of fastening the same without relying entirely upon cement.

Claim.—1. The method of uniting the caps A and A A with their respective keys E and E′ by means of the dovetails L D and C B, substantially as described and shown.

2. The combination of the ornamented glass or crystal caps A and A A, constructed as described, with their respective keys E and E, substantially as herein described, and for the purpose set forth.

144,400.—Mold for Oil-Cakes.—RICHARD MACDONALD, Hull, England. Application filed October 29, 1872.

The metal plates which form the molds are provided with canvas flaps, and also with flanges around their edges, formed of hair or grass rope.

Claim.—1. The mold A, constructed as described, with rope flanges C, as and for the purpose specified.

2. In combination with an oil cake mold, constructed as described, the canvas laps B B, as and for the purpose specified.

144,401.—Machine for Pointing Staples.—WESLEY MALICK, Erie, Pa. Application filed September 16, 1872.

Two horizontal swages and a bifurcated or double vertical swage, combined with a swage-block having a rib across its face that converts it into two anvils, each with a horizontal and a vertical face, which co-operate with the several hammers, the faces of the hammers and anvils being properly inclined in pointing both limbs of the staple at the same time.

Claim.—1. The anvil G, when constructed with the faces I I and J J, and used for the purposes shown and described.

2. The combination of the two-sided and double-faced anvil G with the reciprocal and convergent hammers F E E, for the purposes shown and described.

144,402.—Stair-Rail-Molding Machine.—JOHN B. MARSHON, Swampscott, Mass. Application filed January 15, 1873.

The rail is retained in its proper position with relation to the rotating cutter by a series of changeable feed and guide rolls.

Claim.—1. The combination and arrangement of the wheels *d e d*, support *e″*, feed-roller *f*, support *g*, and wheel *h*, substantially as and for the purpose above described.

2. The combination and arrangement of the shaft *b*, upright *d′*, cutter *c′*, wheel *h*, and support *g*, substantially as and for the purpose hereinbefore specified.

3. The combination and arrangement of the support *e″*, wheel *p*, upright *d″*, and feed-roller *m*, substantially as specified.

4. The combination and arrangement of the wheel *n*, feed-roller *m*, brace *l*, and upright *d′*, substantially as hereinbefore set forth.

144,403.—Coating Iron and other Metals with Protecting Alloys.—CALEB MARSHALL, Philadelphia, Pa. Application filed October 21, 1873.

The object of this invention is to coat sheet-iron and articles of iron with a cheap alloy, which will protect the iron against corrosion without injuring its strength.

Claim.—1. The improved alloys herein described for coating sheet-iron and other articles, composed of lead, tin, and copper, substantially in the proportions named, either alone or with the addition of zinc, or of zinc and antimony, as set forth.

2. As a new article of manufacture, sheet-iron, or other article of metal, as specified, coated with an alloy of lead, tin, and copper, with or without the addition of zinc, or zinc and antimony, substantially as specified.

144,404.—Match-Box.—JOSEPH MATTHIAS, New York, N. Y. Application filed October 18, 1873.

The hinges are so made as to allow movement at a right angle to their axes so that the cover can be pushed down over the upper portion of the body.

Claim.—The sliding or adjustable hinge *b b c c*, constructed substantially as described, and for the purposes set forth.

144,405.—Medical Compound or Salve.—DENNIS J. MCEVOY, Charlestown, Mass. Application filed October 23, 1873.

Hog rind, one-half pound; lard, one-half pound; bees-wax two ounces; rosin, one ounce; sugar, one tea-spoonful; potash, one-half tea-spoonful; leather burned to dust, one-half ounce.

Claim.—A salve composed of the within-named ingredients, compounded substantially as set forth.

144,406.—Miter-Box for Cutting Printer's Rules.—THEODORE H. MEAD, New York, N. Y., assignor to R. HOE & Co., same place. Application filed March 6, 1873.

Claim.—The combination, with the box A, provided with longitudinal grooves *a* and slits *b*, *c*, and *d*, of the clamping-plates and screw D B C, constructed and operating substantially in the manner described.

144,407.—Nail-Distributer.—ALEXANDER MORRISON, Harrisburg, Pa. Application filed September 17, 1873.

The oscillating chute P is pivoted at S to the end of the stationary chute M, and is formed so as to coalesce with said chute when it is desired to receive accepted work, and is operated by means of the trip mechanism, so as to reject or receive a spike, at the option of the operator.

Claim.—1. The arrangement of the transverse articulation of the parts M P of the compound chute directly beneath the forward end of the exit-opening leading from the dies of the spike-machine, substantially as and for the purpose herein shown and described.

2. The trip mechanism composed of the connecting-rod G, the operating-lever G′, the coiled spring K K′, or its equivalent, in combination with the oscillating chute P, these parts being arranged to operate conjointly, substantially as and for the purpose set forth.

3. The combination of the chute P, connecting-rod G, lever G′, plunger D D′, and sheath E, or its equivalent, all constructed and arranged to operate as and for the purpose herein set forth and described.

4. The oscillating chute P, in combination with the shield T, for the purpose herein set forth.

144,408.—By-Pass for Gas-Works.—PETER MUNNINGER, Philadelphia, Pa. Application filed September 16, 1873.

The invention is for correcting any inaccuracies in the working of the exhauster used for pumping the gas from the retorts, and consists of an automatically-acting valve placed in the shut-off or valve of the by-pass.

Claim.—A by-pass in combination with an automatic valve, arranged to close when the pressure of the gas in the forcing-pipes G exceeds the pressure in the suction-pipes E, and to open when the pressure of the gas in the suction-pipes E exceeds that in the forcing-pipes G, for the purpose shown and described.

144,409.—Reed-Organ Reed.—MOSES O. NICHOLS, Clyde, Ohio. Application filed July 5, 1873.

The reed frame or block being made of wire bent round at the point, the wind-current vibrating the reed has a smooth and rounded channel.

Claim.—1. The reed-block A, formed of bent wire, substantially as and for the purpose described.

2. The wire reed-block A, in combination with the heel-plate B, substantially as described.

3. The wire reed-block A, in combination with the heel-plate B and tongue C, when constructed substantially as described.

144,410.—Steam-Brake for Railway-Cars.—NILS NILSON, Minneapolis, Minn., assignor to himself and WILLIAM W. MCNAIR, same place. Application filed December 17, 1872.

A main and auxiliary cylinder are combined with the brake-levers and suitable operating devices, so that the steam first enters the auxiliary cylinder. A spring around the rod of this cylinder withdraws the piston, and the steam is let out of the main cylinder by a valve in the head thereof. A universal joint connects the pipes and allows lateral and horizontal motion. A coupling with hooks and screw-wheels connects the pipes between the cars.

Claim.—1. The combination of the steam-supply C, cylinders B and B′ and their operating devices, as herein described, with the brake-bars 8 and brakes 9, constructed and arranged to operate in the manner and for the purpose substantially as described.

2. The joints H and I, Fig. 4, constructed as described, to allow of lateral and longitudinal motion, in the manner as set forth.

3. The coupling, Fig. 5, composed of hooks *b″*, screw-sleeve wheels *a″*, coupling-pipe *f‴*, in combination with the steam-pipes *f′*, substantially as and for the purpose described.

144,411.—Tenoning-Machine.—JOHN RICHARDS, Philadelphia, Pa. Application filed October 16, 1873.

The cutters are carried upon a vertical spindle affixed to a horizontally-sliding frame, between two tables upon which the lumber to be operated on is placed.

Claim.—The combination of a sliding frame, *m*, with a vertical spindle, *d*, and the two tables F F in a wood-tenoning machine, arranged and operating substantially as hereinbefore specified.

144,412.—Car-Coupling.—LEMAN P. RIDER, Pittsburg, Pa. Application filed May 26, 1873.

The pin is prevented from accidental displacement by a cap, *r*, which fits over its trunnions. The link-guide is pivoted to the draw-head, and so connected with the levers for operating it from the side of the car that they will not interfere with the longitudinal play of the draw-head.

Claim.—1. The pin *c*, having the arm c^1 and journals *c*, in combination with the ledge *c′* on the draw-head, and latch *r*, substantially as set forth.

2. The U-shaped lifter *f*, with one side or arm of the U projecting back and passing loosely through the loop A^1 in the lever A, and the loop *i*, all combined substantially as set forth.

3. The pin *c* and the latch *r*, connected by means of a chain, *s*, so that when the pin is withdrawn by means of the chain *c′* the latch will be opened to permit its escape, all combined substantially as set forth.

144,413.—Window-Ventilator.—LUTHER ROBINSON, Newton, Mass. Application filed September 9, 1873.

The ventilator is in two compartments, and has a roof which deflects the current from an upward direction, and a diffusing-plate to prevent a direct draft.

Claim.—1. The spreading-plate *g*, in the position described, in combination with the floor *a*.

2. A window-ventilator combining, with the floor *a* and plate *g*, a top or roof which acts as a partial obstruction to the ascent of the air, substantially as specified.

3. The arrangement, with the ventilator *e g h*, of the partition *k*, substantially as and for the purpose hereinbefore set forth.

144,414.—Apparatus for Heating and Illuminating.—LAURENT RUEL, St. Johnsbury, Vt., assignor to himself and JULIEN DEMERS, same place. Application filed August 6, 1873.

Upright ribs, at their lower ends, are clasped by a ring to the collar of a lamp, and at their middle steady a glass chimney, and at their upper ends support a horizontal ring which both holds the vessel when contents are to be heated, and steadies a flanged metallic chimney, which rests on the glass chimney and projects upward through a central orifice in the boiler.

Claim.—The clasp F, the series of rods E E E E, the shelf D, the main and auxiliary chimneys B C, and the burner *b*, arranged and combined substantially as shown and described.

144,415.—Garden-Hose Rest.—CHARLES RYDER, Cambridgeport, Mass., assignor to himself and HENRY G. WHITE, same place. Application filed August 6, 1873.

A spout is hinged to and made vertically adjustable upon the rotary head of a tripod by means of a horizontal rack-bar and strut or pawl. The hose is placed in the spout and secured in place by a pin, when it can be changed to any elevation and directed to any point at will.

Claim.—1. The combination of the spout A, the forked rack B, the strut E, the rotary head C, and the tripod D, arranged and applied together substantially as specified.

2. The belaying or supporting rod or bar *d*, arranged and combined with the spout A, the rack-bar B, the strut E, the rotary head C, and the tripod D, all being applied together and for use in manner and for the purpose as set forth.

144,416.—Rotary Puddler.—WILLIAM SELLERS, Philadelphia, Pa., and GEORGE H. SELLERS, Wilmington, Del. Application filed September 3, 1873.

The gearing is so constructed that the rotary puddler can be arranged to swing either to the right or left, as may be most convenient or rendered necessary by location. A double-cylinder steam-engine is mounted on the traversing frame, and, by intermediate gearing, is used to rotate the puddler or vibrate the traveling frame, as is desired.

Claim.—1. As an improvement in the art of mechanical puddling, the hereinbefore-described method of spreading the charge during ebullition.

2. As an improvement in the art of mechanical puddling, the method, substantially as herebefore set forth, of rotating the vessel, when charged, by the same power which, when it is to be charged or discharged, separates it and the fluee.

3. As an improvement in the art of mechanical puddling, the hereinbefore-described method of locking the traversing frame when the puddling-vessel is against the flues.

4. As an improvement in the art of mechanical puddling, the hereinbefore-described transposable arrangement of parts, so that the puddling-vessel may be traversed to the right or left, as required.

5. A cylindrical puddling-vessel open at one end only.

6. The combination, with a rotary puddling-vessel, of a water-back, substantially as described.

7. The combination, with a rotary puddling-vessel and a water-back, of a hollow journal, through which the water is admitted and discharged.

8. The combination of the water-back, the hollow journal, the ping *h′*, and pipe *h*, for the purposes described.

9. The combination of the rotary puddling-vessel, the water-back, the hollow journal, the waste-pipe i^3, and basin i^2.

10. The combination, with the traversing frame G and the radial wheel I, of the supporting-frame J J, substantially as and for the purposes described.

11. The radius-bar *m*, connecting the supporting-frame J J with the traversing frame G, substantially as described.

12. The eccentric shaft *m′* *m′* and lever *n′*, in combination with the wheels *n n*, for the purposes described.

13. The shaft N′, common to the respective systems of gearing, for rotating the puddling-vessel A, and for traversing the frame G, substantially as described.

14. The combination of a rotary puddling-vessel, a traversing frame, and a system of pipes jointed in the axis of vibration of the frame, for the purpose described.

15. The combination, with a rotary puddling-vessel and the traversing frame, of the platform r^6, for the purpose described.

16. The combination, with a rotary puddling-vessel, of a discharging-fork swinging about two centers in a line parallel to the axis of the puddling-vessel, substantially as described.

17. The combination, with a rotary puddling-vessel, of a discharging-fork swinging about two centers, one end moving only in a horizontal plane, the other having both a vertical and horizontal movement, substantially as described.

18. The combination, with a rotary puddling-vessel, of a discharging-fork having a flexible support at one end and a universal joint at the other, substantially as described.

19. The combination, with a rotary puddling-vessel, of a discharging-fork having a flexible support at one end and a universal-joint support at the other, so that the fork may be turned upon its axis, substantially as described, and for the purposes set forth.

20. The handle c^4, located and arranged substantially as described, so that the various movements of the fork may be managed from one and the same point, substantially as set forth.

144,417.—Baking-Pan.—CHARLES T. SMITH, Jersey City, N. J. Application filed January 23, 1873.

To the upper edge of the sheet-metal bake-pan is secured a cast-iron rim, having a square shoulder on the inside in which the cover fits.

Claim.—As a new article of manufacture, the pan *a*, having secured to its top the cast-iron rim *b*, having a square shoulder formed around its inside, so as to receive the cover, substantially as specified.

144,418.—Ironing-Table.—WILLIAM H. SPARKS, Absecom, N. J. Application filed October 11, 1873.

The table has two sets of crossed legs, one set being pivoted to one end of the table. The legs are pivoted at the center where they cross each other by metal braces having projecting pins.

Claim.—The braces E E, having projecting pins *e e*, in combination with the pivot-rod C, and the legs B B and B′ B′, for holding the legs in a firm position to support the top A, substantially as described.

144,419.—Rotary Cultivator.—JOHN D. STARRITT, Chicago, Ill. Application filed May 17, 1873.

A series of revolving diggers are mounted upon the rear end of a rectangular frame supported on wheels. Each digger has an independent motion by rotation upon its own axis; besides, the head of the digger is united to its shaft by a universal joint.

Claim.—In a rotary cultivator, the rotary knives F F, constructed and arranged substantially as described, and each having a free, independent, vertically-yielding movement with relation to the other by reason of the attachment of each to a corresponding rotary shaft by means of a universal joint, and by reason of the arrangement of the stems G G in the yokes H H, substantially as and for the purposes specified.

144,420.—Ticket-Case.—JAMES STOKES, Jr., New York, N. Y. Application filed August 5, 1869.

A spring-metal cylinder, divided longitudinally to provide an orifice for the strip-ticket, is at one of the sides of this opening bent into V form to provide an edge over which the ticket is torn off.

Claim.—The ticket-case composed of the cylinder or drum D, mounted upon the arms E, in combination with the spring-case A provided with strip-holding jaws *a b*, all constructed and arranged substantially as and for the purposes set forth.

144,421.—Bridge-Wall for Furnaces.—SETH C. STURTEVANT, Cleveland, Ohio. Application filed July 21, 1873.

A hollow bridge-wall has its front side perforated, and its top open. A plate is arranged in front of the perforated side of the bridge-wall, so as to leave an air-space between them, the object being to consume the gases and smoke.

Claim.—The combination of the chamber or shell A, having a perforated front wall, C, opening D, and plate F, forming, in connection with the side C, an air-space, H, in the manner as and for the purpose specified.

144,422.—Faucet.—SAMUEL R. THOMPSON, Portsmouth, N. H. Application filed August 25, 1873.

A perforated plunger, fitting into the end of the faucet-barrel, is employed to drive the plug into the barrel after the said faucet-barrel has been partly inserted.

Claim.—The perforated plunger G, attached to rod F, in combination with a faucet, substantially as and for the purposes set forth.

144,423.—Postal-Card Case.—CHARLES H. TOWNSEND, TWIFORD E. HUGHES, and ALBERT A. KEITH, Minneapolis, Minn. Application filed July 1, 1873.

Claim.—The open postal-card case *d*, constructed with the inner rim A, and provided with the plate F and springs E E′, and having the open end *h*, loops C C′, and flap B, substantially as and for the purpose set forth.

144,424.—Buffet-Table.—WILLIAM H. TUFTS, Lynn, Mass. Application filed August 20, 1873.

The lower board of the cupboard forms the top of the permanent part of the table, and is supported on a three-legged stand. Said stand is provided with two hinged arms or rails, each supported by a leg. This extension forms the support to the hinged folding part of the table-top. When the folding top is raised to an upright position it forms the shelves and top of the cupboard. These shelves are hinged to a connecting-frame, to which front and end doors are attached, and a closed cupboard is formed.

Claim.—The buffet-table, substantially as described, consisting of the stand B, the folding arms C C′, the legs D D, the boards A H I, the frame E, the bars G G, and the front and end doors F and K K, all arranged and combined or applied together in manner and to operate essentially as specified.

144,425.—Railway-Car Heater.—JULES H. WEIBEL, Geneva, Switzerland. Application filed August 23, 1873.

By reason of the provision of branch and return pipes the apparatus has special adaptability to compartment-cars.

Claim.—1. In combination with a heater, the supply-pipe *i* and a series of descending pipes, *k*, located at intervals along the car, and connected by cross-pipes *l* to a return-pipe, *n*, with suitable cocks interposed between the supply and return pipes for regulating or shutting off at will the flow through any or all of the pipes *k*, the whole being constructed and arranged to operate substantially as and for the purpose herein set forth.

2. In combination with the heater, constructed and arranged substantially as described, the tube *d* with its cover *e*, arranged as shown, whereby fuel can be supplied from the exterior of the car, as set forth.

144,426.—Spring-Seat for Wagons and Carts.—PETER WEYAND and PHILIPP HILL, Morrisania, N. Y. Application filed April 21, 1873.

The springs of the seat, when in use, rest upon a rubber bed. The seat, when not in use, may be turned over and rest upon the foot-rest, to be out of the way when loading the wagon.

Claim.—In a wagon-seat, the combination of the support B, post A having shoulder *m*, and rubber block *w* with the springs D E, substantially as set forth.

144,427.—Block-Fitting Machine.—ELIAS H. WOODSUM, South Boston, Mass., assignor to FRANCIS H. WHITMAN, Harrison, Me. Application filed September 8, 1873.

A pair of oscillating circular-saws are arranged, in connection with two vertically-reciprocating augers, so as to cut from a plank, and at the same time bore a block of wood which is to form part of a railway-sleeper.

Claim.—The device, substantially as herein described, by means of which blocks are simultaneously cut and bored, for the purpose herein set forth, and for similar uses.

144,428.—Car-Coupling.—THOMAS ANDRESS, Auroraville, Wis. Application filed July 19, 1873.

When the pin is raised, by means of a chain, the weighted lever, which holds the pin-support forward, is also raised, so that the slide is free to be drawn back by a spring at its rear, which slide carries the pin from over the hole in the draw-head. In coupling, a curved bar on one draw-head strikes a lever pivoted in connection with the slide, and which thrusts it forward so that the pin can fall through. The links are thrust forward out of the mouths of their draw-heads by the arrangement of levers and projections.

Claim.—In car-coupling, the combination of coupling-pin B, chains *a a′*, slide *b*, having rod *d e′* and spiral spring *e*, with guides *d d′* and pivoted levers *f g*, for detaining and dropping pin B, as described.

2. The draw-bar A, having curved bar C and bolster-extension F, with slot *o′*, as set forth.

3. The coupling-link B, combined with links *h i*, pivoted lever E, spiral spring *n*, and rod *o*, as described.

4. The combination of draw-bars A, link and pin mechanism, bars C, and rods *o*, forming the double car-coupling, substantially as and for the purpose described.

144,429.—End-Gate for Wagons.—JOSEPH C. BAIRD and MERRITT MILLER, Heaton, Ill. Application filed August 30, 1873.

Claim.—The end-gate C, provided with the lugs G at one end and engaged between the cleats D E, and having the lever-catch I, at the other other end, the lever being jointed to the side of the end-gate by a link, and provided with hooked prongs M to engage the side board when the catch is fastened, all substantially as specified.

144,430.—Window.—GOTTLIEB M. BARTH, Philadelphia, Pa., assignor to himself and AUGUSTUS SAUER, same place. Application filed September 21, 1872.

The hinged stripe, in conjunction with the movable spring-stripe, enable both sashes to be readily removed and replaced, and the lugs or projections on the balancing device afford a ready means of attachment and detachment.

Claim.—1. The combination of the adjustable strip F and the hinged stripe A and sashes B B′, as set forth.

2. The combination of a sash with lugs or projections *d* secured to the balancing devices, and adapted to notches cut in the edges of the said sash, substantially as specified.

144,431.—Jewel-Case.—CONSTANTIN BECK, Providence, R. I., assignor to GORHAM MANUFACTURING COMPANY, same place. Application filed September 10, 1873.

Claim.—In combination with the parts D and A of a jewelry box or case, the rim or frame B, when made of metal, substantially as and for the purpose described.

144,432.—Automatic Hatchway-Guard.—GEORGE E. BERRY and FRANK C. PINGREE, Detroit, Mich. Application filed September 27, 1873.

A means of automatically opening and closing a hatchway-guard by the passage of the elevator-car. A pin on the car encounters a pivoted lever connected, by cords passing over pulleys, to the guard, thus raising the same. Another pin, somewhat in the rear, engages the opposite arm of the lever as the car passes on, and thus causes the fall of the guard to its place.

Claim.—The vertically-sliding gate B, ropes D, and tilting lever F, combined and arranged with the carriage I, the latter having pins H and L, arranged to actuate said lever, in the manner described.

144,433.—Plow.—JEROME BLANCHARD, East Saginaw, Mich., assignor of one-half his right to H. WALLACE CARTER, same place. Application filed April 5, 1873.

Claim.—The two sets of skeleton-wheels A B, forming the entire mold-board, and used in connection with the bar D, all constructed and arranged as shown, and for the purpose specified.

144,434.—Package of Powder-Charges for Blasting.—HENRY M. BOIES, Scranton, Pa. Application filed October 4, 1873.

A series of charges are arranged in a long flexible tube, and separated by twisting the material, which is covered at the division as the charges are required for use.

Claim.—A cartridge-package, consisting of a series of charges contained in a tube of suitable flexible material, and separated one from another by suitable intervals of space, as shown and described, whereby the charges may be used successively, as required, or individually divided and used in part, as set forth.

144,435.—Implement for Capping Cartridges.—HENRY M. BRONSON, Sandusky, Ohio. Application filed September 27, 1873.

Claim.—The instrument herein described for capping cartridge-shells, consisting of the bolt A A′ and the spring-clamp B, the parts being combined substantially as described.

144,436.—Balloon Advertising.—WILLIAM FRANK BROWNE, New York, N. Y. Application filed October 3, 1873.

The netting or canvas upon which the advertisements are displayed is placed below the balloon, and has a vane attached to it so that its edge will always be presented to the wind, and thus allow the balloon and its attachments to remain nearly perpendicular. The advertising canvas is kept taut by being suspended between the balloon and the anchor-rope.

Claim.—1. A double advertising-surface, B, of canvas or other suitable material, constructed to automatically present its edge to the wind, in combination with a balloon for advertising purposes, substantially as herein specified.

2. The advertising-canvas B, in combination with the balloon A and anchor-rope *i*, forming the connection between the same, substantially as and for the purpose herein specified.

144,437.—Churn.—GEORGE G. BUCHANAN, Cotton Plant, Miss. Application filed June 14, 1873.

A dasher-rod, socketed in a removable top to its frame, carries a pinion near its top, which meshes with gearing. A surrounding flange lower down, moving on a cross-beam, supports the rod, which, passing below, is united to the dasher by a sleeve-connection.

Claim.—A churn-dasher section, H, having a pinion, N, by which it may be rotated, and a flange, J, by which it may be supported, connected detachably with tube G, and with a detachable cap, K, as described, to allow it to be easily removed.

144,438.—Wood Molding.—LEONARD BUSHNELL, New Bedford, Mass. Application filed May 17, 1873.

Claim.—A wooden or other molding provided with stamped ornamental figures or signs in intaglio, having the sides of the recesses beveled and inwardly inclined, substantially as described, to facilitate the operation of gilding, as set forth.

144,439.—Car-Coupling.—REVERE BUTT, Harrisburg, Pa. Application filed August 16, 1873.

The bifurcated pin-support is pushed forward beneath the pin by a sector acting on its rear end. The pin is guided and raised by a poised wheel pivoted on a standard projecting up from the draw-head.

Claim.—1. In a car-coupling, the combination of the gravitating sector H H^1 H^2, pivoted through the draw-head side plates, and the bifurcated sliding frame C D E F to traverse the longitudinal chambers, arranged one above the other in front part of the draw-head A K B, to detain and drop the ordinary coupling-pin Q, and to poise and couple the ordinary coupling-link L, substantially in the manner as and for the purpose set forth.

2. The coupling-pin operating device, composed of the wheel V, overbalanced by projection J, connected by chain G to the coupling-pin Q, and mounted detachably on the fore-part of the draw-head by the post W, all combined as and for the purpose herein set forth.

144,440.—Carriage-Door.—JAMES CARSON, Buffalo, N. Y. Application filed September 10, 1873.

Claim.—The pivoted supplemental pieces *d*, having the protecting-stripe, *f*, in combination with the supports D D, having the hooked ends *g*, combined to operate substantially as and for the purpose specified.

144,441.—Office and Counting-House Stool.—ALFRED DEFOREST CARTWRIGHT, Oakland, Cal. Application filed August 21, 1873.

The spindle that is attached to the under side of the rotary seat is supported on a disk that has several perforations on its upper surface, so that the angle of the seat may be adjusted by placing the spindle end in the different holes.

Claim.—The disk F with its perforations or step G, in combination with the spindle C of the seat E, substantially as and for the purpose described.

144,442.—Tilting-Stand for Carboys.—ABNER W. CAVERLY, New York, N. Y. Application filed August 16, 1873.

The stand upon which the carboy rests is provided with rockers so that it can be tilted sufficiently to pour out the contents.

Claim.—A stand for carboys provided with rockers, so arranged that a carboy resting on the stand can be tilted sufficiently to pour out the contents by turning it on the rockers, but will of itself remain upright with a carboy on it, substantially as specified.

144,443.—Wagon-Brake.—BENJAMIN W. COE, Des Moines, Iowa. Application filed August 30, 1873.

Claim.—1. The combination of the plate *d*, spring *g*, and tongue C, in the manner and for the purposes described.

2. The jointed rod *a a*, coil-spring *b*, and pivoted levers *c c*, combined with the axle A, hounds B B, and tongue C, substantially as and for the purpose described.

144,444.—Polishing Compound.—ELSIE J. COMBS, Plattsburg, assignor of one-half her right to LEVI O. DUNNING, Penn Yan, N. Y. Application filed September 12, 1873.

Fifty pounds soft carbonate of calcia, one and one-half pound hard soap, four ounces aqua ammonia, one pint alcohol and water.

Claim.—The compound for cleaning and polishing metals, glass, or other materials, compounded of the ingredients of soft carbonate of calcia, hard soap, aqua ammonia, alcohol, and water, in about the proportions named, and in the manner substantially as herein set forth.

144,445.—Foot-Warmer.—JOHN B. CRAIG, Perrysville, Pa. Application filed May 5, 1873.

Claim.—The bottom B, having the pins D and ribs G, combined with a block having cavities H to hold said block in the box A, as set forth.

144,446.—Artificial Stem for Cut Flowers.—JOHN B. CRAIG, Perrysville, Pa. Application filed August 26, 1873.

Fine annealed wire is formed into a spiral skeleton cup at the apex for embracing the calyx of the flower, either for single flowers or bouquets.

Claim.—The device A for stemming flowers, consisting of a wire-coil, *a*, and stem *b*, as shown and described.

144,447.—Beer and Ale Faucet.—JOHN DEASEY, Fall River, Mass. Application filed September, 20, 1873.

The barrel-plug is driven in by means of a plunger passing through the faucet-body. Said plunger is restored to its position by the elasticity of a spring. Leakage is prevented by a packing and screw-nut around the plunger at its point of entrance.

Claim.—The combination of the cap C, packing G, collar F, and spring H, with the rod and the tube, substantially as specified.

144,448.—Milk-Cooler.—CHARLES A. DOUGLAS, Franklin, N. Y. Application filed October 18, 1873.

The water-pan of a milk-cooler is protected from the heat of the atmosphere by a non-conducting envelope of felt, paper, or equivalent substance. The water-pan is provided with a wooden flange projecting from the metal flange and resting on the beams, which confines the upper edge of the envelope against the side of the water-pan.

Claim.—1. The water-pan of a milk-cooler protected from the heat of the atmosphere by a non-conducting cover or envelope, C, of paper, felt, or other equivalent substance, substantially as specified.

2. The combination of the wood flange E, metal flange F, pan A, beams G, and the non-conducting cover C, substantially as specified.

144,449.—Machine for Bending Tubing.—WILLIAM T. FARRE, Montreal, Canada. Application filed June 30, 1873.

The two two-winged beaters B are so constructed and arranged that one end of each shall overlap in its action the boundary line of the action of the other, and thus prevent the formation of a fin on the tube that projects from mandrel S over the edge of the die I.

Claim.—In a machine for making curved tubes of soft metal, the combination of the two sets of revolving dies B B′, constructed and operating substantially as and for the purpose specified.

144,450.—Type-Writing Machine.—JOHN GALLOWAY, New York, N. Y. Application filed September 27, 1873.

The paper and transfer-cloth are placed on the cylinder B. The block Q, with raised letters on its under side, is moved along until its arm E is in the notch in the bar S, corresponding to the letter desired to be printed, when it is forced down upon the paper. The pawl M, attached to the rear of the frame J, rotates the cylinder, and it is moved horizontally by means of the flange

E gearing into the pins on the rod F. The frame J, to the rear part of which the pawl is attached, is operated independently of the block, so as to rotate the cylinder, to leave the necessary space between the words.

Claim.—1. The movable block Q, provided with two rows of raised type, U, and a projecting arm, R, the slotted and notched plate S S', the two pivoted frames G J, the springs H K, the pawls M P, and the ratchet-wheel O, in combination with each other and the shaft C that carries the roller B, substantially as herein shown and described.

2. The toothed shaft F and the spiral thread E, in combination with the roller B, to move said roller longitudinally while being rotated by the shaft C, substantially as herein shown and described.

144,451.—Sash-Fastener.—ORVELLAS H. GILBERT, Darien, Wis. Application filed October 11, 1873.

A single sliding bolt is furnished with a recess upon each side. In the upper recess a pawl works, which is held by a spring and operated by a key. In the lower recess a bell-crank lever works, and has one end projected from the case, to be operated by the finger to retract the bolt when unlocked by the key.

Claim.—A lock for sashes and other purposes, having recesses F K in the bolt, finger-piece G, pawl L, and springs E and O, arranged to operate substantially as and for the purposes described.

144,452.—Grain-Drill.—SAMUEL HART, Fulton, N. Y. Application filed June 21, 1873.

The seed-box has a supplemental chamber, which is occupied by the feed-roller. The seed is discharged into a spout, the lower end of which is automatically closed by a valve, which may be used in planting in hills, but when thrown out of gear allows the seed to fall in drills.

Claim.—The combination of hopper A, provided with rotary feed-tube F, subjacent receptacles I, having trough closed by an automatically-opening valve, *b*, and the hollow-opening plow X, arranged substantially as and for the purpose described.

144,453.—Wheel-Plow.—FRED HASEBROOK, Stokes' Mound, Mo. Application filed September 6, 1873.

There are two bearing-wheels, and the plow-beam is supported between them and beneath the axle-tree by means of adjustable rods and side chains.

Claim.—The combination of rocking bar I and rod K with bifurcated tongue A B and beam L, as and for the purpose specified.

144,454.—Box-Opener.—MATHIAS J. HINDEN, Detroit, Mich., assignor to himself and ADOLPH FREUND, same place. Application filed February 18, 1783.

Claim.—As a new article of manufacture, the described implement, having the handle A, claw B, hammer-heads C D, and blade E, as herein specified.

144,455.—Grain-Cleaner.—WILLIAM HOUGHTON, Great Grimsby, England. Application filed January 23, 1873.

Passages, exhaust-boxes, spouts, and a fan are arranged in combination with another spout having a valve which closes the passage to the scourer and opens a spout. The exhaust-boxes are emptied by other valves.

Claim.—The combination, with the said passages, exhaust-boxes, spouts, and fan, so arranged, of the spout V, provided with valve Y, as and for the purpose set forth.

144,456.—Wine-Press.—EDWARD HOWLAND, Hammonton, N. J. Application filed June 3, 1873.

The fruit is placed upon the upper surface of the endless belt, and by that carried between the rolls, the elastic blankets of which prevent the seeds from being crushed. The expressed juice falls down through the textile endless belt, which thus serves as a strainer, into a trough beneath, and the refuse matter is ejected at the end of the machine.

Claim.—The construction and arrangement within the frame of the press-rolls B B', covered with the yielding blankets, and the textile endless belt C, substantially as and for the purpose set forth.

144,457.—Lifting-Finger for Harvesters.—ALFRED HUGHES, Brampton Ash, England. Application filed July 14, 1873.

The fingers are attached to the platform at its upper front edge, and provided with means of adjustment by which the points may be set at different heights.

Claim.—The combination and arrangement, substantially as before set forth, of the raking-platform, the lifting-finger, and the means of adjusting the lifting-finger to the platform, the said lifting-finger being constructed so as to raise the crop highest over the cutting apparatus, and the said means of adjustment being interposed (in the rear of the cutters) between the under side of the heel of the lifting-finger and the upper side of the said platform.

144,458.—Balanced Slide-Valve.—CHARLES H. HUTCHINSON, Concord, N. H. Application filed September 13, 1873.

A slide-valve having a cylinder on its back, into which fits a balance that is held against the steam-chest cover by levers connected to a small piston arranged in a central chamber, having apertures, through which the piston is forced outward by the steam. Angular packing-strips are arranged in the balance, breaking joints in the centers of the sides.

Claim.—1. The valve A, having a cylinder, B, and balance D, combined with piston K, connected with said part D by levers N and studs O, substantially as and for the purpose described.

2. A valve, A, having a cylinder, B, and balance D, with chamber L, having apertures R, combined with piston K, as and for the purpose set forth.

3. The combination of angle packing-pieces S with a square cylinder and piston, substantially as specified.

144,459.—Fire-Place Front.—EDWIN A. JACKSON, New York, N. Y. Application filed August 4, 1873.

Claim.—The frame A D, and the border-molding C, held thereto by bolt and nut, both constructed, and the two combined to retain a slab, B, in place, in the manner and for the purpose described.

144,460.—Fire-Place Lining.—EDWIN A. JACKSON, New York, N. Y. Application filed July 5, 1873.

The blocks are held by screws, which allow them to be removed singly, and space is left under the overlapping flange for their lateral expansion.

Claim.—The combination of blocks A and bottom C with an overlapping frame, D, wider both ways than the aggregate width of the rows of blocks, and with the washer-bolt B E applied at the junction of said blocks, as and for the purpose described.

144,461.—Base-Burning Stove.—SILAS H. LA RUE, Allentown, Pa. Application filed February 28, 1873.

Air enters the passage F' through the openings *f*, and escapes from said passage, through openings *h*, into the annular passage *g*.

Claim.—The combination of the annular passage *g* between the short imperforated magazine D' and the cylinder D *d*, apertures *h*, horizontal feed-chamber F', register *f*, fire-pot B, and circulation-chamber *g'* around the cylinder D and over the feed-chamber F', as and for the purpose herein described.

144,462.—Plow.—JOHN L. LAUGHLIN, Peru, Ill. Application filed August 11, 1873.

A block with two diverging arms is bolted between the beam and mold-board, forming a firm seat for the latter. The land-side handle is bolted to the longer arm.

Claim.—The angular tie-block D, constructed as described, to unite the mold-board to the beam and hold the land-side handle, in combination with the mold-board A and iron beam C, as described.

144,463.—Slide-Valve for Steam-Engines.—WILLIAM LOVE, Buffalo, N. Y. Application filed July 30, 1873.

A hollow piston-valve provided with steam-passages, so that the steam passes from the interior or cavity of the valve through said passages to the circular ports, whereby a greater bearing-surface is obtained without increasing the stroke of the valve.

Claim.—The piston-valve G, provided with the hollow extension h and steam-passages *i*, in combination with the circular ports *d*, substantially as hereinbefore set forth.

144,464.—Carpet-Stretcher.—JACOB LUTHER, Buchanan, Mich., assignor of one-half his right to RICHARDS & FOX, same place. Application filed July 25, 1873.

The cylindrical roller is provided with studs to engage with the carpet, and has its axis extended at each end, to which is attached a pair of hooked dogs adapted to be driven in the floor. One of the dogs has a pawl pivoted to it to engage with a ratchet on the end of the roller. The roller is rotated by means of a lever inserted in sockets near its middle.

Claim.—The carpet-stretcher described, consisting of the studded roller A, having handle B and ratchet *e*, in combination with dog C and pawl *d*, as described.

144,465.—Fertilizer-Distributer.—JAMES LYTCH, Laurinburg, N. C. Application filed August 9, 1873.

The frame consists of two diverging beams, and the seed-box is mounted between them. A seed-shoe with spout is hinged to the bottom of the seed-box, and caused to vibrate automatically by lugs upon a ground-wheel, which also serves as a coverer. The spring and shoe are thrown away from contact with the lugs by a crank-shaft and a hand-lever pivoted to one of the handles. A common share opens the furrow.

Claim.—1. The shoe F, provided with a spout, H, pivoted suspension-bars G, and adjustable suspension-cord I, the grooved wheel K, provided with its cross-rods N, and the spring O, in combination with the hopper E, beam A, and plow B C D, substantially as herein shown and described.

2. The combination, with the handle M, beam A, spring O, and shoe F, of the lever R, and double crank or crank-lever Q for holding said spring and shoe away from the wheel K N, substantially as herein shown and described.

144,466.—Ash-Sifter.—LEVI MARSH, South Adams, Mass. Application filed July 19, 1873.

One end of the tilting sieve rests on a bar attached to the sides of the case, and is held in a horizontal position by a pin. The rod that oscillates the sieve works through an elongated slot in the side of the case, and has connected to it a sliding plate that covers the aperture and prevents the escape of dust.

Claim.—The combination of the rod K, sliding plate L, pin M, and bar J with the sieve G and box A, substantially as herein shown and described.

144,467.—Traction-Engine.—NATHAN M. MENDENHALL, Dublin, Ind. Application filed September 25, 1872.

Claim.—1. The combination of the intermediate shaft W, bevel-wheels *j k m*, sleeve *i*, clutches A and *i*, the channel-pulleys *s s*, driving-wheels A' A', pulley C' on the intermediate shaft W, pulley D' on the sleeve, and the chain-belts V V, substantially as set forth.

2. In combination with the elements embraced in the foregoing clause, clutches A and *i*, whereby one or both the driving-wheels may be stopped without stopping the engine.

3. The intermediate shaft W, carrying the sleeve *i*, having the bevel-wheel *k*, channel-pulley *p*, clutch *i*, and channel-pulley D', in combination with the channel-pulley *r* on the crank-shaft X, and the pulley *s* on the driving-shaft L, substantially as set forth.

4. The combination of the foot-lever *a*, spring *b*, and rocking-lever *d* with the clutch *i* and channel-pulley D', whereby the driving-wheel A' may be stopped and started at will, substantially as set forth.

5. The combination of the grooved pulleys L' and F, chain-belt G, circular plate K, lever H, stud I, spring R, and caster-wheel E, whereby said caster-wheel may be guided or held stationary at will, substantially as set forth.

144,468.—Extension-Divider.—GEORGE C. MILLER, Detroit, Mich., assignor to JAMES C. MALOY, Oil City, Pa. Application filed June 3, 1873.

A tubular divider-leg has several slits upward from the end, and one of the legs thus formed has a flange turned outward. A slitted sleeve, having an inclined lower edge, is placed upon the slitted portion of the tubular leg, and when this edge is rotated against the flange the sleeve is pushed upward upon a taper enlargement, thus compressing the leg upon an adjustable point.

Claim.—The combination, with the slotted tubular leg A, provided with the flange *b* and cone *c*, of the cam-ring C, substantially as and for the purpose set forth.

144,469.—Portable Stove.—RICE MOORE, Nashville, Tenn. Application filed June 28, 1873.

The damper P only partially closes the opening in which it is placed. This construction is designed to cause a portion of the products of combustion to pass to the rear of the stove, while the remaining portion passes directly upward to the exit-flue.

Claim.—1. The combination of the damper P and plate O in the chamber F with the culinary vessel L, as shown and described.

2. The vessel L supported by the top R of the stove in the ordinary manner, but extended through the chamber F down into the oven E, so as to form part of the top and utilize the heat thereof, as shown and described.

144,470.—Fire-Escape for Safes.—CHARLES MORGAN, Philadelphia, Pa., assignor to himself and FRANK MANNING, same place. Application filed April 26, 1873.

The safe is arranged between guide-posts which lead to a well or hole in the ground below, and is supported by spring-pawls attached to its side, which pawls engage in ratchet-bars attached to the guide-posts. Spring-hammers, also attached to the safe, are held out of contact with the pawls by means of lever-catches, which catches are kept in position by a yoke attached to a rope. Should any part of the rope be destroyed by fire the spring hammers will be released and caused to strike the spring-pawls, disengage them from the ratchet-bars, and thus release the safe, which will fall into the well and escape from the fire.

Claim.—The combination of the ratchet-bars C, the pawls D, springs E, spring-hammers F, pivoted lever-catches G, buttons or other fastenings H, yoke I, and cord J with each other, and with a safe suspended substantially as herein shown and described.

144,471.—Curling-Iron.—JOSEPH S. MORGAN, Brooklyn, N. Y. Application filed October 18, 1873.

Claim.—1. The curling-iron consisting of a tube, A, with conical base part A' and double-elbow handle B, arranged and applied substantially as and for the purposes described.

2. The base part A', provided with side recesses *a* and vertically-extending apertures *a'*, for supplying air and preventing the extinguishment of the flame at the base, substantially as and for the purpose described.

144,472.—Combined Carpet-Rag Looper and Button-Hole Cutter.—GEORGE W. MORRIS and WILLIAM LENHART, Corry, Pa. Application filed October 18, 1873.

The blade is pointed and double-edged at the top, and one of the straight sides is formed of a pivoted piece made adjustable laterally upon a bar projecting from the base of the blade, by which means the button-hole slit can be made short or long as required. The eye of the blade, used as a carpet-rag looper, is cut on one side from the main part of the blade, and on the other from the pivoted adjustable piece.

Claim.—A combined looper and button-hole cutter consisting of the blade or knife A, adjustable bar D, arm F, and eye J, arranged substantially as shown and described.

144,473.—Vehicle.—MARTIN V. NICHOLS, Osage, Iowa. Application filed May 31, 1873.

Claim.—1. The wheels A A on journals within frames B B, bearing against superposed springs D D, all combined as and for the purpose described.

2. The wheel or wheels E, frame F, spindle G, socket H, coiled spring I, rollers K, and semicircular guide-rod L, combined with the recessed forward end of the car-body, substantially as shown and described.

144,474.—Means for Propelling Vessels.—JOHN O'NEIL, New York, N. Y. Application filed October 4, 1873.

The crank E and pivot D are arranged to operate in connection with the slots in the upper parts of the paddles, so that by changing the position of the crank the pitch of the paddles may be varied.

Claim.—The adjustable pivot D, cranks E, lever H, shifting-bar J, and fastening devices K, combined and arranged with paddles A B, substantially as specified.

144,475.—Drill for Well-Boring.—TIMOTHY PHILLIPS and JOSEPH GOLLETZ, Leavenworth, Kans. Application filed October 11, 1873.

Claim.—The tubular and flaring drill A, perforated tube B, pipe C, and valve D, constructed and operating in connection with each other, substantially as herein shown and described.

144,476.—Car-Coupling.—SAMUEL REED, Liberty, Pa. Application filed August 23, 1873.

The sides of the draw-head are hinged to the end piece, and are held together by a hook-frame, D, in such a manner that if one car should leave the track the hook-frame will be elevated by the link so as to leave the sides free to separate. The pin-frame is raised by means of a lever, H, which at the same time withdraws a locking-catch, I. The frame is thrown down by the link striking a gate which projects from the rear of the pin-frame.

Claim.—1. The combination of draw-bar A, having hinged sides B, with hook-frame D, pin-frame G having hinged pin F, lever H, latch I, and coupling-link E, substantially as and for the purpose described.

2. The pin-frame G, having front piece *g*, with pin-bolt *f*, arms h, roller *i*, and gate *m*, for coupling on entry of link, as described.

3. The arm h of frame G, having recess *h'*, in combination with latch I, for the purpose described.

4. The curved and projecting latch I, pivoted to the top of draw-bar, in combination with lever H, to lock and unlock frame G, as described.

5. The side part B of draw-bar having lug *l* to regulate motion of lever H, as specified.

144,477.—Plow.—ANDREWS RIVERS, Barnesville, Ga. Application filed August 30, 1873.

The standard-bars are pivoted to the beam, and a curved brace, adjustable in the beam, is pivoted to their lower ends. A screw-rod, having a hook upon its lower end for securing the share, is drawn tight by a nut and crank.

Claim.—The combination of the beam A, pivoted standard-bars B, curved brace D, adjustable rod E with crank F, and share C, arranged substantially as and for the purpose described.

144,478.—Cigarette-Machine.—JOSEPH DE S. RUISECO, Paris, France. Application filed July 19, 1873.

The papers for the tubes are transferred singly from a box by a hand (to which they are held by a suction-pump) to a grooved rod turning within a tube, which grooved rod forms the paper tube. The roll of tobacco is formed in a compressor which receives the staple from the distributing-wheel; the compressor then turns on its side over one of the molds that hold the paper tubes, when a plunger descends, forcing the roll into the tube, and discharging the previously-made cigarette.

Claim.—1. The combination of the box *u*, piston *y*, fingers 11, the transferring-hand *z*, and the air-pump, as and for the purpose described.

2. The combination of tube 15, rod 17, ring 20, trunnions 23, rods 19 and 29, pinion 33, and springs 31, all constituting the pinching and rolling device, operating as and for the purpose set forth.

3. The combination of the distributer with the compressor, when the parts of the latter operate as and for the purpose described.

4. The arrangement of the part 56 60 and sliding former 61, constituting the roll-compressor, rocking as described, in combination with the incline 63, as specified.

5. The combination of the levers 75, rollers 74, pinchers 77, collar 72, and rod 73, operating as described, for the purpose set forth.

6. The device for folding the lower end of the cigarette, consisting of the sliding pieces 35 and spur 36, with mechanism for operating the same, as and for the purpose set forth.

7. The combination of the rotating case S, provided with molds *t*, the compressor 56, the tube-forming device, and the folding and creasing devices, as described.

8. A pivoted and perforated compressor, rocked by any suitable means, in combination with the plunger 73 and a mold, *t*, as and for the purpose described.

144,479.—Car-Coupling.—HAMLIN G. RUSSELL, Lincoln, Ill. Application filed June 14, 1873.

Each draw-head is provided with a bar which hooks outwardly and automatically. Uncoupling is effected by suitable levers, and from the side of the car.

Claim.—1. The car-coupling, consisting of draw-bar A, spring-hook C, catch-plate *f*, lever B, and sliding bars *i i'*, all combined and constructed substantially as and for the purpose described.

2. The draw-bar provided with the projections *b* to co-operate with the coupling-hooks C, as and for the purpose specified.

3. The combination of the slotted angle-bars *i i'*, having fulcrum-lug *m*, the stud or pin *h*, and lever or bar B, as shown and described.

4. In a car-coupling, the lever B, having lugs e and bent ends, in combination with the hooks n, as shown and described, for the purpose specified.

144,480.—Cutting Attachment for Sewing-Machines.—WILLIAM H. SAMPLE, Albany, N. Y. Application filed August 4, 1873.

Designed to cut cloth, &c., parallel with line of stitching. One blade projects from the lower end of an arm secured to the face-plate, and it rests on the bed-plate under the cloth; and the other blade, pivoted to the same stationary arm, is operated by the needle-arm, through a slotted connecting-arm provided with an adjustable nut.

Claim.—1. The blade g', constructed as shown, in combination with blade g, as specified.

2. In combination with the cutters, the slotted arm E having the curved or hooked end b, and the adjustable arm d provided with a clamp-nut, d', whereby the device is adapted to be applied to the arm B of a sewing-machine, as described.

3. The cutting attachment C, consisting of stationary arm D with angular blade, loose arm E, pivoted cutter-blade g', and spring f, substantially as set forth.

144,481.—Soap-Cutting Machine.—JOSEPH SAIBERT, New York, N. Y. Application filed October 4, 1873.

The cutting-wires are stretched between the uprights, and, applied to the intersections of the lazy-tongs, are caused to approach or recede from each other, according to the size of the bar required. The presser carries bars at the intersection of the adjustable frame or lazy-tongs.

Claim.—1. The block-feeding device, formed of the horizontal strips D and lazy-tong frames E, the latter having a suitable adjusting apparatus, all applied or attached to a plate or frame, e, which is adjusted relatively to the block-cutting frame by suitable apparatus, as shown and described.

2. The block-cutting apparatus formed of wires m and lazy-tongs E' E', the former being stretched between the latter, which are adjusted by suitable means, all applied to a frame, b, as shown and described, to operate as specified.

144,482.—Wood-Sawing Machine.—JOHN SKINNER, Stockwell, Ind. Application filed September 13, 1873.

The arrangement of the different parts of the machine enables the operator to raise and lower the saw without leaving his post at the crank which gives motion to the machine.

Claim.—1. The saw-frame suspended by swinging bars C and F from the rock-shaft D and the rock-arm G, the latter being connected to the adjusting-lever I, and said lever being arranged relatively to the crank-shafts, substantially as specified.

2. The rocking saw-bench M N, connected to the lever R at the crank-shafts by the arm P and rod Q, substantially as specified.

144,483.—Horseshoe.—URIAH SNYDER, Conshohocken, Pa. Application filed February 21, 1873.

The calks are secured to the shoe by means of the split wedges and end projections.

Claim.—The combination, substantially as described, of the heel-calk B, the end F of the shoe with its projection d, and the split key or wedge A.

144,484.—Mechanism for Stopping and Starting Street-Cars.—JAMES M. STARR, Richmond, Ind. Application filed October 17, 1873.

Pinions actuated by the car-wheels are thrown in gear by wedge-bars operated from the platform of the car. Spiral springs attached to the shafts upon which the pinions are mounted are wound up, destroying the momentum of the car by their resistance, and, by their elasticity when released, aiding its forward motion.

Claim.—1. The pinions H H', provided with the convexo-convex teeth Z, in combination with the wheels B B, having gears Y Y, provided with teeth of the form shown and described, and the springs D, substantially as and for the purpose specified.

2. The drum O, having the recess U, constructed as and for the purpose set forth.

3. The mortised block S S, having the apertures T T, in combination with the shifting-wedges F F', and rods I I, as and for the purpose specified.

4. The shifting-bars E E', in combination with the shifting-wedges F F', rods I I, and pinions H H', substantially as and for the purpose set forth.

5. The combination of the bars E E, wedges F F', rods I I, drum-shafts C C, pinions H H, drums O O, and springs D D, substantially as and for the purpose specified.

6. The combination of the shaft C, pinions H H, and wheels B B', as and for the purpose described.

7. The combination of the block S' with the mortised block S S and the wedges F F', substantially as described.

144,485.—Hand Corn-Planter.—JACOB O. TALMAGE, Cardington, Ohio. Application filed October 8, 1873.

A glass plate is placed above the seed-slide, outside the seed-box, so that the operator can see whether the seed is carried out to the dropper. A perforated air-hole is set in the side of the seed-box.

Claim.—In a hand corn-planter, the seed-slide C, having its regulating-plate i and stop p, the scraper m, the glass plate F, division H, and ventilator L, in combination with the handle-boards A A' and seed-box B, all arranged and operated substantially as and for the purpose set forth.

144,486.—Hominy-Mill.—JACOB L. TONER, Edinburg, Ind. Application filed June 26, 1873.

One of the supporting-staves under cylinder arranged to be dropped down for cleaning the mill.

Claim.—The bottom-slotted reticulated cylinder G, combined, as described, with the stave P, and spring-held lever-frame L M O, as and for the purpose set forth.

144,487.—Subsoil-Plow.—JOHN R. TURNER and JACOB JACOBS, Fredericktown, Mo. Application filed September 13, 1873.

The base-bar is recessed upon the under side to receive the shovel, so that both combined present a smooth under surface.

Claim.—The notched bar G and shovel H, constructed and combined with each other, and with the cutter E of a subsoil-plow, substantially in the manner herein shown and described.

144,488.—Machine for Removing Snow and Ice from Roadways of Streets.—CHARLES G. WATERBURY, New York, N. Y. Application filed September 20, 1873.

A hydrocarbon oil is conducted into a closed chamber, where it is in part volatilized and in part suffered to drip through upon the roadway. The flame from the burning vapor is, by a current of air, caused to impinge upon the surface of the snow and ignite that portion of the oil sprinkled thereon.

Claim.—1. In a machine for removing snow and ice from the roadways of streets, the combination of a sprinkling apparatus and a burner, so that the roadway may be sprinkled with a liquid hydrocarbon, to be burned by the flames of the burner impinging upon the sprinkled surface, substantially as set forth.

2. A vaporizing hydrocarbon-burner combined in a machine for melting snow and ice from roadways, so that the unvaporized portion of the oil may drip through the bottom of the vaporizing-chamber and escape from it, substantially as set forth.

3. The method of removing snow and ice from the roadways of streets by a hydrocarbon sprinkler and burner, substantially as set forth.

4. The combination of the vaporizing-chamber A, air-distributing chamber K, nozzles P, perforated pipes Q, and the bottom-plate I, substantially as set forth.

5. The combination of the oil-distributing pipe C, heating and distributing plate D, and the perforated bottom plate H, substantially as set forth.

6. The combination of the igniting-pan R with the perforated bottom plate H, substantially as set forth.

144,489.—Land-Roller.—WILLIAM WILLIAMS, New Berlin, Ill. Application filed September 2, 1873.

The transverse bars of the frame are made broad and flexible, to enable the rollers to adapt themselves to uneven ground.

Claim.—The flexible bars C C, arranged to operate with the bars A A and B, and with the rollers D D and blocks d' d', substantially as and for the purpose specified.

144,490.—Car-Coupling.—MILTON R. WOOD, Chicago, Ill. Application filed March 13, 1873.

The pin is raised out of the link by a pivoted cam-lever, and by the same means is held in that position when it is desired that cars shall stand together without being coupled. As the pin is beveled on its front lower edge, coupling is automatic.

Claim.—The beveled coupling-pin D, and cam-lever D' pivoted thereto, in combination with the draw-head B, substantially as specified, and for the purposes set forth.

144,491.—Stilt.—NAPOLEON U. AINÉS, New York, N. Y. Application filed September 12, 1873.

Across a slot running lengthwise of the inside of the stilt-staff rods are placed to form a rack, with which rods a dog pivoted in the stirrup engages. The handle of the dog is weighted to render it (in an upright position) self-engaging.

Claim.—The combination of the rack, composed of pins passing through a slot or recess in the standard or pole of the stilt, and the lever-like dog hung within a slot in the stirrup to engage with the rack, substantially as and for the purpose herein set forth.

144,492.—Wagon-Seat.—THOMAS J. ALEXANDER, Westerville, Ohio. Application filed March 15, 1873.

The seat-bottom is divided into sections, each of which is rigidly secured to knees which are pivoted at their outer ends to lugs secured to the supporting-frame.

Claim.—In a wagon-seat, the knees J J, in combination with the boards A, B, C, and D, and the cleats E E, as and for the purpose set forth.

144,493.—Automatic Fire-Extinguisher.—EDWARD H. ASHCROFT, Boston, Mass. Application filed October 30, 1873.

A piston, working in a cylinder, is connected by suitable mechanism to a stop-cock within a water-pipe, so that the expansion of air above the piston, due to heat, will drive the piston down, and, by opening the stop-cock, allow the water to escape through perforations in the pipe.

Claim.—1. The combination of the cylinder A, closed pipe F, piston B, and shaft C, for automatically operating a valve, D, substantially as described and set forth.

2. The cylinder A, provided with the perforations e e, in combination with the pipe F and piston B.

3. The combination of cylinder A, pipe F, piston B, pump G, and gage H, substantially as described.

144,494.—Car-Coupling.—ARSON A. ATWATER, Smith Valley, N. Y. Application filed August 10, 1872.

The plunger is thrust forward by the weighted lever, so that it will support the pin for automatic coupling.

Claim.—The car-coupling consisting of the draw-head A, having the bent weighted arm K, pivoted to the guide-lugs B at the top of the draw-head, and the slide E, slotted vertically for the passage of the weighted arm, and recessed across its top to permit free play by the pivot-pin, constructed and combined as specified.

144,495.—Car-Wheel.—JAMES E. ATWOOD, Pittsburg, Pa. Application filed June 12, 1873.

A wrought-iron band, which is wider than the thickness of the wheel, is interposed between the tire and body of the wheel and riveted to the sides.

Claim.—A car-wheel composed of two sections, A and B, the sections united by means of an interposed iron band, C, the projecting edges being riveted down, substantially as shown and described.

144,496.—Brush.—CHARLES L. W. BAKER, Camden, N. J., assignor to JOHN L. MASON, same place. Application filed September 16, 1873.

A conical-shaped ferrule; the bristles tied and forced in at the larger part, sufficient to admit a handle, which is fastened by tacks.

Claim.—A chambered conical-shaped ferrule, a b, in combination with the handle and brush, substantially as shown and set forth.

144,497.—Thill-Coupling.—JAMES C. BARRETT, New Canaan, Conn., assignor of one-half his right to ALPHEUS E. COWL, Patterson, N. Y. Application filed October 27, 1873.

Claim.—1. The combination of the hook A' and the loop of the thill-iron, with the latch C C', which becomes itself automatically locked, substantially as and for the purpose specified.

2. The combination of the latch C C' provided with a cam, C', the hook A', and the cross-bar B' of the loop of the thill-iron, substantially as specified.

3. The combination of the hook A', the loop of the thill-iron, latch C C', and the adjustable follower D, substantially as and for the purpose specified.

144,498.—Automatic Water-Meter.—FRANCISCO DE PAULE BELLIDO, New York, N. Y. Application filed September 20, 1873.

The inlet-faucet is operated by a lever and float. A float in the lower chamber is connected by a rod to a lever, by which the rod carrying the plug of the pipe leading to the lower chamber is operated. The discharge-faucet of the meter is connected to the faucet in the pipe admitting the water to the measuring-buckets. A device for holding rubber to deaden the noise is placed on the partition between the buckets.

Claim.—1. The float F, and arm E, in combination with the upper chamber B, and inlet-faucet D of the meter, for shutting off the water automatically, substantially as herein shown and described.

2. The combination of the float T, rod U, lever W, rod X, and plug Z, with the lower and upper chambers A B, and with the discharge orifice or pipe H for automatically interrupting the passage of water from the chamber B to the chamber A, substantially as herein shown and described.

3. The combination of the cranks, shafts, and connecting-rods B' C' D' E' F' G' H' or equivalent connections, and the faucet I', with the drawing-off faucet, and with the orifice or pipe H that conducts the liquid from the upper to the lower chamber of the meter, substantially as herein shown and described.

4. The combination of the keepers M, key or slide N, rubber O, and set-screw P, with the central partition of the filling-bucket I, and with supports Q, substantially as herein shown and described.

144,499.—Device for Changing the Speed of Machinery.—ALFRED BETTS, Wilmington, Del., assignor to E. & A. BETTS, same place. Application filed October 23, 1873.

To the sleeve of the loose pulley is secured a gear-wheel, which meshes with an idle pinion pivoted to a notched disk, the latter being keyed to the shaft. The idle pinion also engages with the internally-geared pulley to obtain a fast or slow motion. The slotted disk is either locked with or released from the internally-geared pulley.

Claim.—The spindle B, having keyed fast thereto the notched disk C c, and loosely-fitted pulley G, and internal gear-wheel F, in combination with the pinions c D, stop H, and notched projection a', as and for the purpose specified.

144,500.—Process of Tanning Leather.—ROBERT BLAKE, Pontiac, Ill. Application filed October 18, 1873.

In combination with any bark-liquor used for tanning purposes, muriatic acid, saltpeter, and common salt are employed.

Claim.—The tanning-liquor composed of the ingredients and mixed together in about the proportions specified.

144,501.—Fire-Proof Partition.—CHARLES F. BRAND, Philadelphia, Pa. Application filed October 31, 1873.

Partition-walls of corrugated iron, to which corrugated iron laths are affixed by metallic clips.

Claim.—1. The combination of sheet-metal laths with corrugated sheets A to form partitions, the laths being confined by means of clips C or other suitable fastening, substantially as described.

2. The combination of the flanged plates E E with the corrugated sheets A, substantially as and for the purpose set forth.

144,502.—Cotton-Bale Tie.—ALBERT G. BUFORD, Water Valley, Miss., assignor of one-half his right to ANDREW J. MCCORMICO and H. L. DUNCAN, same place. Application filed September 27, 1873.

Claim.—The cotton-bale tie consisting of the side-tapered bars A A, cross-bars B B', and the removable wedge-shaped crossbar C, constructed substantially as shown and described.

144,503.—Tobacco-Hanger.—DE WITT C. BUSH and JOHN A. JOHNSON, Cromwell, Conn. Application filed July 30, 1873.

Two arms extending from a base embrace the plant, while in the center is a sharp prong in line with the screw-spike, which pierces it.

Claim.—The herein-described tobacco-hanger, consisting of the base A, the two arms B C, made angular upon the inside, and the spike F.

144,504.—Gas-Seal, &c.—ROBERT MAY CAPWELL, Alton, England. Application filed September 3, 1873.

Within a closed case, connected with an inlet-pipe at one end and an outlet-pipe at the other, there is arranged the gas-seal. This consists of a bonnet attached to one end of a rock-lever, the other end of which is weighted, and the lever is suspended on a rod passing through it transversely about its center and secured to the sides of the case. The case is partially filled with liquid. The bonnet rests over the vertical end of the inlet-pipe and extends down into the liquid, and is readily raised by the inflowing gas, but is depressed by a back pressure so as to seal the mouth of the inlet-pipe.

Claim.—1. The poised bonnet C, arranged within the case A over the inlet K, its mouth arranged to dip below the surface of the liquid within the case when in repose, and yield to the inflowing gas to allow its passage through the case, but prevent its return, substantially as shown and described.

2. In combination with an automatic valve interposed between the exhauster and gasometer, as described, a purifier created by supplying lime or other liquid in the chamber in which the seal operates, substantially as described.

144,505.—Automatic Fan.—WILLIAM B. CAMPBELL, Selma, Ala. Application filed October 7, 1873.

A spring-joint, upon being drawn partly out of its socket downward, allows the frame to be folded up toward the ceiling when not in use.

Claim.—1. The stems a of the fan-blades, in combination with the fixed rubber bushings b', substantially as and for the purpose specified.

2. The combination of the hanger-frame, sockets G, links F, and springs H, substantially as and for the purpose specified.

144,506.—Furnace for the Manufacture of Gas, and for other Purposes.—FRANCIS CARROLL, New Orleans, La. Application filed October 30, 1873.

The rod which holds the eyes on the door to the stationary eyes on the door-frame is made fast to the door and turns with it. This rod extends above the top of the furnace, and has a crank-arm and wrist-pin upon its upper end, which operates the damper through the medium of a connecting-rod. The closing of the damper, when the door is opened, prevents the inrush of cold air and consequent waste of fuel.

Claim.—The combination of the furnace-door and the flue or chimney damper connected together, substantially in the manner described, so that the opening of the furnace-door shall cause the closing of the damper, and the closing of the door shall cause the opening of the damper, for the purpose specified.

144,507.—Loom-Temple.—NATHAN CHAPMAN, Hopedale, Mass. Application filed October 29, 1873.

For the easy removal of the toothed roller the pin is fastened at the inner end either of the cap or trough, the outer end of the cap or trough being left open and the outer end of the pin unsupported.

Claim.—The pin N for the toothed roller to turn on, fastened to the inner end of the roller-case, and to the inner end of the case only, substantially as described.

144,508.—Food for Infants from Cereals.—LEWIS S. CHICHESTER, Brooklyn, N. Y. Application filed June 21, 1873.

The nitrates and phosphates of wheat, obtained by pulverizing and sifting the same, are mixed with ground barley, and the mass is then moistened, granulated, baked, and ground.

Claim.—1. The infants' food prepared from barley and wheat, in the manner specified, as a new article of manufacture.

2. The method of preparing cereals for use by baking them in a granulated state previous to grinding, substantially as set forth.

144,509.—Cotton-Scraping Plow.—JAMES M. COBB, Jackson, Tenn. Application filed July 22, 1873.

The front and rear standards are bent abruptly to the left and then downward to the foot-piece, the front standard forming with the foot-piece a seat for the scraper, and leaving the space immediately between the beam and scraper open for the free passage of weeds and clods.

Claim.—The combination of the frame, consisting of the top bar D, outwardly-bent standards E E curved downward and forward, as described, and the foot-piece G extending to the right of the standards, with the scraper C, the beam A, and the handles B B, all substantially as set forth.

144,510.—Earth-Auger.—WILLIAMS COLE, Milan, Tenn. Application filed July 22, 1873.

The auger slides freely upon the shaft, which is made square at the lower end to fit the square bore of the auger, so as to rotate it, but is cylindrical above. The auger rests upon a shoulder at the point, and is confined by a latch above, operated by a cord, which latter also serves as a means by which to draw the auger up. The necessity for withdrawing the auger-shaft for the discharge of earth is thus obviated, and a saving of time and labor proportionate to the depth of the boring is effected.

Claim.—A well-auger, A, provided with a central bore, in combination with the shafting B having point C, with shoulder *a* and the projection *b*, and a latch, D, all substantially as and for the purposes herein set forth.

144,511.—Nut-Lock.—EDWARD A. COOPER, Lancaster, N. Y. Application filed July 30, 1873.

A plate or washer is placed on the bolt, adjacent to the fish-plate, provided with radial corrugations. A spring-plate, having one or more pawls, is interposed between the nut and corrugated washer, the pawls having a convex bearing-surface, to allow them to ride over the corrugations in either direction. The spring-plate is also provided with wings that embrace the sides of the nut.

Claim.—The combination, with the bolt and nut, of the plate E, provided with radial corrugations e^1, and the spring-plate F, provided with pawl *f*, constructed to ride over the corrugations e^1 in either direction, as herein shown and described.

144,512.—Paper-File.—MAHLON CRAFT, Bellaire, Ohio. Application filed October 6, 1873.

The binding-wires are held in the longitudinal groove of a bar by being inserted in a slot at one end of the bar, and attached to an adjustable screw at the other end.

Claim.—1. A newspaper-holder consisting of the holding-case A, retaining wire or wires C, slide *a*, its holding-pin *f*, adjusting-screw *e*, and the notched end *b* for the bent ends *c* of the wires, as and for the purpose described.

2. The pivoted equalizer *g* for the wires C, in combination with the slide *a* and the adjusting-screw *e*, as described.

144,513.—Paper-Box Fastening.—DELAVAN CRANNELL, Amsterdam, N. Y. Application filed October 18, 1873.

Claim.—The paper-box fastening C, made of spring metal, and composed of a hook, *a*, notched and angular body *b*, and tongues *c*, and applied to a box, as and for the purpose described.

144,514.—Carriage-Spring.—JOHN CURTIS, Cincinnati, Ohio. Application filed September 12, 1873.

Claim.—1. A carriage-spring plate, C, attached at mid-length to the bed-frame, and resting by its ends in rubber cushions E E', with inclosing-boxes F F', connected by a tie-rod, I, substantially as set forth.

2. The spring-plate with T-formed extremities, in combination with the cushions E E', and with confining devices F F' J J' L L', substantially as set forth.

3. The combination of the lining K, cushions E E', and caps J J' with the spring C, substantially as set forth.

144,515.—Tool for Marking Edges of Soles of Boots and Shoes.—J. WESLEY DODGE, Malden, Mass., assignor to THE SHOE MACHINERY MANUFACTURING COMPANY. Application filed April 5, 1873.

Claim.—The described tool for marking the edges of soles, having the pattern-wheel A and color-wheel *i*, constructed substantially as described, and relatively arranged and operating as set forth.

144,516.—Faucet.—ARNOLD DOLL and CHARLES ELLING, Cleveland, Ohio. Application filed September 29, 1873.

A nozzle, in which are arranged the valve and cam operating the same, is made in a separate piece and attached to the faucet-barrel by any suitable means, said cam being operated by a crank and handle exterior to the nozzle.

Claim.—The cam I, valve D, plate E, provided with a recess, F, and outlet G, all constructed and arranged to operate as described, in combination with the body A of the faucet, substantially as and for the purpose set forth.

144,517.—Manufacture of Baryta.—CYPRIEN M. T. DU MOTAY, Paris, France. Application filed April 10, 1873.

The central hearth is combined with two fire-places and two regenerators, one on each side, used alternately, so as to obtain a high temperature and a reducing flame necessary to reduce the sulphates and carbonates of barium. The sulphuret thus produced is dissolved in water and boiled with an equivalent of oxide of lead. Double decomposition takes place. The resulting sulphuret of lead is treated with hydrochloric acid, and the chloride treated with lime or magnesium, reproducing the oxide of lead for further use.

Claim.—1. The combination of the chamber J, the two hearths K L, chambers Q R, valve U, and chimney V, all substantially as and for the purpose described.

2. The methods herein described of revivifying and utilizing indefinitely compounds and intermediate re-agents, to transform the sulphuret of barium into hydrated baryta or into carbonate of baryta.

144,518.—Culinary Utensil.—HENRY G. DUNKELBERGER, Shamokin, Pa. Application filed September 6, 1873.

The perforated plate is constructed to receive a perforated rim to adapt the device to different-sized vessels.

Claim.—The perforated plate or disk A, provided with the lip or shoulder described, in combination with the perforated rim C, provided with the lips and shoulders, substantially as and for the purposes shown and specified.

144,519.—Bridge.—JAMES B. EADS, St. Louis, Mo. Application filed August 27, 1873.

A compression equivalent to the maximum load of the arch is produced in the chords of each arch by means of screws passing through the skew-backs or abutments resting on plates on top of the central piers, so that when the arch is loaded the compressive strain will simply take the compression from the chords without producing a tensile strain in them. The chords are made continuous from one end of the bridge to the other by allowing the skew-backs on the central piers to slide on the plates. Provision is made for tensile strain should it occur.

Claim.—1. The described method of relieving the central piers of bridges from the unequal thrust of the arches, or equivalent members of truss-bridges, caused by moving loads, by making the roadway or longitudinal members supporting the same substantially continuous against compressive strains from the abutment at one end of the bridge to the abutment at the other end of the bridge, substantially in the manner and for the purpose set forth.

2. In combination with the cords or distance pieces A A, the compression and tensional screws K and G, substantially as and for the purpose set forth.

144,520.—Ribbon-Block.—THEODOR EHRENBERG, New York, N. Y. Application filed April 9, 1873.

The ribbon-block consists of a hollow drum, containing a smaller one inside, for supporting and strengthening the heads or ends.

Claim.—A ribbon-block composed of a hollow body, *a*, and heads *b b*, said heads being steadied and supported by an internal brace, *c*, substantially as shown and described.

144,521.—Canopied Chair.—THOMAS ELKINTON, Philadelphia, Pa. Application filed August 23, 1873.

Claim.—The combination, with a chair, of a canopy, the support of which constitutes part of the structure of the chair, all substantially as set forth.

144,522.—Saw-Filing Machine.—JOSEPH J. ENGELMAN, Chillicothe, Mo. Application filed June 10, 1873.

The file-guides are formed in sections, and capable of adjustment to different widths. The curved guide-bearer is provided with concentric rows of holes to retain the guides at a desired angle.

Claim.—1. The curved guide-bearer H, provided with the apertures K arranged in concentric rows, for adjusting the guides I I', substantially as shown and described.

2. The sectional guides I I', pivoted and provided with the thumb-screws *n* and spurs *m* for holding them in position and upon the guide-bearer H, substantially as shown and described.

3. The curved guide-bearer H, sectional guides I I', block F, and bar E, in combination with the vise D, substantially as shown and described.

144,523.—Calculating-Machine.—THEODOR ESERSKY, St. Petersburg, Russia. Application filed August 21, 1873.

An apron or belt, with columns of figures on both sides, is wound from one roller to another, so that the rollers shall display opposite sides of said apron at windows in the inclosing-case. An index-bar with digits marked thereon is arranged between the rollers.

Claim.—The combination of the two rollers A B for displaying opposite surfaces of the strip D, having rows of figures on both sides, and with the index plate or bar E, substantially as herein shown and described.

144,524.—Machine for Dressing Metal Cocks.—HENRY ESSEX, Meadville, Pa. Application filed September 13, 1873.

The tool-holding carriage works in angular slides in the bed, and carries the tools, which bore the cock and dress the outside of the plug, at the same angle.

Claim.—The angularly-movable carriage or tool-rest F, combined with cock and plug holders C D, as and for the purposes described.

144,525.—Treadle.—WILLIAM FELZER, Frank Hill, Miss. Application filed October 17, 1873.

Claim.—The foot-board C, provided with the stationary box *e*, movable box *f*, groove *c*, pins *d d'*, and pitmen *b b'*, in combination with the double crank *a a'*, and shaft B, substantially as hereinbefore set forth, and for the purpose specified.

144,526.—Apparatus for Charging and Drawing Gas-Retorts.—WILLIAM FOULIS, Glasgow, North Britain. Application filed September 13, 1873.

The outer and inner ends of the hydraulic cylinder are connected, by means of coupling-joints and flexible pipes, to a water or pressure main, and the application of the pressure to either side of the piston is controlled by a four-way cock, by which means a scoop carrying the charge, or a rake to remove the charge, is introduced or withdrawn from the retort.

Claim.—1. An apparatus for charging or drawing retorts, in which the scoop or rake is combined with and operated by the piston-rod of a water or other fluid engine, as set forth.

2. The combination, in a retort charging or drawing apparatus, of a series of concentric cylinders and pistons, sliding one within the other telescopically, and operated by water or other fluid, as specified.

3. The combination, with the cylinder or cylinders, of a casing, H, and vanes U V, or equivalent devices, by which water or other fluid may be made the means of rotating the cylinder.

4. The combination, with a drawing or charging apparatus, of water-engines, connected to and operating the propelling and elevating mechanism, as set forth.

144,527.—Steam-Heater.—WILLARD M. FULLER, New York, N. Y. Application filed May 3, 1873.

Claim.—1. The pipe D, located at or near the top of the generator B, allowing steam to be generated in an apparatus having free circulation without forcing the water into such pipe, substantially as set forth.

2. The trap E, in combination with the pipes C D and boiler B, substantially as and for the purposes specified.

144,528.—Fastener for Meeting-Rails of Sashes.—LORENZO D. GILLETTE, Meriden, Conn. Application filed September 5, 1873.

A lever moving at right angles to the plane of the window is furnished with hooks which take into recesses in an upright plate upon the opposite rail. A friction-spring holds it closed, and also open.

Claim.—The lever D, the axis of movement of which is parallel to the bar upon which it is placed, and provided with one or more hooks, *d*, combined with a spring, *a*, to hold the lever, and with a keeper, with which the said hooks may be engaged to secure the sash, or turned therefrom to relieve the sash, substantially as described.

144,529.—Machine for Cutting Coal.—JOHN GILLOTT and PETER COPLEY, Barnsley, England. Application filed September 15, 1873.

The bracket to which the cutter-wheel is pivoted is provided with a flange which engages with a corresponding flange formed upon the inner periphery of the cutter, the object being to render the cutting devices stronger and more durable.

Claim.—The cutter-wheel A and its flange S, in combination with the bracket C and its flange T, for the purpose specified.

144,530.—Caster for Furniture.—GEORGE H. GLAD, Boston Highlands, Mass. Application filed September 22, 1873.

The spindle of the caster is swiveled to a nut which receives a screw-shank. This screw-shank carries a bevel-pinion which is operated upon by another pinion upon a shaft which enters the caster-case at right angles to the shank. A key rotates the shaft, and hence elevates or depresses the caster through the intermediate screw-shank and nut.

Claim.—The spindle B and nut C, connected together, as shown, within the casing F, and combined with the screw D, shaft G, and pinions E and H, in the manner and for the purpose substantially as specified.

144,531.—Wash-Boiler Attachment.—WILLIAM W. GLANVILLE, Crawford county, Iowa. Application filed January 25, 1873.

Claim.—The perforated diaphragm C, provided with a supporting-flange, E, and with a perforated wedge-shaped projection, A, for operation in connection with a wash-boiler, substantially as described, for the purpose set forth.

144,532.—Road-Trimmer.—BARNARD GOODRICH, Stratham, N. Y. Application filed August 1, 1873.

The cutters or scrapers are adjusted in pitch by a latch-bar which rises from the front end of the drag-bar through a slot in a supporting-bridge upon the forked main tongue, and is attached adjustably to a bar extending rearwardly and pivoted to an upright hinged lever operating upon the cutter-head.

Claim.—1. The combination of the bridge G, the latch F, the post K', the springs L L, and the arms H I, arranged and applied to adjust the pitch of the cutters, as explained.

2. The combination of the adjusting mechanism, as described, with the draft-tongue D, the cutter-head A, its tongue B, and cutters K C C, substantially as set forth.

144,533.—Lawn-Seat.—HOWARD H. GRATZ, Lexington, Ky. Application filed June 4, 1873.

The back is solid and made wider than the seat, and connected thereto by J-shaped hinges and jointed braces.

Claim.—The combination of the seat A, solid back B, made wider than the seat, and connected thereto by the J-shaped hinges *c*, and the jointed braces *d d*, all as and for the purposes herein set forth.

144,534.—Fence.—JOSEPH GRAY, Raymond, Miss. Application filed March 1, 1873.

Posts for supporting rails are formed of two uprights, two inclined braces surmounted by cap pieces, and two sill pieces which embrace both uprights and inclined braces, and three of the posts, or two panels, are connected by single cap and single base rails.

Claim.—The three fence-posts composed each of the pairs of uprights A A, the pairs of inclined braces C C connected at the top by a cap piece, E, at the bottom between the two bars D D, and all connected together by a single top rail, H, and a single base rail, I, substantially as and for the purposes herein set forth.

144,535.—District and Fire-Alarm Telegraph.—JOHN H. GUEST, Brooklyn, N. Y. Application filed October 29, 1873.

Series of thermostatic fire-alarms placed in a normally-closed circuit of a district or fire telegraph, as per patent of October 14, 1873. In addition in the house, in a branch circuit, alarms and indicators are placed, to which the current is transferred after the alarm to central station is turned in, giving an alarm in the house itself or at other desired point, and without breaking the main circuit.

Claim.—1. The combination, in a normally-closed circuit, of one or more district alarm-signal boxes, one or more automatic fire-alarms, indicators for each fire-alarm, and an alarm mechanism, arranged to turn in an alarm to a central station, and to sound an alarm in the house where the automatic fire-alarms are placed, or at other convenient point, and to show by an indicator the point whence the alarm originates, all through the operation of one main circuit, substantially as set forth.

2. The combination, with a normally-closed circuit, of a district alarm-signal box and a house-alarm, substantially as set forth.

3. The combination, with a normally-closed circuit, of a district alarm-signal box, and a local indicator, substantially as set forth.

4. The combination, with a normally-closed circuit, of a district alarm-signal box, a house-alarm, and a local indicator, substantially as set forth.

5. The combination, with a normally-closed telegraphic circuit, of an automatic fire-detector, a house-alarm, and an indicator, arranged to be operated without any break in the continuity of the circuit.

6. The combination, with a fire-alarm box or other automatically-acting signaling device, of devices for closing one circuit at or just before the time another circuit is broken, for preserving the continuity of a circuit, substantially as set forth.

7. The variable thermostat, Figs. 3 and 4, in combination with an electro-magnetic fire-alarm.

144,536.—Machinery for Cutting Dovetails.—WILLIAM T. HAMILTON, Rathmines, Dublin, Ireland. Application filed March 10, 1873.

The dovetail-grooves are cut by a saw, which has a rocking motion upon its arbor.

Claim.—1. A circular saw mounted on an axle to which a reciprocating endwise motion, as well as a rotary motion, is simultaneously imparted, as herein set forth, for the purpose of cutting dovetails.

2. The combination of the parts *c*, *d*, d^1, *e*, and *f* with the crank-pin a^2 of the reciprocating and rotating axle *a*.

3. The combination of the parts *g g' h h'* and the quadrant-piece *i* with the devices for operating the saw, as and for the purposes herein set forth.

144,537.—Car-Brake.—ELIOT P. HARRINGTON, Volusia, N. Y. Application filed September 27, 1873.

Claim.—1. The combination of the releasing-rods E, vibrating lever G, and the swinging brake-bars C carrying brake-shoes *b*, substantially as and for the purpose specified.

2. The longitudinally-movable draw-bar J, in combination with the lever G, releasing-rods E, applied to brakes which are held in contact with the wheels by means of springs, substantially as described.

3. The releasing-rods E E, pivoted to a vibrating lever, G, to release the brakes from the wheels, substantially as described.

144,538.—Steering-Propeller.—WILLIAM HARDEN, Green Point, N. Y. Application filed October 7, 1873.

Claim.—1. The pendulous arms G, in combination with the revolving worm-shaft C', substantially as specified.

2. The pendulous arms G, in combination with the rudder-post B and the revolving worm-shaft C', whereby said arms not only serve to constitute a propeller, but also a flexible rudder, essentially as described.

144,539.—Rack for Dental Tools.—GEORGE E. HAYNE, Buffalo, N. Y., assignor to BUFFALO DENTAL MANUFACTURING COMPANY, same place. Application filed September 12, 1873.

A plate of spring-metal is slotted at intervals, and the arms formed between the slots are furnished with semicircular depressions, into which the various tools are inserted. This entire plate, with its spring-arms, is secured to the edge of a table or any other convenient place.

Claim.—The rack, composed of a plate or bar, constructed or provided with a series of elastic jaws formed of the same piece of metal as the plate, and recessed on their inner sides to receive and hold the tools, essentially as and for the purpose herein set forth.

144,540.—Electrical Water-Gage, Alarm, and Register.—CHARLES HEISLER, St. Louis, Mo. Application filed June 24, 1873.

A float is connected with a stem passing through a stuffing-box in the boiler, and this stem is connected with an electrical indicator and alarm for "high" and "low" water, which registers the length of time the water is allowed to remain in either condition.

Claim.—1. The float B, operating a circuit-breaking device,

substantially as herein shown, in combination with a recording device, to indicate the length of time the water has been at its high or low stage, as set forth.

2. The combination and arrangement of the float B, arm *b*, stem C, oscillating arm E, roller F, circuit-breaking plates f^1 f^2 f^3 f^4, wires J J^1 J^2 J^3 J^4, arranged in the case D, with the electro-magnets L^1 L^2 L^3 L^4, armatures l^1 l^2 l^3 l^4, index-hands M, and dial-plate *m*, arranged in case E, as and for the purpose set forth.

3. The combination and arrangement of the float B, arm *b*, stem C, oscillating arm E, roller F, circuit-breaking plates f f^5, and wire J J^5, with electro-magnets L L^5, armatures l l^5, pivoted detents b^5, stops *n* n^1, clock-work N, striker n^2, bell n^3, and index-hands O *o*, as and for the purpose set forth.

4. The oscillating arm E *e* e^1, bolt e^2, non-conductor piece e^3, spring E^1, lug E^2, roller F, collar *f*, and spring *f'*, in combination with the stem C, arm *b*, float B, and circuit-breaking plates f f^5, &c., connected to suitable indicating, alarm, and recording devices, as and for the purpose set forth.

144,541.—Automatic Grain-Weigher.—JOHN W. HILL, Dayton, Ohio, assignor of one-half his right to CHRISTIAN HERCHELRODE, same place. Application filed August 30, 1873.

From the weigh-beam of a grain-meter is suspended a tilting frame, in which are pivoted dumping-boxes, which are alternately brought under the spout, and are so connected that the dumping of the filled box throws the empty one into position to receive grain.

Claim.—1. In an automatic grain-weigher of the character stated, the sinking and oscillating hanger C, in combination with the self-dumping and self-righting scale-pans A and B, pivoted thereto, substantially as and for the purpose specified.

2. The sinking and oscillating hanger C, in combination with the self-dumping and self-righting scale-pans A and B, linked together by a connecting-rod, F, substantially as specified.

144,542.—Dried-Fruit Loosener.—HARRY W. HOLMAN, Waterloo, Iowa. Application filed August 16, 1873.

A rod has at its lower end a spear shape; just above, in a slot, are pivoted two independent wings that turn up when the rod is forced into the fruit, and turn down when drawn up, thus loosening the fruit.

Claim.—The device for loosening dried fruit, having its wings D D pivoted at their inner ends, projecting outward and downward when open, and curved upward and outward when folded, in connection with the shouldered spear-shaped point C and shaft A, substantially for the purposes mentioned.

144,543.—Apparatus for the Manufacture of Hydrogen Gas.—WILLIAM L. IMLAY, Philadelphia, Pa. Application filed October 9, 1873.

The generator and carbureter are submerged in the dilute acid used to generate the gas; and, as the arrangement of the stop-cocks is such that both cannot be closed at the same time, the waste liquor from the generator is forced into the compartment containing the carbureter whenever communication is closed between the generator and the chamber in which it is placed.

Claim.—The combination of the tank A, having central partition B, the submerged generating-tank D, with plug *a* and false perforated bottom F, the submerged carbureting-tank D', with perforated disks H H, the pipes G I J, stop-cocks *b b*, and operating-rods *d d*, with cranks and connecting-rod, all constructed and arranged substantially as and for the purposes herein set forth.

144,544.—Process of Removing Ink from Engraved Printing-Plates.—JOSEPH S. IVES, New York, N. Y. Application filed October 9, 1873.

The mass of ink smeared over the surface is removed by ordinary wiping, and the plate cleaned to the proper condition for impression by washing with water.

Claim.—The process of cleaning engraved printing-plates by first removing the bulk of the ink from the plain portions of the surface, and then washing off such portions with water, substantially as hereinabefore set forth.

144,545.—Valve for Direct-Acting Engines.—HENRY A. JAMESON, Brooklyn, N. Y., assignor to himself and GEORGE WHITTAKER, same place.—Case B. Application filed August 4, 1873.

A pin projects downward from the valve into a diagonal slot in an oscillating shaft. The valve has two recessed arms, which, by reason of the diagonal motion imparted by the shaft, open steam and exhaust ports to opposite ends of the piston, which operates the valve longitudinally.

Claim.—1. The combination of the steam-valve C having the projecting curve *g h*, passages *i*, and recess *j*, with the steam-chest D and recessed piston E, the steam-chest being wider than the valve to allow a diagonal motion to the same, as set forth.

2. The combination of the steam-valve C, constructed as set forth, and provided with a projecting pin, *f*, with the oscillating shaft D, having the oblique slot or groove *e*, as and for the purpose described.

144,546.—Car-Starter.—WILLIAM A. JORDAN, New Orleans, La., assignor of one-half his right to ANDREW J. AIKEN, same place. Application filed September 11, 1873.

Claim.—The combination of the sliding bar B, provided with the pawl C having the extension *c*, and held to ratchet D by the spring *d*, the crank-shaft E, chain F, rods G I, lever H, and rods J J', substantially as shown and described.

144,547.—Watchmaker's Lathe.—EDWARD H. KELLY, Jackson, Tenn. Application filed April 3, 1873.

An adjustable tubular center for centering the work and guiding and supporting the drill.

Claim.—In a watchmaker's lathe, a tubular center, D, for holding and guiding the drill in boring the ends of pivots or pins, as herein set forth.

144,548.—Paper Product.—JOHN L. KENDALL, Foxborough, Mass. Application filed April 16, 1873.

Claim.—As a new article of manufacture, paper pulp and sponge combined with linseed-oil, for the purpose specified.

144,549.—Reed-Organ.—WILLIAM J. KENT, Buffalo, N. Y., assignor of one-half his right to GEORGE A. PRINCE, same place. Application filed May 31, 1873.

The front set of reeds, besides the usual mute-valve at the mouth of the reed-cells, has an additional stop-valve on the roof of the reed-cells, qualifying the tone of said reeds when open. The back set of reeds, being tuned with the front set while the roof-valve is closed, of course wavers, if sounded while said roof-valve is open.

Claim.—In a reed-organ, in combination with a double set of reeds *a a'*, the three reed-openings *b b' c* and three mutes *d e f*, to produce the tone or stop called vox celeste, all constructed and arranged to operate substantially as specified.

144,550.—Well-Drill.—GEORGE KOCH, Cass, Pa. Application filed March 1, 1873.

Claim.—1. The rock-drill having the faces *s* gradually fluted from the cutting-edge upward, the concavity gradually becoming more shallow, and merging into the shank portion, as described.

2. The rock-drill having fluted sides *s'*, convex sides C, and centrally-notched cutting-edge, substantially as specified.

144,551.—Velocipede.—JAMES F. MCCLURE, Connersville, Ind. Application filed August 2, 1873.

Claim.—1. The endless chain *m*, rollers *n n*, frame *p*, axle-pulley *n*, and set-screw *s*, in combination with the wheel G, pinion *e*, shaft *f*, as and for the purpose specified.

2. The combination of the wheel G with pinion *e*, shafts *f f'*, gears *e' e'*, fly-wheel K, clutch *h*, endless chain *m*, and pulley *n* on the axle A, all as and for the purposes herein set forth.

144,552.—Plow.—WELLS C. MCCOOL, Guthrie Centre, Iowa, assignor of one-half his right to DANIEL H. BRUMBAUGH. Application filed August 15, 1873.

In a double plow, each carried upon its own beam, the means of securing together at the rear by two T-shaped bars with clamp-bolts, and at the front by braces, in connection with a draft-equalizer.

Claim.—1. The T-shaped yokes B B carrying the loops *a a*, when combined with the beams and standards of two plows, in the manner and for the purposes specified.

2. The equalizer D, having a branch, *b*, carrying the plate *c*, and rod *d* formed and combined with the front ends of two plow-beams, in the manner and for the purpose specified.

144,553.—Lather-Brush Handle.—WILLIAM H. MILES, Jr., Brooklyn, N. Y. Application filed July 3, 1873.

Claim.—As a new article of manufacture, a wooden lather-brush handle, with a socket for the bristles, formed of one piece of wood, and coated with japan varnish or enamel, as and for the purposes specified.

144,554.—Signal-Lantern.—SAM. H. MILLER, Brooklyn, N. Y., assignor to himself and JESSE E. FOLK, same place. Application filed May 6, 1873.

The removable top of a lantern, and the devices by which it is attached to the frame, are formed of a single piece of sheet metal. The standards, having grooves for holding the adjacent edges of the glass screens, are also each formed of a single piece of sheet metal.

Claim.—1. The guides or ways B, each constructed of a strip of metal bent and folded to form separate longitudinal grooves *b b* for reception of the edges of adjacent glasses, substantially as shown and described, and whereby the frame of the lantern is materially stiffened.

2. The cap, top, or detachable piece D, struck up or bent to form a flange, *m*, of double thickness of metal, and projecting rim or border *n*, having lips A cut and bent from the latter, in combination with the openings *i* in the recessed internally-projecting flange *k* of the ring or portion which the piece D is arranged to fit in and lock with, substantially as shown and described.

144,555.—Limekiln.—LUCIUS MONTGOMERY, Akron, assignor of one-half his right to LEROY NEWMAN, Newstead, N. Y. Application filed March 14, 1873.

Claim.—1. The door C and casing *b c d* set slanting in the opening *a* of the hopper B, in combination with the kiln A A', as and for the purpose specified.

2. The door C and casing *b c d*, constructed as described, in combination with the iron supporting-plate E A and kiln A, all arranged in the manner and for the purpose hereinbefore specified.

3. The iron plate E, having the beveled flange *h*, in combination with the kiln A, as and for the purpose specified.

144,556.—Heel-Stiffener for Boots and Shoes.—STEPHEN MOORE, Sudbury, Mass., assignor to himself and HOMER ROGERS, same place. Application filed October 28, 1873.

Outer coated, or both outer coated and inner coated, with a water-proof enamel.

Claim.—A heel-stiffener formed of leather-board, or similar material, coated, substantially as described.

144,557.—Paper-Pulp Engine.—STEPHEN MOORE and RUFUS H. HURLBUT, Sudbury, Mass., assignors to themselves and HOMER ROGERS, same place. Application filed October 2, 1873.

As *b* revolves the pulp is made to circulate, and is mixed without impediment by passing up and along the curved pieces *d* over again upon the wheel. The curved pieces *d* are attached to the inside of the tub.

Claim.—In combination with the tub *a* and wheel *b*, the spiral blade or blades *d*, substantially as described.

144,558.—Thill for Vehicles.—ANDREW MUHLEISEN, Ottawa, Ohio. Application filed October 6, 1873.

Claim.—1. The side thill A, having the curved cross-bar B and an arm, F, in combination with the side thill C, adapted to receive shaft-irons E, substantially as shown and described, for the purpose specified.

2. The shaft-iron E, having the thill-arm *b*, extension *c*, and laterally-equalizing arm D, substantially as described, for the purpose specified.

144,559.—Rotary Engine.—EDWARD MYERS, New York, N. Y., assignor to AMBROSE W. THOMPSON, same place. Application filed February 24, 1873.

The valve prevents the escape of steam through exhaust-port until the piston passes a vertical position, when gravity assists said piston in addition to its inertia in passing over a space, during which time no steam can be admitted.

Claim.—A recessed hollow abutment operating eccentrically, and a working-shaft rotating in the central line of the steam-chamber, the latter being provided with ports *a a* arranged, as set forth, in combination with a piston directly attached to the working-shaft, and provided with a valve, *a'*, substantially as described.

144,560.—Jack-Center for Edge Trimming and Burnishing Machines.—THOMAS M. ORR and ANDREW R. SEARS, North Bridgewater, assignors of one-half their right to CHARLES A. PRATT, Clinton, Mass. Application filed July 31, 1873.

The universal joint furnishes a self-adjusting center in presenting the boot or shoe to the operative mechanism.

Claim.—In a machine for burnishing and trimming heels, the center D, in combination with the ball-and-socket joint E C and the mandrel A B, constructed substantially as described, and for the purpose set forth.

144,561.—Life-Preserving Cape.—GEORGE PALMER and CHARLES PALMER, Morris Run, Pa. Application filed June 17, 1873.

Water-proof cellular cape adapted to be inflated and secured by straps around and under the arms so as to sustain the body in an erect position, and thereby more certainly keep the head above water.

Claim.—A sailor's water-proof cape constructed and adapted, as described, to be converted by inflation into a life-preserver, in which the point of suspension is by the arms, substantially as described.

144,562.—Cotton and Corn Planter.—ASA PENNINGTON, Jr., Brenham, Tex. Application filed August 2, 1873.

A barrel-shaped hopper is revolved by a belt from one of the driving-wheels, and has a slot entirely around it in the center for the escape of seed. A frame, pivoted in front, carries an opener ahead of the hopper and two coverers in rear, the opener carrying a rod, which extends back between the sections of the hopper to stir the seed. The pivoted frame is adjusted by foot-levers, the seat being located on a support extending to the rear.

Claim.—1. The hinged or pivoted frame E, carrying the plows D and G G, and adjusted by the foot-levers *a a*, in combination with the revolving seed-hoppers J J, substantially as and for the purposes herein set forth.

2. The combination of the sulky A B C with seat H, hinged frame E, plows D and G G, foot-levers *a a*, revolving seed-hopper J J, and stirring-rod A, all constructed and arranged substantially as and for the purposes herein set forth.

144,563.—Rattan-Ware.—SULLIVAN H. PENLEY, Chelsea, Mass. Application filed August 6, 1873.

A basket or other article is made of the pith of rattan, which is united at the ends, making long belts or cords. It is then wound on a former and secured by glue, cement, or other fastening.

Claim.—1. A basket or other article of rattan-ware, formed of rattan pith wound in continuous strands or coils, and secured by glue, cement, or other fastening, substantially as specified.

2. A basket or other article made of rattan pith wound in continuous strands or coils, and provided with the stays C, applied substantially as and for the purpose specified.

144,564.—Wire Mattress.—DAVID J. POWERS, Chicago, Ill. Application filed April 26, 1873.

Zigzag wires are connected together at their angles by means of wire-coils.

Claim.—A wire mattress or bed-bottom, composed of zigzag wires *a*, connected together at their angles *b* by means of wire-coils *d*, substantially as specified.

144,565.—Racking-Cock.—AUGUST ROOS, New York, N. Y. Application filed June 6, 1873.

Two arms, each provided with a discharge-nozzle and stop-cock, are combined and arranged upon a tubular stem. Each of said arms may be provided with a try-cock.

Claim.—In combination with the tubular stem A, the branching tubes B C, each provided with a nozzle having its own independent stop-cock, and either or both nozzles provided with the lateral try-cock F, constructed to operate as herein shown and described.

144,566.—Hand Corn-Planter.—MILES C. ROOT, Janesville, Wis. Application filed July 15, 1873.

The operating rod or plunger is locked in position when desired by a pivoted latch.

Claim.—1. In combination with the operating-rod I, the seed-slide E, and casing A, the hinged locking-bar L, as and for the purposes described.

2. The casing A and supplemental casing F, the slide E having gage E', the bent operating-rod I, and hinged locking bar L, when combined and arranged as and for the purpose set forth.

3. The cover or door M, provided with the flanges *m*, and combined with the opening A' of the casing A, substantially as and for the purpose specified.

144,567.—Egg-Beater.—JOHN F. ROTH, Reading, Pa. Application filed October 16, 1873.

A can is hung by trunnions on vertical arms, that are pivoted to a frame. At one end of the frame is suitable gearing that drives a horizontal shaft within the can. On the shaft are wheels of beveled wings. The lid of the can is secured by packing and links.

Claim.—1. In combination with a cylindrical can, D, the central shaft G, provided with two or more wheels composed of hands I and a series of curved and beveled arms or wings, H H, all substantially as and for the purposes herein set forth.

2. The can D, hung upon trunnions *c c* on the pivoted arms E E, and provided with lid D', packing *f*, pins *f f*, and bails or loops A A, all substantially as and for the purposes herein set forth.

3. The combination of the frame A, cog-wheel B with crank C, pinion *a*, socket *d*, arms E E, can D with lid D', shaft G, and two or more wheels, H I, all constructed and arranged substantially as and for the purposes herein set forth.

144,568.—Circuit-Breaker for Electric Railway-Signals.—DAVID ROUSSEAU, New York, N. Y., assignor to himself and WILLIAM C. SMITH, same place. Application filed February 5, 1873.

Vibrating permanent magnet, elevated on a post, and in proximity to track, is attracted by metal of car or locomotive, and so caused to make or break an electrical circuit.

Claim.—1. The circuit opening or closing apparatus placed in proximity to a railway-track, to be actuated magnetically by a passing train or engine without bodily contact therewith, as specified.

2. The needle A arranged, in combination with the springs *b* and *d*, to be operated by a passing engine or train without contact, as set forth.

144,569.—Device for Rounding the Ends of Bolts.—JAMES I. SCHERMERHORN, Schenectady, N. Y. Application filed August 30, 1873.

The bolt is clamped between the jaws or dogs of the chuck, and is trimmed off by the concave cutter C, secured in the transversely-perforated cutter-head B.

Claim.—A mechanism for rounding the ends of bolts, studs, &c., composed of a suitable chuck for clamping the bolt, and a transversely-perforated cutter-head, B *b*, which supports the projecting end of the bolt in a removable and exchangeable sleeve-bearing, D, and carries a concave cutter, C, substantially as specified.

144,570.—Cigar-Point Splitter.—ADAM SICKENBERGER, Chicago, Ill. Application filed June 2, 1873.

The cigar is passed into a cup, which is supported yieldingly upon coiled springs upon two guide-standards, an opening in the bottom of the cup permitting a fixed blade to enter and pierce the cigar.

Claim.—The construction and arrangement of the blade B, guide-standards C C, ring or yoke D, springs E E, and socket F, with relation to the base A, as and for the purpose set forth.

144,571.—Manufacture of Printing-Type.—JULIUS SILVERSMITH, Chicago, Ill. Application filed March 11, 1872.

The blank or strip of metal is first compressed and properly shaped in a rolling-mill. A circular saw having an intermittent motion then saws it into proper lengths. A reciprocating matrix then forms the letter or ornament upon the end, and a trip-hammer or punch nicks the sides. All combined in one machine.

Claim.—1. In a machine for manufacturing types, &c., from blanks of ductile metals, the combination of a rolling-mill for compressing or shaping the blank, an intermittently-acting saw for cutting the blank into lengths for forming type, a reciprocating matrix or die for impressing the letter, character, &c., upon the same, and a trip-hammer or punch acting simultaneously with the latter for nicking the type, as herein shown and described.

2. The transversely-sliding frame A, rollers G H, ratchet and pawl mechanism J K, connecting-rod J, and eccentric T, constituting the mechanism for preparing and feeding the blank to the cutting, stamping, and nicking devices, as herein shown and described.

3. The intermittently-acting circular saw Z, oscillating frame *w*, arms *u v*, and eccentric *t*, combined with suitable mechanism for imparting a rotary motion to the saw, as and for the purpose described.

144,572.—Milk-Cooler.—DAVID SMITH, Jamestown, N. Y. Application filed May 14, 1873.

A water-vat having a condensing-trough on the under side of its convex bottom, and provided with tubes for the escape of animal heat from the milk, is set upon a milk-vat.

Claim.—The combination of the milk-pan A, the cooling-pan B with the bottom convex on its under side, the pipes D D, and condensing-trough C, all constructed and used as and for the purposes set forth.

144,573.—Heating-Drum.—ORLANDO D. SPALDING, Mankato, Minn. Application filed August 23, 1873.

Upon the enlarged double conical portion of the stove-pipe rests a shelf, the downwardly-projecting flange of which is perforated for admission of air. The removable cone within the enlargement deflects the heat toward the exterior, and permits the heater to be cleaned.

Claim.—In a stove-drum heater having the cones B and D, the removable inverted cone C and shelf G with the perforated flange G', substantially as described.

144,574.—Process of Painting Signs on Cloth.—ADOLPH STEMPEL, Chicago, Ill. Application filed May 7, 1873.

Claim.—The described process for making signs, consisting in stencilling or painting in water-colors upon muslin or cloth the desired letters, and then, after drying, saturating the sign with oil, as and for the purpose described.

144,575.—Combined Fan and Parasol.—CORNELIUS ST. JOHN, New York, N. Y. Application filed March 8, 1873.

Claim.—1. A combined fan and parasol, consisting of a body, side pieces, beveled inner edges, riveted handle, and friction-pad, combined and arranged for operation substantially as herein shown and described.

2. In a combined fan and parasol having its handle secured to one of the side pieces by a rivet, the friction-pad, arranged substantially as and for the purpose set forth.

144,576.—Dress-Elevator.—CHARLES TAGE, Philadelphia, Pa. Application filed September 16, 1873.

Claim.—The combined bustle and dress-elevator consisting of the piece A, cords B, guides C and F, and buttons G, the parts being constructed and arranged substantially as and for the purpose set forth.

144,577.—Apparatus for the Manufacture of Ice, Cooling Buildings, &c.—AUGUSTUS H. TAFT, Jersey City, N. J. Application filed July 23, 1873.

Air is compressed and cooled, and, as it expands, is passed through water. The water thus cooled is used to cool the air under compression, the object being to produce a very low temperature without having to resort to a very high degree of compression.

Claim.—1. The method of refrigerating by previously cooling the water or other liquid used to cool the compressed air, as set forth.

2. The pump *a*, the pipes *b* and *c*, the vessel *d*, the pipes *e*, *f*, and *g*, the cooler A, the pipes *j* and *i*, the pumps *k* and *l*, or their equivalents, in combination with the cooler *m*, the pump *n*, the pipes *o*, *p*, and *q*, and the chamber A, or their equivalents, as and for the purposes hereinbefore set forth.

144,578.—Hydraulic Car-Brake.—JOHN F. TAYLOR, Charleston, S. C. Application filed June 17, 1873.

Two steam-cylinders and two water-cylinders have an outlet-tube with the same name, so that the introduction of steam in one cylinder results in the expulsion of water from the other. The steam-valves and valve of the water-outlet tube are connected by intermediate mechanism, and operated by the same lever. The piston-rod of the hydraulic engine is connected to the brake-bars. In case the connecting-pipes are broken, a pair of chambers and suitable valve are provided on the air side of the piston.

Claim.—1. The combination of the steam-cylinder A, having the usual steam-chest, piston, and parts, and the water-cylinder B, having the outlet-tube, with the same ram R, so that the introduction of steam in one cylinder results in the expulsion of water from the other.

2. The combination of the cylinder A B and A^1 B^1, provided with rams R R, and connected by tubes D D', as and for the purpose set forth.

3. The combination of the valve C of water-outlet tube D and the steam slide-valve J of chest K, connected by intermediate mechanism, and operated by the same lever H, for the purpose specified.

4. The combination of the cylinders A A^1, rams R R, and cylinders B B^1, connected by tubes D D', with the hydraulic engine A^2 B^2, to operate the brake mechanism of a car or train of cars, arranged as shown, and for the purpose described.

5. The combination, with cylinders A A^1, of engine A^2 B^2 and the air-chambers A^3 A^4, having valve A^5, to enable an air-forcing apparatus to operate the brake at the times and in the manner described.

144,579.—Animal-Carcass-Scraping Machine.—REINELANDER C. TOMPKINS, New York, N. Y. Application filed August 4, 1873.

A rotary endless chain carries projecting scraping-tools. The animal is held and moved on this apron so as to expose all parts of it to the action of the scrapers.

Claim.—The scraping-machine consisting of the endless chain of scraping-tools E E, all as herein shown and described, and for the purpose specified.

144,580.—Heel for Boots and Shoes.—ORSON UNDERWOOD, Milford, Mass. Application filed May 9, 1873.

Claim.—1. The flanged heel A, the plate A', the insole D, and the outer sole E, arranged and connected by means as described.

2. The metallic heel-plate A', separate from the outer sole, the metallic heel A, the vamp or upper C, the insole D, the outer sole E, and the fastening-screw H, all constructed, arranged, and combined substantially as described and represented.

144,581.—Vapor-Generator.—WILLIAM WELLS, Salem, Mass., assignor of one-half his right to DAVID BUFFUM, same place. Application filed October 1, 1873.

A chamber for bisulphide of carbon to assist in the generation of steam is arranged to permit the free circulation of the water between the tubes containing said bisulphide of carbon and the flue-tubes conveying the products of combustion from the fire-box of the furnace.

Claim.—The combination of water-cylinder A and bisulphide-of-carbon chamber D arranged therein, and the two provided with concentric tubes B and E, substantially as and for the purpose specified.

144,582.—Slack-Taking-Up Apparatus for Steam and Air Brakes.—GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa. Application filed September 27, 1873.

The piston-rod of the brake-cylinder is provided with a slotted or bifurcated arm, which plays on the stem connected to the rack-bar, and, as the piston moves, comes against a stop-pin in said stem when sufficient slack has accumulated to be taken up. One of the brake-levers is bifurcated at its outer end, and is attached to the pawl-box by a pin playing in a slot in the rack-bar. The long end of a beat lever is pivoted to the arm on the piston-rod, and is fulcrumed near the bend to brackets on the cylinder, and the short arm has pivoted to it a stem provided with a shoulder, and passing through a guide, between which a coiled spring plays.

Claim.—1. The arm *a*, fixedly connected with the piston-stem *c'*, in combination with the ratchet-bar R and lever *p*, substantially as set forth.

2. The lever *p*, with a suitable connection from its longer arm to or with the piston-stem C', in combination with the rods *o o*, stem *f*, and spring f^2, substantially as set forth.

3. The bifurcated brake-lever B, pivoted to the box A, in combination with the slot *e'* in the ratchet-bar, arranged substantially as described.

144,583.—Tool-Holder and Cutter-Head for Boring-Bars.—JEROME WHEELOCK, Worcester, Mass. Application filed July 2, 1873.

A cylinder-boring cutter-head having three or more slotted arms, upon each of which is mounted a radially-adjustable tool-holder having a cutter hinged thereto to fold inward.

Claim.—A boring-bar tool-holder, fitted to receive the tool and admit of its being advanced from a radial to a tangential line while operatively mounted on the holder, in combination with a cutter-head provided with arms fitted to receive and carry the holder, and with means for effecting the radial adjustment of said holder, substantially as and for the purposes specified.

144,584.—Plow.—EDWARD WIARD, Louisville, Ky., assignor to BENJAMIN F. AVERY, same place. Application filed September 24, 1873.

The runner is attached to the land-side of the plow-beam, and designed to run upon the unplowed land and support the plow in an upright position. It is made adjustable to regulate the depth of furrow.

Claim.—The land-side runner composed of the broad plate A, inclined standard B, angular and oblique brace C, and support D, all pivoted together and adapted for attachment to the land-side of the plow, and when attached is adjustable thereon by means of the slots in the arms of the standard B and brace C', all substantially as set forth.

144,585.—Draft Apparatus for Metallurgic and Other Furnaces.—GEORGE WINGATE, Boston, Mass. Application filed August 12, 1873.

Air, preferably under a slight pressure, enters the annular casing, and, after circulating in the same, passes into the air-chamber, rising into the vertical space surrounding the steam-tubes, becomes heated, and escapes under pressure through the annular passage intervening between the cap and nozzle, producing a partial vacuum in the stack, which facilitates combustion.

Claim.—1. The combination, with a flue or stack, of a series of air tubes or passages communicating with the flue, and arranged substantially as described, so that the air therein is heated and passes as a blast into the stack.

2. A draft-producing apparatus in which air-pipes *b*, contained within the space through which heated products of combustion are caused to pass, are combined with steam heating-tubes *c*, extending longitudinally through the said air-pipes, all substantially as specified.

3. The combination, substantially as described, of the steam-chamber E, its tubes *c*, the air-chamber D, pipes *b*, casings H and G, cap F, nozzle J, and the annular passage *f*, intervening between the said cap and nozzle.

4. The combination, substantially as described, of the air-chamber D and its openings *i* with the exterior annular casing K, whether the latter be fixed or movable.

144,586.—Chimney-Top.—GEORGE WINGATE, Boston, Mass. Application filed August 12, 1873.

In a chimney, having openings in its sides, is placed an inner casing, the upper end of which extends within the lower end of a second casing supported upon the top of the chimney. The passage of air between the first casing and the chimney-walls assists in increasing the draft.

Claim.—The chimney-top consisting of casing D, having a flange, *h*, and the casing B with its flanges *b*, the said casings being adapted for application to a chimney, in the manner set forth.

144,587.—False Bottom for Water-Coolers.—JAMES F. WOOD, Wilmington, Del. Application filed July 19, 1873.

Claim.—The plate D, resting on a spiral spring, C, and arranged to constitute a false bottom for a water-cooler, as set forth.

144,588.—Planing-Machine.—SOLOMON A. WOODS, Boston, Mass. Application filed June 19, 1873.

A planing-machine is provided with a frame having a chip-breaker formed upon its front part and a protector-bar in its rear, said frame being hung concentric with a cutter-cylinder, the construction of the protector-bar being such that a board of any thickness may be easily entered under the presser-roll of the machine.

Claim.—A cutter-cylinder, in combination with the frame *f*, its bar *i h*, and the roller *g*, substantially as shown and described.

144,589.—Apparatus for Conveying Grain.—HENRY G. YATES, Kalamazoo, Mich. Application filed November 7, 1873.

Grain in a heated state is admitted into the cylinder containing the blower, from which it is forced through the conveying-pipe and ejected from the cylinder containing the exhaust-fan attached to the other end of the pipe.

Claim.—The device for drying and removing grain, consisting of the cylinders A B, with their fans, in combination with the tube T, P, and P' and furnace F, all constructed and arranged substantially as and for the purpose set forth.

REISSUE PATENTS.

5,648.—Process and Apparatus for Preserving Animal and Vegetable Substances.—CHARLES ALDEN, Newburg, N. Y.—Patent No. 121,569, dated December 5, 1871. Application filed November 1, 1873.

Claim.—1. The within-described process of maturing and preserving animal and vegetable substances, in part through evaporation, and in part through chemical binding of their organic moisture, by exposing the same to a current of heated and humid air, increasing in humidity and decreasing in heat as the evaporation proceeds, said current of air moving in the same direction with the articles to be treated, substantially as herein set forth.

2. The arrangement of a fan-blower, H, air-chamber G, heating-coil F, and tunnel A, containing a series of rising or falling screens, E, substantially as shown and described.

5,649.—Kaleidoscope.—CHARLES G. BUSH, Boston, Mass., assignor to himself and JOHN W. HOARD.—Patent No. 143,371, dated September 30, 1873. Application filed October 30, 1873.

To the ordinary objects in a kaleidoscope-box are added short glass tubes, having their ends closed by fire-sealing and containing different-colored objects, liquid or solid, immiscible liquids or a single liquid with a bubble. The inclosed articles change their relative positions by gravity as the tubes are shifted about in the box.

Claim.—1. In combination with a kaleidoscope-box, a glass tube or vessel for containing one or more objects, said tube or vessel being closed hermetically without the use of cement or plugging.

2. In combination with a kaleidoscope-box, an object, consisting of a glass tube or vessel containing liquid, and closed hermetically by the fusing of the glass without the aid of cement or plugging.

3. An object for kaleidoscopes, consisting of a glass tube or vessel containing two or more immiscible liquids, or one or more liquids and one or more solids.

5,650.—Skylight.—GEORGE HAYNS, New York, N. Y.—Patent No. 112,504, dated March 14, 1871. Application filed July 12, 1873.

The hollow supporting-bar is contracted below to form the gutters, so that the latter do not offer a material increase of obstruction to the passage of light or to the apparent weight of the bar. A clip is inserted between consecutive panes, having a groove for the reception of the inferior pane, a rabbet for the superior pane, and a gutter extending under the latter to intercept the condensed moisture upon the same. The transom K has cast-iron strengthening-blocks inserted at the ends, the intermediate portion being filled with wood.

Claim.—1. The hollow metallic bar or rafter C^1 or C^2, of a contracted construction toward its center, to form gutters below the supporting-surfaces of the glasses, substantially as specified.

2. The hollow metallic bar or rafter C^1 or C^2, constructed, substantially as described, of plates *a* and *c*, bent to support or connect each other, and to form gutters *b b*, arranged in juxtaposition to each other, and under cover of the base or bases which support the glass, as herein set forth.

3. The clip H, constructed of sheet metal, bent to form a groove, *h*, a rabbet, *i*, and a gutter, *k*, essentially as and for the purpose described.

4. The transom K, made of sheet metal, with cast-iron blocks *n* and intermediate wooden filling *q*, substantially as specified.

5,651.—Manufacture of Whip-Stocks.—DAVID C. HULL, Westfield, Mass.—Patent No. 132,909, dated November 12, 1872. Application filed September 3, 1873.

Claim.—1. A whip-stock composed of a series of rattan strips, D, a heart-piece, B, and a metallic load-piece, A, arranged as set forth, and having the rattan strips surrounding such load-piece, and extended rearward beyond it, substantially as specified.

2. A whip-stock composed of a series of rattan strips, D, a heart-piece, B, a metallic load-piece, A, and a separate wooden backing or plug, C, all arranged substantially as described, and being in order that the butt of the stock may be held and finished by a turning-machine, and the supporting material or surplus portion of such butt be subsequently removed by a saw or other means without interference from the metallic load-piece.

5,652.—Treating Tanned Leather.—BENJAMIN H. LIGHTFOOT, Philadelphia, Pa.—Patent No. 43,120, dated June 14, 1864; reissue No. 5,016, dated July 30, 1872. Application filed October 16, 1873.

Claim.—1. The currying or dressing of tanned leather, by applying to the same petroleum or any mineral oils of sufficient body and gravity, with or without an admixture of fresh or straights oil, substantially as herein described.

2. As a new article of manufacture, leather dressed or curried by the application of petroleum or any mineral oil of sufficient body or gravity, alone or mixed with other substances, as set forth.

3. A mixture for dressing tanned leather, &c., consisting of petroleum or any mineral oil of sufficient body and gravity, and fish-oil, or its equivalent.

5,653.—Vise.—H. K. PORTER and T. W. PORTER, Boston, Mass., assignors, by mesne assignments, to CHARLES PARKER, Meriden, Conn.—Patent No. 72,327, dated December 17, 1867. Application filed June 19, 1873.

Claim.—In combination with the lever B, passing through the head of the screw A, the adjusting-screw *c*, for the purpose of adjusting the pressure upon the said lever, substantially as described.

5,654.—Preparing Wheat and other Grain for Food.—THE NUTRIO MANUFACTURING COMPANY, Philadelphia, Pa., assignee, by mesne assignments, of R. BERKELEY FITTS.—Patent No. 115,947, dated June 13, 1871. Application filed September 18, 1873.

Claim.—1. The process herein set forth for the treatment of grain by the application thereto of steam under pressure, substantially as described, for the purposes specified.

2. The process of treating grain by the application of steam under pressure, followed by dry heat, substantially as described, for the purpose specified.

2. The products of the above-described treatments, produced by the application of steam under pressure, with or without the application of dry heat, as new commercial articles, substantially as described.

5,655.—Preparing Wheat, Corn, and other Grain for Food.—THE NUTRIO MANUFACTURING COMPANY, Philadelphia, Pa., assignee, by mesne assignments, of R. BERKELEY FITTS.—Patent No. 118,165, dated July 18, 1871. Application filed September 18, 1873.

Claim.—1. The process of purifying and cleaning grain by hot or boiling water, substantially as described, for the purpose specified.

2. The process of purifying and cooking grain by hot or boiling water, substantially as described, for the purpose specified.

3. The process of purifying and cooking grain by hot or boiling water, followed by dry heat, substantially as described, for the purpose specified.

4. As a new commercial article, grain treated by hot water alone, or first by hot water, and afterward by dry heat, substantially as described, for the purpose specified.

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DIGEST OF FOREIGN PATENT LAWS.

SWITZERLAND.

REPORT BY MR. GOULD, OF THE BRITISH LEGATION.

In the Swiss confederation there are, as a general rule, no special laws for the encouragement and protection of inventors. Consequently, the practice does not exist, as in most other countries, of securing to inventors by Letters Patent the monopoly of their inventions for a limited term of years. Public opinion in this confederation is so opposed to the above practice that an attempt made some years ago to bring the subject before the National Assembly proved a complete failure, owing to the marked disfavor with which it was treated on all sides. The accepted theory seems to be that inventions should be considered as common property, and that whatever benefits they may confer should, without delay or restriction of any sort, be extended to the whole community. The only exception to the preceding rule is to be found in the canton of Tessin, where the local government has the power to grant, in consideration of a payment of a sum of from £2 to £20, equal to, say, $10 to $100, the exclusive privilege of working a patent within its territory.

It does not, however, follow that manufacturers are in like manner denied the advantages to be derived from the use of trade-marks for the purpose of distinguishing their manufactures from all others. Yet, even in this instance are there no legal enactments for the protection of trade-marks either in the laws of the confederation or in those of the great majority of the cantons, such as Berne, Zurich, Lucerne, Uri, Schwyz, Upper Unterwald, Lower Unterwald, Glaris, Zug, Friburg, Soleure, Basle Town, Basle Country, Appenzell Within, St. Gall, Argovie, Thurgovie, Vaud, Vallais, Neufchâtel, and Grisons.

In the canton of Schaffhausen, Article 237 of the penal code ("Strafgesey") lays down that, whosoever fraudulently makes use of a manufacturer's stamps, trade-marks, &c., whether such manufacturer be a citizen of the canton or of other cantons or foreign states with which reciprocity in this respect has been established by treaty, will be liable to imprisonment for a term not exceeding three months, or to a fine.

Article 255 of the code of the same canton further enacts that, whoever, with the object of injuring others, or of deriving advantage, whether for himself or for third parties, dishonestly obtains knowledge of the trade or business secrets of others, and appropriates or discloses them; or again, whoever, notwithstanding distinctly-stipulated engagements on his part, acts to the prejudice of his employers while in their service, or even after having left it, will, on the information of the parties concerned with him in proceedings of this nature, or prejudiced by them, be condemned to imprisonment for a term of not more than six months, or to a fine not exceeding 1,000 francs, equal to, say, $200.

The canton of Appenzell Without has in the 26th article of the law of October 28, 1860, defined the rights of manufacturers in the following terms:

The designs (patterns) of manufacturers are to be considered as their exclusive property, and it is unlawful to imitate them. In the same manner a manufacturer or artisan who causes his goods or the products of his workmanship to be known by a particular distinguishing mark, seal, stamp, or label with his name on it, acquires thereby a proprietary right, in the sense that no one else can use the same mark.

Any one infringing the preceding enactment will be fined, and can be called upon to pay an indemnity.

A law of the canton of Geneva of the 10th of April, 1862, contains the following provisions:

ARTICLE 1. The use of trade-marks is optional. Nevertheless, with regard to certain products, the law may exceptionally declare the use of such marks to be obligatory.

ART. 2. Are considered as trade-marks: Names under a distinctive form, denominations, emblems, impressions, stamps, seals, vignettes, reliefs, letters, ciphers, wrappers, and all other signs serving to distinguish the products of a manufactory or the articles dealt in by a firm.

ART. 3. No one can claim the exclusive right to a trade-mark unless he has lodged two models of the trade-mark at the office of the tribunal of commerce.

ART. 4. The right to a trade-mark is limited to fifteen years; but it can be extended for a fresh term of similar duration by renewing the formality prescribed in Article 3.

ART. 5. Are considered guilty of wrongfully appropriating a trade-mark all such as—

1. Counterfeit a trade-mark or make use of a forged trade-mark;

2. Fraudulently affix to their goods trade-marks belonging to others;

3. Knowingly sell or expose for sale goods with a trade-mark, either counterfeited or fraudulently affixed.

ART. 6. Can be prosecuted as guilty of the same offense—

1. All those who, without actually counterfeiting a trade-mark, have fraudulently copied it in a way to mislead the purchaser, or have used a trade-mark thus fraudulently imitated;

2. Those who make use of a trade-mark bearing signs tending to deceive the purchaser as to the nature of the goods;

3. Those who knowingly sell or expose for sale goods with a trade-mark fraudulently imitated or bearing signs tending to deceive the purchaser as to the nature of the goods.

The complainant who brings an action in virtue of the present article will have to prove the fraud or fraudulent intent of the defendant.

ART. 7. The offense of wrongfully appropriating trade-marks will be dealt with, as regards the criminal action, in the light of an attempt to defraud the purchaser with respect to the nature of the goods sold, and entail the penalties prescribed by Article 423 of the criminal code.

ART. 8. The courts will only take cognizance of facts relating to the wrongful appropriation of trade-marks at the instance of the parties interested.

ART. 9. Parties whose trade-marks have been improperly made use of may institute a criminal prosecution by addressing a complaint to the courts, or may confine themselves to bringing a civil action for damages. The provisions of this law of the canton of Geneva on trade-marks are reproduced and amplified in the convention with France, signed on the 30th of June, 1864, which secures to Swiss citizens, by the 14th article, the same rights in France as are enjoyed by French subjects in their own country. The protection thus afforded to trade-marks is also extended to patterns, on the condition, however, that they shall not have become public property in Switzerland, but without any restriction as to the place of manufacture. In like manner, French trade-marks and patterns enjoy special protection throughout the whole confederation. The 31st Article of the above convention lays down that, in Switzerland, the penalty for counterfeiting or using counterfeited French trade-marks shall be a fine of from 50 francs to 3,000 francs, equal to $10 to $600, and imprisonment for a term of from three months to three years, or only one of these two penalties; and, according to the 32d article, for the minor offense of imitating a French trade-mark so as to deceive purchasers with regard to the nature of the goods, or of using one so imitated, the penalty shall be a fine of from 50 francs to 200 francs, equal to $10 to $40, and imprisonment for from one month to a year, or only one or the other. It is further stipulated by the 33d article that, even in cases of acquittal, the court may order the confiscation of the goods for the benefit of the parties defrauded, independently of their right to claim further compensation for the losses they may have thereby sustained. In every case the court shall order the forged trade-marks or the imitation of them to be destroyed. By Article 34, all the dispositions relating to trade-marks are extended to wines, brandies, and all other beverages; cattle, grain, flour, and all agricultural produce in general.

Article 37 confers also the exclusive right to designs (patterns) for a period of one, two, or three years from the date of the deposit of the pattern having been properly effected; but it may always be extended for further periods of three years by renewing the deposit, which may be made publicly or even in a sealed envelope. The latter is not to be opened before the expiration of a year.

According to the 39th article the only conditions requisite to obtain the privilege are that, first, the pattern shall be new; and, second, that the goods of that pattern shall not have been dealt in previously to the deposit.

The pains and penalties incurred for infractions of Article 37 are, as regards the imitator, a fine of from 100 francs to 2,000 francs, equal to $20 to $400; and, as regards the seller, a fine of from 25 francs to 500 francs, equal to $5 to $100, both parties being equally liable for the damages, and their goods to confiscation. Hence the strange anomaly presents itself that, whereas in Switzerland there are no special laws, except in three cantons, for the protection of Swiss trade-marks and patterns, those of French manufacturers and merchants are surrounded by every possible guarantee, and that the former enjoy privileges in France which are denied to them in their own country.

It may, perhaps, be as well to state here that, by an agreement come to in February, 1857, between the cantons of Zurich, Berne, Uri, both the Unterwalds, Glaris, Basle Town and Country, Schaffhausen, Appenzell Within, Grisons, Thurgovie, Tessin, Vaud, and Geneva, as well as Argovie and Appenzell Without, which joined the others in 1861, all works of art and literature are held to be the exclusive property of their authors during their lifetime, and in some special cases even beyond that period, within the respective territories of the cantons, parties to the above agreement. The same principle is recognized and embodied in great detail in the convention with France of the 30th June, 1864, which has previously been referred to.

COMMISSIONER'S DECISIONS.

SAMUEL S. MCNAUGHTON.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Samuel S. McNaughton, for patent for* REGISTERED COUPON TICKET.—*Decided November* 19, 1873.]

Patentability, in a conductor's ticket-book having overlying leaves similarly marked for punching, one of which is to be detached as a passenger-ticket and the other to remain as a voucher: *Held*, that the mere addition of more indicating-marks for punching than had before been used was not invention.

Also, where such leaves have been detachably connected at one side and one end: *Held*, that, as no improved result was effected, it was not a material change to connect them at opposite ends.

THACHER, *Acting Commissioner:*

The claim in this case is—

The conductor's account and general ticket book described, consisting of consecutive connected detachable full-fare ticket-leaves, and undetachable record-leaves, overlying each other, and provided, respectively, with corresponding columns of duplicate figures to indicate the stations and the difference between a ticket and cash receipt, (the names of the stations being printed on the ticket-leaf only,) and with corresponding superposed symbols to relieve the conductor of the full-fare responsibility in case of excess or deficit in his return of tickets and cash, all marks being made by the conductor's punch alone, substantially as specified.

The applicant has connected the leaves of his check-book in a different manner from that heretofore employed, having in view the convenient punching of both leaves at once and the removal of the ticket-leaf, the record or voucher leaf remaining as in books already patented and in use. He has also added to the number of words and figures on the leaves, by which additional matters are indicated beyond what has been done heretofore in a single instance in similar check-books. His check-book is adapted to indicate separately a greater number of facts than others, in the same way that has been practiced in the use of others—viz., by punching. The first matter, relating to the connection of the leaves to facilitate their use for the purpose intended, might undoubtedly furnish good ground for a patent, provided there was presented a substantial difference of plan from any preceding. But the second, consisting merely of the addition of indicating-marks (whether in figures or colors) to be punched, could not. Such additions are not inventions, for they introduce no new principle. Where there are, for instance, coincident figures, on duplicate leaves, to be punched, indicating the days of the month, it is no invention to add other figures to be punched, indicating the days of the week. This point of difference, therefore, although admitted, may be dismissed as clearly immaterial.

The only question is whether the difference in the connection of the leaves, shown by the applicant, from that of Jebb and others, is a patentable one.

Applicant forms his leaves by folding a strip, cut to make two leaves, in the middle, and binding the two opposite ends of the strip together. The bound leaves are thus connected at their inner ends by the binding and at their outer by the fold. The fold is perforated, as is the removable or passenger-ticket leaf near its inner end, to admit of its ready removal. Jebb's leaves are also formed of a suitable strip folded in the middle; but they are bound so that the fold, which is also perforated, shall be at the sides instead of at the outer ends of the leaves. They are perforated near their inner ends like the applicant's, so that one of them for the passenger may be readily detached. No improved result being made to appear, I cannot regard this as a substantial difference of construction.

The decision of the Board is, therefore, affirmed.

EATON, BLODGETT, AND MILLS.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Eaton, Blodgett, and Mills, for* IMPROVEMENT IN SHUTTLES.—*Decided November* 19, 1873.]

Practice under Rule 11 requiring a supplemental oath.

Any modifications of claim justly within the original sworn statement of the invention or claims are allowable without a supplemental oath; but the original claims, as a rule, constitute the inventor's real estimate of what is his invention, and are what he intends to substantiate as such by his oath.

The oath refers to the original specification and claims as illustrated by special reference to the drawings, and has no reference to the model. Where the invention subsequently claimed by amendment was shown in the model but not originally shown in the drawings or referred to in the specification: *Held*, that a supplemental oath was necessary.

The oath of an applicant is not a mere formal matter, but is required by act of Congress, because it goes to assure the novelty and utility of the invention. Followed by an official examination it gives *prima facie* validity to a patent.

THACHER, *Acting Commissioner:*

This invention was stated in the original specification to relate "to shuttles;" and to consist "of a novel construction and arrangement of the spindle and shuttle-body—the spindle having a notch in its head instead of a round hole, with which it bears on the pin, the pin being stationary in the shuttle, and the shuttle having a set-screw which bears on the spindle-head, and thereby regulates its position." The object of the invention was stated to be "to avoid the danger of splitting the shuttle by repeated removing and refastening of the pin which holds the spindle-head, * * * * * and to have a counter bearing against the spindle-head, which is adjustable." Four claims were presented covering pretty comprehensively the details of construction of the device shown in the drawings, as follows:

1. The combination of the spindle B, the spindle-head C, the notch c, the set-screw F in a shuttle A, with a stationary pin, D, substantially as specified.
2. The head C of a shuttle-spindle, provided with a notch to receive the pivot-pin, as set forth.
3. A shuttle, A, provided with a set-screw, F, for adjusting the spindle, as set forth.
4. The anti-friction roller s inserted into the spring-bearing of a spindle-head of a weaving-shuttle, substantially as specified.

Rule 11 provides that "in case the applicant, by amendment, seeks to introduce any claim or claims not *substantially embraced in the original affidavit*, he will be required to file a supplemental oath," &c.

Applicants have filed an amended specification and claims, which are not accompanied by "a supplemental oath," and the Examiner, applying Rule 11, refuses to consider them on their merits unless so accompanied; whereupon this appeal is taken. The original affidavit "substantially embraced" the invention originally stated, described, and claimed as above quoted. Any modifications or limitations of a claim or claims justly within the scope of the statement of the invention sworn to, or of the claims made under that statement are, of course, allowable without being accompanied by a new oath. Within the scope of both the statement of the

invention and the claims, taken together, there is always the right of amendment in this manner. But the original claims, as a rule, constitute the inventor's true estimate of what is his invention, and are what he intends to substantiate as such by his affidavit, and there is only one case that occurs to my mind where an amendment, unaccompanied by an oath, could properly be allowed to be based alone upon the statement of the invention in the specification. Thus it is an essential rule of practice that the claims and statement of the invention must always be made to correspond before a patent can issue. But should a claim be originally submitted more limited in its terms than the sworn statement of the invention, and the particular description thereof, the requirement of correspondence between the claim and statement could be fulfilled at will by the applicant, either by making the claim broader, to conform to the statement, or the statement narrower, to conform to the claim. Neither of such amendments would require a supplemental oath. The question here is whether the amended claims are within what was originally stated and described as the applicants' invention. This is answered at once in the negative, by the fact that a portion of the subject-matter of the amended claims—viz., the pivot-pin extending only partially through the shuttle and secured by a plug—was neither shown in the original drawings, nor described or referred to in the original specification. The pivot-pin was only there referred to and shown as of ordinary construction, extending entirely through the shuttle, as the Examiner has stated. The present representation of the pin in the drawing was effected by amendment subsequent to the Examiner's adverse action. True, the construction now shown and claimed is to be found in the model, and, therefore, may properly form the basis of new claims to be made and sworn to; but it can in no sense be said to be "substantially embraced in the original affidavit." That affidavit referred solely to the original specification and claims, as illustrated by special reference to the drawing, which would go to constitute a part of the patent if granted. It had no reference to the model.

The amended claim seems also to contemplate and will probably involve an interference, wherein the rights of others will be concerned, and for this reason it is the more important that it should have the sanction of the applicants' oath before being entertained by the Office.

The importance of the oath accompanying an application for patent is not always appreciated. It is expressly required by act of Congress and required for a purpose. It is not a mere formal matter to be treated indifferently or disregarded. Its employment rests upon sound reason. The leading principle of our patent law is to secure the grant of patents for none but new inventions, and to none but the original and first inventors thereof. The oath of an applicant is the first step in accord with, and obedience to, this principle. It goes to assure the novelty and utility of the invention. Followed by a careful examination in the Patent Office, it gives *prima facie* validity to a patent, and supports the faith of the public in its legality, and such is the object of its requirement by the statute.

The Examiner is clearly right in his action, and his decision is affirmed.

LACROIX AND WELCH.—*Interference.*

[*Appeal from the Examiner of Interferences in the matter of the interference between the application of E. N. Lacroix for Letters Patent for* IMPROVEMENT IN MIDDLINGS-PURIFIERS, *and the patent of E. P. Welch, granted February 18 and reissued April 1, 1873.—Decided November 12, 1873.*]

Practice under Rule 61: *Held*, that, pending an interference between a patent and an application, upon a broad claim, a patent was properly granted the applicant upon a subsequent application with subordinate claims, covering special devices not in interference, which claims had been withdrawn from the interfering application.

The intent of a rule should govern its application. The second proviso of Rule 61 is properly complied with when the broad subject-matter in interference is disclaimed in a subsequent subordinate patent, and the reason therefor stated to be that it is the subject-matter of another application.

THACHER, *Acting Commissioner:*

The history of this case gives rise to questions somewhat complicated.

January 17, 1873, Welch applied for a patent, which was granted the 18th of the month following. March 17, 1873, he applied for a reissue of this patent, which was also granted, April 1, 1873. The first claim of this reissued patent was a new one and much broader in its scope than either of those allowed originally. February 21, 1873, only three days after the date of Welch's first patent, the papers in the application of Lacroix were filed; but it was not completed by the filing of the model, so as to go forward for examination, until the 30th of April following. Subsequent to the reissue of Welch's patent, and, before action had been taken on his application, Lacroix filed an amendment thereto, inserting an additional claim, which is a copy, almost verbatim, of the first claim of Welch's reissued patent, and, without doubt, was suggested by the grant of the latter. The amendment was accompanied by a request for an interference with Welch's patent, which was accordingly declared the following day, May 20, 1873, the subject-matter involved being limited by the Examiner to the broad claim in each case. May 28, 1873, under the provisions of Rule 61, Lacroix filed a second application, containing the claims of the first application not involved in the interference, these claims having been struck out from said first application by amendment. The new application resulted in the issue of a patent bearing date June 3, 1873, the interference, as originally declared, in the meantime continuing.

It is claimed by Welch that Rule 61 was violated in the issue of the patent to Lacroix, and that he should be compelled now to prosecute the claim in interference by reissue of said patent. He, therefore, moves for a dissolution of the interference, which has been granted by the Examiner of interferences. The appeal is taken from this decision.

The principal ground for the motion is that the devices patented by Lacroix are involved in the interference, and that this patent already granted to him could at any time be reissued with the same claims now in controversy.

Rule 61 is as follows:

When an application is adjudged to interfere with a part only of another pending application, the interfering parties will be permitted to see or obtain copies of so much only of the specifications as refers to the interfering claims. And either party may, if he so elect, withdraw from his application the claims adjudged not to interfere, and file a new application therefor: *Provided*, That the claims so withdrawn cover inventions which do not involve the devices in interference: *And provided*, also, That the devices in interference are eliminated from the new application. In such case the latter will be examined without reference to the interference from which it was withdrawn.

The application of any rule must be governed, to some extent, by its original intent. Rule 61 was designed to apply especially to an interference *between applications*, and for the purpose of preventing one party going out before the world with a patent, showing, perhaps, the subject-matter of a pending interference, and thereby leading the public to suppose that it was protected by said patent, to the great detriment, perhaps, of the other party contesting the claim. To some extent, the provisos also apply in interference between an application and patent; for a portion of the claims in an interfering application ought not to be allowed to go to patent under any circumstances, unless they are for separate inventions, so that, if the interference should result in the grant of another patent to the same party, the two will be distinct from each other; but, if, as in this case, one party already has a patent, the grant of a patent with a later date to the other party can work no damage to the first patentee, even though it show the subject-matter of the interference; especially if the second patent is subordinate to the one already in existence, which is acknowledged to be the fact in this case.

Now, it is admitted on the part of Welch, that the claims in the patent granted to Lacroix involve devices not to be found in his patent; and although the device now declared to be in interference is claimed in combination with other devices which are shown in said patent, it is admitted that he, Welch, could not possibly make these claims by reissue. So far, then, the two patents are distinct from each other; but the drawings, descriptions, and model are the same in Lacroix's patent and the interfering application, and it is, therefore, insisted that the claims withdrawn must necessarily involve the devices in interference. But it will be observed that the claim in controversy is a broad one and not limited to special devices. It, therefore, cannot be restricted to the special devices shown by Lacroix with any more right than to the devices shown by Welch, which are in some particulars different. Where the claim in interference is broader in scope than the special devices shown by any of the parties, the subject-matter involved cannot be limited to just what is shown by either of said parties. I do not see, therefore, that the first proviso of Rule 61 was violated by the issue of a patent to Lacroix.

The inquiry remains whether the second proviso was complied with. The specification of the patent contains this disclaimer, "I do not claim, broadly, the use of the auxiliary blast, as the same is the subject-matter of a separate application." This appears to be as definite a compliance with the proviso as could be required. The subject-matter of the interference is distinctly disclaimed and the reason therefor stated—to wit, that it is the subject-matter of another application. Now this would be an estoppel to the grant of any claim to the subject-matter of the interference in an application for reissue of this patent; and the applicant would find himself rejected on reference to his own prior application now in interference.

It will also be observed that, if the pending application of Lacroix should result in the issue of a patent, it could not be reissued with claims to the special devices already patented, for he would be rejected on the patent of June 3, to which the record would direct any one seeking information. If this interference should thus result, however, to make certainty doubly sure, it might be well to require a disclaimer of said patented devices (with the statement that they constitute the subject-matter of another application) in the present application, before allowing it to go to issue.

It appears clear to me that the patent already granted and the application now pending, are distinct from each other; that the provisos of Rule 61 have been fully complied with; that the action taken in the grant of the patent to Lacroix was regular and proper; and, therefore, that the interference ought not to be dissolved.

The decision of the Examiner of Interferences is overruled, and the proceedings in the present interference will be continued.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

[*In equity.—Before Shepley, Circuit Judge.—Decided October 28, 1873.*]

JAMES B. FORSYTH *vs.* CHARLES M. CLAPP *et al.*

If a tube has been formerly prepared from fibrous material and india-rubber in a certain manner, and cut into rings for stuffing-boxes, to use similar tubes upon shafts for the rolls in a wringing-machine does not entitle any one to monopolize them as his invention.

But he may have a patent for the combination of a tube thus constructed with the shaft, although united in the same way that tubes and shafts have been before united for the same purpose, provided new results have been thereby effected.

A roll for a wringer consisting of fibrous material, of which the fibers are looped about a wire wound tightly around the shaft, and stand out from the shaft in a radial direction, the whole being embedded in india-rubber, which is thereby attached to the shaft, is not an infringement of a patent for a similar roll, in which the fibers also stand out radially, but in curved directions, and are attached to the shaft only by means of the rubber in which they are embedded.

The inventor who has first discovered the advantages of employing upon wringers a well-known roll formed of fibrous material embedded in india-rubber, in which the fibers stand out in radial directions, and has reduced it to practice in one form, is not for that reason entitled to monopolize all rolls fabricated of such materials, in which the fibers stand out radially, however they may be attached, or though constructed in a different way.

Although his claim may be expressed in terms so broad as to cover all such rolls with radial fibers, the court will look into the specification and restrict the claim to what is there shown; and if the patent be a reissued one they will also look into the original specification for the same purpose.

[*William Whiting* and *James E. Maynadier*, for complainant. *Benjamin R. Curtis* and *George L. Roberts*, for defendants.]

SHEPLEY, *J.:*

Without at this time stating the conclusions to which the court arrived in relation to several questions presented in this case, it will be sufficient for the disposition of the cause to state the decision of the court upon the question of infringement. For a proper consideration of this question, it is necessary to consider the state of the art at the time of the alleged invention of Forsyth.

Rubber rolls for wringers were first made in the form

of tubes or hollow cylinders, and expanded onto a plain shaft. Then attempts were made to secure the roll more firmly to the shaft, first by winding the shaft with wire and afterward with twine. An effort was made to secure a more lasting union to the shaft by forcing the tube upon a heated shaft. Next followed a mode of making the shaft itself of two or more parallel rods. The rubber rolls first made with a number of holes corresponding to the number of rods were forced onto these rods which were then connected at their extremities. Canvas was also interposed between the shaft and the roll and cemented to both. Various other devices appear to have been resorted to for the purpose of fastening more firmly the tube to the shaft. The purpose of all of these inventions was to make a more perfect connection of the elastic roll with the metallic shaft.

The difficulty which Forsyth thought he saw, and which he claimed had not been obviated by any of the other devices, was not so much the separation of the roll from the shaft, at the lines or points of connection, as the tendency of the strain on the rolls when in use to a destruction of the body of the roll itself. His theory was, that while the connection of the shaft with the homogeneous body of the roll constricted on to the shaft, was sufficient for all practical purposes in the use of a wringing-machine, that the real difficulty to be overcome was, that the particles of rubber in contact with the shaft separate and tear away from the rest of the rubber composing the body of the roll. He acted upon the hypothesis that, while the various connections of the roll with the shaft were sufficient to withstand the strain, a portion of the body of the roll would break away from the portion retaining its connection with the shaft by a process of disruption or rending asunder of the body of the roll itself. He commenced, thereupon, a series of experiments, the object of which was to substitute for the homogeneous rolls in use a roll with a tougher, stronger, and less elastic substance in the interior than in the exterior portion of the roll. After trying various methods to accomplish this result by the addition of fibrous or other non-elastic material to the stock of which the interior of the roll was composed, he finally constructed a roll with fibrous material arranged in the interior portion of the tubular roll in a manner which, in an expression proximately descriptive, he calls radially. A sheet of cloth, with a thin layer of vulcanizable compound on each side of it, is first cut into long stripe, "bias" or diagonally across the threads or fibers of the cloth. Several of these long strips are placed upon each other and pressed together until the surfaces of rubber or vulcanizable compound are cemented and permanently united. The sheet thus formed is cut into strips or bands of suitable width to admit of their being easily wound on a mandrel, or the shaft of a roll, in such a manner that the fibers of the cloth will radiate from the mandrel or shaft. As shown by the drawing accompanying his specification, it is obvious that each thread would thus extend from the interior to the exterior of the fibrous portion of the roll in a curved radial line, the threads crossing each other, and such threads being nearer together at the core or axis, and separated further from each other as the distance from the core or axis increases. The roll is then made up to the desired size by winding rubber sheets around it coated with cement, when it is placed in molds and subjected to the vulcanizing process, the rubber in its soft and plastic state filling up all the crevices around and between the layers and incorporating the parts together. In this way it is claimed that "*the tenacity of the roll and the degree of adhesion of the parts are much increased*, and the position of the fiber is better adapted to resist any tendency of the roll to become loose and turn on its shaft when subjected to a strain."

Charles McBurney had invented and manufactured at the works of the Boston Belting Company a tube substantially, if not precisely, like the tube of Forsyth. No appreciable material distinction can be discovered between the modes of making the McBurney and the Forsyth tube, or in the tubes themselves when made on a mandrel. McBurney's tubes and their mode of manufacture are represented by exhibits ten to fourteen, inclusive. These tubes were made of all sizes, from three-quarters of an inch to several inches interior diameter, and from one-half inch to an inch and a half thickness of tubing, and sold in tubes to consumers. The purchasers cut them in sections or rings for stuffing-boxes. Such a tube constricted onto a shaft would be Forsyth's roll. Forsyth does not describe any particular mode of connecting the tube with the shaft. He leaves that to be effected by any of the old and well-known processes in use. All that can with any show of reason be claimed for his roll is the combination of an old tube with an old shaft in a mode which was old to accomplish a new and useful result.

Treating it as a valid patent for this new combination of an old shaft with an old tube by old means of connection, for the purpose of considering the question of infringement in the light of the state of the art as existing when he made his roll, we now proceed to examine the construction of the Moulton roll as actually made and relied upon as an infringing device.

The Moulton roll, as manufactured by the respondents, was made by applying transversely to a sheet, or between two sheets of vulcanized rubber, a layer or range of strands of fibrous material and cutting this sheet into ribbons of the desired width at right angles to the length of the strands. These ribbons are folded in the center, and a metallic wire is inclosed in the fold and wound spirally about the shaft, under great torsion, from end to end between the journals, the wire being fastened to the shaft at each extremity. A cylinder or sleeve of rubber is applied over the surface, and the whole is subjected to a vulcanizing process until the whole mass of the roll is thoroughly compacted together. The wire is so tightly wound under pressure that it, in fact, becomes a part of the shaft. The fibrous threads are, in fact, loops which pass into one orifice and out of another in the metallic shaft, their ends extending strictly radially into the body of the roll.

There is a radical and obvious difference in the function of the fibers in the two rolls. Their similarity consists in the fact that the fibers in one are arranged in curved radial diverging lines, extending in a direction toward the periphery of the roll, and in the other in radial lines extending in the same direction. In both of them the effect of the fibers is more or less to diminish the elasticity of the interior portion of the resilient roll; but in the Moulton roll, as made by the respondents, not to any material or scarcely appreciable extent. Their difference consists in the function which they perform. The inner ends of the fibers in the Forsyth tube touch or nearly touch the shaft. They do not fasten the rubber compound to the shaft, or aid in fastening it. The ends of the fibers themselves are not fastened to the shaft except so far as they are cemented by the vulcanizable material. The vulcanizable material holds the ends of the fibers up to the shaft instead of the fibers performing that function for the vulcanizable compound. The inner ends of the fibers in the Forsyth roll were attached to the rigid portion of the roll resting upon the shaft, and the outer ends extended from this rigid portion toward the circumference of the roll, thus tending to secure that "adhesion of the parts" of the roll to each other, at which he aimed, as well as to limit the mobility of the rubber into which they extend. If McBurney's tube, or Forsyth's, be constricted upon a shaft which is too small, or in sufficiently cemented or connected to the shaft by any of the then existing modes of connection in an imperfect manner, so that the shaft turns in the tube, that result would not be owing to the fact that the fibers of Forsyth failed to perform perfectly their function of confining the rigid portion of the roll to the more elastic portion of it, and of limiting the mobility of the rubber in which they are buried. So, when the roll is subjected to strain by the passage of the sliver of cloth between the rolls of a wringer, causing the outer surface to be compressed in one place, and expanded in others, the fibers in the inner portion of the Forsyth roll do undoubtedly tend to prevent the body of the roll from being separated from the shaft; but they do not effect this result by reason of their attachment to the shaft preserving the connection between the shaft and the rubber, but by reason of their acting at the same time to preserve the form of the inner and more rigid portion of the tube, and keep up the adhesion of such parts with the outer portions where the mobility and resiliency is greater. But perfectly as the fibers may perform this function, a tube imperfectly cemented to the shaft may still, for that reason alone, turn on the shaft in the Forsyth roll. Now, the loops or bows in the the Moulton fibers enter the shaft, and the ends of the fibers extend like "staples" (which they resemble in form) into the body of the roll, for the purpose of securing the interior of the resilient body to the shaft. The fibrous loop is to be taken as a whole. The parts of the fibers which extend from the interior toward the exterior of the rubber roll would not operate to confine the rubber to the shaft without the loops. By none of the methods in use at the date of Forsyth's patent, of making the connection between the shaft and the rubber, was the connection made any more tenacious by presenting the ends of the fiber to the surface of the shaft. In some of them the presence of the ends of the fibers lessened the adhesion by as much as it displaced the rubber. The principal function of the fibers in the Forsyth tube, as before stated, is to make the inner portion of the tube more rigid, and to tie the more rigid to the more elastic portion of the tube. Now, in the Moulton roll, as manufactured by the respondents, the principal function of the fibrous loops is to tie the rubber to the shaft, and they do *not create any material rigidity* in the interior portion of the tube. The method of fastening in the Moulton roll is an inseparable part of the roll itself, being necessarily constructed and built up with the roll and constituting the inner portion of the roll. It is not adaptable to Forsyth's tube, nor is Forsyth's tube capable of having Moulton's fastening applied to it. Because Forsyth borrowed from McBurney his method of constructing the interior of a tube with fibers of *cloth* arranged in radial curves, it would be the height of injustice to allow him to monopolize any use of fibers for any purpose whatever in a wringer-roll, if the ends of the fibers extended in a radial direction into the body of the roll. His reissued patent, examined in the light of the invention described in the original patent, if valid, must be limited to such a mode of introducing the fibers of a *woven* texture radially into the tube for the purposes indicated, without regard to the mode of fastening to the shaft.

The Court will look beyond the mere form of words in the claim of a reissued patent into the specifications, in both the original and reissued patent; and even if, on the face of the reissued patent, it does not embrace anything not described or suggested in the original, nevertheless, the Court will ascertain whether there is any substantive invention adequate to support a claim ingeniously worded, not so much for the purpose of describing what the patentee really invented as of grasping within its terms some contrivance not within the knowledge or contemplation of the patentee, and for that reason, not by reason of inadvertence or mistake, not embraced in the claims of the original patent.

Comparing the two rolls, as we have done in some more essential particulars, and without recapitulating other points of difference, enough has already been stated to show, that, so radically different is the structure of the rolls, and the function of the fibrous material, and its mode of operation, that the Moulton roll, as manufactured by the respondents, is clearly no infringement upon anything secured to Forsyth by his reissued patent, even giving to the invention claimed in that patent the fullest scope claimed for it in the evidence of Forsyth himself and the expert testimony introduced by him.

Bill dismissed.

APPLICATIONS FOR EXTENSION.

Applications having been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,599.—Dedcating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,475.—Breech-Loading Fire-Arms.—Granted to BETHEL BURTON, December 20, 1859, and reissued December 21, 1869. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,484.—Platform-Scales.—Granted to THADDEUS FAIRBANKS, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,486.—Pipe-Molding.—Granted to JOHN FENTH and JOHN INGHAM, December 20, 1859, and reissued April 28, 1863. Application filed September 13, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,487.—Screw-Taps.—Granted to WILLIAM and ROBERT FOSTER, December 20, 1859. Application filed September 18, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,506.—Water-Trap.—Granted to JAMES A. LOWE, December 20, 1859. Application filed September 19, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,512.—Nail-Plate Feeder.—Granted to JOHN NEWELL, December 20, 1859. Application filed September 16, 1873. Testimony closes November 18, 1873. Hearing December 3, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KIMBALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GORE, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LESHO, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON B. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STURTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 30, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,869.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 28, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitcher.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PARSON, January 24, 1860. Application filed October 28, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NELSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOMINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KINZLER and WILHELM ROSEBROCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ABNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SEMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOWT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Slinging Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,202.—Fare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,177.—Improvement in Making Rubber Belting, granted to DENNIS C. GATELY, November 22, 1859.

Claim.—A new article of manufacture, machine belting or banding, manufactured with surfaces of india-rubber or gutta-percha, and having surfaces which are as nearly as is practically possible perfectly smooth, as described.

26,178.—Improvement in Rubber Belting, granted to DENNIS C. GATELY, November 22, 1859.

Claim.—The method above described for manufactering machine belts or bands of india-rubber or gutta-percha, by rolling them in thin sheets of flexible metal, and then heating them, substantially in the manner and for the purposes above described.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 18, 1873.]

6,996.—Lock-Case.—WILLIAM H. ANDREWS, New Haven, Conn., assignor to MALLORY, WHEELER & Co., same place. Application filed November 11, 1873. Term of patent 7 years.

6,997.—Carriage-Wheel Hubs.—JOSEPH R. LOCKE, Amesbury, Mass. Application filed August 27, 1873. Term of patent 7 years.

6,998.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed November 6, 1873. Term of patent 3½ years.

6,999.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed November 6, 1873. Term of patent 3½ years.

7,000.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed November 6, 1873. Term of patent 3½ years.

7,001.—Oil-Cloth.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed November 6, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date November 18, 1873.]

1,527.—Ice-Pitchers.—ADAMS, HALLOCK & Co., Brooklyn, N. Y. Application filed July 18, 1873.

"'Pure Silver Lined.'" "'Cryptochylon.'"

1,528.—Soap-Powders.—BENJAMIN T. BABBITT, New York, N. Y. Application filed June 25, 1873.

"a five-pointed star, with the words 'Soft Soap-Powder.'"

1,529.—Baking-Powder.—BENJAMIN T. BABBITT, New York, N. Y. Application filed June 25, 1873.

"a five-pointed star."

1,530.—Compound Spice for Seasoning Meats, &c.—E. R. DURKEE & Co., New York, N. Y. Application filed November 7, 1873.

"'SALPICANT.'"

1,531.—Medicine.—WILLIAM H. GREGG & Co., Elmira, N. Y. Application filed December 20, 1872.

"'Vallex.'"

1,532.—Kid-Gloves.—FORTUNÉ HEGLE, New York, N. Y. Application filed November 7, 1873.

"'Fortuné.'"

1,533.—Cutlery.—ISAAC T. MEYER & Co., New York, N. Y. Application filed September 9, 1873.

"'Our Own.'"

1,534.—Gold and Silver Solutions for Electroplating Without a Battery.—ARTHUR B. MORRISON, Portland, Me. Application filed October 9, 1873.

"'A-B-M.'"

1,535.—Agricultural Implements.—L. M. RUMSEY & Co., St. Louis, Mo. Application filed October 31, 1873.

"'Golden Crown,' and a crown printed in gold."

1,536.—Driers, Paints, Varnishes, &c.—GEBA C. LEBKA, Williamsburg, N. Y. Application filed November 8, 1873.

"'Terebine,' a lion and eagle."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date November 18, 1873.]

ORIGINAL PATENTS.

144,590.—Corn-Husking Machine.—L. AUGUSTUS ABRAHAMS, Albany, N. Y. Application filed December 23, 1870.

Improvement on patent No. 101,809, April 12, 1870. Spiral depressions in the husking-rollers receive the husk, which is then nipped off.

Claim.—1. The husking-rollers *c c*, when provided with spiral depressions *c* upon their peripheries, and formed as described, substantially as and for the purposes set forth.

2. In a machine for husking corn, the picking and feeding rollers *b c*, formed with flattened surfaces or depressions, as shown, and without ribs or cutting-edges of any kind, that as the stalk is passed between said rollers the ear shall be suddenly removed by the impinging of the eccentric surfaces of said rollers upon the same, in the manner substantially as described.

3. In combination with husking-rollers arranged to operate substantially as described, the trough *g*, when constructed as shown, and made removable endwise from the machine, as and for the purposes specified.

144,591.—Hay-Knife.—JOHN S. BALL, Mishawaka, Ind. Application filed April 18, 1873.

A semicircular yoke is constructed upon the lower part of the handle, and to this yoke the knife-blade is riveted. The blade can be removed and renewed when broken or worn out.

Claim.—The combination, with the blade A, constructed as described, of the handle B and yoke C, the latter being in curved form, corresponding with the shape of the blade, united to the handle and riveted to the blade, as and for the purposes herein set forth.

144,592.—Preserving Fruit and Vegetables for Food. WILLIAM G. BARBER, High Point, N. C. Application filed September 20, 1873.

Claim.—1. The treatment of fruit and other food by drying and partial saturation with sugar, substantially as and for the purposes herein specified.

2. The treatment of green corn by separating the milk and pulp from the hulls and drying, as herein specified.

144,593.—Numerical Filing-Case.—GEORGE W. BETTSWORTH, Cedar Rapids, Iowa. Application filed June 13, 1873.

Claim.—The numerical filing-case consisting of the compartments formed by the sloping partitions C, the rubber holding-band F, and file-wire D, as described and shown, and for the purpose set forth.

144,594.—Sportsman's Cartridge-Holding Vest.—JOSEPH H. BLACK, Columbia, Pa. Application filed August 13, 1873.

Claim.—The several series of the fluted open-bottomed pockets P, with the bottom lodge L made upon one or both sides of an ordinary vest or waistcoat, substantially in the manner and for the purpose mentioned.

144,595.—Fire-Extinguisher.—GEORGE BOOTH, Toronto, Canada. Application filed September 1, 1873.

The bottle has a flange on the bottom, by which it is suspended in an inverted position. Its mouth is closed by a convex cap of soft metal. A revolving spindle, having a hooked point to tear the soft-metal cap, extends through the side of the alkali-reservoir.

Claim.—1. The inverted pot A, having the convex cap E, in combination with the spindle H, capable only of the revolving or rocking movement described, and having the hook-shaped point G, substantially as set forth.

2. The combination of the seat C, cap D, and flange *c* on the bottle, as and for the purpose set forth.

144,596.—Vegetable-Slicer.—NATHAN BOSFORD, Lockport, N. Y. Application filed August 21, 1873.

Vegetables are sliced by means of a "plane," the cutting-iron of which is seated diagonally, and held by means of slots and projections and a clamping-screw, so that it can be adjusted, removed, and replaced with facility.

Claim.—The cutting-blade A, having the hooks C D and end *b*, with its curved slot B, in combination with the rectangular frame having the loops E F, and carrying the bolt or screw, all constructed and operating substantially as and for the purpose specified.

144,597.—Attaching Knobs to Drawers, &c.—SAMUEL A. BRACKETT, Boston, Mass. Application filed October 9, 1873.

A screw with its end flattened is passed through from the inside of the drawer into the shank of the knob. A small screw is passed through the knob-shank at right angles to the first one, and, by resting against its flattened end, prevents it from being turned in using the knob.

Claim.—The combination of the flattened screw A with the knob B and screw c or its equivalent, arranged substantially as and for the purposes hereinbefore set forth.

144,598.—Stud and Button.—FRANK E. BROWN, Pawtucket, R. I. Application filed March 24, 1873.

The stud or button has a hook-shaped shank, curved so that when it is attached it forms a double spring. The center of the spring portion of the device is flattened and slotted to receive the end of the shank.

Claim.—1. A hook-shaped fastening for studs and buttons, containing the double spring formed by the parts C and *f*, substantially as and for the purposes described.

2. The part D, provided with the slot G, into which the end of the shank may clasp, constructed in the manner and used for the purposes substantially as set forth.

144,599.—Picture-Frame.—JOHN A. BURCH, Buffalo, N. Y. Application filed August 25, 1873.

Claim.—A corner-piece for picture, advertising, and analogous frames, made substantially as described, in one piece of cast-iron or other metal, and provided with letters or other devices in relief, as and for the purposes set forth.

144,600.—Car-Spring.—ERASTUS T. BUSSELL, Indianapolis, Ind. Application filed April 25, 1873.

Claim.—1. A volute spring, elliptical in form, the central portions of the long sides of the several coils of which are closely in contact, constructed to operate substantially as and for the purpose specified.

2. The combination of the spring A and the set-screw S with an elastic substance between the point of the screw and the spring, as and for the purpose specified.

144,601.—Spindle for Spinning-Machines.—WILLIAM T. CARROLL, Woonsocket, R. I., assignor to SIMEON S. COOK, same place. Application filed September 8, 1873.

The auxiliary spindle is separate from the main one, and rotates in the stem of the bolster to lessen friction.

Claim.—The auxiliary spindle *a''*, operating in the socket or stem *f* on the seat *n*, and forming a seat or bearing for the base *b* of the spindle *a*, substantially as specified.

144,602.—Fluid Compound for Embalming Human Bodies.—WILLIAM E. CHENOWETH, Baltimore county, Md. Application filed June 2, 1873.

Gum-camphor, two ounces; pulverized aloes, one and a half ounce; sulphate of potasea, four ounces; balsamodendron myrrh, two ounces; pulverized saltpeter, four ounces; arsenic, six ounces; carbolic acid, two ounces; bromide of potasea, six ounces; acorus calamus, one and a half ounce; hydrochloric acid, or muriatic-zine acid, two pounds. These are well compounded and mixed, and to it is added from one and a half to three gallons of high rectified spirits of wine.

Claim.—The chemical compound mixed with the fluid as described, used and operated as shown, and for the purposes set forth.

144,603.—Tilting Chair.—JOHN ENGER, Portland, Me. Application filed May 2, 1873.

The seat, arms, and back frame of the chair are attached together and to an inner frame under the seat. To the sides of this inner frame are attached cetips bearing studs that work in slots in the pieces attached to the leg-frame. A spiral spring is attached to the under side of the seat, and to a cross-bar of the leg-frame, to draw back the seat when tipped. A slotted slide is attached to the under side of the frame, and engages with a catch on the under side of the seat.

Claim.—1. The combination of the horizontal frame A, legs B, seat C, curved parts E F, slots I I', pieces G H G' H', studs J J', and spiral spring K, substantially in the manner herein set forth.

2. In combination with the tipping seat C, the slotted slide M and catch N, arranged as herein set forth.

144,604.—Sheet-Metal Coffin.—JOHN D. FARRINGTON, Jr., New York, N. Y., and THEODORE P. AUSTIN, Portland, Conn. Application filed February 7, 1873.

The upper and lower dishing portions of the coffin are each swaged up from a single piece of metal. A central portion is then riveted by its flanges to the two portions first named. A clip extends around the entire coffin-covering, and concealing the uniting flanges and rivets.

Claim.—1. The upper and lower swaged-up pieces M N, with the removable extension-piece O clamped thereto by means of the screws D *d* or equivalent fastening device, as and for the purposes set forth.

2. In combination with the above, the lips E, passing entirely around the coffin and covering the flanged cape, as above described and set forth.

144,605.—Ingot-Mold for Gold or Silver.—JOHN FEIX, San Francisco, Cal. Application filed June 16, 1873.

Claim.—1. In combination with a mold for producing ingots of gold or silver, a recess or cavity formed in the mold above the ingot-shaping chamber to compensate for contraction and expansion of the ingot and secure a uniform density, substantially as described, for the purpose specified.

2. In combination with a mold for casting ingots of gold or silver, a channel or groove, J, arranged in respect to the mouth of the mold substantially as and for the purpose specified.

3. The section B, having the walls *a b c*, incline *d*, and base D, in combination with the enlarged chamber H, section F, and a suitable clamping device, substantially as and for the purpose specified.

144,606.—Hatter's Head-Measure.—FRANK A. FENTON, Camden, N. J. Application filed December 11, 1872.

A flexible band, with an exterior measuring-scale for its overlapping end, is compressed by an elastic cord, and is held at any required size by a clamp-screw. A series of segmental flaps, bent outward at right angles from the lower edge of the measuring-band, forms a semblance of a brim.

Claim.—1. The combination of the yielding shell A, the sliding guide *d*, the set-screw C, the engraved scale K, and the elastic cord *m*, arranged and operating as herein described.

2. The arrangement of the yielding shell A, made of a continuous strip of thin flexible material, in combination with the brim B, rigidly secured to it, but capable of expanding in size with the shell, substantially as herein described.

3. The combination of the yielding shell A with a suitable sliding guide to retain the two ends in contact, the scale A, the elastic cord *m*, and the expanding brim B.

144,607.—Cotton-Seed Planter.—DANIEL P. FERGUSON, Jonesborough, Ga. Application filed October 7, 1873.

A seed-box is mounted upon a frame, which is supported by a furrow-opener and seed-coverer. A transverse shaft with stirring-arms is placed within the hopper. The shaft carries a crank at each end, one pointing upward and the other downward. From the extremity of each crank proceeds a strap, to the right and left fore leg of the animal, respectively, which, in walking, give motion to the seed-agitator. Curved plates cut the weeds, and also cover the seed.

Claim.—1. In combination with the hopper *a* and stirrer *d*, having the cranks *g g* extending in opposite directions from the shaft C, the draft-straps A A, as specified.

2. The plates *n*, having the sharpened edges *m* and the inwardly-projecting ends *t*, substantially as shown.

144,608.—Dumping-Wagon.—WILLIAM FIELDS, Wilmington, Del. Application filed August 20, 1873.

Claim.—1. The combination of the body *c*, hinged gate 4, small door 6, and curved sides 8, substantially as set forth.

2. The closed chute 9, in combination with the endless apron having buckets for carrying the coal across the sidewalk, substantially as set forth.

144,609.—Under-Garment.—OLIVIA P. FLYNT, Boston, Mass. Application filed August 4, 1873.

A combined chemise, under-skirt, and corset-cover, having attachments for suspending other under clothing.

Claim.—1. The under-garment consisting of the waist *c* and skirt *w*, and with long or short sleeves and high or low neck, constructed substantially as described, and intended to take the place of the ordinary chemise, corset-cover or waist, and under-skirt.

2. The garment above described, when made with high neck and long sleeves, and arranged for attaching ruffling, lace, cuffs, &c., by means of the buttons *d*, *e*, or *g*, as specified.

3. The arrangement, with the said garment, when made with short sleeves and low neck, of the band A, substantially as and for the purpose above set forth.

4. The arrangement, with the said garment, when made with short sleeves and low neck, of the band A and pendent pieces *h*, substantially as and for the purposes before set forth.

5. The arrangement, with the garment above described, when made with long sleeves and high neck, of the pendent pieces *m*, substantially as and for the purposes hereinbefore specified.

144,610.—Narrow-Ware Loom.—RUFUS B. FOWLER, Worcester, Mass. Application filed August 19, 1873.

The shuttle is reciprocated on a curved race by rising and falling pins, which alternately take into holes in lugs on the shuttle-plate, and work in vertical cylinders on a vibrating radial arm, being actuated by annular plates with suitable inclines. The stop mechanism, or an alarm-bell, is connected with the weft-detecting fingers by the wires from a galvanic battery, so that when the weft fails the loom is either automatically stopped or the operator is notified.

Claim.—1. The stationary curved race, the curved shuttle, constructed and applied to the race as described, the spindle P, the radial vibrating arm Q', with its cylinders S S and pins R R, and the pin-actuating annular plates *b b*, all arranged, constructed, and operating as set forth.

2. The spindle P, the radial arm Q', with its cylinders S S and pins R R, and the pin-actuating annular plates *b b*, all arranged, constructed, and operating in the manner described, in combination with a stationary curved shuttle-race and curved shuttle, substantially as described, and for the purposes set forth.

3. The combination of the fingers W W', wire A, and curved shuttle-race, constructed, arranged, and operating in the manner described, and for the purposes set forth.

4. The shuttle T, wire A, fingers W and W', and lifting-bars X and X', when combined, arranged, connected, and operating substantially as set forth, and for the purposes specified.

144,611.—Collar and Cuff.—EDWARD P. FURLONG, Springfield, Mass. Application filed October 2, 1873.

Curved folds are made in collars, cuffs, &c., to give a flare to them.

Claim.—The combination of two or more folds in collars, cuffs, and other similar articles of wearing-apparel, arranged in opposite directions, as herein described and shown, whereby the article is given the desired shape and strength, as set forth.

144,612.—Carriage-Top.—JAMES N. GILL, Oshkosh, Wis. Application filed August 21, 1873.

Claim.—The combination of the spring and clasps B and the bow A, substantially as and for the purpose set forth.

144,613.—Harness-Saddle.—ALGERNON GILLIAM, Pittsburg, Pa. Application filed May 20, 1873.

Securing a leather welt between the seat and back plate, which welt allows the leather covering to be stitched through around its entire surface, and, being pliable, prevents the covering from being worn off by abrasion.

Claim.—1. The leather or welt A, clamped and secured between the seat B and the back plate or cantle C, in the manner and for the purpose herein described.

2. The within-described means of securing the leather upon the seat and back of the saddle (and covering the same) by the combination of the covering *a a'* with the leather or welt A, seat B, and back plate or cantle C, for the purposes herein set forth.

144,614.—Mustache-Shield for Drinking-Cups.—JOHN J. GREENOUGH, Syracuse, N. Y. Application filed April 21, 1873.

A strainer is combined with the mustache-guard, which is attached to the cup by two pairs of elastic fingers, which embrace the outside and inside of the cup.

Claim.—1. The spring-hooks A, of the mustache-shield, for holding the same securely within and below the rim of a drinking-vessel, substantially as herein described.

2. The combination of the strainer with a mustache-shield, substantially as and for the purposes set forth.

144,615.—Match-Safe.—JULIUS HELM and ALPHONSE HELM, Washington, D. C. Application filed September 17, 1873.

An opening in the top of the box has such length and width that only one match can be taken from the safe at one time. This opening has an enlargement on each side of its center for admission of the fingers of the hand, and also one at each end, to permit the passage of the friction-ends of the matches without their ignition.

Claim.—The central longitudinal slot F F in the box-top, having rigid sides, and combined with the recesses G G for the thumb and finger, and with enlargements *f*, to permit the passage of the match-tips without friction, all as herein shown and described.

144,616.—Hot-Air Register.—WILLIAM HIGHTON, Malden, Mass. Application filed October 21, 1873.

The wheel is outside of the register-grate. Its axis is extended through the grate, and to it is pivoted the end of the radial lever that, by means of projections, operates the slide which moves the slats.

Claim.—1. The lever D, pivoted to the plate E, and provided on its under side with one or more projections, *r*, in combination with the slide C, having one or more notches, *g*, operating substantially as described, and for the purpose set forth.

2. The wheel H, pivoted to the grate G and attached to the lever D, which actuates the shutters, the end of said lever moving in the arc of a circle having its center at the point where the wheel is pivoted, substantially as and for the purpose described.

144,617.—Skirt-Protector.—JAMES JENKINSON, Brooklyn, E. D., N. Y. Application filed November 4, 1873.

The skirt-facing is provided with one or more welts made of leather or other tough material, which welts keep the train up off of the ground.

Claim.—As a new article of manufacture, a skirt-protector, consisting of a body, A, of suitable material, provided on one side with protruding guards made of leather, rubber, or like durable material, so arranged that when applied to a dress-skirt or trail said guards will be interposed between it and the ground or sidewalk, substantially as and for the purpose specified.

144,618.—Hub-Boring Machine.—FREDERICK JONAS, Burlington, Iowa, assignor to himself and GEORGE O. RAY, same place. Application filed August 31, 1872.

For centering the two ends of the hub and boring the same at one operation without removing the cutting-tool.

Claim.—1. The cutter *t'*, carried by the sleeve *t*, and arranged for operation substantially as and for the purpose specified.

2. The shaft *e* and sleeve *t*, with their respective cutters, operating in combination substantially as and for the purpose specified.

3. The combination of the hinged yoke *m' m''*, collar *n*, and adjustable slide *t*, substantially as and for the purpose specified.

4. The combination of the shaft *e* and sleeve *t* with the collar *n*, slide *t*, clamp *m*, and the nut *n*, when constructed and operated in manner substantially as and for the purpose set forth.

5. The cam-latch *x*, attached to the slide *t*, for holding back the sleeve *t*, as set forth.

144,619.—Sealing Dip-Pipe of Gas-Works.—EDWARD JONES, Boston, Mass. Application filed October 20, 1873.

A pendent wall, upon one side of which is the dip-pipe, divides the main into two chambers. When it is desired to seal the dip-pipe communication is opened, by means of a pipe, with a point beyond the exhauster, so as to create pressure and cause the liquid to rise in the chamber containing the dip-pipe.

Claim.—In combination with the hydraulic main *a*, pressure-chamber *d*, connecting-pipe *f*, one or more, and the valve or cut-off A, leading from any part of the gas apparatus beyond the exhauster, where the pressure is about two and a half inches of water, and the valve *i*, leading to any part of the gas apparatus where the pressure is zero, or nearly so, as herein set forth.

144,620.—Rod for Drawing in Warp-Threads.—MARY S. JORDAN, Tilton, N. H. Application filed May 13, 1873.

To hold the warp-threads in position when drawing them into the harness they are passed between two clamping-rods, one rabbeted and fitting into a corresponding groove in the other, the two being held together by clasps at the ends.

Claim.—The rods *a b*, constructed as above described, with their respective clasps, clamps, or their equivalent, as and for the purposes above set forth.

144,621.—Apparatus for Purifying and Filtering Oils.—DANIEL M. LAMB, Strathroy, Canada. Application filed November 10, 1873.

Claim.—The series of two or more movable pans, A A', with conical bottoms, containing a filling of cotton and charcoal, and resting one on another within a jacketed casing, B, all as herein shown and described, for the purposes set forth.

144,622.—Compound Vulcanizable Gum.—DANIEL M. LAMB, Strathroy, Canada. Application filed November 10, 1873.

Claim.—The compound vulcanizable gum herein described, consisting of caoutchouc with the inspissated juice of milk-weed.

144,623.—Treating Vulcanizable Gums and Caoutchouc.—DANIEL M. LAMB, Strathroy, Canada. Application filed November 10, 1873.

Claim.—The mode or process herein described for the combined treatment of vulcanizable gum and petroleum, or any product thereof, by dissolving the gum in the oil, and subsequently distilling the solution, as and for the purposes set forth.

144,624.—Car-Coupling.—ANTOINE LANGELLIER, Concord, N. H. Application filed June 6, 1873.

The concussion caused by the meeting of the draw-heads forces them back so that the catch which sustains the pin is thrown out of engagement with that on the car, and the pin is allowed to fall.

Claim.—The car-coupling composed of the draw-bar *c*, the pin *b*, the frame *e*, the bar *d*, and catches *f* and *g*, adjusted and combined to operate as and for the purposes set forth.

144,625.—Protecting Buildings against Fire.—WILLIAM MCALLISTER, Lawrence, Mass. Application filed August 27, 1873.

The water is elevated to the roof-ridge through a stand-pipe connecting with a perforated conduit, whence it is ejected against a deflector provided with longitudinal gutters. It flows from the gutters in sheets over the roof, thus forming a protection against sparks from burning buildings in the vicinity. The eaves-gutter is hinged so as to be capable of being tilted, to throw the sheet of water which descends from the roof against the wall.

Claim.—1. The deflector-plate D and the two gutters *b b*; arranged together, and with the roof *a* and conduit, in manner and to operate as described.

2. The gutter B, applied to the roof so as to be capable of being turned from a horizontal into an inclined position, or vice versa, as and for the object as explained.

144,626.—Wood-Joining.—REUBEN MCCHESNEY, Ilion, N. Y. Application filed September 4, 1871.

Claim.—The method of joining various woods or pieces of wood together, in representation of "marquestry" or inlaid work, by means of dovetails cut, by appropriate mechanism, through the pieces to be joined at one operation, and in bevel form, so as to form tight joints when united, substantially in the manner herein described and shown, for the purposes set forth.

144,627.—Clothes-Wringer.—THOMAS E. MCDONALD, New Brunswick, N. J. Application filed July 10, 1873.

To the four posts two rollers are journaled in a diagonal position, one to the other, and held by screw-bolts. Clamp-screws are attached to two of the posts.

Claim.—The combination of the posts A, ties A', screw-bolts B B', having clamp-arms B' and *b'*, with the wringer-rollers C and C', substantially as described.

144,628.—Chimney-Tool for Glass-Blowers.—James G. Mustin, Pittsburg, Pa. Application filed February 19, 1873.

Claim.—A new article of manufacture, viz., a chimney-tool for glass-blowers, said tool consisting of the spring A and detachable blades B, constructed substantially as herein described, and for the purpose set forth.

144,629.—Cotton-Harvester.—William H. Pedrick, Richmond, Ind. Application filed March 27, 1873.

A horizontal cylinder, having teeth of different lengths, the longer being placed nearest the ends, is mounted on wheels and drawn over the plants to be picked.

Claim.—The cylinder of a cotton-picker provided with teeth arranged in pairs, the teeth of each outer pair being longer than those of the pair or pairs within it, substantially as described.

144,630.—Process of Repairing Spinning-Rings.—Horatio L. Peirce, Taunton, Mass. Application filed October 15, 1873.

Claim.—The method described of repairing spinning-rings, by annealing them until soft, and then widening out the flange by means of blows or pressure, so as to form a perfect flange, substantially as specified.

144,631.—Rolling-Mill.—Charles H. Perkins, Providence, R. I.—Case B. Application filed June 24, 1873.

A relief-guide, D, situated between the twisting-guide B and box-guide C, constructed with its side walls pivoted and held in position by springs, and the top held down by a weight. The object is to allow the walls of the guide to give should the metal crowd, and resume their position when the metal is withdrawn. A pair of large rolls, A^2 A^2, one carrying a knife, cuts the bar into lengths as it passes out.

Claim.—1. The relief-guide D, constructed with side walls *b b*, made yielding to internal pressure, substantially in the manner described.

2. In combination with any two consecutive sets of rolls, A A^1, in a rolling-mill, a relief-guide, D, substantially as described.

3. The combination of two consecutive sets of rolls, A A^1, twisting-guides B, relief-guide D, and box-guide C, substantially as described.

4. The means of securing a roll to its shaft, which consists in the combination of the tongued cap K K F with the shaft E and roll A_1, respectively grooved and recessed, substantially as described.

5. In combination with a rolling-mill, as described, the revolving grooved wheel A^2, the knife H, and revolving bed A^2, substantially as described.

144,632.—Guide for Rolling-Mills.—Charles H. Perkins, Providence, R. I.—Case A. Application filed June 24, 1873.

To facilitate the adjustment of the guide, which is divided longitudinally, springs are interposed that press the sides against the clamping-bolts. In order to reduce the friction on the bar when passing through the guide the lower part of the chamber is made somewhat broader than the upper.

Claim.—1. A box-guide for a rolling-mill having an inwardly-projecting guiding-surface on each side thereof, both of which guiding-surfaces are practically in the same plane, and extend longitudinally therein, substantially as and for the purposes specified.

2. The combination, with the rolls A A′, of the box-guide B, which is provided with inwardly-projecting guiding-surfaces, substantially as and for the purposes specified.

3. In combination with the box-guide for rolling-mills the springs D D, substantially as described, for the purposes specified.

144,633.—Guide for Rolling-Mills.—Charles H. Perkins, Providence, R. I.—Case C. Application filed June 24, 1873.

Two arms, D D′, pivoted to a cross-bar, are operated to close two guide-bars pivoted to the table at their outer ends by a wedge, *c*, formed on the end of bell-crank lever, one end of which projects over the rolls and is raised and retained in position by the rod passing between the rolls, which bears against its end.

Claim.—1. In combination with the rolls A A′ of a rolling-mill, the compress-guide B B′, the tongs D D′, and wedge *c*, substantially as described.

2. The combination of the compress-guide B B′, the tongs D D′, the wedge *c*, and its operating-lever E E, so arranged that a bar passing through the guide will, by contact with the wedge operating lever, compress the rod within the guide, substantially as described.

144,634.—Stove-Pipe Damper.—Josiah M. Read, Boston, Mass. Application filed July 30, 1873.

The spindle is held in position in the receiving-socket of a damper by transverse projections or ridges on the face of the sockets or flanges. These projections or tension-bars are placed as far apart as practicable to utilize the elasticity of the spindle.

Claim.—1. In a stove-pipe damper, substantially as described, the socketed disk B, formed with two or more bridges or tension-bars to operate with the spindle, in manner and for the purpose set forth.

2. The above-described stove-pipe damper, the same consisting of the disk B, having angular sockets provided with transverse tension-bars *d*, the rectangular spindle S, and the frictional spring C, arranged upon the spindle, as specified, the whole to be applied to a stove-pipe, in the manner and for the purpose stated.

144,635.—Machinery for Making Barrels.—Charles Ruggles, Huron, Ohio. Application filed June 3, 1873.

The machine cuts the cross and chamfers the end upon a continuous strip of wood, which is afterward bent into a circular form, and makes the body of a barrel.

Claim.—1. In combination with the cutter-wheels C, the pulley-shafts D, adjustable bearings E, and slide-bars F, substantially as set forth and shown.

2. The combination of geared feed-roller G, the friction-rollers H, and weighted levers I, substantially as and for the purposes set forth and shown.

3. The combination of feeding-roller G, cam K, and cutter-bar J, substantially as shown and described.

4. The combination, in a single machine, of the chamfering, crozing, feeding, and dividing devices, substantially as set forth and described.

144,636.—Writing-Desk, &c.—Daniel Schafer, Parkersburg, W. Va. Application filed September 8, 1873.

The upper front drawer is fastened by a side drawer, which enters the back part thereof and operates as a bolt. The tier of side drawers are fastened by means of a sliding upright, which can be moved back only when the front door of the desk is opened. The door can be opened when the straight side of the tripping-lever is brought parallel with the door-jamb, when the locking-bolt can be moved. An indicator is placed on the door to determine when the lever is brought into the proper position to release the bolt.

Claim.—1. The combination of the end drawer B with the front drawer C, operating as a bolt to secure the latter, substantially as set forth.

2. The sliding upright *c*, arranged to work in grooves *w*, and provided with a flange, *v*, in combination with the side drawers *d*, for operation as specified.

3. A piece of furniture constructed with the end drawer B, front drawer C, and side drawers *d*, in combination with the sliding upright *c*, perpendicular drop-bolt *b*, revolving tripping-lever *a*, and sliding swinging door D, whereby the several compartments are secured, substantially as shown and described.

144,637.—Spark Arrester and Conductor.—Eleazer Shoemaker, Melmore, Ohio. Application filed September 8, 1873.

Claim.—The inverted cone C, provided with the short cylindrical flange D, and applied upon the vertically-adjustable rod G, in combination with the smoke-stack A, provided with the cylindrical head B, conical directing-surfaces *a a′*, perforated surface *b*, extension *x x*, and discharge-pipe P, all substantially in the manner and for the purpose described.

144,638.—Revolving Hammer.—George Stacy, Nanuet, N. Y. Application filed June 26, 1873.

A rotating shaft having three (more or less) radial arms, to the outer end of each of which is pivoted the handle of a hammer, each hammer being connected by a sliding pin to the next succeeding arm, which connection limits the throw of the hammer.

Claim.—The rotating shaft A, the arm C, the hammer D, and stop E, all combined and arranged as shown and described.

144,639.—Mode of Fastening Cutters in Stone-Cutters and Other Tools.—George Stacy, Nanuet, N. Y. Application filed June 21, 1873.

The slot in the stock into which the cutting-tool is secured is made with one side either flat or beveled and its opposite side convex. A wedge having one flat side and the other convex is inserted between the cutting-tool and stock.

Claim.—The cavity D, formed in one side of the recess that receives the cutter or similar tool to be fastened, and made in the shape of a segment of a hollow cylinder, and a key, E, correspondingly shaped upon one side and flat upon its other side, substantially as herein shown and described.

144,640.—Stone-Cutter.—George Stacy, Nanuet, N. Y. Application filed May 24, 1873.

The cutter-stocks are hinged to the shaft, and their movement from the center of the same is limited by an adjustable stop. The bed carrying the stone is automatically moved beneath the cutters. A vertical shaft carrying cutters is arranged in such relation to the horizontal shaft that both the side and end of the stone may be dressed at the same time.

Claim.—1. The combination of the cutting-tool J with a cutter-stock, F, hinged to the cylinder E, and by its connection with a stop, H, made to operate substantially as specified.

2. The combination of the cylinder E and its cutter-stocks F, and the intermittent and changeable feeding mechanism described, consisting of the disk-wheel P, with its changeable pins W, driven by the gear O, the lever V, the adjustable stop Y, the pawl U, and the ratchet-wheel T, substantially as specified.

3. The combination of the vertical cylinder E^2 and the horizontal cylinder E, each with its revolving cutter-stocks F, whereby a stone may be dressed upon its upper side and on a side or end at right angles thereto at the same time, as specified.

144,641.—Portable Fence.—Byron L. Taylor, Marlin, Tex. Application filed April 18, 1873.

The pickets alternately have their lower ends behind and their upper ends before the stringers, and the reverse, a wire above the upper stringer and below the lower serving to bind the pickets by taking the side opposite to the stringers. The panels have looping connections, which render the fence flexible in all directions.

Claim.—The combination of the pickets *a*, the stringers *c*, bracing-wires *i*, and flexible loops *e*, substantially as shown and described.

144,642.—Combined Door-Securer and Key-Ring.—Jeremiah P. Tuck, Houlton, Me. Application filed February 27, 1873.

A single piece of steel is formed into a straight round shank, with two outwardly-projecting spurs at one end, while the other or free end, gradually diminishing in thickness, is bent into a loop-spring or ring, thus serving both as a portable door-securer and an ordinary key-ring combined together.

Claim.—As an article of manufacture, the implement described, constructed of a single piece of steel, consisting of the stem A with spurs B C and the loop D, gradually diminishing in thickness and forming a spring at its free end, as shown, and for the purposes set forth.

144,643.—Telegraph Apparatus for Automatic Signaling.—William Unger, Newark, N. J., and Hamilton E. Towle, New York, N. Y. Application filed August 15, 1873.

District alarm-telegraph signal-box, in which a reciprocating circuit-breaker is used, attached to a stem. Depression of a stem winds or compresses a spring, furnishing power for return movement. Circuit-breaker depressed is held by a detent released manually or by the closing of a circuit through an electro-magnet placed in a local circuit for the purpose of automatically giving signals for fire or burglars.

Claim.—1. In telegraph apparatus for automatic signaling, the combination of a reciprocating circuit-breaker with a detent to hold and release the movable reciprocating part of the breaker, and a spring or weight to move the same, for the purpose of giving signals, substantially as described.

2. In telegraph-machines for automatic signaling, the combination of two or more reciprocating circuit-breakers with a switch-key, by which any one of the circuit breakers may be brought into action independently of the other, substantially as described.

3. The stem or key, for the double purpose of setting the circuit-breaking apparatus and of testing the line-current which operates the automatic telegraphic machine, substantially in the manner described.

4. The electro-magnet, arranged substantially as described, for the double purpose of testing the current which operates the machine and for unlocking the detent which holds the circuit-breaker whenever the circuit of a local battery is affected by the opening of a window or door or by heat.

5. The switch or conductor, connected to one end of the main circuit, upon which a point connected and moving with the circuit-breaker slides while the circuit-breaker is being restored to its starting-point, and which is insulated from contact with the circuit-breaker while the instrument is making signals, for the purpose of maintaining continuity through the main line while the movable part of the circuit-breaker is being restored to its starting-point, substantially as described.

144,644.—Steaming and Drying Apparatus for Shaping Pantaloons.—Ellen B. Viets, Boston, Mass. Application filed September 22, 1873.

The pantaloons are placed upon a stretcher or former, and then put into the steam-chamber. When they are to be dried the hot air is admitted into the drying-chamber.

Claim.—1. The combination of the steam-generator A and the steaming and drying chambers C E, constructed, arranged, and applied together substantially as set forth.

2. The combination of a former, F, constructed substantially as described, and the steaming and drying chambers C E, substantially as and for the purpose set forth.

3. The combination of the former F, the steaming and drying chambers C E, and the steam-generator A, all being arranged and applied together substantially in manner and for the purpose as specified.

144,645.—Vegetable-Cutter.—John R. Wharry, Moundsville, W. Va. Application filed October 7, 1873.

The cutting-knife is stationary, while the bed-pieces are pivoted at their outer ends, and adjusted at their inner ends by eccentrics to regulate the thickness of cut. The box in which the vegetables are placed is reciprocated by hand, which at the same time presses down the vegetables.

Claim.—The frame *a*, box *c*, follower *i l o n*, pivoted bottom pieces *e*, knife *d*, and cams *g*, the parts being arranged and combined to operate substantially as shown and described.

144,646.—Soda-Water Draft-Tube.—Otto Zwietusch, Milwaukee, Wis. Application filed May 5, 1873.

The main valve is operated by a stem inclosing a second valve-stem provided to operate the valve governing the lesser orifice, said valve having its seat within the main valve, thus permitting of the opening or closing separately of either the main or lesser exit-pipe, or of their united action.

Claim.—The valve *n*, having its seat over the opening *o* in the valve D, and having a positive motion from the screw *g*, in combination with the valve D and screw *c*, so that I am enabled either to open or close the viaducts *o p* singly or both together, as set forth.

144,647.—Loom-Temple.—Nicholas L. Allen and Edward S. Stimpson, Milford, Mass. Application filed June 9, 1873.

The temple is provided with two rollers, revolving, independently of each other, on a common shaft or on separate shafts, and of the same or different diameters, so arranged that their peripheries are not in the same plane, by which means, in combination with a shoulder on the trough, the cloth is crimped and held so that it cannot be drawn out laterally. The inner end of the roller-shaft has a flanged screw-head which fits the interior of the cap and tends to support it. The outer end piece, into which the roller-shaft is screwed, is slotted, and a clamp-screw so placed as to hold the shaft in position.

Claim.—1. A temple provided with two cylindrical independent rollers, A A′, the peripheries of which are in different planes, in combination with the trough C, adapted to such rollers, and having a shoulder, substantially as and for the purposes set forth.

2. In a temple, the combination of shaft B with the supporting-piece H, the latter having a slot, E, and clamp-screw F.

3. The pin or roller-shaft of a temple, provided with a screw-head and semicircular flange, *b′*, rigidly affixed thereto, for the purposes and substantially as shown and described.

144,648.—Combined Picture Frame and Exhibiter.—Benjamin Antan, Fitchville, Ohio. Application filed October 18, 1873.

Claim.—As a new article of manufacture, a combined picture frame and exhibiter, for the exhibition of a series of pictures, consisting of the combination of frame A, brackets B B′, picture-rollers C C′, guide-rollers E, and strip D, on which a series of pictures is mounted, all arranged substantially as and for the purpose described.

144,649.—Hemmer for Sewing-Machines.—William Lee Apthorp, Tallahassee, Fla. Application filed September 27, 1873.

The adjustable scroll allows for turning hems of any desired width, and the edge-turning scroll is supported at the ends of a wire frame, which also serves to guide the adjustable scroll.

Claim.—The scroll A, formed as described, adjustable scroll B, the frame C F G, and attaching-plate I, combined, constructed, and arranged substantially as specified.

144,650.—Heating Apparatus.—William C. Baker, New York, N. Y. Application filed July 3, 1873.

Water flows through the radiator, and can be admitted or shut off at will without interrupting the circulation in the main pipe.

Claim.—A radiator for circulating hot water connected to the primary circulating-pipe by two independent pipes, one at the upper part of such primary circulating-pipe, and the other at a lower level, in combination, with a cock to regulate or stop the secondary circulation in the radiator, substantially as set forth.

144,651.—Toy Gymnast.—Frederick A. Bancker, New York, N. Y. Application filed September 27, 1873.

Claim.—The gymnast A, having pivoted legs and arms, the former with end hook on each foot, and the latter attached to cross-cords B B, in combination with the tubes D and pivoted bars C C, as and for the purpose described.

144,652.—Method of Burning Brick.—Tobias Billesbach, Kearney Junction, Neb. Application filed August 16, 1873.

Fine coal is placed between the layers of brick, and the draft and heat are regulated by plastering the outside of the kiln in successive portions, from the bottom upward, as the burning progresses.

Claim.—The method of burning layers of bricks in a kiln by plastering up successive portions of the sides of the kiln, beginning at the bottom, and continuing it at intervals toward the top as the burning advances, substantially in the manner and for the purpose specified.

144,653.—Plow.—Elijah Bourne, New Iberia, La. Application filed April 17, 1873.

The plow-beam is composed of a plank, to the under side of which is attached a turn-plow, in rear of which are two subsoil-plows, the last subsoil-plow penetrating the earth a little deeper than the first. The forward end of the beam is regulated, as to depth of furrow, by a sliding gage operated from the handles.

Claim.—1. The clevis F, rods H, I, and J, and cross-bars h, *i*, and *j*, in combination with the plank A, frame *e*, thumb-screw G, and plows C, D, and E, substantially as and for the purpose hereinbefore set forth.

2. The movable foot-rest M, having a shoe, *r*, on the lower end, in combination with the plank A, frame *e*, chains *o* and *p*, arms N and O with slot S, slide Q, and pins *t* and T, substantially as and for the purposes hereinbefore set forth.

144,654.—Dumping-Car.—Levi C. Brady, Chambersville, Pa. Application filed March 17, 1873.

Claim.—The lever *i*, attached to the rear end of a dumping-car, one end of the lever being bent to lock the body of the car, and the other projecting beyond its side, the whole adapted for hand or automatic operation, substantially as set forth.

144,655.—Fastener for Meeting Rails of Sashes.—Edward Burstow, Horsham, England. Application filed October 10, 1873.

A hinged piece falls over the space between the two parts of the fastener whenever the lever is turned in proper fastening position. This prevents the passage of a knife from the outside for the purpose of turning back the lever and freeing the window.

Claim.—The hinged plate D, combined, as described, with a sash-fastener to turn down over the opening between the sashes whenever they are locked.

144,656.—Paint-Mill.—RICHARD BYRNE, Brooklyn, assignor to himself and JOSEPH J. MARRIN, New York, N. Y. Application filed June 13, 1873.

Vibrating levers support and hold in position the stationary revolving crushing-rollers above a revolving bed, and permit them to have a vertical play.

Claim.—In a grinding-mill of the kind described, the combination, with the stationary revolving rollers *d*, of the supporting and vibrating arms *c*, pivoted to a suitable frame by bearings *f*, substantially as and for the purpose set forth.

144,657.—Loom-Shuttle.—NATHAN D. CHAPMAN, Rollingsford, N. H., assignor to himself and HORATIO H. WARREN, same place. Application filed November 1, 1873.

To hold the cop securely in place upon the spindle as the shuttle is picked, the spindle is split, and the two parts twisted near the point.

Claim.—A split shuttle-spindle having a twist of a half of a turn or thereabout, near the point for binding the cop, in the manner described.

144,658.—Car-Coupling.—WILLIAM A. COCHRAN, Flat Rock, Ind., assignor to himself and JAMES T. BURCH, same place. Application filed August 4, 1873.

The block D is intended to hold the pin in an upright position, can be changed from one draw-head to another, and is notched at one corner, that it may hold the link in position to enter the opposing draw-head.

Claim.—A draw-head provided with a pin, B, and having mortise E and recess G, in combination with the changeable block D, substantially as and for the purpose described.

144,659.—Game-Table.—ROBERT R. CRAWFORD, Wytheville, Va. Application filed September 6, 1873.

Claim.—An improved game-table formed of the table A B, platforms C, provided with numbered spots at their forward end, the alleys D, receiver E, flanges F, conductor-passage H, and recess I, constructed as described, and arranged to operate, in connection with the pins G and balls J, substantially as herein set forth.

144,660.—Apparatus for Burning Hydrocarbons.—CHARLES H. CUMMING, Tidioute, Pa. Application filed September 20, 1873.

A disk-shaped pan, into which the liquid fuel is fed, is provided with an annular ridge in the center. As the fuel passes over the inner ridge it is caught by the blast admitted through a central orifice, and distributed in the form of spray of combustion.

Claim.—The vessel A, having outer and inner vertical flanges *a b*, the former higher than the latter, and each inclosing separate spaces, through which are respectively forced the liquid fuel and the air or steam, as and for the purpose described.

144,661.—Hypodermic Syringe.—EPHRAIM CUTTER, Woburn, Mass. Application filed October 29, 1873.

The piston is hollow, and connected at its end with a small cannula for perforating the skin. This cannula-point can be unscrewed and inverted within the piston-rod when not in use. A metal cap screws over the open end of the metallic barrel and closes up the entire apparatus, for carrying in the pocket.

Claim.—1. A hypodermic syringe composed of the barrel A, piston B, and tubular piston-rod C, carrying a hollow probe or needle, F, all combined, substantially as described, for the purpose set forth.

2. In combination with the barrel A and probe F, the covering-cap I, applied as shown, for the purpose specified.

144,662.—Butter-Worker.—DANIEL W. DAKE, Beloit, Wis. Application filed June 9, 1873.

Improvement on the patent to the same inventor, No. 134,788, of 1873, in which the wire cloth is substituted by thin blades, which are set in a removable frame beneath the hopper, their edges receiving and separating the butter, when it falls into a vat.

Claim.—The combination and arrangement of the hopper A, presser B, crank C, frame E, and knives F F, in connection with a vat to receive the butter pressed from the hopper, substantially as and for the purposes specified.

144,663.—Pipe-Joint.—JOHN DEMARREST, Mott Haven, N. Y., assignor to himself and JORDAN L. MOTT, same place. Application filed September 20, 1873.

The pipes have corresponding enlargements at their ends, with two annular recesses forming chambers to receive an extension of the inner pipe, and also form a close chamber for the packing.

Claim.—The pipes A E, having corresponding end enlargements, with two annular recesses to form chambers B C, the former to receive extension G, and the latter to form a close chamber for the packing, in the manner set forth, so that the packing will not be exposed to the water or acid, and thus gradually be forced out of its place into the pipe.

144,664.—Spring for Chairs, &c.—WILLIAM T. DOREMUS, New York, N. Y. Application filed August 30, 1873.

A slotted rocking plate is interposed between two rubber blocks having a central standard passing through them, and confined by upper and lower plates, held in position by a suitable nut working on the standard below the lower plate.

Claim.—The combination of slotted rocking plate C, center piece D, elastic blocks H H, and plates G I, as and for the purpose described.

144,665.—Glove.—THOMAS G. FOSTER, Gloversville, N. Y. Application filed October 18, 1873.

The inside pieces of the fingers and thumb turn over at the ends to form re-enforcing pieces upon the back.

Claim.—As a new article of manufacture, a glove having the palm and finger pieces cut in a single piece, when the finger and thumb pieces are made to turn over at the ends, so as to be attached to the back, substantially as shown and described.

144,666.—Machine for Shooting Dough.—OAKLEY B. FULLER, Newark, N. J. Application filed September 13, 1873.

A reservoir has two curved cheeks, with an aperture in the bottom. Between the cheeks are two corrugated rollers turned by gearing and cranks. The aperture has an adjustable jaw.

Claim.—1. The combination of corrugated rollers and curved cheeks, in a machine for forcing dough, arranged and operated substantially as described.

2. The combination of corrugated rollers and curved cheeks, with a throat for forming a sheet of dough, whether the throat or aperture be adjustable or not.

144,667.—Shaving-Mug.—ANDREW J. FURR and WALTER C. KNAUS, Boonsborough, Mo. Application filed October 18, 1873.

A shaving-mug is provided with a lamp for heating the water. A detachable soap-dish covers the mug and rests in the water. The water passes through an opening into a cup on the outside of the mug, in which the brush may be dipped.

Claim.—The combination of the cylinder A, base B, detachable lamp C, cup D, side cup E, side chimney or fine F, and detachable soap-cup G with each other, substantially as herein shown and described.

144,668.—Cotton-Gin.—NICHOLAS W. GADDY, Nichols, S. C. Application filed August 16, 1873.

Auxiliary fingers applied to the ordinary bars, between which the saws revolve, the said auxiliaries being adapted for easy attachment and detachment, and for shifting toward the saws from time as they wear smooth, thus exposing new and sharp edges.

Claim.—The combination of the auxiliary bars, fingers F, and their fastening devices, with the ordinary bars C of the gin, as shown and described, whereby said auxiliary fingers are adapted to be adjusted and detached, as set forth.

144,669.—Hinge for Safe and Vault Doors.—HENRY GROSS, Cincinnati, Ohio, assignor to HALL'S SAFE AND LOCK COMPANY, same place. Application filed August 9, 1873.

One leaf of the hinge is provided with a concave lip or shoulder, against which an eccentric, journaled on the pintle, bears, and when moved by means of an arm or lever attached to it forces the door outward, thereby drawing the interlocking flanges and recesses of the door and jamb apart preparatory to turning the door on its hinges.

Claim.—1. A hinge consisting of the leaf B with its pintle D, and the leaf A provided with the slot K and lip J, in combination with the eccentric C, the said parts being constructed and arranged to operate substantially as described.

2. The lever E provided with the eccentric C, in combination with the lip J on the leaf A, the whole being constructed and arranged to operate as set forth.

144,670.—Permutation-Lock.—HENRY GROSS, Cincinnati, Ohio, assignor to HALL'S SAFE AND LOCK COMPANY, same place. Application filed August 11, 1873.

The bolt is provided with a spring-arm, so arranged that the movement of the bolt in closing the door will cause the spring-arm to throw the tumblers out of combination, and thus avoid the necessity of turning the dial for that purpose.

Claim.—1. A permutation-lock provided with the spring-bolt H, which is forced back by simply shutting the door, and arranged to operate upon the tumblers to throw them out of combination when the door is closed, the construction and combination being substantially such as is herein described.

2. The compound bolt H I with the springs N and P, and the spring-arm L provided with the arm *e*, and the guide or pin M, in combination with one or more rotating tumblers, the said parts being arranged to operate substantially as and for the purpose set forth.

3. The lever R, provided with the incline or cam *e*, in combination with the spring-bolt H, arranged to operate as set forth, whereby the fence is raised out of the notch in the tumblers by the movement of the part H, as described.

144,671.—Mangle.—ERNST GUNDLACH, Hackensack, N. J. Application filed September 20, 1873.

A heavy roller is pivoted eccentrically to standards so as to operate upon a lower roller, which is turned by a crank, while the heavy roller is carried down to bear upon it by a forked handle.

Claim.—The improved mangle for family and other use, consisting of pressure-roller C with eccentric frame E and lever F, and clothes roller D turned by crank G and placed on standards B, which are applied to table A, substantially as and for the purpose described.

144,672.—Button-Hole Stitching Attachment for Sewing-Machines.—CARL A. HANSEN and GEORGE HARLEY, Guelph, Canada. Application filed June 7, 1873.

The axle of the looping-hook is arranged to rise and fall in a slot of the plate. This hook catches the loop of shuttle-thread, and then, through the needle-arm and link, the loop is drawn up through the button-hole. The swinging plate has a cam-grooved passage about a pivoted tongue and a laterally-projecting arm provided with a pin that enters a slot in a rocking lever, and as the cam-plate is vibrated through a pin projecting from the needle-bar, and which enters the cam-groove, this rocking lever is caused to reciprocate the pusher, which engages the shuttle-thread brought up by the looping-hook and passes it under the path of the needle.

Claim.—1. The mechanism for operating the pusher, comprising the angle-plate K attached to the needle-bar, the stud-pin on the angle-bar, the swinging cam-plate C, tongue G, spring M, arm Q, and rock-lever T on the frame A, when constructed and combined substantially as specified.

2. The looping-hook stock arranged in the slot *y* of plate A, and provided with the trip holding-arm *c'* on the frame A, and connected, by the arm *c'* and link *b'*, with the angle-plate K on the needle-bar, substantially as specified.

3. The cam-plate C, provided with arm *c'*, bar *d'*, springs N, and projection P, for releasing the hook-stock X, in the manner described.

4. The combination, as set forth, of arm *f'* of the hook-stock with arm A of bar *d'*, for turning the hook.

144,673.—Inking Apparatus.—ISAAC HART, Cincinnati, Ohio. Application filed July 2, 1873.

The sides of the fountain are slit and bent in near the roller to form end or side scrapers for the same.

Claim.—In combination with the ink-roller G, the walls F, slit as at *f'*, and said wall, at one side of said slit, bent inward, as at *f'*, to form scrapers for the ends of said rollers G.

144,674.—Blackboard-Rubber.—PEMBERTON B. HORTON, San Francisco, Cal. Application filed June 21, 1872.

Claim.—As a new article of manufacture, a blackboard-rubber, having the rubbing surface composed of one or more thicknesses of felt, *c*, secured to a leather or other flexible backing, A, substantially as specified.

144,675.—Fire-Place.—WILLIAM HOYLAND, Newcastle, Pa. Application filed July 19, 1873.

Claim.—The top-grooved base A, flanged side plates B B, and face-plates E, combined, as described, to receive rotary basket-grate G, divided by a partition, J.

144,676.—Stove-Damper.—HOSEA H. HUNTLEY, Quincy, Ill., assignor to COMSTOCK, CASTLE & CO., same place. Application filed June 24, 1873.

The damper is operated by means of a horizontally-moving rod, to which is secured a slotted plate that embraces a pin projecting from the end of the damper.

Claim.—The rod working horizontally, and placed as shown, and provided with a slotted plate for operating a damper-door, substantially in the manner described and set forth.

144,677.—Postal Card.—HENRY M. JOHNSTON, New York, N. Y. Application filed May 16, 1873.

Enameled with glue and Kremnitz white and coated with sulphate of alumina, chloride of sodium, biborate of soda, chloride of ammonium, and water. The chemical action between these compounds and the deposit from a metallic pencil renders the writing indelible.

Claim.—A postal card covered with the compounds herein described, or their equivalents, so that a mark or writing with a metallic pencil will be permanently fixed, as set forth.

144,678.—Treating Paper and Card-Board to Fix Marks by Metallic Pencils.—HENRY M. JOHNSTON, New York, N. Y. Application filed May 16, 1873.

Two compositions are used, one of glue, Kremnitz white, and coloring matter; the other of sulphate of alumina, chloride of ammonium, chloride of sodium, and borax. The writing or mark is made by a pencil of lead and bismuth, or lead and antimony.

Claim.—1. The compounds herein described, or their chemical equivalents, for coating paper so as to fix upon it marks made by a metallic pencil, substantially as set forth.

2. The process herein described for treating paper, the same consisting in fixing upon its surface chemical compounds or mordants, so as to bring out and fix upon it metallic marks, substantially as set forth.

3. The new article of manufacture, paper having upon its surface a coating or mordant, substantially such as herein described.

144,679.—Excavator.—DANIEL JUDD, Hinsdale, N. Y. Application filed October 29, 1873.

An improvement upon Patent No. 56,229 of 1866, (July 10.) The depth of the cut is regulated by adjustable supporting-chains, the lower ends of which are attached to brackets, which also serve as stops to the scoop in its revolution and as rests for the ends of the levers *d*, by which the scoop is tilted. The frame which supports the scoop is strengthened by truss-rods and straining-posts.

Claim.—1. The combination of the excavator-scoops E with the beams A, under-braces D, stays D', and fulcrum-board *a*, substantially in the manner and for the purpose described.

2. The combination of the suspending and adjusting chains G, levers *d*, and scoop E, substantially as and for the purpose set forth.

3. The combination of the scoop E, levers *d*, chains G and *l*, and the windlass mechanism, arranged as described, all substantially as and for the purpose set forth.

4. The brackets F, constructed to serve as stops to the scoop in its rotation, in combination with the lever-latch *j* and stop *i*, substantially as and for the purpose described.

144,680.—Tap, Plug, and Faucet Connection.—JOHN F. KANE, San Francisco, Cal., assignor of one-half his right to SAMUEL GUTHRIE. Application filed July 2, 1873.

Claim.—The combination of the bushing C with an internal thread or screw, and the projection *d d* on the outer end pressing against the packing in the recessed lock-nut B, the hollow plug D with an external thread or screw working into the thread of the bushing, and the notched end to receive the forked end of the faucet with the perforations H H, the recessed lock-nut B, forming as it does a combined lock-nut and stuffing-box, to prevent leakage, and the forked-ended faucet A, substantially as described, and for the purposes herein set forth.

144,681.—Car-Brake.—MARTIN KARG, Albany, N. Y., assignor to himself and MICHAEL HABER, same place. Application filed January 10, 1871.

Claim.—1. The combination of the stop E, attached to the truck or car, with the arms *f f*, attached to the wheels C C', connecting the coiled spring D, substantially as and for the purpose set forth.

3. The combination of the stop E, secured to the truck or car, with the arms *f f*, attached to the wheels C C', containing the coiled spring D, axle B, and clutches *b b'* and *a a'*, when all are arranged substantially as and for the purpose set forth.

144,682.—Furnace for Evaporating Alkaline Solutions, &c.—MORRIS L. KEEN, Jersey City, N. J., assignor, by mesne assignments, to MARY E. KEEN, same place. Application filed March 15, 1873.

Intended more especially for the evaporation of waste alkaline liquors from paper manufacture. The revolving section is for concentrating very weak liquids, thence transferred to the upper section of the reverberatory, and finally to the intermediate or drying and calcining chamber.

Claim.—1. In combination with the reverberatory evaporating-furnace, constructed, arranged, and operating substantially as herein described, the water sole or hearth composed of two metallic bottoms, as and for the purpose described and represented.

2. The combination of the reverberatory or evaporating furnace with a water sole or hearth, having water retained and circulating in the space between two metallic bottoms, and the water and steam drum connected with said water-space, as and for the purpose described and represented.

3. In combination with the reverberatory or evaporating furnace, having a double-jacket evaporating-pan covering its top, the water and steam drum arranged to operate in connection therewith, as and for the purpose described and represented.

144,683.—Harvester-Rake.—EDWARD LIPPOLDT, Brighton, Ill. Application filed September 6, 1873.

The rake-arm is jointed near its outer end, and flexibly held in position by a wing and retaining-spring, whereby it is permitted to yield to any unusual obstruction.

Claim.—A rake-arm formed of two parts, H and I, connected together by the hinge J, and having a spring, M, and spring-bar K, and wing B, arranged substantially as and for the purposes described.

144,684.—Storm-Window Fastening.—ADONIRAM J. LOVEJOY, Augusta, Me., assignor of one-half his right to MARSHALL WHITMED, same place. Application filed April 26, 1873.

Metallic fastenings with sloping faces for the ready attachment and detachment of exterior or storm windows.

Claim.—The storm-window fastenings E and F, having the reciprocally-beveled bearing-faces *d*, substantially as specified.

144,685.—Machine for Disintegrating Fabrics.—MOSES MARSHALL, Lowell, Mass., assignor to himself and DAVID LANE, same place. Application filed July 19, 1873.

The material is fed on an endless carrier to the machine, through which it passes, and in its passage the long unbroken threads are untwisted and picked apart; finally conveyed away from machine in long loose fibers. The waste falls into chambers below the main cylinders, which open into a central receiving-chamber.

Claim.—1. The combination of the feeding-aprons B, one or more delivery-rollers, C, two main toothed cylinders, E E, their workers and strippers F F F F G G, grates I I I I, feed-rollers M N, receiving toothed rollers L L, and rotary brush O, all arranged and operated, or provided with operative mechanism, substantially as specified.

2. The three chambers H H P, arranged and communicating as described, in combination with the grates I, the two series of

workers and strippers F G, the main and auxiliary toothed cylinders E C L, the feed-rollers M N, and apron B, and the rotary brush O, all arranged and provided with operating mechanism, substantially as specified.

144,686.—Water-Gage for Boilers.—CHARLES G. MARTIN and BENAJAH M. MARTIN, New York, N. Y. Application filed August 12, 1873.

The steam-pipe of a water-gage has an annular tubular steam-way, which conducts the steam around the gage-tube to a valve at the front, and is all cast in one piece.

Claim.—The metallic connection for the glass tube, composed of the tubular socket *c*, tube *k*, body *l*, and projection *o* for the gland, all cast in one piece with an annular tubular steam-way, *m*, and the tubular socket *e*, in combination with the valve *n*, and the opening in the socket forming the seat for said valve, substantially as and for the purposes set forth.

144,687.—Overflow-Alarm.—THOMAS MAYES, Albany, N. Y. Application filed July 5, 1873.

A tilting pan with a counterbalancing-arm is fulcrumed near its edge. The drip from an overflowing vessel falling into the pan causes it to tilt, and the counterbalancing-arm, rising, releases an alarm.

Claim.—The tilting pan H, fulcrumed and projecting beneath a drip-spout, combined with the catch C, lever B, and alarm A, as and for the purpose described.

144,688.—Spring Bed-Bottom.—WILLIAM C. MCGILL, Cincinnati, Ohio. Application filed August 11, 1873.

Side pieces of a supporting frame are laterally connected near each end by a round wooden bar, around which are loosely bent the ends of flat parabolic springs that support slats attached to their upper ends.

Claim.—1. The supplemental slat E, attached permanently to, or capable of a longitudinal sliding movement upon, the main slat D, substantially as set forth, for the purposes specified.

2. In combination with the cylindrical cross-bars B, springs C, and slats D, the frames A, arranged to operate substantially as herein shown and described.

144,689.—Corset-Clasp.—JAMES P. MACLEAN, Brooklyn, N. Y. Application filed March 10, 1873.

The corset clasp is made of wire bent into a zigzag spring, the fastening hooks and loops being made all in one with the body of the clasp. A strip of additional wire is interwoven with the finer wire to strengthen it.

Claim.—1. The wire busk or clasp A A', provided with hooks and eyes 1 2 3 4, forming integral parts of the same, substantially as and for the purpose set forth.

2. In combination with the clasp, constructed substantially as described, the strengthening-strip *s*, arranged as set forth.

144,690.—Fire-Extinguishing Water-Pipe Attachment for Buildings.—THOMAS MILLER, New York, N. Y. Application filed May 24, 1873.

Claim.—The standing pipe of a fire-extinguishing attachment to buildings, provided with climbing-pins J, and thus made available for a fire-escape, substantially as specified.

144,691.—Seaming-Machine.—ALFRED S. MUNGER, Brooklyn, N. Y., assignor to EDWARD T. COVELL, New Bedford, Mass. Application filed August 16, 1873.

Claim.—1. In a machine for closing the seams of metallic cans by means of jaws closing on anvil-plates supporting the can, as described, compressing-jaws, pivoted and normally tilted with reference to the can, substantially as shown and specified, so that each jaw, in closing on the seam, shall first make contact at one of its ends with the can, and then, by the act of further closing, be tilted so as to bring the acting surface gradually and progressively in contact with the same, as set forth.

2. The pivoted stationary and reciprocating compressing-jaws, and the springs for tilting the same with reference to the can, in combination with the yielding or adjustable anvil-plates, substantially as shown and set forth.

144,692.—Valve.—CHARLES F. MURDOCK, Detroit, Mich. Application filed November 3, 1873.

The valve-carriage is provided with lips for the retention of the valve-plates. Said plates are forced to their seats by a brace consisting of two spherical projections fitting into corresponding sockets in the valve-plates, and provided with a lip and central aperture, into which the taper point of the valve-stem projects and passes.

Claim.—1. The carriage C, having lips *b b*, in combination with the plates B and D, constructed as described, and arranged to be operated within a valve-case, as herein set forth.

2. The plates B and D, in combination with the brace O, the parts being connected by the ball-and-socket joints, substantially as described.

3. The brace O, provided with the lip *o*, in combination with the taper point *f* of the stem E, the said parts being arranged to operate as herein described.

4. In a slide stop-valve, a circular valve-plate provided with ratchet-teeth, and a pawl arranged to engage therewith when the valve is moved, whereby the plate has imparted to it a rotary motion to prevent unequal wear, substantially as described.

144,693.—Machine for Nicking and Shaving Screw-Blanks.—EDWARD NUGENT and JOHN FANNING, Brooklyn, N. Y. Application filed October 29, 1873.

The carrying-disk Q, provided with longitudinal depressions, in which the blanks rest, is intermittently rotated to feed two blanks—one to a cutter for finishing the head, and the other to a nicking-saw. One end of the shaft on which the disk is situated is supported in a frame, L, that is oscillated by a cam, Q', on a sliding bar, F, to grip the blank to be nicked against a rest below.

Claim.—1. The combination of the oscillating frame L, sliding bar F, shaft N, carrier-disk Q, guide *q'*, and stationary rest *t*, operating substantially as described.

2. The intermittent rotary oscillating disk Q and guide *q'*, in combination with the rotary shaft A, carrying the jaws *h h*, operated by the sliding spindle *f*, and the cutter *k*, operating to shave the head of the blank, substantially as and for the purpose set forth.

3. The combination of the oscillating frame L, sliding bar F, shaft N, disk Q, guide *q'*, stationary rest *t*, with a nicking-saw, substantially as and for the purpose set forth.

4. The intermittently rotary oscillating disk Q and guide *q'*, in combination with the nicking-saw *d*, shaving-cutter *k*, and a chuck for revolving the blank, substantially as and for the purpose set forth.

5. The frame *f*, carrying the saw-shaft T', and oscillated on the revolving shaft X by means of the connecting-rod *w'*, rod *r'* on the shaft *n*, arm *n'*, and cam *r*, substantially as and for the purpose set forth.

144,694.—Draw-Bar in Draft-Equalizers for Wagons.—JAMES M. ORPUT, Malta, assignor of one-half his right to HENRY SAFFORD, South Grove, Ill. Application filed April 28, 1873.

Improvement in patent No. 132,725. The arms of the draw-bar are connected with the ends of the axle of the wagon by means of chains, to equalize the draft.

Claim.—1. The draw-bar A, having the arms A, slots *b*, and swell *d*, substantially as and for the purposes herein set forth.

2. The curved arms *e e*, formed on the rear end of the draw-bar A, in combination with the arms or T-head *f*, formed on the rear end of the hammer-strap D, as and for the purposes herein set forth.

144,695.—Clip for Wagon-Axle Skeins.—JAMES M. ORPUT, Malta, assignor of one-half his right to HENRY SAFFORD, South Grove, Ill. Application filed April 28, 1873.

Claim.—The clip consisting of the two equal-beveled pieces A A, forming a tapering band, and having straight ears B B, curved ears C C, and link D, adapted to be fastened by bolts *a b* on the thimble-skein of a wagon-axle, substantially as and for the purposes herein set forth.

144,696.—Distributer for Extinguishing Fires.—GILBERT J. ORR, New York, N. Y. Application filed November 1, 1873.

Compound reaction revolving nozzles are arranged to rotate around their own axes, and at the same time to revolve around the stand-pipe by connecting gear-wheels, thus scattering the water in all directions.

Claim.—1. A revolving nozzle connected to a stand-pipe, and acting to scatter the water in all directions by the compound curved path described by the movement of the nozzle, substantially as set forth.

2. Two pairs of reactionary nozzles connected to a supply-pipe and revolving around the same by the action of the connecting gear-wheels, substantially as set forth.

144,697.—Middlings-Purifier.—GEORGE PARKER, Poughkeepsie, N. Y. Application filed November 1, 1873.

Feeding-cone distributes middlings evenly on head of upper shaker. Light substances blown out at end of machine.

Claim.—The funnel B, feeding-cone C, two or more inclined shaking sieves, G M, one or more return-chutes, L, cams I, fan K, conveyer O, and separators Q R S, all combined and arranged in a middlings-purifier, substantially as specified.

144,698.—Tea-Kettle.—NATHANIEL PLYMPTON, Boston, Mass. Application filed June 12, 1873.

Claim.—1. In the tea-pot or water-kettle, as described, the stationary handle provided with a single cover-guard, F, arranged to project from it and over the cover, in manner and for the purpose as set forth, in combination with such cover, separate from and made so as to rest upon and extend into the body, as represented and described.

2. The stand provided with the circular segmental top and pivotal chord, as described, and with the hook bar, arranged as set forth, in combination with the base of the kettle notched to receive the pivotal chord, as shown and described.

144,699.—Method of Fastening Artificial Teeth.—GEORGE F. C. REESE, Brooklyn, E. D., N. Y., assignor of one-half his right to ROBERT R. SINCLAIR, New York city. Application filed September 19, 1873.

Soft-metal rivets are inserted through holes punched in the aluminum plate and then headed down. Upon these rivet-heads the teeth can be easily and firmly secured.

Claim.—The fusible metal rivets inserted and riveted in the base-plate to aid in fastening the teeth thereto, all as described.

144,700.—Stop-Cock.—LOUIS C. RODIER and FRANCIS G. BATES, Springfield, Mass. Application filed March 7, 1873.

Claim.—The valve E, arranged in a chamber transversely to the water-way, constructed and combined with a rack, F, and means for imparting a transverse movement to the valve, so that, in the movement of the valve, a combined transverse and rotary movement is imparted thereto, substantially as set forth.

144,701.—Hand Corn-Planter.—ELI ROGERS, Rochester, Ind. Application filed June 21, 1873.

The pivoted jaw of the planter is held closed by a spring, and is opened by means of a cam-shaped hook, which engages with a crank actuated, through a connecting-rod, by a hand-lever pivoted to the handle. The cap, having the jaws, is removably held to the lower end of the planter by spring-catches.

Claim.—1. The cam-hook P on the plate O, and the crank-shaft Q, combined, as described, with the hand mechanism, as and for the purpose described.

2. The springs M M, combined with cap L, to hold the latter detachably in position on the body of the planter, as specified.

144,702.—Safety-Pocket Attachment.—RICHARD L. RUSSELL, Brooklyn, N. Y., assignor to JOSEPH W. ROBBINS, same place. Application filed November 1, 1873.

The watch-chain passes through the notch in the plates, and the hook, actuated by the spring, closes over it, thereby preventing its withdrawal.

Claim.—The combination of one or more notched plates, A F, a hook, B, and a spring, C, said plates being arranged for fastening onto or within the lid of a pocket, and the said hook arranged to fasten a chain in the notch, all substantially as specified.

144,703.—Pantaloons-Stretcher.—JOHN D. RYAN, New York, N. Y. Application filed September 13, 1873.

The pantaloons are fixed at the rings, and then stretched by means of the screw.

Claim.—1. The pantaloons-stretcher, consisting of the rods A, provided with the open spring-ring C, adjustable rods D, sleeves E, and spring-catches F, the three-armed block B, the swiveled screw G, nut H, rod I, open spring-ring J, and curved adjustable brace-rod K, said parts being constructed and combined substantially as herein shown and described.

2. The detached open spring-rings L, in combination with the upper parts of the rods A of the pantaloons-stretcher, substantially as herein shown and described, and for the purpose set forth.

144,704.—Carriage-Top.—HENRY SAYLER, St. Paris, Ohio. Application filed October 21, 1873.

Claim.—The rod B, provided with the lever C, and having the braces E rigidly attached thereto, in combination with the shifting-rail A of a carriage top, all constructed to operate substantially as described.

144,705.—Clothes-Wringer.—JOHN SEAMAN, Groton, N. Y. Application filed May 17, 1873.

The journals of the upper roll, with boxes, hold in slots in the sides or frame by an elliptic spring attached to the cross-bar on top of the frame. Each journal has a gear-wheel, and on the alternate ends of each is a projecting pivoted gear meshing into a wheel with extended teeth.

Claim.—The combination, with rolls D E, of the gear-wheels H I J K, and crank L, when all are constructed and arranged substantially as and for the purpose described.

144,706.—Hemmer for Sewing-Machines.—LOUIS SEXAUER, Brooklyn, assignor to himself and JOHN B. CHRISTOFFEL, Brooklyn, E. D., N. Y. Application filed August 9, 1873.

The end of one plate rests on the presser-foot, and the other plate, carried by this first plate, is adjustable by means of the screw, so as to press the fabric passing between the edge of the presser-foot and the edge-gage.

Claim.—The plates M, N, and screw P, constructed, combined, and arranged in a hemmer, substantially as and for the purpose described.

144,707.—Plow.—WILLIAM T. SHIPP, CHARLES J. PETERSON, and ROBASON L. MCLURD, Brevard Station, N. C. Application filed September 13, 1873.

The foot of the plow is provided with a shoe, which protects the land-side and bottom. The shovel has one slotted arm rigidly secured to its back, arranged to slide up and down between the double standards, for vertical adjustment. It also rests upon a second detached arm adjustable in the standards.

Claim.—1. As an improvement in plows, the combination of beam A, standards B, which are adjustable by key *b*, land-side C, shoe F, and detachable share E, substantially as and for the purpose described.

2. In combination with standard-bars B and head C', the top support G, sliding adjustably between the bars and share E, fastened by wedges d^1 d^2, as described.

3. The top adjustable support G, having wider head with recess *e'*, and slotted arm d^2, as specified.

144,708.—Corn-Planter.—LEVI SIPE, Keeslestown, Va., assignor of one-half his right to GEORGE R. EASTHAM, same place. Application filed October 23, 1873.

A segment of a wheel, having teeth, is centrally pivoted, and a small wheel hung to supports in a recess of the segment. As the machine traverses the field the small "ground-wheel" strikes each furrow (previously marked) and gives the segment a turn, pushing back the seed-slides by a spur. Teeth upon the segment serve to complete the revolution by engaging with the ground, when the operation is repeated at the next and each succeeding furrow.

Claim.—1. The combination of the ground-wheel E and toothed half-wheel C, substantially as and for the purpose herein set forth.

2. In combination with the seed-slides and retraction spring, the wheel E, and toothed half-wheel C, as and for the purpose herein set forth.

144,709.—Seat for Vehicles.—URIAH C. SNYDER, Richmond township, Huron county, Ohio, assignor of one-half his right to JOSEPH H. BEELMAN, same place. Application filed October 4, 1873.

Claim.—1. The forked arms B, provided with friction-rollers *f*, in combination with slotted guide-plates *g*, substantially as described.

2. The slotted guide-plates *g* secured to the seat, and flanged for the purpose of receiving the T-ends of the sliding arms, substantially as described.

3. The combination, in a tilting spring-seat, of the springs *e*, sliding arms B, and slotted guide-plates *g*, substantially as described.

144,710.—Grain-Drier.—ASAHEL SOPER, New York, N. Y. Application filed October 20, 1873.

The grain is dried by steam or hot air, which is conducted through it in triangular pipes. The moist air is exhausted from the spaces underneath the pipes into an adjoining chamber.

Claim.—The combination, in a grain-drier, of a large number of triangular steam-pipes, B, constructed and arranged as described, with the exhaust-chambers C D and the apertures *g* through the walls *a b* immediately underneath the bases of the said steam-pipes, all constructed, arranged, and operating substantially as and for the purpose specified.

144,711.—Corn-Planter.—ANDREW SPRINGSTEEN, Oquawka, Ill. Application filed February 21, 1873.

The frame is supported upon one bearing-wheel and a revolving cutter. A seed-box is placed contiguous to the bearing-wheel and the feed-roller, and its sweep receives motion from a series of cams upon the wheel.

Claim.—1. The slide J, reciprocating over the upper side of feed-roll D, thus serving both as a stirrer and a cut-off, in the manner set forth.

2. The wings V V, inclined upwardly in front, one placed on each side and at the lower end of piece C, as and for the purpose specified.

144,712.—Coating Tacks, Nails, and Screws, to Prevent Corrosion, and to Color Them.—GEORGE STARKS, Taunton, Mass., assignor to THE ALBERT FIELD TACK COMPANY, same place. Application filed September 25, 1873.

First dip them, when hot, into a composition consisting of lamp-black, boiled oil, and naphtha, thoroughly mixed and incorporated together; after which they are strained and placed in an oven and subjected to heat, which causes the coating to penetrate and bake upon their exterior. The tacks are then given a second coating of the composition, adding thereto japan; after which they are removed therefrom, and allowed to strain, and subjected to heat, when a hard shell or enamel is formed.

Claim.—1. As a new article of manufacture, the process herein described for treating tacks, nails, and screws, to prevent oxidation.

2. As a new article of manufacture, a tack, screw, or nail coated as above described, to prevent oxidation.

144,713.—Measuring-Can.—ARTHUR W. TICE and NATHAN F. SMALLEY, Boston, Mass. Application filed October 1, 1873.

A measuring-can, supported on legs, has an outlet-valve in its bottom, from which valve a stem extends up through the top of the can, and has a shoulder by which it is supported on a standard when elevated to open the valve.

Claim.—The tunnel or can, as constructed, with the valve-stem, its guide-arm, and stops arranged together and with the body and cover, in manner as described and represented.

144,714.—Ore-Stamp Feeder.—JAMES TULLOCK, Jamestown, Cal. Application filed September 2, 1873.

When the stamp falls a collar thereon strikes the end of a lever, and, through a connecting-rod, operates a rock-shaft so as to draw the tray back. When the stamp rises the tray will swing forward until a lug on the bottom strikes a bar or other object, producing a sudden check, which loosens and throws forward the contents of the tray.

Claim.—1. The oscillating tray B, supported by the links C, and operated by the shaft D, with its rocker-arm E and crank G, together with the lever I, the whole operated from the stem J by means of the adjustable collar K, substantially as and for the purpose described.

2. In combination with the oscillating tray B, operated as herein shown, the post or bar L for giving a concussive or abrupt stop to the tray, substantially as and for the purpose described.

144,715.—Binder's Attachment for Harvesters.—THOMAS URDAHL, Cross Plains, assignor to SIMEON MILLS, Madison, Wis.—Case B. Application filed August 22, 1872.

The cut grain that falls upon the platform is carried by a sweep-rake to the receiver. Said receiver, binder's stand, and

table are supported upon a carriage which is hinged to the platform.

Claim.—In combination with the grain-platform, the binding-carriage hinged thereto, consisting of the gavel-box or receiver A, having the binders' stands D secured to its opposite sides, the binding-table E secured upon its rear end, and the supporting-wheel also attached to said end, substantially as shown and described.

144,716.—Billiard-Table.—SAMUEL H. WALDIE, Belmont, Tex. Application filed August 4, 1873.

The end cushion-rail is double, the inner one taking out and uncovering the pockets of the bagatelle-table, and at the same time exposing, upon the under side of said inner rail, numbers to correspond with the bagatelle-pockets.

Claim.—1. In combination with billiard-table A, having apertures *d* and outer bar C, the false bar B with lugs *a*, substantially as and for the purpose described.

2. The outer bar C having horizontal and vertical recesses *b'* for adjusting false bar as billiard-cushion or head-board, as specified.

144,717.—Road-Scraper.—JAMES W. WESTON, Windsor, Ill., assignor to TUBBEE M. JACKSON, same place. Application filed October 25, 1873.

The wheel nearest the point of draft is pivoted to the long lever F, and is capable of vertical adjustment, and when the lever is depressed, bringing the wheel in contact with the ground, the scraper can be readily turned. The wheel on the rear of the scraper is also capable of adjustment, and when depressed, in connection with the front wheel, the scraper is raised and supported on the wheels. The wheel P has a sharp edge, and is pivoted to a lever, R. The sharp edge engages with the ground, and by moving the lever the machine is guided in its direction.

Claim.—An improved grader, composed of the mold-board A, land-side B, point C, cross-beams D, steel plate E, lever F provided with a caster-wheel, H I, and locking-bar K, the levers L M, and caster-wheel N O, the guide-wheel P Q, and lever or handle R, constructed and arranged to operate in connection with each other, substantially as herein shown and described.

144,718.—Skate.—JAMES A. WHEELPLEY, Dartmouth, Nova Scotia. Application filed June 28, 1873.

The toe and front heel-clamps ride on a horizontal backward projection of the skate-iron, and are fastened at any point by a push-nut pressing the lower part of the skate-iron. The back heel-clamp is pivoted, and works in combination with a horizontal swinging lock-lever.

Claim.—1. A hand-nut, L, placed on the lower end of the clamp, and arranged to fasten it down to the edge of the runner, in the manner described.

2. The semicircular brace N, held in a slot, O, of the runner, and made fast to the sole or heel-plate, as and for the purpose specified.

3. A vibrating heel-piece, H, clamped by means of a pendent shank and a cam-lever, as set forth.

4. A lever, Q, having slot and a projecting point, in combination with the shank of the heel-piece, provided with an incline, to operate as and for the purpose set forth.

144,719.—Carbonic-Acid-Gas Generator.—FRIEDERICK W. WIESENBROCK, New York, N. Y. Application filed October 11, 1873.

The generator is hung upon gudgeons, so that it can be oscillated, and is provided with bars crossing the interior, which prevent the marble-dust from caking. Above and connected with the generator is a dome containing a pivoted acid-chamber, the equalizing-pipe passing to the generator through the gudgeon.

Claim.—1. The arrangement of the gas-pipe I in connection with the dome F and hollow journal of gudgeon of the oscillating generator A, substantially as herein shown and described.

2. The combination of cross-bars E with the oscillating gas-generator A, substantially as herein shown and described.

144,720.—Ice-House.—ALFRED WILBUR, Cedar City, Mo. Application filed September 27, 1873.

The basement is made of brick or stone, and the floor is made double and filled with non-conducting material.

Claim.—1. The chamber E, having a floor, F, divided into tanks or water-reservoirs, substantially as shown and described.

2. The tanks or reservoirs G I L, partition-walls H, and spigots J, as and for the purposes described.

144,721.—Thrashing-Machine.—JOSEPH M. WILDERS, Croxton-Keyrial, England, assignor of one-half his right to WILLIAM SILVERWOOD, Baltimore, Md. Application filed September 4, 1873.

A feeding apparatus consisting of toothed bars, supported at their receiving ends upon links, and at their discharging ends upon cranks which operate them, and also give motion to a series of arms suspended over the discharging ends of the bars for evenly distributing the stalks to the thrashing-cylinder.

Claim.—1. The toothed carrier-boxes C, operated by the joint action of the crank-shaft D and the pivoted coupling-arms E, to give a greater vertical movement to the delivery than the receiving ends of said boxes, as and for the purpose described.

2. The combination, in a thrashing-machine, of an automatically-feeding platform of notched vibrating bars, C F, with an adjustable vibrating regulator, I J, and a thrashing-cylinder, as described.

3. The hinged guide-board N, in combination with the vibrating feeder C and thrashing-cylinder, as described.

4. An automatic grain-feeder for thrashing-machines, having a grain-feeding platform of vibrating notched bars, C F, an adjustable vibrating regulator and evener, I J, an operating crank-shaft D, and hinged guide-board N, the several parts being constructed and arranged for joint operation as described.

144,722.—Rotary Engine.—PETER WORRALL, Sugartown, Pa. Application filed September 6, 1873.

A high and low pressure cylinder with abutments are arranged on one shaft, and combined with segmental pistons fitting in recesses, and having circular heads, and are operated by guiding-crank pins on the journals, which pins strike against stationary cams on the case, and springs draw them to their normal position. The ends of the valves are triangular, and project inward, and are operated by the revolving wheels and springs connected to a lever.

Claim.—1. The cylinders A B, having recessed wheels C K on the same shaft D, and the former exhausting into the latter, in combination with arc sectional pistons E, having the circular head F, constructed and arranged to operate substantially as and for the purpose set forth.

2. The valve *a*, with the triangular ends *a'*, springs *w*, and bar X, arranged in combination with the cylinders A B, as and for the purposes described.

144,723.—Process of Retouching Photographic Negatives.—DAVID H. WRIGHT, Terre Haute, Ind. Application filed September 30, 1873.

Claim.—1. Imparting motion to the negative by means of suitable machinery or devices, so that by holding the retouching-pencil in proper position the retouching is performed by the motion imparted to the negative, substantially as described.

2. The improvement in the process of retouching photographic negatives by imparting motion to the retouching-pencil being held in the hand of the operator on a rest having vibratory motion, substantially as described.

3. The combination of a bar, B, having vibratory motion, with a photograph-easel, C, or hand-rest F, substantially as and for the purposes described.

4. The combination of the bar B, pitman *b*, eccentric *c*, wheels G K, and pulleys *d g*, with the negative-easel C or rest F, substantially as and for the purposes described.

144,724.—Track-Clearer.—ERNESTO ABBIATI, New York, N. Y. Application filed September 12, 1873.

The motion of the car revolves the toothed disk. Vertical plates, which protect the interior mechanism, are reciprocated by an eccentric pulley and toggle-joint levers, throwing off the snow impinging against them.

Claim.—1. The combination of the movable wings F F of a snow-plow with the chain H, pulley *f*, and eccentric pulley *e*, substantially as and for the purpose set forth.

2. The combination of the disk D, having projecting teeth *i i*, with the plow-shaped blades E E and movable wings F, substantially as and for the purpose described.

144,725.—Lawn-Mower.—WILLIAM ALLEN, Worcester, Mass. Application filed October 17, 1871.

The pivoted handle is adjusted in height, and its range of free play limited by set-screws and lugs on the frame.

Claim.—The combination, with the frame A A' and tongue or pole I J, of the adjusting and supporting screws N and lugs *s*, substantially as shown, for the purpose stated.

144,726.—Manufacture of Bessemer-Steel-Converter Tuyeres.—JAMES E. ATWOOD, Pittsburg, Pa. Application filed November 7, 1873.

Claim.—A tuyere for the manufacture of steel by the bessemer process, composed of fire-clay and loam or molder's sand, prepared substantially as described, for securing the vitrification of the tuyere, as specified.

144,727.—Chain Tackle-Block.—SAMUEL D. BACKUS, New York, N. Y. Application filed August 28, 1873.

A guide-roller is pivoted in the block above the sheave. Combined with the block is a supplementary frame carrying a locking-pin, arranged to drop between the guide-roller and sheave and lock the chain whenever in a vertical position. By simply raising the supplementary frame the chain is released.

Claim.—The combination of the arm *d*, stop *c*, roller *e*, and ferrule *f* with the chain and sheave, arranged to operate for the purpose and in the manner substantially as above described.

144,728.—Feather Duster.—CHARLES L. W. BAKER, Camden, N. J., assignor to JOHN L. MASON, same place. Application filed September 16, 1873.

Each tuft of feathers has the ends of its quills doubled over for the reception of the loop of a wire or string, previously passed downward through one of a series of holes in the head.

Claim.—The feather duster, consisting of the feathers B B applied to the back A by bending the quills of the feathers, passing them through perforations F in the back, and securing them by wire or cord D, substantially as and for the purpose set forth.

144,729.—Tire-Tightener.—WILLIAM BELLAIRS and WILLIAM OUGH, Atkinson, Ill. Application filed October 4, 1873.

Claim.—The combination, with the felloes A A and tire B, of the box C, dogs D D, bevel-headed bolt *a*, nut *b*, and catches *d d*, all substantially as and for the purposes set forth.

144,730.—Telegraph-Key.—CHARLES H. BILLINGS and GEORGE W. STOCKLY, Cleveland, Ohio. Application filed July 3, 1873.

Additional contact-points mounted on springs and having beveled faces, to insure good contacts and firm writing.

Claim.—1. The additional contact-points G H, arranged in relation to each other, to co-operate with the hammer and anvil D E of an ordinary telegraph-key, substantially as and for the purpose specified.

2. In a telegraph-key, the contact-points provided with the beveled or rounded faces, substantially as and for the purpose set forth.

3. The combination, with the anvil and lever of a key, of the spring or springs I J, carrying the additional contact-points, substantially as and for the purpose described.

144,731.—Mechanism for Reversing Engines.—GEORGE W. BISHOP, Brooklyn, N. Y. Application filed October 17, 1873.

Claim.—The combination, with a single set of ports for receiving the steam from the chest and discharging it into the cylinder, of passages for carrying the steam directly in the different directions and intermediately-seated cylindrical valve-blocks for directing or permitting the passages of the steam in different directions, the whole constructed and operating substantially in the manner and for the purpose described.

144,732.—Propelling Boats.—JAMES BLACK and GEORGE W. JONES, Philadelphia, Pa. Application filed April 11, 1873.

Claim.—A double hollow rudder, into which water is admitted and forced out again alternately, thereby propelling a boat or vessel, substantially as hereinbefore set forth.

144,733.—Hay-Press.—HENRY F. BLAKE, Liberty, Ill. Application filed July 26, 1873.

Each lever is pivoted between two hangers, which are supported by stay-rods and provided at their lower ends with hooks to catch on a corresponding hook on the follower, to prevent the levers from passing too far in or out. It also has a relief-door at one end of the bale-box, having a hinged bar which is pressed against the outer end of the relief-door by the hooked cam-lever which fastens on a pin in the recess of the said door. To release the bale after it is pressed, the lever is raised, which releases the hinged bar and allows it to swing outward, which gives the door a small movement to relieve the bale.

Claim.—1. The combination of the hinged relief-door D with the hinged bar G and hooked cam-lever *b*, as and for the purposes herein set forth.

2. The combination of the follower I, levers J J, hangers K K, hooks *h' h'* and *i*, and the ropes *f m*, all as and for the purposes herein set forth.

3. The pivoted upright hanger T, with rubber bumper *y*, for the purposes herein set forth.

144,734.—Cutting-Nippers, &c.—PETER BROADBOOKS, Batavia, N. Y., assignor of one-half his right to SETH WAKEMAN, same place. Application filed October 17, 1873.

The handle is adapted to carry pivoted jaws which are operated by an independent lever. The jaws are provided with cutting-edges, and can be removed and others substituted in the form of shears, punches, saw set or gummer, &c.

Claim.—The tool-stock A, having pivoted lever B' and spring D, in combination with the removable jaws C C', arranged and operating substantially as described.

144,735.—Automatic Lubricating Water and Gas Cock.—EDWIN F. BROOKS, Baltimore, Md., assignor to himself and CHARLES E. SEAL, Winchester, Va. Application filed October 8, 1873.

Within the valve-plug, at each extremity, is arranged a chamber to contain a lubricating material, from which the oil is expressed, by means of a piston and spring, through orifices in said plug connecting with the valve-casing.

Claim.—1. A gas or water cock valve constructed with an oil-reservoir, E, in one or both ends, connected with the outer surface of valve by a hole or holes, *c*, as and for the purpose specified.

2. The means for forcing the lubricant from reservoir, through hole or holes *c*, and between the valve and shell, consisting of the piston and rod F *f*, spring G, and screw-cap H, applied in the manner described.

144,736.—Hemmer for Sewing-Machines.—SAMUEL H. BRYANT, JAMES M. BRYANT, and HOSEA L. MCGAW, Pittsburg, Pa. Application filed August 8, 1873.

The main plate carries the guide and folder of the hem, and is extended forward and downward past the needle to press upon and flatten out the hem.

Claim.—1. The combination of the raised plate A', having the extension E to flatten the hem, with the combined gage and spreader B, open-flanged plate A, and sliding slotted plate C, substantially as specified.

2. The raised plate A', formed with the lateral extension E to flatten the hem, and provided with the combined adjustable gage, spreader, and folder B, substantially as shown and described.

144,737.—Purifying Water from Mines.—HUGH BURGESS, Royer's Ford, Pa. Application filed November 7, 1873.

The free acid with which the water is charged is effectually neutralized by the waste solution derived from the boiling or digesting of wood, straw, and other vegetable substances in a solution of caustic soda until the latter is nearly or quite neutralized.

Claim.—The treatment of mine-water by the admixture therewith of the waste solutions derived from the boiling of wood and other vegetable matter in alkaline solution, as set forth.

144,738.—Bag-Fastener.—SETH R. BUSH, Bush's Mill, Ohio. Application filed October 23, 1873.

Perforated plate and hook are connected to an open link, that can be easily attached or detached.

Claim.—The combination of the open link A, hook B, and perforated plate C, for the purposes herein set forth.

144,739.—Belting-Machine.—HENRI CARAMES, Bordeaux, France. Application filed April 14, 1873.

Movable top bellows of air-reservoir insure a regular and uniform speed to the machine, and also operate the discharge-nozzle for separating the perfect and imperfect material. A float in hopper, through intermediate mechanism, also operates the discharge-nozzles when the material therein is reduced to an improper extent. Adjustable valves control the passage of material between valves and plates *d*, the material closing the opening to the downward passage of air forced through the perforated air-pipes, which can therefore only pass upward through bolting-cloth.

Claim.—1. The combination, in a belting-machine, of an air-reservoir, the top or other part of which rises and falls as the pressure of air within the reservoir varies, and movable discharge chutes or valves, which are connected to the moving portion of the reservoir and adjusted thereby, substantially as and for the purpose set forth.

2. The combination, with the movable nozzles, of the float X in the hopper T, and intermediate mechanism, or its equivalent, as set forth.

3. The combination, with the bolting-cloth, of the frame D, plates *d*, and adjustable valves *f*.

4. The inclined plates *f'*, arranged below the plates *d*, as specified.

144,740.—Cultivator.—RICHARD S. CAVETT, Bedias, Tex. Application filed September 6, 1873.

The frame consists of four bars. The inner two are connected at the front ends by a clevis-link. The outer two beams are hinged at their forward ends to the inner beams. The plow-standards are fixed to the rear end of each of the frame pieces.

Claim.—The combination of beams A A A' A' and standards B B B' B' with the loose link-connections *g h e d* and *g n*, as and for the purposes described.

144,741.—Bronzing-Machine.—LOUIS G. CHAPUT, WILLIAM BRAIDWOOD, and JOHN BRAIDWOOD, New York, N. Y. Application filed August 7, 1873.

Claim.—1. The cords or strings *b*, running in an oblique direction by means of grooved rollers *d f*, in combination with the endless apron C, bronzing-roller D, and brushes *g g*, substantially as shown and described.

2. The comb A, in combination with the oblique cords or strings *b*, delivery-roller *i*, and apron C, substantially as and for the purpose set forth.

3. The combination of the inclined plane I, fountain H, bronzing-roller D, apron C, cords *b*, and brushes *g*, constructed and arranged substantially as shown and described.

144,742.—Rotary Printing-Press.—CYRIL C. CHILD, Boston, Mass. Application filed March 19, 1873.

The scraper is controlled both against and away from the fountain-roller by several screws, and the adjustment of any one screw affects no part of the scraper, except at the point where it is. Ink may thus be delivered in unequal quantities at different points. The trucks *g*, which bear the composition rollers, are made V-shaped to fit the bearers G. These bearers may be separated laterally by a right-and-left-hand screw, and by thus letting the trucks down cause the rollers to press harder upon the form. The impression-cylinder is more rapidly and accurately adjusted by having its movable bearings in standards adjusted by a differential or Hunter's screw.

Claim.—1. The inking device, consisting of the trough E, flexible plate *a*, screw *b*, slotted sustaining-plate *f*, and grooved nut *c*, as set forth.

2. The V-shaped bearings, each consisting of two longitudinal angular-sided strips, adjusted to and from each other by right-and-left-hand screw-bolts *o*, which are held to the type-bed by hooks *h*, in combination with V-shaped roller *g*.

3. Differential screw I, box *c*, arm or standard K, in combination with the cylinder of a printing-press, substantially as described.

144,743.—Ironing-Machine.—GIDEON W. COTTINGHAM, Saint Mary's, Tex., assignor to himself and JAMES P. COTTINGHAM, same place. Application filed October 27, 1873.

In a suitable frame a table is moved horizontally by means of rollers and cords under the sad-iron, which is attached by pivots to arms, and a rock-shaft that is operated by a lever, cord, and treadle.

Claim.—1. The table D having base *b*, vertical parts *b' b'*, and

elevated portion E, in combination with the guides C C and rollers g e, substantially as and for the purpose specified.

2. The curved arm S, having handle h and braces f f, in combination with the pivoted iron T, rock-shaft R, and uprights B B, all constructed and arranged for operation, as and for the purpose specified.

3. In combination, with the iron T, the arm S, rock-shaft R, lever P, cord O, and treadle M, all constructed for operation, as and for the purpose specified.

144,744.—Polishing-Tool.—HERBERT COTTRELL, Newark, N. J., assignor to COTTRELL STONE-MACHINERY COMPANY, New York, N. Y. Application filed April 25, 1873.

Claim.—1. In combination with a rotary polisher, the spring g, interposed between the body of said polisher at its center and the shaft or socket by which the polisher is rotated, essentially as described.

2. The rotary polisher, constructed of annular form, as described, and flexibly hung, essentially as herein set forth.

144,745.—Carving-Machine.—HERBERT COTTRELL, Newark, N. J., assignor to COTTRELL STONE-MACHINERY COMPANY, New York, N. Y. Application filed April 25, 1873.

By a flexible rod, slides, and pivoted connections the carving-tool is made to operate in any direction and at all angles.

Claim.—1. The swivel B and its pivot c, in combination with the pivots d d, the turning slide-guides a a, and the longitudinally-grooved bar D, essentially as described.

2. The upper pulley n, in combination with the extensible shaft G, the spring s, the flexible connections H H, the tool-spindle F, the turning head-block E, and the bar D, capable of lateral and up-and-down adjustment, essentially as described.

144,746.—Sleigh.—ALFRED DANIEL DE LANO, Goodrich, Mich. Application filed May 17, 1873.

The rear end of the tongue is mortised into a cross-bar, which is pivoted in front of a front beam, the draft, in this manner, to be applied directly to the front beam.

Claim.—The bob-sled having the annular ring D, pivoted bar E, hinged bolster G, reach H, and swivel I, all to operate in the manner described, and for the purpose mentioned.

144,747.—Fluid-Meter.—HENRY A. DESTER, Worcester, Mass. Application filed September 13, 1873.

The meter consists of four cylinders in the same plane radiating from a common center. The pistons are connected in pairs. The connecting-rods are slotted and halved together, and operate the cranks of the rotary valve and the register-stem.

Claim.—1. The combination and arrangement of the four cylinders A^1 A^2 A^3 A^4, the pistons B^1 B^2 B^3 B^4, and the rotary cylindrical valve D, provided with communicating slots i i' and passages a a, substantially as and for the purposes set forth.

2. The connecting-rods C C^2, slotted and halved together, as described, in combination with four pistons, whose axes are all in the same plane, as and for the purposes described.

144,748.—Pavement.—WILLIAM H. DE VALIN, Sacramento, Cal. Application filed June 18, 1873.

Claim.—A street-pavement composed of bricks, laid in rows on their longer edges, with spaces between the same filled with gravel or sand cemented with coal-tar, and with a top-dressing of coal-tar, alphalt, or its equivalent, the said bricks so laid being supported on an under course of bricks or other suitable stable foundation, as herein shown and described.

144,749.—Treating Bricks for Pavements.—WILLIAM H. DE VALIN, San Rafael, Cal. Application filed October 28, 1873.

Claim.—The process of treating bricks or porous stone with coal-tar, asphalt, or other suitable hydrocarbon, by immersing the bricks in the hydrocarbon and boiling the two together until the hydrocarbon contained by and surrounding the bricks has the consistency specified, as and for the purposes described.

144,750.—Bee-Hive.—JOSEPH R. EAST, Fincastle, Tenn. Application filed August 5, 1873.

The comb-frames are suspended, fitting loosely in a V-shed notch in the top of the outer frame-bar, and held from vibrating by a lateral cut in the base of the bottom bar of said outer frame. A sliding floor covers the moth-trap, which trap has induction but no eduction-ports at its sides.

Claim.—1. The removable frames a a', for containing the comb-frames c c, the same being provided with notches to receive said comb-frames, substantially as described.

2. The moth-trap formed of the sliding false bottom D, in combination with the bottom a' and openings d d in the side of the hive, as shown and described.

144,751.—Girder for Bridges.—JAMES W. EVANS, New York, N. Y. Application filed April 9, 1873.

The outer and inner tubes or sections of the chord are arranged to break joints, and they are strengthened by the wire-rope core a, which is firmly secured at the abutments. The projecting lips f f support sleepers for railroad-rails or the flooring of the bridge.

Claim.—1. The lower chord A, constructed of an outer tubular shell, d, inner tube b, wire-rope core a, substantially as described.

2. The shell d, provided with projecting lips f f for holding the sleepers g, substantially as described.

144,752.—Centrifugal Sugar-Draining Machine.—CHRISTOPH FISCHER, Gloucester, N. J. Application filed July 15, 1873.

The basket is stepped below, and is turned in the manner usual in this class of centrifugal machines. The sides of the basket are made with serrated edges. The devices for stopping and steadying the apparatus are mounted on a system of levers.

Claim.—1. The conical box C and conical opening in the raised center of the cylinder and bolts e s, in combination with the spindle D of a centrifugal machine supported below on a step, and having a bearing on the raised center of the cylinder A below the draining-basket, substantially as and for the purpose set forth.

2. The oil-reservoir d in the raised center of the draining apparatus and covering-plate f, combined and operating as set forth.

3. The cage F, formed with vertical serrations H and perforations e between them, when constructed and operating as set forth.

4. The lever L, having an axis suspended from the cylinder A, formed with a boss, N, which encircles the spindle D and bears against the friction-cone J, as herein set forth, for the purpose described.

144,753.—Rotary Grain-Distributer.—APOLLOS D. FOOTE, Berlin, assignor to ALBERT M. HELMER, Milwaukee, Wis. Application filed May 31, 1873.

The grain is received from the elevator-spout into a circular spout, divided into two parts, the upper of which is stationary, while the lower is supported and caused to revolve by means of a central axis mounted in suitable bearings, and is geared at its upper end with a horizontal shaft, which receives motion from a steam-engine or other motive power. The revolving portion of the circular spout is divided by means of radial partitions into a series of compartments, and at its lower end is formed trumpet-shaped, thereby forming a series of curved grain-distributer spouts. Within the upper or stationary portion of the spout a conical grain-director is supported by chains or links in such manner that, when desired, it may be drawn to one or the other side of the spout, and thereby control the particular point at which the distributer-spouts of the revolving portion of the circular spout shall be supplied with the grain, which is thus distributed by centrifugal force, and the trimming of the vessel so laden accomplished without resort to manual labor.

Claim.—1. A revolving spout for the purpose of distributing grain in the holds or other parts of vessels, barges, and other conveyances, substantially as described.

2. A conical grain-director arranged to control the supply of grain to revolving distributing spouts or tubes, substantially as described.

3. A grain-spout, a, divided into two parts, a^1 a^2, one of which is stationary, and the other caused to revolve, substantially as described.

4. A grain-spout, a, having a stationary part, a^1, grain-director d, and a revolving part, a^2, provided with a series of distributing-spouts, a^3, substantially as described.

5. In a grain spout or distributer, the combination of the stationary part a^1, grain-director d, shaft c, revolving part a^2, substantially as described.

6. In combination with the stationary part a^1 of a grain-spout or distributer, a, and a grain-director, d, supported by chains or other suitable means, and capable of adjustment by chains or their equivalents, a series of distributing-spouts, a^3, supported by and caused to revolve with a shaft, c, substantially as set forth.

144,754.—Bed-Bottom.—SAFFORD B. FREEMAN, Fort Wayne, Ind. Application filed October 30, 1873.

Ends of the slats lie on the horizontal portion of a wire-spring, which has, on each side, diagonally-descending portions, coiled at the bottom, with its ends clamped between two lateral supporting-bars, which in their turn rest on band-springs, at each corner of the bed, in form semicircular.

Claim.—The combination of the slats A A, wire springs B B, double bars C C, and C-shaped springs G G, all constructed substantially as and for the purposes herein set forth.

144,755.—Churn.—JOHN P. FRIEST, Chillicothe, Mo. Application filed April 16, 1873.

A detachable frame is adjustably clamped to the top of a churn, said frame having pivoted arms, which support a driving-pulley that communicates motion, by means of a band, to a pulley attached to near the top of a suspended and removable dasher-shaft.

Claim.—The adjustable and detachable frame F, provided with the journal-slots b, arms M, set-screw L, band-wheel R, and band i, in combination with the pulley H on the shaft D, provided with the paddles I, substantially as shown and described.

144,756.—Take-Up Mechanism for Looms.—CHARLES GAHREN, New York, N. Y. Application filed October 21, 1873.

In weaving corsets, or other irregular fabrics, the slack produced by the beat of the lay, in that portion of the web where the weft-thread has been inserted, is taken up by friction-rollers made to operate just as the lay begins to recede, and after the clamping-jaws, extending across the fabric, are closed upon it, by which mode of operation the drag from the take-up rollers acts only on that portion of the fabric between the clamps and the rollers.

Claim.—The combination, with the reed or beat-up, of a clamping device or mechanism and a take-up device or mechanism, arranged to operate in substantially the manner described, for the purpose set forth.

144,757.—Blast for Furnaces of Steam-Boilers.—RENÉ GIGODOT, Lyons, France. Application filed August 27, 1873.

A blast-current is obtained by introducing steam from a superheater into an open-mouthed conduit, which terminates in a tuyere beneath the grate-bars.

Claim.—The combination of the tubes a b, collectors A B, collector C, induction-pipe d, ejection-tube f, open conduit L, terminating in a tuyere beneath the grate-bars, all substantially as set forth.

144,758.—Stair-Rod Fastener.—WILLIAM B. GOULD, Montrose, N. J.—B. Application filed October 17, 1873.

A single piece of thin sheet metal is perforated at each end, one being bent at right angles, and two slits are cut, running longitudinally, so that the two side portions can be raised up to embrace the stair-rod, which is passed through it. The whole is formed, at one operation, from a single piece of metal.

Claim.—The stair-rod fastener A, made with two incisions, d d, between which the back piece e, and at the sides of which the forwardly-bulged parts f f, are formed, substantially as herein shown and described.

144,759.—Stair-Rod Fastener.—WILLIAM B. GOULD, Montrose, N. J.—Case B. Application filed September 23, 1873.

As an improvement upon patent No. 62,627, granted this party February 12, 1867, a screw-follower is substituted for his spring-follower, a metal disk being fitted within one of the hollow tips, to which is attached a screw-stem that extends through a threaded aperture in the end of the tip, a suitable knob being formed on the outer end of the stem to operate the disk or follower.

Claim.—The stair-rod fastener B, containing a follower, d, and a screw-spindle, c, to which said follower is attached, substantially as and for the purpose herein shown and described.

144,760.—Plow.—JOHN S. HALL, Pittsburg, Pa. Application filed June 20, 1873.

The beam is made of iron, the rear end being bifurcated and curving downward to receive the land-side adjustably, the rear end of which is secured to the rear branch by a screw and slotted wedge. The share and mold-board are cast in one piece, and the forward end of the land-side enters a recess in the rear of the nose of the plow. The rear end of the mold-board is secured to the rear end of the land-side by a bifurcated pivoted brace, in such manner that the mold-board can be rotated upon either side of the beam, so as to turn a furrow either to the right or left.

Claim.—The branches A^1 A^2 of beam and the sole F, constructed and combined with the nut-screw and slotted wedge in the manner and for the purpose specified.

144,761.—Wash-Boiler.—WILLIAM H. HAMMOND, Syracuse, Mo. Application filed June 28, 1873.

Claim.—The suspended inner flanged boiler B, having at its bottom the central slot g, peripheral openings l m, the depending transverse channel-guide k below said slot, and the inside raised plates n n', crossing or secured to each other centrally, and covering said slot and openings, substantially as specified.

144,762.—Spool-Case.—AMOS W. HARPER, Philipsburg, Pa. Application filed September 3, 1873.

The vertical tubes are filled with spools, and as they are removed from the lowest openings they are replaced by those above them sliding down.

Claim.—1. A revolving spool-case, consisting of a series of tubes of different sizes and lengths, all provided with openings i, and the shorter ones with bottoms e, substantially as and for the purpose specified.

2. A spool-case with the series of tubes a of different sizes and lengths, and fitted in a revolving frame, in combination with the case l with doors b d, all constructed and arranged as and for the purpose set forth.

144,763.—Paper-Holder Shelf.—GEORGE V. HAWKINS, Clayton, Mich. Application filed September 15, 1873.

Claim.—The within-described paper-stand or paper-holder, formed of a series of removable and gradually-diminishing sections, each section consisting of a platform, A, with bars B B, as described, and provided with pins a a, plate d, and pin b, all substantially as and for the purposes herein set forth.

144,764.—Rubber for Slates and Blackboards.—HENRY W. HOLLY, Brooklyn, assignor to L. A. JOCELYN, Yonkers, N. Y. Application filed November 1, 1873.

The covering is wrapped around the block, and its edges firmly secured in a cut or groove in the block.

Claim.—The rubber for slates and blackboards composed of the block grooved, as described, and the covering applied to it and secured, substantially as and for the purpose herein set forth.

144,765.—Relief-Valve for Steam Fire-Engines.—WILLIAM JEFFERS, Pawtucket, R. I. Application filed December 20, 1871.

A water-passage leading from the discharge to suction side of the pump of a fire-engine, is provided with a spring-valve capable of being set at any given pressure by an independent screw, and said pressure is indicated by an index-wheel.

Claim.—1. In combination with the water-passage W, leading from the discharge to the suction side of the pump in a fire-engine, and a diaphragm or valve-seat, E, arranged across said passage, the spring relief-valve s, capable of being set at any given pressure, and the independent screw J, for the purpose of counteracting the spring when necessary, substantially as described.

2. The combination of the valve s, rod s, collars r s, spring t, shaft h, and index-wheel H, constructed and operating substantially as shown in Fig. 2, for the purposes set forth.

3. The hollow shaft h, having the graduated hand-wheel H, and the grooves s s, in combination with the spring-valve, guides, and supporting-frame, substantially as and for the purposes set forth.

144,766.—Iron Bridge.—PHELPS JOHNSON, Springfield, Mass. Application filed October 20, 1873.

An iron-truss arch, consisting of two parallel members, each member being composed of short tubular sections, which members are placed sufficiently far apart to allow the ties, struts, and braces, extending from the chord to the arch, to take a central bearing on the king-bolt connecting the members of the arch, so that all strains transmitted from the chord shall take effect centrally upon the king-bolts between the arch members, instead of outside the arch and partially on one side, as is the case when the ties, struts, and braces are connected to the arch outside the members thereof, thus avoiding the undue strain to which the braces, &c., extending from the deflected side of the chord to the corresponding side of the arch, are subjected.

Claim.—1. The combination of the double arch made in sections B, with the king-bolts a, vertical ties f, struts b, diagonal braces c, tie-blocks n, bottom chord c, and end bolts e', substantially as described.

2. A truss-bridge wherein the arch or top chord is composed of two members extending parallel with each other, and connected by king-bolts a, extending from one member to the other, and with the ties, struts, and braces extending upward from the bottom chord, and taking a bearing between the two members of the top chord or arch, substantially as described.

144,767.—Toy Propeller.—GEORGE W. JONES, Philadelphia, Pa. Application filed October 30, 1873.

A compressible elastic bulb, held in the hand, connects, by a flexible tube, with an air and water chamber on the toy boat, and in part, at least, below the water-line. Said chamber has an exit pointing rearward, through which the chamber is supplied and exhausted, to propel the boat, at pleasure.

Claim.—The combination, with a toy boat or vessel, of a compressible air-bulb, F, or its equivalent, a connecting-tube, and an air-and-water cylinder or chamber communicating with the end of the boat or vessel, substantially as shown and described.

144,768.—Kneading-Board.—HARVEY P. JONES, Davenport, Iowa. Application filed June 21, 1873.

Claim.—As a new article of manufacture, a metallic kneading-board, A, provided with a ledge, C, as set forth, and for the purposes described.

144,769.—Combined Table and Secret Writing-Desk.—CHARLES KADE, Lexington, Mo. Application filed May 21, 1873.

The body of the table is formed of a box-frame, supported on its rear side by two legs, and provided at its front side with two three-jointed wooden hinges, which connect with a front blind piece or false drawer, having a leg at each end. Said false drawer and extension act as a support to the hinged leaf of the table top. The box-frame contains a secret desk, which is held in place by catches, but when released it is forced upward by four springs, that are coiled around shafts attached to the bottom of the box-frame. The upper end of each spring bears a roller, on which the desk is supported.

Claim.—1. The springs m m, provided with rollers p p and arranged in the frame A, for throwing the desk E upward, substantially as herein set forth.

2. The combined secret writing-desk and table described, consisting of the frame A, legs B B', three-jointed hinges f f, front piece a, box b, top C C', hinged leaf D, desk E, and springs m m, all constructed substantially as and for the purposes set forth.

144,770.—Eaves-Trough.—PETER F. KIBLINGER, Millersburg, Ind. Application filed April 10, 1871.

The gutter is grooved near its upper edges, and in said grooves are placed the cross-braces. The upper edges are bent over and turned down, thereby securing the braces and strengthening the gutter, and allowing it to be placed on either eave of the roof.

Claim.—The within-described eaves-trough, having the beads B and grooves C to receive the braces D, and the turned-over edges A A on each side, constructed so as to be attached to the roof on either side, as set forth.

144,771.—Making Barrel-Heads.—JAMES L. KILGORE, Cleveland, Ohio. Application filed October 21, 1873.

The barrel-head passes over vertically self-adjusting feed-rolls and beneath stationary pressure-rolls, and a revolving cutter which dresses one side of the head.

Claim.—1. The adjustable brackets G and wheels E and L, in combination with the pinions K and rollers B B C C, substantially in the manner as and for the purpose set forth.

2. The puppets I, springs J', brackets G, wheels E L, and pinion K, as arranged in relation to and in combination with the rollers B B C C and cutter D, substantially in the manner as and for the purpose set forth.

144,772.—Separating Precious Metals from Ores.—SOLOMON W. KIRK, Philadelphia, Pa. Application filed April 23, 1873.

The roasted and pulverised ore, together with mercury, is placed in a digester, the air exhausted, and heat applied. One portion of the mercury goes to form cinnabar, and the other forms an amalgam with the metal. The heat is then raised, driving the mercury and sulphur over into a condenser, leaving the metal behind in the digester.

Claim.—1. The process herein described for separating the precious metals from the matrix, by subjecting the mixed pulverized ore and mercury to heat *in vacuo*, substantially in the manner and for the purpose described.

2. The mode herein described of separating the precious metals and recovering the mercury, viz., subjecting the ore previously pulverized and roasted, mixed with a sufficient quantity of mercury, to heat *in vacuo*, and condensing and retaining the vapors given off, substantially as and for the purpose specified.

144,773.—Vegetable-Cutter.—JACOB KRAM, Germantown, Pa. Application filed June 26, 1873.

A partition in the box prevents the meat from turning with the rotating cutter, and serves as a stationary knife in cutting the meat. The follower sits astride of the partition, and is thus prevented from turning.

Claim.—The combination of the case A, having the opening G and partition F, with the knife D and follower E, substantially as specified.

144,774.—Wash-Boiler.—RALPH LAWYER, Pittsburg, Pa. Application filed July 30, 1873.

Claim.—1. The vessel *a*, provided with perforations *c*, the upwardly-curved flange *e*, vertical flange *f*, and tube *b*, substantially as shown and described.

2. The vessel *a*, provided with the flange *g* on its lower edge, in combination with the cross-bar A, engaging with lugs on the sides of the boiler, substantially as described, and for the purpose set forth.

144,775.—Cotton-Press.—THOMAS D. LEONARD, Waco, Tex., assignor of two-thirds his right to JOHN D. JOHNSON and BENJ. C. DRURY, same place. Application filed June 7, 1873.

On the bed-frame of the press a second frame moves on rollers. The follower is made fast to one end of this movable frame, and the bale-box moves horizontally by action from a right-and-left-hand screw, so that each turn of the screw moves both follower and bale-box toward each other, each half way. The box has detachable bottom, and may be turned vertically on trunnions, so as to be more readily filled.

Claim.—1. The combination of the sectional box J, the detachable bottom J′, and block H′ with the pivoted levers G attached thereto, and arranged to operate in the manner shown and set forth.

2. The cotton-press having the main frame A, movable press-frame B with follower I, movable bale-box J, screw D, blocks E, levers G, and block H H′, all constructed and arranged to operate substantially as and for the purposes herein set forth.

144,776.—Bale-Tie Clamp.—THOMAS D. LEONARD, Waco, Tex., assignor of two-thirds his right to JOHN D. JOHNSON and BENJAMIN C. DRURY, same place. Application filed July 26, 1873.

One end of the band is passed through the recess *a*, the band is passed around the bale, and the other end inserted under the clamp. By working the lever backward and forward it will advance on the ratchet-bar, and thus draw the two ends of the band together to be fastened.

Claim.—The mortised lever A provided with roller B, recess *a*, and dogs D D, in combination with the double ratchet-bar C with offset *d* and cam-lever G, and the stirrup *f*, all constructed and arranged substantially as and for the purposes herein set forth.

144,777.—Bottle-Stopper.—HENRY S. LESHER, New York, N. Y. Application filed September 30, 1873.

A hollow tube, having a ball at its lower end and valve attached thereto, works in a hollow wooden stopper fastened in the mouth of the bottle, so when the tube is pushed in the bottle can be readily filled, the valve closing the lower end of the stopper as the bottle fills.

Claim.—1. The hollow wooden stopper B, combined with tube D, as and for the purpose set forth.

2. The within-described bottle-stopper, consisting of the hollow wooden stopper B, tube D, cap C, valve G, and ball *d*, all constructed and arranged in the manner specified.

144,778.—Steam-Boiler.—GEORGE G. LORDELL, Wilmington, Del. Application filed September 30, 1873.

A vertical tubular boiler has below the lower tube-sheet a continuation or leg forming the rear part of a fire-place, the sides and front of which are composed of brick. The tubes diverge from the lower to the upper tube-sheet, for the purpose of preventing priming in boilers.

Claim.—1. A vertical tubular boiler having below the lower tube-sheet a continuation or leg, forming the rear, or part of the rear, of a fire-place, the sides and front of which are composed of brick-work, all substantially as and for the purpose herein set forth.

2. A vertical tubular boiler having tubes which diverge from the lower to the upper tube-plate, as set forth.

144,779.—Fly-Brush.—JOHN A. LYLE, Bridgeport, Ohio. Application filed September 19, 1873.

The outer lower portion of the body of the brush has the feathers curled in planes, the direction of which is tangential to its cross-section.

Claim.—As a new article of manufacture, the brush having the ball G, flat braid *a*, and the ribbon braid *b*, the feathers extending down on the handle to B′, constructed substantially as and for the purpose set forth.

144,780.—Gate.—GEORGE W. MACKEY and GEORGE S. MACKEY, Lathrop, Pa. Application filed August 29, 1873.

A gate having trunnions at the tops of its posts and centrally in the end bars, the gate-rails at one side of the center balanced by weights at the extremities on the other side, so that when unlatched a half turn may bring the weights down and give passage-way. The hinges or trunnions consist of a bracket attached to the post, with a bearing and upward-turned ears or lugs holding a transverse pin which secures the headed journal in position.

Claim.—In combination with the posts *a* and gate *b c d*, the journal *e* with head 1, and bracket 2 with ears or lugs 3, all constructed and arranged for operation, as and for the purpose specified.

144,781.—Reed-Organ Action.—WILLIAM N. MANNING, Rockport, Mass. Application filed August 23, 1873.

The wind-chest is above the plane of the keys. Vertical push-pins, held in place by a rubber partition embracing them, tip the tails of the wind-chest valves.

Claim.—1. The arrangement of the wind-chest, valves, push-pins, and keys of an organ, as hereinbefore described, by means of which one or more sets of reeds can be placed in such a position that a tuner can have access to them without disturbing the action, substantially as specified.

2. The guide-strip *n*, passage *t*, and flexible guide *c*, combined with the push or lifting pin B of the valve C, substantially as described.

144,782.—Heel-Boot for Horses.—WILLIAM MATHIS, New York, N. Y. Application filed June 14, 1873.

Claim.—1. The downward-projecting lip or tongue E as the back of heel-boots for horses, in combination with a suitable metallic plate, *m*, between the lining and outer covering in the cap or after part B, and projecting lip E, substantially in the manner and for the purpose set forth.

2. In heel-boots for horses, the projecting lip or tongue E, to fit into the hollow between and below the quarters of a horse's foot, in combination with a serrated plate, D, attached at the front to the straps *a a*, substantially as and for the purpose described.

144,783.—Middlings-Belt.—ALFRED G. MOWBRAY and HARRY W. MOWBRAY, Stockton, Minn. Application filed September 11, 1873.

Series of graded bolt-reels of small diameter, each having two conveyers with regulating-slides, so that the operator can separate the middlings and fine bran, as desired, the fine bran carried off at one end by the lower conveyer, and the middlings carried by the upper conveyer to the head of the next bolt of the series, this operation being repeated until the middlings become clear and pure.

Claim.—The combination of a series of bolts of small diameter, each having two conveyers, *a* and *c*, and regulating-slides *b b*, all constructed and operating substantially as described, for the purposes specified.

144,784.—Cotton-Planter.—CORNELIUS H. NIXON, Polo, Ill. Application filed August 21, 1873.

A bearing for the front ends of the triangular frame is pivoted at each end to adjusting-plates. Motion is transmitted to the sliding plate through an endless chain and universal gear situated in the pivoted front bearing.

Claim.—1. The combination of the standards *m m*, axles *l l*, notched plates 2 2, clamps 3 3, and pivoted cross-frame *n*, as and for the purposes herein set forth.

2. The combination of the axles *l*, wheels *d e*, chain *g*, shaft *h*, gears *i j e*, universal-joint shaft *t*, wheel 4, and slotted rotating hopper *u*, with feed-cylinder 6, all constructed and arranged substantially as and for the purposes herein set forth.

144,785.—Plow.—JAMES OLIVER, South Bend, Ind. Application filed September 20, 1873.

The standards, mold-board, and land-side present a united curved front, on which rests the point with its long upward-projecting cutter.

Claim.—The standard B, extended forward, as shown at *a*, the mold-board and land-side extending forward even with the standard, forming a uniform curve, which forms a seat for the colter D, the part C being supported by the enlarged foot of the standard, as and for the purpose set forth.

144,786.—Whiffletree.—JOHN PARKER, Pontiac, assignor of one-half his right to JAMES A. HUBBS, Cato, Mich. Application filed September 9, 1873.

Claim.—The whiffletree A, the central plate B nearly encompassing the whiffletree, and having a shoulder, *a*, and the roller D pivoted between the ends of the plate, all combined substantially as described, and for the purpose set forth.

144,787.—Car-Brake.—JAMES B. PELTON, Mount Pleasant, Md. Application filed June 25, 1873.

Claim.—1. The tube C, jointed to a pulley-frame, D, and extending over the platforms of two adjacent cars, all combined as and for the purpose described.

2. The tension-tube C, made in two hinged sections to fold back on the car to which it is attached when not in use, combined as and for the purpose described.

144,788.—Steam-Cylinder and Piston-Valve.—GEORGE G. PICKING, Kingsland, and WILLIAM HOPKINS, Islington, assignors to themselves, JAMES HART, and JAMES L. SAMPSON, London, England. Application filed May 19, 1873.

A steam-cylinder is combined with a main piston-valve and an auxiliary valve or bar, each having a cavity and suitable parts, so as to partly shift or start the main valve for the purpose of changing the flow of steam to the cylinder by steam from the cylinder, and completes its movement by steam from the bar steam-chamber, and cause the shifting of the bar.

Claim.—1. The combination of a steam-cylinder, a reciprocating bar, and a slide-valve, each having a cavity and suitable parts, so as to partly shift or start the main valve for the purpose of changing the flow of steam to the main cylinder by steam from the cylinder, and completes its movement by steam from the bar steam-chamber, and the shifting of the bar by steam from the cylinder, as described.

2. The simple arrangement of ports 15 16 20 21, in combination with the steam-chamber, of the bar for causing the slide-valve to commence its stroke by steam from the cylinder, and complete it by steam from the bar.

3. The combination, with a valve-casing, of a spindle, 26, handle 29, bosses 30, plugs 31, pins 32, and projections 33, for preventing the stopping or sticking of the valve and bar, and to allow of them both being moved by one movement of the handle.

144,789.—Binder's Attachment for Harvesters.—HENRY PORTER, Polo, Ill. Application filed October 16, 1873.

The cut grain is carried by horizontal and elevating aprons to the grain-receiver, which is provided with elastic strips, on which the grain falls.

Claim.—The binder's rack H, provided with flexible strips *n*, substantially as described.

144,790.—Shifting Top for Vehicles.—HENRY K. PORTER, Boston, Mass. Application filed January 29, 1872.

The rail is designed to be of cast metal made malleable.

Claim.—1. A cast-metal shifting-top seat-rail, having the hollow bosses A A for the reception of the wrought-iron bolts or equivalent wrought-iron pivots, substantially as described and shown.

2. The hollow or angular stud *c*, formed upon rail *a*, substantially as and for the purposes specified.

3. The shoulder or head *c*, formed upon rail *a*, and cut through at a right angle with its circumferential line, substantially as described and shown.

144,791.—Rake.—LUTHER A. POWERS, West Meriden, Conn. Application filed August 27, 1873.

Hooked screw-bolts pass through the handle, and clasp firmly the bent braces. A hooked screw-bolt also secures the handle to the head, the hook or bend of the bolt passing through the handle a few inches from the head of the rake.

Claim.—The herein-described rake, consisting of the head A, handle C, and braces E, when the said handle is secured to the head by the hooked bolt D, and the braces to the handle by the hooked bolts F, all as set forth.

144,792.—Portable Fly and Mosquito Net.—THOMAS M. PRENTISS, Boston, Mass. Application filed July 21, 1873.

A gauze curtain is attached to the outer edge of an umbrella, and extends downward a sufficient distance to protect a person from insects.

Claim.—In combination with an ordinary umbrella, a gauze curtain extending down from its outer edge, as and for the purpose substantially as described.

144,793.—Cotton-Bale Tie.—FRED QUARLES, Waco, Tex. Application filed August 23, 1873.

Claim.—The cotton-bale tie consisting of the wedge-shaped plate, having oblique slot on one side and a perforation at one end, in combination with a wire band, one end of which is secured within the perforation and the other adapted for looping in the slot, substantially as specified.

144,794.—Insulating and Finishing Compound for Conducting-Wires.—THOMAS L. REED and EUGENE F. PHILLIPS, Providence, R. I. Application filed October 29, 1872.

Wires for conducting electricity are coated with an insulating compound of Canada balsam, paraffine, and bees-wax, with or without coloring matter.

Claim.—The compound composed of Canada balsam, or equivalent gum, paraffine, and bees-wax, with or without coloring pigment, for insulating, and for giving to the telegraphic conducting-wires a finished exterior, substantially as described.

144,795.—Wash-Boiler.—WILLIAM REHEMEIER, Homburg, Prussia. Application filed August 13, 1873.

The central perforated tube is provided with a funnel that contains chemicals, and also serves to operate a two-way plug or valve inserted in said tube for the purpose of directing the water in an upward or downward direction.

Claim.—1. The combination, within a washing-tub, A, of the perforated pipe C, plug E, and funnel D, when the plug E is provided with the perforations *a* and *d*, and with the inner partition *b*, substantially as described.

2. The combination of the supply-pipe F, central pipe C, adjustable metal plug E, and funnel D with the overflow-pipes I and outlet-pipe J, substantially as shown and described.

3. The combination of the supply-pipe F, central pipe C, and adjustable plug E with the overflow-pipes I, perforated false bottom H, and outlet-pipe J, substantially as shown and described.

144,796.—Lithographic Printing-Form.—IRA REYNOLDS, Dayton, Ohio, assignor to REYNOLDS & REYNOLDS, same place. Application filed March 21, 1873.

The series of stones composing the form are squared, so as to fit closely together, and are equalized in thickness by means of a cement backing. They are also arranged to be removable at will.

Claim.—A lithographic printing-form consisting of a series of stones of equal, proportionate, or multiple size, equalized in thickness, and arranged substantially as described, so that any one or more of the stones may be removed at will, and others substituted therefor.

144,797.—Band Sawing-Machine.—JOHN A. ROCHE and GERRIT V. ONTON, Chicago, Ill.; said ONTON assignor to said ROCHE. Application filed September 11, 1873.

The saw-guide is attached to one end of a horizontal bar which is made vertically adjustable.

Claim.—1. The arm or lever L, supporting the guide T, and adjustably connected with the stem O, all arranged above the table F, leaving an open space between the arm and table, substantially as specified.

2. The adjustable back-guide and saw-support T, affixed to the guide-arm L, with the beveled washers *g* and set-screws *r*, constructed in the manner and for the purpose set forth.

3. The combination of the spring E, support D, and guide T, arranged as and for the purpose herein described.

144,798.—Stock-Car.—OLIVER SEVERANCE, Middlebury, Vt., assignor to A. J. SEVERANCE, same place. Application filed October 1, 1873.

Claim.—1. A stall for stock-car, consisting of the inclined floor C and the adjustable partitions D, confined by grooved posts *a*, substantially as described.

2. The step-bars *a′* attached to the top and to the bottom of the slotted posts *a*, in combination with the adjustable partitions D, as and for the purpose herein specified.

3. The adjustable tiers, each consisting of two or more stalls, constructed as described, each tier constituting a series of compartments, combined in one solid and removable part, as and for the purpose set forth.

144,799.—Stilt.—THOMAS J. SHERARS, Ypsilanti, Mich. Application filed May 13, 1873.

Claim.—The improved stilt, consisting of the foot-rest B, provided with the downwardly-inclined pins C C, in combination with the leg or staff A, having the upwardly-inclined holes *a a*, substantially as and for the purpose specified.

144,800.—Paper Box.—EDWIN M. SLAYTON, Conquest, N. Y. Application filed October 17, 1873.

Claim.—The seamless package, herein described, consisting of the body A, exterior hoops *a a*, interior hoops or linings *d d*, and concavo-convex heads B B, as and for the purpose specified.

144,801.—Blacking for Shoes, &c.—JAMES L. SNEED, Frankfort, Ky. Application filed October 30, 1873.

Pulverised coke, one pound; molasses, three ounces; vinegar, three ounces; litharge, one ounce; sperm-oil, one-half ounce.

Claim.—The within-described compound for shoe-blacking, consisting of the ingredients substantially as set forth.

144,802.—Syringe and Pump.—JOSEPHUS SPEAR, Philadelphia, Pa. Application filed November 2, 1872.

The syringe has a tapering nozzle containing a sheet-metal valve. The packing is held between two sheet-metal plates, the upper one having a tubular projection to receive the end of the hollow piston-rod. The movement of the piston is limited by ferrules arranged on either end.

Claim.—1. A syringe having a tapering nozzle, *d*, and a thin metal valve adapted to and fitting the said nozzle, as set forth.

2. The contracted tapering end of the piston-rod, in combination with the ferrule *f* and handle E, as set forth.

3. The contracted tapering end of the piston-rod, in combination with the ferrule *f* and the adjustable piston.

144,803.—Machine for Separating Rice.—HENRY B. STEVENS, Buffalo, N. Y., assignor to GEORGE L. SQUIER, same place. Application filed July 30, 1873.

Claim.—1. In a grain-separator, the combination, with a fan or equivalent means for producing an air-current, of an inclined table provided with a roughened surface and suitable mechanism for imparting to it a vibratory or rocking motion, so as to cause the two kinds of grain to be separated to work in opposite directions on the table, substantially as and for the purpose hereinbefore set forth.

2. In combination with a face and roughened table, the sup-

porting-arms *F F*, arranged at the end of the table and pivoted, as described, so as to produce such a motion as will cause the mass of grain agitated thereon to work in a thickened layer centrally and longitudinally of the table, while the rough and unhulled kernels are thrown to either edge of the layer, so as to be carried backward by the blast, the hulled kernels working down the incline in the opposite direction, as hereinbefore described.

3. The combination, in a grain-seperator, and with the fan B, of the air-passage *r*, and an inclined table provided with a roughened wire-cloth or other perforated surface, *s*, and tight bottom E, arranged so as to leave a space, *q*, between the latter, substantially as and for the purpose hereinbefore set forth.

4. The combination, with a fan and roughened inclined separating-table, of the central discharge-apertures *h* at the lower end, and the discharge-apertures *i i* at the upper end, of the table, as and for the purposes hereinbefore set forth.

5. The combination, in a grain-seperator, of the pivoted hopper *N*, provided with the thin sheet-metal spout *n*, and set-screws for holding it in place after it is adjusted, whereby a regular and proper feed is affected by the tremulous motion imparted to the spout by the jar of the machine, as hereinbefore set forth.

6. The combination, in a grain-seperator, and with the fan and oscillating table, of the adjustable deflecting-board a^2, for regulating and directing the air-current, substantially as hereinbefore set forth.

144,804.—Safety-Platform for Railway-Cars.—RICHARD STRODE, Coatesville, Pa. Application filed April 8, 1873.

Plates extending from one side of one beveled platform over the other, to prevent persons falling between the cars.

Claim.—The combination, with the end-beveled platforms B B, of the plates C C, extending from one platform and overlapping the other, as and for the purpose set forth.

144,805.—Washing-Machine.—JOHN TRICKETT, Quincy, Ill. Application filed June 7, 1873.

Is constructed with a corrugated center-roll resting upon a bed of smaller ones pivoted to a cross-bar, outside of which are rolls rigidly connected to the bar having slots, into which the outside rolls of the bed are fitted to guide the clothes through the machine. The journals of the larger roll pass through the tub, over which rests a spring or lever, by which the tension of it is regulated.

Claim.—The combination of the pivoted bars or springs F, side pieces E, straps H, self-adjusting fluted roller B', crank E, small fluted rollers *c*, and transverse guides G, constructed and arranged substantially as described.

144,806.—Revolving Stool or Chair.—JACOB J. VOLLRATH, Sheboygan, Wis. Application filed September 13, 1873.

The stool top has a raised flange and a groove upon its upper surface, and a hollow hub in the center, and the seat-bearing spider has a grooved under surface to extend upon and over the flange and groove in the stool top; and these two parts are united by a pivotal screw-bolt.

Claim.—1. The revolving stool or chair top A, having the raised rim or flange, the groove, and the central hollow hub, combined with the spider B, having a groove on its under surface and a central aperture, in the manner and for the purpose set forth.

2. The top A, constructed as described, and spider B, combined therewith and united by the bolt D and nut *d*, in the manner set forth.

144,807.—Trimming.—WILLIAM WALKER, Brooklyn, assignor to GEORGE H. WOOSTER, New York, N. Y. Application filed October 17, 1873.

Claim.—As a new article of manufacture, the trimming herein described, composed of two pieces of fabric stitched by two parallel rows of stitching—that is, one row along the edge of each piece—and united by one or more threads laced into or passed around the threads of the duplicate rows of stitching, essentially as specified.

144,808.—Miner's Pick.—RICHARD K. WALTON, Clarington, Ohio. Application filed July 21, 1873.

Claim.—1. As an improvement in miners' picks, the detachable bit A, having the angular groove *b* and the triangular-shaped points *a a*, as shown and described.

2. The bit A, provided with a screw-threaded tenon having a flattened side, in combination with a head, C, and clamp-screw D, as shown and described, for the purpose specified.

144,809.—Apparatus for Drawing Effervescent Liquids.—THOMAS WARNER, New York, N. Y. Application filed September 4, 1873.

A pipe has at one end a reservoir with a discharge-nozzle and a valve, and, at the other, means for attaching the pipe to the vessel from which liquid is to be drawn. This pipe has two valves, one to cut off communication between the vessel and the reservoir, the other to allow the surplus gas to escape. The object is to prevent dissipation of gas through the forcible expulsion of the liquid, and at the same time to retain as much gas as possible in the vessel.

Claim.—1. The pipe B, having the valves D E for controlling the flow of liquid and gas from a liquid-containing vessel into a pressure-relieving chamber having a discharge-spout, F, and valve G, all constructed and adapted for use substantially as and for the object specified.

2. The described combination of the pressure-relieving chamber A, having the spout F and valve G, with the pipe B, having the valves D E, the pipe being adapted to a vessel containing effervescent liquid, in the manner and for the purpose specified.

144,810.—Overshoe.—GEORGE WATKINSON, New Haven, Conn., assignor to THE L. CANDEE & CO., same place. Application filed August 16, 1873.

Claim.—As an article of manufacture, an india-rubber overshoe in which the front extends up, as at B, and the heel as at A, and cut both from the points B and A to meet at C, forward of the upper edge of the instep portion, as herein described.

144,811.—Draft Attachment for Plows.—NORMAN WESTCOTT, Nelson, assignor of one-half his right to DWIGHT CROSS, Morrisville, N. Y. Application filed May 27, 1873.

The rear end of the pole is supported by a single adjustable gage-wheel, and is connected with the plow-beam by a double-hinged joint, which permits a draft in any direction, the plow being kept erect.

Claim.—The combination of plow-beam O, double-jointed coupling A U Y, pole C, cheek-pieces P, having a vertical series of holes, *p*, and single gage-wheel B, substantially as specified.

144,812.—Unison-Stop for Printing-Telegraphs.—CHARLES J. WILBY, New York, N. Y. Application filed August 18, 1873.

Pin or cam on type-wheel shaft engages once on each revolution with a tooth on the arc-section of a swinging lever, depressing it until it is brought into contact with and locks type-wheel.

Claim.—A unison-stop, composed of the stop A, the cam G, the pawl H, cam I upon the printing-lever P, constructed, arranged, and operating substantially as set forth.

144,813.—Sucker-Rod Joint for Pumps.—ABNER M. WILLIAMS, Oil City, Pa., assignor of one-half his right to CHARLES H. DUNCAN, same place. Application filed October 15, 1873.

The socket-piece has an internal shoulder to relieve the rivets of the vertical strain, and has four straps for attachment to the sucker-rod.

Claim.—A sucker-rod joint consisting of the socket A, with interior shoulder *a* and the four extended wings or straps C C C C, all formed of one piece of metal, as and for the purposes herein set forth.

144,814.—Revolving Fire-Arm.—DAVID WILLIAMSON, Greenville, N. J. Application filed November 12, 1873.

The cylinder is arranged to swing laterally when the center pin is withdrawn, and mechanism is provided for limiting the lateral movement of the cylinder and of the center pin, so that the latter may be used for extracting the empty cartridge-shells without detaching it from the arm.

Claim.—1. The combination, with a cylinder which swings laterally for the purpose of loading, &c., of a vibrating slotted arm or plate, substantially as herein described, whereby the lateral movement of the center-pin and rammer is limited and brought in position, for the purpose set forth.

2. The plate *b'* having slot *x* and bolt or screw *f*, in combination with arm *b* and cylinder B, substantially as and for the purpose specified.

3. The combination, with the cylinder B, tube *a*, and arm *b*, of the slotted plate *b'*, the frame A having slot *y*, bolt or screw *f*, and shaft D, all constructed substantially as and for the purposes herein set forth.

144,815.—Revolving Fire-Arm.—DAVID WILLIAMSON, Greenville, N. J.—Case B. Application filed November 12, 1873.

Claim.—1. A cartridge-extractor for revolving fire arms, made in sections, and the sections operating successively, substantially as and for the purposes herein set forth.

2. The cartridge-extractor sections D D, provided with projections *a a*, of T or other suitable shape, in combination with the tubular end of the extractor-spindle C, provided with longitudinal slots of unequal length, substantially as and for the purposes herein set forth.

144,816.—Belt-Hole Scupper.—BENJAMIN L. WOOD, Taunton, Mass. Application filed July 5, 1873.

The casing has spurs or pins cast centrally upon each side thereof, upon which the shipping-plate moves. The distance that the plate moves is equal to the width of the belt used, and the length of the opening in the top of the casing is equal to twice that width.

Claim.—The revolving belt-hole plate A, used in connection with the casing D, (either upon the exterior or interior thereof,) all for the purpose and in the manner substantially as herein set forth.

144,817.—Compound Engine.—WILLIAM WEIGET, Newburg, N. Y. Application filed August 15, 1873.

A compound engine, having two cylinders and two pistons, is provided with a single induction-valve and suitable ports and passages, so that a volume of steam admitted, on once opening the valve, will effect a complete backward and forward movement of the piston. The single steam-valve is combined with a regulator, so that the volume of steam admitted to the small cylinder is dependent on the pressure of steam.

Claim.—1. A compound engine, having two cylinders and two pistons, provided with a single induction-valve, and with ports and passages, substantially as described, so that a volume of steam, admitted on once opening the said valves, will be the sole agent for effecting a complete backward-and-forward movement of the piston, as specified.

2. The combination, with the single steam-valve *d* of the compound engine, of a regulator, operating as described, so that the volume of steam admitted to the small cylinder is rendered dependent on the pressure of the steam.

144,818.—Frame for Horizontal Engines.—WILLIAM WRIGHT, Newburg, N. Y. Application filed July 26, 1873.

Claim.—1. A horizontal steam-engine frame in which a cylinder, *b*, for guiding the cross-head, is combined with the cylinder-head *a* and semicircular connecting-piece *d*, substantially in the manner described.

2. The combination, in a horizontal engine-frame, of the guiding-cylinder *b*, base H, and trough-like connection D.

3. A horizontal engine-frame composed of the cylinder-head *a*, guiding-cylinder *b*, connecting-piece *d*, trough D, base H, and web *t*, all combined substantially in the manner described.

144,819.—Milk-Boiler.—OSWALD ZWICKER, Philadelphia, Pa., assignor to himself and HENRY OTTO HEHMANN, same place. Application filed August 15, 1873.

A central tube, provided with a perforated base, projects through a perforated cover. The circulation is accelerated from the bottom of the vessel.

Claim.—The combination of the central tube B, its enlarged notched or perforated base, the dished cover D, and its opening *c*, with the pan A, as set forth.

REISSUE PATENTS.

5,656.—Windmill.—EPHRAIM A. ATWOOD and HARRY H. BODWELL, San Francisco, Cal.—Patent No. 142,865, dated September 16, 1873. Application filed November 1, 1873.

The tail or vane of a wind-wheel is hinged to a toothed segment, with which a screw engages to turn and lock the vane at any desired angle, and a shoe, consisting of the body or upright, with the horizontal arm and the brace as a means of supporting and hinging the tail.

Claim.—1. The worm L and the segment K, for the purpose of turning the tail to any position and locking it, substantially as herein described.

2. In combination with the worm L and the segment K, the vertical pulleys M and R and the endless rope O, for the purpose of operating the rudder from the ground, substantially as herein described.

3. In combination with the pulley R and adjusting-spring U, the guide-rod T, to prevent twisting, substantially as herein described.

4. The shoe, consisting of the body or upright H, with the horizontal arm F and brace J, as a means of supporting and hinging the tail G', substantially as described.

5,657.—Tug-Holder.—THOMAS J. BOTTOMLEY, Burlington, Wis., assignor to PRATT & LETCHWORTH, Buffalo, N. Y.—Patent No. 67,489, dated August 6, 1867. Application filed August 18, 1873.

Claim.—1. The combination of two trace carrying arms with a base, A, provided with loops *a a a a*, substantially as hereinbefore set forth.

2. The combination, with the base and tug-supporting arms of a trace-carrier, of the spring locking-arms *s s*, substantially as and for the purpose hereinbefore set forth.

5,658.—Cooler for Coffee.—JABEZ BURNS, New York, N. Y.—Patent No. 61,393, dated January 22, 1867. Application filed October 2, 1873.

Hot roasted coffee is placed upon a perforated false bottom in a movable pan. The compartment below is connected with a suction-fan blower, which causes air to flow down through the coffee and out into the external air, cooling the coffee and removing from the drying-room smoke and dust.

Claim.—1. The movable cooler or pan A, having a perforated bottom for holding the coffee, or substitutes for coffee, to be cooled, in combination with the suction-blower E connected with the cooler, substantially as described, to draw off the smoke and dust from below, as set forth.

2. The stationary suction-blower E, provided with a discharge-pipe, *b*, in combination with the portable cooler A and connecting-tube D, substantially as described, for removing the dust and smoke which rise from the coffee during the operation of cooling, as set forth.

5,659.—Device for Steaming Oil-Wells.—THOMAS B. CABOTHERS, Oil City, Pa.—Patent No. 139,656, dated June 10, 1873. Application filed July 15, 1873.

Clearing clogged fissures and veins in oil-wells by means of steam. The steam-pipe is provided with perforations at its lower part, in consequence of which the steam is directly applied to the sides of the well.

Claim.—1. The pipe D, provided with perforations *a a*, whereby steam may be conveyed and directly applied to clogged veins and fissures of oil-wells, substantially as and for the purpose herein set forth.

2. The steam-pipe D, having perforations *a a*, in combination with the casing-head A, casing B, and tubing C, substantially as and for the purpose shown.

5,660.—Skate.—JOHN FORBES, Halifax, Nova Scotia.—Patent No. 62,649, dated October 8, 1867. Application filed June 23, 1873.

The runner-brackets, and also the transverse clamp-boxes, are punched out of the frame and bent down into place. The runner is secured to the frame by slot-headed studs.

Claim.—1. The bent drops or brackets, formed out of the skate-frame, for supporting the runner, substantially as described and shown.

2. The transverse box or channel, constructed out of the frame by punching out and bending down, substantially as described.

3. The slot-headed bolts, in combination with the heel or toe plates and slotted parts of the runner, substantially as described.

5,661.—Machine for Trimming the Edges of Boot and Shoe Soles.—RICHARD C. LAMBERT, Quincy, Mass., assignor, by mesne assignments, to THE SHOE-MACHINERY MANUFACTURING COMPANY.—Patent No. 80,936, dated August 11, 1868. Application filed November 10, 1873.

Claim.—1. In a machine for trimming, paring, smoothing, or beading the edges of soles of boots and shoes, the combination of a boot or shoe holding mechanism that presents the sole-edge in a substantially vertical plane, and an overhanging tool that rests upon such edge, and is capable of following the curvatures of the sole and sole-edge as such edge is progressively brought under the tool.

2. In combination with the overhanging operating tool, a jack mechanism, having successive longitudinal and semi-rotative movements for bringing the sole-edge to the action of the tool.

3. In combination with the longitudinally and rotatively moving jack mechanism, carrying and supporting the shoe-sole in a vertical plane, a locking mechanism for confining the jack during its rotative movements.

4. In combination with the jack or shoe-holding mechanism, the oblong gear and pinion, arranged in a vertical plane, and operating to impart the respective movements to the jack, substantially as described.

5. In combination with the longitudinally and rotatively moving shoe holding mechanism, the cam-grooved plate *a* for guiding such shoe-holding mechanism, substantially as described.

6. In combination with the longitudinally and rotatively moving shoe-holding mechanism, a tool-holder, having a compound joint to permit its vertical, lateral, and angular movements, substantially as described.

7. In combination with the shoe-holding mechanism, a tool which is held to or toward the sole-edge by the stress of suitable springs.

8. In combination with the shoe-holding mechanism, a pattern-plate, adapted to the sinuosities of the whole sole, for regulating the action of the tool, substantially as described.

9. In combination with the plate *f*, having the outline of a shoe-sole, a clamping mechanism for clamping the shoe against said plate, substantially as described.

5,662.—Eyelet-Making Machine.—WILLIAM R. LANDSTEAR, Hartford, Conn., assignor, by mesne assignments, to THE HARTFORD EYELET COMPANY, same place.—Patent No. 53,669 dated March 6, 1866; antedated October 9, 1865. Application filed April 25, 1873.

The improvement here claimed that was not claimed in the original patent is, the centering-teat *a* on the extremity of the male former B, as specified in 4th claim.

Claim.—1. The combination and arrangement of the die A, the male former B, the punch C, the female former C', the elevator D, and the flanging-die *c*.

2. The combination of the die *d* and the expelling-passage *f* with the female former C', the punch C, the male former B, and the die A, all constructed and arranged substantially as described.

3. The combination and arrangement of the teat or spur *e* with the male former B, the die A, the punch C, and the female former C', all constructed and arranged as described.

4. The combination and arrangement of the annular groove *b*, with the elevator D and the flanging-die *c*.

5,663.—Cotton-Gin.—ROBERT MCKENNA, White's Station, Tenn.—Patent No. 108,500, dated October 18, 1870; reissue No. 5,148, dated November 19, 1872. Application filed November 10, 1873.

Flanged disks, which are arranged on a driven shaft within the roll-box, near the lower edge of the seed-board, mesh into the spaces between the gin-saws, for the purpose of expelling the seed and pressing the lint against the saws.

Claim.—The roller or shaft F with flanged disks G G, combined and arranged in the roll-box to operate in connection with the gin-saws, substantially in the manner and for the purpose herein set forth.

5,664.—Printing-Press.—GEORGE W. PROUTY, Charlestown, Mass.—Patent No. 132,509, dated October 29, 1872. Application filed October 20, 1873.

Segmental gear actuates a semi-rotating plate, which is provided with lugs in which slide the rods carrying the inking-roller frame, and with slotted connecting-rods vibrating the platen.

Claim.—1. The plates H, having the brackets I' and side crank-sockets I, for the connecting of the platen and inking-rollers to the pinion-shaft through the medium of the pitman J and rods N', substantially as described.

2. The combination of the rocker-shaft G, the lever G', the segment F, pinion E, shaft D, cranks I, and pitmen J, operating, as set forth, to impart motion to the platen K, substantially as described.

3. The combination of the segment F, pinion E, shaft D, plate H provided with the brackets I', the rods N', and springs P, operating to impart motion to the inking-rollers M, substantially as described.

4. The toothed segments F, engaging with the pinion E, and operating to transmit motion to the piston and inking-rollers through the medium of the shaft D, crank-plate H, pitmen J, and rods K, or their equivalents, substantially as specified.

5,665.—Locomotive-Wheel.—JOHN R. RICHARDSON, Max Meadows, Va.—Patent No. 105,506, dated July 19, 1870; reissue No. 4,721, dated January 23, 1872. Application filed September 12, 1873.

Claim.—The spurs b, springs d, and pins e on a locomotive-wheel, in combination with a track, a, having teeth c, substantially as set forth.

5,666.—Salt and Pepper Dredge.—DANIEL C. RIPLEY, Pittsburg, Pa.—Patent No. 142,351, dated September 2, 1873. Application filed October 13, 1873.

Two vessels, one within the other, having discharge-openings at the same end, and a rotating registering-cap.

Claim.—1. A dredge having two compartments with the discharge-openings at one and the same end, as described.

2. The combination, in a dredge, of two compartments with a rotating registering-cap, substantially as described.

3. A dredge having separate compartments a and d and two caps, e and f, one of which has a slight rotary motion, and both having perforations arranged relatively to each other, as described, so that, by the rotation of the cap f', either compartment may be opened while the other is closed, substantially as set forth, and for the purposes specified.

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UNITED STATES PATENT OFFICE,

Washington, D. C., December 5, 1873.

Ordered, Rule of Practice No. 22, U. S. Patent Office, referring to the requirement of new drawings in certain cases, in applications for reissue, is hereby amended as follows:

After this date all reissue applications must be accompanied by new thick-paper drawings, as in original applications.

M. D. LEGGETT,
Commissioner.

DIGEST OF FOREIGN PATENT LAWS.

VENEZUELA.

REPORT BY MR. WILL. ACKERS CAGE, OF THE BRITISH LEGATION.

Any person, the author of a discovery or invention in matters of industry, or of an improvement not before used or known, or who introduces from abroad any kind of manufacturing process or industrial improvement known in other countries, but not in use in Venezuela, can obtain a patent or industrial privilege.

To obtain the patent above alluded to a petition must be addressed direct to the minister of the interior, stating, in a clear and precise manner, the principal and essential points of the discovery, invention, or improvement, accompanied by so complete, clear, and correct a description that any one acquainted with the art could obtain the result or manufacture the article if employing the means of proceeding in the manner indicated.

Provisional declarations unaccompanied by the above-mentioned description are not taken into consideration.

On the petition having been presented, the day and hour of its having been made are noted on the margin, in order to insure to the petitioner the priority of the discovery or invention.

Should the patent be in dispute between the persons, the first who had applied for it is entitled to it; and if both applications were made the same day and hour, the question is decided by arbitrators, one named by each interested party and another by the minister of the interior. Should one of the interested parties refuse to name an arbitrator, the patent is issued to the other; and should there be more than two contending parties, and these should not agree in the nomination of three arbitrators, the nomination is then made by the minister of the interior.

In the case of death of an inventor before obtaining a patent for his invention, his lawful heirs may obtain it in conformity with law.

The petitioner for a patent has to make oath to the effect that he believes himself to be the true inventor of the art, machinery, &c., with reference to which he applies for a patent.

The patent is issued by the president of the republic, and in it is mentioned the name of the inventor, and that he has made oath according to law; the art or machine, &c., invented, (fully described as above stated,) and the number of years during which he is allowed the exclusive right to exercise the industry, or manufacture the machine, or sell the article invented; the government, however, not guaranteeing the priority or merits of the invention.

The patent for a discovery, invention, or improvement, insures to the author the exclusive right to exercise the industry, or manufacture the machine, or sell what he invented, for the number of years stated in the patent, in all the states of the republic; but in the case of the introducing of some kind of industrial invention or improvement from abroad, known in other countries, but not in use in Venezuela, an exception is made with regard to such states of the republic where such invention or improvement may have been known and in use before the patent was issued.

The owner of a patent may make such establishments or shops as may be required for the working of the pat-

ent; may employ all sorts of workmen; have partners; establish everywhere deposits for the sale of the productions of his patent, and he may freely dispose of his secret and patent and transfer it to others in legal form, although the person to whom it may be transferred, under the penalty of losing the right, is bound to inform the minister of the interior of the transfer.

A patent issued for an improvement of an invention already patented is limited to its special object, according to the distinctive points indicated in the description, and confers no right to any part of the invention that may have been the subject of a prior patent or of a process previously known; but the owner of the prior patent cannot either avail himself of the improvement or the subject of the later patent without coming to an understanding with its owner.

No privileged industry can, according to law, be subjected to any national or municipal contribution or tax exceeding one per cent. per annum on the original cost of the edifice with all its machinery; and so soon as fabrication is in activity the interested party must present to the minister of the interior the documents proving the said cost, and the definitive amount is to be advertised in the gazette of Venezuela.

Primary materials required for a patented industry are exempt from all import duties for the whole period for which the patent has been granted; and, in order to avoid abuses, the patentee must inform the government, on commencing to work his patent, of the primary materials he proposes importing, and the government issues the necessary orders to the customs; and if it be proved that the patentee, abusing the exemption, has introduced such materials for sale without applying them to the patented industry, independently of his having to pay the duties for the materials sold as above stated, he loses for the future the right to the exemption from duties.

Any violation or sale of an article of the patent of invention, without the consent of the owner, is forbidden as an attack upon his prerogative, and entitles him to obtain the intervention of the police to put a stop immediately to any ulterior violation and to provisionally embargo the falsified articles, be they in the hands of the manufacturer himself, or in the hands of any one commissioned to sell them, or be they imported from abroad, and all under penalties established by law.

The utmost duration of the exclusive rights of the patent is fifteen years, and the least is six years, to count from the date on which the patent was issued; but as regards the prohibition to sell articles of the kind of the patented industry, the term of years is to be reckoned from the date on which the patented industry is brought into operation.

In order to facilitate the trying of experiments, patents may be issued for a less time than fifteen years; and if application be made before the lesser term be completed, it is extended to the fifteen years; but if the application be not made the patent ceases.

Every one is at liberty to make use of the invention, discovery, or improvement when the term of a patent ceases, as well as whenever the inventor, discoverer, improver, or importer ceases to be considered to be the owner of the patent, which happens under the following circumstances:

When it is proved that, by adding or suppressing part of the description he is required to furnish, the patentee conceals the true means for the working of his patent.

When it is proved that he employs secret means, not comprised in the description he is required to furnish, and which he did not add to it by any subsequent declaration.

When it is proved that he applied for and obtained a patent for more than there was in reality of discovery, invention, improvement, or to be imported.

When it is proved, with respect to discoveries, inventions, or improvements, that they had been in use before in Venezuela or elsewhere, or are described in some work previously published, the description being sufficiently clear and precise to enable any one acquainted with the art to carry out the invention; and, with respect to those introduced from abroad, that they had already obtained a patent in Venezuela. Also, when it is proved that the patentee has failed, in the former case, within the term of two years, and, in the latter case, within that of one year, to carry the invention into effect.

When the inventor, within six months of his invention having been freely made use of, has not applied for a patent.

When the patent has been obtained through usurpation of the discovery or invention of another person.

When the patent has been transferred to another person, and this person has not notified the transfer to the minister of the interior.

The above points must be proved in a regular suit at law, and if proved the patent is annulled.

A register for patents issued, with other information relating to them is, according to law, to be kept at the department of the interior.

On a patent being issued, the circumstance is, according to law, to be published in the gazette of Venezuela.

When the term of a patent lapses, or when a patent is annulled, a circumstantial description of the invention is, according to law, to be published in the gazette of Venezuela.

The violation of a patent is punishable, according to law, by a penalty of from three months' to two years' imprisonment, and a fine of from 50 to 500 pesos, say $50 to $500.

Law and practice with regard to inventions correspond, with very slight exceptions, in Venezuela—these exceptions being principally such as arise from the non-publication of the gazette of Venezuela during certain periods, and irregularities and deficiencies in the register, which are principally to be attributed to the civil warfare so constantly prevailing in the country.

For the same reason, probably, there has scarcely been any invention in Venezuela.

COMMISSIONER'S DECISIONS.

EDWARD PAUL AND SAMUEL T. DORLAND.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the interference between the application of Edward Paul and the patent of Samuel T. Dorland, for* IMPROVEMENT IN ORE-WASHERS.—*Decided November* 12, 1873.]

In an interference between a patent and a subsequent application, the patent affords a *prima-facie* presumption of priority of invention in favor of the patentee.

THACHER, *Acting Commissioner:*

The invention in dispute consists in certain improvements in ore-washing appliances. It is comprehended in the patent of Dorland, and the first and second claims of Paul, which are as follows:

1. The perforated grate or screen *e* at the lower end of the inclined trough *b*, in combination with the inclined grate A, substantially as set forth.
2. The curved end *f*, to the trough *b*, in combination with the inclined grates A, as set forth.

The question in the case is in reality not which of the parties *first* made the invention, but which of them *made* it. It is not possible to hold upon the proof that they are both independent inventors. They were intimately associated at the time the invention was produced, if not with respect to its actual production, at least with respect to the work of overcoming the difficulty it was designed to obviate, and each claims to have made the invention for the same object, at the same time and place, and denies that the other, as an inventor, had any part in it. Paul was superintendent of the Sylvan Lake ore mines, where Dorland was employed under him as a carpenter. In July, 1872, Paul says he discovered that there was a waste of ore in the process of washing, which he immediately sought to prevent. This was a matter that would seem to come legitimately within his province as superintendent, and would not seem likely to concern Dorland or enlist his efforts to devise a remedy. Nevertheless, it is not impossible that Dorland might have observed this waste and called Paul's attention to it; and he swears he did so. The divergence in the opposing testimony begins here and continues throughout with respect to all important particulars.

The specific difficulty to be remedied was that the water, flowing from the main separating-machines, carried off in its current small fragments of ore. To prevent this, Paul, as both parties agree, first placed a box, with a perpendicular grate in its end, under the end of the water-trough. This proved ineffectual, and he alleges that he then gave Dorland directions to make and apply a trough with cast-iron grates in a portion of its bottom near its discharge-end. Dorland claims this to have been his own suggestion, which, as an experiment, he was permitted by Paul to try; but it also proved abortive. Dorland then constructed the devices embodying the invention under consideration, but whether upon suggestions and under specific directions of Paul, or upon his own contriving, and by mere permission and encouragement of Paul, is the vital point in dispute.

Very little light is thrown upon this question by the testimony of the witnesses called to aid the respective parties. Paul certainly obtains little substantial support from those he has produced. The only tolerably safe solution of the case seems to be found in an examination and comparison of the testimony of the parties themselves respecting the particulars and circumstances of the production of the invention. Paul is not entirely clear and full in his account of what he did. He does not set out definitely and specifically the nature, time, place, and circumstances of his alleged directions to Dorland to make the device, and does not relate the manner, incidents, and progress of its conception in his own mind in a manner to assure belief that he is the inventor, where the fact is contested as it is here.

Dorland, on the other hand, as the Board have justly remarked, describes minutely "the construction step by step, the difficulties encountered, and the experiments made, with a naturalness of sequence and detail which gives the impression of his having gone through not only the manual but the mental operation of producing the invention."

Upon careful examination, I find nothing to rely on in the case more justly decisive than a comparison of the character of the testimony of the principals, and, upon such a comparison, I have no hesitation in affirming the decision of the Board, awarding priority of invention to the patentee, in whose favor, as has long been established, the patent itself furnishes a *prima-facie* presumption.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

THE SINGER MANUFACTURING CO. *vs.* THE UNION BUTTON-HOLE AND EMBROIDERY CO. *et al.*

[*In equity.—Before Lowell, Judge.—Decided September* 12, 1873.]

MOTION FOR INJUNCTION.

Although courts of equity will not ordinarily, even where the title is clear, disturb the existing order of things by an injunction, they will interfere to preserve them in that condition until the rights of the parties are ascertained, notwithstanding some doubts may rest upon them, provided they are in the course of being judicially determined.

While the courts will not enjoin the specific performance of a contract when they can exercise no supervision over it, or when it would force upon an employer a servant personally objectionable to him, they will nevertheless restrain the parties from any action infringing the contract.

An injunction against trespassing upon an exclusive license to sell a patented article may be granted against parties who are not bound by the contract or who have no notice of it.

Where one party to a contract has already received a benefit from the performance of it by the other, he will be restrained from violating it, although the other is not bound by it.

Where a corporate body had given the plaintiffs an exclusive license to sell machines embodying inventions of which it held the patents, and had agreed to furnish the machines at a stipulated price, it was prohibited from taking measures to dissolve its organization, and its assignee of the patents in trust for a new association was prohibited from disposing of them.

But the corporation was not decreed to perform the contract. *Marble Co.* vs. *Ripley*, 10 Wall., 339, commented on.

[*Elias Merwin*, for complainant.

H. G. Parker and *E. S. Mansfield*, for defendants.]

STATEMENT.

The bill alleged that, in 1866, the defendant company was the owner of certain patents embodied in a machine for making button-holes, and owned a factory, &c., for making the machines, and, being desirous to bring the same into notice and to secure a market, they made a contract with the plaintiffs, who were a corporation of established reputation and large business in this country and in foreign countries, by which the plaintiffs were to be the sole and exclusive agents for the sale of these machines, excepting in France and in the city of Boston, and were to supply the market and to

use certain means and facilities at their command for this purpose; and the defendant company were to furnish the plaintiffs with machines as called for up to the full capacity of the factory, at a certain agreed price, to be paid monthly in cash. It further charged that the plaintiffs had bought and paid for one thousand machines, and had succeeded, with much labor and expense, exceeding the profit obtained, in selling these machines, and that a market had been made mainly, if not wholly, by their exertions; that the company now neglected and refused to deliver any more machines, though requested, and were taking measures to dissolve their association for the purpose of avoiding their contract with the plaintiffs, and in pursuance of that intent they had conveyed their patents to the defendant Wood, as trustee for a voluntary and unincorporated body of persons unknown, called the Button-Hole Sewing-Machine Company; that said Wood had been the treasurer of the defendant company, and was fully informed of the plaintiff's rights.

The bill prayed a decree for specific performance and an injunction against the transfer of the patents by Wood and against the dissolution of the defendant company and the manufacture and sale of the machines, excepting in conformity with the contract.

The agreement between the plaintiff and defendant companies contained this clause: "That the agency aforesaid shall continue so long as the patent or patents for said machine have been or may be granted or extended, provided that the Singer Manufacturing Company shall fairly and reasonably conduct such agency, and shall continue to supply the market with machines as aforesaid, and shall not engage in selling any other button-hole machines than those manufactured by the Union Button-Hole and Embroidery-Machine Company; but in case the Singer Manufacturing Company shall fail to carry out their agreements as herein expressed, the forfeiture of such agency shall be considered the only penalty for such failure.

[*H. G. Parker* and *H. S. Mansfield*, for the defendants.]

The contract is not one that the court can enforce from the nature of the business. *Garret* vs. *Epsom Downs Railway Co.*, 11 Jurist. N. S., 591; *Munroe* vs. *Wirebo R. R. Co.*, 13 W. R., 880. At all events, it will not be enforced, because it is without mutuality. *Guger* vs. *Green*, 4 Gill., 472; *Duvall* vs. *Myers*, 2 Md. Ch., 401; *Bronson* vs. *Cahill*, 4 McLean, 19; *Benedict* vs. *Lynch*, 1 Johns. Ch., 373; *Rogers* vs. *Sanders*, 4 Me., 92; *Woodward* vs. *Harris*, 2 Barb., 439; *Philips* vs. *Berger*, 8 Barb., 527; *Marble Co.* vs. *Ripley*, 10 Wallace, 339.

LOWELL, *J.*:

There is no dispute that the two companies, plaintiff and defendant, made the contract A annexed to the bill, and by which the former is to have the exclusive right of selling the patented machines, excepting two excepted localities; that the defendant Wood had full knowledge of the contract, and that the defendants are about to carry out a course of action which will have a strong tendency, to say the least, to defeat the contract. In such a state of things a court of equity readily grants an injunction until the merits of the case can be inquired into, because, if it refuses to interfere at first, rights may be acquired and innocent third persons may become interested in the property in a way that will embarrass the final action of the court, and perhaps work injustice to those innocent persons. It is the direct opposite of a case in which the court is asked to interfere with existing rights upon the strength of some supposed paramount title, and to break up an established order of things. Here the defendants are breaking the established order, and are the actors in fact, and the court is asked to keep things as they are and were agreed to be, until the full evidence is taken. "It is certain," said a learned lord chancellor, speaking of a case of this kind, "that the court will in many cases interfere and preserve property *in statu quo* during the pendency of a suit in which the rights to it are to be decided, and that without expressing and often without having the means to form any opinion as to such rights." He then cites several authorities, and continues: "It is true that the court will not so interfere if it thinks there is no real question between the parties; but, seeing there is a substantial question to be decided, it will preserve the property until the question can be disposed of. In order to support an injunction for such a purpose, it is not necessary for the court to decide upon the merits in favor of the plaintiff." *The Great Western Railway Co.* vs. *The Birmingham Railway Co.*, 2 Phillips, 602.

The decision of this motion, then, depends upon whether the plaintiffs have made such a reasonable *prima-facie* case for the relief, or some substantial part of the relief which they seek, that they are fairly entitled to maintain the *status quo*. Upon the matters of fact I find that they have such a case.

The two points of law are not without difficulty. The relief asked is specific performance and injunction. It is argued with great ability by the defendants that the plaintiffs are not entitled to specific performance, and that, therefore, they cannot have an injunction, which is merely auxiliary. Granting the premises, I am not prepared to concede the conclusion. If the court cannot order a contract for the making of button-hole machines to be specifically performed by reason of the impossibility of superintending the details of such a business, it does not follow that the bill may not be retained as an injunction bill. It was formerly thought that an injunction would not be granted to restrain the breach of any contract, unless the contract were of such a character that the court could fully enforce the performance of it on both sides. Upon this ground there were many decisions refusing to interfere with contracts for personal services, however flagrant might be the breach of them. *Kemble* vs. *Kean*, 6 Simons, 333; *Kimberly* vs. *Jennings*, ib., 340; *Baldwin* vs. *Society for Diffusion of Knowledge*, 9 ib., 393, in which the courts refused to restrain actors and authors from violating their engagements, because they could not oblige them specifically to keep them. But all these cases were overruled by one of the ablest chancellors who has adorned the woolsack, in *Lumley* vs. *Wagner*, 1 De Gex M. & G., 616. In that case a singer had agreed to sing at the plaintiff's theater for three months, and not to sing at any other, and the court enjoined her from performing at a rival establishment, though it was clear and was admitted that the court could not oblige her to sing for the plaintiff. This case was fully in accord with *Morris* vs. *Coleman*, 18 Ves., 437, which had been disregarded or explained away in many of the intervening cases.

It is now firmly established that the court will often interfere by injunction when it cannot decree performance. Thus it said that the writ may issue to restrain the use of a ship contrary to an agreement for charter, though the agreement was not personally binding on the defendant who was a mortgagee. *De Mattos* vs. *Gibson*, 4 De Gex and Jones, 276; that a tenant may be restrained from doing anything which will prevent the demised premises being used as an inn, though he cannot be forced to keep the inn as he had covenanted to do. *Hooper* vs. *Broderick*, 11 Simons, 47; that where two railway companies had made an agreement for the use by each of the road of the other, the court might enjoin the obstruction of such use by one of the parties, though it could not enforce full performance of the whole agreement. *Great Northern Railway Co.* vs. *Manchester, etc., Railway Co.*, 5 De Gex & Small, 138. The case of *Lumley* vs. *Gibson*, *ubi supra*, has been followed in numerous cases concerning actors, authors, and publishers. *Webster* vs. *Dillon*, 5 W. R., 867; *Stif* vs. *Cassell*, 5 Jurist N. S., 348. The case of *Fechter* vs. *Montgomery*, 33 Beavan, 22, sometimes cited as opposed to these decisions, is not so at all; the decision there was that the actor had the right to renounce his engagement because the manager had not fulfilled his part of the contract. See, also, *Slee* vs. *Bradford*, 4 Giffard, 262; *Rolfe* vs. *Rolfe*, 15 Simons, 88; *Dietricheen* vs. *Cabburn*, 2 Phillips, 52, has much resemblance to the case at bar. The defendant owned a patent medicine and appointed the plaintiff his wholesale agent for the sale of it, and agreed to supply him with all the medicine he should order at forty per cent. discount from the current retail price, and covenanted not to sell to any one else at a greater discount than twenty-five per cent. above that current price. On demurrer, the lord chancellor, overruling the vice-chancellor, sustained the bill which sought to enjoin the defendant from selling to any one else at less than the agreed discount, and for an account. It is plain, I think, that the decision would have been the same if the defendant had agreed not to sell to any one else on any terms. This case virtually overruled *Hills* vs. *Croll*, 2 Phillips, 60, decided a year earlier. (See the able note of the reporter at the end of the last-mentioned case.) These are but a few of the decisions, though they are among the most important of them.

This is certainly a subject upon which it is almost impossible to reconcile the decisions, and of such inherent difficulty that I know of no other in which the appellate courts have so often reversed the decisions below. I have examined a great many of the cases, and some apparent contradictions may be understood by recollecting that the granting or refusing an injunction is scarcely ever a matter of strict right, and that any attempt to lay down precise and invariable rules on the subject must necessarily fail. There are many cases in which injunctions have been refused in behalf of the employed, when, upon the precedent of *Lumley* vs. *Wagner*, and that class of cases, they would have been granted to the employers. This seems unequal. The explanation, such as it is, appears to be, partly, that courts of equity are unwilling to force upon any one an agent or servant who is personally disagreeable, if the relation between the parties is at all a personal or confidential one; and, partly, that, on the part of the agent or servant, the remedy at law is usually adequate, both from the nature of the contract and the standing of the parties. (See *Mair* vs. *Himalaya Tea Co.*, L. R., 1 Eq., 411; *Johnson* vs. *Shrewsbury, etc., Railway Co.*, 3 De Gex, M. & G., 914.) There are other cases which I can reconcile with those I have above cited only on this ground, that where the subject-matter or business is of public importance, such as the management of a railway, the courts will not risk a total stoppage of the business by injunction when they cannot go forward and regulate the whole matter by a decree for specific performance. *Peto* vs. *Brighton, etc., Railway Co.*, 11 W. R., 874; *Johnson* vs. *Shrewsbury, etc., Railway Co.*, 3 De Gex M. & G.

I think the fair result of the later cases may be thus expressed: If the case is one in which the negative remedy of injunction will do substantial justice between the parties by obliging the defendant either to carry out his contract or lose all benefit of the breach, and the remedy at law is inadequate, and there is no reason of policy against it, the court will interfere to restrain conduct which is contrary to the contract, although it may be unable to enforce a specific performance of it. It seems to me that this case comes easily within this rule. The court cannot, perhaps, superintend the performance of a contract to manufacture machines, but it can restrain the defendants from selling in violation of their agreement.

The case may also be looked at in another view, which was presented in the plaintiff's argument. This is not only an agreement between the parties that certain things shall be done by them, but it is also the grant of an exclusive license (excepting for France and Boston) to the plaintiffs to sell the patented machines. And it has never yet been doubted that the court could restrain all persons, whether they were acting with or without notice, and whether bound by contract or not, from trespassing on such a title.

But it is said to be fatal to the plaintiff's case, that the contract is not a mutual one. This want of mutuality is found in the article which limits the penalty for a forfeiture on the plaintiff's part to a mere loss of the agency. This is said to be equivalent to an agreement that the plaintiffs may renounce at any time; and so it is argued that only one party is bound to this agreement. It is no doubt true, in general, that where only one side is bound to an agreement which remains wholly executory, a court of equity will not usually interfere to enforce the agreement against the party who is bound. The simplest case of this kind is where an infant is one party to a contract for the sale of land. The reason given is, that the party who is not bound would enforce the contract if for his advantage, and repudiate it if the contrary. *Lawrenson* vs. *Butler*, 1 Sch. & Lef., 13. The doctrine is often invoked in that class of cases. But there are innumerable cases where the party seeking performance is no longer bound to anything, having paid the consideration in the outset, or performed his part, or where the plaintiff does not rest on a contract wholly executory, to which this doctrine does not apply. I have some doubt of its application to this case. Supposing the stipulation to mean what the defendants contend it does, that the

plaintiff may renounce at any time, which may be doubted, still, if the defendants, for valuable considerations, have given the plaintiffs an exclusive license until they forfeit it, I do not see why a court of equity should not protect that license by its injunction, as usual, so long as it is not forfeited. A very strong case was cited from 10 Wallace, in which the Supreme Court refused to decree the specific performance of a contract for quarrying marble, &c., on the ground, among several others, that the plaintiff had the right to give up the arrangement on a year's notice. I cannot think that the court intended to announce any general proposition that they would never enforce a contract which one party had a right to put an end to in a year. Everything must depend upon the nature and circumstances of the business. In many of the cases that I have cited, the plaintiff had it in his power to end the contract. It is certainly competent to the parties to make a contract which will be equitable and reasonable, and in which their rights ought to be protected while they last, though it may be terminable by various circumstances, and though one party may have the sole right to terminate it, provided their stipulation is not one that makes the whole contract inequitable. In the note which I have above referred to in the case of *Hills* vs. *Cook*, the learned reporter thinks it quite clear that a contract by the defendant to buy all his acid of the plaintiff, so long as the plaintiff chose to deal with him, would be valid and would be enforced by injunction. In *Rolfe* vs. *Rolfe*, *ubi supra*, the vice-chancellor notices the fact that the plaintiff could stop his own business when he chose, and thereby deprive the defendant of the employment agreed on, yet he restrained the defendant in the meantime from working for a stranger.

The remedy by injunction is a very elastic and adaptable one, and there is no sort of difficulty in granting it until, by a change of circumstances, it shall appear that it ought to be dissolved. A bill may be retained for that purpose for any number of years that may be requisite. The argument, to be sound, must go this length, that, after the plaintiffs have ordered a thousand machines, and have paid for them, and are selling them in all the countries of the world excepting France, there is no adequate remedy against the defendants' underselling them in all those markets. I do not mean to be understood that this point would not apply to an injunction bill as well as to one for specific performance, nor that it is not a doubtful one. But the contract contains in itself, as we have seen, not only executory agreements on both sides, but a present grant, for value, of the exclusive right to sell; and my present impression is that such a grant is good, and is to be enforced, so long as it lasts, whether the remainder of the contract is mutual or not, provided the whole contract, including the grant, is not so unequal as to be void in a court of equity, which, as at present advised of the facts, I see no reason to hold.

It seems to me, therefore, that the plaintiff's case has a sufficient appearance of justice to require the court to keep things as they are by restraining all conduct which will put it out of the power of the defendants to fulfill their contract, until the facts and law can be fully ascertained.

Injunction ordered.

APPLICATIONS FOR EXTENSION.

Applications having been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

22,599.—Dedocating and Clarifying Cane-Juice.—Granted to RICHARD A. STEWART, January 11, 1859. Application filed September 24, 1873, under act of Congress approved March 3, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,564.—Top-Props for Carriages.—Granted to GEORGE COOK and HANNIBAL I. KENDALL, December 27, 1859. Application filed August 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,582.—Harvesters.—Granted to JOHN GORE, December 27, 1859, and reissued January 15, 1861. Application filed September 22, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,584.—Machines for Planing Curved Surfaces.—Granted to JONATHAN P. GROSVENOR, December 27, 1859. Application filed September 24, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,599.—Horse Hay-Rakes.—Granted to SAMUEL LEGRO, December 27, 1859. Application filed September 23, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,614.—Manufacture of Porous Ware.—Granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859. Application filed September 26, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,627.—Lathe Attachment for Cutting Veneers.—Granted to BENJAMIN F. STURTEVANT, December 27, 1859. Application filed September 25, 1873. Testimony closes November 25, 1873. Hearing December 10, 1873.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 20, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,829.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MERRIAM and AMOS B. PARSON, January 24, 1860. Application filed October 28, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NEILSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOSHINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KIESLER and WILHELM ROSENBOCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 16, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to AMOS BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SAMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,297.—Couches for Railroad-Cars.—Granted to EDWARD C. KNIGHT, February 28, 1860. Application filed November 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,303.—Fastening Saw-Handles.—Granted to JACOB NEIMEYER, February 28, 1860. Application filed November 28, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 28, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Singeing Figs.—Granted to ABRAHAM and EDWARD M. DENNY, October 30, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,262.—Faro-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. HearingDecember 31, 1873.

EXTENSIONS GRANTED.

26,243.—Improved Water-Closet Basin, granted to WILLIAM BOCH, Sr., November 29, 1859; (MARGARETHA MAIDHOF, executrix.)

Claim.—A water-closet basin having a covered annular waterpassage, B, at its upper edge, as herein shown and described.

26,269.—Improved Journal-Box for Saw-Mill Carriages, granted to WILLIAM M. FERRY, Jr., November 19, 1859.

Claim.—A single casting, A, molded with an intermediate space, B, and with offsetting boxes C D on each side of said space, substantially as and for the purposes set forth.

26,276.—Improvement in the Manufacture of India-Rubber Hose, granted to THOMAS J. MAYALL, November 29, 1859; reissued October 22, 1872, numbered 5,111.

Claim.—1. In india-rubber hose, the application of some of the preservative compounds herein mentioned or their equivalent antiseptics to hose, so as to preserve the same, substantially as described.

2. The improved india-rubber hose prepared by combining some of the substances herein named or their equivalent antiseptics with the fibrous material composing the same, substantially as described.

26,321.—Improvement in Molding for Metal Casting, granted to JOHN P. BROADMEADOW, November 29, 1859.

Claim.—1. The combined use of a half-flask, of a sufficient size to hold the quantity of loose sand required to form a half-mold, and of a follow-board small enough to enter the said half-flask and act as a piston to compress the sand therein when pressure is applied, substantially as herein set forth.

2. The combined use of a half-flask, as above described, and of a strike whose profile corresponds in form with the transverse section or profile of the pattern, substantially as herein set forth.

3. The combined use of a half-flask, as above described, constituting the cope, of a ribbed cope-plate fitted to enter therein, and of sustaining-pins in the said cope, the whole operating substantially as herein set forth.

4. The combined use of the aforesaid cope-plate, of a bottom-plate fitted to enter the drag of the flask, and of clamps, substantially as herein set forth.

5. Combining the spine-pattern with the follow-board, when this combination is used in connection with a match-board having an opening to permit the descent of the lower end of the spine-pattern, substantially as herein set forth.

6. The combination of projections or indentations, or both, with the follow-board, in contradistinction to constructing the flasks with projections and indentations.

26,327.—Improvement in Nursing-Bottles, granted to FRANCIS J. LA FORME, November 29, 1859; reissued January 14, 1868, numbered 2,831.

Claim.—1. An improved nursing-bottle, having its body A composed of glass or other suitable material, and provided with an elastic nipple or mouth-piece, *f*, and a flexible or pendulous tube, C, applied thereto, substantially in manner and so as to operate as and for the purpose set forth.

2. In a nursing-bottle, otherwise properly organized, the use or application of a flexible or pendulous tube, substantially as and for the purpose set forth.

3. The application of a gravitating tip or tube, *c*, to the lower end of the flexible tube C, substantially as and for the purpose set forth.

26,329.—Improved Boot and Shoe Tip, granted to NEWMAN SILVERTHORN, November 29, 1859; reissued September 2, 1862, numbered 1,339; reissued August 4, 1868, numbered 3,070.

Claim.—A formed tip, substantially as described, as an article of manufacture.

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date November 25, 1873.]

7,002.—Knife-Handle.—JAMES D. FRARY, New Britain, Conn. Application filed November 13, 1873. Term of patent 7 years.

7,003.—Inkstands.—GEORGE W. MCGILL, New York, N. Y. Application filed August 22, 1873. Term of patent 7 years.

7,004.—Ornamental Plate.—LOUIS MOSELEY, New York, N. Y. Application filed August 21, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date November 25, 1873.]

1,537.—Emery.—ABBOTT & HOWARD, Boston, Mass., and New York, N. Y. Application filed November 12, 1873.

"a turkey's head on a shield. A band with the words 'Ecton Mills' and 'Selected Turkey Emery.'"

1,538.—Guano.—GUANAHANI GUANO COMPANY, Petersburg, Va. Application filed November 17, 1873.

"'Guanahani.'"

1,539.—Plows.—HUNTER & FROST, Fredericksburg, Va. Application filed November 18, 1873.

"'Farmer's Friend, Perfected.'"

1,540.—Perfumery and Toilet Articles.—FELIX PROT & COMPANY, Paris, France. Application filed November 7, 1873.

"an oblong label bearing a shield bordered with scroll-work, on which are the words 'Parfumeur Lubin,' &c., a white scroll running diagonally across it, bearing the device 'Lubin,' and on its left-hand border the words F. PROT & CIE., successeurs,' and on the right-hand border the words '55 Rue Ste. Anne, Paris.'"

1,541.—Cigars.—THOMAS B. SLINGERLAND, Rome, N. Y. Application filed November 15, 1873.

"'Roman Emperor.'"

1,542.—Cigars and Tobacco.—THE CONSOLIDATED TOBACCO COMPANY, Gilroy, Cal. Application filed October 8, 1873.

"'The Pride of California.'"

1,543.—Teas and Coffees.—THE GREAT EASTERN TEA COMPANY, Terre Haute, Ind. Application filed November 3, 1873.

"a picture of a steamship with the words 'The Great Eastern Tea Company.'"

1,544.—Organs.—GEORGE WOODS & COMPANY, Cambridgeport, Mass. Application filed July 25, 1873.

"'Pianorgan.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date November 25, 1873.]

ORIGINAL PATENTS.

144,820.—Steam-Plow.—ISAAC S. ALLEN, MONTELIOUS P. BROWEN, and CHARLES W. MOULTHROP, San Francisco, Cal. Application filed February 11, 1873.

The driving-wheels are provided with hollow journals, through which the driving-shaft of the machine passes, giving motion to a series of rotary cutters, which are mounted upon a shaft which is attached to the rear ends of swinging bars.

Claim.—1. The crank-shaft D, with its driving and intermediate gear-wheels for giving motion to the traction-wheels, and the hollow axles F F, in combination with the traction-wheels, the cranks G G, connecting-rods I I, and frame K, for raising and lowering the cutters, substantially as and for the purpose set forth.

2. The combination of the shaft D, through the hollow axles F F, and the cranks G G, connected, by the rods H H, to cranks I I and frame K, with shaft J, substantially as and for the purpose set forth.

144,821.—Piney-Fire for the Manufacture of Iron.—THOMAS ASH and ZECHARIAH WALKER, Trenton, N. J. Application filed August 22, 1873.

The bottom of the exterior walls on each side connect with a wrought-iron interior wall or casing extending part way up on each side of the furnace and uniting to form an arched top, the whole forming a water-casing for the working-chamber. The products of combustion from several fires pass through one boiler, utilizing the waste heat.

Claim.—1. A fire or furnace for making charcoal-iron, having its outer and inner walls or castings constructed of wrought-iron, substantially as specified.

2. A charcoal-iron fire or furnace, constructed of wrought-iron plates or castings A E, with the water-space F between said castings, and provided with orifices *f* and *g* for the introduction and exit of the water, substantially as set forth.

3. The combination of one or more charcoal-iron fires or furnaces with a boiler, substantially as and for the purpose described.

144,822.—Feeding Paper to Rotary Printing Presses.—JOHN T. ASHLEY, Brooklyn, E. D., N. Y.—Case A. Application filed May 23, 1873.

The paper is fed from the feed-board to the hollow impression-cylinder, which is closed at one end, and the other connected, by means of a hollow journal and pipe, to an exhaust-engine, when, the air being exhausted, the edge of the paper is held to the cylinder by the atmospheric pressure over the holes. The cylinder rotating, the impression is made, and, at the desired moment, the valve is opened by the toe coming in contact with the stop, admitting air and releasing the paper, which is drawn to the second cylinder by the exhaustion through the portion opposite the slot, and carried around to the receiving-tray. Air is ejected from the pipes *g* and *g'*, through small perforations, against the paper to keep it smooth and in contact with the cylinder. The blast is suspended in the pipe *g'* by the opening of a valve, while the paper is being fed to the cylinder. The tray is placed in an oblique position, so that the sheets are piled with two of their edges even.

Claim.—1. One or more pipes, *g*, applied to induce blasts of air onto the sheets as they are moved around on the surface of the cylinder C, substantially as described.

2. The hollow rotating impression-cylinder C for taking the sheets one at a time from the feed-board B, in the manner described, in combination with a taking-off cylinder, which removes the printed sheets from the impression-cylinder and delivers them into a tray, substantially as described.

3. The stationary slotted exhaustion-bar J and the perforated rotary cylinder D^2, combined with the impression-cylinder C, substantially as described.

4. The blast-pipe *g'*, arranged above the front edge of the feed-table B, and perforated so as to direct blasts of air upon the top sheets while they are being drawn off by the impression-cylinder C, substantially as described.

5. The valve-opening *r* through the head of the hollow impression-cylinder provided with a valve, r^2, and valve-trip, in combination with a tubular journal, A, and fixed tubular journal-box *l* for receiving a hose, substantially as described.

6. The double inclined tray P, having all sides fixed and arranged to take the sheets directly from the rotating cylinder D^2, and by the gravity of the sheets alone adjust two of their edges even, in combination with the perforated discharging-cylinder D^3, substantially as described.

144,823.—Metallic Plane.—JOSEPH F. BALDWIN, Boston, assignor to JOHN SULLY, trustee, Dedham, Mass. Application filed June 7, 1873.

A metallic carriage, *g*, supporting the iron *l*, is operated by a screw-nut, A, on the rod *s*.

Claim.—The carriage *g*, provided with the flanges *g'* *i* and stem *k*, in combination with the plane-iron *l* having orifices *l' l''*, the nut A having the groove *g''*, and the screw-rod *s*, all arranged and operating substantially as described.

144,824.—Billiard-Cue Clamp.—OLIVER D. BENJAMIN, Toledo, Ohio. Application filed October 29, 1873.

The bracket is fastened to the wall at a proper height to bring the screws of the spring-rods against the freshly-cemented tips and hold them until dry, the butts of the cues standing on the floor.

Claim.—The bracket, formed of the bars A and B, carrying the spring cue-clamps C, and adapted to be screwed or otherwise secured to the wall, as shown and described, for the purpose specified.

144,825.—Inkstand.—BLOOMFIELD BROWER, New York, N. Y. Application filed August 11, 1873.

Claim.—The barometer-inkstand A B, provided with the removable perforated or slotted funnel D, contracted to a point, having a small opening therein and in the neck B, so that the ink in the neck and the ink in the funnel will be on the same level without the employment of mechanical agencies, as set forth.

144,826.—Wrench.—TIMOTHY L. BUCKLEY, Mankato, Minn. Application filed July 12, 1873.

Recesses with shoulders are formed on the inner faces of the jaws. The spring is slightly compressed and sprung into the recess without other means of fastening.

Claim.—The wrench described, consisting of the brace A, having the solid portion *a*, with arm a^1 and rod *c*, pivoted arm *b* with enlarged opening for the rod *c*, independent spring *e*, and recess b^1, adapted to hold the spring without other fastening, and set-screw *d*, combined and arranged as described.

144,827.—Hose-Wrench.—EDWARD BUCKLIN, Jr., Pawtucket, R. I., assignor to CHARLES E. DAVIS and FRANK A. NEWELL, same place. Application filed November 5, 1873.

A jointed clutch having a perforation in either arm to fit the projections on the coupling, the upper half having a short rearward extention with a thumb-rest, supported by a spring for keeping the arms tightly down upon the coupling after the pressure is removed from the thumb-rest.

Claim.—A hose-wrench composed of a jointed semicircular clutch, having the ends of the arms thereof perforated, as shown, and having the rearward extension *g* and spring *i*, all substantially as and for the purposes set forth.

144,828.—Mop-Wringer.—AARON W. BUNNELL, Lincsville, Pa. Application filed March 29, 1873.

Claim.—The combination of the wringer mop-holder having the mop-head *b* rigidly attached to the sleeve *a*, and the wringer cross-bar *z* rigidly attached to the handle-shank B, and the offset *c*, or its equivalent, rigidly attached to the sleeve *a*, as specified.

144,829.—Blast-Furnace.—FRANZ BÜTTGENBACH, Heerdt Düsseldorf, Germany. Application filed May 5, 1873.

The hollow blocks which protect the boshes can be used also with the tuyeres. The cast-iron plate, wherein is cast a coiled pipe for the circulation of water, forms, together with the dam-plate, a closed breast.

Claim.—1. The water-blocks *c*, corresponding in form with the tuyeres, and interchangeable with the same, as and for the purpose described.

2. The combination of the cast-iron plate *i*, constructed as described, with the dam-plate *j*, as set forth.

3. The upper gallery or platform of a blast-furnace, supported either entirely or partially by the "down-come" gas pipes or mains *g*.

144,830.—Machine for the Manufacture of Flour.—THOMAS CARR, Bristol, Great Britain. Application filed April 23, 1871.

Reduces seed to flour by percussion, the grain falling between toothed disks revolving at great speed in opposite directions.

Claim.—1. A flour-mill consisting of parallel disks, carrying five or more annular rows of bars or cages, arranged alternately, and devices, substantially as described, for rotating the disks and cages rapidly in opposite directions.

2. The disk *d'*, carrying two or more concentric series of bars, in combination with the parallel disks and cages, rotating in opposite directions, as set forth.

3. The combination of the disks, rotating in opposite directions, their cages, and the inner chamber, provided with openings or slots adjustable in size, substantially as specified.

4. The combination, with the disks and cages, of an outer casing having an outlet, *g'*, as and for the purpose specified.

144,831.—Valve-Actuating Mechanism for Engines.—FRANK CHASE, Boston, assignor to himself and GEORGE S. SCAMMON, Malden, Mass. Application filed November 3, 1873.

The D-valve is actuated by an annular principal plunger, attached thereto and into which the ends of an auxiliary bisected plunger fit. Auxiliary ports in cylinder and plungers admit and exhaust steam to the opposite ends of the auxiliary plunger.

Claim.—The auxiliary plunger H and the principal annular plunger C, for actuating the valve D, in combination with the steam-cylinder A and chest B, provided with ports and exhaust-passages, constructed and arranged for operation substantially as and for the purpose described.

144,832.—Die for Forging Wrench-Bars.—LORING COES, Worcester Mass. Application filed October 9, 1873.

Claim.—The combination of the forging-dies described, having rectangular corner-grooves, the parallel sides of which are unequal in breadth, said dies being so associated and combined in pairs that the broad sides of the grooves in one pair shall slant to the right, and the similar sides of the other pair slant to the left, each for the purpose of welding in the fin left on the bar by the other, as shown and specified.

144,833.—Horseshoe.—ROBERT F. COOKE, Brooklyn, N. Y. Application filed July 30, 1873.

Claim.—1. A horseshoe made of india-rubber, having an outer lip or projection, *w*, and inner lip or projection, *v*, running around the hoof, in combination with a cloth or canvas lining, *w*, and gutta-percha filling, *v*, substantially as and for the purpose set forth.

2. The combination of the india-rubber shoe A', two or more thicknesses of leather, *s s*, or its equivalent, the outer lip or projection *w*, and the gutta-percha lining *v*, substantially as and in the manner specified.

3. The cloth or canvas lining *w*, to strengthen the horseshoe and act as a means of connecting the india-rubber and gutta-percha together.

4. The herein-described mode of attaching horseshoes made of india-rubber or india-rubber combined with leather or similar suitable material, to the horse's hoof by means of gutta-percha mixed with rosin, shellac, or similar resinous gums, substantially as set forth.

144,834.—Water-Tank for Hotels.—JAMES H. CORAY, New York, N. Y. Application filed May 29, 1873.

Water flows through a coil of pipe in a tank adapted to receive exhaust steam, which heats the water in the coil. The water flows into another tank, in which is a steam-coil, where it is further heated. This coil, by means of suitable connecting-pipes, may receive either live or exhaust steam.

Claim.—1. The combination of the steam-tank C D with its coil of water-pipe F', water-tank E F with its steam-pipe L, the pipes I J for the induction of exhaust steam from the engine, and connecting-pipe K, constructed and arranged to operate substantially as described.

2. In combination with the steam-tank C D with its coil of water-pipe, the water tank E F with its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipe N for the induction of water from the dripping-pipes, all constructed and arranged to operate substantially as described.

3. In combination with the steam-tank C D and its coil of water-pipe, the water-tank E F and its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipe P for introducing live steam, all constructed, combined, and arranged to operate substantially as described.

4. In combination with the steam-tank C D and its coil of water-pipe, the water-tank E F and its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipe O for introducing return steam, all constructed, combined, and arranged to operate substantially as described.

5. In combination with the steam-tank C D and its coil of water-pipe, the water-pipe E F and its coil of steam-pipe, the pipes I, J, and B, and connecting-pipe K, the pipes N, O, P, and T, with valves *a*, *b*, *c*, and *d*, all combined and arranged to operate substantially as described.

144,835.—Milk-Cooler.—AUGUSTUS J. CRANE and DENNIS J. HADLEY, Cambridge, Vt. Application filed September 6, 1873.

Water is admitted to and withdrawn from the water-chamber through small tubes connecting with larger pipes, and milk is drawn from the cooler through an aperture in a pipe provided with a flanged head, to close the outer tube when the pipe is pushed down.

Claim.—1. The milk-cooler consisting of milk-pan B, with water-chamber C extending at bottom thereof, and provided with inlet-pipes D *d a*, and outlet-pipes *d'* D', and tubes E E', substantially as and for the purposes described.

2. The sliding tube E, having broad head and aperture *e* fitted into tube E' for closing pan B and drawing off the milk from the same, substantially as set forth.

144,836.—Grain-Separator.—SAMUEL DAW, Corvallis, Oreg. Application filed July 10, 1872.

An irregular horizontal and vertical motion is communicated to the suspended screen by a connecting-rod driven by a crank, and attached near the front corner of the screen, and by a lever below the screen operated by a pin-wheel.

Claim.—In apparatus for cleaning wheat and other small grain, the combination, with a suspended screen, B, of the lever H, pin R, wheel Q, connecting-rod O, and crank N, arranged and operating as set forth.

144,837.—Grape and Flower Picker.—CHARLES W. H. DELANO, Cedar Rapids, Iowa. Application filed May 23, 1873.

A pair of shears, one jaw of which carries a flange, projecting at right angles to the face of the jaw, the other jaw having a recess for a block of india-rubber for holding the fruit or flower stem. The rubber is held in place by an angular piece and spare.

Claim.—The grape and flower picker herein described, consisting of the jaw D provided with the metallic flange *d*, the jaw F provided with the flange *f*, the removable angle piece G, and rubber pad E, the plate G and jaw F being provided with spurs *g*, all combined and arranged substantially as and for the purpose shown and described.

144,838.—Collar and Cuff Drier.—DAVID W. DE FORMET, Petersburg, Va., assignor of two-thirds his right to SIDNEY S. NORTON and FRANK P. NORTON, Brooklyn, N. Y. Application filed October 4, 1873.

Claim.—A collar or cuff drier, consisting of a bar having a zigzag-shaped wire for holding the collars or cuffs, in combination with a hook at each end of the bar, and a holder for suspending the drier from a line, substantially as and for the purpose set forth.

144,839.—Machinery for Finishing the Nap of Woolen Cloth.—JOHN DOBSON, Philadelphia, Pa. Application filed May 19, 1873.

The devices claimed give the rubbing-bed an elliptical motion, and it rubs the nap to form what is called the chinchilla finish. By adjusting the locking-pieces, the movement of the bed is altered, and different patterns will be produced.

Claim.—The bed B and its adjustable locking-pieces *a a'*, in combination with the rods *c c'*, connected directly with such bed, and operating eccentrics, as and for the purpose described.

144,840.—Apparatus for Delivering and Drawing Long-Fibered Wool After Carding.—JOHN DOBSON and JAMES DOBSON, Philadelphia, Pa. Application filed March 17, 1873.

The slivers of long-fibered wool from two or more carding-machines are delivered side by side onto an endless apron, whence they pass through a suitable drawing-frame, and are deposited in a can.

Claim.—In preparing wool on cards for combing and deliver-

ing the sliver from a number of cards through one delivery, the combination of endless apron B and a delivery-head composed of three pairs of rollers, R, R′, and R″, as shown and described.

144,841.—Pulling-Mill.—RUDOLF EICKEMEYER, Yonkers, N. Y. Application filed April 4, 1873.

The hinged apron and the flange hinged to its top are independently and jointly adjustable to vary the area of the pulling-space. The straps which elevate the stocks are operated by griping-rollers, which alternately seize and release them. These rolls are actuated by gear-wheels so hung in an adjustable frame that the contact of the rolls may be governed, and the height to which the stocks are raised thereby determined.

Claims.—1. The combination, substantially as before set forth, of the adjustable tip and the adjustable apron of the bed of the pulling-mill.

2. The combination, substantially as before set forth, of the pulling-stock with adjustable raising mechanism, which is adjustable to vary the distance to which the pulling-stock is raised, so that the force of the blow can be varied as the pulling progresses.

3. The combination, substantially as before set forth, of the adjustable bed for the pulling-mill, the pulling-stock, and the adjustable raising mechanism for the pulling-stock, so that the resistance to the movement of the articles may be increased when the force of the blow is increased.

4. The combination, substantially as before set forth, of the pulling-stock the adjustable raising mechanism therefor, and the cone-pulley for varying the number of strokes of the pulling-stock in a given time.

5. The combination, substantially as before set forth, of the pulling-stock, the raising-strap, and the griping-rollers.

6. The combination, substantially as before set forth, of the raising-strap, the eccentric griping-rollers, and the adjusting mechanism for varying the relative angular positions of said rollers, so as to vary the time during which they operate upon the raising-strap.

144,842.—Piano-String Bridge.—WILLIAM C. ELLIS, Worcester, Mass. Application filed August 22, 1873.

The strings, after being tuned, are tightly clamped upon the wrist-plank bridge between non-metallic surfaces to insure permanence of tune and good quality of tone.

Claim.—1. A piano-forte bridge, on which strings are held by wooden or other non-metallic strips inserted in recesses formed in the bottom of a metallic clamp adjusted to and bearing upon said bridge by screws engaging with a metallic plate or nut located in the bottom of the bridge, substantially as specified.

2. In a piano-forte, a metallic clamp, K, having a serrated front edge, and formed with screw-holes, and on the bottom with oblique recesses filled with wood or other non-metallic material, substantially as and for the purpose described.

3. In combination with the clamp K and bridge E, a metallic plate or nut, F, and screws G, substantially as specified.

4. The combination of a pin-block or wrest-plank, A, insulators D, bridge E, plate or nut F, clamp K, and strings C, all arranged substantially as herein set forth.

144,843.—Apparatus for Removing Obstructions from Gas-Pipes.—GEORGE GOLDSMITH and JAMES DILKES, Leicester, England. Application filed February 1, 1873.

The barrel or chamber of the plug is filled with gunpowder, a piece of tissue-paper put over the end of the barrel, and the ring screwed on, a coupling-piece attached to the pipe, and the plug, charged as described, screwed into the barrel, extending a short distance into the pipe. The charge is fired by a percussion-cap.

Claim.—1. The described process of removing obstructions from pipes, consisting in the employment of explosive materials, as and for the purpose described.

2. The apparatus described, consisting of a tube, A, having nipple C, and ring B, the tube being adapted to be screwed into a pipe, as and for the purpose described.

144,844.—Valve for Pumps.—ROSCOE J. GOULD and MATTHEW E. CAMPFIELD, Newark, N. J., assignors to ROSCOE J. GOULD, same place. Application filed June 28, 1873.

An annular bearing of elastic material is retained by its own elasticity within a groove cut in the valve. Narrow rigid bearings are provided within the valve-seat, which receive the valve and take the strain, allowing the water nearly the whole surface to act on to lift it again. The edge of the metal portion projects out over the rubber.

Claim.—1. The arrangement of the outer edges of the parts B and D relatively to each other and to the seat *a*, in combination with the supports A^1 A^2 for receiving the rigid portion of the valve and supporting it when sufficiently depressed, substantially as specified.

2. The construction of the metallic part of the valve B with a groove, in which the rubber or equivalent elastic material D may be retained by its elastic contraction, in combination with such elastic material, and arranged to allow its free portion to be compressed on the seat *a*, as herein specified.

3. In combination with a valve, B, lifted by the force of the fluid, the rigid bearings A^1, contracted at the bearing-points, as represented, so as to support the valve at those points without materially subtracting from the surface acted on by the water in lifting the valve.

144,845.—Cut-Nail Machine.—WORCESTER HADDOCK, Pittsburg, Pa. Application filed May 24, 1873.

The dies in the vibrating head are held in place by hooks. The scrap of nail-plate is taken from the nippers automatically by means of two vertical pivoted prongs. A compensating device on the vibrator connects with the means that operates the vibrator by a hook-connection. The bed-piece on the stationary die-frame is held from forward movement by means of a stop, which enters it from below.

Claim.—1. The die-box A, provided with a recess for the reception of a stop, B, provided with projections C fitted to a recess in the bed-piece, substantially as herein described, and for the purpose set forth.

2. The plate-nipper consisting of the jaw *e* and pivoted jaw *f*, in combination with the locking device consisting of the adjustable slide A, link *i*, and pivoted lever *j*, said parts constructed, arranged, and operating with relation to each other, substantially as hereinbefore described, and for the purpose set forth.

3. In combination with the vibrator *m*, having opening *k* and tongs for griping the plate, the forked lever *l*, substantially as herein described, and for the purpose set forth.

4. The connecting-rod *o*, furnished with hook *t*, in combination with the plate *n′*, having opening *m′*, and held in position with relation to the vibrator *m* through the medium of rods *x* and springs *f*, substantially as described, and for the purpose set forth.

5. In combination with the vibrating griping-head E of a nail-cutting machine, the hooks *n* and keys *s*, arranged and operating substantially as herein described, and for the purpose set forth.

144,846.—Cultivator.—LEVI HAVERSTICK, Manor, Pa. Application filed April 23, 1873.

The irregular-shaped beams are jointed by one overlapping the other. The pivoted shovel-standards are slotted at the upper end, and held in position by a hooked brace, which engages a ratchet-wheel. The strain of a fixed obstruction causes the wheel to turn and releases the shovel-standard.

Claim.—The beams B B′, held on a common center-pin or pivot-bolt, A, in combination with the shovels C, ratchet M, and slip-brace or pawl L, all arranged and operating substantially in the manner and for the purpose described.

144,847.—Bee-Hive.—WILLIAM S. HOUGH, Galt, assignor to himself and SILVANUS CORNELL, Widder Station, Canada. Application filed April 24, 1873.

A platform at the bee-entrance rests upon woven wire, and has channels at its base, into which the moths enter, when they fall through the meshes of the wire, and find no egress except at the back of the hive.

Claim.—1. The flanged honey-board A′, the entrance *a*, and the grating *b*, arranged above the bottom board A, substantially as described.

2. The moth-trap K, recessed on its under side, and provided with the passages *i*, arranged and operating as described.

144,848.—Self-Closing Railroad-Switch.—THADDEUS K. HUBBELL and GEORGE H. GREGORY, Wilton, Conn. Application filed March 22, 1873.

When the switch is set for the siding, a spring is compressed, and detent-levers are at the same time brought at right angles to the main rails by mechanism which also locks the switch in position. A train along the main line trips these levers, thus allowing the spring to replace the switch.

Claim.—1. The detent-levers T T, rods V V, tripping-bar W, sway-bar R, lever N, shoulder Q, springs P and L, bar F, arranged substantially as and for the purposes described.

2. The spring P, in combination with the bar F, as and for the purposes described.

3. The arrangement of the sway-bar R and lever N, as and for the purposes described.

144,849.—Wagon-Brake.—EDWIN N. JACK, Williamsburg, Ohio. Application filed July 21, 1873.

Claim.—1. The movable suspension-rod D, constructed to operate as and for the purposes set forth.

2. The brace-rods C C′, in combination with the suspension-rod D, as and for the purpose set forth.

144,850.—Sifting-Shovel.—CHARLES KARSTNER, Chicago, Ill. Application filed May 21, 1873.

The entire body of the shovel is composed of wire, which allows the ashes to escape through the sides as well as the bottom.

Claim.—The shovel described, having the handle B, frame A with flattened part *a* and screen *c*, formed and united as described, for the purpose set forth.

144,851.—Diamond Millstone-Dressing Machine.—DANIEL LAREE, Pottsville, Pa., assignor of one-third his right to SAMUEL E. GRESCOM, same place. Application filed October 4, 1873.

The rocker secured to the reciprocating frame engages with weighted catches pivoted to the bed-plate, and feeds the diamond transversely, either to the right or left, according to the position of the double pawl. The feed is adjusted by a set-screw, which limits the throw of the rocker, and turns the ratchet either slow or fast, as desired.

Claim.—The combination of the bed-plate A, longitudinally-sliding frame B, transversely-sliding diamond-carrier D, feed-screw J, ratchet L, rocker M, pawl N, latches V W, and set-screw T.

144,852.—Combined Quarter-Connection and Parallel Motion for Engines.—ARTHUR J. L. LORENZ, Brooklyn, N. Y., assignor of one-third his right to NORMAN HUBBARD, same place. Application filed October 1, 1872.

A double vertical cylinder-beam engine is connected by side rods and links to vibrating cranks on each side of the cylinders, and from these cranks to the main crank in the center by connecting-rods. Two beams are journaled in the central frame, one end connected to the piston-rods and the other to the pumps. The object is to obtain four vibrating points, or a continuous motion from the beams, as would be required for four pumps.

Claim.—1. The arrangement of the cylinders A and B with their beams C and D, the side connections M, rock-shaft K with its cranks L and J working in bearings in the same bed-plates G to which the cylinders A and B are bolted, and connected on the quarter, through rods R^1 R^2, to main crank I of the crank-shaft H placed in the center between the cylinders A and B, substantially as and for the purpose hereinbefore set forth.

2. The combination of the cross-head O, piston-rod P, connecting-rods N, beams C or D, and crank L, substantially as and for the purposes described.

144,853.—Harness-Pad.—STEPHEN A. MARKER, Indianapolis, Ind. Application filed October 2, 1873.

Claim.—1. The herein-described device for fastening the skirt to harness-saddles or coach-pads, consisting of a plate having the opening B, tongue A, and flanged ends C C′, in combination with a brace, D, securely attached to the under side of the skirt, and having raised shoulders *f f′* and flanges *g g′*, which engage with the flanges C C′ and tongue A, substantially as and for the purpose set forth.

2. A pad-plate for harness-saddles or coach-pads, constructed with the tongue A and flanged ends C C′, with or without the opening B, the said opening being cut in the plate to make room for the skirt, and secure it more effectually to the pad, substantially as and for the purpose set forth.

3. In a harness or coach-pad plate, the opening B for accommodating the skirt, and fastening it more securely and directly to the pad, as set forth and described.

4. The brace D, consisting of a raised middle, *d*, the shoulders *f f′*, and flanges *g g′*, when constructed, arranged, and operating substantially as and for the purpose set forth.

144,854.—Railroad-Signal.—EDWIN R. MARSHALL, Grand Rapids, Mich. Application filed November 13, 1872.

An air-pump beside the track is operated by a passing train, and is connected by tubing to a vertical cylinder, in which works a piston connected by a rod, and cords passing over pulleys with lanterns to be shown or hid by raising or lowering. A branch of the cylinder has also a piston, the rod of which strikes a gong in rising, or it may be arranged to blow a whistle.

Claim.—1. The semaphore C, having a hollow main trunk and side boxes, C′ C′, in combination with the interior air-cylinder D, having blast-tube F and piston *a*, the rod *b*, cords *c c*, guide-pulleys C^2, and signals E, as described.

2. The cylinder D, provided with the side cylinder D′, having exhaust-opening *h* and piston-rod, adapted to strike the gong *n*, as described, for the purpose set forth.

144,855.—Hat-Conformator.—JOHN J. MCKNIGHT, Tarrytown, N. Y., assignor to himself and ABRAM STORMS, same place. Application filed August 21, 1873.

An oval band has grooves which radiate from the center in which the feeler-slides are adjustable to the contour of the head. They are held in position by friction-springs interposed between them. The conform or band-block is also oval-shaped, and provided with similar grooves and slides. Its radial slides are kept distended by an endless spiral spring which passes through them, thus enabling the slides to adjust themselves to the exact contour or caliber of the conformator. The slides are held in position by an oval-shaped clamp, receiving pressure from pivoted posts, actuated by cords passing around them diagonally from one to the other, and which are connected to nuts operated by a right and left-hand screw. As the pressure is released the clamp is thrown up by springs beneath it.

Claim.—1. The conformator A, composed of the recessed supporting-band *z*, the radial feeler-slides *y*, and the frictional spring-stops *x*, the latter being so combined with the feeler-slides as to press laterally against the same, in the manner and for the purpose specified.

2. The pivoted guides S and curved conform-slides *v*, constructed and operating, in combination with each other, substantially as herein described, for the purposes set forth.

3. The endless expanding spring *u*, in combination with conform-slides *v*, perforated to receive the same, as described, for the purposes specified.

4. The single tightening-screw *r*, traversing-nuts *p*, grooved rollers *o*, and flexible connections *n*, in combination with the presser-levers *s*, for tightening the retaining-band *t*, and thereby fastening the conform-slides, as set forth.

144,856.—Oil-Cabinet.—THOMAS MILLER, East Boston, Mass. Application filed March 3, 1873.

Claim.—As an improved article of manufacture, the improved oil cabinet, as described, the same consisting of the two parts A and B, as shown, the base or lower part being composed of metal, and the part B of wood, having a metal sink, D, of a like area of the part A, and provided with lid C, as described.

144,857.—Gas-Retort Mouth-Piece.—PETER MUNZINGER, Philadelphia, Pa. Application filed October 3, 1873.

The lead base is inclosed within a counter-sink on the face of the retort. The water-chamber is formed in the enlargement around the mouth-piece sufficiently near to the soft-metal base to carry off heat and prevent melting of the metal.

Claim.—The retort mouth-piece B, having a soft-metal lid-base, *a*, in connection with a water-jacket, F, as and for the purpose shown and described.

144,858.—Carbureter.—JAMES MUSGRAVE, Cincinnati, Ohio. Application filed October 2, 1873.

The air first comes in contact with the gasoline in the mixing-chamber, and, escaping thence, rises through the perforated flange, becoming saturated with vapors. The perforated drum surrounding the exit pipe regulates and steadies the flow of gas.

Claim.—1. A mixing-chamber, D, and float F, in combination with a perforated flange, H, substantially as and for the purpose specified.

2. In combination with the mixing-chamber D, float F, and perforated disk H, pipes constructed with flexible screw-joints, for the purpose of admitting air to the chamber D when the same is at different elevations, and so arranged as to balance each other, so that the float, as it rises and falls, may constantly maintain a horizontal position, even with the surface of the liquid, substantially as herein specified.

3. In combination with the exit-pipe *i*, the perforated drum *m*, or its equivalent, for the purpose specified.

144,859.—Stem Winding and Setting Watch.—EUGÈNE J. PACAUD, Schaffhausen, Switzerland, assignor to FLORENTINE A. JONES, same place.—Case B. Application filed June 30, 1873.

The spring-arm which moves the sliding clutch of a stem winder and setter is operated by a swinging dog, which has two arms, one terminating against the snap-spring, the other projecting through the bezel in position to be moved by hand.

Claim.—The spring-lever *d*, provided with the concave depressions d^1 d^2, forming the shoulder d^3, in combination with the ratchet *f* and the bifurcated angle-lever *e*, having the beveled point *e′*, all arranged and operating substantially as described.

144,860.—Fly-Trap.—CYRUS PACKARD, Eureka, Nev., and STRANUS STANDISH, Pacheco, Cal. Application filed September 9, 1873.

The lower case contains the machinery that operates a reciprocating drawer that connects with the double passage-way leading to the wire cage which is attached to the back part of the lower case. The reciprocating drawer is moved by a rack that engages with a pinion on a shaft bearing a large wheel that engages with two pinions on side shafts which bear at their opposite ends larger cogged wheels, with one of which the operating-shaft is connected. A weighted lever is connected with the central large wheel, and produces the reciprocating motion of the drawer.

Claim.—1. The passage-way B and the partition *c*, in combination with the reciprocating drawer C and the wire cage F, substantially as and for the purpose specified.

2. The spur-wheels *m m* and the shafts *l l*, the pinions *n n*, intermediate wheel *o*, pinion P, rack A, weighted lever S, and pin *u*, in combination with the case E and the reciprocating drawer C, the whole arranged to operate substantially as and for the purpose specified.

144,861.—Register for Machinery.—SHELDEN F. PAYNE, Chicopee, Mass., assignor to GAYLORD MANUFACTURING COMPANY, same place. Application filed July 22, 1873.

A nut traversing a screw-shaft carries a pointer along a scale, and on reaching the end strikes an alarm. The nut can be adjusted to start from any desired point. The apparatus is attached to any mechanism the movements of which are to be registered.

Claim.—1. In combination with shaft H with its crank-arm B, the sliding reciprocating bar F, for the purpose of diverting the rotation of the shaft A in either direction through pawl and ratchet C D to screw E, substantially as shown and described.

2. In combination with feed-screw E and with rods H H, the feed-nut W having the sides *h h*, sections *o o*, supports *d d*, and operating-lever G, substantially as shown and described.

3. In combination with the feed-nut W, the pointer *m* and spur *n*, as shown and described.

4. In combination with the feed-nut W having a suitable spur or projection, *n*, the hinged lever *q*, and alarm-bell I, when constructed and arranged substantially in the manner and for the purpose as set forth.

5. In combination with the feed-nut W and with the pawl C, the pin K with its spring *y*, substantially as shown and described.

6. In combination with the pin K, the lever X with suitable handle R, substantially as shown and described.

144,862.—Hose-Coupling Spanner.—LEWIS POND, Foxborough, Mass. Application filed October 31, 1873.

The ends of the levers are bent to form hooks for the fingers, and also bent outward so that when the arms are closed a space or opening between them will be left for the insertion of the third finger to open the spanner preparatory to closing it upon the coupling.

Claim.—The hose-coupling spanner, constructed substantially as described and shown, viz., of two crossed levers, A B, pivoted together, and provided not only with hooks *c c* and eyes *e e*, disposed as explained, but with the finger-opening *f* between the longer arms, all as set forth.

144,863.—Apparatus for Carbureting Gas.—ALONZO W. PORTER, New York, N. Y. Application filed November 11, 1873.

The flame from the gas-jet plays across the wick at right an-

gles. Any surplus oil carried up by the wick falls into the well of the screw cap, and is returned to the reservoir through the trap-tube, the trap-tube also preventing the escape of any vapor formed in the reservoir when light hydrocarbons are used.

Claim.—1. The combination of the socket attachment and lock with the hinged or pivoted yoke for securing the receptacle to its place, substantially as and for the purpose set forth.

2. The well K in the lower part of the screw-cap, in combination with the trap-tube, substantially as and for the purpose set forth.

3. The flange around the mouth of the reservoir, in combination with the wall and trap-tube, as herein described.

4. The over-cap, adjustable over the end of the burner, for the purpose of supplying air to the flame, substantially as herein set forth.

144,864.—Sewing-Machine.—D'ARCY PORTER, Cleveland, Ohio. Application filed August 4, 1873.

The vibrating shuttle-carrying arm is provided with a bracket-like end and bar, and is pivoted to move horizontally. An eccentric on the feed-actuating shaft has its strap connected with the bar of, and vibrates, the shuttle-carrying arm.

Claim.—The shuttle-carrying lever provided with bracket D and bar F, in combination with the eccentric C and its strap, substantially as described, and for the purpose specified.

144,865.—Umbrella.—HAROLD L. POWER, London, England. Application filed May 5, 1873.

A detachable umbrella-handle which serves as a key to turn a locking-bolt in a socket in the stick by which the runner is locked.

Claim.—The combination of the removable handle a with stud a' and recess a'', socket c with groove c', and locking-bolt e, all constructed and arranged as described, for the purpose set forth.

144,866.—Head-Block for Saw-Mills.—GUSTAVUS A. PRESCOTT and JOSEPH BARSALOUX, Sandy Hill, N. Y.; said BARSALOUX assignor to said PRESCOTT. Application filed January 30, 1873.

Two pawls are attached to a lever upon opposite sides of the fulcrum, and produce a continuous movement of the sliding head to which they are attached when the lever is oscillated. By turning the lever down upon the ratchet-rack the head is locked in position.

Claim.—The combination of the rack a, head b, pawls d i, and bifurcated lever d, the lever being so constructed as to lock the head in position, substantially as set forth.

144,867.—Hog-Ringing Pinchers.—JOHN C. SCHOETTLE, Collinsville, Ill. Application filed June 9, 1873.

Claim.—1. The measuring device B, having slot b and flanges b^1 b^2, as and for the purpose set forth.

2. The combination of cutters a a', measuring device B, and pinchers A, as and for the purpose set forth.

3. The upper and lower grooves, c, and bevels C, for the purpose of bending the ends of the cut wire, as set forth.

4. The combination of pinchers A, cutters a a', measuring device B, grooves a a^1, bearing D, and bevels C, all constructed to operate as and for the purpose set forth.

144,868.—Paper Dry Gas-Meter.—AUGUST SCHÜSSLER and CHARLES F. DIETERICH, New York, N. Y. Application filed November 10, 1873.

These diaphragms for dry meters are made from parchment-paper, which is obtained by treating cotton or linen paper with equal parts of sulphuric acid and water for a few minutes, and then washing it thoroughly, saturating this product with equal parts of glycerine, acetate of potasse, and water.

Claim.—The application of paper, when treated substantially in the manner aforesaid, for dry meters, substantially for the purpose set forth.

144,869.—Ironing-Table.—LEVI SCOFIELD, Grand Haven, Mich., assignor to JUSTIN B. WAIT, same place. Application filed October 20, 1873.

The ironing-board has a frame hinged to the under side of the large end. To this are pivoted supports for each end of the table, with means of adjustment.

Claim.—1. The hinged ironing board or table A, provided with cleats I H on its under surface, in combination with the frame B, and hinged support G provided with the swinging brace J, the whole constructed, arranged, and operated in the manner and for the purpose set forth.

2. The supporting-frame B hinged to the table-top, in combination with the articulated bars E E and F F, the latter being provided with recesses in their upper ends, which engage with the rod D, substantially as described, and for the purpose set forth.

144,870.—Breech-Loading Fire-Arm.—WALTER SCOTT, Birmingham and WILLIAM JAMES MATTHEWS, Aston, England. Application filed May 14, 1873.

A laterally-sliding breech-block, operated by means of a lever or handle, carries an adjustable stud so arranged as to operate the extractor when the breech is opened. The adjustability of the stud admits of the breech-block being entirely removed when desired.

Claim.—1. The adjustable stud f, projecting from the face of the breech-block, and arranged to operate, in combination with the extractor A, to throw out the cartridge case or shell when the block a is drawn out to open the breech, as herein set forth.

2. In a breech-loading fire-arm, the block a, lever f, and extractor A, constructed as shown and described, and operating, in combination with the end of the barrel and the breech-shoe c, as herein set forth, and for the purposes specified.

144,871.—Sap-Spout.—HIRAM B. SEVEY, Vienna, Me. Application filed November 1, 1873.

A sap-spout constructed with a thread running its entire length for securing it into trees. On the outer end is formed a rim for holding a bucket; also slots into which a suitable instrument may be inserted to force it into the tree. Its rear end is provided with slots into which the sap flows.

Claim.—The device for the delivery of sap from trees herein described, consisting of the screw a, provided with the threads b, tapering hole c, longitudinal slots d, projecting edge or rim e, and notches f, as and for the purposes herein set forth.

144,872.—Breech-Loading Fire-Arm.—HENRY N. SHERMAN, Beloit, Wis. Application filed June 26, 1873.

Claim.—The spring E, whose free end acts as a catch-head, in combination with the stock A, notched lug b b' of the barrels B, and the trigger c, substantially as and for the purposes set forth and shown.

144,873.—Whiffletree.—DANIEL S. SLOAN, Rockville, Conn., assignor to J. H. LEWIS, L. S. LEWIS, and A. D. WEST, same place. Application filed March 8, 1873.

Claim.—The double whiffletree-bar a, provided with the straps m m', the chains n n' o o', and the clevis f, the whole constructed, combined, and arranged for operation and use substantially as described.

144,874.—Thrashing-Machine.—JOHN SMITH, Burlington, Wis. Application filed July 29, 1872.

Long stationary sieve extending under cylinder, and having transverse perforations, between which are projecting rake-teeth, between which take teeth carried by endless belt.

Claim.—The stationary sieve Q, constructed as described, and arranged beneath the conveyer P, in combination with the toothed wheel D and thrashing-cylinder C, all constructed, arranged, and operated as described.

144,875.—Lubricating Compound.—NATHAN D. SMITH, Prairie City, Iowa. Application filed October 13, 1873.

Claim.—The lubricating compound composed of turpentine, tallow, and plumbago, substantially as described, and for the purposes specified.

144,876.—Umbrella.—CHARLES B. SPENCER, Hastings, Minn., assignor of one-half his right to MARCUS MARX, same place. Application filed April 29, 1873.

The runner and crown-piece are conical, and consist each of four separate sections. A screw-ring works up on the outside of them. As the ring is screwed to the small or taper end the sections are pressed tightly around the stick, thereby securing the runner and crown-piece, and vice versa.

Claim.—The combination of adjustable fastening-sections A, screw-ring B, springs f, thumb-piece g, sliding arms H and I, folding arms k, and block N, substantially as and for the purpose herein set forth.

144,877.—Manufacture of Fertilizers.—HANNELL STEVENS, Brazoria, Tex. Application filed May 27, 1873.

Claim.—The improved process of converting animal matter into a fertilizer after the rendition of fatty matter therefrom by the evaporation of the remaining liquid into a sirup, and then mixing such sirup with the solid animal matter and plaster-of-paris, substantially as described.

144,878.—Device for Connecting Frames of Valises, &c.—CARL VOTTI, Newark, N. J. Application filed September 19, 1873.

Points are struck up from the metal frame and project inward. They are passed through the material composing the bag and turned down upon it. An auxiliary frame is afterward secured on the inside, which covers the points and conceals the edge of the material.

Claim.—The combination of frame a, nibs c, and plate or interior frame d, when arranged and constructed substantially in manner and for the purpose described and set forth.

144,879.—Seeding-Machine.—EDWARD WITZIGMAN, Buffalo, N. Y. Application filed August 27, 1873.

A pair of wheels supports an axle-tree and frame upon which is mounted a seed-box, the distributing device being worked by gears attached to one of the wheels. Beneath the axle-tree and frame is suspended a harrow by four chains, radiating downward from a common center, a windlass being mounted above the frame to raise the harrow from the ground at will. The draft is supported by a chain reaching forward to the tongue.

Claim.—In a sulky seed-sower, the seed-box F, when constructed with the valve or door G, spring f, catch g, lug A, and set-screw d, in combination with the shaft H, cams or pins j j, and step e, all arranged to operate in the manner and for the purpose substantially as specified.

144,880.—Means for Operating Railway-Switches.—JOSEPH WOOD, Red Bank, N. J. Application filed November 4, 1872.

Claim.—In a switch-stand, the combination of the vertical shaft A, having right-angled arm a and bolt e, with the top plate having notches y, and the lever m having jointed and fulcrumed handle n, adapted to fall vertically into the notches y, and thus secure the shaft from accidental shifting, and also to form a means for elevating and turning the shaft, substantially as specified.

144,881.—Testing-Plug.—JOHN ALLEN, Philadelphia, Pa. Application filed November 1, 1873.

A valve, d, is so constructed as to admit the air blown through the plug into the barrel, but, by pressure on the orifice b, to prevent its escape.

Claim.—The improved tester-plug, for barrels and other air-tight receptacles, consisting of a hollow conical plug with entrance-hole and vertical check-valve, constructed and operated substantially as and for the purposes described.

144,882.—Rotary Engine.—SAUL BAKER and SAMUEL C. MCINTIRE, Springfield, Ohio. Application filed April 12, 1873.

Claim.—The combination of the pistons G G, connected together by the bow g with the cylinder A, and operating in connection with the inner face of the cylinder, formed as described, whereby said pistons are allowed to remain stationary, relatively to the piston-head, during the greater part of their revolution, and the power of the steam acting thereon is equalized, as set forth.

144,883.—Steam-Engine.—ABRAM BEEKMAN, New York, N. Y. Application filed October 4, 1873.

A sliding valve governs the admittance of steam from the boiler to the rotary chamber. Within the boiler a cone is arranged, beneath which the steam is generated.

Claim.—1. The single slide-valve J, arranged between parts A C of boiler and under the wheel F, as described, to be operated in the manner and for the purpose set forth.

2. The cone B, arranged beneath the water of a boiler, as and for the purpose specified.

144,884.—Locomotive Smoke-Stack.—JOHN V. BISHOP, Atlanta, Ga. Application filed July 26, 1873.

The deflectors direct the products of combustion against the side of the stack, while the open tubes prevent the egress of the rebounding cinders and permit large openings to be made in the discharge-tube.

Claim.—The combination, with deflectors J G, of the open tubes F F, arranged as described, in the side of the ordinary discharge-tube D of a smoke-stack, substantially as described.

144,885.—Glass Bottle.—JOSEPH BORDEN and JAMES L. TRIMBLE, Medford, N. J. Application filed November 10, 1873.

To prevent breakage of imperfectly-annealed bottles when corking them. A metallic removable head is attached to the neck of the bottle by screw-threads. An elastic cushion is interposed between the metal and the glass.

Claim.—1. The metallic head c, constructed substantially as set forth.

2. The combination of the glass neck a, the metallic head c, and the interposed elastic cushion d, in the manner and for the purpose substantially as set forth.

144,886.—Nut-Lock.—WILLIAM H. BOWMAN, London, Ohio. Application filed July 26, 1873.

A washer projecting laterally beyond the nut is connected to the bolt and turns with it. The projecting edge of the washer is perforated, and a pin inserted that bears against the side of the nut.

Claim.—The edge-perforated washer A, connected and turning only with the bolt, and projecting laterally beyond the nut or nuts, combined with pins I to lock the nut or nuts, in the manner described.

144,887.—Cherry-Stoner.—ELI BUCK and EDGAR W. KIRK, Cincinnati, Iowa. Application filed October 11, 1873.

An inclined pan or hopper with a frame projecting above it and grooves and holes in the bottom. In the frame is a bar with punches that slide on ways, when operated by a crank-shaft above them. To one end of the crank-shaft is attached a short crank which is connected with a vertical rod, and two other cranks that move a reciprocating pan under the punches.

Claim.—1. The combination of the pan A, provided with discharge-openings a'', with the reciprocating punches D, stripping-plate H, and sliding discharge-apron T, the various parts being constructed to operate in substantially the manner herein shown and described.

2. The reciprocating punches D, operated through the medium of devices which serve to actuate the sliding discharge-apron T, causing the latter to move backward when the punches rise, for receiving the stoned cherries, substantially as herein set forth and shown.

144,888.—Fishing-Stake.—JOHN O. CAMPBELL, Alpena, Mich. Application filed May 24, 1873.

To obviate pulling up and replanting fishing-stakes every season, the tops are made detachable by means of a fishing-rod joint, to which is added a spring-catch which engages with a slot in the band.

Claim.—A fishing-stake consisting of two parts, A D, detachably connected together by a socket, B, and spring-catch E, substantially as specified.

144,889.—Hasp for Butter-Tubs, &c.—HENRY C. CARTER, New York, N. Y. Application filed September 13, 1873.

The lower hinged part of the hasp is of elastic metal and convexed outwardly. A turn-button works through a recess in its lower part, and is held in position more firmly by the spring of the hasp.

Claim.—1. The hasp B, convexed outwardly and made elastic, combined with the swiveled staple, as and for the purpose specified.

2. The combination of the spring-hasp having recess c, and rotating staple E having projection d, as and for the purpose described.

144,890.—Farmer's Boiler.—PASCHAL COLVIN, Pecatonica, Ill. Application filed November 21, 1872.

This heater is to be placed in a vessel containing water or the food to be cooked. The smoke flows through the circuitous passage from the fire up to the exit-flue, so as to heat the exterior casing. Through suitable openings in the top air is admitted and fuel supplied.

Claim.—1. In combination with the inner shell F, the partition G and flanges or angle-irons e, substantially as described.

2. In combination with the outer shell E, the inner shell F having one end thereof formed into a scroll, F^2, and serving as a support for the pipe H, substantially as described.

144,891.—Device for Wetting Grindstones.—DAVID CUMMING, Jr., Jersey City, N. J. Application filed September 8, 1873.

Claim.—1. The roller or wheel f, applied in the water-trough of a grindstone, and movable so as to be brought into contact with such grindstone, substantially as set forth.

2. A wheel or roller of felt, or other material, set diagonally to the axis, and applied to and combined with a grindstone and its water-trough, as and for the purposes specified.

144,892.—Automatic Toy.—ALBERT H. DEAN, Bridgeport, Conn. Application filed February 25, 1873.

A toy see-saw operated by clock-work.

Claim.—1. In combination with the standards A, the pivoted balance B carrying the toy figures C at each end, and provided with the slotted guide-piece b for the reception of a crank-arm operated by clock-work, substantially as described.

2. In combination with the subject-matter of the preceding claim, the toy figures C, provided with the loosely-jointed metallic legs, as and for the purpose specified.

144,893.—Folding Pail.—ARRILLARD DU CHATEAU and JOHN D. WILLIAMS, Green Bay, Wis. Application filed May 10, 1873.

The sides of the pail are made of a flexible material, so as to fold, and braces extend from top to bottom, with joints in them, to hold the pail in an extended position when desired.

Claim.—A folding pail, composed of the india-rubber or other equivalent elastic tube A, hoops B C, rubber, metal, or wood bottom D, and the folding braces F, all substantially as specified.

144,894.—Spring-Power.—THEODORE EISELEN, San Francisco, Cal. Application filed October 21, 1873.

A flat steel spring is attached to the shaft carrying the main wheel, which drives a suitable train of wheels. The other end of this spring is secured to the free end of a heavy steel spring, which is secured to a shaft journaled in the opposite end of the frame and provided with a ratchet and pawl, the latter serving to adjust the tension of the spring.

Claim.—1. A train of gears, a b c d, in combination with the spring I, applied as described, and flat spring i, which serves both as a spring and connecting chain or belt, substantially as and for the purpose specified.

2. The re-enforcing power, consisting of the levers m with their weight p, in combination with the shaft i, in the manner substantially as described.

144,895.—Fire Indicator and Alarm.—JOHN FAWCETT, East Boston, Mass. Application filed August 23, 1873.

A metallic cage contains an easily-ignitible substance arranged under a combustible cord holding a trip-lever, with which is connected a wire leading to an alarm and indicator. Several cages may be connected together.

Claim.—1. The combination of a connecting-wire, E, tripping-lever C, combustible cord D, and a card of matches, B, or other equivalent easily-ignitible material, with an indicating-disk, H, spring I, and an alarm mechanism, K, the matches, combustible cord, and the trip-lever being in a metallic cage in the room to be signaled, and connected by the wire with the indicator in the room in which the signal is to be received, substantially as specified.

2. The combination of the chain R, the revolving disk P, and spring Q applied to the axis thereof, with the combustible cord D, arm O, catch-arm C, and the matches B, or equivalent ignitible material, as and for the purpose specified.

144,896.—Manufacture of Copper Ingots for Alloying Gold and Silver.—JOHN FELIX, San Francisco, Cal. Application filed August 15, 1873.

Claim.—1. The process herein described for removing oxides from metallic copper, consisting in melting the copper and treating it while at rest with flame from wood, substantially as described.

2. The method of giving a bright red color to copper, consisting in treating it in a crucible, molding it into ingots, and cooling, substantially as described.

3. The new article of manufacture, of dark cherry-red ingots of copper, made substantially as and for the purpose set forth.

144,897.—Reversible Center-Pinion for Watches.—OLMSTED GATES, Columbus, Ohio. Application filed October 3, 1873.

The center-pinion is locked or released, according to direction of rotation, by an obliquely-grooved tenon rigidly attached thereto, and a projection from the inside of a cup-like expansion at the base of the arbor.

Claim.—The cup C and tenon D, in combination with arbor I and wheel A and pinion B, and secured by the groove E and clutch G, or their equivalent, substantially as and for the purpose hereinbefore set forth.

144,898.—Blind-Hinge.—LOUIS GATHMANN, Chicago, Ill.—Case G. Application filed June 2, 1873.

The lower one of a pair of blind-hinges made with screw-attachments, cast with a series of notches or serrated teeth on the outer edge of its eye-piece, which remain open by the weight of the blind.

Claim.—The lower hinge, composed of the screw-hook C and the screw-eye C^1, having serrations or teeth, as described, for the purpose set forth.

144,899.—Leather-Splitting Machine.—JOHN GOEBEL and JACOB PERR, Caledonia, Wis. Application filed June 30, 1873.

The roller E is made vertically adjustable by means of a sliding rack, upon which the pinions of a transverse shaft rest, which support the bearings of the roller.

Claim.—In a leather-splitting machine, the rollers E, F, and L, knife G, rack B, spring M, and pinion C, constructed and arranged as and for the purpose specified.

144,900.—Spoke-Setting Machine.—WILLIAM R. GREENE, Juda, Wis. Application filed August 23, 1873.

The spoke is placed in a case, which prevents its splitting or bending while being forced into the hub by a screw, which is operated by miter-gears.

Claim.—1. The spoke-setting frame L, consisting of top piece p, slide-pieces g, and bifurcated clamps r, which hold the sleeve M, as set forth.

2. The sleeve M, having wedge-shaped side ribs t and perforated end u, for the purpose described.

3. The grooved guide-pieces I, having steps or pins v' for engaging rods v of clamps r and detaching them from sleeve M, as described.

4. The bifurcated clamps r, being arranged in different lengths to hold sleeve M in inclined position, and having rods v, for the purpose specified.

5. The combination of spoke-setting frame h, sleeve M, guides I, frame A, and gearing o o' for seating the spokes in the hubs, arranged substantially as and for the purpose described.

144,901.—Anchor.—ZEBINA HALL, Dennis, Mass. Application filed August 7, 1873.

Claim.—The circular frame c, having the cross-bars extending across its center, between which the single-pointed fluke 5 7 8 is pivoted so as to play back and forth, the fluke having a circular slot, 9, cut through its end so as to limit its movement, substantially as specified.

144,902.—Stuff-Regulator for Paper-Machines.—DAVID HAMEL, Holyoke, Mass. Application filed October 11, 1873.

The stream thrown by the pump through pipe H being constant, variations in the height of float G are caused by the variable consistency of the stuff. When the float rises, on account of thickness of the stuff, it closes, by means of valve E, the port F leading through chamber C to the screen, and causes a less quantity to be spread upon the screen, while at the same time valve E' rises port F' is opened, and the stuff flows freely back through chamber D and pipe to the reservoir. If the stuff is thin, float sinks, valve E rises, and a greater quantity is spread upon the screen, and less goes back to reservoir. I and J are gates attached to rock-lever K, and serve to close completely ports F and F', respectively, when it is desired to shut off flow of stuff from chamber B either to the screen or back to the reservoir.

Claim.—A self-acting stuff-regulator for paper-machines, consisting of the compartment B, float G, and valves E E', combined with the passage H from the main reservoir to the paper-screen, and a return-passage to the said reservoir, the valves being connected to said float, so as to be worked reversely to each other.

144,903.—Shank-Luster.—WILLIAM HAMILTON HANNA, Chico, Cal. Application filed October 4, 1873.

Claim.—1. The nipper-jaws A B, wedge C, screw-rod E, cranked nut G, rest F, and strap I, combined and arranged substantially as specified.

2. The strap I, in combination with the rest F H and suitable griping and stretching devices, supported by said rest, all as shown and described, whereby said parts are adapted to be applied to a last, and to operate as specified.

144,904.—Furnace for Desulphurizing Ores.—EDWARD C. HEGELER and FREDERICK W. MATTHIESSEN, La Salle, Ill. Application filed September 14, 1872.

The ore in powder is fed in at the top of the furnace, and flows down in a zigzag course as it is let out at the bottom by regulating devices.

Claim.—1. The furnace-shaft A, provided with zigzag columns or troughs C C, containing and supporting the ore, with sufficient opening at the bottom of each trough to allow the ore to slide through to the trough below, as described above, for the purposes therein set forth.

2. The modified form of the troughs, as shown in Figs. 3, 4, and 5, for same purposes as in claim 1.

3. The provision or arrangement, in the shaft A, of the gas-passages, through which the desulphurizing-gases pass under and in close contact with the column of ore, stationary or in movement, as above described.

4. The air-passages d d, as shown in Fig. 3, in connection with the modified form of the troughs, shown in Figs. 3, 4, and 5, the descent of the material on which is caused by an apparatus removing said material at the bottom of said furnace.

5. The revolving overshot-wheels D, arranged in relation to the bottom troughs of each ore-column, as and for the purpose specified.

6. The overshot-wheel D, for the purpose specified, revolved by the weight of the ore which it receives into its buckets, and controlled in its revolutions by the pendulum G.

7. A desulphurizing, calcining, heating, or drying shaft-furnace for fine ore or other fine materials, arranged, as above specified, to subject the ore or other materials to the action of the heated gases for a longer or shorter time, as may be necessary.

144,905.—Nut-Lock.—CHARLES A. HOWARD, Pontiac, Mich. Application filed June 26, 1873.

The extended plate is provided with a slotted spring end. The locking-plate is passed through the slot and interlocked, the spring holding it normally on a plane with the extended plate.

Claim.—The combination of the interlocking-plates E F with the nuts G H, the extension m of the plate E forming the spring, and the plate F interposed between the said nuts, substantially as described.

144,906.—Bed-Bottom.—EDWIN HOYT, Stamford, Conn. Application filed October 7, 1872.

The slat-frame has on its under side short studs descending into spiral springs, which rest on the frame beneath. Lateral bars on the top frame have affixed beneath them bolts, that prevent sagging by passing freely into lateral bars below.

Claim.—The bed-bottom, substantially as herein described, consisting of the supporting-bars a, cross-pieces c l, springs g, studs i, side rails d, bolts e, and slats e, the parts being arranged as shown and described.

144,907.—Bird-Cage.—EDWARD HUTCHINSON, New York, N. Y. Application filed August 16, 1873.

Claim.—A perch for bird-cages, consisting of two parts, A B, tongued and grooved together, and so united as to form cracks E for insects to conceal themselves in, substantially as specified.

144,908.—Machine for Turning Carriage-Axles.—WILLIS JONES, Brooklyn, N. Y. Application filed May 2, 1873.

The plate f supports the axle while the pressers i k hold it against the cutters d e. The cutter e is made in three parts to operate upon the shoulder of the axle. All the plates are adjustable as well as the stocks A and c by which they are held.

Claim.—The stock c, constructed as specified, and supporting the adjustable cutters d and e and presser f, in combination with the stock A and presser or pressers k l, the parts being adjustable, substantially as and for the purposes set forth.

144,909.—Pneumatic Station-Indicator.—JAMES P. KEALY and JOSEPH RIGNEY, Bridgeport, Conn. Application filed August 9, 1873.

Station-indicators, consisting of chains of name-plates in each car of a train, are connected to pneumatic engines, which are operated by compressed air from an air-pump connected therewith by tubes, the air passing through each engine to the next. The action of the indicators is reversed by fan-wheels, properly connected, located on top of each car.

Claim.—1. The chain of name-plates, arranged on a single roller, to be transferred from one side of the case to the other, and vice versa, and attached at each end by an expanding and contracting connection, substantially as and for the purpose specified.

2. The case containing the roller and the chain of name-plates, divided into two compartments by a partition, I, either stationary or pivoted, substantially as specified.

3. The slotted toothed bars U, pivoted to the piston of the air-engine, connecting-yoke T, stationary bar A', and stud-pins C, combined with the loose wheel O, double pawl N, cam R, and the ratchet-wheel J on the name-plate roller-shaft, substantially as specified.

4. The combination of the shifting-cam R and lugs S of yoke T with the double pawl R, substantially as specified.

5. The combination of a spiral wind-wheel, mounted on the car so as to be subject to the atmosphere, with the reversing toothed bars U, when connected to them by a sliding bar, F', rock-shaft J', connecting-rods H' I', and arms I' and K', or any equivalent connecting apparatus, substantially as specified.

6. The spiral wind-wheel, connected to the rock-shaft J' by a reversing-link, K', substantially as specified.

7. The series of annunciators, connected together and to the air-forcing pump Y by pipes Z and Z^1 and valves Z^2, substantially as specified.

144,910.—Refining Varnishes.—FRANKLIN KERSTING, Grand Rapids, Mich., assignor of two-thirds his right to CARL RUDOW and BENJ. F. BROADWELL, same place. Application filed October 12, 1872.

Claim.—1. The method, substantially as described, of clarifying and improving the luster of varnishes, and clarifying all manufactured liquids.

2. In such method, the employment of burnt, ground, or powdered oyster-shells.

3. In such method, the combination of pulverized marble and ground burnt oyster-shells, or their equivalent.

4. As a new article of manufacture and trade, varnish rendered clear and of improved gloss and elasticity, as herein described.

144,911.—Skeleton Skirt.—PHILLIPP LIPPMANN, New York, N. Y. Application filed October 30, 1873.

Claim.—A skeleton skirt in which the horizontal hoops b are supported upon and by flaps d woven upon the faces of the vertical tapes a, the hoops being passed through openings d' in the flaps made in the weaving, or otherwise by puncture, substantially as set forth.

144,912.—Garden-Cultivating Implement.—DAVID MACK, Barnesville, Kans. Application filed June 26, 1873.

To the front end of a jointed beam a bearing-roller is attached, and to the rear a braced standard, carrying a weed-cutter, a rear roller, and a rake, pivoted to the standard, and hanging over the weed-cutter a little in the rear of its cutting-edge.

Claim.—The combination of wheel D, jointed beam E A, rear roller L, and standard F, with horizontal weed-cutter J and rearward-superposed rake I, as and for the purpose described.

144,913.—Holder for Soda-Water Tumblers.—JOHN MATTHEWS, New York, N. Y. Application filed November 6, 1873.

The holder has a base-ring, to which is attached a handle and projecting wires, that secure an upper ring, into which the tumbler is to be set.

Claim.—1. A cup-holder composed of a base-ring and a series of body wires or pieces united therewith by means of holes or recesses, as set forth.

2. In combination with the upper ring of a tumbler-holder, the body-wires embracing or inclosing the upper ring, substantially as and for the purpose set forth.

3. The combination of a handle having a button or lug, c, and with the base-ring having a dovetailed slot or recess, and the body-wire, substantially as and for the purpose set forth.

4. The combination of base-ring A, the body-wires c, and the upper ring b, relatively arranged as and for the purpose specified.

144,914.—Weighing and Price Balance.—ALBERT M. MAYNARD, Savoy, Mass. Application filed September 30, 1873.

An equal-arm balance has an attachment by which, at any price per pound, the total price of the article weighed is shown. Weighs in pounds and ounces simply if the computing device is detached.

Claim.—1. The combination of the platform P', connecting-rod r, and the saddle-piece upon the scale-beam, substantially as specified.

2. The combination of an apparatus for weighing in pounds and ounces and a separate price-computing attachment, which may or may not be used in connection therewith, substantially as shown and described.

3. The combination of the equal arm-balance, central beam s, and graduated bar U, and connecting-rod r, or its equivalent, substantially as and for the purpose set forth.

4. The combination of the base-plate a and standards b c d, having arms projecting over the base-plate, with the duplex apparatus described, substantially as shown.

5. The saddle-piece g, having the lugs l l', in combination with the hooks Q Q', substantially as specified.

6. The scale-beam consisting of the central beam s and parallel arms s' s'', provided with knife-edges cast in one piece with the block t, and having the graduated bar U attached thereto parallel with the central beam, substantially as described.

7. The sliding bracket g, and the small bracket thereunder, for holding the knife-edges of the scale-beam in position, substantially as set forth, and combined as shown.

144,915.—Knit Fabric.—BERNARD J. MCGEE, Watertown, Mass., assignor to JOHN W. TUTTLE, same place. Application filed October 31, 1873.

Made on a machine having a single row of needles and two guide-bars, each carrying half as many guides as there are needles. The guide-bars are traversed across each other, first in one direction and then in the other, and lay a yarn over each needle to form the bands, and then move in opposite directions horizontally and vertically, so as to wind the yarn from two guides, a sufficient number of times, around alternate pairs of needles to form the coils or tufts.

Claim.—The new fabric composed of the chain-stitch bands and the ranges of tufts, made and combined substantially as described.

144,916.—Flower-Maker's Grass-Cutting Machine.—THEOPHILUS MILLOT and JAMES MILLOT, New York, N. Y. Application filed August 30, 1873.

Treadle pressure gives a shear cut of any length and thickness desired, the pile of material being securely fastened to a cutting-board, movable in guides upon the supporting-bed, which allow a feed-motion of the material to the shear-blade. A narrow adjustable cutter for trimming the points of the grass-blades is arranged in front of the larger cutter, to point them before cutting out.

Claim.—1. The combination of a cutting-board, E, and a clamp for holding the pack of material to be cut or said board, with a paper-cutting machine, the said board being arranged on a feed-guide having adjustability laterally to the feed, for shifting the pack to the position for cutting the slits, and also to the position for cutting off the bunches, substantially as specified.

2. The combination of the point-cutter Q with the cutter C and cutting-board, substantially as specified.

3. The said point-cutter connected with the shifting cutter-board guide H, to be shifted with the board, substantially as specified.

4. The said cutter Q, arranged on a movable support, in combination with an incline on the cutter C, that moves it out of the way of the said cutter C when the latter descends, substantially as specified.

5. The combination of the paper or cloth guide k with the cutting-board, substantially as specified.

6. The arrangement of shifting-guide H, standard K, swinging rod L, adjustable cutter-support O, and spring Z with the cutter C and table B, substantially as specified.

7. The point-cutter Q, arranged to work in an inclined plane coinciding with the shearing inclination of the cutter C, substantially as specified.

144,917.—Adjustable Blackboard.—PETER W. MOELLER, New York, N. Y. Application filed October 25, 1873.

Two blackboards, hung in a frame, sliding in grooves and connected by cord suspended upon a pulley, are each reversible by lowering to the bottom of the grooves, which are there wider, to allow of their removal.

Claim.—1. The combination of the blackboards C C, counterbalanced by each other, and suspension-cord L with the frame A, grooved upon the inner surfaces of its side bars to receive the edges of said blackboards, arranged to operate substantially as herein shown and described.

2. In combination with the blackboards C C, the grooves in the frame A, made deeper in their lower parts, at one side, to enable the boards C to be removed and turned, substantially as herein shown and described.

144,918.—Corn-Coverer.—JOEL A. MOORE, Salem, N. J. Application filed August 4, 1873.

A corn-coverer provided with two rollers, one in front for crushing the clods, and the other in the rear for leveling. The rear roller is pivoted in arms projecting from the rear of the frame. Between the two rollers are secured ridgers for forming the earth into a ridge to receive the seed.

Claim.—The combination described, with the ordinary ridges C and leveler D, of a front clod-crusher, B, that pulverizes the clods before they are raked up into the ridge intended to receive the seed.

144,919.—Hand Corn-Planter.—MICHAEL P. NEMMERS, St. Donatus, Iowa. Application filed May 24, 1873.

The seed-disk is rotated by the teeth engaging with a cam-shaped plunger, every downward stroke revolving the disk through a given space. Beneath the disk is a perforated plate, one end of which is raised or lowered by a bent lever projecting through one side of the box beneath the seed-disk, adjusting the plate to increase or diminish the amount of seed discharged.

Claim.—1. The combination, with the recessed plate l, arranged beneath the disk H, of the lever M, working through the slot m' of the hopper, as shown and described.

2. The combination, with the disk H, provided with the teeth g and perforations f, of the projection F, the cam projection E, and spring b, as shown and described.

144,920.—Barrel-Hoop.—HARRISON OSBORN, Richmond, assignor of one-half his right to SAMUEL WATSON, Lewisville, Ind. Application filed May 15, 1873.

A peculiarly-formed clasp is used for securing the ends of the hoop.

Claim.—1. Staples E E constructed with a hole in their central or middle part, for the purposes herein specified.

2. The staples E E, in combination with nail P, when used to unite the ends of hoop B, in the manner substantially as shown and described.

144,921.—Woven Corset.—JULIUS OTTENHEIMER, New York, N. Y., assignor to OTTENHEIMER, ROTHSCHILD & Co., same place. Application filed November 8, 1873.

The clasps or busks at the front are of greater width at the bottom than at the top, and the corsets have woven pockets adapted to receive them.

Claim.—A corset woven with the edges d d of the front busk-pockets diagonal to the edges c c and with the pockets for the ribs or bones d e, extending from near the diagonal edges d d toward the top edge of the corset, substantially as set forth.

144,922.—Machine for Finishing Horseshoe-Nails.—SILAS S. PUTNAM, Boston, Mass. Application filed May 31, 1873.

Two levers, pivoted on pins projecting from a plate capable of movement on trunnions, carry at one end the halves of a divided conveyer, the inner sides of which are tapering, and are operated to grasp the nail, after the head has passed through, by means of a spring-arm carrying a wedge that is forced between the ends of the levers, while another spring is thrown forward against an incline on the under side of the levers, to depress the conveyer and insure the entrance of the nail between the rolls, one of which is concentric, and the other eccentric. The rolls are fastened to their shafts by sleeves and nuts pressing them on tapered portions of the shafts.

Claim.—1. The combination of the rolls H H and a conductor, I, formed of two movable clamping portions, operated by suitable mechanism, as set forth.

2. In a nail-finishing machine, the sleeve K and screw-nut *l*, in combination with the shaft *a* or *e* with its tapering portion 11, the boxes *f f*, and the roll H, all constructed and operating substantially as and for the purpose described.

144,923.—Process for Purifying Quicksilver.—James B. Randol and Charles W. Wright, New Almaden, Cal. Application filed October 4, 1873.

Claim.—The process of purifying mercury by treating it, under agitation, with heated water and alkaline matter, substantially as set forth.

144,924.—Revolving Sample-Case.—John F. Randolph, Edwardsburg, Mich. Application filed August 30, 1873.

Claim.—The improved revolving show-case herein described, formed of the polygonal base B, the vertical partitions C, arranged radially around the shaft, and the triangular removable trays D, supported between said partitions in an inclined position by side and front strips *a b*, all as shown and described.

144,925.—Road-Scraper.—Roland F. Read, San Francisco, Cal. Application filed September 3, 1873.

The scraper is mounted upon jacks, which move longitudinally in ways, so that it can be adjusted at any required angle to the line of draft. These jacks carry long levers, by which the scraper is elevated, said scraper being retained in its elevated position by confining the long arms of the levers by means of the racks J. To compensate for the side draft of the machine, when the scraper stands at an angle, the rear wheels are directed by a foot piece within reach of the driver's seat.

Claim.—1. The parallel timbers C C mounted upon wheels A B, and having the longitudinal mortise or slot A, in combination with the adjustable lifting-jacks I, cords or chains *t*, and scraper E, substantially as and for the purpose above described.

2. The scraper-wagon, having the braces *z* and *v*, in combination with the lever *y*, rack Z, and connection N, for the purpose of adjusting the rear wheels in reference to the scraper, as set forth.

3. The scraper E and lifting-jacks I, with their levers K, all adjustable laterally, in combination with the rack-standard J, as set forth.

144,926.—Door-Spring.—Francis H. Richards, New Britain, Conn. Application filed June 7, 1873.

A cylinder, containing at one end a piston and at the other a coil-spring, is arranged in a tubular case over the top of the door. A fixed bracket upon the frame carries a pin which passes into the rear end of this case, and a second bracket upon the door itself is connected with a movable plug located in the center of the tube. As the door opens the last-mentioned bracket forces back the plug, which latter carries with it the coil-spring. When the door is released the coil-spring closes it, but the piston prevents slamming.

Claim.—1. The combination of the piston G, cupped packing H, and tube D with the bracket C E and spring F, or equivalent, substantially as herein shown and described.

2. The grooved screw I, for adjusting the vent, in combination with the packing H, piston G, tube D, and coiled spring F, or equivalent, substantially as herein shown and described.

3. The employment of a bracket, E, working in a slot in the tube D, for connecting the packed piston with the door, substantially as herein shown and described.

144,927.—Hand Cultivator.—Amos W. Ross, Northfield, Mass. Application filed September 13, 1873.

To the axle near the wheels are pivoted bars which extend rearward and pivot to the rear ends of an expansible V-shaped frame, the front end working through a keeper upon the axle. A lateral adjustment is effected by means of a lever, attached by a link to one of the rear pivot-joints, and extending parallel with one of the handles. Upon the axles are guards for protecting the plants, and hilling-shares are attached to the expansible beams.

Claim.—The combination of the wheels A, axle B, handles C, and cross-bar D with the pivoted side bars F, pivoted middle bars G, the plows, the keeper H, guards I, and hillers M, substantially as herein shown and described.

144,928.—Manufacture of Sulphuric Acid.—Joseph Saunders, Brooklyn, N. Y. Application filed November 8, 1873.

The balls will be some six inches in diameter, and arranged with one of the openings at the top in the tower in which the gases descend, and the reverse in the tower through which the gases ascend.

Claim.—Hollow balls of glass for sulphuric-acid-condensing towers, substantially as specified.

144,929.—Inkstand.—Thomas S. Shenston, Brantford, Canada. Application filed January 3, 1873.

Claim.—1. An ink or mucilage stand or receptacle having a tube projecting into its chamber, whereby it is adapted to be inverted without discharge of its contents, in combination with a receptacle for liquid for temporarily sealing the mouth of said tube, as set forth.

2. In combination with the sealing-liquid receptacle, the stand A, provided with the tube *b*, projecting upward in the conical cavity C, and downward into the chamber B, as and for the purpose specified.

144,930.—Railway-Switch.—William A. Slingerland, New York, N. Y. Application filed October 11, 1873.

An arrangement by which trains coming from a siding are always conducted onto the main track. Three sets of movable switch-rails are placed in conjunction with the ends of the main and side tracks. Corresponding fixed rails match the movable rails. The two outer sets of rails converge to the main track through fixed inclined rails or guide-pieces. The middle set of rails is always in line with the main track.

Claim.—The combination, with main track A A and branch B B, of intermediate short tracks C D E, having each a switch at one end and a frog or turn-in at the other, as and for the purpose described.

144,931.—Door-Latch.—Frank Stowe, Huron, Ohio. Application filed September 27, 1873.

A sliding spring-dog, having a rubber cushion in its outer end, is arranged in the front part of the latch-case, so as to engage and hold the bolt when it is drawn back by the knob. On closing the door the rubber cushion strikes against the jamb of the door and forces the dog inward, thereby releasing the bolt and allowing it to be thrown outward into the keeper.

Claim.—The dog C, carrying socket *b*, with rubber cushion C', and having sidewise-projecting lug *d* for engaging the bolt, as described.

144,932.—Spark-Arrester.—Gustaf Swenson, Hackensack, N. J., assignor to himself and Peter Bogart, Jr., same place. Application filed September 27, 1873.

Within the hood of the smoke-stack a vertical plate is arranged to direct the current of air upward through said hood.

Claim.—The vertical plate J, arranged in the conical hood with relation to the tubes I, guides D E, and top of the stack B, as shown and described, for the purpose specified.

144,933.—Combined Stubble Shaver and Scraper.—Henry Von Phul, Jr., and James Mallon, Holly Wood, La. Application filed August 16, 1873.

A curved vertical cutter, designed to split the rows of sugar-cane stubble, is mounted upon a frame with runners. The cutter is followed by a pair of oblique horizontal knives, behind which is a triangular scraper, the last two being adjustable as to height by means of bars and cranks operated by a lever.

Claim.—1. The combination of the knives G, sliding angular bars H, connecting-bars I, crank-arms J, shaft K, lever L, and catch-bar M, with each other and with the frame A D, substantially as herein shown and described.

2. The combination of the scraper R, bar Q, and lever P with the shaft K, having crank-arms O, the lever L, knives G, and bars H, all as shown and described, whereby the two cutting devices may be simultaneously raised and lowered by operating said lever, as set forth.

3. The combination of the cutter T with the knives G, scraper R, and frame A D, substantially as herein shown and described.

144,934.—Adjustable Bench-Vise.—Jeremy B. Wardwell, Lawrence, Mass. Application filed November 1, 1873.

The clamping device is made adjustable vertically to suit the varying widths of plank.

Claim.—The jaw B, frame or spider C, rest D, single pawl E, and double pawl F, in combination with each other and with the stationary slotted and notched or toothed bar A, substantially as herein shown and described.

144,935.—Road-Scraper.—Moses E. Warner and Seth W. Kingsley, Hatfield, Mass. Application filed October 29, 1873.

The scraper is attached to a freely-moving draft-bar in the ordinary manner, and said draft-bar is controlled from the driver's place by a chain-windlass and lever, which latter is operated by a strap, winding-drum, and hand-wheel. The draft-bar with the scraper is by this means readily lifted by the driver when necessary, and a second man dispensed with.

Claim.—The combination of the shaft 5, drum 6, hand-wheel 8, stop or catch 9, chain or strap 7, lever 3', and drum 2' with the chains 4' and draft-bar *d*, carrying the scraper, substantially as shown and described.

144,936.—Coffee-Pot.—John E. Weber and Peter Knudson, La Crosse, Wis. Application filed May 24, 1873.

An upper chamber contains water, and a lower chamber contains ground coffee. A lamp is placed under the upper chamber which when lighted heats the water until pressure is created, which forces the water into the lower chamber and permeates the coffee. The lamp is extinguished, and a vacuum forms in the upper chamber by condensation, causing the liquid to return. A glass bulb indicates the passage of the liquid from one chamber to the other.

Claim.—1. The coffee-pot A, consisting of the water-receptacle B, the middle part C, and the lower receptacle D, the parts B and D being connected by tubes *b* and *f*, having strainer E, substantially as and for the purpose described.

2. The water-receptacle B, having tube *b* with extension glass bulb *d*, for indicating the boiling process, and tightly-closing lid *a*, as described.

3. The lower receptacle D, having tube *f* with strainer E, supported by wires *g*.

144,937.—Heater and Feeder for Boilers.—Garner C. Williams, Catskill, N. Y. Application filed January 25, 1873.

The feed-pipe connects to the front and rear ends of the boiler by branch pipes, and by a central pipe with the lower pipe of the boiler. In said feed-pipe are arranged injectors, with their mouths projecting above the branch pipes, and thereby create the circulation of the water through the boiler from the rear to the front end, upon the Giffard principle.

Claim.—The combination, with boiler-piping H E D E H, of the injection G and G' feed-pipe B inserted at C, and having its end projecting above that of boiler-pipe D and pipe D', as and for the purpose described.

144,938.—Machine for Cutting Veneers.—William H. Williams, Green Point, (Brooklyn,) assignor to John R. Graham, New York, N. Y. Application filed September 2, 1872.

The knife-carriage is adjusted on inclines M, and is moved automatically by screws K, so that the pitch of the knife *f* is maintained as the log is reduced in its diameter by successive cuts.

Claim.—1. The log-holder frame D, constructed of a beak bar or brace arranged in rear of the trunnions *b b*, and radial projections from the trunnions at the ends of the frame, in combination with the log-holder B, with its end ways or slides *c c*, intermediately-arranged sliding guides or stays *d d*, and the set-screws *e e*, the whole being arranged for operation substantially as specified.

2. The adjustable inclines M M, in combination with the cross-shaft N, the bevel-wheels *n n o o*, the screws *p p*, and the sliding or reciprocating knife-carriage J J', whereby the angles of both inclines may be simultaneously changed, essentially as and for the purpose herein set forth.

3. The combination of the toothed segments or segment-levers E E, the pitmen G G, the wheels H H, the pinions F F, and the curvilinearly-reciprocating log-carrier B D, substantially as specified.

144,939.—Baking-Mold.—George Wingate, Boston, Mass. Application filed August 9, 1873.

The mold is provided with a sliding plug or cover that rests upon the upper surface of the bread, and is forced up thereby as it rises. A false bottom is also provided and attached to a rod passing through the bottom, by means of which the bread is forced out of the mold. The cover or false bottom may be provided with ornaments, figures, &c., which are imprinted on the top or bottom of the loaf.

Claim.—1. The mold A, with its extended top *b*, in combination with a plug or cover sliding therein, and provided, or not, with a device to produce a mark or impression on the top of the loaf, substantially as described.

2. The plate or disk D, provided on its upper side with letters or figures, or with a rib or projection, *i*, extending across it, substantially as and for the purposes described.

144,940.—Machine for Drawing Wire.—Joseph Woods and Edwin Woods, Warrington, Great Britain. Application filed September 22, 1873.

The wire is drawn through the dies, four in number, by intervening drums, around which it is wrapped three or four times as it passes from the plate, from whence it is continued through the next plate. The speed of the drums increases from the first to the last, to provide for the elongation of the wire.

Claim.—The series of two or more dies, with intervening drawing-pulleys moving at increasing surface speeds, substantially as and for the purpose hereinbefore set forth.

144,941.—Rotary Engine.—Leonard H. Woods, Syracuse, N. Y. Application filed October 18, 1873.

The revolving steam-drum is divided by a hollow exhaust-partition. Steam is applied to each section alternately through a hollow shaft, with suitable openings to hinged gates on the drum, working against double abutments, thus overcoming the dead-center.

Claim.—1. The rotary engine, consisting of the combination of steam-cylinder A, having abutments A', and exhaust-partition D, rotary drum B, and stationary hollow steam-shaft C, arranged substantially as and for the purpose described.

2. The rotating drum B, having sleeves or shaft extensions B', hinged vibrating gates *b*, and steam-ducts *d*, which are arranged in such a manner that those of one section are at right angles to those of the other section, for the purpose set forth.

144,942.—Stop-Nozzle for Hose-Pipes.—James N. Allen, Providence, R. I. Application filed November 3, 1873.

An exterior sleeve, with interior screw-threads, engages with a longitudinally-sliding bar or rack provided with incline teeth corresponding with the screw-threads on the sleeve, and connected to a plug-valve by a link, so that the rotation of the sleeve will effect a longitudinal movement of the rack and rotation of the valve.

Claim.—In a stop-nozzle, the combination of a rotating valve with an actuating threaded sleeve, a rack, and connecting-link, substantially as described.

144,943.—Pipe-Coupling.—Daniel Ashworth, Wappinger's Falls, N. Y. Application filed October 17, 1873.

A pair of annular disks, fitting loosely upon nipples behind their collars, interlock each in the other by external inclines and hook-shaped lugs.

Claim.—1. The combination of the disks B B, each having one or more hooked-shaped lugs, C, projecting from its face, notches D for the reception of the corresponding lugs C on its fellow, and external inclines *a* leading therefrom, substantially as and for the purpose herein set forth.

2. The combination, with the system of hook-shaped lugs C C, the notches D D, and inclines *a a*, of the segmental screw-threaded lugs *b* and *c* on each disk and their fellow leg D on the other disk, essentially as and for the purpose specified.

144,944.—Water-Wheel.—Benjamin J. Ransom, Ballston Spa, N. Y. Application filed November 13, 1873.

A counter-balance is arranged, in combination with the oscillating gates of a water-wheel, for relieving the gates from the pressure of the column of water.

Claim.—1. In combination with the oscillating gates of a water-wheel, a counter-balance attached thereto for relieving the gates from the pressure of the column of water, substantially as set forth.

2. In combination with the gates B and links and ring for operating the same, the weighted lever for adjusting the action of the counter-balance, substantially in the manner set forth.

144,945.—Dynamometer.—George W. Bemlow, New Haven, Conn. Application filed September 16, 1873.

A lever is fulcrumed upon an arm which revolves with a shaft. One end of the lever is connected by a link with the face of a pulley, the other with a bar which can slide in a slot through the shaft. This bar is connected with a spring and index, and its movement is the measure of the resistance overcome in turning the shaft by a belt on the pulley.

Claim.—1. The pulley A loose upon the shaft B, the lever C D having its fulcrum in connection and so as to revolve with the shaft, one arm, C, in connection with the said pulley, the arm D acting directly or indirectly upon a longitudinally-sliding bar, F, and a spring interposed between the said pulley and shaft to offer a resistance to the turning of one by the other, the construction and arrangement of the said parts being substantially as described, so that the power more than sufficient to overcome the said resistance will cause the said lever to turn and impart a correspondingly longitudinal movement to the said bar, and thereby indicate the amount of such power.

2. In combination with the pulley A, loose upon the shaft B, the lever C D, spring *d*, the transverse slide G provided with the incline *b*, and the longitudinally-sliding bar F, all substantially as described.

3. In combination with the pulley A, loose upon the shaft B, the two levers C D and C' D', the springs *d d'*, one or both of said levers acting directly or indirectly upon the longitudinally-sliding bar F, substantially as specified.

144,946.—Flattening-Oven for Plate-Glass.—John B. Boulicault, New Albany, Ind. Application filed March 21, 1873.

Double turn-tables in oven communicating with cooling-chamber, in which glass is stacked on slides I I.

Claim.—1. The combination of the two turn-tables C C' with the slides I and frames K, all substantially as and for the purposes set forth.

2. The frame *f* with friction-roller *i*, arranged in the center of the turn-table C' and operated by means of the lever G and spring *e*, substantially as and for the purposes herein set forth.

3. The combination of the slides I, frame K with rollers *h*, and the lever L, shaft *m*, and arm *k*, all constructed and arranged to operate substantially as and for the purposes herein set forth.

144,947.—Saw-Set.—William J. Boynton, Battle Creek, Mich. Application filed October 10, 1873.

Claim.—A saw-set combining in its construction two jaws, having a throat, *c*, to receive the extreme end of the saw-tooth to relieve it of pressure, two inclined faces for bending the teeth, and two flat surfaces for grasping and holding the saw-blades, arranged to operate substantially as herein shown and described, for the purpose specified.

144,948.—Compound for Filling Wood.—Cyrus E. Bradley, Wilmington, Del. Application filed October 10, 1873.

Claim.—A compound for filling the pores of wood-work prior to the application of varnish, consisting of a solution of para or india-rubber, shellac, litharge, and sugar of lead, compounded in the manner and about in the proportions substantially as set forth.

144,949.—Sleigh-Brake.—Thomas H. Bromley, Stonebrough, Pa. Application filed November 3, 1873.

Claim.—1. The brake-bar F, having the claw G and branching arms E E, in combination with the pendent arms D D and rock-shaft B, as and for the purpose specified.

2. The prongs I, pivoted upon the brake-bar F having the prong G, combined substantially as described, for the purpose specified.

3. The combination of the prongs I, brake-bar F having prong G, rock-shaft B, and arms E D, substantially as described.

144,950.—Writing-Tablet.—Charles M. Brown, Providence, R. I. Application filed October 3, 1873.

Ribs are attached to or formed on the leaves of an erasible tablet, to prevent the writing from becoming obliterated when the leaves are closed.

Claim.—An erasive tablet provided with the ribs B B, raised on or attached to the leaves thereof, substantially as and for the purposes herein set forth.

144,951.—Clothes-Drier.—Joseph Burch and Benjamin Webb, Warren, N. Y. Application filed March 29, 1873.

The clothes-drier is constructed with two elliptical plates, between which is pivoted arms so arranged as to fold closely within

them and against the back, which has at its center a bracket for its suspension or attachment.

Claim.—The clothes-rack herein described, having the elliptical plates B B', between which are pivoted the arms D, in the manner shown, together with the fastening-bracket C, the several parts being arranged as specified.

144,952.—Mordant for Dyeing.—RICHARD O. BURGESS and SAMUEL LA RENTY, Providence, R. I. Application filed October 25, 1873.

Sodium chloride, thirteen parts; binoxalate of potash, three parts.

Claim.—A color-mordant composed of the substances mixed together in about the proportions specified.

144,953.—Tack-Hammer.—GEORGE J. CAPEWELL, Cheshire, Conn. Application filed October 14, 1873.

A tack-hammer is provided with a pair of jaws for extracting tacks, one of said jaws being rigid and the other movable, the movable jaw projecting out and forming a fulcrum, to which is attached a spring for releasing the claws after the tack has been drawn.

Claim.—The herein-described tack-hammer and extractor, consisting of the hammer-head, the spring fulcrum-jaw, and stationary claw, the whole constructed to operate substantially as described, as a new article of manufacture.

144,954.—Car-Coupling.—ALBERT F. CHANDLER, Fall River, Mass. Application filed September 8, 1873.

The link on entering strikes the block E, which is driven along grooves in the draw-head until its arms *f*, coming in contact with the lever D, force it against the lower end of the link-holder, which is thereby thrown over and the pin falls into place. When the link-guide is raised its lever H forces the block E up against the link, and retains it against the pin at the desired height.

Claim.—1. The draw-head A, pivoted pin-holder B, lever D, and sliding block E *f*, combined to operate substantially as and for the purpose described.

2. The vertically-operating link-guide F, the lever G, and wedge-shaped bar H, in combination with the sliding block E and the draw-head of a car-coupling, substantially as and for the purpose described.

144,955.—Varnish or Polish for Wood, Metals, &c.—JEAN FRANÇOIS CHEVALIER, Lyons, France. Application filed November 6, 1873.

Claim.—The liquid polish composed of water, hydrochloric acid, alumina-calcareous earth, in the proportions and prepared substantially as specified.

144,956.—Car-Coupling.—JAMES T. L. COCHRAN, Columbia, Tenn. Application filed October 18, 1873.

The end of the link which fits in the cross-bar of the tender is rectangular, while that which enters the cross-bar of the coach is rounded, so that if the locomotive and tender should leave the track the link will be turned up-side down, and the pin will fall out, and thus release the cars.

Claim.—The bolt C, cross-bars A B, and pins *d e*, all combined substantially as and for the purpose described.

144,957.—Strap-Coupling.—THOMAS COGSWELL, Boston, Mass. Application filed September 25, 1873.

A metal strip is doubled midway of its length, and has a projecting pin on one part that extends through the strap, and also through an eye or slot in the other part. A swinging hasp correspondingly slotted catches into the protruding end of the pin, and locks the parts together. A sliding leather loop conceals the mechanism and holds the parts in place.

Claim.—1. The coupler *d*, having its parts which embrace the strap connected by the pin *f* and hasp *i*, substantially as shown and described.

2. In combination with the coupler, the sheath *m*, substantially as shown and described.

144,958.—Fireman's Ladder.—MARTIN CROHIN, Washington, D. C. Application filed October 18, 1873.

The main ladder is elevated by means of a short lever-ladder, which engages with the lower round of the main ladder in connection with ropes passing over the lever-ladder and fastened to the links E E. The main ladder is elevated by depressing the lever-ladder, which forms a short lever-arm, said main ladder being stiffened by a system of rope tension-stays. It is steadied in its elevated position by adjustable braces, and adapted to uneven ground by adjustable caster-wheels.

Claim.—1. The combination, with a ladder, of the lever-ladder D, the links E, ladder-halliards F, and hoisting-halliard G, constructed and arranged substantially as described.

2. The combination, with the ladder, of the extensible legs B and their caster-wheels, substantially as described.

3. The combination of the ladder, the extensible legs B, and the caster-wheels with the separately-adjustable foot-braces H, as and for the purposes specified.

4. The halliard-links F, in combination with side lines *p*, constructed and arranged as and for the purposes specified.

144,959.—Bed-Bottom.—LEWIS M. CROSBY and EZRA G. CAMERON, Ashtabula, Ohio; said CAMERON assignor to said CROSBY. Application filed July 2, 1873.

The slats lie on two lateral bands of webbing, each stretched along the top of a series of spiral springs, which rest on the front and foot pieces of the frame, onto the ends of which the webbing is drawn down and nailed. Another band is passed under the top coil of each spring, and nailed to the upper band. The apex of each spring (on which it stands) has its end straightened, passed down through a mortise, and then bent under the frame at a right angle.

Claim.—1. The coil-springs B, with straight projections *z* and angular ends *y*, in combination with the slats A with oblong slots, and the wedges *a*, all substantially as shown and described.

2. The combination, with the springs B and slats G, of the wide webbing D and narrow webbing E, arranged as and for the purposes herein set forth.

144,960.—Plow.—AMUND K. DAHL, Fox Lake, Wis. Application filed April 19, 1873.

The front half of the land-side, with the forward section of the moldboard and the point, are cast in one solid piece, to which the other parts are bolted by means of flanges, the standard extending downward only just past the top. The hinged guard clasps the standard, and is held down by a spring.

Claim.—1. The front part A, of a plow, with the part *c* of the mold-board, and the part *d* of the land-side, all made in a single solid piece, substantially as described.

2. The guard D, having its rear end slotted to engage on the standard *a*, in combination with the spring F, the construction and arrangement being substantially as shown and described.

144,961.—Cement Sewer-Bottom.—MARCELLUS DAY, Charlestown, Mass. Application filed October 2, 1873.

The sewer-bottom is formed in tubular sections of hydraulic cement and sand.

Claim.—The tubular sewer-bottom or section, formed to shape in a mold, of the material and by the process substantially as described.

144,962.—Fumigator.—ABRAHAM R. DENLINGER, Gordonville, Pa. Application filed August 30, 1873.

In the main tube the fumigating substance is placed, perforated and removable diaphragms being placed upon each end. A mouth-tube is attached to one end, and a nozzle to the other end.

Claim.—In combination with the cylinder A and conic tubes E F, the detachable rimmed or flanged and perforated diaphragms D C, locked or otherwise attached, when the whole jointly is constructed substantially in the manner and for the purpose described.

144,963.—Stock for Shoeing Animals.—JACOB DITCH, Five Forks, Pa. Application filed August 8, 1873.

The animal is led between two upright posts on each side. The platform is widened or narrowed by shifting the posts of one side with a portion of the floor by means of a pivoted lever and link lateral at each end. Confining end bars are applied adjustably. A shifting block fitting in mortises is used to hold the foot in shoeing. A pulley with a cord confines the animal's head.

Claim.—1. The bed composed of the slotted end pieces E E and longitudinal bar provided with cross-pieces B B, in combination with the posts I I I' I', connected by cross-bars, longitudinal movable bar D provided with mortises, and levers L L to open and close the stocks, substantially as described, and for the purpose set forth.

2. The stationary bed A, having the uprights I I, carrying a roller, in combination with the movable bed D H, provided with uprights I' I', carrying a roller, belt M, levers L L, and connecting-rods G G, as and for the purpose set forth.

3. The stocks made to open and close, as described, with the brackets N N, provided with holes, and bars or cross-pieces O O, having perforations and pins, by means of which the bars may be adjusted to animals of different heights, substantially as described.

4. The stocks made to open and close, as described, when provided with mortises P P, in combination with the shifting-block Q, by means of which either foot of the animal confined can be securely fastened for shoeing, substantially as described.

5. The stocks made to open and close, as set forth, when provided with a roller, R, having a cord or its equivalent, in combination with the mortises P P and shifting-block Q, as and for the purpose set forth.

144,964.—Nut-Lock.—CASPER DITTMAN, near Leacock Post Office, Pa., assignor to himself and DAVID N. LANDIS, Jr., same place. Application filed July 10, 1873.

A series of rubber balls are inserted in the chambered nut, and a follower provided, which enters the recess. The follower and nut are prevented from separating by slightly spreading the interior flange of the nut in the central hole of the follower.

Claim.—1. The combination of nut D, having flanges C R, and the rubber balls H, placed between said flanges and the washer F, substantially as and for the purpose described.

2. A nut and washer C D E F, held together by a portion of the nut being upset in the hole of the washer, as and for the purpose specified.

144,965.—Pump.—JOSEPH W. DOUGLAS, Middletown, Conn., assignor to W. & B. DOUGLAS, same place. Application filed September 2, 1873.

A brace is pivoted to an adjustable sleeve, which encircles the pump-barrel.

Claim.—The combination of the sleeve F, carrying the brace or standard G, with the pipe C of a pump, as specified.

144,966.—Dumping-Car.—JOHN ELLIOTT, JOHN P. HARRINGTON, and WILLIAM R. DAVENPORT, Erie, Pa., assignors to ERIE CAR-WORKS, same place. Application filed October 24, 1873.

Claim.—1. In combination with the transverse timbers A B of the truck-frame, the yoke *c*, hinged brake-hangers *d*, and brake-blocks C, as and for the purpose set forth.

2. The combination of the center bearers F F, side sills G G, center stringer E, and iron stirrups *f f*, as and for the purpose described and represented.

3. The combination of the rods *h h*, drops H H hinged thereto, and safety-straps *i i*, as and for the purpose described and represented.

4. The combination of the center stringer E, slotted as at *r r*, and the cheek-pieces N N for strengthening said stringer, and for facilitating the removal and replacing of the draw arrangement O, as described and represented.

144,967.—Stove-Pipe Stretcher, &c.—GEORGE ELSEY, Sterling, Ill. Allippcation filed May 24, 1873.

A casting of wedge shape skeleton form for inserting in the end of a stove-pipe for stretching the same, and so formed that it may be used as a boot-jack.

Claim.—A skeleton stove-pipe stretcher having the inclined bars A, curved bar B, shoulder-bars *a*, and handles C, with or without the brace-bars A' and lugs *b*, substantially as described.

144,968.—Center-Board for Vessels.—JOSEPH ESPALLA, Mobile, Ala. Application filed October 4, 1873.

Claim.—A center case, the forward end of which is wider than the after, provided with a center-board as constructed and pivoted that it will swing and swerve automatically, in the manner shown and described.

144,969.—Machine for Forging Hammers.—WILLIAM EVANS, Long Island City, N. Y. Application filed October 25, 1873.

Claim.—1. The arrangement and combination of the forming-dies, the punch, the shears, and the finishing-dies in a machine for making hammers, substantially as described, for the purposes specified.

2. The dies E^1 E^2, for the purpose of crowding out the metal and perfecting the contour of the hammer, substantially as described.

3. The method of making hammers from a steel blank by subjecting the blank, first, to the cutlining-dies; secondly, to the convex dies for indenting the cheeks; thirdly, to the punch; fourthly, to the shears; fifthly, sixthly, and seventhly, to the finishing-dies, substantially as described.

144,970.—Suspenders.—THOMAS JEFFERSON FLAGG, New York, N. Y. Application filed July 26, 1873.

Claim.—The suspender-end before described, consisting of the combination of the concealed core *c*, the cloth facing *c*, turned over the edge of the core, the button-hole lining *w*, projecting and concealing the edges of the cloth face and the core at the button-hole, and the backing *w*, covering and concealing the raw turned-in edge of the face, substantially as before set forth.

144,971.—Shutter-Hinge.—WILLIAM FOSKET, Meriden, Conn., assignor to CHARLES PARKER, same place. Application filed October 17, 1873.

A horizontal flange upon the lower side of the upper leaf falls behind and locks over another horizontal flange upon the upper edge of the lower leaf. The flange turns and projects at right angles to its plane for a short distance at its end. The larger part of the sides of the flanges are inclined, but small portions near the edges are perpendicular, to secure a more positive lock.

Claim.—1. The plate A, provided with the pintle B, the flange C, and the flange D, at right angles, or nearly so, to the flange C, combined with the plate E, provided with an elongated opening, F, for the pintle, and the flange G, substantially as and for the purpose described.

2. The plate A, provided with the pintle B, the flanges C and D, at right angles, or nearly so, to each other, combined with the plate E, elongated opening F, and flange G, when the said flanges C and G are constructed with a portion of their surfaces, *s w*, vertical, so as to form a dead lock, substantially as described.

144,972.—Clothes-Tongs.—ELIZA ANN FOULKE, Paris, Ill. Application filed September 15, 1873.

The arms are crossed and pivoted near the center of the length. The jaws have flat edges with concave inner spaces with holes for the escape of water.

Claim.—A pair of tongs the jaws C whereof have flat biting-edges *c* and intervening spaces or gutter-grooves *a*, provided with outlet-perforations *b*, as and for the purpose described.

144,973.—Safety Appliance for Governors.—JOHN GASKELL, Bridgeport, assignor to THE COLT'S PATENT FIRE-ARMS MANUFACTURING COMPANY, Hartford, Conn. Application filed May 26, 1873.

Claim.—In combination with a governor and the belt which drives it, a feeler provided with means of pressure, to bear said feeler upon the belt, and a stop in connection with said feeler, and in position relatively to the governor, constructed and operating substantially as described, so that, upon the breaking or loosening of the belt, the said stop will catch and hold the valve-moving portion of the governor in substantially the position it occupies when such breaking or loosening occurs.

144,974.—Needle-Threader.—FELIX R. GASPARY, Berlin, Prussia. Application filed May 28, 1873.

The corrugated portion of the elastic arm is adapted to embrace the needle and insure the entrance of the hook into the eye; and when the thread is caught the arm, in resuming its natural position, draws the thread through the eye.

Claim.—1. The arm D, pivoted to the clamping device B, made elastic, and provided at its lower end with the hook *h*, and with the notch or corrugation *s* at its point of contact with the needle, substantially as and for the purpose specified.

2. In combination with the elastic arm D, constructed as described, and provided with the hook *h*, the shield D, extending from the clamping device, and so as to receive the said elastic arm D, substantially as set forth.

144,975.—Elastic Anti-Friction Attachment for Vessels' Booms.—HARMON GREGORY, Jr., Rockland, Me. Application filed October 20, 1873.

Claim.—The combination, with the boom C, carrying the ring A provided with an annular groove, of a friction band or strap, D, the free ends E E of which serve as a socket for the springs L L, the whole being constructed and operating to form an anti-friction and elastic attachment, substantially as set forth.

144,976.—Letter-Box.—BENJAMIN B. GURLEY, Minneapolis, Minn. Application filed April 26, 1873.

A letter-box having two compartments, one on each side of the door, has an aperture, lid, and a door on each side. A letter dropped through the aperture on one side falls through an opening in the door into the receptacle on the opposite side. Raising the lid on the inner side, to drop a letter into the outer compartment, operates a crank, lifting a signal, which is held in an elevated position, by a catch on the outer lid until the lid is raised to release it.

Claim.—1. The boxes A and B, having letter-openings, combined with the door C, with its single opening *d'*, as and for the purposes set forth.

2. The lid *b'* of the inner box, rod *m*, crank-shaft E, and indicator G, connected and operated as and for the purpose set forth.

3. The lid D, arm *n*, and spring *k*, in combination with the crank E, as and for the purpose set forth.

4. The combination, with a door, C, of an outer and inner letter-box, A B, having letter openings and doors D D', and an inner lid, *b'*, operating an exterior indicator, G, all substantially as set forth.

144,977.—Lifting-Jack.—JOHN T. HAMILTON, Boone county, and EZRA F. CONNER, Decatur, Ind.; said CONNER assignor to said HAMILTON. Application filed September 24, 1873.

Improvement on patent of J. T. HAMILTON, March 19, 1872. The rod with which the rack-bar engages is secured between the standards.

Claim.—In a lifting-jack, the combination of the lever B, rod D, the ends of which are secured to the sides of the legs A A, and the rack-bar C, all substantially as and for the purposes set forth.

144,978.—Circular Harrow.—GEORGE W. HILLS, Dodge Centre, Minn. Application filed October 3, 1873.

A revolving harrow having a cam-shaped block in the center, to which the draft-beam is attached by a swivel-bolt. To the beam are secured rollers, one of which revolves on the upper surface of the cam-wheel, while another revolves on its periphery, and bears against the depressed portions, so that, when the harrow comes in contact with an obstruction, causing it to revolve, the roller is caused to move past a rounded corner, and onto another depressed side. A roller on the rear end of the draft-bar revolves against the outer rim of the frame.

Claim.—1. The combination, with a circular revolving harrow, A B, of the irregular cam-shaped center-block D, swivel-bolt *d*, draft-bar E, and draft-wheel G, as and for the purposes herein set forth.

2. The combination of the harrow-frame A B C, cam-shaped block D, beam E, swivel-bolt *d*, and rollers G G^1 G^2, all constructed substantially as and for the purposes herein set forth.

144,979.—Apparatus for Printing upon and Decorating Enameled Surfaces.—SAMUEL J. HODGSON, New Haven, Conn., assignor to THE AMERICAN ENAMEL DECORATING COMPANY, same place. Application filed September 16, 1873.

Claim.—1. In combination with the revolving table A and the post D, the arm I supported from the said post, and carrying the printing-disk M and the coating-roll U, substantially as set forth.

2. In combination with the printing-disk M supported from the post D, the block E, to which the disk is attached, and made adjustable vertically and axially, substantially as described.

3. In combination with the printing-disk N, the post D, and the block E supporting the disk, the cylindrical bar G to which the disk is hung, and made adjustable in said block, substantially as described.

4. In combination with the printing-disk N, hung to or supported from the post D by the arm I, the weight W, pivoted to said arm, for the purpose of adjusting the pressure of the said disk, substantially as described.

5. In combination with the printing-disk N, supported from the post D, and the coating-roll U, the auxiliary arm P, attached to and made adjustable upon the arm I, substantially as and for the purpose described.

144,980.—Grain-Scourer.—CHACE B. HORTON, Waterloo, N. Y. Application filed April 5, 1873.

Rubbers in convex sections attached to a cylinder revolving within another cylinder. Sections provided with sockets in which

may be secured any desired kind of brushing-surface, on each side of which are metallic rasping-surfaces.

Claim.—1. The tangential rubber for grain-scouring cylinders, constructed with a front end, 1, adapted to force the grain into contact with the case, and with a socket, 3, to hold a brush, 4, or its equivalent, and to protect the edges thereof, substantially as herein described.

2. A tangential rubber for grain-scouring cylinders, having metallic rasping-surfaces 1 2 at its respective ends, and an intermediate changeable brushing or rubbing surface, 4, formed and operating substantially as herein set forth.

3. A tangential rubber for grain-scouring cylinders, having a wooden rubbing-block, 4^b 4^c, held in a socket, 3, and constructed with an effective surface formed by saw-kerfs, substantially as specified.

144,981.—Steam Radiator.—ALBERT L. IDE, Springfield, Mass. Application filed June 6, 1873.

Each tube of the radiator is provided with three passages, two of which are intended for the upward and the third for the downward passage of steam.

Claim.—In a steam radiator, a vertical pipe or column divided interiorly into three vertical passages, substantially as and for the purpose specified.

144,982.—Hand-Power Baling-Press.—PLATT C. INGERSOLL, Green Point, N. Y. Application filed August 4, 1873.

Claim.—1. The pulley G for guiding the chain L, in combination with the pulleys C D I, for operating the follower B of a press, substantially as described.

2. The differential pulleys C D and ratchet and pawl E K, in combination with the pulley I, guide-pulley G, and follower B, substantially as and for the purpose described.

144,983.—Sulky.—LA FAYETTE H. JENNISON, Monroeville, Ohio. Application filed October 24, 1873.

Claim.—1. The U-shaped springs G, in combination with the thills A A and axle-tree E, substantially as and for the purpose set forth.

2. The spring-brackets F, in combination with the thills A A and axle-tree E, as and for the purpose set forth.

3. The trotting-sulky consisting, essentially, of the thills A A, U-springs G G, spring-brackets F, and axle-tree E, all constructed and arranged in the manner as described, and for the purpose set forth.

144,984.—Bed-Spring.—WILLIAM W. JONES, Philadelphia, Pa. Application filed May 14, 1873.

Two coupled spiral springs are surmounted by independent loops for the reception of the slats, the springs, loops, and coupling constructed of one piece of wire.

Claim.—A compound bed-spring, consisting of two coupled spirals, A and B, composed of a single piece of wire, and each surmounted by an independent loop, *b*, for the reception of a slat, all as and for the purpose specified.

144,985.—Measuring Device for Spooling-Machines.—THOMAS K. KEITH, Haverhill, and AUGUSTUS SHAVER, Milford, Mass. Application filed July 10, 1873.

The spool draws the thread through open loops on the face of a loose worm-wheel, thereby turning said wheel, which engages with a toothed worm rotating at a right angle to it, which in turn engages with a graduated toothed wheel rigidly attached to the shaft, which serves as a bobbin-spindle, and arranged side by side with the first-mentioned loose worm-wheel.

Claim.—The combination, with the screw-wheel *f* and gear-wheel *l*, of the toothed and screw wheel *r* engaging with both these parts, being arranged and operating substantially as described.

144,986.—Blacksmith's Forge.—WARREN T. KELLOGG, Troy, N. Y. Application filed June 20, 1873.

The blast-fan is operated by means of a hand-lever and frictional gearing, with journal-boxes adjustable in slots by means of springs.

Claim.—The combination, substantially as shown and described, in a portable forge, of a blast-fan and system of friction-pulleys and adjustable journal-boxes and springs for constantly maintaining the contact of the faces of the pulleys, all arranged below the plane of the fire-pan and operated by a lever, in the manner set forth.

144,987.—Apparatus for Preserving and Forcing Beer.—EDWARD C. KRAUSNICK, St. Louis, Mo. Application filed April 28, 1873.

Gas conveyed from a generator through a tube expels air from a liquid-receiving chamber placed within the temperator, which is afterward filled with liquid from a reservoir. The vacated space in the reservoir is filled with gas from the generator. The liquid-chamber is surrounded by hot or cold water, as warm or cold liquid is desired. An extra cold-chamber, as well as a siphon containing mercury for determining the pressure of the gas, is placed on the generator.

Claim.—1. The generator A, the temperator B, and the reservoir D, constructed, connected, and combined substantially as and for the purpose described.

2. The chambers *c* and *e*, combined with a pipe, *d*, arranged as and for the purpose described.

3. The siphon *l* for regulating, increasing, or diminishing the pressure of the gas generated by increasing and diminishing the quantity of mercury, applied to serve also as a safety-valve, being of such dimensions that all the gas possibly generated by neglecting the closing of faucet *p* can escape through said siphon *l*.

4. The washers *g* and *f*, so arranged that the generated gas is prevented from passing directly through the washing liquid by the horizontal plates h^1 h^2 h^3 h^4, as and for the purpose described.

5. The generator A, so constructed that, in a few rare cases, when the use of carbonic acid is injurious to the liquid to be preserved, the hydrogen gas may be generated for the same purpose, to form an indifferent atmosphere.

6. The extra acid-vessel *y* on generator A, applied as described, whereby the generator may be supplied with fresh acid by filling said vessel with water and adding a few pieces of carbonate of lime, and the operator may keep the generator for a longer time at work without giving a new charge.

7. The faucet F, constructed and applied as described, so that the generated gas can enter the reservoir or barrel D, the preserved liquid can pass through this faucet out of reservoir D into vessel b^3 of the temperator, and, further, can pass from vessel b^3 into the outlet-chamber of said faucet, without coming into contact with the atmospheric air, or without reducing the original pressure, till drawn off for use.

8. The temperator B, constructed and applied as described, so arranged that it may be used as a refrigerator or a coloridicator, being founded on the laws of specific gravity of fluids of different temperatures, without altering the pressure.

9. The reservoir D and vessel b^3, combined with pipes b^4 b^5 and faucet F, as and for the purpose set forth.

10. The pipe *q* and faucet *p* on generator A, combined as described, so that the pressure of the generated gas may be increased at will of the operator.

11. The combination of pipe β^2 and its connections with cistern b^3 of the temperator B, the pipe β^1, and surrounding pipe β^3, as described, so that the temperature of the water of cistern b^3 can be regulated and kept uniform, as the liquid to be preserved may require.

144,988.—Middlings-Purifier.—EDMUND M. LACROIX, Minneapolis, Minn. Application filed November 22, 1873.

By the reciprocating or vibrating and rising-and-falling motions imparted to the annular sieve, the material to be acted upon travels in the path of a circle from the head to the tail. The air-pipe underneath the sieve, as constructed, admits of a double blast being thrown upon it.

Claim.—1. An annular sieve constructed and operated as described, the material to be acted upon traveling over the same in the path of a circle from head to tail.

2. The combination, with an annular sieve, constructed as described, of mechanism for imparting a reciprocating or vibrating motion to the same, substantially as and for the purpose described.

3. The combination, with an annular reciprocating or vibrating sieve, of mechanism for imparting a rising-and-falling motion to the same, substantially as and for the purposes described.

4. The combination, with an annular reciprocating or vibrating sieve, of an automatic cleaning device underneath the same for keeping the meshes of the cloth clear.

5. The combination, with a sieve or shaker, of mechanism for imparting a reciprocating rotary motion to the devices for cleaning the meshes of the cloth.

6. The combination, with an annular reciprocating or vibrating sieve, of a suction-blast, substantially as and for the purposes described.

7. The combination, with an annular reciprocating or vibrating sieve, of an air-blast underneath the same, substantially as and for the purpose described.

8. The air pipe or pipes D', constructed with diagonal openings, with or without slides *d'*, substantially as and for the purpose specified.

9. The combination, with the chamber B and annular sieve F', of the flexible ring or head U, for the purpose specified.

10. The combination, with an annular reciprocating sieve, of discharge-spout R and flexible connections *r*, substantially as and for the purpose described.

144,989.—Corn-Planter.—JAMES G. LA FORTE, Dayton, Ohio. Application filed October 23, 1873.

The frame of the machine is mounted upon five wheels, three of which follow after the furrow-openers and droppers to cover the seed. The forward wheels vibrate upon a king-bolt, as in the common four-wheel vehicle, and change direction in turning at the end of the field, but when passing straight forward become fixed by lock-bars. The middle covering-wheel is placed in rear of the others, and has upon one side cams to operate the seed-slide. Row-markers are formed by cut-rigging in the usual manner.

Claim.—1. The combination of the hoppers D D', spring-slide G, reversible lever H, and follower F provided with several series of inclines, *b*, with the adjustable followers *c* and drill-teeth *f*, for the purpose of planting corn in rows and hills at varying distances apart, substantially as described.

2. The combination of the self-adjusting follower-shaft *d* with the arms *l l* and drill-teeth, as and for the purpose shown and described.

3. The brakes or stays K K, for holding the front axle rigidly in line with the frame-work of the machine, substantially as set forth.

144,990.—Drain-Tile.—JOHN LEVELER, Rochester, N. Y. Application filed October 17, 1873.

A pipe-mold made in sections, its ends having offsets and intermediate sockets to form pipes, having alternate corresponding projections and depressions on their edges, so as to interlock with each other.

Claim.—1. The rectangular mold herein described, consisting of the sides A A, bottom B, and ends C C, and provided with the offsets *c c* and *d d*, as and for the purpose specified.

2. The pipe constructed with square bottom and sides and an angular top, and provided with the intermatching coupling projections *f f* and sockets *g g*, as and for the purpose specified.

144,991.—Automatic Fire-Alarm.—CHARLES H. LESCHORN, Philadelphia, Pa., assignor of one-half his right to ALEXANDER LESCHORN, Pittsburg, Pa. Application filed May 10, 1873.

One or more U-shaped tubes or vessels containing mercury, and having one arm in connection with a closed and exhausted fusible tube extending to the locality to be guarded, are arranged with a piston on the other side, carrying an indicating-disk, and in connection with the trip or detent of an alarm mechanism, so that in case of fire the tube collapsing allows the mercury, acted on by atmospheric pressure, to raise the piston, and thus sound an alarm, at the same time that the indicator being brought into view announces the locality of the fire.

Claim.—1. The combination of a clock-alarm cam-wheel, L, a lever, J, piston-rod *a*, indicator-plate F, and piston E, with the cylinders A B communicating at *c*, and being partly filled with mercury, and the fusible vacuum-pipe D, substantially as specified.

2. The combination of a fusible vacuum-pipe, a piston, and a communicating pair of cylinders or pipes charged with mercury or any other liquid, for the purpose of indicating, by the change of elevation of such liquid in either part of the said cylinders or pipes, the action of fire on the fusible vacuum-pipe, substantially as specified.

144,992.—Machine for Tenoning Cogs.—STEPHEN W. LONG, Owensborough, Ky., assignor to himself and THOMAS H. GUTHRIE, same place. Application filed July 26, 1873.

The several forms required by wooden cogs are given by means of the carriage and adjustable guides and ways.

Claim.—In combination with the rotary cutter-head E *e e'*, the pivoted and grooved ways *b b'* F *f f'*, reciprocating carriage H H^1 A A^1 k^2 k^1 I *i*, adjustable table J *j*, rock-shaft K, clamp M *n* O, and set-screws L, L^1, R, and S, as and for the purpose specified.

144,993.—Apparatus for Refining and Deslivering Lead.—GUSTAVE LUCE, Marseilles, France, assignor to LUCE, SON & ROZAN, same place. Application filed November 16, 1872.

Injects steam into the bottom of the vat which contains the melted mass, agitating the mass, causing the lead to crystallize, and oxidizing the foreign metal.

Claim.—The combination of the melting-caldron H, the crystallizing-vat A arranged to receive the melted lead from the caldron, the steam-pipe B extending to the bottom of the vat and provided with the cock C, and the operating-rod E, the said vat provided with the spout or spouts E', all substantially as and for the purpose specified.

144,994.—Farm-Gate.—WILLIAM LUCUS, Olive Green, Ohio. Application filed October 4, 1873.

The gate is supported centrally on a vertical post which extends up through a slotted cross-beam, and rests its lower end in a step in the ground-sill. Rollers are attached above the cross-beam to the upper end of said post, on which, after the gate is turned half-way around, the gate is rolled along the cross-beam to one side of the roadway. A long latch-bar holds the gate to the side posts when shut.

Claim.—The horizontally-turning gate D, suspended from an overhead beam, C, by means of rollers *d d*, in combination with the slot *a*, substantially as and for the purposes described.

144,995.—Crimping Apparatus for Boots, &c.—MARTIN R. MARCELL, Dansville, N. Y., assignor of one-half his right to WARREN H. CASE, same place. Application filed April 23, 1873.

Rollers are inserted in the inner surfaces of the jaws, slightly projecting, so that the crimping-block, as it is forced between the jaws, will bring the leather into immediate contact with the rollers.

Claim.—1. In an apparatus for crimping leather, the combination of the rollers G G with the jaws E E, or equivalent, when said rollers are set in the inner faces of the jaws, and project therefrom to receive the contact of the crimping-block, substantially as and for the purpose specified.

2. In combination with the jaws E E and rollers G G, the encircling-straps H H, as and for the purpose specified.

144,996.—Valve.—ANSELM MARMONT, St. Louis, Mo., assignor to JOSEPH W. BRANCH, same place. Application filed October 7, 1873.

The valve-seat is made cylindrical in form, and is cemented in place against a circumferential flange in the valve-chamber. On the valve-seat the valve proper is hinged. On the back of said valve a projection, having a slotted cylindrical socket, affords the means of operating the valve by the spherical head attached to the valve-stem.

Claim.—1. The valve-seat *a*, formed with a circumferential flange, *m*, which abuts against an inside flange, *n*, of the valve-chamber *c*, and with lugs *d* for attachment of the axial valve *e*, substantially as and for the purpose set forth.

2. The axial valve *e*, formed with a lug, *j*, having a cylindrical socket, *i*, and slot *k*, and jointed to the valve-seat *a*, in combination with the operating screw *f* having a spherical head, *h*, as set forth, and for the purpose described.

3. The combination of the valve-chamber *c*, necks *b b'*, valve *e*, socket-lug *j i*, valve-seat *a d*, and screw *f* having a head, *h*, and passing through a stuffing-box, all substantially as set forth.

144,997.—Hose-Coupling.—THOMAS J. MAYALL, Boston, Mass. Application filed October 9, 1873.

A divided hinged coupling-ring closes around collars formed upon the contiguous ends of the hose-sections, and is securely fastened by a locking device consisting of a pivoted locking-lever and a swival cross-pin applied to the respective ends of the coupling-ring.

Claim.—1. In combination with the divided and hinged coupling-ring, the locking-lever and swiveled and adjustable locking-pin, said parts being applied to the respective ends of the coupling-ring, and constructed and arranged for joint operation, substantially as shown and set forth.

2. The coupling collars, having their exterior opposite sides inclined or beveled, and provided with packing-rings on their contiguous faces, in combination with the divided and hinged coupling-ring, locking-lever, and swiveled locking-pin, said parts being constructed and arranged for joint operation, substantially as described.

144,998.—Apparatus for Mixing Vulcanizable Compounds of Rubber, &c.—THOMAS J. MAYALL, Boston, Mass. Application filed October 29, 1873.

The radial inclined blades lift and mix the mass, overcoming the tendency of the sulphur, emery, and other heavy matters to collect at the bottom of the mixer. The stock is squeezed and mashed between the projecting arms and mixing-blades.

Claim.—The combination, with the mixing-tank and the upright rotary shaft therein, of the radial inclined blade carried by said shaft, and the stationary arms projecting inwardly from the sides of the tank, and operating, in conjunction with said revolving radial inclined blades, substantially as shown and set forth.

144,999.—Paper-Hanger's Brush.—JOHN M. MCCOMB, Lancaster, Ohio. Application filed August 22, 1873.

Claim.—1. The hinged spring-pressed clamp C, applied to the top of a paper-hanger's brush, as and for the purpose described.

2. The combination, with clamp C, of lifter E, having stud *e*, with cord or wire extending along the handle, as and for the purpose set forth.

3. The combination, with a lifter having the extension *e'*, of the crooked lever G, hook *g*, fulcrumed at H H, and an end, *g'*, extending below the handle, as and for the purpose specified.

145,000.—Means for Operating Screw-Propellers.—ALEXANDER MCDONALD, Cumberland, Md. Application filed October 27, 1873.

The pinion *a* is attached to the lower end of shaft *b*, to the upper end of which is attached a hand-wheel, L, said shaft being mounted on a rocking bar, J, which allows the pinion to be thrown into and out of gear with the wheel I, the whole being designed to afford means for assisting the machinery in passing the dead-center, or for starting it when it has stopped on that point.

Claim.—1. In connection with a propeller-shaft, the combination of the gear I and pinion *a*, having a hand-wheel connected therewith, and having bearings in a rocking bar, as and for the purposes set forth.

2. In combination with the blades D D', the shaft and sleeve A A', and gears, as set forth, the gear I, pinion *a*, hand-wheel L, and rocking shaft, all substantially as and for the purposes set forth.

145,001.—Saddle.—THOMAS H. MCGRATH, San Antonio, Tex. Application filed September 13, 1873.

Claim.—1. The metallic cap C, having flanges *c* and extension *c'* applied to horn of saddle-tree, as and for the purpose described.

2. The grooved part-collar E, applied under the front of the horn of a saddle, as and for the purpose set forth.

145,002.—Medical Compound.—GEORGE F. MUNRO, Leon, Iowa. Application filed May 13, 1873.

One part of cinconia, one part of sanguinaria, one-fourth part of niter, two parts of sulphur, one-eighth part of leptandria and podophyllin, one-eighth part of bromide of potassium and morphia, and "Tilden's" extracts in such proportions as the malady of the patient may require.

Claim.—The medical compound herein described, composed of the ingredients, compounded in the manner and proportions, substantially as specified.

145,003.—Barrel-Washer.—ADOLPH MUNTZENBERGER, Kenosha, Wis. Application filed June 26, 1873.

The barrels, partially filled with water, are placed upon a rack suspended between standards so as to enable it to swing longitudinally, and agitate the water and cause it to be thrown around the entire surface of each barrel.

Claim.—The hereinbefore-described device for washing barrels, consisting of a rack suspended so as to swing longitudinally, and suitable mechanism for causing said rack to reciprocate, substantially as and for the purpose specified.

145,004.—Car-Axle Box.—DAVID MUNSON, St. Albans, Vt. Application filed April 3, 1873.

The jaws of the pedestal have concave interior surfaces, while the sides of the axle-box are globe-shaped, this construction allowing the axle-box to adjust itself within the jaws.

Claim.—The hanger B provided with concave sides, as shown and described, in combination with the globe-shaped box C, for the purposes herein set forth.

145,005.—Manufacture of Steel.—CHARLES M. NES, York, Pa. Application filed November 21, 1873.

Claim.—The manufacture of steel from silicon pig-iron, either separately, or in combination with ordinary pig or cast iron, substantially as described.

145,006.—Safety-Strap for Harness.—CLARENCE W. NICHOLS, Chicago, Ill., assignor to HENRY H. FEARY, same place. Application filed September 10, 1873.

Claim.—1. The strap D, combined with the cross-strap B, and forming therewith a safety-triangle, as and for the purposes described.

2. The combination and arrangement of the loops, rings, or eyes *a*, *a*, *b*, and *c* with the straps B D, as and for the purposes described.

145,007.—Earth-Boring Machine.—SILAS R. OWEN, Stewartville, Mo. Application filed April 19, 1873.

The boring is effected by connecting the sweep to the auger-shaft through the attachment L. The weight of the auger and shaft feeds the same downward, the shaft being extensible, and at the same time draws the rope *c* from the windlass D. When the auger is to be raised the sweep is disconnected from the auger-shaft, which is then prevented from rotation by the bolt P', and connection is effected between the sweep and the capstan H by a drop-hook and catch. The sweep is then rotated, and the capstan takes up the rope from the drum E, geared with the winding-drum, which takes up the hoisting-rope to which the bucket is attached. The sweep is attached to a ring which rotates freely within the capstan. The rope which suspends the auger-shaft is prevented from twisting when the auger is rotated by a swivel connection at lower end, and by passing through a tubular swivel which sustains the auger-shaft case at the upper and.

Claim.—1. The combination of ropes C and G with pulley B, swivel U, windlasses D and E, wheels *d*, *e e'*, and *f*, crank F, and capstan H, substantially as specified.

2. The combination of sweep K, levers L L, adjustable bar M, ring J, drop-hook *h'*, and catch *h*, substantially as specified.

3. The combination of bars N O, box P, bolt *p'*, and swivel-eye *p*, substantially as specified.

145,008.—Fog-Signal.—GURNEY C. PATTISON, Baltimore, Md. Application filed July 2, 1873.

A floating body, with a vertical opening through its middle, in which is hung a paddle-wheel, is supported at its ends upon fixed upright poles, and carries a bell, suspended over the paddle-wheel, in such manner as to be tripped or swung by the same as the wheel is turned by the waves.

Claim.—The combination of the boat A with wheel E and bell F and the bars B B, connected to the boat and to the standards C C, all substantially as and for the purposes set forth.

145,009.—Spindle for Spinning-Machines.—WILLIAM G. PERRY, Manchester, N. H. Application filed July 21, 1873.

The cap receives the lower end of the bobbin, causing it to turn with the whirl, which latter has also a flange projecting over the upper end of the bolster, protecting it from dust, &c., and a pin entering a circumferential groove in the bolster to prevent the whirl being raised in doffing, the neck of the whirl steadying its rotation.

Claim.—The whirl B, having the cup U, flange J, neck H, and pin S, in combination with the bolster E, having screw-step N, and groove Y T, and the spindle, as and for the purpose specified.

145,010.—Apparatus for Drying Tan.—NATHANIEL PORTER, Peabody, Mass. Application filed September 4, 1873.

Claim.—The stationary solid floors A, arranged as herein described, in combination with the reciprocating scrapers, links *a b*, and shaft *c*, all constructed and arranged substantially as described, for the purpose specified.

145,011.—Sewing-Machine Caster.—JAMES K. PROCTOR, Malden, Mass. Application filed November 1, 1873.

The casters may be lifted from the floor by a lever.

Claim.—The caster-frame D, herein described, the same consisting of the two bars *a*, each carrying two caster-wheels, *b*, and the connecting-rod *d*, which bars *a*, together with the rods *d*, are hung to the standards C and connecting-rod F, and actuated by the treadle-lever G, or its equivalent, substantially as herein described, for the purpose specified.

145,012.—Planing-Machine.—JOHN RANKIN, Binghamton, N. Y. Application filed December 3, 1872.

The planing cylinder is driven by a system of gearing that imparts power equally upon opposite sides of the cylinder-shaft.

Claim.—In combination with the supporting-frame and work-bed, and the cutter-shaft with its driving mechanism, the yielding feed-roll and its driving-gears, the whole arranged to operate substantially as and for the purposes described.

145,013.—Railway-Switch.—THOMAS J. REYNOLDS, Irvington, Ill. Application filed November 5, 1873.

A switch of that class wherein a spring is interposed between the shifting-lever and the movable point-rail, to allow the flange of the wheel to pass should the point be improperly set. The opposite point in this case is fixed, and secured to the main rail by bolts passing through offsets, which hold it at the proper distance from the main rail. The said point is fixed in a block, E, upon which the flange of the wheel runs in making the transit from the point to the main rail, or vice versa.

Claim.—1. The combination of the rails C B, rod F, spring G, and target-rod H with the rails A D and piece E, as and for the purpose set forth.

2. The combination of the piece E with the rails A D and lugs *b b b*, as and for the purpose set forth.

145,014.—Brace-Truss.—HENRY H. ROEDEL, Lebanon, Pa. Application filed July 29, 1873.

At each of the four corners where the iron frames of the brace meet is placed an angle-iron, upon each arm of which the frame is adjusted. Four adjustments are thus furnished, so that the abdominal portion of the brace may be drawn up as well as shortened to meet the varying form of the abdomen.

Claim.—The side springs, connected to the front and back bars by the solid angles adjustably connected thereto.

145,015.—Railway-Rail Fastening.—ALBION M. ROUSE, St. Louis, Mo. Application filed May 19, 1873.

The clamping-jaws have wedge-formed sole-plates so arranged that when drawn together the base of the rail is constricted both laterally and vertically. The lower flange of one is pierced for the passage of lugs on the other, through which elastic wedges of U form are driven. These are secured in place by a locking-strip.

Claim.—1. The combination of the jaws B E when provided with wedge-formed sole-plates C F, arranged and operating substantially as and for the purpose set forth.

2. In combination with the jaws B E, the slotted lugs D and slotted rib or flange *e'* for securing the jaws together, substantially as set forth.

3. The elastic wedge G *g*, arranged substantially as set forth.

4. The combination of jaws B E, lugs D, wedge G, and locking-strip H, substantially as and for the purpose set forth.

145,016.—Harrow.—LEVI C. RUMBERGER, Cass, Pa. Application filed May 24, 1873.

Securing harrow-teeth to beams by means of eyelets or round sockets provided with square holes, which are set into beams, and are prevented from passing through by means of flanges on the upper ends. The teeth are passed into the eyelets or round sockets, and are secured by means of wedges.

Claim.—In a harrow, the cylindrical eyelet A with the flange *a*, the diametrically-opposite holes *a'*, the square hole B, and the key-groove *b*, substantially as specified.

145,017.—Machine for Making Heel-Stiffeners.—JAMES SAMUELS, Vineland, N. J., assignor to WILLIAM G. HILL, Cambridge, and L. B. RUSSELL, Lynn, Mass. Application filed February 17, 1873.

Claim.—The former A, the fluted clamp C, and the crimper E, arranged, constructed, combined together, and provided with operative mechanism, all substantially as described.

145,018.—Broadcast Seeder.—JAMES B. SCARBOROUGH, Millburn, Ky. Application filed July 12, 1873.

Claim.—In a broadcast seeder, the scatterer G, constructed with two concave disks of equal size, arranged one above the other, and separated by the radiating angular partition-plates *a*, their inner acute angles meeting the margin of the opening in the upper disk, substantially as shown and described.

145,019.—Seeding-Machine.—MORRIS SCHNAPP, Pleasant Park, Mo. Application filed March 15, 1873.

The frame consists of a beam, share-standards, and handles. The seed-box is adjustably secured to the forward standard and provided with a feed-roller at the lower end, and rotated by a band from a pulley on the covering-wheel. The covering-wheel is adjustably attached to the rear end of the beam, thus affording means for tightening the band and regulating the depth of the machine.

Claim.—The standards B B', clod-fenders J J, seed-box E, clamps G G', wheels H I, bar K, pulley *f*, and belt *e*, all constructed, combined, and arranged as and for the purpose set forth.

145,020.—Photographic Plate-Holder.—AUGUST SEMMENDINGER, Fort Lee, N. J. Application filed September 4, 1873.

Claim.—The supports a bent up of wire, and provided each with two recesses, *b b'*, and with retaining-spurs *c*, in combination with a photographic plate-holder, A, substantially as and for the purpose herein set forth.

145,021.—Manufacture of Gas.—HENRY SKOHNS, London, assignor to WALTER SANDELL MAPPIN, Stanley Crescent, England. Application filed October 8, 1873.

Claim.—1. The process of treating the crude gases, vapors, or products arising from the coking or first carbonization of cannel-coal and analogous substances, by introducing such products, with superheated or other steam, or with water, into retorts or chambers charged with chalk or analogous material in a highly-heated state, as above described.

2. The above-described process of manufacturing or producing gas for illuminating or heating purposes by coking or carbonizing cannel-coal or analogous substances in coking retorts or chambers, treating the resulting gases, vapors, or rising products with superheated or other steam, or with water, in other or intermediate retorts or chambers containing chalk or analogous material for absorbing the sulphurous compounds and ammonia, and amalgamating the gases in final retorts or chambers charged with coke or analogous substance.

3. The process of manufacturing or producing gas by passing air or superheated or other steam through a retort or chamber charged with highly-heated chalk or analogous material, thence through a retort or chamber charged with highly-heated coke or analogous substance, and afterward through a highly-heated retort charged with cannel-coal or analogous substance, as above explained.

145,022.—Smoke-Consuming Apparatus.—WILLIAM RAE WILSON SMITH, Glasgow, North Britain. Application filed November 7, 1873.

Tubes are formed by longitudinal grooves in the side of the grate-bars, through which hot air and superheated steam are supplied to a horizontal pipe above the fire and into a hollow bridge-wall, through which they are emitted and commingle with the smoke.

Claim.—1. A smoke-consuming apparatus in which hollow grate-bars A, air or steam tubes B, and a hollow bridge, D, having outlet-openings *b*, are combined and applied to a fire-box or furnace, substantially as herein described.

2. The air or steam passages *a*, formed between adjoining grate-bars by longitudinal grooves in the edges of the same, as set forth.

145,023.—Bed-Bottom.—CHARLES B. SPENCER, Hastings, Minn. Application filed May 1, 1873.

A frame has near each end a lateral strap fastened to posts on its sides. Along these straps are affixed sections of round rods, each split longitudinally. Around each is coiled the middle of a wire-spring, the extended ends of which are attached, one to the slats above and the other to the frame below.

Claim.—The jointed rods E 3, in combination with the springs D and slats C, substantially as shown and described.

145,024.—Machinery for Making Wood Shanks for Boots and Shoes.—WATSON N. SPRAGUE, Keene, N. H., assignor to himself, and GEORGE GOODYEAR, Elizabeth, N. J. Application filed October 2, 1873.

A revolving disk is provided with a series of knives set at different distances from its face, which split the wooden shank into layers, which are all united at one end.

Claim.—1. In machinery for cutting and splitting shanks for boots and shoes, the combination of a rotary cutter-holding disk, a series of cutters set at different distances from the face of said disk, so as to make their cuts in different planes, and thus form the leaves of the shank, and a guide for supporting the stock to be operated on, so that said stock may be fed in proper position in the path of said cutters, said parts being arranged and operated substantially as shown and described.

2. The combination of the cutter-holding disk, the slitting-cutters, the separating-cutter, and the guide or support for the wood or other stock to be operated on, substantially as and for the purpose shown and set forth.

3. The cutter-holding disk provided with a circular boss or central projection, and the slitting and separating cutters arranged on said disk, as described, in combination with the guide having a ledge or shoulder, between which and the shoulder formed by the boss the stock may be pressed and held against the face of the disk in the path of said cutters, as shown and set forth.

4. The combination of the slitting and separating cutters with the cutter-holding disk, constructed in rear of the slitting-cutters with clearing-spaces, progressively increasing in size to accommodate the increasing thickness of shank, and a discharge opening or outlet in rear of the separating-cutter, substantially as shown and set forth.

145,025.—Sewing-Machine.—ONÉSIME ST. AMANT, Quebec, Canada, assignor of one-half his right to JOSEPH WOODLEY, same place. Application filed October 28, 1873.

A series of levers connected with the presser and operated by a pattern-cam, operate such foot to move the material in any desired direction.

Claim.—1. The combination, in a sewing mechanism of otherwise ordinary or suitable construction, of a feed capable of universal movement, and a pattern wheel or cam, and intermediate mechanism connecting said pattern and feed, constructed and operating substantially as shown and described, to cause said feed to automatically carry the work during the progress of the sewing backward as well as forward, to either side or in any direction, substantially as and for the purpose set forth.

2. In combination with the presser-foot *v*, having an intermittent rise and fall, as described, the wheel c^1, provided on its lateral faces with projections, indentations, and plane surfaces, as described, and the system of levers communicating movement from said wheel to said presser-foot, all substantially as herein shown and set forth.

3. The wheel c^1, in combination with the levers g^1 and l^1, link q^1, and spiral springs m^1 and o^1, for actuating the presser-foot *v*, substantially as described.

4. The wheel c^1, in combination with lever r', slide r, bell-crank lever u', and rod w', caused to move as described, and actuating the presser-foot *v*, as and for the purposes described.

5. The wheel c^1, having projections, indentations, and plane surfaces, in combination with pinion k^1, as described.

6. The rod *u* with presser-foot *v*, in combination with stud *s*, pivot-pin *t*, yoke *w*, and spring *x*, substantially as set forth.

145,026.—Saw-Mill Dog.—EDWARD H. STEARNS, Erie, Pa. Application filed July 3, 1873.

A series of self-adjusting dogs are arranged within the setting-knee of the head-block, and are attached to a lever, from which they receive their vertical movement.

Claim.—1. The cant-hook dog *c*, having the lug c^2, in combination with the lever *b* and spring b^1, substantially as set forth.

2. The cant-hook dog *c*, having the lug c^2 and the swell c^4, in combination with a post or bearing at the pivoting-point *a*, and the spring b^1, substantially as set forth.

3. The combination of the cant-hook dog *c*, lever *b*, spring b^1, ratchet-plate *d*, and standard B', substantially as set forth.

4. The series of dogs *n* n^1, in any desired number, and having guides *e*, in combination with the stirrup *g*, guiding-strips e^1 of the standard B', and lever *b*, substantially as set forth.

5. The series of dogs *n* n^1 n^2, in combination with the guiding-strips e^1, the knee g^1, and block g^2, substantially as set forth.

145,027.—Malt-Polishing Apparatus.—WILLIAM W. STOLL, Brooklyn, N. Y. Application filed November 10, 1873.

The friction-pins have square heads, and, being inserted from the outside, cannot work loose and fall among the malt. A raised flange and inverted cup-cap prevent the malt from discharging at the sides of or clogging the vertical shaft.

Claim.—1. The combination of an adjustable discharge-spout with the feed-opening in the chamber A containing friction-pins *d* and agitating-pins *f*, which act upon the malt in said chamber, said spout serving to retain the individual grains for a longer or shorter period in the polishing-chamber, substantially as described.

2. The friction-pins *d*, provided with heads on their outer ends, and secured in the sides of the polishing-chamber from the outside, substantially as set forth.

3. The protecting-cap *h* and circular flange *g*, in combination with the shaft B and with the polishing-chamber A, substantially as shown and described.

145,028.—Last-Block Fastener.—NELSON R. STREETER, Groton, N. Y. Application filed November 21, 1873.

Claim.—A last-block fastener composed of a rigid rod or strip of metal, bent as described, and pivoted to one or both sides of the last, so as to freely swing back and forth, in combination with the block *b*, having its rear end notched or slotted to receive the clasp, substantially as shown and described.

145,029.—Horse Hay-Rake.—GEORGE SWEET, Dansville, N. Y. Application filed October 30, 1873.

The independently-hinged teeth pass through loops in evener-bars, centrally pivoted to the rear of the axle. Rake is lifted by friction-brakes acting on the supporting-wheels.

Claim.—1. The evener-bars H H, pivoted in their centers, and provided with loops *a a*, through which the rake-teeth pass, and having slots *x x* in their ends for the passage of the pins *b b*, all substantially as and for the purposes herein set forth.

2. The hand or pawl *d*, in combination with the notch *y* and projection *i*, all as and for the purposes herein set forth.

145,030.—Ticket-Box for Railroad-Cars.—GEORGE C. THOMAS, Brooklyn, N. Y. Application filed December 7, 1871.

The recessed head, when moved to present its opening for the ticket, trips the spring-seated tilt and deposits the preceding ticket it supported into the lower compartment.

Claim.—The combination, in a ticket-box having a glazed front, of the inclined spring-tilt F, bearing with its lower edge against the glass, with the recessed and pivoted block D and its trigger *i*, all as set forth, for the purpose specified.

145,031.—Saw-Mill Dog.—JOHN TORRENT, Muskegon, Mich., assignor to STEARNS MANUFACTURING COMPANY, Erie, Pa. Application filed October 15, 1873.

A series of self-adjusting dogs are arranged upon a vertically-moving bar.

Claim.—1. The box or case H, having one or more latch-dogs, in combination with a standard, D', and lever A, substantially as described.

2. The automatically-operating dog *a*, having a preponderance of weight back of its pivoting-point, in combination with the box or case H.

145,032.—Device for Operating Sash-Doors.—HIRAM B. TRIPP, Boston, Mass. Application filed July 10, 1873.

A knob-spindle, arranged to turn in the door, is connected, by means of a rack-bar, with a rotating rod having cams that turn in slots formed in the hinges, so that by turning the knob the door may be thrown outward sufficient to disconnect the tongues and grooves of the door and jamb, and permit the door to swing open.

Claim.—1. A safe-door hinge, C^3, consisting of the leaves *a b c*, connected together and applied to said door and safe-body as herein described, in combination with the rod D having cams or eccentrics *l l* and a spindle arranged to turn within the door and connected with rod D, as herein described, for the purpose set forth.

2. The combination, with a door hung substantially as herein described, of a spindle arranged to turn within the door, when such spindle is connected to the rod or other part for operating said door-hanging, substantially as and for the purpose described.

3. The combination, with a door hung substantially as herein described, of a spindle arranged to turn within the door, when such spindle is adapted to both actuate the rod D, or its equivalent, for operating said door-hanging, and to throw the bolts on the door substantially as described.

145,633.—Curry-Comb.—JOHN W. TAUSSELL, Troy, N. Y., assignor to WILLIAM P. KELLOGG & Co., same place. Application filed June 17, 1873.

Formed of right-angle sections of sheet metal, one edge being toothed, the other forming part of the back and barely lapping the angle of its preceding piece. A metal brace or strap passing through a slot at the base of each toothed part, at each end of the comb, is centrally riveted in each space between the toothed plates.

Claim.—1. A curry-comb formed in sections A A′, overlapping only enough to form a bearing at the angle of the next section in the series, and with braces B B, passing along the inner faces of the back through slots, and confined to the sections of the back by rivets, substantially in the manner as set forth.

2. A curry-comb constructed in sections A A′, in which are slots to receive braces B B′, passing along the back, to which they are secured by rigets, the ends of the slots forming shoulders to relieve the rivets from lateral strain, substantially as set forth.

145,634.—Ironing-Machine.—JAMES T. WALKER, Albany, N. Y. Application filed October 16, 1873.

A stationary frame has arranged above it an adjustable movable frame, and in these frames are journaled sets of drums and heating-rollers, so that the goods can be ironed on both sides while passing between them on endless belts, and then dried by passing through another set of rollers.

Claim.—1. The combination, with a stationary and a movable frame, in an ironing-machine, of the drums A and B and one or more heated rollers, C C′, and one or more heated rollers, D, for ironing goods on both sides, substantially as herein set forth.

2. The combination, with a stationary and a movable frame, in an ironing-machine, of the drums A and B, one or more heated rollers, C C′, one or more heated rollers, D, and one or more drying-rollers, E, all substantially as and for the purposes set forth.

3. The combination, in an ironing-machine, of a stationary frame, Z, provided with a drum, A, endless belt M, and one or more ironing-rolls, D, and an adjustable frame, Z′, provided with a drum, B, and one or more ironing-rolls, C, substantially as and for the purposes herein set forth.

4. The combination, in an ironing-machine, of a stationary frame, Z, provided with drums A A′, endless belts M N, and one or more ironing-rolls, D, and an adjustable frame, Z′, provided with a drum, B, one or more ironing-rolls, C, and one or more drying-rolls, E, all substantially as and for the purposes herein set forth.

145,635.—Car-Axle Journal.—JOSEPH WHITAKER, Woonsocket, R. I., assignor to SIMEON S. COOK, same place. Application filed July 14, 1873.

Claim.—The shaft or journal *d*, tapering outward from its inner to its outer end, in combination with the lubricating-box *a*, having the groove *f* at its inner end, adapted to hold the packing and supply the lubricant to the inner end of the journal, substantially as described, for the purpose specified.

145,636.—Chair-Rocker.—MONROE WILCOX, and CHARLES DEFLENDRE, Canadaga, N. Y. Application filed August 7, 1873.

A wide bearing-strip and a central rib, having a flange on its upper edge, adapted to receive a slotted leg.

Claim.—The metallic rocker A, consisting of the wide bearing-strip *a*, central rib *c*, and flange *b* on the upper edge, adapted to receive the adjustable socket D, as specified.

145,637.—Potato-Digger.—ADAM WILLMANN, Mount Carmel, Ill. Application filed October 18, 1873.

A plow for digging potatoes, provided with a shoe extending from front to rear. To the front of the shoe is attached a concave share, to the rear edge of which are secured tines for separating the earth from the potatoes. The shoe is secured to the beam by front and rear standards.

Claim.—The combination of the plow-beam A, standards C C′, horizontal shoe D, nose E, and screen F, said screen being flat, and composed of the diverging tines *e* fixed at an incline and upon the same general inclination with the nose E, substantially as described.

145,638.—Cultivator.—BURREL W. WINGO, Chillicothe, Mo., assignee of one-half his right to JESSE H. DAVIS, same place. Application filed June 28, 1873.

The standards extend above the beam to which they are pivoted. They are adjusted by a pin, which passes through them and through holes in a semi-elliptical plate which is secured to and rises above the beam.

Claim.—The plow herein described, having the adjustable standards B B pivoted one on each side of the beam A, and the bent brace C secured at one end to the standard B and at the other end to the semi-elliptical plate D, and plow-beam A, as and for the purpose specified.

145,639.—Caisson.—ADOLPH G. WOLFGRAM, Apex, N. C. Application filed October 2, 1873.

The caisson is made to conform to the shape of the structure to be erected within it, and is provided with an external flange at its bottom, to which the base is secured by means of short screw-bolts, which pass through the flange into the base, a water-tight rubber packing being placed between the flange and base. When the structure is completed and the caisson is to be removed, the screw-bolts are withdrawn by a long key operated from above, which fits their square heads and is held thereon by a spring-catch. Guide-rods are secured to the outside of the caisson, by which a diver can guide its descent. The top of the caisson is provided with a cover and rubber packing to protect the interior from rain and high water.

Claim.—1. The body of the caisson, A, made in the form described, and provided with the flange C, to receive the screw-bolts *f* for securing the base F in position, substantially as and for the purpose specified.

2. The base F and body A, connected together by screw-bolts having recessed heads to receive the key G, substantially as described, whereby the body A can be detached from the base when a pier or foundation is built thereon, as set forth.

3. The guiding-rods E, connected with the outer surface of the caisson and its flange C, to operate substantially as and for the purpose specified.

4. The guide-rods E, having a collar, *e*, in combination with the braces D, body A, and flange C, to operate substantially as and for the purpose specified.

5. The body A of the caisson, provided with the protecting-top I and a packing, *p*, substantially as and for the purpose specified.

145,640.—Curtain-Fixture.—JOHN F. WOLLENSAK, Chicago, Ill. Application filed August 20, 1873.

A reversible roller is used in connection with a reversible spring-locking pawl, provided with two radial cord-arms. The roller is also provided with a peripheral groove, and also lugs for engagement with the spring-locking pawl having the two radial cord-arms.

Claim.—1. The spring-locking pawl provided with the radial cord-arms H H, locking-head J having the lug K, and spring M, substantially as described.

2. The roller D, provided with a peripheral groove for the shade-cord, and lugs E E, in combination with the spring-locking pawl having radial arms H H and head J, substantially as described.

145,641.—Railway-Frog.—JOSEPH WOOD, Red Bank, N. J. Application filed June 12, 1872.

The rails of the frog have a block of wood inserted between them, and firmly secured thereto by bolts. The tongue of the frog is slightly elevated above the level of the side rails.

Claim.—1. A railway-frog with wood placed between the rails thereof, and fastened thereto, in the manner and for the purpose substantially as described.

2. A railway-frog with the tongue elevated above the side rails, substantially as herein described.

REISSUE PATENTS.

5,667.—Extension-Table for Sewing-Machines.—JOSEPH BENNOR, Philadelphia, Pa., assignor, by mesne assignments to NISBET D. STOOPS and JOHN B. MYERS, same place. Patent No. 136,939, dated March 18, 1873. Application filed September 30, 1873.

When the cover is used as an extension, it is connected to the table by a turning and sliding rod, having a hook on its front end that engages with an eye-plate on the cover. Said rod is also provided with an arm that abuts against the cover below the eye-plate. The rear end of the rod has two lugs that enter notches in a block attached to the under side of the table.

Claim.—1. The turning and sliding rod B, provided at its front end with the hook *g*, and at its rear end with the lugs *i* and *k*, in combination with the block *e*, having notches *m* and *n*, and with the eye-plate *c* of the cover, for holding it in connection with the top A, substantially in the manner and for the purpose above described.

2. The rod or bracket B, having a hook, *g*, and arm *h*, in combination with a sewing-machine table and cover, D, substantially as described.

5,668.—Gate-Latch.—JAMES BULL, Galesburg, Ill., assignor to VAN WAGONER & WILLIAMS, New York.—Patent No. 71,094, dated December 3, 1867. Application filed July 25, 1873.

Claim.—1. A movable double catch or latch with a dovetail recess located between its two ends, which are provided with frictional surfaces on the dovetail side of the catch, and act each as the sole counter-balance to the other.

2. A movable double catch or latch with a dovetail recess located between its two ends, arranged to operate in connection with, and barely but easily receive, a detaining-stop corresponding in size to the dovetail recess, as set forth.

3. A movable double catch or latch with a dovetail recess located between its two ends, which are provided with frictional surfaces, and act as counter-balances each to the other, and having its vibrations limited by alternate stops within a quadrant of a circle.

4. A movable double catch or latch with a dovetail recess located between its two ends, which are provided with frictional surfaces, and act as sole counter-balances each to the other, and which is secured by a single pivot-screw to the latch-plate.

5. A vibrating double catch or latch with a dovetail recess located between its two ends, which act as counter-balances each to the other, in combination with the protecting projections *e e* on the latch-plate.

5,669.—Manufacture of Paint.—FREDERICK W. GERDES, Allegheny City, Pa.—Patent No. 110,087, dated December 13, 1870. Application filed November 17, 1873.

Claim.—1. Argillite or argillaceous slate, in combination with white lead or oxide of zinc, in the manufacture of paints, substantially as set forth.

2. The combination of argillite or argillaceous slate, Prussian blue, or other equivalent blue pigment, white lead or zinc-white, and linseed-oil, so as to form a blue paint for oil-casks and other articles, substantially as set forth.

3. As an ingredient in the manufacture of paints, resin varnish prepared by dissolving resin in benzine, or other like distillate, and incorporated with the body of the paint before grinding, substantially as set forth.

4. The combination, by means of grinding, of resin varnish, prepared as described, with white lead or oxide of zinc, in the manufacture of paint, substantially as set forth.

5,670.—Boot.—PRESBURY WEST and GEORGE S. LEE, Worcester, Mass.—Patent No. 142,494, dated September 2, 1873. Application filed October 31, 1873.

Claim.—A boot, the seams of which are closed upon the outer side, and formed by means of metal fastenings, for the purpose set forth.

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Since July 1, 1869, the drawings filed with the applications for patents have been copied and multiplied by photographic processes, so that copies can be furnished at prices much less than those previously charged when all reproduction of patent drawings was by hand tracing. From July 1, 1869, to December 31, 1869, the copies were photographs; from January 1, 1870, to the present time, they have been photo-lithographs.

The sizes of the drawings have not been uniform throughout this period, as they have been governed, to some extent, by the size of the patents, which has also varied. The two sizes which exist are, respectively, 10 x 15 inches and 7½ x 10 inches. It is in contemplation to reduce those of the larger size to the smaller, so that sets of drawings of classes may be uniform in size, and that the volumes in which the patents are assembled in order of date may also correspond in size.

Congress having authorized the reproduction of the patented drawings issued previous to the date (July 1, 1869,) at which photographic copying was introduced, the reproduction proceeded in order of time, working backwardly through June, May, &c., 1869, till the issue of November 30, 1867, was reached. When that point had been reached it was determined to proceed in future by subject-matter instead of by date, and the following subjects have been completed or are in course of completion, carrying the photo-lithographic reproduction of the drawings in the classes stated back to the year 1836; also including such drawings of patents as were restored and again placed on record in the Department after the fire which consumed the Office records in the year 1836.

In the statement of the subjects and numbers following it will be borne in mind that the official subject-matter classification, date of 1872, by which cases are assigned for examination, governs the disposition of the drawings in the folios of the Office, and each class embraces numerous details appertaining or allied to the main subject-matter of the class.

The statement gives the approximate number of drawings of these classes.

HARVESTERS; including all machines for gathering and securing crops, (excepting hand-rakes and hand-forks)	6,500
SEWING-MACHINES and attachments	2,000
FIRE-ARMS; including breech-loaders, revolvers, cartridges, ordnance, projectiles, fuses, blasting, and torpedoes	4,000
PRINTING; including presses, type, and printers' furniture.	2,500
FELTING and HATS; including caps, bonnets, flock, &c.	1,200
WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
CARRIAGES and WAGONS	6,000
BRIDGES; including ferry-guards, girders and columns, piers	400
CARDING, CLOTH, CORDAGE, KNITTING, SILK, SPINNING, WEAVING	4,800
RAILWAYS, complete, about	3,500
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TEXTILE, (in progress,) to July, 1871, about	4,800

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In ordering copies of any drawing or specification, the name of the inventor and patentee, the title of the invention, and the date of the patent must be given; and for any search required in consequence of the omission of any of these data a charge of one dollar may be made. So in ordering a copy of an assignment, the liber and page of the record, as well as the name of the inventor, must be given; otherwise an extra charge will be made for the time consumed in making any search that may become necessary.

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FINAL FEES.

The final fee upon a patent must be paid within six months after the time at which the application was allowed and notice thereof mailed to the applicant or his agent. And if the final fee for such patent or a certificate of deposit for the amount be not received at the Office within that time, the patent will be forfeited, and the invention therein described will become public property, as against the applicant thereafter, unless he shall make a new application within two years from the date of notice of the original allowance.

The following abbreviated forms of the Patent Office classification by subject-matter may be of assistance to persons ordering copies of specifications and drawings by class. Of course the classes vary somewhat in number of patents, and in following a branch of industry it may be necessary to group several classes to secure absolute completeness. These groupings will readily suggest themselves to the inventor or mechanic.

Copy of classification in full for the use of subscribers furnished on application.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—NORTHERN DISTRICT OF ILLINOIS.

TUESDAY, *October* 2, 1873.

Present, The Hon. HENRY W. BLODGETT, *Judge*.

FRANK STURGES, OLIVER H. LEE, AND WILLIAM S. POTWIN *vs.* ISAAC VAN HAGEN.*—*In Chancery.*

This cause having come on to be heard upon the bill of complaint, answer, and replication herein, and the proofs, documentary and written, taken and filed in said cause, now, therefore, on consideration thereof, and on motion of N. C. Gridley, counsel for complainant, it is ordered, adjudged, and declared, and the Court doth hereby order, adjudge, and decree that the Letters Patent of the United States of America, No. 114,068, bearing date the twenty-fifth day of April, A. D. one thousand eight hundred and seventy-one, and issued to the said defendant Isaac Van Hagen, be, and the same is hereby, revoked, vacated, and declared null and void, and of no effect, and that the said defendant Isaac Van Hagen be, and is hereby, divested of all right and interest he had, under and by virtue of said Letters Patent, in and to the "Improvement in Machines for Punching and Stamping Metal" therein described.

And it appearing to the Court, from admissions of the parties made on the hearing, that said defendant is the sole owner of said patent, it is further ordered, adjudged, and decreed that the said defendant, Isaac Van Hagen, do, within sixty days from the date hereof, surrender and deliver up to the clerk of this Court, the said Letters Patent No. 114,068. And thereupon the said clerk shall write with ink across the face of said Letters Patent the words "revoked, vacated, and declared null and void by the Circuit Court of the United States of America for the northern district of Illinois," and shall then transmit the said Letters Patent, so canceled, properly enveloped, to the "Secretary of the Interior of the United States of America, Washington, D. C." And it is further ordered, adjudged, and decreed, that the record of the said Letters Patent No. 114,068 be canceled, quashed, and annulled.

And it is further ordered that the clerk of this Court, after the expiration of sixty days from the date hereof, do transmit to the Secretary of the Interior, Washington, D. C., a certified copy of this decree.

And it is further ordered, adjudged, and decreed that the said complainants do recover of the defendant their costs and disbursements in this suit to be taxed.

* Van Hagen obtained his patent June 26, 1871. A man by name of Huntington applied for the same thing early in 1872. An interference was declared, and priority was awarded to Huntington July 25, 1872. (See *Commissioner's Decisions*, 1872, p. 164; or OFFICIAL GAZETTE, vol. 2, p. 116.)

DIGEST OF FOREIGN PATENT LAWS.

WÜRTEMBERG.

REPORT BY MR. GEORGE PETRE, OF THE BRITISH LEGATION.

Patents for invention are among the subjects enumerated in Article II of the constitution of the German Empire, as being reserved for imperial legislation. The question of the future maintenance, modification, or abolition of the patent system in Germany will have to be decided, consequently, at Berlin, by the representatives of the German nation, whenever the federal council and the reichstag have leisure to occupy themselves with this important matter. Pending such legislation, the patent laws and regulations of the separate states continue in force, and those of Würtemberg are comprised within so small and readable a compass as almost to dispense with the necessity of analysis or sum-

mary. They are contained in certain clauses of the Würtemberg general industrial code of 1836, which, in anticipation, probably, of a change in the law throughout the Zollverein States, were left unrepealed by the subsequent code of 1862, which, in its turn, has been superseded by the North German industrial code of 1869; the latter, however, (a translation of which was annexed to my report on the industrial classes, dated Berlin, 1869,) leaves the question of patents or patent rights untouched. The only modification which the clauses above mentioned in the industrial code of 1836 have received up to the present time, are contained in a law which was passed in 1842, in consequence of the establishment of the German customs union. One result of this law was to confer upon the subjects of the other states of the Zollverein the same rights in respect to patents as were enjoyed by Würtemberg subjects; and another most important one, which may be described as introducing the thin edge of the wedge, was to abolish the penalties attaching to the mere sale or importation from abroad of patented articles, without the consent of the patentee. Such, then, is the condition of the patent law in Würtemberg at the present moment.

I subjoin a translation of those clauses of the industrial code which relate to patents, interspersed with such ministerial orders in connection with them as have been issued from time to time, and also a translation of the law of 1842 above mentioned.

Patents in Würtemberg, as will be seen by a reference to the clauses of the industrial code, which treats of them, are divided into patents for invention ("Erfindungs-Patente") and patents for introduction, ("Einführungs-Patente.") The latter, however, have reference solely to foreign patents introduced into Würtemberg. A patent for invention, taken out in the Kingdom, includes and carries with it a patent also for introduction. All that is necessary to obtain the latter in the case of a foreigner or native is the production of a certified copy of the foreign patent, together with the written consent of the patentee to its introduction. Facilities for taking out patents in this country are considerable, and the expense is trifling. The law provides that every petition for a patent, accompanied by a specification in writing, sealed or open, as the applicant may prefer, shall be delivered at the district government office ("Bezirk's Amt") of the locality where the petitioner resides, and shall be immediately forwarded to the central board of trade and commerce at Stuttgart, which is a department of the ministry of the interior. The petition is then referred for examination to a commission *ad hoc*, whose business it is to examine the specification and report whether it is "useful and new."

As it is obviously impossible, in the great majority of cases, for the commission really to determine either of these points, the result is that all petitions, except those relating to inventions which are palpably absurd or notoriously not new, are forwarded to the ministry of the interior for acceptance, and the patents are published in the official gazette. The specification is kept secret, but inspection of it by persons interested is allowed, under certain conditions defined in clause 147.

No patent can be granted for a longer term than ten years, but the average period of grants is for five or even less. The patentee, however, can always obtain an extension of the term up to ten years. No fees are payable for the mere grant of a patent, but the patentee has to pay an annual tax ranging from 5 florins ($2.05) to 20 florins ($8.20) until the patent expires or is void. A foreigner patenting an invention in Würtemberg is obliged to find some native of the country to stand security for the annual payment of the patent-tax. All disputes or claims for damages arising out of alleged infringement of patent rights are decided administratively by the police. There is no appeal to the law courts, and no action for damages, as in England. Complaints of this nature are submitted to the district police office, which, in cases of proved and willful infringement of patent rights, has a power, not only of confiscating for the benefit of the patentee the tools or apparatus and articles manufactured in violation of such rights, but also of enforcing a restitution of the value of such articles already sold.

It is difficult to conceive a machinery less suited than that which exists in Würtemberg for the determination of the difficult and complicated questions which arise in connection with the alleged infringements of patent rights. The evil, however, is partially corrected by the ministerial orders of March 20, 1851, (following clause 156,) which leave it to the discretion of the local police authorities to allow the matters in dispute to be settled by the provincial government, and, in case of a complaint of infringement of patent rights being met by the plea of the nullity of the patent itself, require the whole matter to be referred to the ministry of the interior.

That the difficulties in the way of obtaining patents are infinitely less in Würtemberg than in Prussia is clearly shown in the statistical statement of patents issued in each of the different states of Germany in 1867, contained in Count Bismarck's message to the North German Parliament in December, 1868. In Prussia, with a population of 24,500,000, only 103 patents were issued; whereas in Würtemberg, with a population of less than 1,800,000, there were 139. The following is an official return of the number of patents granted in Würtemberg in each year during the period of 1862 to 1871, and during the eleven months of the present year:

Patents granted in—

1862	98
1863	79
1864	88
1865	92
1866	66
1867	139
1868	140
1869	114
1870	105
1871	97
Total	1,018
1872 (to November 30)	121

It will be seen by the above that 1867 and 1868 were exceptional years, and that the numbers have somewhat diminished since then, although they have recovered during the present year. About one-fifth of the patents annually granted in Würtemberg are taken out by foreigners, and fully one-third of the number become void, either because they are relinquished by the patentees or from not being put in operation for two years. It is probable that, owing to the trifling cost incurred, patents are often taken out here merely for advertising purposes, and with no serious intention of turning them to practical use.

Being anxious to obtain from a competent source a knowledge of the opinion held here in regard to the advantages or disadvantages of the present system, I consulted Dr. Steinbeis, the president of the board of trade and commerce, than whom no higher authority on all industrial matters exists in this part of Germany. Considering that the patent system as it is carried out in Würtemberg, even though it does not act injuriously upon local industry, at all events cannot be supposed to benefit it in any way, I was somewhat surprised to find his excellency so decided and vigorous an opponent of the abolition of patents. He considers that such a step would remove all incentive to the exercise of inventive talent, and would be highly injurious to industry in general; and he assured me that this opinion was shared by the majority of practical men here. The example of Switzerland, his excellency said, was rather in favor of than against those who advocated the maintenance of the patent system, as Swiss industry profited by foreign patents without contributing, or having any inducement to contribute, to the general stock of inventions. Referring to the watch-making trade in particular, he said that any improvements or inventions which were made by Swiss workmen, instead of being patented, which would insure their becoming within a certain period the property of the public, were handed down as family secrets from father to son.

Although an anti-abolitionist, President Steinbeis advocates a modification of the present system. He thinks that the cost of acquiring a patent—in Würtemberg, at least—should be much greater than it is; and although opposed to the remuneration of inventors by the state, he is of opinion that the patentee of an invention should be compelled to put a certain price beforehand upon the use of it, under such conditions as to place the advantages of it within the reach of the industrial public without depriving the inventor of his legitimate reward.

COMMISSIONER'S DECISIONS.

HOLMES AND SPAULDING.—*Reissue.*

[*In the matter of the application of Daniel Holmes and John Spaulding, for reissue of patent No.* 19,465, *dated February* 23, 1858, *reissued May* 13, 1862, *No.* 1,307, *and extended February* 27, 1872. *Subject*, CARPET-BEATING MACHINE.—*Decided December* 4, 1873.]

An assignment of a *patent* does not convey the extended term. Neither does the assignment of the *invention* or *improvements*, something more explicit being necessary to indicate the intention of the parties to transfer the interest in the extension.

Both the legal and equitable interest in the extended term may be conveyed before the extension has been granted, and probably also before the grant of the patent.

LEGGETT, *Commissioner:*

The question has been raised under Rule 63, in making up the file of this application, whether all the parties in interest have joined in the application. The inventors were Joseph Harris and Daniel Holmes. Previous to the grant of the patent, and on the day of making application therefor—to wit, the 15th day of December, 1857—they executed an assignment of the invention to Holmes, and requested that the patent be issued to him, which was done. The question is whether that assignment conveyed the extended term of the patent, which has recently been obtained. If it did, then this application is concurred in by all the parties in interest: and if it did not, then Harris or his assignees now have an interest, and should be joined.

The Supreme Court of the United States in *The Nicholson Pavement Company* vs. *Jenkins* (OFFICIAL GAZETTE, vol. 1, p. 465) said: "An assignment of an interest in an invention secured by Letters Patent is a contract, and, like all other contracts, is to be construed so as to carry out the intention of the parties to it. * * * There is no artificial rule in construing a contract, and effect, if possible, is to be given to every part of it, in order to ascertain the meaning of the parties to it."

A deed assigning in terms all one's right, title, and interest in a *patent*, it is well settled, does not convey the extended term. It must be expressly conveyed—and the intention to convey it must appear from the language of the deed—or it will not pass. But both the legal and equitable interest in the extended term may be conveyed before the extension has been granted, (*R. R. Co.* vs. *Trimble*, 10 Wallace, 367,) and probably also before the grant of the patent.

I know of no case in which the mere assignment of the *invention* or *improvements*, either before or after the grant of the patent, has been held to convey the extended term. Something more explicit is required. In both the cases before the Supreme Court, above cited, in which it was held that the respective assignments there under consideration conveyed the extension, the language fully and clearly indicates an intention to convey it. The patents had been granted, and the words in the granting clauses, after conveying the patents, expressly conveyed all future interests in them which might accrue to the assignors.

The following sufficiently exhibits the assignment in this case:

And whereas Daniel Holmes aforesaid has agreed to purchase from us all the right, title, and interest which we have or may have in and to the said invention, and in and to the said Letters Patent to be granted therefor, and has paid to us, &c.,

Now, therefore, this indenture witnesseth that for and in consideration of the said sum to us paid we have assigned and transferred, and do hereby assign and transfer to the said Daniel Holmes, the full and exclusive right to all the improvements made by us, as fully set forth and described in the specification which we have prepared and executed preparatory to obtaining Letters Patent therefor. * * * And we hereby authorize and request the honorable Commissioner of Patents to issue the said Letters Patent to the said Daniel Holmes, as the assignee of our whole right and title thereto.

Taking this whole deed together, in accordance with the rule stated by the Supreme Court, above referred to, so as to give effect, if possible, to every part of it, I think it quite clear that there is no intention exhibited to convey, and therefore that there was no conveyance of, the extended term. The only words which, without qualification, might clearly indicate such an intention are the following in the recital: "And whereas Daniel Holmes aforesaid has *agreed to purchase* from us all the right, title, and interest which *we have or may have* in and to *the said invention, and* in and to *the said Letters Patent* to be granted therefor."

Then follows the granting clause conveying "all the *improvements* made by us, as fully set forth and described in the specification, preparatory to obtaining Letters Patent therefor."

Were this all, the effect of the instrument might, perhaps, be a matter of doubt; but then follows what was evidently intended as the *habendum*—always of impor-

tance in aiding a proper construction of the granting part of a deed—which clearly specifies that Holmes is to hold, as assignee, the "*patent*" merely. This limitation of his interest is apparently in conflict with the language of the recital; but it may be harmonized with that language by construing the words "*or may have*," in the recital, as referring to the patent which was about to be obtained when the assignment was made. Either that must be done or the *habendum* must be ignored, which would be contrary to both law and reason.

I think Harris or his assignee has an interest in the extended term, and should join in this application for reissue.

LONES, VERNON, AND HOLDEN.—*Appeal.*

[*Appeal from the Primary Examiner in the matter of the application of Lones, Vernon, and Holden, for patent for* IMPROVEMENTS IN THE MANUFACTURE OF CARRIAGE-AXLES.—*Decided December 3, 1873.*]

Machinery for forming and completing a carriage-axle, and distinct machinery for polishing it after it is completed, cannot be treated as a combination nor considered under one application.

Where two machines produce a result when they operate in conjunction, which they could not accomplish by their independent and disconnected action, they may be embraced in one patent as a combination.

Eynon's case, Commissioner's Decisions, 1871, p. 239, commented on and explained.

LEGGETT, *Commissioner:*

Applicant proposes to make a metallic wagon-axle of a certain configuration, by taking certain steps for its manufacture; and he describes and illustrates certain machinery adapted to the purpose. In addition to that for forming the axle from a suitably-prepared blank, he also describes and claims certain machinery for polishing the axle after it has been in other respects completed. This latter machinery he admits has no necessary connection with the former in its operation; but, if desired, it may be driven by the same power-shaft. Whether so driven or not, however, there is no dependence of the one mechanism upon the other—no relation other than that of different independent machines for operating upon the same article, at different times and for different purposes, in the progress of its manufacture.

The two machines in no sense constitute a combined apparatus. That for polishing the axle is as disconnected in the part it performs from that for forming it as is the machinery for forming the blank, or that for making the fagot. Yet a claim for the combination of the two machines is presented in an amendment, and the decision in the *Eynon case* (Commissioner's Decisions, 1871, p. 239) is relied on to authorize it.

That decision, however, is not authority for the proposed claim. The result, or effect, is the proper test of the validity of a combination. By the combination of machines, in that case, a result was accomplished which could not be by their independent and disconnected operation. It enabled a better article to be produced at a diminished cost and in less time than before. It was because of this result that the union of the machines into one co-operating apparatus was resorted to. There is no such object or effect in the present case, and, therefore, the combination claimed has no legal foundation.

In my judgment the Examiner is clearly right in requiring a division of this application, and his decision is, therefore, affirmed.

THOMAS J. MAYALL.—*Extension.*

In the matter of the application of Thomas J. Mayall, for extension of Letters Patent for IMPROVEMENT IN THE MANUFACTURE OF INDIA-RUBBER HOSE, *granted November 29, 1859, reissued No. 5,111, October 22, 1872.—Decided November 28, 1873.*]

Where it appeared in proof that the antiseptics specified in a patent for preparing canvas to make hose were inefficient, under the conditions necessary to the manufacture, but that the inventor actually used another efficient antiseptic, and in fact made a meritorious invention, *Held*, that the patent could be reissued to include the antiseptic actually employed.

It is immaterial that the inventor was and is yet in total ignorance of the scientific nature of what he employed and what he did. Seeking a certain result, the only question of importance is, what did he actually produce?

The questions of infringement and what are equivalents are not proper questions to be decided in an application for extension, especially when they are pending in court.

A just test and ascertainment of the actual constituents of a product, produced by the use of chemicals, furnishes the best evidence of the character of the product.

Other conditions being favorable, it has become the established practice of the Commissioner to grant extensions of patents having only such defects as may be corrected by reissue.

THACHER, *Acting Commissioner:*

This invention consists in the application of antiseptics to canvas to be coated with vulcanized rubber and formed into hose. The object is to produce a combined rubber and canvas hose that will be durable.

After rubber hose came into use and began to supersede the old leather article, it was found that the canvas, upon which its strength depended, soon decayed, and that it consequently burst under the pressure necessary to its use. Mr. Mayall sought to overcome this objection to rubber hose, which was otherwise very desirable, and in 1859, as the result of a series of experiments, he made the hose upon which his application for patent was based. He had no knowledge of chemistry, and did not understand scientifically the causes or conditions of the decay of canvas in hose, or the *rationale* of its prevention. He does not even now know the chemical properties of the ingredients he employed or mentioned in his patent, or the nature of their action under the conditions of the formation of vulcanized-rubber hose.

It becomes important, therefore, to scrutinize the testimony in this case with great care to determine what was actually done by Mayall. Relying upon the uncontradicted expert testimony of the remonstrants, with respect to the four substances expressly named in the patent, I am brought to the conclusion that, as it now stands, the patent could not properly be extended; for these substances—viz., "corrosive sublimate," "chloride of zinc," "pyrolignite of iron," and "oil of tar"—although generally known as antiseptics, are, according to the testimony, so inefficient, under the conditions prescribed for making antiseptic hose, as to render the patent practically worthless.

But it appears that Mayall actually did procure from Durant, and actually did use, *dead oil of tar*. This is virtually conceded by the opponents to the extension. A bottle, sworn by Mayall to contain some of the very liquid used in treating the specimen of hose filed in the Patent Office with his application for a patent, and also its companion piece, Exhibit 1, was produced, and put into the case as Exhibit 3. The contents were examined by Prof. Morton, expert witness for remonstrants, who subsequently testified that it was his impression the bottle contained dead oil. One of the elements of dead oil is carbolic acid; in fact, the substance itself, according to the testimony of the expert, Prof. Chandler, in this and in a former case in the Patent Office, is known as crude carbolic acid, and the value and efficiency of *this* antiseptic, as applied to the manufacture of hose, is unquestioned. But while it is proved that Mayall *used* "dead oil of tar," he fails to mention it specifically in his patent, naming, as one of his antiseptic agents, simply "oil of tar," which phrase is shown by remonstrants to be limited in commercial language to the vegetable product, which is also proved by them to be worthless for the purpose proposed.

If, however, Mayall actually made antiseptic hose, and used in the process "dead oil of tar," the question arises whether his patent cannot now be reissued, so as to include this latter substance. Now, it is not at all material that he was at the date of his experiments, and is now, in total ignorance of the scientific nature of what he employed or of what he did. The *result* was what he sought and what, from the tests he applied, he was conscious that he had attained, when he ceased his experiments, took his product to his solicitor, and directed him to take out a patent. Nor is it of the least consequence that, apparently groping blindly, (saving a few inquiries of scientific persons,) by mere accident he hit upon the means and accomplished the end sought. There is no doubt about what he was *seeking* to do; and this circumstance that he was working with an intelligent purpose, removes the case from the category of accidents to which reference is made in *Ransom* vs. *Mayor of New York*. The only question is, What did he actually produce?

Now, it is shown that he used "dead oil of tar." It is also the fact that *apparently* the Patent Office specimen and Exhibit 1 are pieces of antiseptic hose, as both appear to be well preserved. Whether or not these specimens are what is now called "carbolized hose," formed by the use of carbolic acid, is not the point at issue. Did Mayall actually make an antiseptic hose which was a new product in 1859? That is the question to be determined. Patents have since been granted to other parties expressly covering carbolized hose, and it is not necessary or proper to try the question of infringement here, especially since it is now pending in court. Mayall's invention must be confined necessarily to the substances he actually used and their equivalents; but it is not necessary to the present discussion to determine what are equivalents. If a just test of the constituents of Exhibit 1 had been made by the remonstrants, it would have been the simplest, the most direct, and the most conclusive evidence that could have been presented. If the canvas of which it was composed had not been found to have been treated successfully with an antiseptic, the fact, in connection with the expert testimony filed, would have been necessarily decisive against the validity of the patent under any circumstances. But the expert testimony of remonstrants does not directly deny that Mayall made an antiseptic hose. It merely details *ex parte* experiments which tend to show that the antiseptics mentioned in the patent cannot be employed successfully for that purpose. Whether in the absence of anything to the contrary they would conclusively show this or not, it is unnecessary for me to determine, in view of the fact that the Office specimen and Exhibit 1 are apparently, and sworn to be, specimens of antiseptic-hose, and, although easily capable of being proved not to be, if they are not, it is not directly done or attempted. The conclusion upon the weight of evidence is incontestibly in favor of the applicant that he did actually make an invention, consisting in the treatment of canvas for hose with "dead oil of tar," and did suppose that he thereby obtained an antiseptic product.

The law relating to the correction of patents by reissue provides that "no new matter shall be introduced into the specification, nor, in case of a machine-patent, shall the model or drawings be amended, except each by the other; but when there is neither model nor drawing, amendments may be made upon proof satisfactory to the Commissioner that such new matter or amendment was a part of the original invention, and was omitted from the specification by inadvertence, accident, or mistake, as aforesaid." (Section 53, 1870.)

Although there is found in this case what is called a model, it is not such in the sense in which the term is used in connection with mechanical patents. The patent of Mayall is a chemical-process patent, and the so-called model is simply a specimen of the product, and is not in any sense an illustration of the mechanism used in conducting the process. The patent is, therefore, undoubtedly within the provision of the last clause quoted above, and may be reissued to include and cover any antiseptic satisfactorily proved to have been used by Mayall in perfecting his invention.

Other conditions being favorable, it has become the established practice of the Commissioner to grant extensions, where there are only such defects as may be corrected by reissue. It only remains, then, to dispose of the other points in the case, upon which much less stress has been laid by the contestants.

Upon the question of reasonable diligence on the part of the patentee, the remonstrants rely on the statement that no hose has been manufactured by him, or by any one else, by the use of any of the antiseptics specified in the patent. The pending suit, however, will determine whether or not equivalents have been employed in the extensive manufacture of antiseptic hose that has taken place during the later years of the term of the patent; and upon that it is not necessary to decide here. But there is evidence in the testimony of Murphy to indicate that alleged infringers themselves have not been wholly free from misgiving on this point. It appears that Mayall was reasonably diligent up to the date of assignment of his patent in 1861, after which he was not personally responsible for the introduction of his invention. Since the close of the war the Boston and New York companies licensed under the patent have been engaged in manufacturing carbolized hose, assuming the license a sufficient warrant for their manufacture. I do not think, therefore, that it can justly be held either that the invention of Mayall has never been practiced or that he has been culpably negligent in efforts to introduce it into use.

The great value of antiseptic hose, of which appli-

cant is apparently the inventor, whatever may be the defects of his patent, is conceded, and the inadequacy of his remuneration is apparent. I conclude, therefore, that it is proper the extension he asks should be granted.

APPLICATIONS FOR EXTENSION.

Applications having been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

26,674.—Clothes-Driers.—Granted to B. B. HAWES, January 3, 1860. Application filed October 3, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,679.—Double-Seaming Machines.—Granted to LESTER T. HULBERT, January 3, 1860. Application filed September 29, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,689.—Pivot-Bearings.—Granted to FRANCIS C. LOWTHROP, January 3, 1860. Application filed October 6, 1873. Testimony closes December 2, 1873. Hearing December 17, 1873.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,806.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 10, 1869. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE H. CUMMINGS, January 24, 1869. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 7, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NEILSON, January 24, 1860. Application filed October 18, 1873. Testimony closed December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOMINSKY, January 31, 1860, and reissued March 28, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KIESLER and WILHELM ROSEBROCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ABNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SEMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,297.—Couches for Railroad-Cars.—Granted to EDWARD C. KNIGHT, February 28, 1860. Application filed November 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,303.—Fastening Saw-Handles.—Granted to JACOB NEIMEYER, February 28, 1860. Application filed November 28, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,357.—Table-Cutlery.—Granted to JOSEPH W. GARDNER, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,392.—Machine for Folding and Pasting Paper.—Granted to GEORGE K. SNOW, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,403.—Steam and Fire Regulators.—Granted to JOSEPH WOODRUFF, March 6, 1860. Application filed December 5, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOVE, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,262.—Pare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,339.—Improvement in Water-Wheels, granted to JAMES P. COLLINS, December 6, 1859; reissued June 12, 1860, numbered 979; again reissued May 13, 1873, numbered 5,407.

Claim.—1. A water-wheel provided with annularly-arranged buckets and a central covering box or cap, in combination with a disk or lifting plate for relieving or counteracting the weight or pressure of the water on the buckets, substantially as described.

2. The ring or flange *a* interposed between the stationary guide and the wheel for preventing access of the water to, and its consequent pressure upon, the center of the wheel, substantially as and for the purpose specified.

3. The combination, with a water-wheel provided with annularly-arranged buckets, as described, of a lifting-plate for counteracting the weight of the water on the buckets, and a ring or flange interposed between the wheel and the stationary guide-box or cap for preventing the ingress of water between said wheel and guide-box or cap, as described.

4. The packing-ring *c* fitted within a recess or groove surrounding the wheel, and adapted to move laterally to compensate for wear or irregularities in the movement of the wheel, as described.

DISCLAIMERS FILED.

143,201.—JAMES E. THOMAS, Buffalo, N. Y.—Improvement in Seal-Locks.—Patent dated September 23, 1873. Disclaims:

"That part of the second claim in said specification, which is in the following words, to wit: 'and shoulder *f*.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 2, 1873.]

7,005.—Buckle.—JOSEPH R. SMITH, Waterbury, Conn., assignor to THE WATERBURY BUTTON COMPANY, same place. Application filed October 11, 1873. Term of patent 7 years.

7,006.—Pencil-Case.—EDWARD TODD, Brooklyn, N. Y. Application filed November 1, 1873. Term of patent 3½ years.

7,007.—Cooking-Stove.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to NICHOLAS S. VEDDER, same place. Application filed September 12, 1873. Term of patent 3½ years.

7,008.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 3½ years.

7,009.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 3½ years.

7,010.—Cooking-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 3½ years.

7,011.—Box-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 7 years.

7,012.—Base-Burning Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 7 years.

7,013.—Parlor-Stove.—NICHOLAS S. VEDDER, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 7 years.

7,014.—Heating-Stove.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, and TOBIAS S. HEISTER, Lansingburg, assignors to NICHOLAS S. VEDDER, Troy, N. Y. Application filed September 12, 1873. Term of patent 7 years.

7,015.—Clock-Case.—GILBERT H. BLAKESLEY, Bristol, Conn. Application filed November 8, 1873. Term of patent 14 years.

7,016.—Group of Statuary.—JOHN ROGERS, New York, N. Y. Application filed November 26, 1873. Term of patent 14 years.

7,017.—Fan.—WILLIAM A. SMITH, Niagara Falls, N. Y. Application filed September 6, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date December 2, 1873.]

1,545.—Dry Goods.—EMERY, IVES & LEE, New York, N. Y. Application filed October 25, 1873.
"A sphinx."

1,546.—Hardware, Cutlery, Guns, Pistols, and Lead-Pencils.—THEOPHILUS HASSENBUCH, Philadelphia, Pa. Application filed November 13, 1873.
"a dancing-bear with staff."

1,547.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 2. Application filed November 22, 1873.
"'H. Z. Culver.'"

1,548.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 3. Application filed November 22, 1873.
"'H. H. Taylor.'"

1,549.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 4. Application filed November 22, 1873.
"'G. M. Wheeler.'"

1,550.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 5. Application filed November 22, 1873.
"'Mat Laflin.'"

1,551.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 6. Application filed November 22, 1873.
"'J. T. Ryerson.'"

1,552.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 7. Application filed November 22, 1873.
"'Lady Elgin.'"

1,553.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 8. Application filed November 22, 1873.
"'W. H. Ferry.'"

1,554.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 9. Application filed November 22, 1873.
"'M. D. Ogden.'"

1,555.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 10. Application filed November 22, 1873.
"'Gail Borden.'"

1,556.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 11. Application filed November 22, 1873.
"'Frances Rubie.'"

1,557.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 12. Application filed November 22, 1873.
"'Dexter St.'"

1,558.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 13. Application filed November 22, 1873.
"'Chas. Fargo.'"

1,559.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 14. Application filed November 22, 1873.
"'National Watch Co.'"

1,560.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 15. Application filed November 22, 1873.
"'Elgin Watch Co.'"

1,561.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 16. Application filed November 22, 1873.
"'Chicago Watch Co.'"

1,562.—Watches.—THE NATIONAL WATCH COMPANY, Elgin, Ill.—Case 17. Application filed November 22, 1873.
"'The Chicago Watch.'"

1,862.—Liniment.—ISADORE VALLIER, New York, N. Y. Application filed November 17, 1873.

"'Vallier's French Liniment,' with the figures of an infirm and a cured man, inscriptions, and autograph."

1,864.—Medical Compound for Rheumatism.—MOYER & Co., Philadelphia, Pa. Application filed November 18, 1873.

"'Highland Rheumatic Remedy,' and the figure of a 'Highland Chief.'"

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date December 2, 1873.]

ORIGINAL PATENTS.

145,042.—Dish-Washer.—CHARLES BARTLETT, Providence, R. I. Application filed September, 20, 1873.

A handle has a large recess at one end, into which an eye-bolt is inserted and held by a screw and nut.

Claim.—The combination, in a dish-washer, as shown and described, of the recessed handle A, eye-bolt B, and nut C, as and for the purpose specified.

145,043.—Harness-Whiffletree.—CHAUNCEY T. BEECHER, Bethany, Conn. Application filed May 5, 1871.

Claim.—The combination of the whiffletrees *b*, having rings *c* and central bolt, with the double-trees, and the universally-jointed hook or link *x*, substantially as described.

145,044.—Concave for Thrashing-Machines.—LEWIS C. BECKMAN, Norristown, Pa. Application filed August 19, 1873.

The grooves increase in depth from front to rear, and both ribs and grooves have their surfaces smooth.

Claim.—The metal concave A, furnished in the same solid piece, with rectangular and parallel grooves B, made transversely across the concave, having the sides of the partitions and the curved top or roof of each of said grooves made smooth and even upon their surfaces, and also having the base of each such partition inclined in a straight plane from the feeding side of the concave at *f* to the discharging one at *g*, so as to form a diverging angle from its point of contact with the curved roof of each adjacent groove, until it meets the other end of the said partition, and thus causing said grooves to grow gradually deeper toward the said discharging end, said construction made, arranged, adjusted above the thrashing-cylinder C, and operated upon substantially in the manner and for the purposes herewith shown and described.

145,045.—Treating Horn to Resemble Whalebone.—WILLIAM BIRCH, Walworth, Great Britain, assignor of one-half his right to CHARLES L. TEMPLE, Chester, Pa. Application filed November 8, 1873.

An infusion or decoction of sage is made by steeping in water sage-leaves and adding potash. The horny substance is placed into a perforated vessel, (which is capable of being lifted in and out of the close boiler,) and when sufficiently soft they are rolled while hot.

Claim.—Subjecting horny substances to a combination of chemical and mechanical processes for the purpose of first softening and then pressing, consolidating, rolling out, or otherwise treating the same, as and for the purposes and in the manner herein set forth.

145,046.—Wagon-Jack.—MARTIN BUCK, North Rush, N. Y. Application filed October 16, 1873.

Claim.—The combination of the base A, standard B, and lever or handle C, with the coil-spring E, loop D, cross-bar *p*, shanks *l l'*, and studs *t t t t*, as substantially herein described and specified.

145,047.—Medical Compound for Treating Horses' Hoofs, &c.—JOSEPH C. BURROUGHS, Clinton, Mich. Application filed July 11, 1873.

Lard, sugar, bees-wax, resin, mutton-tallow, verdigris, new linseed-oil, turpentine.

Claim.—The ointment or medical compound above described, composed of the ingredients specified, and compounded in the proportions and in the manner substantially as set forth.

145,048.—Bee-Hive.—DAVID MCC. CALVIN, East Fallowfield, Pa. Application filed September 27, 1873.

An improvement on the hive patented to same inventor April 8, 1873.

Claim.—The combs so made that when secured together they form the top and two sides of the hive, tapering from the bottom to the top, which, in combination with the sides D D and the rods E E, or their equivalents, complete the hive, substantially in the manner and for the purpose specified.

145,049.—Extension-Table.—AARON F. CHUBBUCK, Canandaigua, Mich. Application filed October 10, 1873.

One of the end bars of the lazy-tongs is pivoted to the under side of the table, and the other bar has a friction-roller on its free end, which runs in a straight groove in the under side of the table. Studs project upward from said bar and engage with the groove in a curved plate, also attached to the under side of the table. The "lazy-tongs" are operated by a lever attached at one end.

Claim.—1. The combination, in an extension-table, of a curved grooved plate, *d*, with the lazy-tongs E, provided with studs *h*, arranged and operating to prevent the sagging of the lazy-tongs, substantially as shown and described.

2. The combination, in an extension-table, of the lazy-tongs E, having the studs *h*, friction-roller *a*, and handle G, with the table A, provided with grooves *b* and plate *d*, all arranged and operating to readily effect the adjustment of the table by a single person, substantially as set forth.

145,050.—Harvester.—EDWARD H. CLINTON, Iowa City, Iowa. Application filed October 20, 1873.

The cut grain, which falls upon the horizontal platform, is moved, by a reciprocating rake, which operates beneath the platform, to the top of the elevator, where it is dropped upon a grain-receiver.

Claim.—1. The pinion-wheel F and bevel-wheel E on the shaft which carries the device which reciprocates the sickle, and are geared with the traction-wheel shaft, in combination with the bevel-wheel S^2, vertical shaft S^3, clutch S^4, bevel-wheels S S^1, sprocket-pulley r^3, and endless chain O, which carries the grain-elevating rake, substantially as and for the purpose described.

2. The vibrating reciprocating toothed rake M, endless chain O, horizontal and inclined grain-platforms B B, pivoted lifting-lever Q, cam *o*, catch *p*, spring-trip P, constructed, arranged, combined, and operating substantially in the manner herein described and shown.

3. The cam-extension *o* of the rake, slide N, and pivoted lifting-lever Q, combined, for the purpose described.

4. The spring-trip P, in combination with the cam *s* of the spring-catch *p*, arranged and operating as described.

145,051.—Dental Plugger.—JOHN T. CODMAN, Boston, Mass. Application filed November 12, 1873.

The pressing-point of the tool is at right angles to the shank, and the shank itself is a trip-lever, the inner end of which lies within a hollow handle, and is operated by a rotary cam and spring. Combined with this lever-arm is a fixed arm, which, being held against the filling, forms a guide and rest in directing the lever-point in its action.

Claim.—1. A dental plugger having the lever *c*, with its bent plugger-point *b*, said lever being operated by the cam *q* and spring *o*, or equivalent mechanism, substantially as shown and described.

2. In combination with the lever-arm *c*, the fixed arm *d*, substantially as shown and described.

145,052.—Machine for Shearing Hats.—RICHARD COOKE, New Hartford, N. Y. Application filed April 10, 1873.

Claim.—1. The two overhung or projecting revolving shears B B', and two corresponding leger-knives, *b b'*, arranged to operate relatively to each other and to a hat-brim passed between them, substantially as and for the purposes herein set forth.

2. The two leger-knives *b* and D, arranged, as shown, relatively to the same revolving shear B, so that one, *b*, is available in shearing both sides of the brim, and, on changing the position of the hat, the other, D, becomes available for shearing the crown and tip.

3. The smooth casing C, arranged on a projecting revolving shear, B, and adapted to serve therewith in shearing into the angle between the brim and crown of hats, as specified.

4. The combination, in a single organized machine, of the two revolving shears B B' and corresponding leger-knives *b b'*, with the additional leger-knife D, mounted on the opposite side of one of the revolving shears, as and for the purposes specified.

5. The projecting supporting-bar E, combined and arranged to operate with the revolving shear B, casing C, and leger-knife D, as herein specified.

145,053.—Drop-Light for Chandeliers.—CHARLES E. CORNELIUS, Philadelphia, Pa. Application filed February 26, 1873.

The spring and its drum and cord which sustains the drop-light are concealed in the canopy and casing of the chandelier. A central pipe conveys gas to the drop-light burner. Between this central pipe and a concentric pipe next outside of it the tube and cords which sustain the drop-light traverse perpendicularly. Between the second above-named pipe and the outer casing the gas passes to the main burners of the chandelier.

Claim.—1. In combination with the canopy and main pipe of a chandelier, the spring-box and drum concealed within the canopy, and the cord concealed within the main pipe of the chandelier, as hereinbefore described.

2. The concentric pipes G and H, forming between them an annular space for the reception and concealment of the sliding pipe I, and of the cord which descends from the spring-box and drum located within the canopy above, and connects with the sliding pipe.

3. The sliding pipe I, in connection and combination with the cord which descends from the spring-box and drum within the canopy, and passes through the annular space formed by the concentric arrangement of the pipes G and H.

145,054.—Stove for Smoke-Houses.—ISAAC M. DEARDORFF, Canal Dover, Ohio. Application filed July 9, 1873.

The dampers, one below the grate and the other above the fire, prevent excessive draft.

Claim.—A smoke-producing stove provided with the grate B, regulated by the grated dampers *d d*, and the inner perforated partition-plate D in its upper part, regulated by a damper or dampers A A, as described, whereby the draft and combustion are so regulated as to give out the least heat and the greatest amount of smoke, as required, substantially as herein specified.

145,055.—Shaft for Vehicles.—JOHN J. DEWEY, Quechee, Vt. Application filed September 29, 1873.

Claim.—The sliding joints *c d*, placed between the straight and curved portions of the thills, so as to form a rigid connection, all combined substantially as and for the purpose set forth.

145,056.—Manufacture of Crimped Hair.—RODNEY F. DONNETHORPE and THOMAS A. W. CLARKE, Leicester, England. Application filed June 25, 1873.

As the roving of hair passes out of the opening of the tube the cord is twisted around it from the revolving bobbins.

Claim.—1. The improvement in the art of manufacturing crimped hair, consisting in plaiting the hair from a continuous roving, substantially as before set forth, whereby all the hair, including the ends, is crimped with uniformity.

2. The combination, with a tube, *l*, through which a roving of hair is led, of pinions g^2 g^3, giving motion to arms *r*, which have mounted upon them bobbins A, holding cords or wires, substantially as described, and for the purpose set forth.

145,057.—Railway Time-Signal.—JACOB FEHD and JOHN W. STEVENSON, Johnstown, Pa. Application filed June 23, 1873.

The hands of a railway time-signal are turned back to the starting-point by means of yielding connections with a lever operated by a passing train.

Claim.—1. The toothed wheels C and D, the latter carrying the springs c^2, having the lugs *o o'*, in combination with the disk F, having lugs *e* and *d'*, and disk G, having lug *d* and notch *c'*, the said disks being connected with the hands of the clock, and arranged substantially as described.

2. The above-described combination, arranged to be operated by a lever and pitman having yielding connections, for preventing sudden strain, and actuated by the passing train, substantially as shown and described.

145,058.—Dental Forceps.—CYRUS G. FRENCH, Springfield, Ill. Application filed October 22, 1873.

Claim.—The above-described dental forceps, having a conical screw on the end of one of the beaks, a cam acting as a fulcrum in the joint, a slot in which the pin or screw is put to connect the two parts of the forceps, and the recess or notch behind the joint for the cam to rest in, as substantially shown and described.

145,059.—Feed-Water Heater.—JOHN H. HALE and ALFRED C. WHITNEY, Boston, Mass. Application filed October 30, 1873.

Water is forced through the coil located in the combustion-chamber, and heated by the products of combustion on their way to the chimney. The coil is provided with a pipe to keep up a circulation from the boiler, and prevent burning should the pump become disarranged.

Claim.—The combination of a boiler, *a*, smoke-box *c*, chimney *d*, the spirally-wound tapering feed-pipe *e*, check-valve *f*, connecting-pipes *g*, stop-valve *h*, regulating-pipe *i*, and the stop-valve *k*, when combined and arranged substantially as herein shown and described.

145,060.—Machine for "Heading" Hair.—EMMA HOUGH, Brooklyn, N. Y. Application filed November 7, 1873.

A machine for arranging the root-ends of hair. The hair is placed upon the bed-plate under the vibrating heading-plate, which, as it rubs the hairs back and forth, comes against their barbed surfaces and pushes them out head first on either side, where they are caught by the combs upon the revolving belt and carried out.

Claim.—1. In a hair-heading machine, the combination of a self-adjustable vibrating heading-plate, E, with the slotted rock-shaft U, connecting-rod I, cam J, shaft V, substantially as described.

2. In a hair-heading machine, the combination of a self-adjustable vibrating heading-plate, E, with the bed F and elastic rubber G, substantially as described.

3. In a hair-heading machine, the combination of the two opposite-revolving comb or card-belts K and L with the bed H, with its elastic rubber surface G and self-adjustable vibrating heading-plate E, substantially as described.

4. In a hair-heading machine, the two opposite-revolving comb or card belts K and L, in combination with the cog-wheels R and S, worms T and U, and horizontal shaft V, substantially as described.

145,061.—Heel-Breasting Machine.—AUDISON B. JAQUITH and JAMES WOLOHAN, Rochester, N. Y., assignors of one-third their right to ELBRIDGE A. JAQUITH, same place. Application filed March 17, 1873.

The standard or last-holder is made adjustable, and held rigidly in position at any desired inclination by a single set-screw.

Claim.—The pivoted stock B, with its arm C and adjusting-screw *c*, in combination with the sliding base A in fastening machines, when the said stock is constructed to receive and retain the last D rigidly in its desired position or adjustment, substantially in the manner and for the purposes shown and described.

145,062.—Medical Compound or Bitters.—LEWIS KIRTLAN, Woodstock, Ill. Application filed November 4, 1873.

Agaric or touchwood, elecampane, valerary root, gentian, arum or dragon root, rhubarb or rhubarb, Agnostinum levisticum or lovage, glycyrrhiza or liquorice, castoreum, theobroma or theobroma.

Claim.—The herein-described medical compound, composed of the ingredients, and substantially in the proportions herein set forth.

145,063.—Churn-Machine.—FRANKLIN LOCKHART, Cleveland, Ohio. Application filed October 24, 1872.

The improvement on his former patent of July 8, 1873, consists in connecting the arms B by means of the link C, to cause said arms to move equally at the same time. The pillow-block T is provided for the purpose of keeping one end of the link higher than the other, while an adjustable gage, Y, gages the link to be lapped by the rollers. The dies *c' d* are made wider than they are deep to provide for the expansion of the metal.

Claim.—1. The link C and spring D', in combination with the arms B B, in the manner substantially as described, and for the purpose specified.

2. The pillow-block T, arranged in relation to link in combination with, the rollers *c b* and arms J K, in the manner as and for the purpose set forth.

3. The gage V, as arranged in relation to the standard I, rollers *a b*, and arms J K, for the purpose specified.

4. The dies or points *c' d* of the hammer and block, constructed as described, and co-operating in the manner substantially as set forth, for the purpose specified.

145,064.—Telegraph Cut-Out.—WILLIAM G. LEE, Bloomfield, Iowa. Application filed April 21, 1873.

Central revolving disk, with a metallic raised rim divided into two equal parts by insulating-spaces. Disk revolved in one direction connects B to E and F to B', cutting the office out; reversing, connects B to B' and E to F.

Claim.—The movable disk with its separated conducting-strips, combined with the conducting-arms B E F B', substantially as described.

145,065.—Chemical Compound for Cleaning Jewelry, Diamonds, &c.—AUGUSTUS H. LONGLEY and EDWARD R. STICKNEY, Springfield, Mass. Application filed October 30, 1873.

Alcohol, benzine, (rectified,) oil of citronella, oil of verbena, oil of bergamot, ammonia water, salt, saltpeter, alum, borax, palm soap, pure water.

Claim.—A compound composed of the ingredients in about the proportions herein set forth.

145,066.—Refrigerator.—JACOB LORENZ and HENRY F. W. BENDER, Hamilton, Ohio. Application filed May 29, 1873.

Claim.—1. The arrangement of the metal cylinder-tubes *a a*, recess D, and openings *x x*, in relation to each other, and the outer casing *a* and zinc lining *b*, substantially as described, for the purpose specified.

2. The arrangement of the water-pipe *e* within the air-induction-tube *n*, to aid in cooling the inflowing air, substantially as and for the purpose specified.

145,067.—Car-Coupling.—JAMES C. MALOY, Johnstown, Pa. Application filed November 20, 1873.

When the buffer *c* is forced back so as to drop the pin, by means of a lever, *g*, having hooks *i*, a pair of springs are compressed against the link so as to guide it into an opposing draw-head.

Claim.—The combination, in the draw-head *a*, of the sliding collar *b*, buffer *c*, lever *g*, hooks *i*, and springs *l*, substantially as shown and described.

145,068.—Combined Ruler and Blotter.—THOMAS MERRILL, Portland, Me. Application filed September 1, 1873.

Claim.—The combination of the blotting-rule A, blotting-roller B, side pieces C, tongue G, and teeth F, for the purposes set forth.

145,069.—Sink.—HENRY MILLER, Johnston, R. I., assignor to GEORGE MILLER, HENRY MILLER, and ALFRED A. BROWN, same place. Application filed July 21, 1873.

The basin is constructed with thick hubs for the reception of screws which pass into but not through them to secure the strainer, and with lugs on the outside of the basin for securing the waste-pipe, so that they may be removed independent of each other.

Claim.—The funnel or basin F, constructed with thick hubs F', and with lugs H on the outside, substantially as shown and described.

145,070.—Stem Winding and Setting Watch.—ULYSSE NARDIN, Locle, Switzerland. Application filed October 17, 1873.

When the watch is closed the stem is engaged for winding; when the bank is opened a spring is released which automatically shifts the engagement from the winding to the setting mechanism. Said spring may be locked out of action.

Claim.—1. The combination of the spring H, having beveled piece H', and levers G and F, with the spring-clutch, all arranged substantially as shown and described.

2. The slide S, having stud T, passing through a slot in the center or rim K, in combination with the spring H, substantially as set forth.

145,071.—Head-Comb.—DAVID N. ROPER, Orange, N. J., assignor to THE INDIA-RUBBER COMB COMPANY, College Point, N. Y. Application filed October 1, 1873.

Claim.—In combination with a head-comb, the detachable vertical ornament secured and adjusted substantially by means such as herein before described, so that one ornament may be removed and another substituted at will, as set forth.

145,072.—Machine for Bending Chain-Links.—DANIEL ROY, Millcreek township, Erie county, Pa., assignor of one-half his right to SAMUEL S. CAUGHEY, same place. Application filed April 11, 1873.

The recesses *b* in the table, over which the rod is placed, are oblique to the axis of the table. The forming-jaws F are the concaved ends of two levers E pivoted to the frame, and the mandrel C is on arm projecting from a crank-shaft. The mandrel in its revolution strikes the blank and forces it down between the jaws, and the latter are then forced to turn on their pivots, by which they gradually bend the rod around the mandrel.

Claim.—The combination, substantially as herein shown, of the mandrel C, jaw-plates B B with diagonal jaws *b b*, and the clamps F F, all arranged and operating together substantially as and for the purposes shown.

145,073.—Clasp for Elastic Bands.—ROBERT B. STAATS, New York, N. Y., assignor to himself and FRANK A. STOUT, same place. Application filed April 18, 1873.

Claim.—The spring-wedge *c*, in combination with the case *a*, having the teeth *b* at the ends bent inwardly, as and for the purpose set forth.

145,074.—Clasp for Supporting Stockings, &c.—JAMES R. TREAT, Boston, Mass. Application filed April 26, 1873.

Claim.—In combination with the concave plate *c*, having a lip, *d*, in its lower end, the tongue-plate *e f*, hinged at *g*, and to the upper end of the plate *c*, the whole forming a buckle, as and for the purpose set forth.

145,075.—Spherical Gear or Universal Joint.—THEOPHILUS WEAVER, Harrisburg, Pa. Application filed May 16, 1873.

The spherical spindles are right-sphere joints. The ball B is solid or shell-formed, and has groove Q on the maximeter score to receive the stiles S of the male or its projecting shaft, to resist lateral strain thereby. It has trunnions K projecting radially from its convex surface, and shaft *m* rigidly fixed in its axis; also washers V' or concave-convex plates, having eyes to pass the sphere-shaft through, employed to relieve the friction of the sphere in the hanger.

Claim.—1. Trunnions or projections as equipments on a spherical gear, when retentively inserted and closely fitted to constitute the gear an independent traveler, and as definitely radially-poised cylindrical detents to transmit the energy of the driver to the driven gear transitively, substantially as and for the purpose herein set forth.

2. The spherically-dished female gear provided with any conformation of isotope between the straight or curved subdivisions of its concave surface, to effect the transit of the male-gear trunnion-crowns in the imaginary chord-lines, herein set forth, and for the purpose substantially as described.

3. The concavo-convex washers, in combination with the male-gear journals and the hanger-arms as friction-relievers, and blocks to gage the instep of the trunnions by the lateral adjustment of the female gear, as herein described.

4. The dunnion or sphere complements, when employed to keep the trunnions inserted in the spherical shell, all constructed and applied substantially as herein set forth.

5. The trunnions, when provided with chamfers, or their equivalents, as herein set forth.

6. In combination with spherical gears, the arch-formed stirrups, each provided with arms to hug the sphere appositely, employing the sphere-shaft as the hinge-pintle, about which the stirrup-frame swings, and provided with the bearing for the shaft of the sphere male, so arranged as to present said shaft radially toward the sphere-center, in the manner as and for the purpose herein set forth.

7. The dynamic governor or cut-off composed of the gravity-lever A, the spirally-grooved sleeve A^1 A^2, and the detent H, in combination with the stirrup M and the male and female gears, all constructed and arranged, to effect the conjunction and disjunction of the gears, in the manner herein set forth.

8. The spherical ball-formed spindles P P' J, constructed as and for the purpose herein set forth.

9. The combination of ball B, trunnions K, stirrups M, pinions *a* and *b d*, and cut-off A A^1 A^2 H, substantially as herein set forth.

10. The combination of two equipped spindles, P P' J, with each other, with the interposed dummy Z', and the pinions *i i'*, as and for the purpose herein set forth.

11. The trunnion shown in Fig. 9, tablet-crowned, and belt-formed cheek, as herein set forth.

12. The arrangement of the trunnions on a spherical gear in circles smaller than, parallel to, and offset from, the maximeter score, as and for the purpose herein set forth.

13. The stile or shaft projection S on the sphere mate, in combination with the groove Q, girdling the sphere, for the purpose set forth.

14. The truncated sphere Z', or spherical periphery, provided with trunnions, substantially as herein shown and described.

15. The combination of the shafts *n* and *m* with each other, when aligned by the perforated dummy Z', or its equivalent, in the interior of the male gear, and when connected exteriorly by means of the rigidly-attached spindles P P' J, and one or more female gears, *i i'*, all encompassed by the stirrups M, substantially as herein shown and set forth.

16. A couple of spherical gears (male and female) equipped with trunnions and isotops for trunnions, respectively, applied to each other transversely as an articulation on midshaft about the sphere by an encompassing hanger or hangers, substantially as herein set forth.

145,076.—Car-Starter.—VALENTINE WIRICK, Chicago, Ill. Application filed June 23, 1873.

Friction-wheels upon a movable bearing are brought in contact with friction-wheels rigidly attached to the car-axle. By means of intermediate gearing, the motion thus generated winds a spiral spring within its drum, and is retained by a pawl and ratchet. Upon starting the car it is released and communicates motion to the axle. Upon reversing the motion of the car, the pawl upon the main axle is raised by being thrown in contact with a bent pin, which is turned down for that purpose by a rocking lever, which is in turn operated by an arm sliding in a spiral groove within the drum.

Claim.—1. The combination of the arms K, friction-wheels J H, cog-wheels D *c* G, spring *d*, ratchet-wheel *b*, pawl *f*, ratchet-wheel *n*, and pawl *r*, all constructed and arranged substantially as and for the purposes specified.

2. The combination of the arm K, friction-wheels J H, cog-wheels D *c* G, ratchet-wheels *b n*, ratchets *f r*, rod *t*, lever N, spiral channel *e*, shaft *g*, arm *h*, and arms or levers *j k*, all constructed to operate substantially as and for the purposes specified.

145,077.—Reciprocating Winnower.—HENRY C. WIETZ and CHARLES GEBHARDT, Jr., Northfield, Minn. Application filed June 14, 1873.

The shaker-bar is connected both to the shoe and to the grain-board, and causes them to reciprocate in different directions.

Claim.—The shaker-bar D, having one arm connected directly with the lateral screens, and the other with the grain-board, said arm pivoted at its angle to the side of the mill, and operated by a yoke-bar, *e*, uniting the extremity of the lateral arm directly with an eccentric upon the fan-shaft.

145,078.—Reed-Organ.—GEORGE WOODS, Cambridgeport, Mass. Application filed October 17, 1873.

The cover of the case has a compensating hinge to allow for shrinkage and swell of the wood. The pedal-action case is made separable from the case of the instrument, and is provided with a fifth caster. The sounding-hooks have a nib to fit a dent in the supporting-rail, which is also made skeleton for greater lightness.

Claim.—1. An adjustable board, *y*, to which the cover *c* is hinged, in combination with the spring *h*, or its equivalent, as and for the purpose set forth.

2. In combination with the covers *c d*, guide *l*, and rest *m*, the adjustable board *y*, hinged to the cover *c*, and the spring *h* and hook *i*, or their equivalents, as herein shown, and for the purpose set forth.

3. The handle *s* for the stops, provided with an annular groove, *q*, and projecting washer *r*, as and for the purpose set forth.

4. An organ-case, *a*, in combination with a separate or independent pedal-base, *n*, secured to the case *a* by means of the dowels *p p*, or their equivalents, as herein set forth and described.

5. The caster *t*, of equal height with the casters *u u*, in combination with the less-projecting casters *v v*, for the purpose set forth and described.

6. A sounding-hook, *x*, for musical instruments, provided with a projecting lip, *y*, for the purpose of attaching the hook to a metallic rail, as herein set forth.

7. The hook *x*, rail *z*, clamp 1, and screw 2, one of each for each sounding-hook, when constructed and arranged as and for the purpose set forth.

8. The metallic rail *z*, made with a perforated flange, 5 6 6 6, wholly or in parts, in the manner and for the purpose set forth.

145,079.—Knitting-Machine.—LUKE WOODWARD, Nottingham, England, assignor to GEORGE FOX. Application filed November 13, 1872.

The middle or main bar carries the guide which delivers the yarn to form the leg, while doing which the front and rear bars are held up out of work. The front bar is then lowered, and it and the main bar have a short traverse to form each one side of the heel-piece. Just previous to this, the rear bar, carrying two guides, is lowered and traversed so as to lay in an extra or splicing thread just above, and also throughout the entire heel-piece. As this rear bar is not required to traverse so far as the main one while producing the leg, it is connected to the latter by a swinging latch, raised at the proper time by coming in contact with a cam-piece, and the two bars disconnected.

Claim.—1. The combination and arrangement of mechanism, substantially as herein described, and shown in the drawings annexed.

2. The employment, in machinery for the manufacture of stockings, of three thread-carrier bars, acting substantially in the manner herein described, two bars to form the leg and heel pieces, and a third bar to lay in the splicing-threads, whereby the leg-piece of a stocking, with a cleared and selvaged heel and spliced ankle and heel, is produced without removing the work from the needles on which the leg is formed.

3. The combination and arrangement of mechanism, substantially as herein described and shown, for giving motion from one thread-carrier bar to another thread-carrier bar, so as to give it a traverse shorter than its own traverse.

145,080.—Table-Knife.—WILLIAM HENRY ANDREW, Sheffield, England. Application filed January 18, 1873.

A bent piece of metal is passed over the end of the handle, and the tang of the blade inserted through a slot formed for that purpose. The same rivet holds the tang and the slotted bent piece.

Claim.—A slotted tongue-plate, D E F, and transverse perforated blade-tang C, secured by the same rivet, as and for the purpose set forth.

145,081.—Refrigerator.—RICHARD ARNIGER, Baltimore, Md. Application filed October 11, 1873.

Claim.—The inclined ice-chamber D and inclined water-discharge tank E, arranged, with respect to each other, diagonally, and in the upper part of refrigerator, as described, for the purpose set forth.

145,082.—Animal-Trap.—HUDSON H. C. ARNOLD, Nicholasville, Ky. Application filed October 25, 1873.

The caught victim sets the trap for the next one.

Claim.—1. The combination of the trip-board B, catch D, and platform-lever E with the box A and chute C, when constructed and arranged substantially as herein shown and described.

2. The combination of the catch-rod G, lever I, and two hanging gates, H J, with the trip-board B, box A, and chute C, substantially as herein shown and described.

145,083.—Riding Attachment for Plows.—ANDREW H. BALLAGH, Bowensburg, assignor to himself and MARTIN MCNITT, Mound Station, Ill. Application filed June 21, 1873.

A triangular frame, with caster-wheel at each angle, supports the operator's seat, which is mounted over the rear angle. The draft-rods also form a triangle with the forward beam, which moves at right angles to the line of draft.

Claim.—The triangular frame A, caster-wheel B, beam D, and draft-rod F, combined in a riding-plow, as and for the purpose described.

145,084.—Scroll-Saw.—HENRY L. BEACH, New York, N. Y., assignor to BEACH WHEEL HORSE-RAKE MANUFACTURING COMPANY, same place. Application filed April 3, 1873.

The saw is strained by a spring formed by coiling wire about a central shaft, and operating, through a system of levers, upon the saw.

Claim.—The combination, with the bearing-plate C, of the strap or belt D, segmental plate or curved lever E, connected to the lever H, springs K, ratchet-wheels L, and shaft I, substantially as and for the purposes set forth.

145,085.—Wrench.—W. CHAPLIN BEMIS, Springfield, Mass. Application filed April 21, 1873.

The spring and nut jaws are arranged on the same side of the wrench-bar, and any strain brought upon the wrench tends to close the outer ends of the jaws and retain the parallelism.

Claim.—The combination and arrangement of the nut D, sliding piece I provided with the serrated piece G and jaw C, threaded bar A having thereon the jaws B and H, with the spring *a* placed between the jaw C and bar A so as to keep the two jaws B and C always parallel when turning a nut, substantially as described.

145,086.—Steam and Vaper Generator.—RICHARD BERRETON, Easton, Pa., assignor to BENJAMIN DOUGLASS, Montrose, N. J. Application filed September 13, 1873.

The water is forced into a series of hollow connected imperforate expanders, in which are a series of jet-balls, all arranged at the sides and ends of the furnace, the object being to generate steam almost instantaneously. All are connected and surrounded by a water-jacket. A series of pipes are arranged to form a cone with perforations in a chamber of the supply-pipe.

Claim.—1. A series of hollow imperforate expanders connected together, and a series of jet-balls combined therewith, the same being, respectively, connected with the feed or supply pipe and the conducting-pipe leading to the engine, substantially as shown and described, to operate as specified.

2. In a steam-generator, a series of expanders or pipes, I J, for generation of steam, arranged within a furnace-chamber with relation to the grate and ease or jacket thereof, as shown and described, whereby, when fuel is supplied, it will be confined upon and around the pipes, to burn in contact therewith, as and for the purpose specified.

3. The combination, with hollow balls for the instantaneous expansion of fluid, in the manner described, of an air-cushion, L, independent of the pump-cushions, and interposed between the pump and generator.

4. The series of pipes arranged to form the cone *n*, having perforations *r s*, in combination with a chamber, *p*, of the supply-pipe, as shown and described.

5. The combination of half-ball expanders J with the sides of the furnace, substantially as specified.

6. The said half-ball expanders attached to the sides of the furnace, so as to project and allow the heat to act between them and the furnace-walls, substantially as specified.

7. The connection of the half-ball expanders by the tube *c'* hollow bolt *b'*, and bars *d'*, substantially as specified.

8. The arrangement of the branched feed-pipes O and Q and regulating-cock with the expanders, so as to feed each row of expanders and regulate the amount of the feed to the pressure required, substantially as specified.

9. The arrangement of the main feed-pipe K, coil M, connection N, jacket-chamber R, feed-pipes O and Q, and the expanders in the order described, to apply the feed in the said order.

145,087.—Saw-Set.—JEROME N. BURGE, South Adams, Mass. Application filed October 4, 1873.

Claim.—The rear slotted arms J J, having front projections L L, and held adjustably to the lower jaw A, as and for the purpose described.

145,088.—Plow.—RICHARD A. BROWN, Oakland, Miss. Application filed July, 26, 1873.

Claim.—The combined brace and adjusting-rods F and G and their screw-nuts, in combination with the plow D and pivoted standard E, the rod G being pivoted to the rear extension of the land-side D', and all arranged with relation to the beam A, as shown and described, for the purpose specified.

145,089.—Cooking-Stove.—RICHARD H. BROWN, Linneus, Mo. Application filed October 20, 1873.

In the bottom of the ash-pit, underneath the fire-pot, is a sifter. The sifted ashes fall through a close passage into an ash-box under the stove. This condensing-passage is divided into two branches to allow the reservoir in front to receive heat between them from the oven.

Claim.—1. In a stove, A, the ash-pit C, the passages G G', pan I, and reservoir K, combined, arranged, and operating substantially as described and shown.

2. In a stove, A, the ash-pit C, passages G G', sifter E, pan I, and reservoir K, combined, arranged, and operating substantially as described and shown.

145,090.—Track-Clearer.—FREDERICK BUSH, Fergus Falls, Minn. Application filed May 10, 1873.

Claim.—Two rotary wheels with straight radial shovels H, arranged in front of a locomotive to throw the snow from the center outward and from the track, substantially as set forth.

145,091.—Bale-Tie.—LANDON CARTER, Huntsville, Ala. Application filed October 4, 1873.

Claim.—The combination of the halved or shouldered wedge J with the clip A C and block E, secured to the end B of the band, as shown and described, whereby the end F is bent and secured, as specified.

145,092.—Adjustable Hat.—I. YGNACIO CARRANO, San Antonio, Tex. Application filed August 30, 1873.

The hat is rendered adjustable to various sizes by being provided with a sweat-band made in sections. Each section is attached to a U-shaped spring, the end of which is flush with the bottom of the band, while the other is bent at right angles to its body, and extends outward under the brim, and is attached thereto.

Claim.—The hat-band B, made in sections, and each section provided with a U-shaped spring, C, as and for the purpose described.

145,093.—Fly-Trap.—HERMAN L. CHAPMAN, Marcellus, Mich. Application filed August 23, 1873.

A bottomless trap is provided with side troughs, and has side glasses sliding out and in said troughs.

Claim.—A bottomless fly-trap, having the two side glasses C C sliding out and in the troughs B, as and for the purpose described.

145,094.—Carpet-Rag Looper.—JAMES F. COOPER, Frankton, Ind. Application filed September 13, 1873.

The knife is fixed rigidly in the bed-plate, and a two-pronged guard in front of it to protect the fingers of the operator. On the same bed-plate is placed a stand with a sloping or conical top, in which is inserted a vertical needle, which holds an end of one of the rag-strips, while the two lapped ends, after being slit by the knife, are slipped over it, thereby forming the loop.

Claim.—The combination of holding and looping needle device B C, double guard E, and intermediate knife D, arranged upon the same bed-piece A, as and for the purpose described.

145,095.—Heater for Steam-Boilers.—DAVID COUSELIN, Fall River, Mass. Application filed July 22, 1873.

Claim.—A heater consisting of the water tube or space E, having the enlarged chambers F and G, and concentrically surrounding and surrounded by the steam-passages C and H with their chambers D and I, these again surrounding and surrounded by the steam-passage B and the casing A, when the whole is constructed to operate substantially as herein described.

145,096.—Liquid-Meter.—THEODORE A. CURTIS, Springfield, Mass., and JONATHAN S. CURTIS, Hartford, Conn. Application filed September 25, 1873.

The valves are so placed on the ends of the oscillating cylinder that their faces are parallel with its axis, and at right angles to the axis of its support. They are adjusted to their seats by means of one set-screw acting upon the body of the cylinder. The case is cylindrical or curved in its contour.

Claim.—1. An oscillating cylinder, D, which operates as the measuring-vessel, and provided with valves G, having a port, *e'*, therein, (one at each end,) the faces of which valves are parallel with the axis of the cylinder, and at right angles to the axis of its support, operating in connection with the valve-seats *u*, provided with an orifice or port, *a*, all substantially as described.

2. The tilting cylinder D, supported on trunnions *c'*, and provided with valves G, (one at each end,) both the faces of which are adjusted to their proper bearing against the valve-seats *u* at the same time by a set-screw, *i*, substantially as described.

3. An oscillating cylinder, which serves as the measuring-vessel, operating within and in combination with a case or inclosing-vessel of a curved or cylindrical form in its cross section, substantially as described.

145,097.—Clasp.—JOSEPH H. EASTMAN, Boston, Mass. Application filed November 3, 1873.

Claim.—The jaws A B, ring C, double-headed slide E, and countersunk slot, the whole being constructed, combined, and used substantially in the manner and for the purposes set forth.

145,098.—Dental Drilling-Machine.—CHARLES E. EDWARDS, Philadelphia, Pa., assignor to SAMUEL S. WHITE, same place. Application filed June 3, 1873.

The telescopic slide of the horizontal arm of the power-conveyer is furnished with an elastic cord or spring, which automatically withdraws the drill from the tooth whenever the operator relaxes his hold upon it.

Claim.—In dental drilling-machines, the combination of the elastic cord I with the tubes A and B of the horizontal arm of the machine, so as to automatically withdraw the tool while it is rotating, substantially as hereinbefore described.

145,099.—Gauntlet-Glove.—FREDERICK FARRANT, Gloversville, N. Y. Application filed July 12, 1873.

The gauntlet of the glove has two or more bands or cuff-like pieces laid one upon another with their pinked edges together.

Claim.—The wristband of a gauntlet-glove, composed of two or more bands, A B C, said parts being constructed and arranged substantially as and for the purpose described.

145,100.—Shaft-Coupling.—JAMES GIBBINS, Springfield, Mass. Application filed September 19, 1873.

The tightening-bolts serve to hold the pins in place, which lock together the sleeve and shaft.

Claim.—An improved shaft-coupling, consisting of the block B, having an opening, *b*, therein its entire length, in combination with the bolts *f*, which serve to tighten the sleeve and lock the pins A, inserted in the shafting to which the coupling is attached, substantially as described.

145,101.—Printing-Press.—WILLIAM H. GOLDING, Chelsea, Mass. Application filed November 13, 1873.

A tubular arm carrying a spring-pressed tripper, adjustable by a pin, is attached at one end to the clamp-bar, and at the other to a helical spring secured to the frame of the press. The action of the tripper, striking a stud on the frame, causes the clamps and the gage to be borne to and from the platen, as desired.

Claim.—The combination of the spring N, the stationary stud P, the tubular arm M, and the tripper O thereof, provided with the stop-pin *l*, all being arranged and applied to the shaft H and the frame A in manner and to operate substantially as specified.

145,102.—Fountain-Pen.—HENRY N. HAMILTON, White Plains, N. Y. Application filed October 25, 1873.

The reservoir is closed by a hollow screw-cap having a stem extending through the barrel to its contracted end and terminating in a valve to regulate the flow of ink. A perforated screw-plug is fitted in the cap to admit air through it to the reservoir.

Claim.—In combination with the barrel or ink-reservoir A, the hollow screw-cap B carrying the stem C and valve D, and adapted for the reception of the perforated screw valve or plug E, when the various parts are constructed to operate in the manner herein set forth and shown.

145,103.—Machine for Facing Cylinders.—THOMAS M. EISEMANN and FRANK L. MCDONALD, Omaha, Neb. Application filed March 29, 1873.

Claim.—1. A machine for facing cylinders, and for similar purposes, having a supporting cone or shell with central shaft and adjustable arms, an exterior adjusting cone, and revolving frame, feed-screw, and cross-head, arranged to operate substantially as shown and described.

2. The revolving frame L, in combination with the cones C and F, as and for the purposes described.

145,104.—Gate.—ELIJAH HICKMAN, Red Bluff, Cal. Application filed October 13, 1873.

Claim.—The double gate, with its central revolving post B, in combination with its operating ropes H H, which unlatch and open the gate, substantially as and for the purpose described.

145,105.—Hog-Tongs.—HUGH W. HILL, Decatur, Ill., assignor of one-half his right to CHARLES P. HOUSUM, same place. Application filed November 10, 1873.

One jaw passes over the upper and the other beneath the inferior maxillary, the knob fitting between the rami of the latter to keep the instrument from slipping.

Claim.—1. The knob C in a pair of hog-tongs, substantially as described.

2. The knob C, in combination with the jaws B and A, substantially as and for the purpose set forth.

145,106.—Bench-Plane.—GEORGE W. HUBER and AARON E. FLICKINGER, Norwalk, Ohio. Application filed October 18, 1873.

The thickness of the shaving is regulated by a conical cam, C, which forces the iron forward in the throat.

Claim.—The improved adjustable plane, consisting of base-piece P, pivoted shoe B with rubber cushions *b*, conical eccentrics C C', perforated plane-iron D, and clamping cap-piece A, constructed substantially as and for the purpose described.

145,107.—Churn-Dash.—ANDREW J. HUDSON, Camden, Tenn. Application filed October 25, 1873.

A thick revolving dasher with a vertical central shaft, one wing, on its upper side, presenting a shell-like concavity and cutting-edge to the cream and a corresponding convexity beneath, over and under which the cream passes; the opposite wing being just the reverse of this.

Claim.—The dasher A, provided with the grooves or concaves a^1, the recesses a^2, the shoulders a^3 and a^4, and the notches a^5, constructed and arranged in connection with each other, substantially as herein shown and described, and for the purpose set forth.

145,108.—Horseshoe.—ROBERT K. JORDAN, Oakland, Cal. Application filed May 16, 1873.

The heels of an ordinary shoe are made longer than usual and bent outward. A flat metallic plate encircles the shoe and extends beyond the heel and toe. This plate is supported on the outwardly-bent extension at the heel and by a bar, bent upward, projecting from the toe of the shoe.

Claim.—1. The shoe A, with its extensions *e* and bar or plate *f*, in combination with the surrounding metallic rim-plate B, substantially as and for the purpose described.

2. The metallic rim-plate B, constructed as described, having its forward end bent upward, and united to the toe of the horse-shoe by an angular plate or bar *f*, substantially as and for the purpose above described.

145,109.—Toy Putty-Blower.—NATHAN JOSEPH, San Francisco, Cal. Application filed October 25, 1873.

Claim.—As a new article of manufacture, a tube for blowing putty, beans, &c., constructed of sheet metal bent into cylindrical form, overlapped at the edges, not united by solder or other permanent fastening, and with or without a mouth-piece, substantially as specified.

145,110.—Hardening the Surfaces of Iron.—ROBERT T. KING, Pana, Ill. Application filed October 18, 1873.

Lamp-black, sal-soda, muriate of soda, black oxide of manganese.

Claim.—The within-described compound, substantially as and for the purposes herein shown and described.

145,111.—Cleaning Sewers.—BALDWIN LATHAM, Westminster, England. Application filed May 8, 1873.

Sewage is treated with sesquisulphate or sulphate of alumina, in conjunction with lime or chalk, and the precipitate thus obtained is partially dried and allowed to stand until catalytic action takes place, producing humus, after which it is treated with sulphuric or similar acid to carbonize it.

Claim.—The process of purifying sewage by treating the same with sewage-precipitate previously dried and carbonized, substantially in the manner set forth.

145,112.—Grain-Conveyor.—CONSTANTIN LAZAREVITCH, Brooklyn, N. Y. Application filed October 18, 1873.

Grain is conveyed from a hopper through pipes to a revolving wheel, by means of which it is evenly distributed in the hold of a vessel.

Claim.—1. In combination with the horizontal rotary wheel, having close bottom and partly closed covering, of the hopper U and tube V V, to distribute the grain equally on each side of the wheel, substantially as shown and described.

2. The combination of the conical frame, arranged above the wheel E, with the conical shield W, substantially as and for the purpose set forth.

145,113.—Sleeping-Car.—G. HERRMANN LINDNER, Brooklyn, N. Y. Application filed June 28, 1873.

The lower berth is formed by the bottom and part of the back of each seat, the upper section of the latter being turned up and secured against the section-partition by a leg, to form a partial support for the upper berth. The upper couch is secured in its day position by sliding bolts at rear and front. The partitions and curtains which belong to this couch are pivoted thereto, so as to fold within when stowed.

Claim.—1. In sleeping-cars, the combination of the seat-frame F, having cushion C, pivoted to arms *a*, and having leg *d*, with the back cushions D and E, substantially as described.

2. The pivoted arm *a*, having leg-shaped extension *a'*, as and for the purpose set forth.

3. The car-frame A, having stop-pin *s* and pivoted bolt *s'* for locking top cushion E, so as to support the upper berth, as specified.

4. The berth G, having the front and rear spring-bolts *g* and partitions I, in combination with frame A, having grooves *g'* and pendent arms H, for raising and lowering the same, as described.

5. The frame A, having lug *i* to arrest pendent arm H in its downward motion for the intermediate position of berth G, as set forth.

6. The rods *l* and longitudinal connecting-rod *l'*, combined with an upper curtain, L, in the manner and for the purpose described.

145,114.—Truss-Frame for Bridges.—JACOB H. LINVILLE, Philadelphia, Pa. Application filed June 9, 1873.

A truss-frame on which the lower end surfaces of the posts or struts are flat and rest on corresponding surfaces on the upper edges of the chord-bars above the transverse connecting pins, to which the floor-beams and vertical diagonal suspension-rods are secured in the usual manner. To increase the bearing-surface of the pins which connect the suspension members to the top chord, and thereby transmit the resulting strains from the suspension-bars directly to the struts, chord Z or channel bars are secured between the plates of the chord over the ends of the struts, and extend a short distance on each side of the pins, which pass through suitable openings in the bars. To provide a firm bearing for the nuts of the horizontal diagonal bracing of the floor-beams angle-bars are secured to the beams.

Claim.—1. The combination, in truss-frames for bridges or other structures, of a series of struts having substantially flat lower end surfaces, a series of chord-bars having similarly-formed edges on their eyes, on which the struts are supported, and a series of connecting-pins passing through the eyes and uniting the chord-bars at their ends, substantially as set forth.

2. The combination, with the upper chords and their connecting-pins, of the channel or I beams Z, substantially as and for the purpose set forth.

3. The combination of the floor-beams, the inclined washers F^2, bolted or riveted thereto, and the diagonal tie-rods F^1, as and for the purpose set forth.

145,115.—Corn-Planter.—ABNER C. MARTIN and ROBERT FERGUSON, Lena, Ill. Application filed August 22, 1873.

The clutches connecting the traction-wheels with the seeding and marking devices are held in place by forked springs, which may be simultaneously retracted by levers upon a rock-shaft. The seed-disks upon each side are oscillated by crank-levers and transversely-vibrating bar, rack, pinion, oscillating shaft, double lever, and cam-wheel. The hill-markers are operated by rock-shaft, lever, and pins upon main cam-wheel. Cut-off in seed-disk has curved slot, recess, and rubber-ball adjustment.

Claim.—1. In combination with the movable clutch-sleeves *c c*, the spring-forks *d d* and the revolving lever E, having arms *e' e'*, as described, the lever being adapted by its revolution to draw in the springs and release the clutch-sleeves, as described.

2. In combination with the cogged bar H, operating the planting-machine, the shaft G, having pinion *g'* and double lever *g*, and the wheel F, having projections *f*, as described.

3. The combination of the wheel F, having pins *f'*, with the rock-shaft P, spring R, and indicating-rods, as described.

4. The combination of a spiral spring, R, as described, with a rock-shaft, P, and indicating-rods *g g*, as and for the purpose set forth.

5. The cut-off described, having the block *n*, pivot-shaft *n'*, and ball *n''*, arranged as described, and for the purpose set forth.

6. In combination with the cut-off, constructed as described, the stationary plates I K and the intermediate oscillating plate *m*, substantially as described.

145,116.—Extensible Brace for Supporting Trenches.—SAMUEL G. MCKEEHAN, Paterson, N. J., assignor to MCKEEHAN & FITZGERALD, same place. Application filed September 6, 1873.

A device for supporting the walls of trenches and similar excavations, consisting of a double right-and-left screw working in boxes, provided with nuts, and arranged so that the turning of the screws extends the brace firmly against the opposite walls of the trench.

Claim.—The adjustable brace for supporting walls of trenches, &c., composed of the wooden tubes C C, provided with internal nuts D, and the right-and-left screw, arranged as shown and described, to operate as specified.

145,117.—Boot or Bootee.—TOBIAS P. MITCHELL, Haverhill, Mass. Application filed October 28, 1873.

Claim.—1. A boot having a quarter-piece, the edge of which passes inside of and is stitched to the facing-piece *h*, except at the corner, where the slit *l* is made to form an overlapping side-piece, *m*, stitched to the vamp, substantially as shown and described.

2. In combination with the vamp and quarter-pieces, connected as described, the garing-pieces *e*, fastened to the tongue and facing, and secured by the stay-piece *m* and its stitches, substantially as shown and described.

145,118.—Lock for Fire-Arms.—DANIEL MOORE, Brooklyn, E. D., N. Y. Application filed September 27, 1872.

Claim.—A blocking-piece, *i*, between the cock *c* and notch of the hammer-tumbler, constructed and operating substantially as set forth.

145,119.—Machine for Building Earth-Works.—HARVEY MOSELY, Cameron, Tex. Application filed July 28, 1873.

The earth is carried up an inclined way onto a platform supported upon a frame mounted upon wheels. The platform is hinged at one side, and rests at the other upon strong springs, where it is confined by a catch. When loaded the catch is released, and the force of the released springs discharges the earth from the platform. The platform is returned to its position by means of a windlass.

Claim.—1. The combination of a swinging platform, C, springs E, windlass F, and a fastening and tripping device on an elevated platform, A, substantially as specified.

2. The combination of the ascending way M with a frame, platform, and springs, substantially as specified.

145,120.—Plow.—JOHN B. NORRIS, Richmond, Va. Application filed September 16, 1873.

The plow-standard has two branches which pass through the beam, and both are cylindrical. The forward one is provided with an outer cylinder, the interior of which is fitted with anti-friction balls, so that it will turn with ease, and thus avoid clogging.

Claim.—The combination of anti-friction balls with a roller, cylinder, or drum, *w w*, and neck or stem *J K I* of a plow, in the manner as shown in Figs. 3 and 5, for the purpose substantially as set forth and described.

145,121.—Machine for Threading Screw-Blanks.—EDWARD NUEMET and JOHN FANNING, Brooklyn, N. Y. Application filed October 29, 1873.

The carrying-disk I is intermittently rotated to carry around two blanks to the cutters, and the frame in which the disk is journaled is moved laterally to clasp the blanks against a bearing-block, to form a rest for them while being rotated by screw-drivers that are advanced and enter the nicks. The cutters X X are caused to traverse the blank and cut the thread by a cam acting on the shaft W, the depth and form of cut being regulated by an arm projecting from the shaft that bears against a former on the end of a transverse slide.

Claim.—1. The double-acting cam H, in combination with the disk I, cutters X X, and revolving screw-drivers *b b*, constructed and operating as and for the purpose set forth.

2. The combination of the sliding bar E, provided with the projections F G, inclines J J, and steady-pin K, with the cams H D, disk I, and the sliding frame X K, operating substantially as and for the purpose set forth.

3. The carrying-disk I, having a transverse movement to clasp the screw-blank while being threaded, and an intermittent rotary movement to present more blanks for the action of the cutters, substantially as and for the purpose set forth.

4. The disk I, sliding frame X K, and bar E, operated as described, in combination with the screw-drivers *b b* and cutters X X, as and for the purpose set forth.

5. The combination and arrangement of the sliding bar T, having the formers U U, with the levers V V, carrying set-screws X' X', shafts W W, traversing arms X'' X'', and cutters X X, substantially as and for the purpose set forth.

6. In combination with the disk or carrier I in a screw-machine, the oscillating race O, arranged and operated as set forth.

145,122.—Safety Attachment for Car-Trucks.—GEORGE C. OWEN, Portland, Me. Application filed August 30, 1873.

Claim.—The pivoted bracket-bearing B, having segmental slot *b*, combined with step *b'* of cross-piece C, substantially as set forth.

145,123.—Caloric-Engine.—NICOLAUS A. OTTO, Gasmotoren-Fabrik Deutz, at Deutz, Germany. Application filed July 9, 1873.

Hot air at atmospheric pressure is drawn into the cylinder during two-thirds of the down-stroke of the piston, when the supply is cut off and the air dilated during the remainder of the stroke. The cylinder is surrounded by a cooling medium to obstruct the heat from the air. The lower end of the cylinder being open, the pressure of the atmosphere drives the engine. The piston-rod is so connected to the shaft that the forward stroke of the piston is made in much shorter time than the return stroke.

Claim.—1. The method of utilizing heated gases in caloric-engines, by drawing them, at high temperature and at atmospheric pressure only, quickly into the cylinder, and cooling them therein, whereby the pressure on one side of the piston is reduced below that of the atmosphere on the other side, substantially in the manner and by the means set forth.

2. The mode of utilizing heated gases in a caloric-engine, by admitting them to the cylinder during only a portion of the forward stroke, and dilating them by the further motion of the piston, as distinguished from causing them to act successively against the piston, in the manner and by the means substantially as set forth.

3. In caloric-engines, the jacketed cylinder *a*, open to the atmosphere at one end, with slide *g* for cutting off the supply of heated gases, and valve *i* for discharging the cooled gases, in combination with the piston *b* connected to the crank-shaft *c* with fly-wheel *f*, in such manner that the piston performs its outward stroke quicker than its return stroke, substantially as and for the purposes herein set forth.

145,124.—Shoe-Last.—PARKER P. PAUL, Brooklyn, N. Y. Application filed March 1, 1873.

Holes are made in the surface of a metal-faced last coinciding with the holes in the plate, and provided with a screw-thread bushing. Detachable plugs of wood to receive the tacks are held in place by a hollow screw, which screws against a shoulder on the plugs.

Claim.—The combination of screw-threaded bush and hollow screw with detachable plugs, substantially as and for the purpose described.

145,125.—Paper-Bag Machine.—JAMES P. RAYMOND, Cincinnati, Ohio. Application filed May 23, 1873.

A bag-length tube projects through a slotted table, and is fed through the machine by two endless belts clamping its lower end. Its upper end rests against a gage, and is spread to admit the opener, which consists of hinged plates *c c*, which, descending, spread flat, and thus open and spread the tube-end flat upon the table, (Fig. 1a.) The triangular end folds thus formed are held flat by auxiliary plates *a a'*, hinged to the wings *c*, and plate K independently vibrated into position, which hold and guide them as the belts are brought together to grasp and feed the tube onward. It passes under a pressing-roll, R, which creases for side folds, and under a pasting-roll, S, which applies paste to the proper points from its peripherical projections. The side folds are turned down by twisted plates and spring-fingers, and pressed flat by roll *m*, which also creases the bottom centrally for the packing-fold, which is accomplished by plates *t t'* and a central tongue, *t''*, which fold the sides of the folded bottom into a plane parallel with the tube, which bag is fed out by rolls *u*.

Claim.—1. The machine as a whole, organized by the use of a divided table, to perform, by a series of successive operations, substantially in the manner described, the work of opening and folding down the end of a tube of paper, feeding the tube along the table, pressing the folds, pasting and folding the side flaps, and folding back the flaps for convenience in printing and packing.

2. The reciprocating bar C and hinged opening and folding wings *c c*, combined and operating substantially in the manner and for the purpose specified.

3. In combination with the wings *c c* and bar C, the folding-plates *a a'*, operating substantially in the manner and for the purpose specified.

4. The combination, with the wings *c c*, bar C, and folding-plates *a a'*, of the independent folding and guide plate K, substantially as specified.

5. In combination with the roller S *s*, the lifting-yoke T, as and for the purpose specified.

6. The combination of side folders or guides Y Y' and flexible fingers Z Z, operating substantially as and for the purpose described.

7. The pressing and centrally-creasing roller *m m'*, operating in the manner and for the purpose specified.

8. The combination of the folders *t t' t''*, operating substantially as and for the purpose specified.

9. The combination of folders *t t'*, central web *t''*, and pressure-rollers *u u'*, operating substantially in the manner and for the purpose specified.

10. In a machine for making satchel-bottom paper bags, the vertically-arranged feeding-belts L L', operating substantially as and for the purpose specified.

145,126.—Extensible Brace for Supporting Trenches.—WILLIAM REILLY, Newark, N. J. Application filed October 18, 1873.

An extensible brace for supporting the walls of trenches and similar excavations, consisting of a quadrangular frame in which are threaded two screws with bread heads, which engage and sustain the opposite walls of the excavation when the screws are extended by turning.

Claim.—A brace for staying sewer-banks, formed of the screw-rods A B, with heads C, and the nut or center-piece D E, said parts being arranged so that the screws work parallel to each other, as shown and described.

145,127.—Refrigerator.—ERASTUS S. ROOT, Providence, R. I. Application filed October 18, 1873.

The upper segmental ice-chambers B^2 are designed more especially to cool the box in which the refrigerating-chamber is placed.

Claim.—The improvement in refrigerators herein described, consisting of the metal cooler B, having the central food-chamber B^1, the surrounding ice-chambers B^2, and the short supplemental ice-chambers B^3, all constructed and arranged as set forth.

145,128.—Telegraph-Register.—WILLIAM H. SAWYER, New York, N. Y., assignor to THE AMERICAN DISTRICT TELEGRAPH COMPANY, same place. Application filed October 17, 1873.

Employs principle of screw-thread unison of printers to arrest clock-work of registers, preventing running down and waste of paper when not in use.

Claim.—1. The combination, with the pen-lever of a telegraphic registering or recording apparatus, of a shaft, Y, provided with a screw, S, and stop-piece X, a pivoted lever, L, carrying a pin, U, a supporting-arm, R, and a retracting-spring, O, substantially as and for the purposes herein specified.

2. The combination, with the screw S and pin U, of the pivoted lever L, the latter being made flexible for the whole or a portion of its length, substantially as and for the purposes herein specified.

3. The combination, with the arms R and L, of the adjustable stop V, substantially as and for the purposes herein specified.

145,129.—Rolling-Mill.—WILLIAM SELLERS, Philadelphia, Pa., and GEORGE H. SELLERS, Wilmington, Del. Application filed May 22, 1873.

The upper roll is raised for adjustment by counter-weights, and set down by means of hydraulic rams, the cylinders in which they work being situated in the cross-piece of each housing. The supply and discharge of the water are regulated by valves, arranged and combined with mechanism in such a manner that when a sufficient quantity has been admitted for adjusting the rams the supply shall be cut off, and the water retained within the cylinders to keep the roll in its adjusted position.

Claim.—1. The combination, substantially as before set forth, of the hydraulic cylinder, the ram thereof, and the self-closing mechanism for the inlet-valve of the said hydraulic cylinder.

2. The combination, substantially as before set forth, of the movable roll, the hydraulic cylinder, the ram thereof, and the closing mechanism for the inlet-valve of the said hydraulic cylinder.

3. The combination, substantially as before set forth, of the hydraulic cylinder, the ram thereof, the self-closing mechanism for the inlet-valve, and the adjusting mechanism for adjusting the said valve mechanism.

4. The combination, substantially as before set forth, of the movable roll, the hydraulic cylinder, the ram thereof, the self-closing mechanism for the inlet-valve, and the adjusting mechanism for adjusting the said valve mechanism.

5. The combination, substantially as before set forth, of the hydraulic cylinder, the ram thereof, and the indicating mechanism.

6. The combination, substantially as before set forth, of the movable roll, the hydraulic cylinder, the ram thereof, and the indicating mechanism.

7. The combination, substantially as before set forth, of the hydraulic cylinder, the ram thereof, the inlet-valve for said cylinder, and the admission-valve, which is closed while the inlet-valve is being opened.

8. The combination, substantially as before set forth, of the movable roll, the hydraulic cylinder, the ram thereof, the inlet-valve for said cylinder, and the admission-valve, which is closed while the inlet-valve is being opened.

9. The combination, substantially as before set forth, of the hydraulic cylinder, the ram thereof, the inlet-valve, the latch for holding the same open, and the slide for moving said latch.

10. The combination, substantially as before set forth, of the hydraulic cylinder, the ram thereof, the inlet-valve, and the check-valve for preventing the return of water from the hydraulic cylinder.

11. The combination, substantially as before set forth, of the admission-valve, the hand-lever, and the graded segment.

12. The combination, substantially as before set forth, of the inlet-valve, the mechanism for operating it, and the stop-latch for operating the exhaust-valve in connection with the inlet-valve.

145,130.—Paint Compound.—CARL AUGUST SITZLER, Kitzingen, Germany. Application filed November 1, 1873.

Claim.—The paint compound herein described, consisting mainly of pulverized iron, cement, oil varnish, spirits of turpentine, turpentine, soluble glass, mixed and combined with a ground solution of zinc-white, balsam of sulphur-turpentine, silver litharge, and manganese, substantially as and in the manner specified.

145,131.—Bolt for Doors and Gates.—JOSIAH SMITH, Southhold, N. Y., assignor to himself and L. F. TERRY, same place. Application filed November 1, 1873.

The inner plate of a bolt is cast with a transverse slot in one keeper, through which a loop or handle cast upon the bolt passes when the bolt is slipped in place. The outer plate is cast with an overlapping flange, a fixed loop near the forward end, and a transverse slot for the stem of another loop or handle, which passes through and is secured to the inside bolt.

Claim.—The inner plate A, cast with a closed keeper, a^1, a slotted keeper, a^2, and a slot, a^3; the bolt B, cast with a loop or handle, *b'*, and a hole; the outer plate C, cast with a flange, c^1, a loop, c^2, and a slot, c^3, and the handle D, constructed and arranged in connection with each other, substantially as herein shown and described.

145,132.—Attachment for Stove-Doors.—WILL O. SMITH, Boston, Mass. Application filed October 27, 1873.

The knob is attached to an oven-door by jaws, which embrace the ordinary "lift" or ear, and are fastened thereto by a screw.

Claim.—The knob E, provided with the concaved end K, combined with the jaws B C, body A, and set-screw D to form a stove-door attachment, as set forth and described.

145,133.—Pump-Box.—WILLIAM A. SPOONER, Springfield, Mass. Application filed August 16, 1873.

Upon the top of a pump-box a projection is arranged to serve as the valve-seat. To the rear of said projection a metallic stop is secured for the purpose of holding the valve in place, and also to limit the movement of the valve by serving as a stop, against which a finger upon the valve strikes, thereby preventing the injury done by the pounding incident to the ordinary construction.

Claim.—1. The pump-box B, having the projecting part C, which forms the seat of the valve, combined with the stop E, which secures the valve *g* in place, constructed and arranged substantially as herein described.

2. The combination of the valve *g*, finger *f*, and weighted trip H with the stop E, all arranged and operating as set forth.

145,134.—Method of Extinguishing Fire in Oil-Tanks, &c.—JOHN W. STANTON, Brooklyn, N. Y., assignor to J. H. COLTON, same place; said COLTON assignor of one-half his right to CHARLES M. MARTIN, New York. Application filed March 12, 1872.

Claim.—An apparatus, irrespective of form, in which the introduction of carbonic-acid gas beneath the surface of oil, petroleum, naphtha, or other inflammable liquid is employed to effect the more perfect diffusion of said gas on the surface of such liquid, for the purpose of extinguishing fire burning upon said surface, said apparatus consisting of any suitable device, either for generating carbonic acid gas beneath the surface of the oil within the oil-tank, or for introducing said gas beneath the surface of the liquid from any convenient generator placed outside of the oil-tank, all substantially as described.

145,135.—Carriage-Top Joint.—WILLIAM B. C. STERLING and JOHN W. POHLMAN, Batavia, Ohio. Application filed August 4, 1873.

Claim.—1. The combination of braces A, B, and C, forming a carriage-top joint or prop, substantially as and for the purposes described.

2. The combination, in a carriage-top joint, of the inclined brace A, provided with the forward extension *b*, having the rib *d*, and the front brace C, having the recess *d'*, as and for the purpose specified.

145,136.—Machine for Making Double-Pointed Screws for Knobs.—CHARLES H. THURSTON, Marlborough, N. H., assignor to himself and JAMES H. FOWLER, Boston, Mass. Application filed October 22, 1873.

The wire, revolving with the arbor C, is drawn through it and between the rolls *k k* by the stationary die D, through which it passes into the guide E, through a slot in which the cutting or milling wheel operates. The bearing G for the shaft of the milling-wheel is pivoted, and is raised at regular intervals by a cam on the shaft L to cause the wheel to cut nearly through the wire.

Claim.—1. The combination of the tubular arbor C, the griper M, the advancer D, the slotted guide E, the screw-cutting wheel F and its shaft-supporter G, and the operative cam K, all being arranged and provided with operative mechanism, substantially as described.

2. The combination constituting the griper M, such consisting of the V-grooved wheels *k k* and the levers *g g*, the cross-head *f*, the conic frustum A, and the wheel *i*, all being as set forth.

145,137.—Egg-Carrier.—FRANK M. WADE, San Francisco, Cal. Application filed October 4, 1873.

The compartments are strengthened at the corners by a duplication of the material, which is bent at a right angle from the strip that forms the sides.

Claim.—The system of egg-pockets herein described, consisting in connecting and fortifying the pockets at the points of connection by a return and duplication of the material from the corner of one pocket to the departure of the partition of another, as set forth.

145,138.—Caster-Bottle.—AUGUST WEBER, Newark, N. J. Application filed August 6, 1873.

In the bottom of the bottle is a cylinder, through which its contents are ejected by means of a piston and piston-rod connected by mechanism in the mouth of the bottle.

Claim.—The valve *u* for the nipple *r*, in combination with the piston *k* and rod *d*, and mechanism connecting the valve-stem to the piston-rod *d*, substantially as set forth, so as to withdraw the valve as the piston-rod is forced down, substantially as set forth.

145,139.—Fountain for Soda-Water, &c.—FRIEDRICK W. WESSENBOCK, New York, N. Y. Application filed September 20, 1873.

A nut screw-threaded both interiorly and exteriorly is fastened to the lining, and projects through the cover, to which it is fastened by an outside nut. The discharge-pipe passes through it. The outside case has a detachable bottom, so that the lining may be taken out for repair.

Claim.—1. The nuts I J, combined with the pipe F, lining D, and cover E, as and for the purpose described.

2. The body A and flanged bottom B *b*, combined with a base, L, provided with recesses *l l*, as and for the purpose described.

145,140.—Filling for Beds, Mattresses, &c.—JOSEPH C. WIGHTMAN, Newton, Mass. Application filed September 30, 1873.

As a filling for beds, &c., the material known as excelsior is impregnated with substances to render it uninflammable and antiseptic.

Claim.—1. As a new article of manufacture for filling beds, mattresses, &c., excelsior rendered uninflammable by impregnating it with substances to prevent its inflammability, substantially as set forth.

2. In bed-filling of uninflammable excelsior, the treatment by disinfectant or antiseptic substances, substantially as specified.

145,141.—Fire-Place Grate.—JONATHAN E. WOOD, Huntington, W. Va. Application filed March 19, 1873.

The grate is pivoted near its top, and may be swung back into the fire-place out of the way of the summer-front.

Claim.—The combination and arrangement of the pivoted basket B, spring-catch C, and damper D with the grate-front A, as shown and described, and for the purpose set forth.

145,142.—Hub-Boring Machine.—DAVID R. WRIGHT, South Amesbury, Mass., assignor to CYNTHIA A. WRIGHT, same place. Application filed October 11, 1873.

Claim.—The toggle-levers *e* having jaws *f*, the socket-threaded link *g* and the screw A, combined with a plate, *d*, having the leg *h'*, and attached to platform B *e b*, as and for the purpose described.

145,143.—Non-Freezing Battery.—EDWARD H. ARNCROFT, Boston, Mass. Application filed October 30, 1873.

A number of battery-cups are arranged upon shelves in a subterranean casing containing a lamp and having ventilating-pipes.

Claim.—The outdoor battery composed of cells C, inclosed in a subterranean close chamber, and provided with lamp D, pipe E for supplying fresh air, and vent F for escape of the battery-fumes and products of combustion.

145,144.—Manufacture of Glassware.—ANDREW H. BAGGS, Bridgeport, Ohio, assignor to LA BELLE GLASS COMPANY, same place. Application filed October 13, 1873.

Mold for fluted-stem ware has a scalloped joint concealing mold-mark.

Claim.—1. A mold for making fluted-stemmed glassware, having the junctions of the stem part of the mold with the body part of the mold formed in a scalloped or waving line, substantially as set forth, whereby the annular mold-mark is concealed.

2. A fluted-stemmed article of glass with a molded stem, and a scalloped annular joint at *b*, as a new article of manufacture.

145,145.—Salver.—ANDREW H. BAGGS, Bridgeport, Ohio, assignor to LA BELLE GLASS COMPANY, same place. Application filed October 13, 1873.

Molded in two parts, with male and female screws to secure them together, and an elastic packing between the shoulders.

Claim.—As a new article of manufacture, the salver herein described, made entirely of glass, and consisting of the top A, provided with the boss *a* and screw-stem *c*, and the pedestal B, having the female screw *d* and recess *b*, to receive an elastic washer, as set forth.

145,146.—Car-Axle Box.—JAMES E. BERRIE, Newburg, N. Y. Application filed June 23, 1873.

A supplementary oil-reservoir is affixed to the axle-box, and when the plugs of tallow or other material melt the oil flows from the supplementary reservoir into the journal-box.

Claim.—1. In a car-axle box the auxiliary reservoir B filled with fluid lubricant, and having a passage to the axle, closed with a plug fusible at a low temperature, substantially as and for the purpose described.

2. The auxiliary box B and axle-box A, cast together and having the holes *a b* in the division-plate, combined with brass bearing D having a duct, *d*, leading to periphery of journal, as and for the purpose described.

145,147.—Wheel-Plow.—JACOB BINGHAM and ORLANDO M. POND, Waterloo, Iowa. Application filed October 30, 1873.

A crank-screw, passing through a nut bedded in the axle, elevates or depresses its land end, while the other axle-arm slides up and down in a box secured to the axle, and is held at any height by a set-screw. The distance of one plow from the other is regulated by slotted guides secured to the rear side of the axle.

Claim.—In a plow-carriage, the axle A, having the adjustable screw lifting device *a b d* at one end, and the plate and box *a'* with set-screw *b'* at the other end, of the axle, in combination with the plow-beam D and staple *c*, sliding on axle-arm B', and the plow-beam D', adjustable by slotted guides on the axle, substantially in the manner and for the purpose herein set forth.

145,148.—Sewer Attachment to Plows.—JOB BROWN, Southampton, Ill. Application filed January 4, 1873.

As each furrow is turned the seed is sown upon the last furrow, the hopper and supporting-bar being fixed transversely upon the plow, the feeding-worm, worked by a belt from a toothed ground-wheel, carrying the seed to a convex plate which scatters it.

Claim.—The attachment to an ordinary plow, consisting of the supporting-bar D, hopper G, worm R, convex scattering-plate P, pivoted stirrup K, and wheel H having spurs, as described, to serve as band-wheels for the driving-belt, the several parts being arranged as specified.

145,149.—Manufacture of Gunpowder.—FREDERICK BURNEY, Faversham, Great Britain, assignor to THOMAS S. POPE and WILLIAM S. COLVIN. Application filed October 2, 1873.

Claim.—1. The process herein described of molding meal gunpowder or broken-down mill-cake into regular pebbles or grains of large size at one operation by pressure between plates having cellular surfaces, substantially as described.

2. Mold-plates with cellular surfaces, the cells being shaped and arranged substantially as hereinabefore described, and for the purpose specified.

145,150.—Furnace-Door.—JOHN M. CLARK, Louisville, Ky., assignor of one-half his right to THOMAS C. COLEMAN, same place. Application filed July 18, 1873.

The side and bottom edges of the front plate are cut away at the corners, and corner-angles, which are flanched over the front plate, substituted, and firmly secured by bolts and nuts.

Claim.—1. A furnace-door provided with false or removable corners, substantially as and for the purpose set forth.

2. The corner-pieces D, constructed as described, in combina-

tion with the door of a furnace, substantially as and for the purpose described.

145,151.—Production of Turpentine from Sawdust.—SETH L. COLE, Brooklyn, N. Y. Application filed July 5, 1873.

Consists in the utilization of sawdust or wood in a powdered state for producing spirits of turpentine by means of any suitable steam apparatus.

Claim.—Utilizing sawdust in the manner and for the specific purpose set forth.

145,152.—Burnisher for Photographs.—CHARLES B. COBANT, Lewiston, Me. Application filed October 16, 1873.

A sliding adjustable concave burnishing-tool is moved over an adjustable elastic bed.

Claim.—1. The adjustable sliding burnisher D^1, having the dovetailed tongue d^2, in combination with the standard D^2, having the screw d^3, substantially as described.

2. The standard D^2, having the dovetailed tongue d, in combination with the bar C, having the dovetailed channel D, and the burnisher D^1, as substantially as specified.

3. The bar C, guide-rib D, standards B B^1, adjusting-screws C^2, standard D^2, and sliding burnisher D^1, combined substantially as specified.

4. The cushions C^1, supporting the bar C, in combination with the screws C^2 and burnisher D^1, substantially as specified.

5. The adjustable block G, plate H^1, blocks H, and recessed base-plate A, combined substantially as specified.

6. The eccentric rollers z, cranks b, and connecting-link b^1, in combination with the adjustable block C, substantially as described.

145,153.—Hand-Cultivator.—SAMUEL A. CONRAD, Central's, Ill. Application filed November 6, 1873.

The hoes are convex, and designed to be on a line nearly parallel with the surface of the ground when in use.

Claim.—The within-described hand-cultivator, consisting of the triangular teeth or blades A, shank B, bar C, and intermediate teeth D, all substantially as and for the purpose herein set forth.

145,154.—Breech-Loading Fire-Arm.—LOUGHLIN CONNOY, New York, N. Y. Application filed April 9, 1873.

Claim.—1. The cocker-lever G, pivoted to the lower rear projection of the downward and backward swinging breech-block whereby, in addition to its having an independent movement to drive the firing-pin forward and to start the hammer, it is moved by the breech-block to continue the movement of the hammer to half-cock, as set forth.

2. The combination of the cocker-lever, the breech-block, and the lever-guard having the arm C, whereby the hammer is carried back by a duplex motion of the cocker-lever, and the breech is opened, as specified.

3. The combination of the cocker-lever G, pivoted to the breech-block, as described, the hammer H, the firing-pin E, and the lever-guard B, for automatically placing the hammer at half-cock when the breech is being opened, as specified.

4. The arrangement, substantially as herein shown and described, of the cocker-lever G, the breech-block C, the hammer H, the mainspring I, and the trigger K, whereby, when the breech-block is depressed to its fullest extent, and pressure removed from the guard-lever, the mainspring lifts the upper surface of the forward end of the breech-block, so as to retain the cartridge after insertion, before the breech-block is closed.

145,155.—Mucilage-Cup.—JOSEPH E. CROSBY, New York, N. Y. Application filed July 10, 1873.

The neck *p* of the cup has an annular groove, through notches in which are inserted corresponding projections on a wire ring, leaving a space between the neck and the ring, which is used to remove superfluous mucilage from the brush.

Claim.—The ring F, having the arms *b'*, in combination with the mucilage-pot having the grooved and notched flange C, substantially as described.

145,156.—Soldering-Tool.—LEWIS CUTTING, San Francisco, Cal. Application filed August 16, 1873.

The soldering ring or tool is formed in sections, and secured by a hoop, so that one or more sections may be replaced whenever necessary.

Claim.—The soldering-ring composed of the sections F, in combination with the block C and the holding-ring G, when constructed to operate substantially as herein described.

145,157.—Trap for Steam-Pipes.—MARSHALL T. DAVIDSON, Brooklyn, N. Y. Application filed October 4, 1873.

The valve D being first adjusted at a suitable distance from its seat B, air is forced out on the admission of steam. A continuance of the steam-pressure expands the inner tube, of which the valve D is a prolongation, and prevents the escape of steam.

Claim.—1. The combination of the external iron pipe A, the internal copper pipe E, the valve D, seat B, and openings *c*, *f*, and *g*, to permit the free circulation of steam both inside and outside the pipe E, as explained.

2. The combination of the pipe A, port *b'*, valve D, expansible hollow valve-rod or pipe E, and the head F, adjustable, for the purpose of setting the valve in proper normal position, substantially as explained.

145,158.—Windmill.—JOHN P. DAVIS, Galveston county, and ASA MORGAN, Cedar Bayou, Tex. Application filed October 7, 1873.

A vertical wind-wheel is placed within a shell or shield of semi-cylindrical form, said wheel being hung on the wind-wheel shaft, to turn easily thereon, and in so connecting the vane with said shield that a small wind-wheel mounted upon the vane will control the position of the shield, turning it over the wind-opening during heavy gusts or squalls of wind, and allowing it to enlarge the wind-opening during comparative lulls.

Claim.—1. The semi-cylindrical shield G, combined with the wind-wheel I on the weather-vane, and arranged to partly embrace the operating wind-wheel C, substantially as described.

2. The combination of the rope *n*, weighted rope *p*, and wind-wheel I, with the vane H, disk F, and shield G, to operate as specified.

3. The buckets *s* of a wind-wheel connected with the annular weight D, and combined with the notched spring-levers E, substantially in the manner herein shown and described.

145,159.—Paper-Pulp-Washing Machine.—SAMUEL DEACON and JAMES DEACON, Lawrence, Mass. Application filed August 1, 1873.

The dirty water flows from the revolving cylinder through a siphon passed through one of its journals. The inner opening of the siphon is controlled by a float-valve.

Claim.—The siphon B C D, its automatic valve E, float G, and water-seal L, in combination with a revolving gauze cylinder, A, of a paper-pulp-washing machine, substantially as and for the purpose set forth.

145,160.—Coil-Spring Garter and Belt.—JAMES M. ELLIS, Bridgeport, Conn., assignor to DOOLITTLE MANUFACTURING COMPANY, same place. Application filed November 15, 1873.

The end plate has prongs with hooked ends bent upon a needle running through the springs, or bent directly upon the coils of the springs.

Claim.—1. The method herein described of fastening the springs to the end plates by means of the hooked points *a a*, with or without the needle or wire, substantially as set forth.

2. As an article of manufacture, a garter or belt composed of a series of coiled springs, braided or plaited, substantially as and for the purpose set forth.

145,161.—Burnisher for Photographs.—WILLIAM G. ETTRIKIN, Philadelphia, Pa. Application filed November 11, 1873.

An oscillating movement of the plate carrying the burnishing-tool is effected by means of cam-grooves in the pressure feed-roll.

Claim.—1. A burnishing-machine provided with an oscillating burnishing-tool and a feed-pressure mechanism, substantially as described, by which a polished surface is given to the article burnished.

2. The combination of an oscillating burnishing-tool with a friction feed-roll, substantially as described.

3. The plate D, provided with a clamping device, in combination with the removable burnisher *z*, substantially as described.

4. The combination of the plate D, provided with the flange *d* and the gage-jet G, feed-roll B, and burnisher *z*, substantially as described.

5. The combination of the feed-roll B, oscillating burnisher *z*, and pinion with the adjusting apparatus, substantially as described.

145,162.—Ironing-Table.—ENOCH S. FAMOUS, Philadelphia, Pa. Application filed October 28, 1873.

In connection with the board and legs is a frame with a knee-joint with a tie-bar attached. Rods are also attached, which support an apron.

Claim.—1. The combination, with the board A, hinged to the rear legs $B' B'$ substantially in the manner described, the knee-jointed frame D D, the swinging or vibrating legs B B, and the tie-bar E, the said parts being arranged to operate substantially as and for the purposes herein before set forth and described.

2. The combination, with the side pieces C C and rear legs B' B', of the apron F with its rods $f' f'$, substantially as and for the purposes herein before set forth and described.

145,163.—Harness-Fastener.—JAMES G. FLEMING, Cochranton, Pa. Application filed July 26, 1873.

Claim.—The combination, with the curved ratchet-tongue A and socket B, of the thumb-pawl C, loops D D', and draw-strap E, substantially as specified.

145,164.—Bracelet.—AVERY FOBES, Attleborough, Mass. Application filed February 20, 1873.

Claim.—1. The combination, in a bracelet, of the front piece A, with a lining, B, formed with a depression, *b*, substantially as described.

2. A lining, B, depressed toward the front A, and soldered to the front at the edges *a a*, and at the central or depressed portion *b*, substantially as described.

145,165.—Axle for Vehicles.—HENRY FREDERICK, Butler, Pa. Application filed July 12, 1873.

Claim.—The recessed wrought spindle A, in combination with the cast sleeve D and steel plate C, as specified.

145,166.—Process of Utilizing Old Railroad-Rails.—GEORGE FRITZ, deceased, Johnstown, Pa.; JOHN FRITZ, JAMES MCMILLEN, and WILLIAM R. TUCKER, executors. Application filed July 17, 1873.

The flanges of the rails are cut off, as at A, previous to rolling into bars.

Claim.—The process herein described of utilizing old rails and rail ends of steel or homogeneous iron by removing the prominent edges of the flanges and subsequently rolling them.

145,167.—Steam Heater.—WILLARD M. FULLER, New York, N. Y. Application filed November 11, 1873.

The supply of water is so limited and proportioned to the steam-holding capacity of the radiating system that it is all vaporized with the exception of the water of condensation, which is sprayed upon the heated evaporating surface from the perforated return-pipe.

Claim.—The process of heating by steam, substantially as herein described, the steam being forced, through a pipe or series of pipes, through a building, and, when condensed, returning through a perforated return-pipe extending nearly across the generator near its top, forming a spray falling in the generator, and kept in constant circulation through the building without an additional supply of water, and without the use of valves, for the purpose specified.

145,168.—Ear-Muff.—SIGMOND GOSS, New York, N. Y. Application filed August 5, 1873.

The inner covering portion of the ear-muff is cut away at the lower front part to make a passage for sound.

Claim.—The ear-muff consisting of the exterior portion *b* and interior portion *a*, constructed and arranged substantially in the manner described, and for the purpose set forth.

145,169.—Brick-Machine.—DAVID GOLDTHORP and THOMAS HIELD, Hartford, Conn., assignees of one-half their right to JOHN B. CLAPP, same place. Application filed July 19, 1873.

A receding back plate, which permits the clay not required in filling the molds to pass until the stroke is finished. An adjustable piston and mold-carriage gear.

Claim.—1. In the piston-chamber of a brick-machine, the receding back plate I^2 with the advancing guide-stripe *i*, constructed and arranged substantially as and for the purpose set forth.

2. In a brick-machine, the adjustable piston-gear, consisting of the combination of the piston L, the shank K with the pins k^1 k^2 and the holes k^3, in connection with the lever M, the connecting-rod N, and the crank G', constructed and arranged as and for the purpose set forth.

3. In a brick-machine, the combination, with the mold-carriage and with the operating-levers S, of the rods R, and the adjustable swivels R' having the check-nuts *r*, all constructed and arranged substantially as specified.

4. In a carriage motion of a brick-machine, the combination of the lever U having the fixed fulcrum *u*, the levers U^1 U^2 having fulcrums u^1 u^2 and serrated surfaces u^3, the adjusting-weight W, and the adjustable connecting-rod T, all constructed and arranged substantially as specified.

145,170.—Middlings-Purifier.—ABSALOM R. GUILDER, Minneapolis, Minn. Application filed May 31, 1873.

Construction and arrangement of beating devices, collecting-chambers, air-passages, and partitions, draft-separator, and perforated air-pipes, with reciprocating screens and exhaust-fan.

Claim.—1. In a middlings-separator, the mallet F, on the elastic arm *f*, secured to the cross-bar G, and the shaft H, with arm A, constructed and arranged directly under the inclined oscillating screen C, and operating in the manner as shown and described.

2. In a middlings-separator, the deposit-chambers M M', with the covers *m*, hinged valved doors *m'*, and the vertical partition *o*, substantially as specified.

3. In a middlings-separator, the oscillating screen C, in combination with the oscillating blast-pipes P, substantially as specified.

4. In a middlings-separator, the combination of the screen C, the inclined plate I, the vertical partition T, and the draft-separator *v*, substantially as specified.

5. The combination of the hopper J, the chambers M M', the covers *m*, the fan L, the oscillating screen C, and mallet F, the inclined partition I, the screen C, and the oscillating perforated pipes P, the fan S, the partitions *o* T V, and the adjustable vents N N' I^1 I^2, substantially as specified.

6. In a middlings-separator, the oscillating pipes P, with perforations p^2, and regulating slide-valves *r*, arranged transversely underneath a reciprocating screen.

7. In a middlings-purifier, the stationary pressure-fan S, stationary air-chest R, and the oscillating perforated pipes P, in combination with a reciprocating screen, substantially as and for the purpose specified.

145,171.—Permutation-Lock.—HENRY GROSS, Cincinnati, Ohio, assignor to HALL'S SAFE AND LOCK COMPANY, same place.—Case D. Application filed August 11, 1873.

The bolt and dog are constructed in a single rigid piece, and so arranged that the drive-wheel throws the bolt out and in, and causes its rear end to engage with a stationary shoulder for the purpose of locking the same.

Claim.—1. The bolt B, with its dog D formed in a single rigid piece, in combination with one or more tumblers, F, a locking-shoulder, and the notched drive-wheel G, all constructed and arranged to operate substantially as shown and described, whereby the bolt is thrown, made to engage with its locking-shoulder, and all the operations performed without the aid of a key, pivoted dog, or other devices, as herein set forth.

2. The sleeve I, with the tumblers F mounted thereon, and held in place by the sliding key-plate K, substantially as set forth.

145,172.—Stove-Grate.—WILLIAM HAGERTY, Philadelphia, Pa. Application filed May 31, 1873.

The sectional grate and its operating-gearing are mounted on the rotating ring.

Claim.—1. The sectional grate E and connected gearing F mounted on the rotating ring B, substantially as and for the purpose set forth.

2. The combination, with the grate E and gearing F, and the rotating ring B supporting said grate and gearing, of the lever G jointed to the grate, and projecting through the base A of the stove, substantially as and for the purpose set forth.

3. The combination, with the fire-pot J, of the grating K, adapted to rotate independently of the grate proper, and operated by the rod M, the parts J K having cut-away portions *a b*, respectively, as herein set forth, and for the purpose described.

4. The combination, with the fire-pot J and rotating grate K, of the windows or openings L, encircling the parts J K in relation to the cut-away portions *a b* of the parts J K, substantially as and for the purpose described.

145,173.—Sash-Balance.—CHARLES HARBAUGH, Eaton, Ohio. Application filed November 8, 1873.

Claim.—The strips G G, provided with holes *a a*, in combination with cords *a a*, keys *b b*, and sash B C, the parts being constructed and arranged either to admit of any desired adjustment of the sash, or to lock the same securely, when required, by means of keys *b b* and cord *a*, substantially as herein set forth.

145,174.—Drawing-Board Trestle.—JOHN H. HARDEN, Philadelphia, Pa. Application filed May 31, 1873.

A special construction of stands, which support the drawing-board independently of each other. Provision is made for adjustability both vertical and to any inclination likely to be useful.

Claim.—1. A drawing-board support, consisting of two bars, A A, adjustable horizontally on central pins *q*, and vertically as independent trestles, as set forth.

2. A stand, B, having bars *a a'*, and a plate, *a*, adjustable between the bars, in combination with bars *i i*, hinged to the said plate, and having segments *m m* adapted to bolts *l l* in the bars *a a'* of the stand, all substantially as described.

3. The structure composed of the bars *a a'*, legs *b b'* and *d d'*, cross-bars *e e'*, and inclined braces *f f'*, all fitted and secured together in the manner described.

145,175.—Boiler for Vaporizing Volatile Fluids.—JOHN F. HASKINS, Fitchburg, Mass. Application filed November 12, 1873.

A vessel containing bisulphide of carbon is provided with drop-tubes, while the vessel containing water is also provided with tubes concentrically arranged about the drop-tubes, in order that a thin stratum of hydrocarbon liquid may be exposed to the heat of the boiling water.

Claim.—1. In a vapor-generator, two sets of tubes, one placed within the other, so as to break up both the water and volatile fluid into thin layers or strata, substantially as specified.

2. A boiler for vaporizing volatile liquids, consisting of the shell *a*, water tubes and space *c l*, fluid tubes and space *i m*, arranged and combined for operation substantially as shown and described.

145,176.—Lamp.—ROZERT HITCHCOCK, Watertown, N. Y. Application filed November 11, 1873.

In a forced-blast lamp the movement is inclosed on the sides and bottom by the oil-receptacle, and on the top is separated, by a close partition, from the fan. Air is supplied to the fan through a vertical passage in the oil-receptacle and through a horizontal passage traversing the lamp above the oil-receptacle. The wick-tube and its jacket is detachably placed entirely above the oil-receptacle. A drip-cup strains the drip, directs it from the fan, and restores it to the oil-tank. The lamp has trunnions. There results a force-blast lamp, made available for a railway-car lamp by protecting its movement from dust or cinders, by facilitating the trimming of its wick, by providing a means of support.

Claim.—1. In a forced-blast lamp, the combination, with the oil-reservoir, of the movement contained in a chamber separate and distinct from, but surrounded on all sides by, said reservoir, substantially as shown and described.

2. The combination, in a forced-blast lamp, of the movement, the fan or air-impelling device, separated and partitioned off from, but driven by, said movement, and air-passages through which the air-supply for the fan is taken in outside of, and without passing through or in contact with, the movement, substantially as and for the purpose set forth.

3. The wick-tube and its surrounding jacket, arranged entirely outside of, and removable, bodily and together, from the oil-reservoir or main body of the lamp, and provided with air-passages for conducting the impelled air from the fan to the flame, substantially as shown and set forth.

4. The combination of the air-impelling apparatus, the surrounding oil-reservoir, and the wick-tube and jacket surmounting said reservoir, and formed with passages through which the impelled air-current will be directed upon the flame, substantially as set forth.

5. The combination of the air-impelling mechanism, the oil-reservoir, and the wick-tube surmounting the same, with the pump mechanism and supply-pipe for feeding the wick with oil, and the overflow-trough and return-pipe for conducting back to the reservoir the surplus of oil, substantially as shown and described.

6. In combination with the elevated wick-tube and return-pipe, the combined ash-shield and strainer, intermediate between the open bottom of the wick-tube and the air-impelling fan, and constructed, as described, with a cup or dish shaped receptacle and a gauze diaphragm to strain the return oil and catch the refuse from the wick-tube, and with an annular projecting flange to deflect from the opening above the fan the matter that might otherwise drop from the said shield and strainer onto the fan.

7. The wick-raising sleeve, slotted as described, and provided with spring-catches located in said slots, and normally projecting inward through the slots beyond the inner surface of the sleeve, as and for the purposes shown and set forth.

145,177.—Rotary Plow.—ANDREAS B. HOFFMEYER and JAMES SCHMIDT, Copenhagen, Denmark. Application filed November 20, 1873.

The cutters and spades revolve in opposite directions by means of a crossed band. The loosened earth is taken up by the spades and carried over the cylinder, being prevented from falling at the side by the shield.

Claim.—The combination of the revolving cutters E, revolving shares A, and stationary shield or deflector D, all arranged and operating substantially as and for the purpose specified.

145,178.—Safety-Pocket.—HARVEY L. HOPKINS, Morrisville, N. Y., assignor of one-half his right to ALEXANDER M. HOLMES, same place. Application filed June 5, 1873.

Claim.—The herein-described safety-pocket, provided with a self-closing flexible flap, *a*, substantially as and for the purpose specified.

145,179.—Blocking Stereotype-Plates in Casting.—MARSHALL J. HUGHES, New York, N. Y. Application filed September 16, 1873.

Claim.—1. The combination, with the block or blocks D, of the stereotype-plate C, and the bottom plate connected therewith, by continuation of the metal on the sides of the block or blocks, as shown and described, whereby said parts form one article or device, as shown and described.

2. In combination with the blocks D, the protecting-plate or lining B, the same being applied, as shown and described, to form a more elastic bed for the plate, and render it more durable, as specified.

145,180.—Fire-Proof Column.—THEODORE HYATT, New York, N. Y. Application filed August 21, 1873.

A wooden column or beam enveloped in a fire-proof coating, consisting of asbestus mixed with earthy or plastic material which is strengthened by a cylinder of wire-netting embedded therein, and the whole covered with an ornamental casing or jacket of thin sheet metal.

Claim.—1. A wooden column or beam protected from the action of heat by means of a coating or envelope of asbestus combined with plastic or earthy material, substantially as is specified.

2. A wooden column or beam enveloped with a coating of asbestus, combined with earthy or plastic material, when the latter is strengthened and secured in place by means of a cylinder of wire-netting, substantially as and for the purpose shown.

3. A wooden column or beam coated exteriorly with asbestus combined with earthy or plastic material, and the whole covered with an ornamental casing or jacket, substantially as and for the purpose set forth.

145,181.—Fire-Proof Floor and Roof.—THEODORE HYATT, New York, N. Y.—Case A. Application filed October 8, 1873.

Claim.—A floor or roof composed of a corrugated sheet-metal diaphragm, covered with asbestus, combined with earthy material, substantially as and for the purpose specified.

145,182.—Fire-Proof Illuminating-Tile.—THEODORE HYATT, New York, N. Y.—Case B. Application filed October 8, 1873.

A fire-proof illuminating roofing-plate composed of a perforated lens-bearing sheet-metal plate, coated beneath with a layer of asbestus combined with some plastic and adhesive earthy material. The metal plate is furnished beneath with projecting-headed studs, to assist in retaining the earthy coating in place.

Claim.—An illuminating roofing-tile constructed of or from sheet metal and coated beneath with asbestus, made plastic and adhesive by the admixture of earthy or other suitable material, substantially as and for the purpose specified.

145,183.—Illuminating-Door.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place. Case 27. Application filed October 22, 1873.

An illuminating-door, composed of a tubular metallic frame and a perforated metallic panel set with lenses for the transmission of light.

Claim.—An illuminating-door composed of a tubular frame and a sheet-metal center or panel, substantially as and for the purpose specified.

145,184.—Metallic Hatchway-Door.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 29. Application filed October 22, 1873.

The iron frame upon which the heavy illuminating door closes is furnished with elastic buffers to relieve the shock of collision.

Claim.—In combination with hinged illuminating-doors for inclosing an elevator-opening, elastic buffers placed between the impinging surfaces of the same and of their frame, substantially as and for the purpose specified.

145,185.—Flexible Sheet-Metal Illuminating-Plate.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 21. Application filed October 22, 1873.

A roofing or skylight composed of flexible sheet-metal plates, perforated and provided with lenses.

Claim.—A roofing composed of flexible sheet-metal plates, and provided with glazed light-openings, substantially as and for the purpose specified.

145,186.—Ventilating Illuminating Roofing-Plate.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 31. Application filed November 11, 1873.

A skylight formed of perforated metallic plates, overlaid with glass panes, which slide in grooves, thus affording ventilation when desired.

Claim.—An illuminating ventilating-roof composed of perforated sheets of metal overlaid with glass, substantially as and for the purpose specified.

145,187.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 5. Application filed October 22, 1873.

Claim.—An illuminating-lens having tapering sides, provided with a screw-thread, and secured in position by means of a nut applied to or upon its lower threaded end, substantially as and for the purpose specified.

145,188.—Illuminating Vault-Cover.—THADDEUS HYATT New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 3. Application filed October 22, 1873.

Claim.—1. A button-head glass lens provided with a threaded shank, and combined with a grating by means of a nut, substantially as and for the purpose specified.

2. A nut having its threaded central portion extended beyond its bearing-face, substantially and for the purpose shown.

145,189.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 4. Application filed October 22, 1873.

The lens is made of conical form and screw-threaded upon its lower end. It is drawn forcibly into place by a nut, B, a rubber gasket being interposed between the glass and the plate to secure a tight and elastic joint.

Claim.—In combination with the illuminating-grating C, provided with light-openings, the lens A, provided with an enlarged head, *a*, and threaded shank *a'*, the nut B, engaging with said threaded shank, and the elastic gasket D, interposed between said head *a* and the sides of the light-opening, substantially as and for the purpose specified.

145,190.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 18. Application filed October 22, 1873.

The metallic shell, which carries the lens, is detached from the perforated plate, which forms the vault-cover, and rests upon it. The lenses can, by this means, all be removed together when desirable for ventilating purposes, without disturbing the perforated plate.

Claim.—An illuminating vault-cover, pavement-plate, &c., provided with a detachable lens-holder, substantially as and for the purpose specified.

145,191.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 10. Application filed October 22, 1873.

The metallic vault-cover is traversed by deep grooves at intervals, furnishing lines of breakage, so that the cover can be readily adapted to the size of the opening to be covered by breaking, without the necessity of expensive fitting.

Claim.—A metal grating for areas, stoops, sidewalks, &c., the frame of which is provided with grooves, along and within which said metal may be divided by breaking, substantially as and for the purpose specified.

145,192.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 6. Application filed October 22, 1873.

A metallic conical ring, provided at its upper edge with a flange, and at its lower aperture with a screw-thread, is soldered within the opening. A rubber gasket is then inserted, and the conical illuminating-lens is screwed to place, its lower portion being screw-threaded to fit the threaded portion of the ring.

Claim.—An illuminating-lens made tapering vertically, provided upon its periphery with a screw-thread, and combined with an inclosing metal ring, in the manner and for the purpose substantially as specified.

145,193.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 16. Application filed October 22, 1873.

Claim.—1. A vault-cover, pavement-plate, &c., provided with a detachable bearing or wearing surface, substantially as and for the purpose specified.

2. A vault-cover, pavement-plate, &c., provided with a detachable bearing-surface, and having interposed between the same and said cover or plate, rubber or other elastic material, substantially as and for the purpose shown.

145,194.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 19. Application filed October 22, 1873.

The upper surface of the metallic plate is covered by a shell or bearing-surface, which is held in place by flanges cast upon the illuminating-lenses, the latter being threaded below, and capable of being drawn down by nuts, so as to compress the surface-plate tightly by means of the flanges.

Claim.—A pavement-plate covered upon its upper side by a sheet-metal shell, which is held in place by means of the enlarged upper ends of its illuminating-lenses and nuts placed upon the lower threaded ends of the same, substantially as and for the purpose specified.

145,195.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 20. Application filed October 22, 1873.

Claim.—An illuminating vault-cover, pavement-plate, &c., in which the lenses are secured by means of molten lead or solder poured into and caused to fill the spaces between said lens and plate, substantially as and for the purpose specified.

145,196.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 24. Application filed October 22, 1873.

Claim.—A vault-cover, pavement-tile, &c., inclosed by means of a rubber shield, (with or without bearing-points,) which forms a packing for its illuminating-lenses, and between said tile and its surrounding frame, substantially as and for the purpose specified.

145,197.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 2. Application filed October 22, 1873.

Claim.—A glass lens having an enlarged or button-shaped head and a smaller shank or stem, substantially as and for the purpose specified.

145,198.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 1. Application filed October 22, 1873.

Claim.—In an illuminating vault or area cover, pavement-plate, &c., a detachable illuminating-lens, secured in place by means of an elastic gasket, substantially as and for the purpose specified.

145,199.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 9. Application filed October 22, 1873.

Claim.—An illuminating vault-cover, floor-light, &c., provided upon its upper bearing-surface with strips or buttons of rubber, substantially as and for the purpose specified.

145,200.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case. 7. Application filed October 22, 1873.

Claim.—An illuminating-lens having molded upon its periphery a metal frame, which is provided with a projecting head or flange, and with a threaded shank, substantially as and for the purpose specified.

145,201.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 26. Application filed October 22, 1873.

Claim.—In combination with an illuminating-plate, a shield of thin metal, or other suitable material, inclosing the lower side of said plate, and having its light-openings flanged upward, so as to catch the drip from the illuminating-lenses, substantially as and for the purpose specified.

145,202.—Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 8. Application filed October 22, 1873.

The illuminating-lens is set within an inclosing metallic frame capable of being soldered in its place in the vault-cover opening. This metallic frame enables very thick lenses to be used with thin supporting-plates.

Claim.—An illuminating-lens set within an inclosing metal frame, which is capable of being soldered to and within a supporting-plate, substantially as and for the purpose specified.

145,203.—Non-Condensing Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 15. Application filed October 22, 1873.

Claim.—An illuminating pavement-plate protected upon its lower side by means of a covering of wood, which latter is provided with light-openings which correspond in vertical position to the openings in said plate, and are each inclosed by one or more lenses, substantially as and for the purpose specified.

145,204.—Non-Condensing Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 13. Application filed October 22, 1873.

Claim.—A tile composed of a sheet-metal casing inclosing a wooden center, substantially as and for the purpose specified.

145,205.—Non-Condensing Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 12. Application filed October 22, 1873.

Claim.—An illuminating pavement plate or tile composed of a double shell of sheet-metal, having its interior filled with plastic material, substantially as and for the purpose specified.

145,206.—Non-Condensing Illuminating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 11. Application filed October 22, 1873.

The metallic perforated plate is protected upon its lower surface by a non-conducting casing of wood to prevent the condensation of moisture, and each illuminating-opening is surrounded at its lower edge by a ring of felt to absorb the small amount of moisture which condenses upon the lens.

Claim.—A metal plate provided with illuminating-openings, covered upon its lower side with a casing of wood or other suitable non-conductor of heat or cold, and having the lower edges of its said illuminating-openings covered with rings of felt or other like absorbent material, substantially as and for the purpose specified.

145,207.—Elevating Vault-Cover.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 28. Application filed October 22, 1873.

One of the panels of an illuminating vault-cover is arranged to rise and fall in ways, so as to serve the secondary function of an elevator-platform when desired. It is actuated by a windlass and chains.

Claim.—An elevator in which the platform serves the purpose of a support for articles being moved, and, when raised, constitutes a part of an illuminating sidewalk, substantially as and for the purpose specified.

145,208.—Flexible Illuminating Vault-Plate.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 23. Application filed October 22, 1873.

Claim.—An elastic plate provided with glazed illuminating-openings, and capable of being removed by rolling from a perforated supporting frame or grating, substantially as and for the purpose specified.

145,209.—Illuminating Ventilating-Stop.—THADDEUS HYATT, New York, N. Y., assignor to ELIZABETH A. L. HYATT, same place.—Case 30. Application filed October 22, 1873.

The steps of a stoop are formed of illuminating-plates, and the rear edge of each step is extended beneath the front edge of the next higher step, so as to form a ventilating-chamber, which is inclosed front and rear by glazed risers and movable glazed frames.

Claim.—1. In an illuminating-stoop, a ventilating-chamber formed by extending the rear edge of one plate beneath and in rear of the plate which forms the next highest step, substantially as and for the purpose specified.

2. In an illuminating-stoop, a ventilating-chamber formed between the rear edge of one plate and the overlapping front edge of a higher plate, and partly or wholly inclosed at its rear side by means of a glazed wall or partition, substantially as and for the purpose shown.

3. The overlapping illuminating-plates A and A', open risers B, and glazed frame E, when constructed and combined in the manner and for the purpose substantially as set forth.

145,210.—Propulsion of Vessels by Direct Action of Steam.—GEORGE W. JONES, Philadelphia, Pa. Application filed November 4, 1873.

Steam, admitted to a chamber extending below the surface and opening into the water, acts as a piston to force the water therefrom, and is then condensed, allowing the water to return, when steam is again admitted; and the operation repeated causes the movement of the boat.

Claim.—1. As the improvement in the propulsion of vessels herein before described, in combination with a navigable vessel, the cylinder or chamber G, having a single orifice, through which the water is alternately received and discharged at the stern, a valve mechanism, substantially as herein described, for controlling admission of steam, and a steam-generator, all combined and operating as specified, whereby the steam, acting upon the water within the cylinder as a piston, forces the same out, and then, condensing, causes the entrance of a like quantity of water, and so on alternately, as set forth.

2. The combination of the cylinder G, having orifice O, the small cylinder K, float J, valve-chest D, valve F, and tube E, with a steam-generator and a vessel, as shown and described.

145,211.—Fire-Proof Floor and Wall.—JAMES JOHN, Chicago, Ill. Application filed October 29, 1873.

The wooden joists which support the floor are rendered fire-proof by a coating of plaster or cement, the spaces between the joists being then filled with hollow blocks or shells of plaster-of-paris, or analogous material. The said shells have partitions to prevent circulation of air, and are laid so as to break joints. They are coated with cement like the joists, after being placed in position.

Claim.—1. In combination with the joists A A, the hollow shells or boxes D, to occupy the space between said joists, as set forth, to prevent the passage of air, as described.

2. In combination the joists A, furring-strips B, strips E, concrete layers C *c*, and the hollow boxes or shell D, as and for the purpose set forth.

3. The shell or box D, constructed open on one side, and with a medial partition, *d*, so that said shells may be laid "breaking joints," in the manner and to the effect described.

145,212.—Grate.—SOLOMON KEPNER, Pottstown, Pa. Application filed October 25, 1873.

The bars of the movable section of the bottom grate alternate in position with the bars of the fixed part of the grate. The movable section of the bottom grate is hinged at its rear, and its front can be raised to clean out ashes and clinkers.

Claim.—1. The movable or tilting bottom-piece C, combined with the rear bar D having an offset or groove, *d*, and with the bars B' having notches *b'*, in the manner and for the purposes set forth.

2. The combination of the bars B and B' with the tilting grate C having the projection *c'*, in the manner set forth.

3. The grate A having the long and bent bars B', the short front bars B provided with projections *b*, and the tilting bottom C constructed and hinged as described, the several parts combined in the manner and for the purpose set forth.

145,213.—Apparatus for the Manufacture of Starch.—THOMSON KINGSFORD, Oswego, N. Y. Application filed August 21, 1873.

A horizontal endless apron or belt is used to remove lumps of starch from one part of the factory to another, and a second to raise lumps from one story to another.

Claim.—The combination and arrangement of the horizontal endless belt D', passing over pulleys F' F', and supported by rollers E and the vertical endless belt D, to which are attached the shelves or brackets C, all constructed and operated in the manner and for the purpose specified.

145,214.—Wind-Wheel.—COLUMBUS W. KLINE, Beloit, Wis. Application filed October 2, 1873.

A rotating air-chamber for receiving and conducting the wind to the lower side of the wheel and into the buckets. This air-chamber is loosely pivoted upon the spindle, but rotates independently of the wheel.

Claim.—The combination, with the turbine wheel B and the shaft M, of the independently-rotating chamber C, with vanes V V and hinged gates L L, connected by rods a^2 a^2 to the weight O, all constructed and arranged substantially as and for the purposes herein set forth.

145,215.—Sewing-Machine.—FRIEDRICH KOCH and ROBERT BRASS, Brooklyn, assignors to JOHN BOYLE, New York, N. Y. Application filed September 23, 1873.

The curved vibrating shuttle-carrier and awl-feeding mechanism are arranged to operate at the extreme forward end of a cylindrical supporting-surface, and so constructed that the machine is specially adapted to sewing bags.

Claim.—The combination, within a semicylindrical bed, F, of the piercing and feeding awl K, shuttle S *s*, slotted oscillating shuttle-carrier E *r'*, and the awl and shuttle operating mechanisms, substantially as set forth.

145,216.—Loom Shedding Mechanism.—CHARLES H. LANDENBERGER and HENRY ATKINSON, Philadelphia, Pa., assignors to MARTIN LANDENBERGER & Co., same place. Application filed September 25, 1873.

To impart a greater range to the shedding mechanism without increasing the number of heddle-levers, each lever transmits a falling movement to one or more heddles controlled by it, and at the same time a rising movement to others, through the medium of an endless cord, or through supplemental levers.

Claim.—A witch loom in which each of the levers A is caused to move two heddles, or two sets of heddles, simultaneously in opposite directions through the medium of the devices described, or their equivalents, for the purpose specified.

145,217.—Hypodermic Syringe.—JOSEF LEITER, Vienna, Austria, assignor to FERDINAND G. OTTO and JOHN REYNDERS, New York, N. Y. Application filed November 1, 1873.

The sides of the barrel-bore are enlarged at both ends, so as to facilitate the entrance of the piston, and of the conical plug, which forms the connection between the syringe and the vial in the first instance, and then serves to connect the cannula point.

Claim.—1. The cylinder A of a hypodermic syringe, made with the enlarged ends to its bore, substantially as and for the purpose herein shown and described.

2. The combination of the conical plugs J and E, and of the plunger B and conical plug F with the cylinder A of a hypodermic syringe, as described.

145,218.—Crib for Children.—JOHN D. LEWIS, Toronto, Canada. Application filed July 24, 1873.

An upper and lower frame of such relative size that for compactness of stowage the lower can lie within the upper one; they are connected by flexible bands; the whole suspended by cords attached to springs above.

Claim.—1. The crib-bottom composed of the frame B and bands *y*, and combined with the top frame A by means of the flexible bands *z z*, substantially as and for the purpose shown.

2. The combination of the crib A, B, *y*, and *z* with the cords or suspenders D E and springs S, in the manner and for the purposes set forth.

145,219.—Vehicle-Wheel.—MARTIN LINCK, Danville, Ill. Application filed July 19, 1873.

The spokes are to be made of gas-pipe or similar hollow material.

Claim.—The within-described wheel for vehicles, consisting of the mortised felly A, of one piece, the tire B', hollow spokes B B, turned at one end and beveled at the other, recessed hub C, with inwardly-sloping shoulders *i i*, hub-cap D, and suitable bolts and nuts, all of said parts being made of iron, and constructed as herein set forth.

145,220.—Marker, Seed-Planter, and Cultivator.—CHARLES H. LOGAN and FERDINAND LOGAN, Pawling Post-Office, Pa. Application filed June 12, 1873.

The wheels and marking-plows are all adjustable to different widths. The seeding devices cease to work when the harrows are raised from the ground, a clutch being actuated by a rod, lever, and eccentric. The lifting-chains have each an elongated curved link for hooking or resting upon the rock-spindle, to support the harrow.

Claim.—1. The combination of the cross-bar of the frame, the adjustable wheels H H, and the adjustable clamps, or their equivalents, for carrying the markers, substantially as specified.

2. The combination of the seed-distributing devices, the suspended harrow F, spindle M, and eccentric *r*, operating a clutch, *u*, through the medium of a rod, *s*, and lever *t*, as specified.

3. The combination of the hopper A, its openings *b*, plate E, having openings *f*, and feed gear-wheels *g*, arranged between the plate E and the bottom of the hopper, and operating as specified.

4. The combination, substantially as described, of the rock-spindle M and the chain *l*, having elongated links *q*.

145,221.—Wooden Panel.—EDOUARD MAITRE, Veuxaulles, France. Application filed November 10, 1873.

The panel is made of small pieces or strips tongued and grooved together in ornamental patterns, inclosed between stiffening-boards, and held together by transverse pins or keys passing through the panel.

Claim.—In the manufacture of wooden panels, the employment of pieces or strips A of wood, which are united by means of tongues and grooves, and arranged in suitable patterns between entire or stiffening boards B, the whole being held together by means of pins or keys C, substantially as herein shown and described.

145,222.—Cultivator-Plow.—KENNETH MCKINNON, Pleasant Hill, Ala. Application filed May 31, 1873.

An extension-brace, clamped to the front standard and beam, passes through and tightens a fixed cross-brace, and also secures a subsoil-plow standard.

Claim.—1. The combination of the separate diagonal and annular braces G H with the plow-standard A, the beam C, and the clamping devices I and L, constructed and arranged substantially as described.

2. The brace N, in combination with the braces G H, the screw-coupling B, and the standard B, as and for the purpose described.

145,223.—Permutation-Lock.—SAMUEL MILLER, Gratis, Ohio. Application filed April 26, 1873.

A bar pivoted to the tail of the bolt is provided with a notched projection, which, when properly adjusted by one of the tumblers, engages with a revolving arm attached to the operating-shaft for the purpose of retracting the bolt. An eccentric, operated by a key, is arranged to throw the tail of the bolt above and away from the tumblers when it is desired to use the bolt as an ordinary latch.

Claim.—1. The combination of the perforated tumbler C with pins *b b* and notch *d*, the perforated tumbler D with pins *e e* and tooth *f*, the perforated disk E with arm H, and washer G with pin *i*, all constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the tumbler D, disk E, tooth *f*, and arm H with the notched projection *m* on the bar K, pivoted to the arm J, substantially as and for the purposes herein set forth.

3. The combination of the arm H on the disk E, the spoke-wheel M, and the slotted flange *n* on the bolt, substantially as and for the purposes herein set forth.

4. The combination of the bolt I, slotted flange *n*, arms J L, projection *k*, and the pivoted bar K with notched projection *m*, all constructed as described, and operating in connection with suitable tumblers, substantially as and for the purposes herein set forth.

5. The combination, with the lock-bolt arm J, having pin *y*, and the spring O, of the shaft *s*, eccentric *t*, finger *x*, spring *z*, and key P, all constructed and arranged substantially as and for the purposes herein set forth.

145,224.—Battery-Gun.—ALONZO E. MILTIMORE, United States Army. Application filed November 25, 1873.

Claim.—1. The combination, with a single central barrel, A, of a series of complete barrels, B, of smaller caliber, constructed and adapted to revolve around the central barrel A, substantially as described.

2. The combination described, of a central barrel or gun and a frame or cradle for supporting the gun at or near its extremities, so that a series of independent barrels may be arranged around said central gun, as set forth.

145,225.—Rolling-Mill.—JAMES MOORE and WILLIAM GEORGE, Philadelphia, Pa., and ALEXANDER L. HOLLEY, Brooklyn, N. Y. Application filed October 28, 1872.

The middle roll is adjusted by means of two screws, one right and the other left handed, passing through the bolster at each end, and operated by worm-gearing connected to a pulley above. The fore-plate and catch-plate are fastened to lugs on the bolster of the middle roll, and are carried by it when the roll is adjusted. A stop or lug on the bolster limits or gages the height to which the metal is to be raised by the table.

Claim.—1. In a three-high rolling-mill, a movable middle roll, adapted to be moved into and set at various positions, with reference to the top and bottom rolls, while the mill is running, for the purpose set forth.

2. The combination of the paired screws D D' and bolster C with each end of the roll F, for the purpose of moving and holding the said roll, as described.

3. In a rolling-mill having a movable roll, the fore plate and catching-plate *a a'*, secured to lugs *g g'* on the movable bolster C, so as to move therewith, as herein described.

4. In a rolling-mill having a movable roll, the combination of the bolster with a lug, stop, or other means adapted to arrest the movement of the table at a uniform position with reference to the said roll, substantially as described.

145,226.—Lubricating Device for Car-Axles.—WILLIAM J. L. MOULTON, San Francisco, Cal., assignor to JENNESS LUBRICATOR COMPANY. Application filed August 2, 1873.

Claim.—The lubricator consisting of the flexible pad-holder A, having the central trough C, springs E attached thereto, links F, and pad D, all combined as set forth.

145,227.—Car-Axle Box.—WILLIAM J. L. MOULTON, San Francisco, Cal., assignor to JENNESS LUBRICATOR COMPANY. Application filed August 2, 1873.

A felt ring is placed around the axle against the inner wall of the lubricating-chamber, in which position it is held by the inner end of the brass bearing-block.

Claim.—The felt ring C, placed against the inner wall of the oil-box, and having the axle passing through it, substantially as and for the purpose specified and shown.

145,228.—Car-Coupling.—JOHN F. MULLOWNY and SIDNEY R. BROOKS, Pittsburg, and JAMES COPE, Connellsville, Pa. Application filed May 13, 1873.

The plates which engage with the arrow-head are held together by weighted levers. Uncoupling is effected by means of a cam operated from the platform, or by levers suitably arranged beneath the platform, and a transverse bar by which they are operated.

Claim.—1. The plates C, hinged rods *b'*, and weights *b*, combined substantially as shown and described.

2. The cam E and lever F, in combination with the plates C D and hinged rods *b*, substantially as and for the purpose specified.

3. The transverse pivoted bar D', having the studs F', in combination with the arms *d'* and hinged plates C, substantially as and for the purpose specified.

145,229.—Car-Seat.—PATRICK W. NOLAN, New York, N. Y. Application filed October 30, 1873.

Claim.—1. A reversible folding-seat, O, to swing under the back B on pivoted side straps E, substantially as described.

2. The standard A, having the elongated slots D, in combination with the back B, stud C, and seat O, substantially as described, for the purpose specified.

3. The square bosses G on the seat O, in combination with seats H on the standards, substantially as and for the purpose described.

145,230.—Bill and Paper File.—THOMAS ORTON, Chicago, Ill. Application filed October 17, 1873.

Claim.—The flat spring B, having its fixed end secured to the bracket by means of the notch *a'* and screw *b*, and its free end curved inward, as shown and described, for the purpose specified.

145,231.—Lubricating Device for Vehicle-Axles.—CHRISTOPHER COLUMBUS PARKER, Kiddville, Me. Application filed April 8, 1873.

The cover to the oil-vessel can be removed without interfering with the valve, and the valve can be manipulated without interfering with the cover to any great extent.

Claim.—1. The combination, with the vessel A, having the conically-shaped valve seat, of the valve or cut-off B, the stem of which is supplied with a diaphragm, *b'*, and a handle, substantially as and for the purpose set forth.

2. The combination of the vessel A, cap or cover C *c'*, valve B *b*, having the adjustable head *s* and bale *b'*, and the diaphragm *b'*, substantially as and for the purpose specified.

145,232.—Spark-Arrester.—HENRY C. FARRALEE and SAMUEL M. JONES, Cleveland, Ohio, assignors of one-third their right to CHARLES D. EVERETT, same place. Application filed November 13, 1873.

An inverted cone, which deflects the coals and sparks, is provided with projecting circumferential disintegrators, by which the coals are broken in small particles, and also ribs with tapered holes, through which the smoke passes, the taper preventing them from being choked.

Claim.—The within-described spark-arrester, consisting of the inverted cone C having circumferential shoulders *b b*, and the shield D provided with ribs or nipples *d d*, with slots or holes X X, and the shoulders *b' b'*, all cast in one piece, substantially as and for the purposes herein set forth.

145,233.—Bridle-Blind.—JAMES PATTERSON, Jr., Bangor, Me. Application filed May 27, 1873.

Claim.—In combination with a blind or winker, the metallic plate *b*, having loops *c c* therein, through which the cheek-strap passes, said blind being adjustable upon the cheek-straps, as herein described and shown.

145,234.—Crane.—JOSEPH L. PENNOCK, Coatesville, Pa. Application filed October 15, 1873.

A cylinder, to whose piston-rod the weights to be hoisted are attached, has rollers to facilitate its traveling upon ways on the jib of the crane. The supply and exhaust ports of the cylinder communicate with the steam-boiler or compressed-air reservoir and the place of exhaust through flexible pipes.

Claim.—A cylinder, A, having wheels or rollers adapted to ways on the jib or beams of a crane, and having a piston and piston-rod constructed for direct attachment to the weight to be hoisted, in combination with pipes so arranged as to admit steam or compressed air to and exhaust it from the cylinder without interfering with the free movement of the latter or with that of the crane, all substantially as set forth.

145,235.—Cork or Stopper Holder.—GRANVILLE H. PLUMMER, New York, N. Y. Application filed November 13, 1873.

An elastic holder connected to the neck of the bottle and to the stopper, so that by means of said holder the stopper is retained in position in the mouth of the bottle, and when withdrawn prevented from being mislaid.

Claim.—An elastic holder for bottle-stoppers composed of a retaining-clasp, b, and neck-band c, which are connected to each other by side straps *d d*, all arranged and operating substantially as herein described.

145,236.—Watering-Column for Railway-Tanks.—JOHN N. POAGE, Cincinnati, Ohio. Application filed November 22, 1873.

A threaded toothed nut is placed upon and around the upper end of a valve-rod, and caused to revolve within suitable bearings by a pinion and shaft; also giving the valve-rod a vertical movement.

Claim.—The means shown for producing a vertical movement of the valve-rod D, consisting of a threaded toothed nut, F, placed upon and around the upper threaded end of said valve-rod, and caused to revolve within suitable bearings by the pinion G and shaft H, substantially as and for the purpose specified.

145,237.—Heating-Drum.—FREDERICK PROUDFOOT, Toronto, Canada. Application filed June 5, 1873.

A corrugated pipe is provided in its interior with a similarly-corrugated hot-air pipe, which is closed at its lower end and connected with the external air by short tubes, terminating in cone-shaped caps. The interior tube is provided with dampers.

Claim.—The combination of the corrugated smoke-pipe A, the core-tube or inner air-chamber C, provided with branch-tube I and dampers J, and the funnel or cone shaped cap, as shown and described, for the purpose specified.

145,238.—Toy Pistol.—HENRY M. QUACKENBUSH, Herkimer, N. Y. Application filed November 1, 1873.

The nipple is inserted in line with the axis of the barrel. The hammer is upon the recurved end of a sliding rod actuated by a spring, and working in a groove parallel with the barrel.

Claim.—The combination, in a toy pistol, of a sliding L-shaped hammer, C, having the shank *c* parallel, or nearly parallel, to the barrel, with the spring E and trigger D, all arranged to operate substantially as herein shown and described.

145,239.—Weather-Strip.—CHRISTIAN B. RAGER, North Manchester, Ind., assignor of one-half his right to HENRY MILLS, same place. Application filed September 30, 1873.

Claim.—The threshold-plate *a*, having the external hinge-flange *b* extending downward at an obtuse angle with said plate for closing the sill-joint, and the end arm *a'*, arranged at an acute angle with said plate, for raising the same to close the door-joint, as specified.

145,240.—Leather-Crossing Roller.—SILAS B. RANDALL, Cincinnati, Ohio. Application filed September 30, 1873.

A series of annular disks, having waved surfaces, are arranged upon a metallic roller, and may be readily renewed or changed, to vary the style of finish, as may be desired.

Claim.—1. A compound metallic roller having a concave periphery, *n*, and perpendicular crossing-ridges *o*, formed by sections or disks M M' N, with beveled opposing surfaces, and interposed bent annular plates O O', substantially as herein described, for the purpose specified.

2. The compound metallic roller, consisting of the clamping sleeve and nut K & L, rigid annular sections or disc M M' N, and interposed thin rings O O', forming an effective periphery, *n*, with parallel end flanges *m*, and perpendicular waved crossing-ridges *o*, substantially as set forth.

145,241.—Guitar.—GEORGE D. REED, Springfield, Vt., assignor of two-thirds his right to JULIUS E. GRAVES and WILLIARD BAILEY, same place. Application filed November 4, 1872.

The body or shell is made, back, belly, and sides, of sheet metal.

Claim.—As a new article of manufacture, a guitar having a

sheet-metal body with or without a metallic neck and strings, when constructed as herein shown and described.

145,242.—Curry-Comb.—ALBAN H. REID, Brandywine Manor, Pa. Application filed July 12, 1873.

The frame, rubbers, and tang are made of wire, bent as shown. The part of the device upon which there is little strain is not composed of as many wires as other parts.

Claim.—A curry-comb composed of a series of wires bent and twisted together, substantially in the manner described, so as to form transverse rubbers *a*, a frame, *b*, and a tang, *d*, adapted to a wooden or other handle, *f*.

145,243.—Gas-Extinguisher.—DAVID M. REYNOLDS, Port Deposit, Md. Application filed September 24, 1873.

An adjustable weighted arm is attached to the gas-cock, and connected, by a pivoted catch or trigger, with a threaded disk attached to the hour-hand shaft of the clock movement. When the trigger is released the weighted arm turns the key.

Claim.—1. The bent arm E E′, provided with an adjustable weight, H, and pin K, in combination with the trigger J and screw-threaded disk B, all arranged, constructed, and operated in the manner and for the purpose set forth.

2. The socket having a cylindrical end, and provided with ears *c c*, in combination with the arm E and thumb-screws D and F, as and for the purposes set forth.

3. In combination with the key *a*, the arm E E′ and adjustable weight H, substantially as described.

145,244.—Door-Spring.—WILLIAM T. ROESITER, Lincoln, Nebr. Application filed August 16, 1873.

The coil-spring is permanently fastened to a prismatic plug, which plug is furnished with a handle to assist in adjusting the torsion. The plug is inserted in the brackets, through slots formed for the purpose, before the latter are screwed on.

Claim.—The helical spring C, having a plug, E, permanently secured to one or both ends, and adjusting-handle *a*, in combination with the slotted brackets D D, or either of them, substantially as described.

145,245.—Guard for Preventing Leakage Around Chimneys.—JOSEPHUS F. SCHUYLER, Fostoria, Ohio. Application filed March 21, 1873.

A metallic case firmly attached to the roof surrounds the chimney at a small distance therefrom. This is covered by a cap, G, attached to the chimney a short distance above, having a flange which projects down over the roof-cap so as to exclude rain. Staples *a a*, placed in the brick-work, permit the chimney to slide through the roof without impediment when settling occurs.

Claim.—The combination, with a roof, B, of the loosely-fitted chimney A, with staples *a a* between it and the roof, the roof-cap C D, made in two parts, and the chimney-cap G, the parts being constructed and used as described, with reference to the settling of the chimney, for the purposes set forth.

145,246.—Machine for Cutting Veneers.—JOHN N. SEIM, Boston, Mass. Application filed October 2, 1873.

The machine is adjustable for cutting veneers from square or circular logs.

Claim.—1. The combination of pinions *p*, cog-wheel *s*, pitmen-rods *g*, working-beams *b*, rods *a* and A, feed mechanism *i k l m*, knife-carriage E, and log-carrier C, all constructed and operating substantially in the manner herein shown and described.

2. The standards D hinged upon the bed A, in combination with the reciprocating log-carrier C, to operate in the manner and for the purpose specified.

3. The log-retaining dogs *r*, provided with adjusting-pins *v* and set-screws *t*, in combination with the log-carrier C, substantially as shown and described.

4. The combination of the knife-carrier E with the supporting-blocks *u*, the screws *z z*, and roller-nuts *y*, all constructed and arranged as and for the purpose specified.

5. The divided log-carrier G, having the lugs *f′* and flanges *i′* and groove *g′*, in combination with the shaft *f* having the projections *h′*, substantially as and for the purpose specified.

6. The clamping-jaws *b′*, provided with grooves to engage with a tongue on the breast of the knife-carriage, in combination with the knife *a′*, clamping-screws *c′*, and set-screws *d′*, substantially as described.

145,247.—Pump.—CHIPMAN W. SHOLES and HENRY C. KELLY, Morrison, Ill. Application filed March 31, 1873.

The pump-stock and the standard are both made adjustable. By this means not only can the pump be accurately set, but the length of stroke of the piston can be changed without altering the length of the piston-rod.

Claim.—The pump-stock A, and standard B b^2 b^3 secured adjustably to the platform or cover of the well, as shown, in combination with the handle C, substantially as and for the purpose specified.

145,248.—Carbureter.—ISAAC SIMMONS, Baltimore, Md. Application filed November 21, 1873.

Claim.—1. The clips E, constructed substantially as described, in combination with the partitions C, capillary material D, and pan or pans to contain hydrocarbon liquid.

2. In a carbureting apparatus, consisting of a series of pans arranged one above another, taking the air or gas to be carbureted at top and delivering it at bottom, the guards G and screens H, constructed and arranged as described, to prevent the current of air or gas unduly agitating the liquid or carrying it from an upper to a lower pan.

3. The cup M, constructed and applied substantially as described, to prevent access to the feeding-nozzle K′, cocks L M, by unauthorized parties.

4. The pans A B A^1 B^1, constructed as herein described, with seamless bottoms and vertical corner-seams, to which access is had from end to end, as explained.

145,249.—Wire Mattress.—JOHN G. SMITH, St. Louis, Mo. Application filed September 9, 1873.

Webbing of interlocking-coils of wire having an elliptical section, and tightened by a horizontal stay-wire on each side.

Claim.—1. The wire fabric or webbing for mattresses formed of the interlocked spirals of wire having an elliptical section, with its shorter diameter radial or transverse to the coil, substantially as set forth.

2. The guys or stay-wires G G, extending from bracket B to bracket C, and connected to the sides of the webbing, substantially as and for the purpose set forth.

145,250.—Machine for Forming Wire Loops.—CHRISTOPHER M. SPENCER, Hartford, Conn. Application filed August 2, 1873.

A pair of jaws, operated by a crank and connecting-rod, seizes the wire and thrusts it forward the proper distance for a "length." The wire, lying on a table, is cut off by a chisel and forced around a pin to form a loop, the ends of which are caught under a lip on a horizontal shaft and turned up. The several devices are operated by cams on a horizontal shaft.

Claim.—1. The combination of the crank *c*, pitman *d*, bearing the cam d^3, and the reciprocating clamp, composed of the base *e*, anvil e^1, and pivoted head e^2, the whole constructed, arranged, and designed for operation and use, substantially as described.

2. The combination of the crank *c*, crank-pin c^1, and pitman *d*, having the slot d^2 for lost motion, and bearing the cam d^3, with the reciprocating clamp, composed of base *e*, anvil e^1, and pivoted head e^2, the whole constructed, arranged, and designed for operation and use, substantially as described.

3. The combination of the crank *c*, pitman *d*, bearing the cam d^3, the reciprocating clamp, composed of the base *e*, anvil e^1, and pivoted head e^2, the cam h^2, lever A, and bed h^3, all constructed and operating substantially as set forth.

4. The combination of the crank *c*, pitman *d*, bearing the cam d^3, the clamp-base *e*, anvil e^1, pivoted head e^2, cam h^2, lever A, bed h^3, cam i^2, and chisel i^1, all constructed and operating substantially as set forth.

5. The combination of the cam o^2, swage-slide o^1, having the cut-away o^3, and the pin *o*.

6. The combination of the cam o^2, swage-slide o^1, having the cut-away o^3, the pin *o*, the table *k*, and rock-shaft *n*, provided with the former *m*, all constructed and operating substantially as set forth.

7. The combination of the cam *s*, shaped as shown, the rack s^1, the pinion n^2, and the rock-shaft *n*, bearing the former *m*.

145,251.—Stove-Pipe Shelf.—WILLIAM J. STEPHENSON and DAVID W. STEPHENSON, Yellow Springs, Ohio. Application filed October 13, 1873.

A ring resting on lugs of a stove-pipe is connected by oblique legs to shelves, which are inclosed by sliding doors.

Claim.—The combination of lugs B, ring C *c*, tubular oblique legs D, and two or more compound shelves, E E′, having hooked margins F, for sliding and separable doors or shutters J, as and for the purpose specified.

145,252.—Tool-Handle.—SUMNER F. STREETER, Greenfield, Mass. Application filed December 7, 1872.

The shank of the tool is passed through a hole in the ferrule, and fastened at any angle by a screw-nut.

Claim.—A chopping-hatchet composed of a handle, A, provided with a socket, C, and a blade, F, constructed with a shank, D, fitted to and secured in said socket, and adjustable therein so as to fix said blade parallel with, oblique, or transverse to said handle to cut either right or left handed, as and for the purpose set forth.

145,253.—Stove-Grate.—DAVID STUART and LEWIS BRIDGE, Philadelphia, Pa., assignors to STUART, PETERSON & CO., same place. Application filed June 26, 1873.

The movement of the parts A A′ is limited to the depression in the bar G.

Claim.—1. The grates A A′, arranged upon the same plane, and connected together by a projection on one fitted to a recess in the other, so that the movement of one will impart a simultaneous movement to the other, substantially as described.

2. The arm E, carrying a vertical pin, D, to a socket of which is adapted the bar *a* of a revolving and tilting grate, substantially as described.

3. The within-described stove-grate, consisting of three sections—that is to say, the upper, vertical, and permanent section B, the intermediate hinged section B′, and the horizontal section for supporting the body of fuel when the intermediate section is depressed—all being combined as set forth, for the purpose specified.

145,254.—Monument.—JOSEPH C. TAYLOR, Roanoke, Ala. Application filed October 23, 1873.

Claim.—A grave-cover consisting of a base or pedestal, B, of masonry, and a slab, C, composed of hydraulic cement, sand, and water, or equivalent ingredients, to form artificial stone, the same being molded upon said base, substantially in the manner described, and for the purpose set forth.

145,255.—Construction of Railway-Cars.—KIRK THOMPSON and SYLVESTER D. BEEBEEOWER, Oxford, Pa., assignors of one-fifth to WM. L. G. THOMAS, same place. Application filed November 25, 1873.

Rolled-iron hollow sills run the length of the car, covered by top plates, which are mortised to receive the stanchions. The wooden end sills are set within the side sills, one wall of the latter being partly cut away to form the joint, which is strengthened by a bolt and nut.

Claim.—1. Hollow wrought-metal car-sills A, having the stanchions of the body seated into them, and combined substantially as described.

2. The cap-plates A′, perforated to receive the tenons of the stanchions, in combination with wrought-iron sills A, substantially as described.

3. The side and end sills united by joints constructed, locked, and clotted substantially as described.

4. The stanchions C, combined with L-plates G and V-shaped sills A, substantially as described.

5. A hollow rolled metal car-body sill A, rabbeted to and in combination with mortised cap-plates A′, substantially as described.

145,256.—Gas-Retort.—JOSEPH C. TIFFANY, Portsmouth, N. H. Application filed November 14, 1873.

Claim.—1. A retort for the generation of gas, made wholly or in part of platinum or its allied metals, for withstanding the action of heat and the gas-generating agent.

2. A gas-retort provided with a lining or jacket of platinum or its allied metals, whether the lining covers the entire or only a portion of the interior or exterior surface of the retort, substantially as set forth.

3. A gas-retort provided with a bottom of platinum, made separate from the retort-body, and attached thereto by suitable means, substantially as herein set forth.

4. In combination with a retort for generating gas, one or more perforated rose-heads or tubes, for diffusing the liquid in a spray or shower over the heated surface of the retort, as herein set forth.

145,257.—Method of Burning Gas in Furnaces.—JOSEPH C. TIFFANY, Portsmouth, N. H., assignor of one-half his right to CHARLES F. DODGE, New York city. Application filed November 14, 1873.

Claim.—1. A perforated pipe made wholly or in part of platinum, or its alloys, or of iron coated or lined with platinum, projecting into or arranged within the fire-chamber of a furnace, for conveying or distributing aeriform fluids for promoting combustion, substantially as set forth.

2. In combination with the induction steam-jet pipe, the sliding conoidal-shaped valve, adjustable upon the same for regulating the admission of air to the fire-chamber, substantially as described.

145,258.—Railway-Tie.—THEODORE R. TIMBY, Tarrytown, N. Y. Application filed September 27, 1873.

A metallic railway-chair and tie united to each other by the process of casting the chair on the end of the tie, said end being inserted in the mold, and provided with holes, into which the molten metal runs.

Claim.—The railway-tie herein described, consisting of a flat bar, E, set in a vertical or nearly vertical plane, with bearings B C D cast on its ends, in the manner described.

145,259.—Machine for Heading Hair.—ROBERT TURNEAURE, Rockford, Ill., assignor to himself and BELINDA WILLIAMS, same place. Application filed September 22, 1873.

The upper roll is either stationary or revolves in the same direction as the other, so that their surfaces resist each other in either case, and, by opposing the barbed surfaces of the hairs, push their root-ends out on either side of the machine.

Claim.—1. In a machine for separating hair, the roller C and rod C^1, both provided with elastic covers, and adapted to separate the hair by frictional resistance, substantially as and for the purpose set forth.

2. The rod C^1, in combination with the frame-piece D, spring E, and swinging arm B^2, arranged and operating substantially as described.

3. The rod C^1 and yielding covering C^2, in combination with concave plate F and frame-piece D, constructed and operating substantially as described.

4. The standards B B^1, in combination with the swinging arm B^2, frame-piece D, and bolts *b*, arranged and operating substantially as described.

145,260.—Machine for Severing Tin Cans.—HENRY T. VADEEN, Lansdale, Pa. Application filed June 7, 1873.

The cutters are circular, and are adjustable the one vertically and the other horizontally, and the can placed bottom upward over and around the one cutter is severed by the pressure and rotation of the other cutter against it.

Claim.—The combination of the knives *d* and *f*, the movable bracket E′, and gearing G′, substantially as set forth.

145,261.—Balanced Valve.—CHARLES P. WELCH and ROBERT J. OZE, Mahanoy City, Pa. Application filed August 16, 1873.

Small valves are provided in the back of the cup-valve, and through the top of the steam-chest cover, for the escape of waste steam that may leak into the cup-valve. Lost motion is compensated for by an adjustable hollow valve stem and nut.

Claim.—1. The yoke C and movable stripe *c′*, combined with the valve-stems E F, valve B, and nuts *h i′*, substantially as described.

2. The steam-escape valves *f g*, combined with the anti-friction slide-valve herein described, for the purpose described.

145,262.—Forming Hat-Bodies.—JOHN WHARTON, Newark, N. J. Application filed June 25, 1873.

The deposit of fur upon the cone is regulated by a sectional dedector hinged to the inner side of the case. The fiber is crossed by rotating the cone in opposite direction to that of the case. By the vertical adjustment of the perforated disk J, fur is thrown upon the tip and square. Air is admitted to the cone through perforations in the base of the case, the current being controlled by an annular band.

Claim.—1. An expansible dedector, B, within the case A of a machine for forming hat-bodies, substantially as described.

2. The combination of the case A and cone H, provided with gearing, substantially as described, whereby the case and cone are made to rotate in opposite directions, as set forth.

3. The combination of the case A, cone H, and dedectors B and *j*, substantially as described.

4. The combination, in a machine for forming hat-bodies, of the case A, having its lower portion provided with perforations, and a slide, W, the cone H, expansible dedector B, and the adjustable dedector *j*, all constructed and combined substantially as described.

145,263.—Pipe-Wrench.—HENRY B. WHEATCROFT, New York, N. Y., assignor to J. AUSTIN & CO., same place. Application filed September 25, 1873.

Claim.—In combination with the curved lever-bar *a*, serrated on its convex side at a distance from the end, the dog *c*, having the re-enforcing clips *f f*, and pivoted to the extreme end of the bar, and pressed backward by the spring A against the serrated surface *g* on the side of the bar, the whole arranged and operating substantially as shown and described.

145,264.—Journal or Shaft Hanger.—JOSEPH WHITAKER, Woonsocket, R. I., assignor to SIMEON S. COOK, same place. Application filed October 22, 1873.

Claim.—The combination of the glass indicator or feed-tube F with the movable elbow-pipe E and oil-box having reservoir D, substantially as shown and described.

145,265.—Process of Separating Silver from other Metals.—CONRAD WIEGAND, Virginia City, Nev. Application filed August 1, 1873.

The mixed metals are ground in quicksilver to form an amalgam, washed to remove iron and other substances not readily soluble in mercury. The amalgam, dissolved in an excess of mercury, is fed into an upright vessel surrounded by a heating-jacket having a close cover, means for introducing and agitating the amalgam and mercury, and provided with a strainer, undergoes what is termed leaching or hot filtration. The amalgam remaining on the strainer will contain gold, copper, &c. The silver, passing through with the excess of mercury, is submitted to a second or cold filtration.

Claim.—1. The process herein described for separating or refining silver, through a more or less complete separation of its amalgam from the amalgams of other metals, by leaching them with quicksilver, while warm or hot, in or upon a strainer, and subsequently straining the filtrate cold.

2. The process of heating, straining, and cooling the amalgams herein described, without allowing either the amalgam or quicksilver to come in contact with water or other cooling liquids or mixtures, substantially as and for the purpose set forth.

145,266.—Bedstead-Fastening.—CALMAN WOLF, Rochester, N. Y. Application filed November 7, 1873.

A hook, recessed in the rail, is passed over a pin in the post, and tightened thereon by the revolution of a nut, otherwise stationary, on a screw on its rear end.

Claim.—1. The nut G, having a screw-socket, *a*, rim *g*, and stem A, in combination with the hook D, having shoulder *c*, screw *d*, and head *e*, substantially as and for the purpose specified.

2. The combination of the eccentric washer with the nut G, having a screw-socket, and the hook D, having the screw *d* and head *e*, constructed and arranged substantially as described.

145,267.—Gas-Retort.—JAMES WOTHERSPOON and WILLIAM FOULIS, Glasgow, North Britain. Application filed August 23, 1873.

Claim.—1. The combination, with the hinged lid A, of a catch, F, and eccentric I operating on the catch, so as to first raise the same into contact with a projection on the lid, and then draw the latter against the mouth of the retort, as specified.

2. The combination, with the recessed lid or retort, of a packing of asmianthus, combined with and strengthened by wire, as set forth.

REISSUE PATENTS.

5,671.—Grain-Car Door.—CHARLES BARKER, Maquon, Ill., assignor to himself and THOMAS C. THOMAS, same place.—Patent No. 103,126, dated May 17, 1870; antedated May 13, 1870; reissue No. 5,206, dated December 31, 1872. Application filed November 12, 1873.

Claim.—1. In combination with a railroad-car, a door arranged to turn edgewise across the opening C, substantially as and for the purpose specified.

2. The opening *d* in the frame of a railroad-car, in rear of the door, for the purposes set forth.

3. A pivoted door for railroad-cars, with the outer points of

the door equidistant from the pivot on which it turns, substantially as and for the purposes herein set forth.

4. The car A, pivoted door B, grooves *m*, and opening *d*, all constructed and arranged as and for the purpose set forth.

5,672.—Gate for Gang for Marble-Saws.—LUCIUS B. CLOGSTON, West Rutland, Vt., assignor of one-half interest to CHARLES H. SHELDON, same place.—Patent No. 119,968, dated October 17, 1871; antedated September 30, 1871. Application filed November 15, 1873.

The ends of the tubular side-supports of the gate are connected by couplings, which engage with the wrought-iron channeled head-block.

Claim.—1. Intermediate couplings B, as means for connecting the ends of channeled-iron head-blocks A A to tubular side pieces C C of a saw-frame, substantially as described.

2. In a frame for gang-saws for marble manufacture, the head-block of wrought and channeled iron, constructed substantially as specified.

5,673.—Machine for Threading Screw-Blanks.—EDWARD CROFT, Waterbury, Conn.—Patent No. 142,500, dated September 9, 1873. Application filed November 12, 1873.

The screw-blanks are threaded by being rolled between the two die-faces, the configuration of which is that described in the claims, the increased pitch of the grooves corresponding to the elongation of the blank.

Claim.—1. The combination of two converging dies having longitudinal indenting-ridges of progressively-increasing pitch, substantially as before set forth.

2. The combination of two converging dies having longitudinal ridges of progressively-increasing pitch, and also profiles which are concave at the sides, which correspond with the point of the screw, substantially as before set forth.

5,674.—Saw-Frame.—DANIEL MOORE and EDWIN MOORE, Brooklyn, E. D., N. Y., assignors to THE BISSELL AND MOORE MANUFACTURING COMPANY, New York city.—Patent No. 94,500, dated September 7, 1869; reissue No. 4,276, dated February 21, 1871. Application filed November 17, 1873.

The saw is properly strained by the action of the turn-buckle and the double-braced rods D.

Claim.—The frame sides A A', a saw, B, and a tightener, *c*, in combination with the thrust-brace D, having the four points of bearing in the frames A A', between the tightener and saw, substantially as and for the purpose specified.

5,675.—Vegetable-Scoop.—JOHN F. UNGLISH, Webster, N. Y., assignor of one-half interest to JAMES E. THOMPSON, same place.—Patent No. 100,822, dated March 15, 1870. Application filed November 10, 1873.

A ring attached to a suitable handle, and having bars, with a guard extending from the sides of the scoop to the handle.

Claim.—A vegetable-scoop consisting of the rim A, provided with the stem or shank *a*, cross-bars *b*, guards *d*, and handle D, arranged substantially as and for the purpose set forth.

5,676.—Cultivator.—RICHARD B. ROBBINS, Adrian, Mich.—Patent No. 141,462, dated August 5, 1873. Application filed October 13, 1873.

The front ends of the drag-bars are provided with spiral springs to permit a free lateral motion of the frame, the side frames being connected by a double cross-head bearing additional plows. Anchor-shaped hooks suspend the beams.

Claim.—1. The springs *w w w w*, in combination with the swinging frames D D and pendent arms *o*, for the uses and purposes described.

2. The double cross-head H, in combination with the inner rails of the swinging frames D D, for the uses and purposes described.

3. The anchor-shaped pendent hooks *s*, in combination with the staples *f*, when used in a lateral-moving cultivator, substantially as described.

4. The metallic shanks *i* of the drag-bars, passing through the eyes of the pendent arms *o*, in combination with adjusting-nuts and spiral springs, substantially as described.

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PATENT CONVENTION.

The following call has been issued by the members for the United States of the standing committee of the Vienna International Patent Congress, announced in OFFICIAL GAZETTE, Nos. 17 and 18, vol. 4, October 21 and 28, 1873:

"The difficulties to which American inventors are subjected in attempts to secure some protection for their inventions in foreign countries are well known. The unsatisfactory condition of legislation relating to patents has been the theme of discussion in many quarters within the last few years, especially as the frequent recurrence of international expositions has made the defects therein more and more apparent.

"In connection with the late exposition at Vienna there was convened an international congress for the purpose of considering the subject of patent protection for inventions. This congress appointed a permanent committee, the members of which were authorized to organize branch associations in their respective countries, and, in general, to adopt measures in aid of the movement inaugurated at Vienna.

"The resolutions adopted by that congress have already been published in this country, and will be recognized as embodying, with some few exceptions, the principles of the American system. The interest manifested in the discussion of the resolutions and the unanimity with which they were adopted, afford encouraging signs of ultimate success, in which none are more deeply interested than the inventors of this country. But our friends abroad greatly need the information and aid which we can readily furnish, for we are the foremost nation in the world in the liberality and success of our patent system.

"Under the authority vested in us, we, therefore, invite all those interested in any way in the subject of patent protection to assemble in convention at Washington, D. C., on Thursday, January 15, 1874, for the purpose of discussing this topic, and, if thought desirable, of organizing a United States Patent Association.

"J. M. THACHER,
"HAMILTON A. HILL,
"WILLIAM P. BLAKE,
"*Of the committee.*"

CASE OF THOMAS H. UPPERMAN.

U. S. PATENT OFFICE,
December 19, 1873.

Order of the Commissioner of Patents refusing to recognize Thomas H. Upperman, or any firm of which he is a member, as a patent agent.

U. S. PATENT OFFICE,
December 18, 1873.

The following charges and specifications were, on or about the day of their date, duly served upon Thomas H. Upperman, of Washington, D. C., a patent agent practicing before the United States Patent Office:

U. S. PATENT OFFICE,
WASHINGTON, D. C., *October* 8, 1873.

Thomas H. Upperman, Esq.:

SIR: You are hereby notified to appear before the Commissioner of Patents, on or before Thursday, the twenty-third day of October, 1873, and show cause, if any exist, why the Commissioner of Patents, in virtue of the authority conferred upon him by the seventeenth section of the act of Congress approved July 8, 1870, and entitled "An act to revise, consolidate, and amend the statutes relating to patents and copyrights," should not refuse longer to recognize you as a "patent agent,"

by reason of "gross misconduct," more particularly with reference to the matters hereinafter named in charges and specifications:

CHARGE I.—That he, the said Thomas H. Upperman, in his practice as agent or attorney before the U. S. Patent Office, has wilfully, fraudulently, and corruptly withheld or misappropriated money paid to and received by him as a fee or fees of the U. S. Patent Office.

Specification first to Charge I.—That on or about the eighteenth day of March, 1873, one James Rice, of Batavia, Clermont county, Ohio, for whom the said Thomas H. Upperman was then acting as his authorized agent or attorney in the matter of a certain application for patent for an improvement in "Horse-Powers," filed October 17, 1872, and passed for issue October 30, 1872, paid to him, the said Thomas H. Upperman, as the final Office fee in said case, to be applied by him as such, the sum of $20.00, which sum was never so applied by him in said case, but was wilfully, fraudulently, and corruptly withheld or misapplied, and the said application thereby became forfeited.

Specification second to Charge I.—That on or about the twenty-sixth day of January, 1872, one Susan H. Hackley, of Grand Ledge, Eaton county, Michigan, for whom the said Thomas H. Upperman was then acting as her authorized agent or attorney in the matter of a certain application for patent for an improved "Hair Tonic," filed September 25, 1871, and passed for issue November 1, 1871, paid to him, the said Thomas H. Upperman, as the final Office fee in said case, to be applied by him as such, the sum of $20.00, which sum was never so applied by him in said case, but was wilfully, fraudulently, and corruptly withheld or misapplied, and the said application thereby became forfeited.

Specification third to Charge I.—That on or about the twelfth day of October, 1872, one Lewis M. Lusk, of Perryville, Ashland county, Ohio, for whom the said Thomas H. Upperman was then acting as his authorized agent or attorney, in the matter of a certain application for patent for an improved "Tie-Lifter," to be filed in the Patent Office by the said Thomas H. Upperman, paid to him, the said Thomas H. Upperman, the sum of $15.00 as the first Office fee in said case, to be applied by him as such, which sum was never so applied by him in said case, but was wilfully, fraudulently, and corruptly withheld or misapplied.

Specification fourth to Charge I.—That on or about the fourth day of August, 1873, Messrs. Scott and Hiltz, of Calais, Maine, for whom the said Thomas H. Upperman was then acting as their authorized agent or attorney in the matter of a certain application for patent for an improvement in "Fire-Escapes," filed June 23, 1873, and passed for issue July 12, 1873, paid to him, the said Thomas H. Upperman, as the final Office fee in said case, to be applied by him as such, the sum of $20.00, which sum was never so applied by him in said case, but was wilfully, fraudulently, and corruptly withheld or misapplied.

Specification fifth to Charge I.—That on or about the ninth day of July, 1872, one Francis Balduc, of St. Anne, Kankakee county, Illinois, for whom the said Thomas H. Upperman was then acting as his authorized agent or attorney in the matter of a certain application for patent for an improvement in "Corn-Planters," to be filed in the Patent Office by the said Thomas H. Upperman, paid to him, the said Thomas H. Upperman, the sum of $15.00 as the first Office fee in said case, to be applied by him as such, which sum was never so applied by him in said case, but was wilfully, fraudulently, and corruptly withheld or misapplied.

CHARGE II.—That he, the said Thomas H. Upperman, in his practice as a "patent agent," has wilfully, fraudulently, and corruptly withheld or misappropriated money paid to and received by him as a fee or fees of the Canadian Patent Office.

Specification first to Charge II.—That on or about the third day of December, 1872, one Lewis M. Lusk, of Perryville, Ashland county, Ohio, for whom the said Thomas H. Upperman was then acting as his authorized agent or attorney in the matter of a certain application for improvement in "Lifting-Jacks," to be filed in the Canadian Patent Office by the said Thomas H. Upperman, paid to him, the said Thomas H. Upperman, the sum of $116.00 as the Office fee or fees in said case, to be applied in whole or in part as such, which sum or any part thereof was never applied by him in said case, but was in whole or in part wilfully, fraudulently, and corruptly withheld or misapplied.

Specification second to Charge II.—That on or about the thirteenth day of January, 1873, one C. L. Wood, of Calais, Maine, for whom the said Thomas H. Upperman was then acting as his authorized agent or attorney in the matter of a certain application for patent for improvement in "Snow-Plows," to be filed in the Canadian Patent Office by the said Thomas H. Upperman, paid to him, the said Thomas H. Upperman, the sum of $46.58, and afterward, on or about the twenty-ninth day of January, 1873, the sum of $20.00, to be applied in whole or in part as the Office fee or fees in said case, which sums, or any part thereof, were never applied by him in said case, but were, in whole or in part, wilfully, fraudulently, and corruptly withheld or misapplied.

Specification third to Charge II.—That on or about the twelfth day of March, 1873, Messrs. Scott and Hiltz, of Calais, Maine, for whom the said Thomas H. Upperman was then acting as their authorized agent or attorney in the matter of a certain application for patent for improvement in "Fire-Escapes," to be filed in the Canadian Patent Office by the said Thomas H. Upperman, paid to him, the said Thomas H. Upperman, the sum of $66.50, to be applied in whole or in part as the Office fee or fees in said case, which sum, or any part thereof, was never so applied by him in said case, but was, in whole or in part, wilfully, fraudulently, and corruptly withheld or misapplied.

M. D. LEGGETT,
Commissioner of Patents.

The hearing was postponed until the fifteenth of November, ultimo, when the accused asked a further postponement of thirty days, to enable him "to answer the charges in the several papers, or to make good to clients and Office the amounts therein named," which was granted. On December 15, the accused asked a still further postponement, saying: "I cannot truthfully deny any of the allegations entirely, but yet I can as truthfully and earnestly say, that in no single act of mine, since I have been a practitioner before the Office, was wilful fraud *intended* toward my clients." Being informed, by letter from the Commissioner of the same date, that no sufficient reason was shown for granting further delay, the accused, on December 16, instant, addressed a letter to the Commissioner, in which he said: "I do not ask that you longer recognize me as a practitioner before the Office, because you are only performing your duty;" but requested to be allowed "to make the several sums good to Office and clients" without having his "name published as defrauding both, when no fraud was intended."

Upon a careful examination of the proofs and the records of the Office, it appears that the foregoing charges and specifications are fully proved, and they are also fully confessed, except as to the intent. The acts are admitted to have been done as charged, but a *fraudulent* motive is denied. This denial, however, consists in the mere statement of the accused, not under oath, and is the old story of the dishonest appropriation of the money of others, held in trust, with the expectation, perhaps, if fortunate, of replacing it. But the fraud and crime are in the acts of misappropriation, and cannot be excused by an alleged intent to return the money, which alleged intent, notwithstanding the extensions of time that have been granted, has not been followed up by the actual return of a single cent. In the meantime, the stream of complaints from other victims, upon which additional charges should be based, has continued to flow into the Office, even to the very last day set for hearing these charges.

There appears no palliation of the offenses herein charged, proven, and confessed, and it is therefore adjudged—

I. That the said Thomas H. Upperman has been guilty of such "gross misconduct" as to demand that the Commissioner of Patents shall refuse longer to recognize him as a "patent agent," and it is accordingly ordered, in virtue of the authority conferred upon the Commissioner of Patents, under section seventeen of the act approved July 8, 1870, that the said Thomas H. Upperman, or any firm of which he may be a member, be hereafter forbidden to practice before the Patent Office in any and all cases.

II. The examiners before whom any cases are now pending, or may be hereafter filed, in which the said Thomas H. Upperman, or any firm of which he is a member, may be acting as attorney, will at once notify the applicants, by letter forwarded to their own proper address, of the above order.

M. D. LEGGETT,
Commissioner of Patents.

Approved:
C. DELANO,
Secretary of the Interior.

DIGEST OF FOREIGN PATENT LAWS.

APPENDIX.

Extract from the Würtemberg General Industrial Code of 1836, containing the Laws and Regulations relating to Inventions and Patents.

ARTICLE 141. Patents may be granted by the government for the invention of a new manufacture, or of a new medium or method of manufacture; also for the first introduction of any such invention, provided it is worked only under the protection of a patent abroad.

ART. 142. The exclusive right accorded by a patent for invention or for introduction may not be infringed by another person during the period for which it is granted.

ART. 143. Any one desirous of obtaining a patent for invention or for introduction must deliver his petition at the government district office (Bezirk's Amt) of his domicile in Würtemberg, or of the place where he proposes to establish the manufacture in question; and to this petition must be annexed an exhaustive and true description of the thing for which he seeks to obtain a patent, together with such drawings, models, or samples as are necessary for the purpose of illustration; and he must specially indicate in the description the means and qualities in which the subject-matter of the petition manifestly differs from others which have already been in use, or have been introduced. This specification may be inclosed under seal, and in that case is not to be opened at the district office.

ART. 144. A certificate acknowledging the receipt of the petition is to be given to the person presenting it, stating the day and hour when it was received; but the petition itself, with the specification and inclosures accompanying it, is to be forwarded to the central board of trade and commerce, with a statement of the time when it was received.*

ART. 145. A patent applied for in accordance with these regulations will be granted, except in the following cases:

1. When the process for which it is sought to obtain a patent, or the means which are to be employed for the purpose, are shown to be at variance with existing laws;

2. When a patent for the same thing has already been previously issued;

3. When the alleged invention has notoriously been already in use in Würtemberg.

ART. 146. The period for which a patent is granted must not exceed ten years. An exclusive privilege for a longer term than the above can be accorded only by an act of parliament. The grant of a patent is to be publicly notified.

ART. 147. The specification which is sent in of the thing patented may, during the term of the patent, without the consent of the patentee—

1. Be communicated to the functionary, should he require it for his use, who is called upon to decide in any dispute arising in respect to the patent; and,

2. Be submitted to the inspection of another person, subject to the following conditions:

(*a*) That, in the case of patents for invention, the last year of the period for which they were granted shall have commenced; and, in the case of patents for introduction, that the first half of the period shall have elapsed;

(*b*) That the person applying to inspect the specification be a Würtemberg subject, and resident in the country;

* A direct report is to be immediately sent to the ministry of the interior announcing the receipt of the petition for a patent, with the name, condition, and domicile of the applicant, or of his representative in Würtemberg, (if a foreigner;) describing the nature of the patent, and stating the day and hour when the application was received. (*Ministerial Instruction of April 24, 1850.*)

(c) That the said person shall prove that he has an interest in obtaining a knowledge of the specification; and,

(d) That he shall give sufficient security that he will neither work the invention himself nor furnish any other person, within the Kingdom or abroad, with the means and opportunity of working it, during the term of the patent, without the consent of the patentee.

Previous notice must be given to the patentee before a request to inspect a specification is acceded to; and a sufficient time must be allowed him to urge any objections to it.

ART. 148. An annual tax of from five to twenty florins ($2.05 to $8.20) is payable for a patent during the period for which it is in force; the first payment is to be made when the patent is issued, and it is to be repeated at the commencement of each year of the period. When a patent ceases to be valid, before the expiration of the term for which it was granted, the patentee is released from the payment of the tax for the year which has not yet fallen due.

(Section 121 of the ministerial order of March 20, 1851. Foreigners applying for patents must furnish the authority to which they deliver their application, (Article 143,) with a reference to some native of Würtemberg, who will be responsible for the payment of the patent tax.)

ART. 149. Any one who has obtained a patent for less than ten years can obtain an extension for that term by applying for it, before the beginning of the last year, and, in respect to patents for introduction, before the expiration of the first half of the period for which it was originally granted. A tax, as prescribed by Article 148, is payable for every year of extension. The extension of a patent and the fact of its having been granted are to be publicly notified.

ART. 150. A patentee may establish any number of works, for the purpose of carrying out his invention, subject to the general laws of the Kingdom, without being tied down to the seat of his right of citizenship or domicile; and he may transfer the privilege conferred by the patent, during the time it is in force, to other persons, or he may take them into partnership. A patent right, if the patentee dies before its expiration, passes to his heirs for the remainder of its term.

(Articles 150 to 153, relating to the penalties for infringing a patent, were repealed by the subsequent law of 1842, a translation of which will be found in the Appendix.)

ART. 154. A patent granted for the improvement of an invention already patented is limited to the improvement itself, as manifested by the distinguishing characteristics pointed out in the specification, and it confers no right on the patentee to the other portions of the invention already patented. On the other hand, the original patentee is not allowed to avail himself of an improvement for which another person has obtained a patent.

ART. 155. A patent is to be considered as null and void—

1. If, before the receipt of the specification of the invention at the district office—

(a) Another person had applied for a patent for a similar invention in the form prescribed by Article 143; or

(b) If the thing patented had already been in use in the country, or in a foreign state, without the protection of a patent for invention or introduction, or had been so clearly described in some public print or work as to enable any person technically acquainted with the subject to apply it;

2. If the specification sent in (Article 143) was silent as to some integral part of the invention, upon which its complete application depended, or had incorrectly represented that which had been accepted as the reason and object of the patent;

3. If it should be proved by another Würtemberg subject that he was the inventor, and that the patentee had appropriated the invention by unfair behavior toward him.

The provision contained in 1 *b* has a limited application if the invention had already been used by another person before the patent was applied for, but had been kept secret. In that case, the patent granted subsequently remains valid, but its operation is not to extend to the persons by whom the thing patented was used before the patent was applied for.

ART. 156. A patentee who has concealed or who has incorrectly described an essential part of his invention, with a view to keeping his process a secret after the lapse of the term for which the patent was granted, renders himself liable to the penalty for fraud; and if the process in question was injurious to the public, to the additional penalty incurred thereby. (Section 123, ministerial order of March 20, 1851.) Complaints in regard to any curtailment or violation of the right conferred by a patent are to be addressed to the district police office; the latter, in cases where there is a question of confiscating counterfeited tools, and apparatus and articles produced by the use of such tools and apparatus or counterfeited manufactures, or where there is a question of the repayment of the value of such articles, has either to decide independently within the limits assigned to the higher officials by section 98 of the administration act, or is to refer the matter to the decision of the provincial government. (Section 124, ministerial order of March 20, 1851.)

The decision in regard to disputes arising out of the declaration of the nullity or extinction of a patent rests, in the first instance, with the ministry of the interior, which directs the grant of patents. Should a complaint of infringement of patent rights, when heard before a functionary subordinate to the ministry of the interior, be met by the objection that the patent is null and void, or has expired, the objection is to be referred to the ministry of the interior; in the meantime, however, unless other objections stand in the way, the necessary instructions must be issued by the authority in question for the protection of the patentee.

ART. 157. A patent for invention ceases—

1. When the period for which it was granted has expired;

2. When it is relinquished by the holder;

3. If the patentee has failed to put it in operation in Würtemberg for two years from the date of the grant; or if, after having put it in operation, he has ceased to work it for two years consecutively, without giving valid grounds of impediment in either case;

4. If the process for which the patent was granted, or the method applied for the purpose, is shown to be incompatible with the laws.

ART. 158. A patent for introduction becomes extinct—

1. For the same reasons as those for a patent for invention;

2. When the patent or one of the patents by which the invention was patented abroad at the time the home patent for introduction was granted has expired.

ART. 159. The invalidation as also the extinction of a patent, when the latter occurs before the expiration of the term for which the patent was granted, are to be publicly notified.

ART. 160. When a patent has expired, any Würtemberg subject has a right to examine the specification of it which was sent in. It is at the discretion of the government to publish it in print or not.

Law of June 29, 1842, relating to Patents for Invention and Introduction.

William, by the grace of God King of Würtemberg:

In pursuance of the reservation made by the contracting states in concluding the customs union treaties, to come to an understanding with a view to the removal as soon as possible of all impediments to commercial intercourse arising out of privileges conferred by patents for invention, as to certain general principles in regard to the issue of such patents, and in pursuance of the negotiations which have taken place on the subject between the states of the union, we hereby, after consulting our privy council, and with the consent of our faithful estates, order and enact as follows:

ARTICLE I. The grant of patents for invention and introduction of new manufactures, manufacturing mediums or processes, even under the existence of the preliminary conditions laid down in Articles 143 to 145 of the revised general industrial code (Revidirte Allgemeine Gewerbeordnung) of August 5, 1836, depends on the discretion of the government, to be exercised according to the special circumstances of each particular case.

ART. II. The provisions of Article 145, No. 3, and Article 155, No. 1 *b*, of the general industrial code in respect to Würtemberg, are to apply henceforth to the whole territory of the customs-union. In like manner, in applying the provisions of Article 147, No. 2 *b*, and Article 155, No. 3, of the general industrial code, the subjects of the other states composing the customs union are to enjoy the same consideration and treatment as Würtemberg subjects.

ART. III. A patent for introduction for an invention by the subject of a union state, which has already been patented by him in another union state, can be lawfully acquired only by the inventor in question or by his legal successor.

A patent obtained by another person in contravention of this stipulation is subject to a declaration of nullity. (Revised industrial code, Articles 155 to 159.)

ART. IV. A patentee has an exclusive right to produce the patented article during the duration of the patent, and, if the patent is granted for a new mode of manufacture or for a machine or manufacturing tool, an exclusive right to apply the patented medium or process of manufacture. Any one making use for purposes of trade of a patented process or medium of manufacture, without having acquired the right to do so from the patentee, incurs the penalty of forfeiture, for the benefit of the rightful party, of the tools or apparatus which he has imitated, and also of the articles produced by their application; and if the articles in question have already been disposed of, or have been worked up with other things, he is bound to repay the value of them to the patentee at their selling price.

These provisions do not extend to any person using a patented medium or process of manufacture in *bona fide* ignorance of a patent right having been granted to some one else; but the person so acting, on a complaint being lodged by the patentee, is not only prohibited during the period of the patent from the further use of the said medium or process, but also from selling such articles not actually disposed of as have been produced by the infringement of the patent, in order to escape the penalties imposed by the preceding paragraph of this article.

ART. V. Subject to the same distinction as that which is set forth in Article IV, any one producing a patented manufacture without the consent of the patentee is liable, on the complaint of the latter and for his benefit, to confiscation of the manufactured articles, and to be called upon to repay the equivalent of the value, at their selling price, of articles already sold or worked up with other manufactures; or he may be merely inhibited from their further production and sale.

ART. VI. A patentee has no right to proceed against any one merely dealing in articles produced by a patented invention, or importing them from abroad, or only using the patented invention for other than manufacturing and industrial purposes.

ART. VII. The foregoing Articles IV to VI take the place of Articles 151 to 153 of the revised general industrial code of 1836.

Patents granted previous to the promulgation of the present law are governed, during the period for which they were issued, by the provisions of the revised general industrial code, which retain their validity in this respect even when at variance with the present law.

Our minister of the interior is charged with the execution of the present law.

(Signed) WILLIAM.

COMMISSIONER'S DECISIONS.

HYATT AND FRENCH.—*Interference.*

[*Appeal from the decision of the Board of Examiners-in-Chief, in the matter of the application of Thaddeus Hyatt and the patent of James French, granted February 13, 1872.—Decided December 6, 1873.*]

In a controversy between two independent inventors, where it appeared that one was first to conceive an invention and construct a device embodying it, but rested for twelve years before attempting to use the invention or apply for a patent for it, and in the interim the other invented, perfected, patented, and largely introduced the invention: *Held*, that the latter was, in contemplation of law, the prior inventor.

An inventor, through want of diligence in the reduction of his invention to practice, may forfeit whatever right he may have thereto to another independent and more diligent inventor of the same thing.

The questions of abandonment and forfeiture, in an interference, are distinct questions; for abandonment of an invention operates in favor of the public, and forfeiture in favor of another inventor.

LEGGETT, *Commissioner:*

I have heretofore, on various occasions, after mature

consideration, fully expressed my views upon the questions presented in this case, particularly in the case of *Diston* vs. *Emerson*, (Commissioner's Decisions, 1871, p. 162,) which is precisely parallel in the principles involved. The decision of the Examiner of Interferences, which was complimentarily referred to and indorsed by the Board of Examiners-in-Chief, fully and correctly states the facts proved and the law applicable to them, and relieves me from the necessity of going over the same ground in writing an opinion. His decision is as follows:

The invention forming the subject of this controversy consists in providing a vault-light with an air-space between its upper and lower lenses, for the purpose of preventing the "sweating" of the inner side of the glass.

French's application was filed on August 5, 1871, and a patent was granted to him on February 13, 1872.

Hyatt's application was filed on February 19, 1873, one year and six days after the issue of French's patent.

The testimony in the case on behalf of the patentee consists of the deposition of French only, wherein he swears that he first conceived the idea of the disputed invention about one year before filing his application for patent, (July, 1870,) that he "first made a model in December, 1871;" that the first "work done" by him was in November, 1871, or near that time; that the use of the invention in Chicago, since the fire, has been "quite extensive;" that the French Vault-Light Manufacturing Company is now making and selling his invention under his patent involved in this controversy; that he has "spent his best energies" to introduce the invention, devoted all of his time, and invested all he is worth in it, and that the business has proved successful. I also find that he is an independent inventor.

The testimony in the case on behalf of Hyatt proves that he made Exhibit "No. 1" in January, 1861, (see depositions of Lobdell and Wilde,) and this is admitted on the part of French. Wilde swears that he put the glass in the Exhibit (No. 1) in the winter of 1860, or very early in the spring of 1861. (Ans. 4.)

The applicant, Hyatt, who was sworn on his own behalf, says that he went to Europe in 1861, because of ill health, and did not return to active business until the autumn of 1872; that the invention at issue was conceived by him and put in the shape illustrated in Exhibit "No. 1" before his leaving for Europe in 1861; that owing to his sickness and absence from home he has not been able to do anything toward putting the disputed invention in practical use, and that to his knowledge it never has been in use.

Exhibit "No. 1" perfectly illustrates the invention as it is claimed by Hyatt, but it differs in construction from the invention shown by French, in that the glass is set in a single frame of iron, while French employs a double iron frame.

The evidence, then, is that Hyatt was the first to conceive the invention and the first to embody it in a permanent condition in a model. All this he did twelve years before the filing of his application. In the mean time—viz., in July, 1870—the same invention was conceived by French, who diligently followed up the conception by the making of a model and the practical application of the invention to public use; and without delay he conferred upon the general public a knowledge of the invention through the medium of a patent.

If it be found in the present instance that Hyatt's invention was reduced to practice before the making and patenting of the invention by French, his right to receive a patent is good in law, for the proof in the case furnishes no evidence of abandonment on his part. If, on the other hand, it be found that Hyatt had not *reduced his invention to practice* prior to the time above named, then it will be necessary to inquire whether he has used reasonable diligence to that end. This question—that is, forfeiture—is entirely distinct from that of abandonment; for abandonment always operates in favor of the public, and it can only be adjudged against one who has perfected and reduced his invention to practice, whereas *forfeiture* takes place in regard to an invention which has not been carried to that state of perfection where the courts will hold that it has been *reduced to practice*, and it operates in favor of a third party. (*Jenkins* vs. *Barney & Berry*, O. G., vol. 3, p. 112.) An inventor, through want of diligence in the reduction of his invention to practice, may forfeit whatever right he may have thereto in favor of another independent and more diligent inventor of the same thing.

Now Hyatt made the model, Exhibit "No. 1," in January, 1861, and put it away in his closet, where it remained until produced in this case. It was never tested; never put to any use whatever. Under the authority of many decisions the making of this model must be held to have been a mere experiment, and therefore not such a reduction of the invention to practice as would defeat a patent granted to a subsequent meritorious inventor. In *Cahoon* vs. *Ring*, (1 Fish., p. 409,) Justice Clifford, in his charge to the jury, said: "Should you find that it (the machine) was made and completed prior to the Cahoon invention, and that it does embody the improvements in the Cahoon patent, * * * * you will then inquire whether it was in point of fact a machine completed and reduced to practice in contradistinction to an experimental machine, or a machine made by the supposed inventor, in the prosecution of experiments and inquiries; and that unless it appears to your satisfaction that such a machine was actually used as a seed-sower in sowing seed for agricultural purposes, you are warranted in presuming that it was a mere experiment, and if so, you are instructed that it would not invalidate the plaintiff's patent." In *Parker* vs. *Hulme*, (1 Fish., p. 53,) Judge Kane said: "It is not enough for the defendant to show that wheels like the patented ones were *made*, but that he must also show that they were *used* before the plaintiff's invention. This is the test of what is required to defeat the title of a patentee of an improved machine." (See, also, *Pfeffenhausen* vs. *N. Y. G. P. Comb Co.*, 2 Fish., p. 68; *Seymour & Morgan* vs. *Marsh*, O. G., vol. 2, p. 677; *Gaylor* vs. *Wilder*, 10 How., S. C. Rep., p. 477; *Johnson* vs. *Root*, 2 Fish., p. 207; *Ellithorpe* vs. *Robetson*, ib., p. 85; *Rich* vs. *Lippincott*, ib., p. 7.)

Upon the question of diligence, Hyatt has no standing whatever. He was negligent in regard to this invention to a degree which nothing but an utter incapacity to transact business or complete poverty can excuse. His sickness, which is the burden of his plea, did not prevent his attending to other business, nor did it interfere with his prosecuting to success a number of applications for patents. (See list of patents referred to in arguments of both parties.) Upon the evidence, therefore, it must be held that the reasonable diligence which the law demands in such cases has not been exercised on the part of Hyatt. (*Ball* vs. *Fletcher*, C. D., 1870, p. 97; *Wheeler* vs. *Peters*, ib., p. 141; *McClure* vs. *Miller and Mason*, ib., p. 122; *Duchemin* vs. *Richardson & Stein*, ib., p. 31; *Hussey* vs. *Willard*, C. D., 1871, p. 297; *Diston* vs. *Emerson*, ib., p. 162.)

Priority of invention in contemplation of law is accordingly adjudged to be with the said James C. French.

J. E. M. BOWEN,
Acting Examiner of Interferences.

JULY 22, 1872.

The decision of the Board of Examiners-in-Chief is affirmed, and priority awarded to French.

DANIEL F. HAASZ.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Daniel F. Haasz, for* PORTABLE FARE-BOXES.—*Decided December 8, 1873.*]

Practice as to claims—

A claim in which the words "or their equivalents" were used held to be ambiguous, and disallowed.

Whenever the words "equivalent" or "equivalents" occur in a claim, in such a connection as to have an equivocal signification, their employment, in that connection, must be inhibited.

The use of any particular word or phrase is not to be absolutely prescribed or proscribed; but no ambiguous or useless word or phrase should be allowed in a claim. Judicious care must be exercised in each case, to the end that claims shall clearly, definitely, and correctly comprehend the invention, and nothing more.

LEGGETT, *Commissioner:*

This invention consists of certain improvements in fare-boxes for the reception of coin or metallic passenger-checks, on city railways, and its object is to prevent the abstraction of the checks or coin from the box. Two sets of converging elastic spring-rods are placed, for this purpose, one above the other, in the chute leading from the bottom of the hopper to the large check compartment or depositary in the lower portion of the box. Applicant illustrates these spring-rods as composed of metal and of bristles, and says—

I do not desire to confine myself to the use of metal spring-rods arranged in precisely the manner above described, as rods formed of bristles or of other suitable materials having an inherent spring may be substituted for the rods, as illustrated in the sectional views, Figs. 5 and 6 of the drawings.

He claims—

A fare-box in which a channel for the downward passage of a coin or check is bounded by converging rows of independent spring-rods or their equivalents, substantially as and for the purpose herein set forth.

The Examiner objects to the words "or their equivalents" in the claim, upon which objection this appeal is taken. The grounds of objection stated are, first, that these words deprive the claim of the necessary accuracy and precision; second, that they are superfluous; and, third, that it is for the courts to determine what constitute equivalents.

The third objection is not well taken. The determination of what are and what are not mechanical equivalents constitutes the major part of the duties of the examining corps. It is only after patents are granted that the question belongs to the courts. The other objections are those usually urged against the use of these words in claims.

I know of no rule or reason for prescribing or proscribing the use of any particular word or phrase in connection with a specification or claim. Anything of the sort would necessarily be arbitrary and unreasonable. All the words of our language are, of course, as free to the intelligent and appropriate use of inventors in their specifications and claims as to anybody else; but there are some words and phrases which are capable of being used equivocally, and perhaps the words *equivalent* and *equivalents* are the most conspicuous examples. Whenever they occur in such a connection as to have an equivocal signification, their employment in that connection must be inhibited. This is as far as a rule of practice in the matter can go. Under this rule judicious care must be exercised in the consideration of each particular case, where these words occur, to the end that the claims shall clearly, definitely, and correctly comprehend the alleged subject-matter of invention and nothing more. No ambiguous or useless word or phrase ought ever to be allowed in a claim. It is well known to those versed in patent law, that equivalents are comprehended in every claim whether specified or not, and that the use of the word in a claim cannot enlarge its legal scope. Wherever its use would merely serve to convey a magnified idea of the scope of the patent to the uninformed, it surely ought not to be allowed. I think its employment in a claim will seldom be found to be other than useless or mischievous, and it should, therefore, always be closely scrutinized by Examiners whenever it occurs. The rule excluding new matter in reissues especially emphasizes this course. Yet the Office would not be justified in holding the word to be of itself so inherently vicious as to be, under all circumstances, absolutely precluded.

In this case the applicant shows and describes two kinds of spring-rods, or, rather, spring-rods made of two different materials, one of metal and the other of bristles, which are probably equivalents. He argues that the words, "or their equivalents," in the claim, refer to these interchangeable spring-rods, or materials for spring-rods.

I think it doubtful, however, whether these words, as collocated in the claim, would not be more likely to be understood to refer to the "converging *rows*" of spring-rods than to the individual spring-rods. If they are merely intended to refer to the latter, such might be made to appear unmistakably by inserting words which would limit the "equivalents" to those described in the specification. Then the full benefit of all that the applicant has described as equivalents in his specification will be definitely and expressly secured to him in his claim. The applicant would probably prefer, however, to erase the words than to thus limit them.

As the claim now stands it is ambiguous, and the decision of the Examiner is, therefore, sustained.

HENRY W. GOULD.—*Appeal.*

[*Appeal from the decision of the Board of Examiners-in-Chief in the matter of the application of Henry W. Gould, for Letters Patent for an* IMPROVED MODE OF ADVERTISING.—*Decided December 9, 1873.*]

The mere attachment of an advertisement to an ordinary anchored balloon, without specially adapting the balloon to the purpose of displaying advertisements, held not to constitute a patentable invention.

It is a common right to place an advertisement in any eligible position for displaying it where not legally prohibited, and there is no more ground for patent on account of the selection of an anchored balloon than on account of the selection of any other conspicuous object.

The idea of attaching an advertisement to a balloon, instead of some other well-known object, cannot be patented.

THACHER, *Acting Commissioner:*

Applicant claims—

An advertising apparatus, consisting of a balloon, A, one or more supporting ropes, B, and hand-bills or placards D, and either with or without a supply-pipe, C, the whole arranged and operated substantially as described.

The employment of more than one "supporting rope" and the presence of the supply-pipe being alternative in the claim, the essential elements of the advertising apparatus claimed are the balloon, anchor-rope, and advertising placard.

Much has been said in the arguments of counsel filed in this case, in relation to the adaptation of the means employed to the end sought. This may all be laid aside, for the specification describes no peculiarity in the construction of the balloon, the anchorage to the earth, or the advertising sign. A balloon held at a certain height above the earth by an anchor-rope, has been known and used for various purposes for a great length of time. Applicant's so-called invention, then, as now claimed, consists simply in the attachment of an advertisement to an object already in use, and without changes for adapting it to the special purpose. This does not present patentable novelty. Whatever may have been done in adapting the balloon to the purposes of advertising may present patentable invention; and, as the Examiner states, has already been recognized as such by the Office.

The fact that an advertisement has never been attached to a balloon before is not material to the issue. It is a common right to put an advertisement anywhere,

unless prevented by legal prohibition. There is no more ground for the grant of the patent sought by this applicant than to one who should for the first time attach an advertisement to a carriage, train of cars, lofty building or flag-staff, suspend it over a street, paint it upon a cliff, set it on a high hill, or put it in a thousand other places, which have suggested themselves to enterprising business men, and have been found by them ready for the purpose. There is nothing in this case, as presented, but the *idea* of attaching an advertisement to a balloon instead of some other well-known object. A patent cannot be allowed for this idea merely.

The decision of the Examiners-in Chief is affirmed.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

BENJAMIN J. GREELEY, COMPLAINANT IN EQUITY.

[*In the matter of the application of Benjamin J. Greeley, for patent for* IMPROVEMENT IN SUSPENDER-STRAPS.—*Decided November* 14, 1873.]

In two devices—each being a combined button-hole and link—where the same elements, in the same relations, enter into the same combination, and operate in the same way separately, and as a combined device, the devices are the same.

Where the opening for receiving the button in each device was longer than the diameter of the button, the fact that in one the opening was elongated in a direction at right angles with the link, and in the other in a direction parallel with the link, was held to be a mere structural change.

Structural changes of form and proportion, although they improve the operation and produce a much better result, yet one of the *same kind*, are only different and better forms of embodying the same idea, and illustrate the difference between mechanical skill and inventive genius.

[*J. E. Maynadier*, for complainant.

Marcus S. Hopkins, for Commissioner of Patents.]

SHEPLEY, *J.*:

This is an application for a patent for an alleged improvement in suspender-straps. The application was filed in the Patent Office September 13, 1869, with two claims, which were rejected. On December 16 they were withdrawn and two others presented in lieu of them. These were rejected and withdrawn, and on the 23d of February, 1870, the present claims were presented. These claims were rejected by the Examiner February 28, and, on appeal, by the Board of Examiners April 27, and by the Commissioner on appeal from the Board, September 17, 1870, and by the Supreme Court of the District of Columbia, on appeal from the Commissioner May 3, 1871.

The bill in equity in this case is filed under the provisions of the fifty-second section of the act of July 8, 1870, and is virtually an appeal from the decree of the Supreme Court of the District of Columbia rejecting the application for the patent.

The applicant claims, in the second and most material and important claim to be considered in his application, "the metallic button hole and link combined above described, consisting of a single piece of metal shaped as shown, so that the button used may be of a diameter greater than the width of the device." The first claim, which is for a combination of the combined button-hole and link, with a piece of webbing with a button-hole at its free end and a slide, must stand or fall with the second claim. The question presented is whether the references cited in the record anticipate the complainant's alleged invention of the metallic button-hole and link combined, as described and claimed in the second claim.

The English patent of R. A. Brooman, granted in 1861, and cited in the references on the record, is for a combined link and button-hole. It has, first, a link for the purpose of attachment to the web; second, an enlarged body of the device to admit the insertion of the button; third, a loop at the bottom for retaining the button. This loop at the bottom also performs the function of admitting the button to pass more easily through the enlarged opening made to receive the button by receiving the shank of the button as the button is being passed through the opening.

The device of Greeley has, first, a link for attachment to the web; second, an enlarged body of the device for the insertion of the button; third, the loop at the bottom for retaining the button. Each one of these stands in the same relation to the others and performs the same function in Greeley's as in Brooman's device. The same elements enter in the same relations into the same combination, and they operate in the same way, separately, and as a combined device. In Greeley's device the opening to receive the button has its greatest diameter in a direction at right angles with the link, while in Brooman's the longest diameter is in a direction parallel with the link, so as to admit the button in a direction at right angles with the direction in which it is admitted in Brooman's. To accommodate this change of direction loops are also made on each side of the opening as well as on the bottom, to receive the shank of the button as it is being passed through the metallic loop. This adds much to the convenience of the device, and works better in use, and receives a button sidewise.

It is contended that it is impossible to use a button with Brooman's device whose diameter is greater than the width of the device, and no change in the relative proportion of the parts will make it possible. "Width" is used by the claimant to express the shorter diameter of the device as a whole, and not the shorter diameter of the operative part. It is easy to see that Brooman's device may be elongated so as to receive sidewise a button of greater diameter than the width of Brooman's device. Neither of them will admit a button of greater diameter than the length of the opening. In its relation to the button the parts of the device intended to receive the button are to be considered, and in each of them the opening made to admit the button is longer than the diameter of the button in the line of the plane through which the button enters, and less than the diameter of the button measuring at right angles with that line. The differences between the two devices are merely structural changes. Such structural changes of form and proportion, although they improve the operation without changing the mode of operation, and produce a much better result, but one of the same kind, are only different and better forms of embodying the same idea, and illustrate the difference between mechanical skill and inventive genius.

As compared with Brooman's invention, the complainant's device as a combined device is not a novel one, but possesses the same elements operating in the same way to produce the same result, and is not patentable.

Bill dismissed.

APPLICATIONS FOR EXTENSION.

Applications having been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

26,785.—Waste-Cocks of Hydrants.—Granted to GEORGE W. ROBERTSON, January 10, 1860. Application filed October 3, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,808.—Manufacture of Boots and Shoes.—Granted to FRANCIS D. BALLOU, January 10, 1860, and reissued April 15, 1862. Application filed October 4, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,822.—Tool for Cutting Round Tenons.—Granted to LEVI A. DOLE, January 10, 1860. Application filed September 30, 1873. Testimony closes December 9, 1873. Hearing December 24, 1873.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NELSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOSHINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KINDLER and WILHELM ROSEBROCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ARNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SEMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,297.—Couches for Railroad-Cars.—Granted to EDWARD C. KNIGHT, February 28, 1860. Application filed November 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,303.—Fastening Saw-Handles.—Granted to JACOB NEIMEYER, February 28, 1860. Application filed November 26, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 20, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,337.—Table-Cutlery.—Granted to JOSEPH W. GARDNER, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,392.—Machine for Folding and Pasting Paper.—Granted to GEORGE K. SNOW, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,403.—Steam and Fire Regulators.—Granted to JOSEPH WOODRUFF, March 6, 1860. Application filed December 5, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,438.—Blackwashing-Molds for Casting.—Granted to WILLIAM FERGUSON and DAVID FERGUSON, March 13, 1860. Application filed December 10, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,447.—Chain for Timber-Bending Machines.—Granted to LEVI HEYWOOD, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,478.—Turning-Lathes.—Granted to WILLIAM SELLERS, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,485.—Lanterns.—Granted to AUGUSTUS TUPTS, March 13, 1860. Application filed December 19, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,545.—Fitting Sinks.—Granted to JAMES INGRAM, March 20, 1860. Application filed December 15, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,594.—Sewing-Machines.—Granted to L. W. LANGDON, March 20, 1860. Application filed December 13, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,656.—Horseshoe-Nail Machines.—Granted to WILLIAM TALLMAN, March 27, 1860. Application filed December 15, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,262.—Pare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,408.—Improvement in Composition for Kindling Fires, granted to ELIZABETH BELLINGER, December 13, 1859; reissued August 7, 1866, numbered 2,366.

Claim.—A self-lighting fire-kindler, made substantially as herein described.

26,410.—Improvement in Seed-Planters, granted to WILLIAM BLESSING, December 13, 1859.

Claim.—The arrangement of the top portion of the distributer, made with a semi lunar opening, and the recess under the covered portion of the said top, when the periphery of the said top is made with the chaff openings H, on either side of the reciprocating seed-bar, so that the said bar, by its reciprocating action, shall work out the chaff through the passages H H on either side of the seed-bar, and thus prevent choking the distributer.

26,434.—Improvement in Dispensing with Switches on Railroads, granted to WILLIAM WHARTON, Jr., Philadelphia, Pa., December 13, 1859; reissued April 3, 1860, numbered 942.

Claim.—The employment, in connection with the sidings or turn-outs on railways, of supplementary inclined and elevated rails, in combination with car-wheels so constructed as regards the said inclined rails, which are so arranged as regards the rails of the siding or turn-out, that the wheels may be elevated above and free from the control of the rails of one track and be placed under the control of those of another track, as herein set forth.

DISCLAIMERS FILED.

28,244.—GEORGE B. ARNOLD.—Ruffles, granted May 8, 1860.

The "Magic Ruffle Company" disclaims:

"So much thereof as allows the claim to include other than a band-ruffle combining the following characteristics and limitations: First, when made separately, ready to be attached to garments; second, with stitches formed by a series of loops passed through the fabric and secured; and, third, with a single series of stitches, which perform the double function of confining the gathers and securing the gathered fabric to the binding."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 9, 1873.]

7,018.—Butt-Hinge.—WILLIAM GORMAN, New Britain, Conn., assignor to THE RUSSELL AND ERWIN MANUFACTURING COMPANY, same place.—Case F. Application filed November 15, 1873. Term of patent 14 years.

7,019.—Door-Knob Rose.—WILLIAM GORMAN, New Britain, Conn., assignor to THE RUSSELL AND ERWIN MANUFACTURING COMPANY, same place.—Case G. Application filed November 15, 1873. Term of patent 14 years.

7,020.—Door-Knobs.—WILLIAM GORMAN, New Britain, Conn., assignor to THE RUSSELL AND ERWIN MANUFACTURING COMPANY, same place. Application filed November 15, 1873. Term of patent 14 years.

7,021.—Key-Hole Escutcheon.—WILLIAM GORMAN, New Britain, Conn., assignor to THE RUSSELL AND ERWIN MANUFACTURING COMPANY, same place. Application filed November 15, 1873. Term of patent 14 years.

7,022.—Frame or Stand of Grinding-Mills.—JOHN G. LANE and WILLIAM J. LANE, Millbrook, N. Y. Application filed August 4, 1873. Term of patent 14 years.

7,023.—Lamp-Shade.—WILLIAM L. LIBBEY, Boston, Mass., assignor to NEW ENGLAND GLASS COMPANY, same place. Application filed November 10, 1873. Term of patent 3½ years.

7,024.—Fly-Wheels.—JOHN G. BAKER, Philadelphia, Pa., assignor to ENTERPRISE MANUFACTURING COMPANY OF PENNSYLVANIA. Application filed November 21, 1873. Term of patent 7 years.

7,025.—Carpet.—HENRY HOSAN, East Orange, N. J., assignor to HARTFORD CARPAT COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,026.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,027.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,028.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,029.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,030.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,031.—Carpet.—HENRY HORAN, East Orange, N. J., assigoor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,032.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,033.—Carpet.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,034.—Carpet.—HARTLEY KNIGHT, Philadelphia, Pa., assignor to JOHN GAY, same place. Application filed November 28, 1873. Term of patent 3½ years.

7,035.—Floor Oil-Cloths and Carpets.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed December 2, 1873. Term of patent 3½ years.

7,036.—Floor Oil-Cloths and Carpets.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. J., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed December 2, 1873. Term of patent 3½ years.

7,037.—Floor Oil-Cloths and Carpets.—CHARLES T. MEYER and VICTOR E. MEYER, Bergen, N. Y., assignors to EDWARD C. SAMPSON, New York, N. Y. Application filed December 2, 1873. Term of patent 3½ years.

7,038.—Carpet.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,039.—Carpet.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,040.—Carpet.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,041.—Carpet.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,042.—Carpet.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,043.—Carpet.—ELMER J. NEY, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed November 29, 1873. Term of patent 3½ years.

7,044.—Carpet.—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

7,045.—Carpets.—HENRY NORDMANN, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed September 26, 1873. Term of patent 3½ years.

7,046.—Badge.—JOSEPH SEYMOUR, Syracuse, N. Y. Application filed February 10, 1873. Term of patent 7 years.

7,047.—Corners of Glass Show-Cases.—THOMAS VAUGHAN, Boston, Mass. Application filed October 31, 1873. Term of patent 7 years.

7,048.—Cooking-Stove.—NICHOLAS S. VEDDER and FRANCIS RITCHIE, Troy, N. Y., assignors to NICHOLAS S. VEDDER, same place. Application filed September 12, 1873. Term of patent 3½ years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date December 9, 1873.]

1,565.—Soap.—R. M. BISHOP & Co., Cincinnati, Ohio. Application filed August 26, 1872.

"the figure of a tiger."

1,566.—Cured Meats.—WILLIAM H. DAVIS AND Co., Cincinnati, Ohio. Application filed November 7, 1873.

"'Triangle Brand.'"

1,567.—Steel Corset-Springs.—FRANCES LEE EGBERT, Waterbury, Conn., and New York, N. Y. Application filed November 26, 1873.

"'Can't-break-ems.'"

1,568.—Bourbon Whisky.—E. A. FARGO & Co., San Francisco, Cal. Application filed November 25, 1873.

"'Spirit of '76, E. A. F. & Co., old Bourbon Whiskey;' man, gun, horse, and trees."

1,569.—Ammoniated Superphosphate Fertilizer.—J. M. RHODES & Co., Baltimore, Md. Application filed November 24, 1873.

"Three circles containing initials, and with interlocking circumferences."

1,570.—Cotton-Gin.—THE BROWN COTTON-GIN COMPANY, New London, Conn. Application filed November 22, 1872.

"'The Brown Gin.'"

1,571.—Carpets.—JOHN DORNAN, Philadelphia, Pa. Application filed October 30, 1873.

"'Monitor.'"

1,572.—Whisky.—EPHRAIM HOWE, New York, N. Y. Application filed September 8, 1873.

"'New Time.'"

1,573.—Oysters.—O. W. MILLER & Co., Baltimore, Md. Application filed December 4, 1873.

"an acute-angled triangle, in which are the firm-name, the business, and the place of business."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date December 9, 1873.]

ORIGINAL PATENTS.

145,268.—Hand-Truck.—NATHAN ADAMS, Altoona, Pa. Application filed March 25, 1873.

The frame of the truck has a shoulder against which the burden rests. The handle is slotted, and pins are so arranged as to lock the notched lever, which serves to secure the burden.

Claim.—1. The lever C, having grappling-hooks *b b* at its forward end, and a series of hooks, *c*, in its lower edge, in combination with the pins *a* of the slotted tongue B, substantially in the manner and for the purpose above set forth.

2. The truck-frame A, having the shoulders *a a* at the forward end for preventing the burden from coming against the wheels D D, substantially as described.

145,269.—Designer's Paper.—ABRAHAM AKERBOYD, Manchester, N. H. Application filed July 21, 1873.

The usual paper used by designers for textile fabrics is printed in checker-board pattern, (as to the stitch-squares,) to aid the eye in counting the same.

Claim.—The design-paper herein described, having every other space printed or dotted any light or dark shade, as and for the purposes specified.

145,270.—Harness-Buckle.—JOHN ALLEN, Squaw Grove, Ill. Application filed February 1, 1873.

The plate or frame has loops on two opposite sides, and studs or tongues on two adjoining sides. The straps are secured by means of a serrated wedge passed under the loop.

Claim.—The plate C, provided with pins *e w* and loops *f f*, in combination with the key-wedge O, having serrated or toothed side flanges, substantially as and for the purposes herein set forth.

145,271.—Game-Board.—ALBERT F. R. ARNDT, Detroit, Mich., assignor to THORNDIKE NOURSE and NOAH D. LAPHAM, same place. Application filed July 25, 1873.

The ball at the head of the inclined table-bed is thrown up by sudden pressure of the button at the foot, and finds its way among the fixed and loose pins and pockets, with such numerical result as may be, to the pools or bins below.

Claim.—A game-table having the inclined bed B, lever C, studs *b*, pins *d*, sockets *e*, stalls *i*, men D, ball F, and flange E, when said parts are constructed and arranged substantially as herein described and shown.

145,272.—Churn-Dasher.—GEORGE W. BARKER, St. John's, Mich. Application filed July 31, 1873.

A conical dasher forming a flaring expansion of a hollow rod, with a close diaphragm near its base, the part below the diaphragm being perforated for the passage of the cream, the rod and hollow cone to contain a cooling or warming fluid.

Claim.—A churn-dasher consisting of the hollow tube B, the conical base C with perforated rim D and diaphragm E, all constructed as shown and described.

145,273.—Cotton-Bale Tie.—GEORGE N. BEARD, St. Louis, Mo. Application filed November 7, 1873.

Claim.—The bale tie or fastening having a stiff back, A, horn B, ear or ears C D, and band ends E and *f*, the former end lying directly beneath the whole width of the latter, and holding it in place without aid from the cotton.

145,274.—Metallic Foil for Dental Purposes.—CHARLES E. BLAKE, San Francisco, Cal. Application filed November 10, 1873.

Claim.—As a new article of manufacture, platinum foil or leaf coated with gold, either upon one or both sides, substantially as and for the purpose above described.

145,275.—Dental Filling.—CHARLES E. BLAKE, San Francisco, Cal. Application filed October 4, 1873.

Claim.—A filling for teeth consisting of the usual base covered with a stratum of platinum or other metal approximating to the color of the enamel of the teeth, as set forth.

145,276.—Cooking-Stove.—LEWIS E. CLOW, St. Louis, Mo. Application filed May 29, 1873.

There is a dead-air space between the oven and the fire-pot section. A continuous flue passes around the front of the stove and on three sides of the oven, terminating in an extension-flue wide as the stove and contracted from front to rear, to furnish room for pot-holes over the oven. A two-way damper admits the products of combustion directly to the exit-flue, or compels them to pass around through the circuitous flue.

Claim.—1. The stove described, having the central portion A, with fire-box B and flue *a*, extending about the front and bottom of the part A, and also bottom, rear, side, and top of oven E, the two-way damper a^2, and the extension-flue F, constructed and arranged as described, for the purpose set forth.

2. The flue F, extending above the top plate of part E, and constructed with a contracted portion below, for the purpose of leaving space for the pot holes, and a gradually-expanding top above, to give increased surface for the radiation of heat, in combination with the flues *a* a^2 and two-way damper a^2, as described.

145,277.—Artificial Stone.—THOMAS CHRIMES, Jackson, Mich. Application filed November 6, 1873.

Claim.—The composition for artificial stone herein described, consisting of artificial pozzuolana, lime, and iron, combined with cement and sand by means of potash in solution, substantially as set forth.

145,278.—Ingot-Mold.—NEY CHURCHMAN, Pioche, Nev. Application filed August 16, 1873.

The bottom of the mold is slotted to receive removable wedge-shaped pieces, which are loosened when the metal is poured, to allow the bottom to expand without bulging.

Claim.—An ingot-mold having its bottom provided with slots or openings *b b*, in combination with corresponding wedges or keys *c*, substantially as and for the purpose above described.

145,279.—Smoke-Stack.—THEODORE F. CONKLIN, Fond du Lac, Wis. Application filed September 30, 1873.

Fan-beaters, with feathers running diagonally across their wind-surfaces, are attached by horizontal arms to an upright shaft, and a screw-wheel is arranged at the lower portion of said shaft, operating, by the force of the exhaust-steam, to cause the rapid revolution of the fan-beaters in the stationary rimmed cap of the smoke-stack, for arresting and pulverizing the sparks.

Claim.—1. The combination of the fan-beaters A A, the cap B, rim *b*, and screw-wheel C, attached, as stated, in and to locomotive and other smoke-stacks, substantially as and for the purpose hereinbefore set forth.

2. The combination of the fan-beaters A A and feathers *a a*, substantially as and for the purpose hereinbefore set forth.

145,280.—Carriage-Axle.—SIMEON S. COLE, Woonsocket, R. I. Application filed June 20, 1873.

Claim.—1. The axle-box having longitudinal ribs *k k*, provided with screws *l l* at their outer ends, and communicating with the axle through orifices *m*, filled with porous plugs *m'*, substantially as described, for the purpose specified.

2. The axle *a*, having the collar *h*, spiral groove *i*, and internal channel *k*, communicating with the exterior of the axle through porous plugs *e* in the orifice *e'*, substantially as described, for the purpose specified.

145,281.—Steam and Air Engine.—FRANK J. CROUCH, San José, Cal. Application filed September 27, 1873.

Claim.—1. The method herein described for working steam, consisting in introducing steam from the boiler into the steam chest and cylinder and superheating it at the moment it is introduced under the piston, as set forth.

2. The boiler B, in combination with the furnace A and open-topped cylinders D arranged to set into the fire-box and having suitable steam-connections, as set forth, and for the purpose described.

3. The cylinders C C, either with or without the air-valves *p*, in combination with their double cup-shaped pistons D D, pitmen F, and crank-shaft *f*, substantially as and for the purpose above described.

145,282.—Machine for Making Weaver's Harness.—JOHN H. CROWELL, Providence, R. I., assignor to THE KENDRICK LOOM-HARNESS COMPANY, same place. Application filed July 2, 1873.

In combination with traveling twine-carrying spools for forming the heddles, independent sets of traveling spools, together with vibrating needles, are used for attaching the heddles to the side bands. To form and preserve the loose, two arms, situated in the central vertical plane of the machine, are used in combination with the heddle-forming spools, the arm forming the loose reciprocating, the other arm stationary. To prevent the contraction of the heddle-eye on its discharge from the forming-fingers, a gage-rod is used, having an intermittent vertical movement, its flat top, around which the eye is formed, determining the length of the eye. The gage-rod has a slot for receiving the discharger which removes the knots from the forming-fingers.

Claim.—1. The combination and arrangement of the twine-carrying spools A^5 A^7, for forming the heddles, traveling eccentrically in paths, as described, with the continuously-revolving spools A^5 A^6 and the reciprocating needles c^1 c^2, for attaching the heddles to the side bands, substantially as herein set forth.

2. In combination with the heddle-forming spools A^5 A^7, the vibrating arm b^3, for selecting the loose of the harness during the formation of the heddles, and the stationary arm b^5, for preserving, with the rod b^6, the loose after it has been selected, substantially as described.

3. In combination with fingers w^1 w^2, or their equivalents, on which the knots of the heddle-eyes are formed, gage-bar *o*, for limiting the minimum size of the eyes, substantially as described.

4. In combination with the heddle-forming spools and devices w^2 w^3, for carrying out the twines to the side bands, the gage-rod *o*, having a vertically-reciprocating movement for raising each eye, after it has been formed, above the plane in which it was formed, to give room for the formation of the next, substantially as described.

5. The gage-rod *o*, provided with an open slot to give admission to the discharger for discharging the knots of the eyes from the fingers whereon they are formed, substantially as described.

145,283.—Wire Stand or Holder.—GEORGE D. DUDLEY, Lowell, Mass., assignor to EDWARD P. WOODS, DANIEL SHERWOOD, and C. H. LATHAM, same place. Application filed October 23, 1873.

The stand is formed of twisted wire, with a central socket in which revolves the stem or shaft of a basket made of the same material.

Claim.—1. The wire sleeve-bearing A, formed of the wires which form the braces B or legs C', constructed substantially in the manner described and specified.

2. The combination, with the shaft E, of the basket or receptacle I, substantially as described.

3. The combination, with a supporting-stand, as described, of the shaft-furnished basket E G, constructed substantially in the manner described and specified.

4. As a new article of manufacture, a wire stand or holder made up of a receiving basket, G, and shaft E, and a sleeve, A, and legs C', substantially in the manner described.

145,284.—Wire Bottle-Stand.—GEORGE D. DUDLEY, Lowell, Mass., assignor to EDWARD P. WOODS, DANIEL SHERWOOD, and C. H. LATHAM, same place. Application filed October 23, 1873.

The stand is made of twisted wire, with legs contracted at the upper end, forming a socket for holding the shaft of a horizontal wheel having hangers for the reception of bottles.

Claim.—1. The revolving wire holder, made up of the wheel A, shaft C, and pendent receivers *e f*, constructed substantially in the manner described.

2. In combination with the revolving holder, the base-stand, made up of the sleeve D and legs E, substantially in the manner described.

145,285.—Wire.—GEORGE D. DUDLEY, Lowell, Mass., assignor to EDWD. P. WOODS, DANL. SHERWOOD, and CYRUS H. LATHAM, same place. Application filed January 6, 1873.

Claim.—The wire A, having the longitudinal grooves in its faces, as herein described, as a new article of manufacture.

145,286.—Handle for Sheet-Metal Ware.—JAMES FALLOWS, Philadelphia, Pa., assignor to C. B. PORTER & CO., same place. Application filed August 11, 1873.

Claim.—The process of producing sheet-metal handles by fitting together two blanks of sheet metal, A and B, while in the straight form, as shown in Fig. 3, then filling with melted tin, and, after cooling, bending the same into the required form of handle, and, finally, immersing the said solid handle in a bath of melted tin to remelt the core, and thus permit of the same being run out, leaving the joints of the two plates A and B soldered together, substantially as described.

145,287.—Sewing-Machine.—JOHN FANNING and EDWARD NUGENT, Brooklyn, N. Y. Application filed November 1, 1873.

The looper or under needle is actuated by an eccentric, and its forward end is guided in a block, which is free to oscillate as the looper-bar is moved sidewise and longitudinally, and this block is also adjustable to insure the correct position of the looping-needle.

Claim.—The oscillating adjustable guide H, constructed as described, in combination with the eccentric K, bar G, and needle E, operating in connection with an eye-pointed perforating-needle, as and for the purpose described.

145,288.—Filter for Wine.—CHARLES W. FARCIOT, Kelley's Island, Ohio. Application filed July 14, 1873.

The false bottom is provided with an opening, closed by a sliding door, to give easy access to the true bottom of the filter for cleaning it.

Claim.—The false bottom C, having the sliding door C^1, covering-piece C^2, recess *a*, opening *b*, and grooves *c*, arranged substantially as and for the purpose set forth.

145,289.—Sash-Balance.—ROBERT FARIES, Decatur, Ill. Case B. Application filed April 19, 1873.

A volute spring, a fusee, and a cord, of a swinging pulley in such a manner that the vibration of the pulley enables the cord to run properly on the pulley, and wind correctly on the fusee.

Claim.—The combination, with the volute spring I, fusee C, and cord F, of the swinging pulley E, substantially as described and shown, for the purpose specified.

145,290.—Cigar-Box.—HENRY FOWLER, Detroit, Mich. Application filed January 21, 1873.

A rabbet at the top receives the ends of the cover and prevents end-thrusts, a strip on the under side of the cover, near the front, preventing side-thrusts.

Claim.—A cigar-box having its front, bottom, and back formed of a single piece of bent card-board, the same being secured to end pieces of wood, rabbeted as described, and having a card-board cover provided with a strip, G, as and for the purpose set forth.

145,291.—Wheel for Vehicles.—DEXTER B. FRENCH, Grafton, Vt. Application filed April 11, 1873.

Claim.—The rings B B', right angled in cross-section, the hub A having wooden bearings *c*, conical on their plane bearing-surfaces, with spaces A A between them, and the spoke-mortises *b*, and the bolts *c*, all combined substantially as set forth.

145,292.—Machine for Punching, Splitting, and Creasing Bridles.—JOSIAH B. GATHRIGHT, Louisville, Ky. Application filed March 5, 1873.

Claim.—1. The punch-bars H and K, with their punches, with their lines of punch-tubes adjustable with respect to each other, substantially as and for the purpose herein shown and described.

2. The punch-bars H and K, with their punches, and knife S, adjustable with respect to each other, substantially as and for the purpose herein shown and described.

3. The bar G, in combination with the punch-bars H and K, with their punches, also with knife S, substantially as and for the purpose herein shown and described.

4. The punch-bars H and K, with their punches, knife S, and variable chute F, arranged in relation to each other substantially as and for the purpose herein shown and described.

5. In combination with the knife S, the creasers T and T, substantially as and for the purpose shown and set forth.

6. In combination with the bars H and K, knife S, and chute F, the plates B B, with their openings E and *e*, and substantially as herein shown and described.

7. A machine combining the lines of punch tubes, a knife, and creasers, substantially as herein shown and described.

8. A machine for punching, splitting, and creasing the crown-piece of bridles, combining the frame A, cam-lever N, plunger M, bar G, punch-holders H and K and their punches, knife S, creasers T T, guide-chute F, flanges B B, and openings E, *e*, and *c*, substantially as herein shown and described.

145,293.—Steam-Generator.—ELBRIDGE GODDARD, St. Louis, Mo. Application filed June 7, 1873.

The steam-generator is provided with inclined circulating-pipes, which project beyond the fire-walls at both ends to facilitate repairs, and are connected at the front and rear at the lowest point, whereby a constant and rapid circulation is kept up.

Claim.—The combination of the boiler A, pipes C, C', D, E, G, and H, both ends of the pipes C C', the whole of the pipes D and G and E, and the outer end of the pipe H, outside of the fire-walls, inclosing the boiler, and all constructed, arranged, and operating substantially as and for the purpose shown and specified.

145,294.—Hydrant.—WILLIAM H. GRAHAM, St. Louis, Mo. Application filed August 21, 1873.

A recessed plunger has an upper packing-cup, with an adjustable sleeve slotted diagonally to contract and fit flush with the circumference of the body of the plunger, and when expanded to allow the sediment that passes to lodge in the recessed part of the plunger, so as not to effect the spring-like action of the sleeve.

Claim.—The combination of plunger C, upper packing-cup E, adjustable sleeve D, lower packing-cup c^2, valve-packing c^1, and valve-cap *c*, as and for the purpose set forth.

145,295.—Shoe-Knife.—ANDREW J. HALL, Farmington, N. H., assignor of one-half his right to JOHN F. CLOUTMAN. Application filed October 29, 1873.

Adapted to trimming the shank of a boot or shoe.

Claim.—1. A shoe-knife having a curved blade, substantially as shown, and for the purpose set forth.

2. On a shoe-knife, the combination of the curve C and rim D, substantially as and for the purpose set forth.

145,296.—Stereoscopic Camera.—WARREN HARRIS, Danville, Vt. Application filed August 24, 1872.

Claim.—The combination of two reflectors, with the two object-glasses of a stereoscopic camera, the two object-glasses being placed at right angles with each other, with one of the reflectors in front of one object-glass outside of the camera, and the other reflector behind the other object-glass inside of the camera, the two reflectors being at an angle of about forty-five degrees with both the sensitive plate and the object-glasses, substantially as described, and for the purpose set forth.

145,297.—Spool-Stand.—WILLIAM HARRIS, Rochester, N. Y. Application filed March 29, 1873.

Claim.—A spool-stand having the open groove *a*, the eyelets *d*, and superimposed boxes *e* and *f*, and cushion *g*, constructed and arranged substantially as and for the purpose specified.

145,298.—Child's Carriage.—JOSEPH N. HAZELIP, Baltimore, Md. Application filed August 26, 1873.

Claim.—The cast-iron bracket *c* and box B *b*, in combination with bearing-stem *a* and spring c^1, for attachment to and to form seats for the curved brackets *a* of children's carriages, as and for the purpose set forth.

145,299.—Harness-Loop.—FRANCIS HICKMAN, Reading, Pa. Application filed February 17, 1873.

Claim.—The rubber ring A, formed with the channel C to receive the buckle D, and having the flanges *a'* for securing the edges of the strap B, said flanges being extended and joined together on one side of the ring, so as to form the strap-keeper E, all as herein shown and described.

145,300.—Feed-Regulator for Cotton-Openers.—RICHARD KITSON, Lowell, Mass. Application filed August 29, 1873.

One of the cone-pulleys is hung in a weighted swinging frame so as to keep the belt always taut and prevent it slipping, and thereby unduly increasing the speed of the feeding mechanism.

Claim.—In a cotton-lapper evener or feed-regulator, the movable swinging motor-cone C, in combination with the shipping-cone A, the cone-belt, and the feed-connecting mechanism, all arranged and operating in the manner and for the purpose set forth.

145,301.—Fountain-Brush.—RUFUS LAPHAM, New York, N. Y., assignor to HENRY CONDRON, same place. Application filed September 5, 1873.

The hollow handle contains the paint, which flows through apertures in the socket of the brush, between it and an outer casing screwed thereon, to the exterior of the bristles. The flow is regulated by a stop-cock between the socket and the handle.

Claim.—1. The combination of the socket B, provided with apertures *s s*, with the tube D and brush *d*, as and for the purpose set forth.

2. The combination of the brush *d*, provided with the perforated socket B and pipe D, and stop-cock C, as and for the purpose set forth.

145,302.—Folding Coop.—EDWIN P. LAWRENCE, Worcester, Mass. Application filed July 22, 1873.

The ends of the coop are of canvas, and the sides, top and bottom are so hinged that the coop can be folded to occupy little space for transportation.

Claim.—A folding coop or cage, consisting of the front piece A, rear piece B, bottom C, top D, flexible ends E E, and hinges *e h*, said parts being constructed and combined for operation substantially as set forth.

145,303.—Crimping-Machine.—LEWIS P. LUM, Newburg, N. Y. Application filed October 25, 1873.

A series of forms of the contour of a crimped boot-leg are attached to an endless chain-belt, which passes around pulleys, one at each end of the vertical frame, which supports the entire mechanism. The pressure of the crimping-jaws is graduated to conform to varying thickness of stock by means of rubber guide-rolls.

Claim.—1. The jaws V V, one of which is stationary, the other being movable on hinges U^1 U^2, in combination with the inside plates H^1 H^2, for the purpose of bracing the same, substantially as specified.

2. The rubber cushions R R, in combination with the guide-pins T T and tension-screws, or their equivalents, between the jaws V V and inside plates H^1 H^2, arranged substantially as and for the purpose specified.

3. The forms K^1 K^2, provided with the slots *l'* and sliding blocks L, substantially as specified.

4. The forms K^1 K^2, with the holes *i i* along the inside edge, and the sliding blocks L, with the holes *d d*, for the purpose as specified.

5. The chain-wheel Y, provided with single and double cogs, in combination with the chain J, provided with single and double spaces between the links to match the wheel, substantially as specified.

6. The combination of the forms K^1 K^2, slides L, inside plates H^1 H^2, jaws V V, and adjustable rubber cushions R R, with vertical frame B, chain J, and chain-wheel Y, substantially as and for the purpose described.

145,304.—Rotary Steam-Engine.—WILLIAM F. MOODY, Chicago, Ill., assignor to himself, ABEL H. FROST, and CHARLES L. AMES, same place. Application filed July 3, 1873.

The inner revolving cylinder is provided with a chamber having suitable holes, which are plugged with porous substances to allow the chamber to fill with water of condensation, or oil, when used, to lubricate the parts.

Claim.—The cylinder B, provided with a chamber, N, and holes *b*, the latter being plugged with suitable porous substances to allow the chamber to fill with water from condensed steam to lubricate the parts, and allow oil, if used in the chamber, to also lubricate the parts, as and for the purpose set forth.

145,305.—Bedstead.—EDMUND MORRIS, Burlington, N. J. Application filed June 14, 1873.

Each side rail, with its front and bottom posts and legs, is formed of one piece of timber, with a longitudinal saw-cut at each end, which, after being steamed, is opened, and one part bent up and the other down to form post and leg.

Claim.—As a new article of manufacture, a bedstead or crib having each side rail B, contiguous legs C C, and posts D D constructed of a single piece of timber, slitted at its ends and bent in combination with the bent braces F F^2 and head-board G, substantially in the manner and for the purpose above described.

145,306.—Copying and Folding Press.—SAMUEL W. ODELL, St. Louis, Mo. Application filed September 23, 1873.

The written sheet is laid upon the open press. The tissue or copying paper is spread over it. Then the flaps and sides are folded over and secured by the thumb-screw.

Claim.—1. A pocket-press for copying and folding purposes, consisting of hinged press-covers, having one or more folding-leaves, substantially as set forth.

2. A pocket-press for copying and folding purposes, consisting of hinged press-covers having one or more folding-leaves, and the faces of covers and leaves lined, as set forth.

3. The combination of the press covers A A', folding-leaves B B', lining b^3, hand-screw D, and pin-points *c c'*, all constructed to operate as set forth.

145,307.—Corpse-Preserver.—CHARLES O. PECK, Pittsfield, assignor to WILLIAM LESTER, South Hadley, Mass. Application filed September 26, 1873.

The body rests upon a sieve supported by cleats upon the bottom of the receptacle, the head of the corpse being received within the offset, which is closed by glass and a slide. The bottom of ice-box, located in the movable top, is formed of a series of gutters and deflectors, upon which rests a sieve to support the ice, allowing a free circulation of the air around the ice and corpse.

Claim.—The combination of box C with its troughs *m m*, &c., and *n n*, &c., and sieve P, with the box B with its sieve *b*, and tank D with outlet S, the parts being constructed and arranged substantially as shown and described.

145,308.—Electric Signaling Apparatus for Railroads.—FRANK L. POPE, Elizabeth, N. J. Application filed April 2, 1873.

For use at tunnels, draw-bridges, &c., one line of rails divided into insulated sections, the other in connection with earth. System of repeaters at each end of, say, tunnel. Train going in one end sets a primary signal at far end, which signal repeats back and sets a secondary signal at entrance. Train on its exits closes certain circuits, reversing the signals.

Claim.—1. The combination of the electro-magnet C', electro-magnets B B^1, circuit-breaking levers *b* b^1, and circuit-closing devices a^1 and a^3, substantially as and for the purpose herein specified.

2. The combination of the magnet C' for operating a primary signal, the magnet D for operating a secondary signal, and a circuit-closer, a^1, the latter arranged to be actuated by the passage of a train, substantially as herein described.

3. The combination and arrangement of the electro-magnets B and B^1 and armature-levers *b* and b^1, so arranged that the closing of the circuit through one magnet will break the circuits of the other, substantially as herein specified.

4. The arrangement of a primary signal-magnet and a secondary signal-magnet at each end of a section of railroad-track, each secondary signal-magnet being controlled by the action of the primary signal-magnet at the opposite end, substantially as and for the purpose herein specified.

145,309.—Pneumatic Railroad-Signal.—WILLIAM E. PEALL, Washington, D. C. Application filed October 31, 1873.

Along the track is laid a continuous supply-pipe, and parallel thereto a continuous service-pipe, actuating the signals, and connected with the supply-pipe by means of cross-pipes. A passing train opens the signals in front and closes those behind.

Claim.—1. A continuous air-reservoir or supply-pipe, A, laid along any portion of a line of railway, in combination with a series of service-pipes, B B, connected therewith by branch pipes W W, so as to be automatically charged with air therefrom, as required, for the purpose of displaying or sounding a system of signals, substantially as herein set forth.

2. The cock M, constructed and operating substantially as described, in combination with the air-passages L, L', N, *f*, *g*, and *g'*.

3. The cylindrical space E, in combination with the connected valve *a* and plunger I, and the air-passages F, L, G, and *g*, substantially as herein described.

4. The valve *i*, in combination with the air-supply pipe A and passage N, the rod R, lever Q, cock M, and plunger *p*, substantially as herein described.

5. The lever Q and its lugs *q q*, in combination with the cock M and its projecting pins *s s'*, and with the forked end or yoke of the rod P, substantially as herein described.

6. In combination with the rod P, plunger *p*, and cylinder H, the exhaust-aperture *e*, perforated plunger *r*, and air-passages G and G', substantially as herein described.

7. The air-commutator D—a combination, substantially as herein set forth, of the several devices enumerated in the four preceding claims, to co-operate substantially as and for the purpose herein set forth.

145,310.—Umbrella.—GEORGE W. PRESSEY, Hammonton, N. J. Application filed June 27, 1873.

The ribs are in sections, and the stick is made telescopic, so the umbrella may be compactly folded into a small bundle.

Claim.—1. The sectional telescopic staff A A^1 A^2, the connecting-wires *b*, links *d*, locking-springs *f* f^1 f^2, flange *g*, runner A, jointed ribs C C', and braces D, and a suitable cover, B, constructed and arranged to operate substantially as described and shown.

2. The combination and arrangement of the sectional ribs C C', the former being provided with the socket *i*, having the braces D pivoted thereto, and the pin *j*, the rib C' having a hook or its equivalent to engage with the said pin, substantially as and for the purpose set forth.

3. The combination of the elastic bands *l* with the rib sections C C', substantially as and for the purpose set forth.

145,311.—Plane-Iron.—ERNEST QUAST, Jerseyville, Ill. Application filed February 18, 1873.

The plane-iron is composed of two parts halved together—the part A of malleable iron, and B of steel.

Claim.—The plane-bit described, having the iron shank A and steel cutting-part B, as a new article of manufacture.

145,312.—Bureau and Wardrobe Combined.—HANS H. STAUGAARD, Chicago, Ill. Application filed May 31, 1873.

The upper drawers of the bureau are shortened, so that the wardrobe may extend downward to the rear of them, and the bureau and wardrobe are connected together by suitable clamps.

Claim.—The combination of bureau A with wardrobe B by extending the latter in the rear of the upper shorter drawers *b*, connected by clamps *f*, to be detachable, substantially as and for the purpose described.

145,313.—Medical Compound for Treating the Hair.—WILLAMON F. STATEN, Jasper, Fla. Application filed October 24, 1873.

Alcohol, oil of ricini, oil of lavender, oil of lemon, oil of neroli, oil of rosemary, tincture of musk, borate of soda, pulverized.

Claim.—The compound above described for curling and frizzing the human hair, substantially as specified.

145,314.—Grain and Malt Cleaner and Crusher.—NICHOLAS THIELEN, Sacramento, Cal. Application filed March 6, 1873.

Supplementary screen *q* placed in shaking shoes. On *q* is arranged, underneath hopper, a plate consisting of two triangular pieces elevated at rear point of junction to spread grain, &c., evenly on *q*.

Claim.—The combination, in the shaking screen-frame A, of the main screen *p*, adjustable short screen *q*, with its spreading-plate *e*, and the apron *i*, combined and arranged substantially as and for the purpose above described.

145,315.—Stop-Hinge.—GEORGE C. THOMAS, Brooklyn, N. Y., assignor to SCOVILL MANUFACTURING COMPANY, Waterbury, Conn. Application filed April 30, 1873.

Claim.—A hinge, the blanks or halves of which are formed with a shoulder or stop, A, having its side coincident with the part B, which forms the eye, all substantially as described and shown, for the purpose specified.

145,316.—Loom.—SAMUEL T. THOMAS, Gilford, N. H. Application filed August 29, 1873.

The drop-boxes are operated by star-cams, controlled by a pattern-chain, which give a reciprocating movement to slides working flanges on the box-levers, each slide embracing the flanges of two adjacent levers. By means of a vertically-reciprocating rod, connected with the weft-stop mechanism and provided with horizontal arms, the pawl of the pattern-cylinder and the pawls which drive the star-cams are carried out of gear to arrest their movements when the weft-stop mechanism is operated. The protector-rod carries a finger under the lay, so arranged that, when a shuttle to be thrown remains in either box, it raises the hooked end of a spring-arm pivoted to the knocking-off lever under the breast-beam, and brings the hook within the path of a projection on the lay as it moves back, and stops the loom. The heddles are operated by vertical levers and grooved-face cams, which cams receive an intermittent motion from a pin-wheel driven by a crank-pin on the end of the crank-shaft, by which means the cams are stationary during one-half of the rotation of the crank-shaft.

Claim.—1. The combination, with the drop-boxes and the pattern mechanism, of the cam-slotted wheel *b*, lovers *c*, links *g*, slides A, and intervening mechanism, operating to positively move the boxes to position in each direction, and to positively hold them in position, substantially as described.

2. In combination with the cam-wheels *b* and pawls *u*, and with the pattern mechanism, the vertical rod c^3, link c^3, and the mechanism connected therewith, and with the weft-stop motion, to effect the stoppage of the cams and pattern cards and cylinder from the weft-stop motion, substantially as described.

3. In combination with the lay a^4 and breast-beam b^4, and with the lever l^4, operated by the shuttle, the arms c^4 and h^4 and spring g^4, having a latch, A^4, and secured to the knocking-off lever i^4, operating to stop the loom, substantially as described.

4. In combination with the harness levers, the intermittently-operated cams c^5, wheel g^5, and pins i^5, and the crank-pin h^5 (on the crank-shaft a^5) and catch-pawl b^5, the whole being arranged and operating substantially as and for the purposes described.

145,317.—Refrigerator.—ROBERT THOMSON, Springfield, Ohio. Application filed August 11, 1873.

A large wooden tube, perforated at its ends, is inserted in the well and supported by lugs resting upon the platform covering the well. Within the tube a galvanized-iron frame slides freely, and contains the pans in which the food is placed.

Claim.—1. A combined well refrigerator and elevator, for the purpose of preserving food without the use of ice in summer and from freezing in winter, consisting of a tube or pipe projected into a well to a sufficient depth to reach the cold air near the water, and having its sides pierced with openings near the lower end to allow air to circulate freely among the articles of food contained in a case or frame suspended in the same, substantially in the manner shown and described.

2. Tube A, with its lugs *l l* and slots *a a*, constructed and arranged substantially as shown and described.

3. In combination with tube A, with its smaller tube F, lugs *l l*, slots *a a*, cord *r*, pulleys *p p'*, and crank *s*, frame B, with its pans *b b b* and bale *c*, substantially as shown and described.

4. In combination with the platform P of the well W, the tube A, with its lugs *l l* and slots *a a*, substantially as shown and described, as and for the purpose hereinbefore set forth.

145,318.—Wash-Boiler.—WILLIAM W. TURTELOT, Rome, N. Y. Application filed May 7, 1873.

Is constructed with apartments at each end of the center one, one with a strainer in the partition, the other with openings for passing out the water, having covers or bonnets for giving it direction, which passes through the clothes, over a grate, and out of openings through the flange of the cover, which connect with the openings in the partition, and out of the opening for its discharge.

Claim.—1. The apertures *i i*, with hoods *d d* in the partition C, forming communication between the clothes and receiving-chambers of the boiler, for the purposes herein set forth.

2. The lid G, provided with grating E' and apertures *i i*, for the purposes herein set forth.

3. The combination, with the boiler A, of the partitions B C, strainer *a*, apertures *i* with hoods *d*, lid G, and gratings E E', all constructed and arranged substantially as and for the purposes herein set forth.

145,319.—Soap-Cutting Machine.—JOHN B. ULTECH, Cambridge, Mass. Application filed May 28, 1873.

The bars of a grill fit between fixed bars, and rest upon a table hung upon a pivot at one end, and resting upon a cam at the other, so that the grill is raised or lowered to form an even surface for the soap, or to aid in the removal of the same. The table, upon which the soap is first placed, is provided with blades for trimming the soap, and with obutes for carrying off the cuttings. The cutting-frame is provided with plates that admit of vertical adjustment to suit the thickness of the soap.

Claim.—1. In a soap-cutting machine, the combination of the grill N N N with the table Q and cam R, operating substantially as described, and for the purpose set forth.

2. The combination of the cutting-blocks L with the table E' and sluices M, substantially as described, and for the purpose set forth.

3. The combination of the adjustable plate H, upon which the templets or cutters G G are fastened, with the frame D, substantially as described, and for the purpose set forth.

145,320.—Cart-Loading Scoop.—AARON VREELAND, Mont Clair, N. J. Application filed September 26, 1873.

The scoop, with its operative appliances, is so arranged as to be readily attached to and detached from the cart. The supports

for the windlasses are pivoted to a cross-bar at *e*. By turning the windlass *g* in the direction of the arrow the rope *i* is wound around the drum, and the rear of the scoop is elevated. The front end of the scoop engages with the earth, and, by the forward motion of the cart, the scoop is filled. When the scoop is filled the windlass *f*, on which the ropes *m* and *n* are wound, is turned. The winding of the rope *n* elevates the scoop, and the winding of the rope *m* draws the loaded scoop forward into the cart.

Claim.—The scoop *a*, connected with and operated by the swing-windlasses *g* and *f*, substantially as and for the purposes specified.

145,321.—Hay-Loader.—CHARLES E. WARNER, Burlington, Kans. Application filed December 14, 1872.

The rake-head is provided with holes at different angles, so that a weighted lever holds the rake-teeth to or from the ground, at the will of the operator.

Claim.—The weight S, adjustable, by holes, at different angles in the shaft, in combination with the shaft P, for the purpose of retaining the rake-teeth Q in a depressed or elevated position, substantially as shown and described.

145,322.—Spinning-Machine.—CHAUNCEY WILLIAMS, SAMUEL M. WILLIAMS, and HENRY M. WILLIAMS, Coldwater, Mich., assignors to THE WILLIAMS CONTINUOUS SPINNER COMPANY, same place. Application filed July 11, 1873.

An arrangement of mechanism for driving the drawing and delivery rolls; an improved construction of twisting-tube; devices for governing the rotation of the spinning-rings; and mechanism for regulating the reciprocation of the spindle-rails so as to properly wind the cops.

Claim.—1. The combination and arrangement of the shaft B, pulleys Q R, pinions R^2 R^3 R^4 R^5 S S^2 T^2, shafts R^1 and S^1, and train of gears U U^1 U^2 U^3 U^4 U^5 for operating the drawing-roll shafts T T^1, feed-roll shafts W W^1, and roving-drum shaft X, substantially as and for the purpose set forth.

2. The twisting-tube Y, in combination with the removable nut Y^1, having the cruciform slot, as described.

3. The combination of the bearings D D^1 and the spinning-rings with the brake *e* and treadles, as described.

4. In combination with rings E and bearing D, the reciprocating spindle-bearings F F^1, the guides *d d*, brake-block *e*, shaft *p*, bolts *c*, and treadles *q*, substantially as and for the purpose specified.

5. The combination, with the spindle-bearing F, of the cross-heads *f*, connecting-rod I, lever I^1, pin *i* for pivoting the said rod I in the slot *g* of said lever, the eccentric-rods I^2, eccentrics H, shaft J, bevel-pinion K, gear K^1, shaft K^2, worm-wheel K^3, and the worm K^4 on the shaft B, the gears L L^1 L^2 L^3, shaft M, wipers N, and bell-cranks O, having the pins *i* engaged with their slots *g'*, for reciprocating the spindle-bearing F, in the manner described.

145,323.—Sleigh.—ARTHUR A. ABBOTT, Chicago, Ill. Application filed June 4, 1873.

Claim.—In combination with a sleigh-runner, a sleigh-knee, C, having box D, provided with plug E, substantially as and for the purpose set forth.

145,324.—Bee-Hive.—LEONIDAS ADAMS, Mason City, Ill. Application filed July 26, 1873.

When the bees enter the outer case they ascend into the hive; but the moths descend an incline to a perforated floor, whence they are unable to ascend, the flange, inclined upon all sides, being steep and reaching into the middle of the box or trap. A slide beneath the perforated floor serves to totally close the hive when desired. The case and inner parts are in duplicate, co incident slots between them giving passage to the bees. Hooks and staples hold together the several parts.

Claim.—In a hive of the construction described, the moth-trap E, having the flange *g*, perforated bottom *m*, and slide *n*, as and for the purpose set forth.

145,325.—Apparatus for Compressing Cast Metals in Liquid State.—HORACE W. BARNUM, Omaha, Nebr. Application filed September 27, 1873.

A portable compressed-air reservoir, having a pump attached, is connected by a pipe to a flanged cap, which can be clamped to a cylinder placed on the flask. The compressed air, being admitted from the reservoir, acts directly upon the liquid metal.

Claim.—1. The combination, with the flask and cylinder H G, of the removable cap F, rubber pipe A', and movable air-cylinder A, and pump D, as shown and described.

2. The cylinder G and removable cap F, connected by rim and groove *a a'*, and flange and couplings *b d*, in combination with the flask H, said cap and cylinder united forming a receiver for the air from the forcing apparatus, as shown and described.

145,326.—Composition for Lining Furnaces, Crucibles, &c.—ALFRED E. BATES, Monroe, Mich. Application filed October 27, 1873.

Claim.—A fire-proof composition consisting of about three (3) parts ground or crushed soap-stone, two (2) parts of fire clay, and one (1) part fire-sand, as herein set forth.

145,327.—Saw-Gumming Machine.—HENRY BAUGHMAN, Dorn's Gold Mine, S. C. Application filed August 26, 1873.

The saw is held in the clasp S T, and operated upon by the rotary gumming-tool A, mounted in the oscillating frame E. The upward movement of the frame E is regulated by the stop-button W, and its downward movement by the eccentric-dog K.

Claim.—1. The combination of the stop-button *w* with the oscillating frame E, stationary frame G, and the rotary gumming-tool, substantially as specified.

2. The adjustable circular-saw clamp S T, center U, and the holder V, combined with the oscillating rotary gumming-tool A, and detachably connected to the supporting-frame of said tool, substantially as specified.

145,328.—Carriage-Curtain Fastening.—FREDERICK BAUMGARTNER, Brooklyn, N. Y. Application filed August 9, 1872.

Claim.—The button-hole plate D, designed and adapted to be secured to the curtain by the ring E, so as to form, with the curtain, a pocket for the head of a knob, C, with which it is to be used, substantially as described.

145,329.—Meat-Holder.—SARAH BRISSEL, Shamokin, Pa. Application filed August 30, 1873.

A suitable board has two vertical screw-bolts, which pass through the ends of a cross-bar, and is held and adjusted by nuts. Between the bolts, in the board, are holes for the insertion of vertical rollers.

Claim.—The meat-holder, consisting of a board, B, having vertical screw-bolts *b*, with lateral cross-bar C, which is pressed on the meat by thumb-screws *d*, and vertical side rollers D, adjustable in holes *e* of the board, to clamp the meat firmly and feed it for cutting, substantially as specified.

145,330.—Muff-Stand.—LOUIS BERGTOLD, Buffalo, N. Y. Application filed November 24, 1873.

Claim.—The standard B, ring C, and arms E and F, constructed, combined, and arranged substantially as and for the purposes herein shown and described.

145,331.—Wheel-Cultivator.—GEORGE BRADLEY, Rockford, Ill., assignor to CHARLES R. CHANDLER, same place. Application filed August 7, 1873.

The long shovel-beams are pivoted at the front to oblique hangers for both lateral and vertical movement. By means of hangers, loosely jointed to the rear part of the beams and to a slotted cross-bar supported by long hand-levers, the plows can be moved in any direction and either beam raised independently of the other.

Claim.—1. The pivoted upright link-rods F and slotted connecting-bar F', in combination with the bracket C and swivel-block D, for effecting the adjustment of plow-beams E, as described.

2. The racks H H, hand-levers G G, and loops *g g*, in combination with the uprights F and slotted connecting-bar F', arranged and operating substantially as described.

145,332.—Burglar-Alarm.—HENRY L. BROWN, Middletown, Conn. Application filed November 8, 1873.

Two gas-burners are arranged side by side. A minute flame burns in one when the apparatus is set for action. The cock of the other is connected by a chain and lever to the door or window, so that the act of opening turns on the gas. This is ignited on issuing, and the blaze severs a cord stretched above it, thereby releasing an alarm.

Claim.—1. In combination with an alarm mechanism, a combustible trip-cord, or its equivalent, and a gas-supply pipe provided with a suitable stop-cock, connected with a device operated by a door or window, and a supplementary flame or burner, substantially as shown and described, whereby, when said door or window is opened, the gas will be let on and ignited, and the alarm sounded, as set forth.

2. The wire or cord J and burners E and F, in combination with a burglar-alarm, substantially as described.

145,333.—Carriage-Spring.—JACOB BULLOCK, Windsor, N. Y. Application filed June 20, 1873.

Claim.—The wooden springs A and steel springs C, having the interposed block M and shackles *i*, and attached to the frame D by clips E, all combined substantially as and for the purposes described.

145,334.—Milk-Can.—JAMES F. CASS, L'Original, Canada. Application filed July 19, 1873.

A conical removable top, having air-tubes descending from near its base, a large air-tube descending from its apex, with lateral ascending perforations into this tube near its upper end.

Claim.—The combination of a conical milk-can cover, B, having air inlet and outlet passages C E, and pipes D and F, substantially as specified.

145,335.—Windmill.—MATTHEW T. CHAPMAN and MARK C. CHAPMAN, Aurora, Ill. Application filed September 17, 1873.

The beam of the vane is fitted in a socket cast upon the revolving piece, which is provided with casters or rollers above and below. The upper casters run upon the upper rim of the flange, which forms the top of the socket-piece. The flange on the top of swivel-piece rests on the casters and rotates them, the balls acting as frictionless bearings. The crank-shaft of the wheel revolves in a sleeve or journal-box, rigidly attached to the top of the swivel-piece, which rotates in such a manner as to bring the wheel edgewise to the wind when its speed is to be regulated.

Claim.—1. The combination of the revolving piece B, casters *b* and *b'*, socket-piece C, swivel-piece E, having a flange, *c*, and journal-box *c'*, arm A, annular piece B', balls *d*, beam A, chain *r*, provided with the adjustable weight *g*, chain K, and tubular arm *m*, all operating together as described.

2. The combination of the annular piece B', casters *b* and *b'*,

socket-piece C, swival-piece E, provided with a flange, *e*, and journal-box *e'*, arm A, beam A, chain *z*, rod *y*, provided with the adjustable weight *x*, chain K, and tubular arm *m*, all operating together as described.

145,336.—Manufacture of Horseshoe-Nails.—HARLEY D. COWLES, Montreal, Canada, assignor to JAMES TERRY, Terryville, Conn. Application filed June 16, 1873.

The die A is provided with gages C and D and a stop, F. Said stop is made adjustable by means of a set-screw. The punch B is provided with a presser-foot, F, which, being in advance of the punch, holds the metal firmly until the punch has cut a nail and receded. The die A and punch B correspond in shape to the contour of the nail to be produced, and are each provided with an incline, *c*, said incline being for the purpose of bringing the points of the nails central.

Claim.—1. The die A and punch B, in combination with the presser-foot F, stop E, and gages C D, all substantially as and for the purpose set forth.

2. In a die and punch for cutting nails, the incline *c*, when arranged in relation to the points of the nails cut by said die and punch, substantially as and for the purpose described.

145,337.—Eye and Lung Protector.—GEORGE A. CROFUTT, New York, N. Y. Application filed November 5, 1873.

The upper part of a domino, or half-mask, is made to closely fit around the eyes, and is furnished with plates of glass or mica, so that it may form a partial protection against smoke, &c., when the cloth is wetted.

Claim.—The duplex shell A, provided with glasses or transparent eye-pieces A', and shaped to fit the face about the eyes, as described, in combination with the curtain B, provided with a suitable means of securing the same to the head, substantially as and for the purpose set forth.

145,338.—Butter-Worker.—DANIEL W. DAKE, Beloit, Wis. Application filed September 11, 1873.

An endless apron over rollers at the ends of the trough-like frame; a grooved pressing-roller and smooth counter-roller beneath.

Claim.—In a butter-worker, the combination and arrangement of the endless and corrugated apron C, the adjustable and corrugated roller D, and the adjustable roller B, substantially as and for the purpose specified.

145,339.—Railway-Rail Joint.—WILLIAM G. DUNN, Fairland, Ind., assignor of one-half his right to GRANVILLE S. HARMALL, same place. Application filed August 7, 1873.

The plate *a* forms a clamping device under pressure of the wheel, which firmly compresses the rail and fish-plate at the joint, between the projections of the chair *c c*.

Claim.—The combination and arrangement of the plate *a*, the chair *c c*, the segmental rail *b*, and the T-rails *d* and *d*, for the purpose and in the manner substantially as set forth.

145,340.—Ice-Creeper.—REGINALD H. EARLE, St. Johns, Newfoundland. Application filed October 4, 1873.

Claim.—The ice-creeper, constructed of the grooved plate A, the plates B, sliding on each other, and having spikes C, and the set-screw D, arranged as shown and described.

145,341.—Inking Apparatus for Printing-Presses.—MARTIN ENGLAND, New York, N. Y. Application filed August 30, 1873.

As the arm K moves it moves the rod, and through this the lever G, the inking and distributing rollers. The stop Q is adjustable to control play of distributing-roller. The ink-fountain is adjustable.

Claim.—1. An automatic brayer for printing-presses, consisting essentially of the ink-box A, ink-roller B, carrier-roller D, rock-lever G, rod I, stop Q, eye-plate J, standard R, and arm S, the ink-box being adjustable upon the arm S, as and for the purpose specified.

2. The combination of the ink-box A, ink-roller B, with the rock-lever G, pawls O, ratchets P, arm M, spring N, and carrier-roller D, as and for the purpose specified.

3. The within-described means for communicating motion from the ink-roller frame of a Gordon press to the rock-lever G of the brayer, the same consisting of the rod I, stop Q, and eye-plate J, as set forth.

145,342.—Vibrating Propeller for Vessels.—JAMES D. FRASER, Pictou, Canada. Application filed August 31, 1872.

The vibrating arms D are turned a quarter of a revolution for the purpose of reversing the operation of the paddles.

Claim.—The adjusting-bars H and nuts K, in combination with the hollow crank-shaft C, pinion G, shaft D, arms F, and hinged paddles E, as shown and described, to operate as and for the purpose specified.

145,343.—Combined Shutter and Window Fastener. WILLIAM T. FEY, Brooklyn, N. Y. Application filed October 18, 1873.

The stud-catch is arranged upon the inside of the shutter. A swing-lever, inclosed beneath the sill, takes over the stud-catch with one end, and with the other secures a pin, which projects downward from the sash.

Claim.—The shutter having stud-catch C in front, and subjacent spring J in the rear, combined with a sash, K, having the spring-lever I D, and a sill having stud-catch L, as and for the purpose described.

145,344.—Urinal.—JOHN C. GARKEY, New York, N. Y. Application filed November 15, 1873.

Claim.—As a new article of manufacture, a urinal for bed-ridden persons which has a broad oval base with covered rear part, being provided with a handle in front of the center of the base, and a downward-curved forward-projecting spout, arranged in the manner substantially as and for the purposes described.

145,345.—Process of Manufacturing Artificial Marble, and Veining the same.—FREDERIC H. HALL, Hackensack, N. J. Application filed November 26, 1873.

Claim.—In the manufacture of marble, the process of veining the same by flowing or floating the colors preparatory to incorporation with cement-paste tinted or in its natural state, substantially as described.

145,346.—Water-Wheel.—MORDECA H. HEYLMAN, Oshkosh, Wis. Application filed November 1, 1873.

The plates which form the issues are parallel to each other. At the junction of each pair are shoulders to receive the full reactionary force of the water.

Claim.—The concentric circular plates G H, forming the issue F, in combination with the shoulder J, whether curved, inclined, or radial to the wheel, substantially as specified.

145,347.—Construction of Vessels.—HERMANN HIRSCH, Middlesex county, England. Application filed November 14, 1872.

Claim.—The keel swelling upward and outward, bilges swelling outward and downward, and sides having an outward curvature near and above the water-line, when so constructed and combined that all horizontal and vertical sections through the bilges will partake of the form of wave-curves, as and for the purposes described.

145,348.—Shuttle for Sewing-Machines.—GEORGE W. HUNTER, Washington, D. C., assignor of one-half his right to HENRY M. BAKER, WM. F. STONE, and JAS. H. VERMILYA, same place. Application filed October 27, 1873.

The face of the shuttle is provided with a thread-guiding slot and a tension-spring, and the bobbin, without journals, is introduced in the shuttle through a hole bored in the end.

Claim.—1. A cylindrically-bored shuttle having its face provided with a curved or straight slot for the passage of the thread, and with a tension-spring in a depression in such face, as and for the purpose described.

2. The cylindrically-bored shuttle provided in its face with an open-ended slot for the passage of the thread, as shown and described.

3. The shuttle having its face slotted, as described, when combined with a bobbin without journals or journal-receiving depressions, and with its heads resting against the shell of the shuttle.

145,349.—Skate.—CHARLES W. JENKINS, New York, N. Y. Application filed July 1, 1870.

Claim.—1. A skate having a point or pivot, A', on the toe, adapted to serve in the manner and for the purposes herein set forth.

2. A skate having a pivot-point on the toe, with one or more shoulders adjacent, so as to catch in the ice and support the skater in performing toe-movements, as herein specified.

3. The toe-point A', with the rounded shoulders on the edge of the iron or runner adjacent thereto, when constructed and arranged, relatively to the main body of the skate-runner, substantially in the manner and for the purposes herein set forth.

4. The sharp-cornered skate-clamps E E, mounted adjustably at the sides of skates, and adapted to perform the double functions of attaching the skate securely to the foot, and also of serving as auxiliary runners when the skate is greatly inclined, substantially as herein specified.

145,350.—Manufacture of Water-Gas.—EZRA J. JERZMANOWSKI, New York, N. Y. Application filed October 8, 1873.

Claim.—The process of forming a fixed gas for illuminating purposes by first producing a mechanical mixture of gas from water and the vapors of some hydrocarbon, and then combining the same with gas evolved from bituminous coal heated in a retort in the usual manner, and the whole volume of gas thus produced being finally and fully fixed by passing it through some suitable refracting substance, substantially as and for the purpose set forth.

145,351.—Metallic Bracket.—ALBERT D. JUDD, New Haven, Conn. Application filed May 20, 1873.

The bracket is constructed in three parts, the wall and shelf plates and the arch or brace, and are held together by hooks and holes cast in the parts.

Claim.—1. The plates *c* and *m*, separate from the brace *a* and united to each other and to such brace by the hooks *a b*, and dovetail block *d* or its equivalent, substantially as set forth.

2. The wall-plate *c*, cast separate from the bracket *a* and plate *m*, and provided with the opening for the hook *c*, and interlocking with the plate *m* at the angle, substantially as set forth.

145,352.—Inkstand.—ALBERT D. JUDD, New Haven, Conn. Application filed May 20, 1873.

Claim.—1. The sponge-holding cup, united to the inkstand-cover by a hinge, in combination with the removable ink-bottle and the stand receiving the same, whereby the cup performs the two duties of a support for the cover and a holder for the sponge, as set forth.

2. The sponge-holding cup *f* and elastic band or cord to hold the sponge in place, as specified.

145,353.—Car-Coupling.—XAVER KRAFT and JOHN F. BOERCKEL, Allentown, Pa. Application filed September 20, 1873.

The link is elevated by means of the lever D, and is held in position to couple by the pin *g*, which fits in inclined holes in the draw-head so as to drop out immediately on being relieved of the pressure of the lever D upon it, caused by the weight of the link on the outer end of said lever.

Claim.—1. The combination of draw-head B, coupling-link C, and lever D, pivoted on cross-bolt *b*, and pin *g*, substantially as set forth.

2. The draw-head B, having holes *f*, upwardly inclined, and at different heights, to insure downward-inclined position of pin *g*, and the dropping of the pin on discontinuing pressure of lever D, as set forth.

145,354.—Mitering-Machine.—CHRISTIAN LOETSCHER, Dubuque, Iowa. Application filed October 4, 1873.

The guides are hinged, and made longitudinally, as well as horizontally, adjustable.

Claim.—1. In combination with the sliding bar B, the guide I, having the sliding and axially-adjustable hinge-connection G H, with the slotted pivoted plate C, all constructed, arranged, and operating as shown and described.

2. The combination of the adjustable dovetailed stop-bar L with the hinged guide I of the mitering-machine, substantially as herein shown and described.

145,355.—Cooking-Stove.—SOLOMON LONG, Mayville, Ohio. Application filed November 1, 1873.

The products of combustion may be made to rise to the top of the stove and pass along close to the pot-holes by means of plates hinged, one at the edge of the fire-pot and the other near the exit-flue. When the former is raised to a vertical position it lifts the latter, and sustains it in a horizontal position.

Claim.—The combination of plate G pivoted at the rear end of the combustion-chamber, and the plate I pivoted at the edge of the fire-box, the former being arranged to lap over and be supported by the other in the elevated and inclined position, respectively, as shown and described.

145,356.—Corn-Sheller.—JOHN MARSHALL, Cordova, Ill. Application filed March 29, 1873.

The concave is formed of sections having notched edges, and placed so as to leave longitudinal spaces between them.

Claim.—1. The concave formed of the sections G, having notches in their edges, and arranged near together, as and for the purpose specified.

2. The ribs F, made flat on the under side, oval on the upper side, and terminating at their ends in tapered shanks, and secured to the hollow metallic cylinder by bending said shanks, as shown and described.

145,357.—Device for Forming Bale-Ties.—JOHN MCCLEAN, New Orleans, La., assignor to FREDERIC COOK, same place. Application filed September 13, 1873.

A lever, F, hinged at an angle of forty-five degrees to the plane of the band, when brought down, bends the end over a plate, E, at right angles to the remainder of the strip. A latch, I, is fastened down over the bent portion after the lever F is raised, and a lever, K, completes the tie by lapping the end up over the latch.

Claim.—In a bale-tie-forming machine the combination of the angular shaping-edge H, the holder I, and the two hinged bending-levers F and K for shaping and bending the end of a bale-tie, substantially as described and represented.

145,358.—Brick-Machine.—JAMES M. MITCHELL, Dunlap, Iowa. Application filed April 4, 1873.

A single downward movement of the hand-lever presses one brick, and delivers the brick previously pressed from the mold.

Claim.—1. In combination with the movable molds C, the plunger B, the lever F, rod *g*, and hand-lever G, constructed and operating as described.

2. In combination with the hand-lever G and the pressing-plunger B, operated thereby, the sliding molds C and the delivering-plungers *H*, also operated by the hand-lever G, the parts being all constructed and arranged to operate substantially as shown.

145,359.—Curtain-Fixture.—CHARLES C. MOORE, New York, N. Y. Application filed September 7, 1872.

A wooden block is secured within a metal tube, and is axially perforated to receive the pulley-screw. The outer end of the block is also recessed to allow the passage of the cord from an opening on the outside of the tube to another opening on the end of the tube. The cord-pulley is formed by the flange on the head of the screw and the flange on the end of the tube.

Claim.—1. The sheet-metal tubes B, having blocks E secured therein, and axially perforated, in combination with the screw C, as and for the purpose specified.

2. The tubes B having holes b^1 b^1 formed in their sides and ends, respectively, to adapt them to receive the cord D, as and for the purpose specified.

3. In combination with the cord D, the flanges or head b^1 and *c'* formed upon the end of the tube B and the head of the screw C, substantially as herein shown and described, to serve as guides to the cord D, as and for the purpose set forth.

145,360.—Stove-Grate.—GEORGE R. MOORE, Philadelphia, Pa. Application filed May 9, 1873.

By means of the notches the grate may be adjusted at various elevations.

Claim.—1. The grate A, hanging upon and in combination with the horizontal lever D, extending around it and across the ash-pit, affording it a free space for revolving or tipping, and the rod E for raising and lowering the grate at will, substantially as and for the purpose herein set forth.

2. The combination of the grate A, arm B, and rod C with the levers D D and rod E.

145,361.—Subsoil Gang-Plow.—CHRISTIAN MYERS, Marysville, Cal., assignor to himself and FRANCIS J. SCHAEFFER, Davenport, Iowa. Application filed August 16, 1873.

The plowshare and lower section of land-side are connected rigidly, and overlap the corresponding parts of the plow, where they are held by a hook on the under side of the share engaging in a slot beneath, and by a wedge passing through the two parts of the land-side.

Claim.—The combination of detachable share G, having hooks *s* and rear extension of point H, with under side G' and land-side H', by means of slot *e'*, apertures *f f'*, and wedge-piece *g*, for the purpose set forth.

145,362.—Gate-Fastener.—JOSEPH H. NICHOLS, La Fayette, Ill. Application filed October 25, 1873.

The gate is lifted by a cam-lever, which works under a projection secured upon the edge of the perpendicular part of the frame, and its end rails take under catches on the post.

Claim.—The combination of the weighted lever D with post E, catches C, and the gate A, having piece F and projections to take under said catches, as shown and described, to operate as specified.

145,363.—Process of Manufacturing Artificial Stone. ERNEST L. RANSOME, San Francisco, Cal. Application filed October 18, 1873.

Claim.—The process herein described of removing soluble salts or other valuable liquids from artificial stone by means of a current of air, substantially as set forth.

145,364.—Rock-Drill.—WILLIAM ROBERTS, Jr., Copper Falls, Mich. Application filed October 18, 1873.

The drill is secured within the socket between two half-boxes, which are forced together by means of wedge-shaped bolts.

Claim.—The combination of the socketed solid head A, half-boxes D, bolts F, and nuts G, substantially as specified.

145,365.—Railway-Car.—CYRUS W. SALADEE, Pittsburg, Pa.—Case B. Application filed November 21, 1873.

Claim.—The independent bottom B B', provided with guards P, and supported upon hangers L, suspended from springs placed above the bottom and secured to the outer body A, substantially as and for the purpose set forth.

145,366.—Railway-Car.—CYRUS W. SALADEE, Pittsburg, Pa. Application filed April 4, 1873.

The car-body is mounted upon an independent frame-work, and supported upon springs, while the supporting-frame is directly connected with the trucks.

Claim.—1. In a railway-car, the combination of the independent frame-work B C C', provided with suitable springs on which to support the car-body A, substantially as and for the purpose set forth.

2. In combination with the bottom of the car-body, the equalising-shafts D and D, substantially as and for the purpose set forth.

145,367.—Towel-Rack.—CHARLES SCHERMERHORN, New York, N. Y. Application filed June 28, 1873.

To a suitable board are attached one or more metal hinges. The hinges are rigidly attached by one of the extensions to said board. The other extension of each hinge has loops or eyes formed in it, through which are passed wooden slats or rounds. The swinging part of the extension is provided with a shoulder, which serves to stop the rack-frame from dropping beyond a horizontal position.

Claim.—1. The hinges B B' C C', the latter being provided with loops M N, and with the center *d* held out from the wall or board A, as herein specified.

2. The completed frame-work described, having the connecting-board A and slats *m n*, in combination with one or more of the hinges B B' C C' *d* M N, and adapted to serve as and for the purposes herein specified.

145,368.—Latch for Gates, &c.—GEORGE N. SHARP, La Plata, Mo. Application filed October 18, 1873.

The lever for operating the latch is provided with a plate, the ends of which rest upon the top edge of the case, and serve as fulcrums to the lever, so that the latch may be raised by moving the upper part of the lever outward, inward, or upward.

Claim.—1. The plate d', formed upon the lever D, in combination with the slotted upper edge of the case A, in which the catch C is pivoted, substantially as herein shown and described.

2. The flanges a', formed upon the inner surface of the inner part of the case A, and arranged in connection with each other and the plate d' of the lever D, substantially as herein shown and described.

145,369.—Low-Water Indicator.—FERDINAND STEELE, Brooklyn, N. Y., assignor to AMERICAN STEAM AND WATER RECORDING COMPANY, same place. Application filed May 14, 1873.

One end of a rod is secured to a bridge in the pipe. The upper end is fastened to a flexible diaphragm, which closes the end of the pipe. The movement of said diaphragm, caused by the boiler pressure, is controlled by the expansion and contraction of the rod, which sounds an alarm.

Claim.—1. The diaphragm f and expansion rod or tube d, in combination with the tube e and alarm or whistle, substantially as set forth.

2. The diaphragm f, expansion rod or tube d, lever h, and an adjustment, p, in combination with the tube e and alarm of a low-water indicator, substantially as set forth.

3. The expansion-rod d and diaphragm f, in combination with the lever h, valve i, and alarm and steam and water tubes, substantially as and for the purposes set forth.

145,370.—Lock.—HERRMANN STEIN, New York, assignor to himself and HERMAN DALE, Brooklyn, N. Y. Application filed September 13, 1873.

The cap-plate is constructed of spring sheet metal, and is provided with teats or projections that engage and hold the tumbler when the bolt is in the locked or unlocked position.

Claim.—1. The combination of bolt A, having tumbler-recess b, pillar d, tumbler B, spring-plate D, and key C, composing the lock, arranged and operated substantially as and for the purpose described.

2. The spring-plate D, having teats or projections g and perforation for insertion of key, for the purpose described.

145,371.—Car-Coupling.—ALLEN STRAIN, Greenfield, Ohio. Application filed March 1, 1873.

The weight of the triangular plate presses upon the lever and prevents the escape of the link.

Claim.—1. The triangular plate D, with extension-arm K, pivoted at h, in connection with pin i, rope E, and lever C, applied to draw-bar A, to raise and lock the same, substantially as set forth.

2. The triangular gravity-plate D, arranged to press with its base upon lever C in a slotted draw-bar, A, as and for the purpose set forth.

145,372.—Railway-Rail Joint.—WOODARD THOMPSON, Gardiner, Me. Application filed October 29, 1873.

A lap-joint is formed by vertically cutting away the heads of the rails, and by securing to one end of the rail on opposite sides flat metal pieces, which project beyond the end of the rail, thereby forming a slot at the end of the rail. The adjacent rail is similarly cut away, and on one side is secured a short metal piece, as above, the length of which is the difference of the two which are secured on other rail. The end of the rail having the short piece is inserted in the slot of the other rail end. Expansion is allowed for by a slotted bar secured to one rail, a pin secured in end of other rail working in the slot.

Claim.—1. The plates b b c on the outside of and in combination with the lap-joint a^1 a^2, substantially as and for the purpose shown and described.

2. The slotted bar D, in combination with the rails A^1 A^2, plate b, and bolt c, as herein shown and described.

145,373.—Clay-Mill.—JAMES A. VAUGHN and HORACE B. CAMP, Cuyahoga Falls, HENRY E. MERRILL, Akron, Ohio, and CALVIN J. MERRILL, Alton, Ill., assignors to TURNER, PARKS & Co., Cuyahoga Falls, Ohio. Application filed May 3, 1873.

Grinding-wheels reciprocated longitudinally on shaft through auxiliary shaft and endless rack, operated by main driving-shaft.

Claim.—In combination with the main shaft A and endless rack G, the auxiliary shaft H for reciprocating the rack, the main and auxiliary shafts being so geared together that the grinding-wheels shall be reciprocated in the manner herein described.

145,374.—Carriage-Spring.—ROBERT WALKER, Harrisville, Ohio. Application filed October 18, 1873.

Claim.—1. In combination with an elliptic spring, the angular springs I I, substantially as and for the purposes described.

2. The flanged plates C C and springs I I combined, as and for the purposes described.

3. The springs J J, in combination with an elliptic spring, as and for the purposes described.

4. The pads K K on the springs J J, as and for the purposes set forth.

145,375.—Shaving-Conductor for Planing-Machines. WILLIAM WEAVER, Burlington, Vt. Application filed August 30, 1873.

The hood is swiveled, so that it may be turned aside to reach the cutters. Also, the chip-breaker is extended around the side cutter, having a recess in it to conduct the shavings into the hood.

Claim.—1. As an improvement in wood-working machinery, the combination of cylindrical planer A and side cutter B with the combined shaving-conductor C, turning in sleeve e^1 of casing E, substantially as and for the purpose described.

2. The chip-breaker D of the side cutters, being enlarged, and provided with tapering recess for carrying the chips to the conductor, as set forth.

145,376.—Machine for Cutting and Dressing Stone.—J. BURNS WEST and JOHN C. FISH, Genesco, N. Y., assignors of one-half their right to WILLIAM H. KELSEY, same place, and JOSEPH C. MCKIBBIN, Washington, D. C. Application filed December 3, 1873.

Two sets of cutters, geared upon right and left hand screws, travel toward the center of the stone.

Claim.—1. A stone-dressing machine having two separate and distinct sets of cutters, arranged to commence cutting at the edges or ends of the stone, and to terminate at or near the center thereof, said cutters having a simultaneous movement, the purpose being substantially such as is herein set forth.

2. The combination of the frame B C, cross-heads D D, chisel-stocks F F, chisels G G, holders H H, screws I I, and driving mechanism, the parts being constructed and arranged to operate substantially as and for the purpose set forth.

3. The bed K, when constructed and arranged to operate substantially as and for the purpose set forth.

145,377.—Liquid-Measure.—WILLIS L. WEVER and A. WALLACE JOHNSON, Plattsburg, N. Y. Application filed October 11, 1873.

A sliding central division carries on one side a shelf closely fitting the sides of the vessel. By adjusting the shelf to different heights the vessel may be used to measure different quantities of liquid.

Claim.—A measure arranged for measuring the whole or any subdivisional part thereof, produced by the unit-measure A having sliding central gate B, with closely-fitting subdivisional shelf C, constructed and operated substantially as and for the purposes described.

145,378.—Combined Drawing-Table and Desk.—JOHN A. WILKENS, Indianapolis, Ind. Application filed January 22, 1873.

When the desk is depressed the table-top slides over it and holds it in that position. When the top is drawn out the desk is elevated by the contraction of rubber cords or straps attached thereto.

Claim.—In a table-desk, the combination and arrangement of the rubber straps or cords G and the interior desk C with the sliding table-top I, closing over upon the case to hold the interior desk, as shown and described.

145,379.—Machine for Printing Oil-Cloth.—WILLIAM E. WORTH, San Francisco, Cal. Application filed October 25, 1873.

A vertically-moving press, for carrying the printing-block and pressing it on the cloth, is mounted in a frame carrying a platform for the operators, which frame shifts laterally on another frame, which may be moved forward and back over the printing-floor, whereon the cloth to be printed is laid; the principal frame—that is, the longitudinally-moving frame—being provided with pawl-and-ratchet mechanism for shifting it, and both frames being arrested, when desired, by stops, so that the prints will match.

Claim.—1. The combination of movable frames A M and press Q with a printing-floor, D, substantially as specified.

2. The press Q, platform V, lever U, and stud T, combined with the frame M, substantially as specified.

3. The pawls K and notches L, combined with the frame A, ways C, shaft E, racks G, pinions F, pawl and pawl-lever I J, and the wheel H, all substantially as specified.

4. The pawl O and adjustable stops P, combined with frames A and M, arranged and operating substantially as specified.

145,380.—Perforating-Rule for Printers.—CHAUNCEY W. AMES, New York, N. Y. Application filed August 9, 1872.

The perforator is moved obliquely on its bearings, when the impression is made, by means of the slides, and is held in position by the pawl until the impression is complete.

Claim.—1. The perforator A, provided with oblique bearings E F, and confined between the plates B B, in combination with slides G H for operating the perforator, substantially as and for the purpose described.

2. The locking-pawl L, in combination with the knife or perforator, substantially as described, and for the purposes set forth.

145,381.—Combined Bow Fastener and Guard for Ox-Yokes.—ESDIX N. BACON, Chelsea, Vt. Application filed November 15, 1873.

The long arms of the levers being thrust inward, they are retained in that position by the short arm of the lever C catching in a notch in the short arm of the lever D, so that the bow may be withdrawn.

Claim.—1. The bow-fastener, consisting of the holder F, notched lever D, lever C, and spring E, combined to operate substantially in the manner set forth and specified.

2. The holder F, extended as shown at y, to form a strengthener and guard, substantially in the manner described.

145,382.—Blowing-Machine.—JOHN G. BAKER, Philadelphia, Pa. Application filed November 24, 1873.

Two revolving slotted cylinders are placed in the lower part of the case to cut off communication between the inlet and outlet ports, and make two revolutions to one of the piston-cylinder. The slots permit the pistons or vanes to pass the cut-off cylinders. The three cylinders revolve nearly in contact with each other and the case, but do not touch.

Claim.—A blower in which are combined, within a chest, A, a cylinder, B, its vanes a a', and the slotted cylinders D and D', all substantially as described.

145,383.—Lathe-Chuck for Sleigh-Bells.—WILLIAM E. BARTON, East Hampton, Conn. Application filed May 15, 1873.

The chuck has a concave seat for the bell, and the latter has a screw-threaded hole, into which is screwed one end of a rod, the other end lying within the chuck, and secured there by a set-screw.

Claim.—The lathe-chuck herein described, formed with a countersink or concavity in its end and a central screw, the whole adapted to hold a spherical or other convex object with a threaded aperture, in the manner explained.

145,384.—Lubricating-Packing for Journals, Shafting, &c.—SAMUEL BAXENDALE, Boston, Mass. Application filed October 28, 1872.

Claim.—The combined lubricating-packing for shafts and journals, composed of a mixture of fibrous asbestus and wool-waste, substantially as described.

145,385.—Game Apparatus.—RUFUS E. BEAN, Franklin, N. H. Application filed June 17, 1873.

The ways upon which the ball is first placed are opened, at the pleasure of the operator, to direct the passage of the ball, if possible, into the holes numbered highest underneath.

Claim.—1. The bed A, provided with the cavities d d, arms B B, and rest b, constructed substantially in the manner described.

2. As a new and improved article of manufacture, the game apparatus described and shown.

145,386.—Machine for Making Endless Bands.—LEEDHAM BINNS, Oakenshaw, near Bradford, England. Application filed February 26, 1873.

A strand of suitable material is passed from a spool around the guide wheels or pulleys and through the opening in the center of the disks, and its end secured, the guide-wheels being then rotated until sufficient material is wound about them, in the form of a skein, to form a core for the band, it being then broken, and this end also secured. Covering-strands are then led and secured to the core, from spools on the disks, and the latter being rotated together or separately, and in opposite directions, the core is properly covered, the ends of the covering-strands being secured and hidden. The band is removed through the slots in the disks, wheels and boss.

Claim.—1. In a machine for the manufacture of endless bands, cords, or ropes, the combination of the guide wheels or pulleys b d, and disks j k, and parts carried thereby, or their equivalents, arranged and operated in manner substantially as shown and described.

2. The combination of the disks j k, wheels n o, with slots or openings therein, or with pieces capable of removal therefrom, and the boss c with a slot or opening therein, in the manner and for the purpose substantially as herein shown and described.

3. In a machine for the manufacture of endless bands, cords, &c., the open slotted tube or boss c, in combination with the open, slotted, spool-carrying disk, the latter acting to wind the thread carried by the spool about the material passing through the tube or boss, substantially as described.

145,387.—Steam-Trap.—JOSEPH BISHOP, Meriden, Conn., assignor to himself and CHARLES PARKER, same place. Application filed January 3, 1872.

An inner expansible tube with conical end fitting into a conical seat, which is made adjustable by a screw. The tube is inclosed in outer non-expansible tube.

Claim.—The herein-described steam-trap, consisting of the inner expanding tube B, of conical form at its lower end, and the outer non-expansive tube D, combined with the valve-seat I, corresponding to the lower end of the tube, and made adjustable relatively to the valve or open end of the tube, substantially as described.

145,388.—Ticket-Case.—LEONARD J. BLADES, Harrington, Del. Application filed May 29, 1873.

Drawers or slides are arranged above each other in inclined grooves. Their front edges have flanges, against which the tickets are held by a gravitating follower, and they are suspended vertically in front of the cases when required to be replenished.

Claim.—1. A series of ticket-holding slides, C, arranged in inclined ways in case A, and having stops E applied vertically, or nearly so, to the front edge of the partitions D, so as to leave a space, g, at the bottom, and the gravitating follower-blocks F, all combined as shown and described.

2. The combination of the ticket-holding slides C, having lugs or projections k at the rear side, with the case A, having grooves e and studs i combined, as shown and described, whereby the slides may be drawn forward and suspended vertically to be filled, as specified.

145,389.—Heel for Boots and Shoes.—LYMAN R. BLAKE, Brooklyn, N. Y., and ASA S. LIEBY, Lawrence, Mass. Application filed November 26, 1873.

Claim.—1. The boot or shoe sole, made of a block, a, encompassed by a band, b, which band has the lip or flange l, substantially as shown and described.

2. The block-encompassing leather band, having its ends united by the metal clasp f, whose hooks g h enter the channels i k, substantially as shown and described.

3. In combination with the block a and band b, the metal plate m interposed between the block a and lip l, substantially as shown and described.

4. A heel for boots and shoes, made substantially as shown and described.

145,390.—Thill-Coupling.—WILLIAM R. BOWMAN, Danville, Ky. Application filed July 2, 1873.

Claim.—The clutch C beveled on its inner faces from x to y, as shown, and provided with the slot b, in combination with the head G beveled from w to z, as shown, and connected to the thill-iron D, having shoulders i i, by the shank d, all as and for the purpose set forth.

145,391.—Ornamental Label for Hat-Linings.—THOMAS W. BRACHER, New York, N. Y. Application filed November 13, 1873.

Claim.—A label composed of a frame, A, of paper or other suitable material, and a center, B, of textile material, the two parts being combined and ornamented substantially in the manner herein shown and described.

145,392.—Sand-Paper Roller.—HENRY W. BRETT, Boston, Mass. Application filed November 12, 1873.

Claim.—1. A sand-paper roller constructed with the slit a, and with clamping-jaws B B^2, that are arranged and adapted for adjustment to draw the paper about the roller-body, substantially as herein described, and for the purpose specified.

2. The combination of the jaws B B^2, carrier-block C, and adjusting-bolts f with the cross-pieces D and roller A, having the slit a, arranged to operate substantially as and for the purpose specified.

145,393.—Wheel for Vehicles.—ALEXANDER BUCHHOLZ, Janesville, Wis. Application filed September 25, 1873.

Claim.—The notched and tenoned spokes B, fitted within the mortised wooden hub-core A, and forming, between their contiguous edges, the openings b', in combination with the flanged collars C and C', the latter of which is provided with the lugs c and c, substantially as and for the purpose specified.

145,394.—Steering Apparatus for Vessels.—CHARLES W. BUFFINGTON, Cleveland, Ohio. Application filed September 15, 1873.

Claim.—In a steering apparatus having a right and left hand screw, operated by rearing connected with the steering-wheel, constructed as herein described, the combination therewith and the nuts g g of the arms or rods h h and tiller-arm i, detachably connected, for the purpose of substituting a tiller-arm of different length, as set forth.

145,395.—Lubricator for Car-Wheels.—WILLIAM A. BULLARD, Kalamazoo, Mich. Application filed November 1, 1873.

Claim.—1. The oil-supply cup E, having a feed-hole, c, centrally through it, and secured to the outside of wheel A, in combination with inclined oil-passages a a in the wheel A, and the holes a' a' through the bushing C, and the recessed oil-supply washer G, applied to the axle B, substantially as described.

2. The washer D, keyed on axle B, and fitted in recesses in the wheel A, in combination with washer G, also keyed on axle B, and having a feed-cup, e e, feed-spaces h, and grooves g g, substantially as described.

145,396.—Corn-Planter.—JARVIS CASE, Springfield, Ohio. Application filed November 15, 1873.

The main frame is mounted upon two bearing-wheels, which serve as coverers. The seat is pivoted upon the axle-tree in such a manner as to be shifted into two positions, and secured in either. The furrow-openers (runners) are secured to the forward end of the frame by a self-adjusting coupling, and the rear end is adjustably connected to a pair of foot-levers, for lifting the runners entirely from the ground. The seed-boxes are mounted upon the runners in the usual manner, and the circular dropping-plate rotated upon its center by a reciprocating bar operated by hand. The ratchet-teeth are upon the face of the wheel-plate, and are acted upon each side by a gravitating-pawl, one of which acts at every stroke of the pawl-bar. A spring scraper-bar is attached loosely to the rear end of the frame, so that the free ends are held in contact with the face of the wheels.

Claim.—1. The rotating plate G, provided with the seed-cells d and the ratchet-teeth e on its face, in combination with the rods f, said parts being constructed and arranged to operate as and for the purpose set forth.

2. The disk G, provided with the teeth b on its edge, in combination with the arms h and i, arranged to operate as stops to limit the motion of the disks, as set forth.

3. The plates m, provided with vertical recesses or slots, in combination with the pin p, when applied as described, to form a flexible joint between the front and rear frames of a planter.

4. The levers D, pivoted to the bars A of the rear frame, and connected, by means of the chains r and adjusting-bolts q, to the

rear end of the front frame, for the purpose of elevating and adjusting the latter, all combined and operating as set forth.

5. The pivoted standard T, having the seat S made adjustable thereon, and provided with the adjustable wedges V and *z* and bars *y*, all constructed and arranged to operate substantially as described, whereby the seat can be moved forward or back, and kept in a horizontal position, as set forth.

6. In a corn-planter, the bar provided with the scrapers, in combination with the central detachable spring, all constructed and arranged to operate as set forth.

145,397.—Mop-Head.—CHARLES B. CLARK, Buffalo, N. Y. Application filed August 19, 1873.

The cross-head is formed with the two lateral arms diminishing smoothly and gradually from the center of shank portion. Also, the ends of the sliding clamping-wire are held in the collar by means of a rib, which is cast in the recess for receiving the wire, said rib entering a corresponding indentation in the wire.

Claim.—1. In a mop-head, the cross-head A, the arms of which are formed with a diminishing exterior surface from the center to the ends, substantially as and for the purpose herein set forth.

2. In a mop-head having a cross-head and a sliding clamping-wire, the projections *d d* on the collar C, in combination with the notches *s s* on the wire D, substantially as and for the purpose set forth.

145,398.—Machine for Bending Hoops.—EDGAR COAPMAN, Rochester, N. Y., assignor of one-half his right to B. H. CLARK, same place. Application filed June 20, 1873.

A circular former is so arranged as to hold hoops of different sizes in a proper position for securing their ends to each other.

Claim.—1. In combination with the pressing-roller G, the disk B, having slots *k k* and ways or grooves *w w*, and the expansible forming-wheel A, with its slides *l l* and the set-screws *i i*, all constructed and operating substantially as described.

2. The right-and-left screw C, the slides *l l*, the set-screws *i i*, and the slots *k k*, when combined with the forming-wheel A and disk B, in the manner and for the purpose specified.

145,399.—Ratchet-Wrench.—ISAAC C. COLBERT, Marysville, Ohio. Application filed July 19, 1873.

Claim.—1. The handle A, forming two jaws, B B', one of which is provided with ratchet-teeth, the barrel C, with its ratchet-collar *c*, and the spring *d*, in combination with a removable bush-thimble, D, substantially as and for the purposes specified.

2. The ratchet-barrel C, slotted at *d'*, and provided with a spring-catch, *d*, arranged to pass through said slot *d'*, to secure the bushing D, substantially as herein set forth.

145,400.—Can for Paints, &c.—JONAH R. COLE, New York, N. Y. Application filed July 18, 1873.

Claim.—The can A having a flange, C, of double thickness of material, and used in connection with the cover B having the raised portion or flange *a* and forming a solder-space, *c*, all constructed and arranged as and for the purpose specified.

145,401.—Door-Key.—JOHN COLLINS, Hohokus township, Bergen county, N. J., assignor to HOPKINS AND DICKINSON MANUFACTURING COMPANY. Application filed November 6, 1873.

Claim.—A key made in parts which can be adjusted to and rigidly secured in any desired relation, for the purpose of regulating the extent of protrusion of the handle to suit the thickness of the door, substantially as described.

145,402.—Mechanical Movement.—JOHN H. CRANSTON, Norwich, Conn., assignor to CHARLES POTTER, Jr., New York city. Application filed November 6, 1873.

On each side of the press is a lever turning on a fixed axis and connected to the bed by one end, and to a set of rollers by the middle, so that as the bed reciprocates the lever shall vibrate and the rollers shall be compelled to move to an extent equal to exactly half the motion of the bed.

Claim.—The lever G, connected to the bed B, and connected to the roller-frame C at a point equidistant between such connection and the center of motion *a*, so as to control the roller-frame C in all parts of the motion, substantially as herein specified.

145,403.—Explosive Compound.—CARL DITTMAR, Boston, Mass. Application filed August 30, 1873.

Claim.—1. The herein-described process of treatment of vegetable fiber, the same consisting in reducing the fiber to a pulp, then compressing the pulp into a sheet or other compact form, and then reducing said sheet to a granulated or powdered condition, and treating the same in this condition with an acid or acids for the purpose of rendering it explosive, substantially as described.

2. Vegetable fiber prepared with a solution of sugar, or mannite, or amylum, or inuline, or other substances, substantially as herein described, and rendered explosive by nitric acid.

145,404.—Sofa-Bed.—ERNEST N. DOHING, New York, N. Y. Application filed December 1, 1873.

The hinges on which the bed unfolds have slots for the screws to permit a forward as well as a pivotal movement, thus saving the upholstery between. The bedding does not extend the full length of the sofa, but has at each end, covering the deficiency, an arm-rest formed of a cushion and a box beneath. These latter, when the bed is unfolded, form a receptacle for a bolster, the cushions being at the other end.

Claim.—1. The seat-frame, composed of two parts, united together by a combined slide-and-hinge connection, substantially as and for the purposes shown and set forth.

2. The combination, in a sofa-bed, with the divided and hinged seat and bed-frame, of detachable arms, fitting down upon the end of the folded frame, and provided with front and side pieces, to cover and conceal the otherwise exposed portions of the frame sections, substantially as shown and set forth.

3. The detachable sofa-bed arm, made of two parts, the one a bolster portion, and the other a cushion portion, the same being constructed and adapted to be applied to the sofa-bed, substantially as herein shown and set forth.

4. The divided seat-frame, having the upper or movable portion upholstered to form a sofa-seat for a portion of its length, and not extending to the ends, in combination with the sectional arms, consisting, each, of a bolster and a cushion, fitted and applied to the unupholstered ends of said sofa-seat, substantially as shown and set forth.

145,405.—Fire-Extinguisher.—WEAR L. DRAKE, Evanston, Ill.—Case B. Application filed February 27, 1873.

The trunnions on which the extinguishers are mounted are hollow, and connect with a pipe extending nearly to the bottom of the tank.

Claim.—A tilting fire-extinguisher provided with one or more hollow trunnions, substantially as and for the purposes specified.

145,406.—Fire-Extinguisher.—WEAR L. DRAKE, Evanston, Ill.—Case C. Application filed February 27, 1873.

The generators are connected with the water-supply pipes of a building. Check-valves are placed in the pipes between the generator and the main, which close by the pressure of the gas when the extinguisher is discharged. Suitable outlets are arranged in the different rooms, and are provided with the necessary cocks or valves.

Claim.—A fire-extinguisher which discharges its contents by means of gas generated in the extinguisher, in combination with water-supply pipes provided with valves, arranged and operating substantially as specified.

145,407.—Lasting-Jack for Boots, &c.—JAMES C. DREW, Auburn, Me. Application filed October 2, 1873.

Jack specially adapted for finishing long-legged boots, with provision for ready attachment to a bench, and may be moved in any direction desirable while working upon the boot.

Claim.—1. The combination of the jack-spindle *o*, spindle-supporting arm *n*, and flanged coupler-plate *a*, substantially as and for the purposes described.

2. The combination of the disk-plate *e* and its hub *f*, and the bolt *h* and its disk-head *i*, and nut *k* for supporting the ring *m*, substantially as shown and described.

3. In combination with the coupler *a* and arm *n*, the stops *y* and *z* and projection *j* for sustaining the jack-spindle either in vertical or in horizontal position, substantially as described.

4. In combination with the disk-plate *e* and its hub *f*, and the bolt *h*, head *i*, and nut *k*, the elastic washer or spring *l* interposed between the head and hub, substantially as shown and described.

145,408.—Umbrella-Supporter.—WILLIAM A. DROWN, Jr., Philadelphia, Pa. Application filed May 31, 1873.

To afford ready connection and disconnection of the umbrella and its supporting-arm.

Claim.—1. The combination of an umbrella tip or stem, A, carrying a pivoted plate, B, with a supporting-arm, D, having an eye, *b*, through which the said stem and plate can be passed, as set forth.

2. The stem A, having a shoulder, *c*, and a jointed slotted plate, B, and adapted to a notched arm, D, substantially as specified.

145,409.—Reusing Alkaline Solutions from Treating Straw.—JAMES H. DUGAN, Bloomfield, N. J. Application filed October 26, 1872.

Combines the liquor drained from the straw with the wash-liquor; filters the mixture to remove foreign matter; re-enforces with caustic alkali; after which the solution can be used for treating a second quantity of straw.

Claim.—The combination, with a tank, A, of a draining-tank, B, and filtering-reservoir D, operating together, as and for the purpose specified.

145,410.—Flour-Sifter.—FREDERIC G. FORD, Philadelphia, Pa. Application filed June 20, 1873.

A follower is placed within the vessel and provided with a stem that passes through the cover. The follower removes the flour that adheres to the sides, while its stem indicates how much flour is in the vessel.

Claim.—The combination of the pail A, rotating sieve partition B, movable disk D, and stem E, extending through the center of the lid of the pail, all substantially as and for the purposes herein set forth.

145,411.—Screw.—JOHN FREARSON, Birmingham, England. Application filed October 22, 1873.

Claim.—A screw, provided in its head with one or more nicks of angular figure, or of a combined angular and V figure, the said nick or nicks being of greatest depth at the center of the head, and terminating within the edge of the head, as herein described and illustrated in Figs. 1, 2, 3, 4, 5, 6, and 7 of the accompanying drawing.

145,412.—Machine for Cutting Out and Stamping Up Sheet-Metal Boxes.—WILLIAM J. GORDON, Philadelphia, Pa. Application filed June 30, 1873.

The slides F and punch D have a definite throw, by virtue of their cams, and the cutter E is adjusted with relation to them, to suit different thicknesses of metal, by means of the nuts *e'* and *e''*.

Claim.—The construction and arrangement of the parts D, E, F, *e'*, and *e''*, in relation to the cams *e'''* and *f' f'*, and to the die C constructed as set forth, whereby the cutter or part E is caused to hold the separated blank firmly down upon the shoulder *c'* of the die C while the plunger or part D is forcing the said blank down through the central opening in the said die C, and afterward causing the formed-up blank to be released from the rising plunger or part D, that it may drop down into any suitable receiver, substantially as and for the purpose set forth and described hereinbefore.

145,413.—Vehicle.—CHRISTIAN GORMANN and JOSEPH B. THIEL, Union Hill, N. J. Application filed October 30, 1873.

Claim.—1. The sliding king-bolt I, connected with the body of the wagon by stays J, in combination with a horizontal steering-wheel, G, connected with the front axle, substantially as described, for the purpose specified.

2. The combination of the guide-plates E, having openings on each side of the axle, with the sliding brace-rods D, arranged in pairs on each side of the axle, all constructed substantially as and for the purpose specified.

145,414.—Shirt.—SOLOMON S. GRAY, Boston, Mass. Application filed September 22, 1873.

The neck-band is made adjustable in size, so as not to alter the position of the central collar-button.

Claim.—A shirt provided with two or more button-holes in each end of the neck binding or band, in combination with a movable stud or fastening for securing said band together, substantially as and for the purpose set forth.

145,415.—Flexible Play-Pipe for Hose.—JOHN GREACEN, Jr., New York, N. Y. Application filed June 20, 1873.

The flexible play-pipe has a ferrule or coupling attached, by means of an inner tube and flange, to prevent the liability of expanding the pipe from the coupling by the force of the water.

Claim.—A flexible play-pipe with a coupling thereto attached by means of an inner tube and flange, substantially in the manner and for the purpose described.

145,416.—Machine for Bending Wood.—HIRAM HANNA, Columbus, Ohio. Application filed May 27, 1873.

Carriage-thills are bent in one direction in a former, by which they are held, and removed to a clamping-table, where the points are bent in a transverse direction.

Claim.—1. The beveled opening *a*, formed in the hooked end of the heel-former B, substantially as and for the purpose described.

2. The heel-strap C, provided with the beveled hinged foot *c*, substantially as and for the purposes described.

3. The combination of the beveled opening *a*, formed in the hooked end of the heel-former B, with the heel-strap C, provided with the hinged bevel-foot *c*, substantially as and for the purpose described.

4. The notched bars *g g'* on the heel-strap C and former B, substantially as and for the purposes described.

5. The adjustable clamp G, in combination with the notch-bars *g g'* and heel-former B, arranged and operating substantially as and for the purposes set forth.

6. The combination of the heel-former B, hinged heel-strap C *c*, and eccentric clamp D E, &c., arranged and operating substantially as and for the purposes described.

7. The combination of the body-former K, provided with an attached point-strap, *m*, and clutch-head *m'*, point-former L, hinged latch *l'*, levered eccentric I', and rapid screw S, all arranged and operating substantially as and for the purposes set forth and described.

145,417.—Piano-Forte Action.—ALBERT K. HEBARD, Cambridge, Mass. Application filed September 13, 1873.

The spring exerts constant stress against the head of the flange-screw, thus lifting the under jaw always toward the hammer-butt pivot.

Claim.—The flat spring M, secured upon the upper surface of the flange A, its slotted free end embracing the set screw L, for drawing up the section D, to operate in connection with the hammer, substantially as described, for the purpose specified.

145,418.—Lounge.—ALOIS HEYER, Philadelphia, Pa. Application filed November 8, 1873.

The back is hinged to the arm-rests at each end, and the arm-rests are hinged to the body of the lounge, so that either arm-rest and the adjoining portion of the back may be elevated or depressed. The arm-rests are supported in a depressed position by a slide arranged beneath the body. A fastening is arranged on the back, so as to lock the back and arms in position when both rests are elevated.

Claim.—1. The end rests B, jointed to the body A, in combination with the back C, jointed to the end rests, substantially as and for the purpose set forth.

2. The slide E, arranged beneath the body A of the lounge, and operating, in combination with the end rests B, as set forth, and for the purpose described.

3. The catch D, in combination with the back C, end rests B, and body A of the lounge, substantially as and for the purpose set forth.

145,419.—Harvester-Dropper.—ANDREW J. HODGES, Peoria, Ill. Application filed August 27, 1873.

Claim.—The combination of bar G, having a hook or dog, *d*, the plate *g*, spring *e*, dropper F *i i i*, and cam *k*, substantially as and for the purpose set forth.

145,420.—Lithographic Press.—BERTHOLD HUBER, Boston, Mass. Application filed May 28, 1873.

When the bed-piece advances beyond a certain distance it causes a strain on the chain S, which, acting upon the belt-shifting device, throws the belt from one pulley to the other, and will cause the belt to cease acting on the cylinder F and to act on the return-rollers H^1 H^1. Now, by raising lever G^2 the cylinder F is removed from contact with the bed-piece B.

Claim.—In a press, the combination of the bed-piece B, the chain S^1, shifting device S R Q, and gears H F^1, operating substantially as described, and for the purpose set forth.

145,421.—Machine for Making Metallic Tubing.—JOHN HUGGINS, Birmingham, England. Application filed July 5, 1873.

Claim.—The combination of alternate pairs of vertical and horizontal forming or shaping and welding rolls and guides, for conducting the strip and partially-made tube to the successive pairs of rolls, said parts being constructed and arranged to operate as herein shown and described, so that the partially-formed tube shall be compressed into an elliptical form in cross-section, the longer axis of the ellipse being alternately vertical and horizontal, until said tube is made cylindrical in the last or finishing rolls.

145,422.—Bow-Pin for Ox-Yokes.—WILLIAM J. IVES, Meriden, Conn. Application filed September 16, 1873.

Claim.—As an article of manufacture, the bow-pin for ox-yokes, consisting of the pin A, having the flanged head B C upon one end, and the spring D on the other, substantially as set forth.

145,423.—Corn-Shocker.—GEORGE E. JOHNSON, Smith Valley, N. Y. Application filed July 19, 1873.

A jointed supporting-bar, with a transverse pin, has two legs inserted in a cross-bar, which turns on a pivot to facilitate removal.

Claim.—In a corn-jack, the pivoted table A with legs B, in combination with the bar C, hinged leg H, and removable pin D, substantially as and for the purpose specified.

145,424.—Heating-Stove.—JOSEPH JOHNSON, Spring City, Pa. Application filed November 8, 1873.

Slides working up and down on the inside of the external casing expose and conceal, at pleasure, the mica windows in the internal casing. Heating-chambers are made to project into this latter casing above the mica windows. These chambers communicate with external hot-air flue by means of the space between the outer and inner casings.

Claim.—1. The combination of the hood D, and the casing *a*, and a series of hollow projections extending from the said casing into the combustion-chamber of a base-burning stove, above the illuminating-doors, and forming air-heating chambers communicating with a hot-air flue, all as set forth, for the purpose specified.

2. A heating-stove in which slides F, admitting of being raised and lowered to expose or cover the mica doors B, are combined with hoods D, secured to the exterior of the stove above the said mica doors, all substantially as and for the purpose specified.

145,425.—Car-Axle Box.—JOSEPH G. JOHNSON, Elkton, assignor to THE LUBRICATING CAR-AXLE COMPANY, Baltimore, Md. Application filed August 30, 1873.

Claim.—The open-ended oiler-frame E, arranged to slide and be supported on shelves *d' d'* of axle-box and over an oil-reservoir, *d*, forming part of axle-box, as and for the purpose described.

145,426.—Device for Detaching Horses.—EDWARD P. JONES, Shell Mound, Miss. Application filed May 28, 1873.

Improvement on patent 96,703, of November 9, 1869. The inner ends of the levers are secured in place by means of guards.

Claim.—The whiffletree-bar A, projections or cleats B B, guards C C, and levers D D, the whole combined and arranged to operate substantially as described.

145,427.—Nut-Lock.—EDWARD KAYLOR, Pittsburg, Pa. Application filed May 13, 1873.

Claim.—The nut-locking device, consisting of the thin flat metallic plate, and the broad elastic washer, the latter, when displaced by the pressure of the nut, bending the former up around the edges of the nut, to prevent its turning, substantially as described.

145,428.—Car-Coupling.—JAMES KECK, Dwight, Ill. Application filed April 24, 1873.

To prevent accidental uncoupling, by the lateral swaying of the cars, the front of each head has a vertical slot formed in it, which embraces a rib formed on the shoulder of the opposing coupling. This will not prevent the cars uncoupling if one should jump the track.

Claim.—The draw-bar C, having a harpoon-head, with the vertical slot *f*, pin-hole *i*, and rib *g*, in combination with the spring

D, adapted to operate with a draw-head of similar construction, as set forth.

145,429.—Shirt-Protector.—GEORGE E. KING, New York, N. Y. Application filed November 25, 1873.

Claim.—The metallic strip B, when applied to a dress or dress-protector, substantially in the manner, and for the purpose set forth.

145,430.—Machine for Burnishing the Heels of Boots and Shoes.—RICHARD C. LAMBART, Quincy, assignor to TAPLEY HEEL-BURNISHING-MACHINE ASSOCIATION, Boston, Mass. Application filed November 1, 1873.

Claim.—1. The combination of a series of burnishers connected with a normally stationary plate or holder, and pressed inward by suitable springs, with a rotatively-reciprocating jack, which brings the whole length of curved heel-edge under the action of the burnishing mechanism.

2. In combination with the series of yielding burnishers and reciprocating jack, the support-plate *r*, made vertically adjustable, substantially as described.

3. In combination with the series of yielding burnishers and reciprocating jack, a carrier-plate, *v*, made adjustable horizontally, substantially as described.

4. In combination with a boot or shoe jacking mechanism, the burnisher or burnishers upon a stock or carrier arranged to reciprocate in a right line in a direction across the edges of the lifts, substantially as described.

145,431.—Egg-Carrier.—WILLIAM A. LAVERTY, Philadelphia, Pa. Application filed June 24, 1873.

The pockets are formed by a spring, which is bent in such a manner as to form four compartments, and held in position by notches in it, which fit slots on opposite sides of a strip, A.

Claim.—The strip A, slotted as described, and bent and interlaced to form four pockets, in combination with the straight strip B, substantially as and for the purposes herein set forth.

145,432.—Bung-Faucet.—GEORGE D. LEE, Brookhaven, N. Y., assignor of two-thirds his right to JOHN M. KING and HOLMES W. SWEEZY, same place. Application filed October 28, 1873.

A swinging hook, binding against the inside of the barrel, is pivoted to a rod, and is tightened by a nut working in a screw-threaded portion in said rod, forming a self-adjusting attachment to a faucet, by which it is readily secured to the barrel.

Claim.—1. The self-adjusting hook L, in combination with the screw-rod K and spout A, substantially as and for the purpose set forth.

2. In combination with the features above, the packing-rings C and O and screw-nut M, substantially as and for the purpose set forth.

145,433.—Disinfecting Compound.—JOHN W. LEE and JOHN W. DAVIS, Washington, D. C. Application filed December 3, 1873.

Claim.—A deodorizing and disinfecting solution, consisting of water, copperas, alcohol, either with or without saltpeter, substantially as described.

145,434.—Gate.—MONTGOMERY LOOMIS, Liberty Centre, Ohio. Application filed October 25, 1873.

A gate which can be opened or closed by sliding endwise or revolving around its post, having pivoted self-adjusting braces, which support the gate in a horizontal position when opening, preventing swagging; said braces pivoted to the swinging post through which the gate slides, their lower ends fitting in a horizontal groove of the bottom rail of the moving gate.

Claim.—The braces C C, pivoted to a block, D, on which the gate slides, in combination with the channeled gate-rail B and openings *g'*, substantially as described.

145,435.—Trunk.—HARVEY L. LOWMAN, Birmingham, Conn. Application filed November 6, 1873.

Claim.—A trunk or case of substantially rectangular form in its central, longitudinal, and transverse sections, contracted into a circular form at the ends, substantially as described.

145,436.—Apparatus for Sweating Hides or Skins.—WILLIAM M. MASON, Buffalo, N. Y. Application filed July 21, 1873.

Claim.—In an apparatus for sweating hides, the ventilator B with valve *a*, and the water-floor C with troughs *c c c*, when combined with the vault or apartment A, in the manner and for the purpose specified.

145,437.—Angle-Iron Cutter.—ARCHIBALD MCGUFFIE, Buffalo, N. Y. Application filed September 10, 1873.

The upper blade C is constructed with beveled edges *a a*, while the lower blade or knife D has a plane or straight cutting-edge, and is secured in position by the reversible wedges *b c*.

Claim.—1. The removable and reversible knife D, having a plane or straight cutting-edge, in combination with the vertical knife C, having the beveled cutting-edges *a a*, arranged substantially as described, for the purpose specified.

2. In an angle-iron-cutting machine, the reversed wedges *b c*, placed one each side of and in combination with the lower blade D, arranged and applied as and for the purpose specified.

145,438.—Lamp-Burner.—RUFUS S. MERRILL, Hyde Park, assignor to himself, WILLIAM B. MERRILL, and JOSHUA MERRILL, Boston, Mass. Application filed August 25, 1873.

The cone of a lamp-burner is corrugated close to and parallel with both sides of the flame-slot, in order to strengthen the sides sufficiently to prevent their indentation during use or transportation.

Claim.—An oblong-slotted sheet-metal deflector for lamp-burners, formed on top of the dome and on each side of the slot, with a rib or corrugation extending parallel with and near to the longer edges of said slot, as and for the purposes shown and set forth.

145,439.—Paint-Can and Device for Removing the Contents.—FREDERICK L. MILLER, Brooklyn, N. Y. Application filed October 24, 1873.

A diaphragm or packing of pasteboard is cut in the form of a cross-section of the can, with its diameter a little larger than that of the can, so as to afford a flange turned up all around. This diaphragm is then inserted and pushed up against the top of the can, the can reversed, and the bottom, with an opening in the center, is soldered on. The material is then filled in through the aperture in the bottom, which is finally closed in the usual manner.

Claim.—1. In combination with the supporting-shelf S, a rigid propelling-piston, N, constructed substantially as described, and for the purpose of expelling the contents of cans.

2. In a can for plastic material, a flexible independent packing, E, constructed substantially as described, for the purpose of combination with a rigid external piston, N.

3. The specific mechanism consisting of rack and pinion, constructed substantially as described, for the purpose of expelling the contents of cans containing plastic material.

4. An external piston, N, constructed substantially as described, for application to an internal independent flexible packing.

5. The combination consisting of the rigid external piston N, the flexible internal packing E, the support S, and the can C.

145,440.—Can for Paint, &c.—HERMAN MILLER, New York, N. Y. Application filed November 22, 1873.

Claim.—The combination, with a conical or tapering male valve-seat, *b*, at the mouth of the body of the can, and female valve *d* in the lid, of a screw-thread, *f*, spun or wrought in said body below the valve-seat *b*, and corresponding screw-thread *g* in the lid, substantially as shown and described.

145,441.—Ore-Separator.—HIRAM MINCT, Chicago, Ill. Application filed October 24, 1873.

The hopper is filled with the ore or similar matter, and the valve opened, allowing an upward current of water through the sieve, agitating the mass, and carrying the lighter particles over the flaring edge of the hopper.

Claim.—The tapering hopper I, in combination with the screen *b* and valve C, constructed and arranged for operation as and for the purpose specified.

145,442.—Gas-Cock.—EUGENE M. MORRIS, Baltimore, Md. Application filed November 17, 1873.

In a gas-cock the valve stem is prolonged beyond the seat, and operated by a spring. The prolongation is made hollow, and is perforated above and below the bottom of the valve-shell to permit of the passage of the water of condensation into the chamber provided as a receptacle therefor.

Claim.—The combination, with a cock-valve, B, subjacent chamber F, and drip chamber C, of the projecting tube *b*, provided with apertures b^1 b^2, one above and the other below the shell-bottom a^2, as and for the purpose specified.

145,443.—Seed-Drill.—ROBERT H. D. MORRISON, Winona, Minn., assignor of one-half his right to JESSIE TAGGART, same place. Application filed May 7, 1873.

Both the seed-cup and the corrugated feed-roller are made in halves, and slide upon each other, so as to enlarge or contract their capacity.

Claim.—The stationary sectional cup B, provided with a fluted feed-roller, C, in combination with the sliding sectional cup B', having the fluted feed-roller C', and with the lever A, pivoted to the stationary cup B, for operating the sliding cup and feed-roller, all being constructed and arranged for operation, substantially as specified.

145,444.—Brick-Machine.—LEMUEL PATTERSON, Parker City, Pa., assignor to himself and JAMES COOPER, same place. Application filed November 12, 1873.

A vibrating plate, operated by a lever, carrying pinions, which are adjustable, and gear into a reciprocating mold-rack, from which the formed bricks are ejected by plungers hung on a vertically-reciprocating frame operated by a rock-shaft.

Claim.—1. The reciprocating mold-rack G, gearing into the pinion *e*, and combined with the pinions *b* and *d*, which are hung upon the forward plate F, substantially as and for the purpose herein shown and described.

2. The vertically-movable frame L, carrying the plungers *f*, and connected with the short arms *g* of the jointed rock-shafts M M, substantially as herein specified.

3. The lever J, combined with the jointed frame I, vibrating plate F, and pinions *a*, *b*, *d*, and *e*, for operation on a brick-machine, substantially as herein shown and described.

145,445.—Welding Iron and Steel.—JOSEPH POPPING, New York, N. Y., assignor to himself and WILLIAM L. GODFREY, same place. Application filed November 21, 1873.

Claim.—1. For welding purposes, a compound composed of calcined borax, iron filings, and prussiate of potassa, in the proportions, and applied in the manner hereinbefore described.

2. The process, hereinbefore described, of welding iron and steel, viz., applying to the surfaces to be welded the compound hereinbefore named, joining the prepared surfaces of the metal together, heating them red-hot, and hammering or rolling the same.

145,446.—Car-Coupling.—HENRY H. POTTER, Sterlingville, N. Y. Application filed August 27, 1873.

The draw-head is made in two parts, the upper part having a horizontal movement, and the lower part a circular vertical motion, it being pivoted near its rear end. By means of a double crank-lever, operated from the platform, the said upper part is thrust forward, and the lower part downward, so that the pin, which is pivoted beneath the platform, is free to swing out and release the link. When the cars come together the parts are forced back to position. When one car jumps the track, the device is operated by a similar arrangement of levers operated by one of the rails of the track.

Claim.—1. The combination of the levers *i* or *l*, connecting-rod *n*, lever *o*, provided with the projections 1 2, with the two parts *c* and *a* of the draw-head, substantially as described.

2. The rods 6, cranked lever 7, arm 8, draw-head *a c*, and lever *o*, provided with the projections 1 2, all in combination, substantially as shown.

145,447.—Endless Driving-Belt.—J. FRANKLIN REIGART, Washington, D. C., assignor to himself and EHUD N. DARLING, same place. Application filed May 10, 1873.

Claim.—An endless driving-belt constructed of a flexible cord or wire, upon which are strung gum or other elastic balls, substantially as described.

145,448.—Composition for Fire-Brick, Stove-Linings, &c.—ERNST H. RICHTER, Taunton, Mass. Application filed August 21, 1873.

Composed of pulverized oyster-shell, sand, clay, and powdered zinc or iron.

Claim.—The composition herein described for stove-linings, fire-brick, retorts, &c., composed of the ingredients substantially as described.

145,449.—Apparatus for Granulating Zinc.—ERNST H. RICHTER, Taunton, Mass. Application filed August 21, 1873.

The conical hood keeps the contents of the kettle always in condition for removal and granulation, economizing fuel thereby.

Claim.—The suspended hood C, having a vent at the upper part, and placed above and combined with an apparatus for melting scrap zinc, substantially as and for the purpose described.

145,450.—Zinc-Furnace.—ERNST H. RICHTER and FRIEDRICH G. RICHTER, Taunton, Mass. Application filed August 21, 1873.

The center stack is supplied with air currents by means of inclined air-passages formed in the longitudinal partition of the retort-chamber; and, in place of the side stacks usually employed, horizontal draft-passages are formed on top of the furnace, and communicate with the central stack.

Claim.—1. The zinc-furnace carrying the central stack B on top of and in direct communication with central portion of the retort-chamber, and with the passages C C that extend to the four corners of the furnace, so that the stack will at once draw the gases from all parts of the furnace, as set forth.

2. A zinc-furnace provided with inclined air-passages *a a* in the central partition, when said air-passages are made to extend from the ends of the furnace to the central stack B, substantially as specified.

145,451.—Tobacco-Package.—GOLDSBOROUGH ROBINSON, Louisville, Ky. Application filed July 9, 1873.

Claim.—A wrapper consisting of a series of rows of corn-shuck leaves arranged spirally around a "cut tobacco" pocket, and each row binding upon a next adjacent one, in the manner set forth.

145,452.—Combined Lounge and Chair.—MARSHALL P. ROBINSON, Fayette county, Ky. Application filed September 30, 1873.

The hinged head-rest of an invalid-bedstead can be adjusted, by a curved arm and clamp-screw, to lean the contrary way, and thus form a chair at the head of the bed. There are also straps with eyelets and studs, and a foot-step between the two front legs.

Claim.—1. In combination with the lounge or frame *a*, the pivoted head-piece, which can be used as the head of the lounge or back of the chair, substantially as specified.

2. A combined chair and lounge, constructed of the body *a*, hinged part *c*, adjustable straps *b l*, curved arms *e*, eyes *g*, set-screws *t*, and hinged foot-board *u*, the parts being arranged for operation substantially as shown and described.

145,453.—Pipe-Organ Valve.—WILLIAM SCHULKE, Hamilton, Ohio. Application filed June 20, 1873.

The wind-chest valves are pivoted in the base-board of the chest, and the tails of the valves connected by a threaded wire with adjustable nuts thereon, the valves being thus accurately fitted to their seats. The spring holding said wire and the connected valves in place is itself adjustable by set screws to increase its tension when desired.

Claim.—1. In combination with the pivoted valve-levers G, the threaded connecting-rod H and nuts *h*, substantially as and for the purpose specified.

2. In combination with the connecting-rod H and its valves, the lever I, the spring L, the strip M, and the set-screw N, substantially as and for the purpose shown.

145,454.—Manufacture of Glue.—BENJAMIN F. SHAW, Cambridge, Mass. Application filed June 6, 1873.

Consists in forming upon that part of the surface of the pan a coating that is complementary to the skin or coating which is formed by natural tendency at the surface exposed to the air, and by this means inclosing completely within a case, film, or sack the softer and sticky portion of the mass so that it may be removed and handled with facility.

Claim.—The formation of a coating, film, pellicle, or crust for the unexposed surface of gelatine or glue in the process of manufacture and desiccation, for the purpose mentioned.

145,455.—Ore-Washer.—REUBEN SOLLIDAY, Allentown, Pa. Application filed October 24, 1873.

Improvement upon Letters Patent No. 138,948, granted May 13, 1873.

Claim.—The means employed for locking the blades B in position within the groove A' of the base A, consisting of the key C, fitted to or within the openings *a'* and notch *b'*, substantially as specified.

145,456.—Railroad Switch-Signal.—CHARLES W. SPAYD, Wilkesbarre, Pa. Application filed January 10, 1873.

A switch-signal shaft is provided with a pinion and a lug. The former gears with two teeth on the cap of the switch-stand so as to turn the shaft barely half round and display the signal required. The lug at the same time turns in a semicircular recess, and then, coming between the split parts of the cap, locks the shaft, preventing further rotation.

Claim.—1. The key *r*, in combination with the two-part switch-lever and the signal-carrying rod pivoted between them, and provided with the arm *f*, moving between the sides of the cap of the switch-stand, as shown and described, whereby said rod may be locked, as specified.

2. In combination with cap E of the stand, provided with teeth *d d* and recess *e*, the rod or lever A, its rigid arm *f*, and pinion *c* keyed thereto, as shown and described.

145,457.—Water-Heater.—ARCHIBALD STENCE, Montreal, Canada, assignor of one-half his right to PETER H. FERGUSON, same place. Application filed October 24, 1873.

The main double-cone boiler inclosses the fire-grate near its base, and the products of combustion pass up through an internal system of water-pipes connecting the opposite sides of the main boiler and out through an opening in the top into a supplementary double-shell boiler. In this boiler a central water-space compels the heated air to traverse its length to reach the exit-flue.

Claim.—1. A boiler constructed of outer shell *a*, with sediment-chamber *d d*, plugs *f f*, inner shell *b*, with flange *e e*, as and for the purposes set forth and described.

2. Flanged pipes *h h*, branching from the shoulder, connecting the top or head, composed of outer shell *j j*, flanges *k k*, branches *l l*, pipe *m*, in combination with inner shell *n*, heads *o o*, stoppers *t t*, space *p*, smoke and heat passages *q* and *r*, plate *s*, double smoke-flue *i*, as and for the purposes fully described and set forth.

3. The hollow water-cone *u*, with openings *w*, annular water-space *x*, in combination with vertical tubes *y*, lower annular water-space *z*, elbow-pipe 2, ring 3, cross-pipe 4, vertical pipe 5, movable plugs 6 6, as and for the purposes fully described and set forth.

145,458.—Subaqueous Gas-Stove.—SAMUEL H. STARR, Philadelphia, Pa. Application filed September 20, 1873.

A stove to be sunken in the liquid to be heated has an air-tube opening into an air-chamber, which underlies the entire base of the stove, and has orifices in its top for emission of air to the gas-jets. A gas-tube follows the inside of the air-tube and air-chamber; fits an opening in the top of the air-chamber, and so conducts gas into a gas-chamber, from whose dome-shaped cover gas is emitted in jets and is fed by air from the underlying air-chamber. Flame is applied to the top of the smoke-pipe, whence it is borne to the gas-jets in the body of the stove.

Claim.—The combination, in a subaqueous gas-stove, of the convex disks D and K, the plate *m*, the base-plate *s*, and the pipes A and B, substantially as described, and for the purpose set forth.

145,459.—Plastering-Machine.—GUSTAVUS STEVENS and JAMES H. WATSON, Tawas City, Mich. Application filed August 13, 1873.

The mouth-piece, carrying the trowel-plate, is adjusted by means of the pivoted lever *i*, slotted at the short arm and set by an adjusting-screw. The mortar is furnished to the trowel through the mouth-piece by a piston sliding within the reservoir, and fed forward as the machine is drawn over the surface by a rack-bar gearing into a pinion, and train moved by the bearing-wheels of

the machine, the train being so calculated as to give the proper rate of delivery.

Claim.—1. The trowel G, attached to the adjustable and pivoted levers *l l*, as and for the purpose specified.

2. In combination with the trowel G, the trowel *i*, the trough-shaped mouth C, box A, and plunger D, as and for the purpose specified.

3. The box A, the plunger D, the mouth C, the rack-bar E, the cog-wheels *d* and *e* with the pinion *a*, the trowels G and *i*, the lever-arms *l l* combined with wheels F F and H H and handles I I, substantially as described.

145,460.—Cleansing Sugar from Molasses, &c.—AUGUSTUS H. TAIT, Jersey City, N. J. Application filed December 6, 1873.

Claim.—The process of cleansing or purging sugars by means of a solution of grape-sugar or glucose, in the manner substantially as described.

145,461.—Manufacture of Iron.—WILLIAM J. TAYLOR, High Bridge, N. J.—Case A. Application filed December 5, 1873.

Claim.—1. The method herein described of making cast-iron from oxides of iron by reducing magnetic iron ores to a fine or powdered condition, separating the iron oxides therefrom by magnetic influence, and preparing and uniting the same for use in the furnace, whereby the products thereof are controlled by controlling the character of the material prior to its use in the furnace, substantially as herein described.

2. The consolidation of purified fine magnetic oxides of iron with lime, or its equivalent, in the manufacture of cast-iron, in the manner and for the purposes substantially as herein described.

3. A composite material of purified fine magnetic oxides of iron and lime, prepared as described, to furnish both the material and its flux in the same combination.

4. As a new article of commerce and trade, a composite material for the production of iron, having the character of fine purified oxides of iron, compounded with lime or its equivalent.

145,462.—Manufacture of Iron.—WILLIAM J. TAYLOR, High Bridge, N. J.—Case B. Application filed December 5, 1873.

Claim.—1. A composite material for the manufacture of cast-iron, consisting of the combination of fine magnetic purified oxides of iron with carbon and lime for a fluxing material necessary for smelting, substantially as herein described.

2. The composite material herein described, as a new article of commerce and trade, in the manufacture of cast-iron.

145,463.—Horseshoe.—GEORGE H. TODD, Montgomery, Ala. Application filed September 27, 1873.

An elastic substance is interposed between the plates. The lower plate is provided with projections at the heel ends and toe to protect and assist in keeping the elastic substance in place.

Claim.—The plate A, with recess *d*, the plate B, with lip *c*, and curved or bent heel *e*, in combination with the elastic substance C, substantially as and for the purpose described.

145,464.—Machine for Cutting Paper.—GEORGE A. WALKER, Boston, Mass. Application filed November 9, 1871.

The paper-gage is adjusted by a cord and pulley. The bed and paper-clamp are raised in contact with the knife by eccentrics, moving in plates fixed to the table, operated by worm-gear and pinions.

Claim.—1. The special combination above described of the bar B with the eccentrics I I and the uprights A A, when arranged relatively to each other as specified, and so that the slots in the uprights shall serve as guides not only for the bar B, but also for the eccentrics.

2. The combination of the gage J, cord K, and double wheel L, when constructed and operating substantially as described.

145,465.—Repairing Railroad-Tracks.—BEALE A. WARFIELD, Howard county, and WALTER F. ELMER, Baltimore, Md. Application filed April 7, 1873.

A portable substitute rail carried on the train for use in case of a breach in the track. The portable rail is of a proper configuration to fit the main rails by lapping, and in case of a break the adjoining portions of the broken rail are sprung outward and the substitute rail lapped and fitted into the breach so made. In case of removal of a portion of the broken track, a number of the substitute rails can be used.

Claim.—1. A portable substitute rail, adapt to butt against a sound rail and lap a broken one sprung off to receive it, the said substitute rail being beveled and recessed as may be required to cause it to fit against the said broken and sprung rail, substantially as set forth.

2. The portable substitute rail or rails beveled and recessed or otherwise adapted to lap the sides of two extremities of a broken rail, or two broken rails, substantially as and for the purpose herein specified.

145,466.—Vapor-Engine.—WILLIAM WELLS, Salem, Mass. Application filed October 29, 1873.

A chamber incases the piston-rod, substantially through its whole length, preventing escape of the gas used as motive-power, and connects with the cylinder by a pipe to return the gas.

Claim.—The chamber G, arranged about the piston-rod and connected with the piston-cylinder of a vapor-engine, substantially as and for the purpose described.

145,467.—Journal and Bearing.—JOSEPH WHITAKER, Woonsocket, R. I., assignor to SIMEON S. COOK, same place. Application filed November 19, 1873.

A yielding supply-tube and lubricating-pad, to insure close contact of the pad with the journal, and thereby secure as perfect a vacuum as possible.

Claim.—1. In combination with a journal-box, having an upper and lower bearing, an independent self-adjusting oil-tube, working in an aperture in the lower bearing, and held in contact with the shaft by a spring, substantially as described, for the purpose specified.

2. The bearing B, having the aperture C, in combination with the tube E, having the concave head D, and spiral spring G, substantially as described, for the purpose specified.

145,468.—Car-Starter.—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed October 16, 1873.

Claim.—1. The starting-eccentrics D on axle D′, combined with right and left springs S S, loose chain-drum H, chain T, and wheels G G^3 on a frame, F, substantially as and for the purposes described.

2. The lifting toggle-frame E E′, connected by a chain, *p*, to the brake-lever I, for the purpose of applying the brakes when the car has been lifted to its full height, all combined as and for the purpose described.

3. The chain R, connected to the shaft of the winding-up wheel G and also to the toggle-frame E E′, in combination with the chain T for operating the eccentrics D D′, levers L L′ M M, rod *m*, arm A, and the eccentric shaft of clamping-wheel G^2, substantially as and for the purposes described.

145,469.—Peg-Cutter.—AMOS WHITTEMORE, Cambridgeport, Mass. Application filed October 16, 1873.

A guard-plate is secured to an overhanging frame, so as to press upon the outer sole of the boot or shoe while the pegs are being cut.

Claim.—1. The rotary cutter B′, arranged at the upper end of a double-inclined rigid stock, A, and operated by means of spurred teeth *b*, and double spurs *b′*, and a pinion, *g*, as and for the purposes described.

2. The guide *k* on a pressure-plate, K, in combination with the rotary cutter B′, substantially as and for the purposes described.

3. In a machine for cutting pegs from boots and shoes, a plate or device, K, arranged and operated to press upon the outer surface of the sole of the boot or shoe and hold the same down upon the peg-cutters, substantially as described.

145,470.—Car-Brake.—JOHN G. WIGGIN, Moultonville, N. H. Application filed June 30, 1873.

The chain attached to the brake-lever is carried around the car-axle and fastened to a turn-shaft, which is revolved by a hand-wheel and pinions. The chain being tightly drawn upon the axle, sufficient friction is produced by the revolution of the latter to operate the brake.

Claim.—1. The combination of the chain D with the axle E and the turning shaft C, substantially as and for the purpose specified.

2. A system of car-brakes, composed essentially of the self-coupling shafts C C, brake-chains D D, car-axles E, and hand-wheels K K, all combined to operate substantially as and for the purpose set forth.

145,471.—Furnace for Reducing Iron Ores.—JOEL WILSON, Dover, N. J. Application filed June 10, 1873.

Improvements on Letters Patent No. 128,993, July 16, 1872. The flue for entrance of products of combustion is placed beneath the exit-flue, so as to obtain discharge room for two more retorts. Flues beneath the retorts conduct a portion of products of combustion directly to the outer annular chamber, and also serve to heat the retort bottom. The external conduits enable communication to be made with the descending-flues without weakening the retorts.

Claim.—1. The flue F, located below the annular collecting-chamber I, and communicating with the internal chamber E, which is surrounded by retorts and flues, substantially as described.

2. The flue-passages *n n* under the retorts B, leading from chamber E into the angular space *b*, surrounding the retorts, substantially as described.

3. The external conduits *c*, forming communications between the chamber E and the upper ends of the descending flues C, substantially as described.

145,472.—Process of Transferring Lithographic Prints onto Glass, &c.—OTTO P. WOLFF, Cincinnati, Ohio, assignor to STROBRIDGE & CO., same place. Application filed June 6, 1873.

Claim.—In the before-described process of preparing and transferring lithographic prints onto glass, &c., the employment of a transparent solution of white lac, substantially as described, and for the purposes specified.

145,473.—Horse-Power.—DANIEL WOODBURY, Rochester, N. Y. Application filed November 1, 1873.

The leveling-frame is pivoted to the under side of the main frame, and the latter is connected with the standard and stay-bar for adjusting either the main or leveling frame to the proper position. The vertical and lateral adjustment of the bull-wheel is accomplished by means of the slide upon the end of the arms over the covering of the bull-wheel.

Claim.—1. In a mounted horse-power, such as shown and described, the leveling-frame D, windlass S, outrigs J L, slides H H, and brake Q, combined with the main frame A, to operate in the manner and for the purpose specified.

2. The combination of the main frame A, short leveling-frame D, and the pivots *b*, the said pivots being secured upon the frame A, close to the axle, in such a manner that the axle projects beyond said pivots, to receive the wheels, substantially as shown and described.

3. In combination with the main frame A, the adjustable standard M and adjustable share or stay-bar N, to be employed conjointly in the raising and lowering of the main frame or the leveling-frame, as specified.

4. In combination with the standard M and share N, the supporting-arch, consisting of the bars *x x* and the plates *w z*, as and for the purpose specified.

5. In combination with the leveling-frame D, the reach O, provided with the lugs b^3 b^3 and cross-piece c^3, and connected by the pin d^3, as and for the purpose specified.

6. In combination with the bull-wheel F, the slides H, when provided with the forks *k*, and having vertical lips w^3, which stand reversely to the motion, and made adjustable by the keys *l*, as shown and described.

7. In combination with the brace-arm K and bearing *o*, the angular or rounded bearing end of said arm and the sliding shank *p*, provided with the hook *q* for engaging with the eye *r*, as and for the purpose specified.

8. In combination with the spur-gear 2, the brake Q and spring s^3, operating as described.

9. In combination with the outrigs J L, the bearings *s s* at the front and rear of the main frame, as shown and described, and for the purpose specified.

10. The combination of the block W, standard X, and segment y^3 of the jack, the said block and standard being pivoted to turn at right angles to each other, as specified.

11. In combination with the pivoted standard X and segment y^3, the perforated gage-plate b^3, as and for the purpose specified.

12. In combination with the pulley Y, the adjusting-ring Z and its guide-pulley a^3, as and for the purpose specified.

13. In combination with the windlass S, the hanger A^3, pulley n^3, and the stay-cord c^3, as and for the purpose specified.

145,474.—Draft-Equalizer.—OWEN N. COLLINS and PETER B. STILES, Cedar Rapids, Iowa. Application filed November 20, 1873.

Claim.—1. The combination of the bow-yokes C with the plates A of the harness, as and for the purpose described.

2. The combination of yokes C with the equalizing draft-bar D, as and for the purpose described.

3. The projecting rest *b*, provided with holes *c*, as and for the purpose described.

4. The combination of the projecting rest *b* and clevis *c*, as described.

REISSUE PATENTS.

5,677.—Mode of Constructing Wells.—ASAHEL CURTIS, Bastrop, La.—Patent No. 139,947, dated June 17, 1873. Application filed October 18, 1873.

An additional temporary casing-tube is employed above the foundation-tube, which remains at the surface, and serves as a guide by which to lay the bricks evenly and perpendicularly.

Claim.—The casing-tube B, applied above the sand-penetrating box A, so as to enable the bricks to be laid evenly, perpendicularly, and more economically thereon, forming thus the well in the manner and for the purpose described.

5,678.—Sofa-Bedstead.—JOSEPH B. HARLOW, Portland, Me. Patent No. 135,643, dated February 11, 1873. Application filed September 10, 1873.

A sofa and folding leaf have each a hinged head-rest, which are also hinged to one another; both susceptible of angular adjustment by a catch on the former, which, to permit the unfolding, is released to allow the rests to fall into a horizontal position, when the catch again adjusts them. The front of the leaf is supported by pivoted legs; brought from the horizontal to the vertical by the horizontal reciprocation of a bar acting on segmental racks on the legs.

Claim.—1. The combination, with the fixed or immovable frame *n n*, of the movable frame *e e′*, hinged to the front *d* by the hinges *e*, and carrying hinged to it the part *b b′* by the hinges *c c*, the said part *b b′* operating, in the folding and unfolding of the lounge, substantially as herein described.

2. The combination, in a sofa-bedstead, of the head-rest *r* and *b*, hinges *c c* and *c′ c′*, and ratchet *g*, provided with the cord *q*, with the frames *e* and *e′*, operating in the manner set forth.

3. The combination of the rail *e*, bar *w*, having the slots *s s*, and racks *k k*, with the supporters *i i*, provided with the gears *j j*, as set forth.

5,679.—Ball-and-Socket Joint.—MILTON W. ST. JOHN, Leonardsville, N. Y.—Patent No. 79,408, dated June 30, 1868; antedated June 12, 1863. Application filed November 15, 1873.

The socket in the piece D is made much deeper than the diameter of the ball, and there is a notch in the side a little wider than the neck, which is connected to the ball, to allow sufficient play for the vibration of the neck. On the upper side of the ball is a metallic piece, C, concave on its under side and smooth to match the ball, and flat on its upper side, on which is placed a piece of rubber, and the whole is secured under a cap, which screws over the piece D.

Claim.—1. The deep socket-piece D, having a notch, *d*, in the side, in combination with the concave piece C, matched within the upper portion thereof, and with the ball E and neck *e*, as herein specified.

2. The adjustable cap F, in combination with the concave piece C, socket-piece D, notch *d*, and ball and neck E *e*, as herein specified.

3. The shoulders *c c* on the concave piece C, in combination with the notch *d* in the deep socket-piece D, and with ball and neck, and with a suitable cover or holding means, F, as herein specified.

4. A spring or elastic piece mounted over the concave piece C, in combination with the ball E, neck *e*, and deep-notched socket-piece D *d*, as herein specified.

5. The combination of the deep socket-piece D, ball E, concave piece C, rubber G, and cap F, when connected to the parts substantially in the manner and for the purposes specified.

5,680.—Mold for Rubber Billiard-Cushions.—MATHEW DELANEY, New York, N. Y.—Patent No. 116,819, dated July 11, 1871.—Division A. Application filed November 11, 1873.

The mold for forming the billiard-cushion having a strained cord or core held in it. The molded cushion is thus provided with a true fine hole for the after insertion of the spring-wire, also held under tension therein.

Claim.—In combination with the mold, a core firmly held under tension or in a strained condition, substantially as and for the purpose described.

5,681.—Billiard-Cushion.—MATHEW DELANEY, New York, N. Y.—Patent No. 116,819, dated July 11, 1871.—Division B. Application filed November 11, 1873.

Claim.—A rubber cushion-body molded into a solid mass, and provided with a hole adapted to serve as a pocket for the reception of a wire to act as an auxiliary spring, formed parallel with the face of the cushion, and at the proper height relatively to the line of impact of the balls, substantially as described.

5,682.—Water-Wheel.—JOSEPH TANEY, Bangor, Me.—Patent No. 143,040, dated September 23, 1873. Application filed December 1, 1873.

The water first acts upon the wheel by impact upon the buckets, and then, as it fills the wheel and makes a pressure upon its rim, the curved vents above and below give vent to this pressure, and free the wheel from the reaction of the water in the scroll-passage.

Claim.—1. A water-wheel having the central discharges *i* and the discharges *c* through the base or crown plate, substantially as set forth.

2. A water-wheel having the central discharges *i* and the curved vents *c* through its crown and base plates, substantially as specified.

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DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF CALIFORNIA.

WILLIAM SMITH *vs.* J. O'CONNOR *et al.*

[*In equity.—Before Sawyer, Judge.—Decision September* 1, 1873.]

A claim for "a receiver for pan water-closets formed and constructed so that the side A D, into which the pan C swings for emptying, will conform to the shape of the pan," &c., held, on comparing it with the specification, to be a claim not merely for a conformity, but for a conformity attained by specified means, and to be valid.

Held, also, on a like comparison with the specification, that the claim was not too broad.

A patent held not to be void for want of utility in the invention upon its appearing that it possessed certain advantages over others.

Although a third party had conceived of the invention before the plaintiff, and had made some progress toward completing a model, yet, if he then suspended his labors, and before he resumed them, the plaintiff had perfected the invention and had embodied it in a practical working machine, his patent will be sustained.

An invention will not be held forfeited in consequence of its having been on sale more than two years before the application was filed on which the patent issued, if within the two years the inventor had filed a previous application which described the invention, and was intended to cover it, although it was not specified in the claim in express terms. The second application will be considered a continuation of the first.

SAWYER, *J:*

I have had some difficulty in reaching a satisfactory conclusion in these cases. I shall mention some of the principal points involved, and those very briefly.

One main point relied on is that the specification in the patent is insufficient to cover the claim of the plaintiff as now presented.

It is insisted that the patent is for mere conformity, not for the form of the vessel—the change in the construction of the receiver of the water-closet. The language literally construed and the claim taken by itself, perhaps, might look so; but after considering the entire specifications and allegations I think that that position is not well taken. The specifications, it is true, might have been much better expressed, and, probably, if the parties should draw them after receiving the criticism, they would be drawn more clearly. I will make the remark here, which I have made before, that I do not recollect to have tried a single case but that similar objections have been made to the patent; showing the difficulty of making specifications which shall cover exactly what the party designs they shall cover, and no more, so that the patent may be free from criticism in that respect.

Now, in the description here it says—

> The nature of my said invention consists in constructing the receiver of water-closets so that I am able to make the side where the pan is hung correspond to the shape of the pan, and thereby save the waste space which is left behind the pan in ordinary or common receivers. Heretofore the receivers or containers of pan-closets have been constructed of an oval bowl-shaped hopper, with a covering plate, having an enlargement on one side, into which the pan swings when emptying.
>
> This construction forms a large space inside the receiver, behind the pan, which is not utilized, but, on the contrary, is detrimental to the closet in allowing obstructions to collect and impede the working of the pan.

Then there is a drawing given of the receiver, as he claims his receiver to be, specifying each particular point, and among others he says that "A A represent the two parts of the receiver bolted together, with the pan hanging in it as open. It will be noticed that there is no waste space behind the pan, but that the receiver conforms to its shape," going on and giving a particular description of each part of the instrument. He says, "By this mode of construction I am able to make a much more perfect article in form."

Then he claims—

> A receiver for pan water-closets, formed and constructed so that the side A D, into which the pan C swings for emptying, will conform to the shape of the pan, and avoid the waste space behind the pan, as in ordinary or common receivers, substantially as and for the purpose set forth.

Now, it is true that conformity is claimed there, but that conformity is produced in a manner which he before described, and he gives a drawing, gives each spe-

cific portion, the objects to be accomplished by his invention, and then this space is to be saved substantially as and for the purposes indicated—that is to say, by means of the instrument in the form and containing the parts before particularly described. I think, therefore, it is a claim, not merely for conformity, but conformity attained by the particular means which are heretofore set out, and the implement of which he has given a drawing. As I said before, that might have been more distinctly specified than it is; but, taken together, I shall construe it liberally in favor of the patentee, as I think it substantially covers the case.

Then it is claimed, also, that the claim is too broad, that it covers the lower part as well as the upper. Well, there is some difficulty in the description upon that point; but it is very difficult to describe a matter of that kind distinctly in language.

Still, he has given generally the description of the closets before used, and the particular difficulties to be overcome, and he has given a drawing of his own implement; and I think, upon the whole, the description is sufficient. All definitions must presuppose some knowledge of the subject-matter or knowledge of the matters referred to in giving the definition, and, of course, a reference is made to the state of the art as it before existed. Any one having to deal with these matters must be supposed to have some acquaintance with the subject-matter and the state of the arts. So, as I said, the description of the claim might have been better; but, from the construction which I have before indicated, I am inclined to think it is sufficient in the particular referred to.

The next point is as to whether it is useful or not; whether it attains any result. Well, the testimony shows that it is useful in several particulars. One is that it dispenses with the space which is behind and above the pan, and which was liable to clog up by reason of fragments of paper getting behind and remaining there, and afterward clogging the outlet. There are some witnesses here, it is true, who say they have never heard any such objection, while witnesses on the other hand testify that that objection did exist, that it was a serious one, and that this change obviates it.

The testimony is also that it takes less iron, that it reduces the size, that there is less trouble in transportation, that it takes up less room; and all these, it is claimed, are useful results. If that is true, undoubtedly this is a useful result, and I think the testimony shows it, upon the whole. Besides that there is the testimony that these closets supersede all others. That of itself is a very strong evidence that there is some useful result obtained. More than that, parties here are contesting this matter. The defendants here are using this form, and if there were no useful result in it there would be no occasion for them to be here contesting this invention. I think, manifestly, there is some useful result, and what I have spoken of in addition to the other testimony ought to displace any contrary view. I think there is a useful result, and that the implement is patentable in that particular.

The next objection is that one Carr, for whom the defendants sold, first made a model in 1854, which is prior to the making of the machine by the plaintiff. There is testimony here tending to show that he did make some progress toward making the model; but the testimony also shows that he never reduced it to a practical working machine until some time after making the model and laying it aside. The party having gone to Europe, in the mean time, and returned, it was afterward taken up. In the mean time the plaintiff had perfected his machine, and had made a practical working machine. I think, on that score, he is in advance of the defendants and entitled to the patent as between the two. It was merely an undeveloped idea with the defendants, so far as making a machine and putting it in practice is concerned.

It is contended, on the other hand, that the Culpin patent in England was an anticipation. Well, there was only one point on which it was contended that that was an anticipation, and that is conformity in the pan, &c. I do not think the Culpin machine is any anticipation of this machine—it is a different machine altogether; a machine of different form or make; and it does not appear that that was a practical working machine. At all events, it is a very different working machine from this, and I do not think it is an anticipation of this machine.

The next question is that more than two years elapsed after the making and selling of this machine by the plaintiff before he made his application for the patent. He first made his machine in 1866; in 1866 he presented an application for the patent; but the form of his claim in that application is different from the form of the claim here. That application was rejected. The claim there is—

> Constructing the receiver of a water-closet of two pieces, which are joined together, making a vertical joint, whereby I am enabled to make the receiver conform to the shape of the pan, substantially as herein shown and described.

Now, that was rejected on the ground claimed, that it was cast in two pieces, and the casting of the machine being in two pieces was nothing new; but the device claimed was precisely the implement as finally patented. His descriptions were mainly the same thing; he had the same drawing, precisely, as the one now had, and the object to be accomplished was evidently the same as he desires to accomplish in the last. The description, among other things, says—

> My invention consists in constructing the receiver in two pieces and bolting them together, whereby I am able to do away with the waste space behind the pan, and to save much expense in casting.

Now, one of his objects to be attained, as is alleged, is to dispense with that waste space. His machine and drawing are the same. Then he says—

> By this mode of construction I am able to make a much more perfect article in form, besides saving an important item in the weight of the casting, and, consequently, in transportation.

Again, his claim is—

> Constructing the receiver of a water-closet of two pieces, which are joined together, making a vertical joint, whereby I am enabled to make the receiver conform to the shape of the pan, substantially as herein shown and described.

The same ultimate object was to be accomplished by the dispensing with the useless space, reducing the expense in casting, &c. The same objects were to be accomplished, but he stated his claim in a different form. It was the same machine he was after. Now, if the view which the Patent Office took was that this claim was simply for casting in two pieces, and he had obtained a patent on that, it would not have covered the present objection. The law prescribes what shall be done when a party has failed to cover the points of his invention. This is the same invention, the same patent, the same drawings; but he had made an error in the presentation of his claim, and there are many facts. He not only amended it once, but more than once. I think it is manifest that the plantiff here endeavored to cover this invention. He did not stop upon the rejection on that ground, but after some correspondence with his attorney and some little delay, in which he does not appear to be very essentially at fault, he presents his claim again in another form, and it covers, as he supposes, the invention.

The Commissioner of the Patent Office must have considered that he was presenting his claim for the same invention, but that he had made an error in his prior claim, otherwise he would not have granted his patent upon the second application.

I am inclined to think, therefore, it is the same machine, the same invention, a claim for the same thing that he sought originally, which is presented in the last claim, and they therefore connect themselves together for the purposes of the two years—that is to say, he made his application within the two years after he began to make and sell the machine; and although he failed to get his patent on his first application, for the reason given that his claim was not patentable in the form in which he put it, he still renewed his efforts, and filed a new application for the same machine, the same invention, putting in his claim in a different form, and finally obtained it.

Under the decisions cited, one from the Supreme Court and one from one of the Circuit Courts, I think his applications connect themselves together—that is, his application for his patent for the thing which he desired to obtain, when first made, was for the same machine for which he has finally obtained his patent upon a corrected application. He sought to cover the same points in both applications, and he has followed it up, and the interval which elapsed between the rejection of the first and the filing of the latter does not make a material delay by the explanation of the testimony relating to it. His counsel resided in New York at that time. The communication was by steamer. He began to correspond immediately with his counsel. He followed it up, and finally succeeded in obtaining his patent. I think he has connected his applications together. The application for this invention is to be regarded as dating from the filing of the first application, he only changing the form of his claim.

These are the main points. There are one or two points I have some hesitation on, but I have concluded to give my judgment for the plaintiff.

It only remains to consider the question of damages. That is always a difficult point in patent cases. I have taken into consideration, however, the facts as to this class of closets, the prices which he sold at before the defendant came into the market as competitor, the fact of the reduction of prices by competition, and in all the probabilities of the case, the nearest I can come at it is to allow about four dollars a closet. I think that is not extravagant. In the case of *Smith* vs. *Prior* the damages are six hundred dollars, and in the case of *Smith* vs. *O'Connor*, six hundred and thirty-two. I shall not, however, double or treble these damages, in view of the fact that there was reasonable ground for contest between these parties.

SUPREME COURT DISTRICT OF COLUMBIA.

SMITH *et al. vs.* WOODRUFF.

[*In Equity.—Before Humphreys, Justice.—Opinion delivered September* 13, 1873.]

Where two patents have been granted for articles which resemble each other, a presumption arises from the action of the Office that there is such a difference between them that the use of one constitutes no infringement of the patent for the other.

If one paper-file holds the paper better than another which is patented, and has driven it out of market, that is *prima-facie* evidence that the mechanism is different, and is a new invention, and that the use of it does not violate the patentee's monopoly.

A patented combination may be used without infringing the patent if one of the elements of the combination is omitted, although another is substituted in its place which is new, or performs a substantially different function, or if it was not known as a proper substitute when the patent issued.

Although a bill for restraining the infringment of a patent is dismissed, the defendant will be allowed no costs if the rights of the parties are thereby settled, and a benefit consequently results to him as well as the public.

[*W. E. Edmonson*, attorney for plaintiff.

R. D. Mussey, attorney for defendant.]

HUMPHREYS, *J:*

In this case the complainant files a bill against the defendant, alleging therein an infringement by the defendant of the complainant's rights under a certain patent, and asking for an injunction. It alleges that Letters Patent were issued to the complainant for a certain invention for filing and holding papers; and that the defendant has infringed upon the rights of complainant under said patent, by making and selling a like machine. All which allegations are denied by the defendant.

The evidence shows that the application of the complainant for a patent was filed January 6, 1868; and that the defendant filed an application for Letters Patent for his machine January 7, 1868. That a patent was issued to defendant on the 31st March, 1868, and subsequently, on the 14th of April, 1868, a further patent was issued for further improvements; and that, on that day, the complainant's patent was issued, and that complainant's patent was afterward surrendered, and a reissue of the same made on the 9th day of April, 1872, for alleged infringement, of which this suit is brought. But it is not claimed that these dates make any difference now as to the question in controversy.

The Patent Office decided that there was no infringement, or conflict, between the two claims, and, so deciding, issued a patent to each party. It is here claimed by the complainant that that decision is erroneous; and the question now is whether the defendant's patent is an infringement upon the complainant's rights under his patent. The patent itself is made by law *prima-facie* evidence that everything that was necessary to have been done in the Office before the same could issue has been done; and that principle is carried even further than I at first thought a *prima-facie* case would go. But it is in the language of a reported case that I prefer to state this principle rather than in my own words.

In *Potter & Wheeler* vs. *Holland* (1 Fisher's Patent Cases) this principle is clearly stated. I have looked at the text, and it fully authorizes the head note, which is short, and which I will read:

The patent is *prima-facie* evidence that the several grants of right contained in it are valid; that the several things, methods, and devices contained in it are new; that they were useful; that they required invention; and that they were the invention of the patentee. And this *prima-facie* evidence must have full effect unless it is rebutted by sufficient countervailing evidence.

Now, that is the extent to which the *prima facie* evidence of the patent goes—it purports to be issued after everything required to be done has been done.

Now, here are *two patents*, and the question more particularly involved is whether or not the Patent Office decided correctly in deciding that there was no conflict between the two machines. The one *patent* is of as much force as the other; and the main question at present is whether the decision of the Patent Office, that there was no conflict between the two, is correct. I have come to the conclusion that the Office decided correctly.

In the case of *Gould* vs. *Rees* (15 Wallace, 187) the court says—

Patentable inventions may consist entirely in a new combination of old ingredients whereby a new and useful result is obtained; and in such cases the description of the invention is sufficient if the ingredients are named, the mode of operation given, and the new and useful result is pointed out, so that those skilled in the art and the public may know the nature and extent of the claim, and what the parts are which co-operate to produce the described new and useful result.

Damages are claimed by the plaintiff for the alleged infringement of certain Letters Patent, and he instituted for that purpose an action of trespass on the case against the defendant to recover compensation for the alleged injury.

Here in this case, the bill is filed seeking an injunction against the defendant for the alleged infringement.

The court there further says that—

Where the defendant, in constructing his machine, omits entirely one of the ingredients of the plaintiff's combination without substituting any other, he does not infringe; and if he substitutes another in the place of the one omitted, which is new, or which performs a substantially different function, or if it is old but was not known at the date of the plaintiff's invention as a proper substitute for the omitted ingredient, then he does not infringe.

Now, it is held that the principle in the two paper-files here is the same; but the *principle* is not what was patented, but the *mode* of *operation* and *construction* of the machines. The defendant's machine holds the papers more securely than the complainant's, and it is decided in *Singer* vs. *Walmsley* (1 Fisher's Patent Cases, p. 558) that—

If the result of the mechanism used by the defendants is greatly superior to that described and claimed by the patentee, this fact may be considered by a jury as tending to prove that the mechanism of the defendants is a new invention substantially different from that described by plaintiff.

It is in evidence fully in this case that the defendant's machine has supplanted entirely that of the complainant's; and the court is greatly relieved, and will be so all the way up to the court of last resort, by the presumptions in favor of the finding by the Office, to which is intrusted the determination of the question of patents and of conflicting claims therefor.

I am not disposed to interfere with that finding; and if there is no infringement there could be no interference.

The decree will be that this cause coming on to be heard, being argued by counsel, and on due consideration, it is ordered, adjudged, and decreed that the complainant's bill be dismissed, and that each party pay his own costs.

The reason that I come to this conclusion as to costs is that the public is benefited by this investigation, and the defendant is greatly benefited by having the case settled; and the complainant ought not to be required, perhaps, to pay more than his own costs, and it will be no hardship to the defendant to require him to pay his.

U. S. CIRCUIT COURT, EASTERN DISTRICT OF MISSOURI.

JAMES V. WESTLAKE *vs.* M. S. & H. B. CARTTER.

[*Before Treat, Judge.—Decided October* 11, 1873.]

It is not sufficient to give notice of special matter of defense in an action upon a patent thirty days before the trial; it must be given thirty days before the first day of the term.

Such notice need not specify the particular portion of the plaintiff's patent to which the evidence applies.

Patents may be given in evidence to show the state of the art without such notice; but printed publications cannot be.

The proceedings in the Patent Office upon the plaintiff's application for the patent are not admissible for the purpose of giving it a different construction.

If the defendant claims that the patent is void for uncertainty it rests with him to establish the charge.

The patent is not void for want of utility if the invention possesses it in any measure, however slight.

A combination may be patentable on account of the novelty of the arrangement, although all the elements are old.

A patent for a combination is not infringed unless all the elements enumerated are used, or the equivalents of those which are omitted are substituted for them.

To show that the parts omitted by the defendant from a patented combination are unessential will not render him liable as an infringer for the use of the rest.

A device is the equivalent of one that is patented if it performs substantially the same function in the same way and produces the same result, though it may be of a different form and bear a different name; and the use of it will be an infringement.

If the defendant has a patent it is evidence of the opinion of official experts that it does not conflict with the plaintiff's patent, and that in working under it he is guilty of no infringement.

Such evidence will be submitted to the jury; the court will not compare the patents.

If the patentee is engaged in manufacturing the patented article for sale, his damages will be manufacturer's profits.

[*M. Kinealy*, for plaintiff.

Saml. S. Boyd, for defendants.]

TREAT, *J:*

This was an action on the case tried before Judge Treat and a jury, upon the patent granted Jonathan L. Jones, November 6, 1860, for "Improvement in Truss-Bridges," numbered 30,577. The defendants plead the general issue, and gave notices of special matter, as will appear in the charge.

Certain rulings during the progress of the trial present points of value.

Defendants' counsel offered in evidence patent granted Geo. S. Avery, July 28, 1857, No. 17,864, to which plaintiff's counsel objected "on the ground that the particular portion of the plaintiff's patent it referred to was not specified in the notice." The notice was as follows:

The said defendants will further prove, upon said trial in bar of said action, that the plaintiff's assignor was not the first and original inventor of the invention described and claimed in said Letters Patent No. 30,577; but that long prior to said pretended invention the same was fully described and shown in the following Letters Patent—to wit, Letters Patent of the United States, No. 17,864, granted Geo. S. Avery July 28, 1857, for "Improvement in Segmental Truss for Bridges."

The Court overruled the objection, holding the notice sufficient.

PLAINTIFF'S COUNSEL. Now, I ask the court to take these patent papers [the Avery patent] and look at them, and see whether they have any bearing on this invention, [the Jones patent.]

TREAT, J. You have chosen to make this a jury case, and it must go there. When you chose to have a jury you chose to have this question determined in the light of expert testimony, and the jury will have to ascertain, from what the experts say in regard to it, what the facts are. I cannot take it away from them. If I were sitting as a chancellor then I would pass my judgment individually on them; but as I am not doing that, and you chose to have a jury, the jury will have to pass upon all these things. I cannot say whether they are alike or not, or what light they would throw on it. The experts will have to do that. It is for the court to construe the patent under consideration here; but as far as any questions of fact are to be determined in the light of expert testimony, the jury are the judges of that. Consequently we call in those who are skilled in this department to enlighten the jury in the one case or a chancellor in the other. There are two patents presented, and they require a large amount of mechanical skill outside of pure propositions of law, and this has to be obtained from this source—the experts.

Defendants' counsel offered in evidence the patent granted Wm. Howe August 28, 1846, numbered 4,726, for "Improvement in Bridges," being the same set up in his third notice of special matter, of which a copy had been filed and served on the plaintiff's counsel on the 25th day of August, 1873, to which plaintiff's counsel objected as not having been filed within thirty days of the first day of the term. The court sustained the objection, holding that, as in the eighth circuit the first day of the term was the "day of trial," the notice must be filed thirty days before the first day of the term, in order to be available. The first day of the term was September 15, but the trial of the case did not begin till the 7th day of October.

Defendants' counsel then offered the same patent in evidence for the purpose of showing the state of the art.

Plaintiff's counsel objected "that the patent could not be put in evidence for any purpose without notice; and if it went in at all it should go in merely to show priority of invention."

TREAT, J. I will only admit it to show the state of the art at the time of its date, not to impeach the validity of the plaintiff's patent.

Defendants' counsel then offered in evidence under the same notice a reference to "Mahan's Civil Engineering," which, being ruled out, was then offered as showing the state of the art. The court refused to admit it, holding that a scientific work could not be received for such purpose.

Defendant's counsel offered in evidence certified copy, file, wrapper, and contents of plaintiff's patent, "for the purpose of showing that when the application was originally presented the plaintiff's assignor endeavored to cover flat or square heads on the chord-bars; that such claim was rejected, and subsequently amended by withdrawing all claim to flat or square heads, and leaving only a claim for the curved heads, as showing what was really patented, and what was the agreement, as it were, between the applicant and the government as to the extent of his patent."

Plaintiff's counsel objected, and the objection was sustained, the Court holding the correspondence was not admissible.

Defendants' counsel was allowed, against the objection of plaintiff's counsel, to put in evidence Letters Patent No. 104,110 and 127,564, dated, respectively, June 14, 1870, and June 4, 1872, granted defendants for "Improvement in Truss-Bridges."

TREAT, *J:*

Gentlemen of the jury: This is a suit by plaintiff as assignee of patent No. 30,577, dated November 6, 1860, to recover of defendants damages for the alleged infringement by them of said patent.

The issues raised by the pleadings and notices filed are:

First, touching the validity of said patent, Are the descriptions and specifications in said patent in such full, clear, and exact terms as to enable one skilled in the art of bridge-building to construct a bridge according to said alleged invention with the aid of the drawings attached? or, on the other hand, are they so indefinite, uncertain, and ambiguous as not to enable a person so skilled to construct a bridge in accordance with the plan of the patentee? This principle rests on the doctrine that, while the inventive genius of the patentee is to be rewarded by a monopoly for a term of years, the public is to be compensated for such monopoly by having, after its expiration, the free and unrestricted use thereof, which free and unrestricted use cannot be enjoyed unless the description of the invention is sufficiently clear and exact to enable those skilled in the art to construct the same. On this point, under the testimony, it is supposed you will have very little difficulty, if any. If the description is not so uncertain, indefinite, and ambiguous in its terms, (which the defendant must prove,) then the patent is not invalid for the first cause assigned.

Second. Is the patent void for lack of usefulness? If the invention is not frivolous or prejudicial to the public, and has any degree of usefulness—no matter how slight the practical utility—then, within the meaning of the law, it is useful, and consequently not void for lack of utility.

Third. Is there want of novelty in the invention? Under this branch of the inquiry your attention is confined to the devices of the Whipple patent No. 2,064, April 24, 1841; of the Avery patent No. 17,864, July 28, 1857; of the Osborne patent, issued in England, No. 11,501, December 21, 1846, and of the description of the Severson iron bridge in Appleton's Engineers' Journal, (No. 10, vol. 2, October 1, 1852,) as received in evidence. The defendants can assail the Jones patent for want of novelty only on the grounds that some one or more of those patents or published descriptions had, prior to its date, covered the same ground. Under the law of the United States governing this matter—so that the patentee may not be taken by surprise—the defendant, if he wishes to assail the validity of the patent on the ground of lack of novelty, must specify precisely what patent or published description covered the ground of this alleged invention, so that he may have his attention specifically attracted at the time of the trial to the allegation as made; otherwise the patentee may come into court and have to meet anything likely to come from any book or the world at large concerning particular inventions. Hence these instructions confine you, as the law does, to those patents of which he gave notice, which he insisted already covered the ground occupied by the patentee. In this list no others come before you except the Howe patent.

I may state the plaintiff's patent cannot be assailed from any supposed imitation of that. That is introduced as a mere illustration, that the jury may see the condition of the art of bridge-building at that time. Whether plaintiff's patent covers any ground occupied by that is immaterial.

The foregoing inquiries appertain to the validity of

the Jones patent. That patent, having been duly issued, is presumed to be valid, and whoever assails it must show by competent evidence that it is void for some of the reasons alleged. If the defendants have not so done in this case, then the jury should consider it valid, and proceed to the next inquiry—viz., whether the defendants have been guilty of an infringement on it? If, on the other hand, the jury find it invalid under the evidence for any one of the three reasons mentioned, no further inquiry on their part will be necessary, and they will find for the defendants.

It is essential to the inquiries under the foregoing heads, and also to the question of infringement, that it should first appear distinctly what the Jones patent covers. The specifications and claims, there being no separation of the new from the old, as generally appears in a specification, call for a construction by the court. There are six distinct claims in this patent, each of which is patented. The plaintiff states to the court, however, that he does not rely on any other than the first, third, and sixth. Although the court, in order to ascertain what is embraced in the specified claims said to be infringed, must look to all the claims and the whole specifications in order to ascertain what is specifically patented in the first, third, and sixth, the attention of the jury under the evidence should be limited to what is embraced in these three claims as defined by the court. The first claim is for the "flexile curved splice in the lower chord, when said splice is formed of broad flat plates, with lateral curved offsets or lugs formed on their ends, said offsets pulling against one another, and allowing a free and independent movement of each plate in the path of a vertical circle, substantially as set forth in the drawings and specifications."

This is not a patent under this claim for the splicing of broad flat plates, with lateral offsets or lugs formed on their ends irrespective of their construction or intended functions. The object sought by the patentee was to secure such splicing by means of the indicated curving, so that the same may be flexile, to allow a free and independent movement in the path of a vertical circle. That first claim is not for any mode of interlocking by the use of lateral offsets or lugs other than this, which should be so curved as to allow a free and independent movement of the plates, as mentioned. The patent is not designed to cover any other device than that thus restricted—namely, "the flexile curved splice, allowing a free and independent movement in the path of a vertical circle." In other words, gentlemen, this contrivance of interlocking by offsets and lugs at the head is not what is patented. There is no claim in the patent for that as a specific thing; but it is in the curved flexile mode of splicing to secure this free and independent movement, so that when one of the plates moves it shall not necessarily move the other. That is the particular device patented in that connection.

The third claim is for "the metallic clamps or recessed blocks for retaining and holding together the tension-joints of the upper and lower chords or stringers, in the manner and for the purposes set forth."

It is obvious where several stringers are used to constitute the upper or lower chord, and are to be spliced at intervals, especially if the splicing is to be effected by interlocking with lateral offsets or lugs, it is important to have some mechanical contrivance to prevent a lateral and longitudinal displacement, whether caused by a change of temperature, loading the bridge, or from any other cause. This patent covers a specified device for that purpose—namely, recessed blocks, which served these and other supposed beneficial purposes, as sufficiently described by the testimony. That special device has its marked peculiarities. These are upper and lower blocks to be fitted together, each to be recessed, flared from the center outward, so that, in connection with the curved surfaces of the upper part of the upper block and the curved termination of the braces resting thereon, the bridge structure may in its different parts adjust itself automatically, as it were, to the various changes of camber.

The sixth claim is to the shoe at the abutment, "as constructed and combined with the lower ends of the tubular diagonal brace and the extreme ends of the lower chord, substantially as and for the purpose set forth." This is a claim, not for the specified parts of the combination separately, but for the combination itself. It is composed of three elements—viz., the shoe, diagonal brace, and extreme ends of the lower chords passing through the shoe, each to be constructed as set forth, and all combined in the manner indicated, so as to work out a given result. There is no infringement of the sixth claim, if the shoe is not the same, or the brace, or the ends of the lower chords passing through the shoe, for some if not all these were covered, in whole or part, in combinations with other devices, by other claims in the patent.

This sixth claim covers a combination of mechanical contrivances or devices to produce a given effect, and the question is, Did the defendants infringe that combination?—not Was any one of the many devices in the combination used? In determining the several questions of infringement, the jury must not judge about mere similarities or differences by the names of things, but must look to the whole structure and its several devices or elements in the light of what office or function they perform, and how they perform it, and find that a thing is substantially the same as another, if it performs substantially the same functions or office in the same way to attain the same result; but the devices are substantially different if they perform different duties or in a different way, or produce a different result. The substantial equivalent of a device is the same as the device itself—that is, if the patent mentions a specified mode of effecting a prescribed result, the substitution of any one or more mechanical equivalents for those specially mentioned will none the less work an infringement. The object sought by the modes of effecting the same, substantially as stated in the patentee's specifications, is covered by the patent, and whoever adopts the patentee's plan and works out the same result by merely substituting for one or more mechanical devices their mechanical equivalents or devices, is just as guilty of an infringement as if he servilely copied the patentee's device in all its parts. Hence, if the Jones patent is valid, and defendants have adopted his plan for accomplishing the result he sought, and also the mechanical contrivances he contrived therefor or their equivalent, they are guilty of an infringement. If, on the other hand, the result sought by the defendants was different, or if they sought the same result by an entirely different device or one that is not the same or equivalent, as in the patent, then they have not infringed.

The jury will bear in mind that plaintiff insists that defendants have infringed the first, third, and sixth claims, consequently, if they infringed any one of said three claims they are guilty, and damages should be assessed accordingly. The fact that the defendants have had granted to them patents since the issue of the Jones patent the jury have a right to consider and weigh. The issue of a patent follows the decision of official experts specially appointed and qualified to examine and pass on the claimed invention for which the patent is sought; hence plaintiff's patent is, *prima facie*, valid. But the same official experts have also granted defendants' patent, thereby expressing their opinion that the latter did not interfere with the former. Their opinion, however, is not conclusive. The plaintiff has a right to rely on the presumption springing from his older patent, and it is for the jury to decide, in the light of the testimony produced on the trial, whether that presumption as to validity has been overthrown, and also whether defendants' patent interfered or infringed on plaintiff's patent. In doing so, they can take into consideration the fact of the issue of defendants' patent; so, if there be doubt or difficulty in reaching a conclusion, they may have the benefit of such official expression.

Of course a valid patent cannot be overthrown by the issue of a subsequent patent to another person for the same thing; but when the question of infringement is under consideration, and expert testimony is necessary, the action of official experts on the subject is entitled to some consideration, especially where doubt exists.

The jury should bear in mind that the object sought by plaintiff in his patent, was the adjustability of the various parts of the bridge structure on his plan, by means of flexile curved splices and convex and concave surfaces, respectively, of the top angle-block, bridge-seats, and brace-ends. Where a combination is claimed the patentee cannot abandon part of said combination and maintain a claim to the residue, nor prove any part thereof immaterial or useless without destroying the whole. For the combination is an entirety, and if one of the elements is given up the combination disappears. From what has been said the jury will understand that several propositions are to be considered as to the validity of the Jones patent. On the ground of novelty, let it be borne in mind that it is not necessary that a patent for a combination should rest on novelty of parts or elements combined, but on novelty of the mode of combining the parts.

As to the infringement the main points are, What is the Jones patent? and next, Did defendants use any of the three plans named as new in the first, third, and sixth claims thereof? As to some of the first bridges built by defendants the jury should consider the testimony presented—viz., that the plaintiff gave his consent thereto or sold some of the parts thereof. As to those to which he gave his consent no damages can be recovered; as to the others, if any, he is to receive manufacturers' profits thereon.

The jury found for the defendants.

APPLICATIONS FOR EXTENSION.

Applications having been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

26,860.—Machines for the Manufacture of Tinware, granted to SAMUEL J. OLMSTED, January 17, 1860. Application filed October 16, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NEILSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOSHINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KUNZLER and WILHELM ROSENBROCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ABNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SEMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,297.—Couches for Railroad-Cars.—Granted to EDWARD C. KNIGHT, February 28, 1860. Appli ation filed November 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,303.—Fastening Saw-Handles.—Granted to JACOB NEIMEYER, February 28, 1860. Application filed November 28, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,357.—Table-Cutlery.—Granted to JOSEPH W. GARDNER, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,392.—Machine for Folding and Pasting Paper.—Granted to GEORGE K. SNOW, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,403.—Steam and Fire Regulators.—Granted to JOSEPH WOODRUFF, March 6, 1860. Application filed December 5, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,438.—Blackwashing-Molds for Casting.—Granted to WILLIAM FERGUSON and DAVID FERGUSON, March 13, 1860. Application filed December 10, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,447.—Chain for Timber-Bending Machines.—Granted to LEVI HEYWOOD, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,478.—Turning-Lathes.—Granted to WILLIAM SELLERS, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,485.—Lanterns.—Granted to AUGUSTUS TUFTS, March 13, 1860. Application filed December 12, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,545.—Fitting Sinks.—Granted to JAMES INGRAM, March 20, 1860. Application filed December 15, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,594.—Sewing-Machines.—Granted to L. W. LANGDON, March 20, 1860. Application filed December 13, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,627.—Cultivators.—Granted to CYRUS M. HALL and DAVID E. HALL, March 27, 1860, and reissued October 14, 1873. Application filed December 20, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,641.—Harvesters.—Granted to FRANK T. LOMONT and JOHN GROJEAN, March 27, 1860, and reissued June 11, 1872. Application filed December 20, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,636.—Horseshoe-Nail Machines.—Granted to WILLIAM TALLMAN, March 27, 1860. Application filed December 15, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,743.—Feed-Water Arrangement for Steam-Boilers.—Granted to THOMAS SNOWDON, April 3, 1860. Application filed December 16, 1873. Testimony closes March 3, 1874. Hearing March 18, 1874.

28,004.—Railroad-Car Axles.—Granted to JAMES MONTGOMERY, April 24, 1860. Application filed December 17, 1873. Testimony closes March 24, 1874. Hearing March 8, 1874.

28,269.—Bayonet-Scabbards.—Granted to EMERSON GAYLORD, May 15, 1860. Application filed December 19, 1873. Testimony closes April 14, 1874. Hearing April 29, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,262.—Fare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,475.—Improvement in Breech-Loading Fire-Arms, granted to BETHEL BURTON, December 20, 1859; reissued December 21, 1869, numbered 3,770.

Claim.—1. The opening 13, arranged as described, in connection with the breech-piece and stock, for the purpose of allowing the escape of gas and smoke, preventing heating and clogging, and facilitating the lubrication of the parts, substantially as shown and described.

2. A breech-pin made in two or more pieces, with a broken joint or joints, when the front end has a reciprocating motion only, and the rear end a reciprocating and rotary motion, substantially as shown and described.

3. One or more projections on the forward end of the breech-pin for guiding it and holding it in place, when made and operating as shown and described.

4. The L-shaped groove 11 in the breech-pin, in combination with the pin or projection 12 on the inside of the breech-piece, when arranged and operating as shown and described.

5. A concavity or depression on the front end of the reciprocating breech-pin, receiving the conical rear end of the barrel, in combination with a sliding packing-ring in the rear end of the barrel, when made as shown and described.

6. The combination of the breech-piece, and the reciprocating breech-pin made to slide therein, when provided with sectional screws, as shown and described.

Disclaimer filed December 4, 1873.

Disclaims the first clause of the recital of the nature of invention, viz:

"First, an opening in the breech-piece and stock to allow the escape of gas and smoke, prevent heating and clogging, and keep the working parts lubricated."

Disclaims, also, the first clause of claim as above set forth.

26,484.—Improvement in Platform-Scales, granted to THADDEUS FAIRBANKS, December 20, 1859.

Claim.—1. The arrangement and application of the yoke, stirrup, their concave steps or bearings, and the pivots of the two multiplying and transmitting levers, substantially as specified, the whole being for the purpose and to operate as described.

2. Combining with the rod I, and the yoke applied thereto, as described, the cap or bonnet a^3, the same being for the purpose as specified.

26,486.—Improvement in Pipe-Molding, granted to JOHN FIRTH and JOHN INGHAM, December 20, 1859; reissued April 28, 1863, numbered 1,463, (MARY FIRTH and JOHN INGHAM executors of the estate of JOHN FIRTH, deceased.)

Claim.—Blackwashing pipe-molds by causing a stream or volume of the wash to flow through the interior of the mold, the said stream being controlled in the manner described.

26,487.—Improvement in Screw-Taps, granted to WILLIAM and ROBERT FOSTER, December 20, 1859, (WILLIAM FOSTER for himself and as executor of the estate of ROBERT FOSTER, deceased.)

Claim.—The combination of the oblique-backed taps C and slotted collar B with the tapering or conical stock A, substantially as shown and described, so that on turning the collar the cutting threads of the taps will be released from the nut, and thus allow the tool to be withdrawn, all as specified.

26,506.—Improvement in Water-Traps, granted to JAMES A. LOWE, December 20, 1859.

Claim.—The water-trap shown, when cast without a seam, (in lead or composition,) as a new article of manufacture.

DISCLAIMERS FILED.

26,475.—Improvement in Breech-Loading Fire-Arms.—BETHEL BURTON, Brooklyn, N. Y.—Patent dated December 20, 1859; reissue No. 3,770, dated December 21, 1869. Disclaims as follows:

"That part of the specification which includes the first clause of the recital of the nature of invention, and which reads as follows:

"'First, an opening in the breech-piece and stock to allow the escape of gas and smoke, prevent heating and clogging, and keep the working parts lubricated.'

"Also, the first claim, which reads as follows:

"'The opening 13, arranged as described, in connection with the breech-piece and stock, for the purpose of allowing the escape of gas and smoke, preventing heating and clogging, and facilitating the lubricating of the parts, substantially as shown and described.'"

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 16, 1873.]

7,049.—Lamp-Pedestal.—NATHANIEL L. BRADLEY, West Meriden, Conn., assignor to BRADLEY & HUBBARD, same place. Case D. Application filed November 22, 1873. Term of patent 7 years.

7,050.—Carpets.—JOHN FISHER, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,051.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,052.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,053.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,054.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,055.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,056.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,057.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,058.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,059.—Carpets.—OTTO HEINIGKE, New York, N. Y., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,060.—Carpets.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,061.—Carpets.—HENRY HORAN, East Orange, N. J., assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,062.—Show-Cases.—JAMES IRONS, Philadelphia, Pa. Application filed September 22, 1873. Term of patent 7 years.

7,063.—Casing of Soda-Water Apparatus.—GEORGE F. MEACHAM, Newton, assignor to JAMES W. TUFTS, Medford, Mass. Application filed November 20, 1873. Term of patent 14 years.

7,064.—Fur-Trimming.—ADOLPH MOLNAR, New York, N. Y. Application filed August 30, 1873. Term of patent 3½ years.

7,065.—Carpet.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,066.—Carpets.—JOHN H. SMITH, Enfield, assignor to HARTFORD CARPET COMPANY, Hartford, Conn. Application filed December 11, 1873. Term of patent 3½ years.

7,067.—Handles of Table-Casters.—HORACE C. WILCOX, West Meriden, Conn., assignor to THE MERIDEN BRITANNIA COMPANY, same place. Application filed November 22, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date December 16, 1873.]

1,574.—Goods Made of a Composition Substitute for Bone, Horn, Hard Rubber, &c.—GERMANELLE MANUFACTURING COMPANY, New York, N. Y. Application filed December 9, 1873.

"'Hallolite.'"

1,575.—Burning-Fluids and Liniments.—NETTERFIELD & SMITH, Burr Oak, Mich. Application filed October 31, 1873.

"a star having five points, and upon the center of which is the figure of an acorn."

1,576.—Whisky.—DAVID PORTER, San Francisco, Cal. Application filed December 5, 1873.

A "shield with the St. Andrew's cross, with letters 'D P S F' surmounted with the helmet and thistle, and label with a hand, together with the ribbon below the shield, upon which are the words 'Honesty is the best Policy,' and the circular ribbon above, with the word 'Shield.'"

1,577.—Perfumes, Medicines, &c.—GEORGE J. WENCK, New York, N. Y. Application filed November 22, 1873.

"a shield surmounted by an eagle."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date December 16, 1873.]

ORIGINAL PATENTS.

145,475.—Scythe-Holder for Rag-Cutters.—EDGAR D. ALDRICH, Pittsfield, Mass. Application filed May 7, 1873.

The scythe-blade is secured in an angular slot in the holder by a clamp-bar held by a screw-nut.

Claim.—The scythe-holder, consisting of the flanged shell B, having the openings *d g* and nut O, in combination with the hook-bolt L and nut W, the parts being constructed and arranged substantially in the manner and for the purpose as set forth.

145,476.—Straw-Cutter.—THOMAS D. ANDERSON, Bardstown, Ky., assignor of one-third his right to ENOCH E. MCKAY, same place. Application filed June 28, 1873.

The knives are attached to the hub of the gage-wheel. In cutting they pass between the stationary cutter and a supporting-blade. The feeding-rake is automatically moved forward by cams on the feeding-shaft, and returned by means of springs.

Claim.—1. The blade F and knives D D, when said knives are made in a solid piece, and secured to the shaft as described, in combination with the wheel C, when made in a solid plate, to answer as a gage for the length of the straw, when arranged, constructed, and operated substantially as and for the purpose set forth.

2. The combination of the several devices for feeding up the straw, as above described, consisting of the frame K, with its springs L and rake M; also, the shaft G, cams J J, pinions H H, and box A, when arranged, constructed, and operated substantially as and for the purpose hereinbefore set forth.

145,477.—Device for Marking Dovetails.—GEORGE ASHBY, Decatur, Ill. Application filed November 18, 1873.

Dovetails are laid off by sharp edges on the marker being pressed upon the board.

Claim.—1. The markers D D D' D', in combination with the blades C or B, substantially as described, and for the purpose set forth.

2. The combination of the handle A, blades B C, markers D D D' D', and gages E E, as and for the purpose set forth.

145,478.—Magazine Fire-Arm.—ADOLPH ASMUS, Chicago, Ill., assignor of one-half his right to CHARLES ASMUS, same place. Application filed February 11, 1873.

Claim.—1. A breech-loading and repeating gun wherein the exit for the empty cartridge-shells is arranged in a line with the mouth of the magazine for the loaded shells or cartridges, and wherein the empty cartridge-shells are conveyed to the said exit by means of the cartridge-carriage operated upon through the medium of levers actuated by the hammer, and are then expelled

into the stock by means of the automatic action of the loaded shells or cartridges, substantially as specified.

2. In a breech-loading repeating gun, the sliding bar L, provided with the clasps or hooks *l l*, shoulder G″, and groove *m*, in combination with the hammer G, provided with the arm G′, constructed and arranged to engage the shoulder G″ and the shoulders of the groove *m*, and with the needle *n*, carried by the hammer G, and arranged to impinge the cartridge, all substantially as shown and described, and for the purposes set forth.

3. In a breech-loading and repeating gun, the stop-spring *d*″, having its free end arranged in the cartridge-exit and forward of the wall *b*, and for contact with the end and body of the cartridge, substantially as and for the purposes specified.

4. In a breech-loading and repeating gun, the combination, construction, and arrangement of the pivoted lever F, the lever H, hammer G, and trigger J, in connection with spring for operating the same, substantially as and for the purposes specified.

145,479.—Brush-Holder.—CHARLES L. W. BAKER, Camden, N. J., assignor to JOHN L. MASON, same place. Application filed September 16, 1873.

The rotary motion of an externally screw-threaded sleeve on the end of the handle gives, for the purpose of clamping a scrubbing-brush, longitudinal motion to a nut affixed to a wire frame forming the outer jaw, the other jaw being lateral loops on the extremity of the handle, through which the wire frame passes.

Claim.—A brush-holder, consisting of the screw-shank B, swiveled on the stick or handle A, in combination with the nut or ring D, the frame or yoke E, and hook G′, and with the head C and hook G, all as set forth.

145,480.—Steam-Trap.—ROBERT J. BARR, Philadelphia, Pa. Application filed November 10, 1873.

The tubes are prevented from expanding longitudinally, and their ends are secured rigidly, so that a lateral motion is imparted to the yoke and the valve as they contract and expand, thus opening and closing the valve.

Claim.—1. The method of operating the valve or valves of steam-traps by combining bent tubes with means for preventing their longitudinal movement, and for rigidly securing their ends, substantially as set forth.

2. The combination of the bent tubes, the slotted plate *o*, rod *m*, and valve *f*, substantially as and for the purpose set forth.

3. The combination of the bent tubes, slotted plate *o*, valve *f*, and yoke A, substantially as and for the purpose set forth.

145,481.—Window-Blind-Slat Adjuster.—ROBERT C. BEACH and GEORGE A. BERRY, Tidioute, Pa. Application filed March 26, 1873.

The blind is of the species the slats of which have a double pivot passing into a duplicate shifting-rod. In this case the shifting-rods are operated by a knob attached to a link, the shank of which knob passes through a slotted locking-plate, so that when pulled out the knob moves freely up and down in a vertical slot carrying the shifting-rods, but when pushed in a lug on the shank engages with transverse slots in the locking-plate, thereby holding the slots at any desired angle of aperture.

Claim.—1. The combination of connecting-rods A, cross-bars or levers B, caps C with projections *a*, knob *d*, and locking-plate O, substantially as and for the purpose herein described.

2. The shifting and holding link D, with its knob *d* and lug *f*, constructed and operating substantially as herein set forth, in combination with a locking-plate, O, having a guide-slot, *o*, and retaining-notches *n*, for the purpose specified.

145,482.—Tucker for Sewing-Machines.—JOSEPH H. BEAN, Cincinnati, Ohio. Application filed October 11, 1873.

The short and horizontally-projecting bent end of the plate rests beneath a previously-made tuck, and the line of seam is held and guided between the end of the plate and the shoulder formed by bending the plate up.

Claim.—1. The plate B, having the bent end adapted in connection with its main plate to gripe the line of the seam, as described.

2. The combination of the main plate A, recessed as described, with the adjustable and independent gage-bar D, as described.

3. The tucker described, consisting of the plates A B and gage-bar D, constructed and arranged substantially as described, for the purpose set forth.

145,483.—Means for Sinking Broken Piles.—ELIJAH C. BOOBAR, San Francisco, Cal. Application filed October 15, 1873.

The bell-shaped cap is designed to be placed over a sunken pile to assist in driving it beyond danger to passing vessels. A socket in the upper portion of the cap receives a second pile, and the two are secured together by the ropes to prevent the cap from being lost. The upper pile receives the blows from the pile-driver and transfers them to the pile to be driven.

Claim.—1. The described bell, having the mouth B and socket D, in combination with the beam E, the mouth B being adapted to guide the end of the broken pile to its seat, and the socket D to receive and hold the end of beam E, as described.

2. The combination of the bell A and pile E with the mousing F, substantially as described.

145,484.—Bottle-Cover.—WENDEL BOURGUIGNON, Providence, R. I. Application filed November 13, 1873.

A hinged cover provided with a valve is connected to a strap encircling the neck of the bottle by adjusting-screws, and is secured upon the mouth by cam connections.

Claim.—The combination of the straps C C with the adjusting-screws D and E, lip I, catch G, and cover A B, the whole operating substantially as described.

145,485.—Drawing-Knife.—MIDAS BROOKS, Chicago, Ill. Application filed January 15, 1873.

The handles are pivoted and fold over the cutting-edge.

Claim.—The implement herein described, having blade A, slotted handles B, with spring C, notch *f d*, and end *g*, all constructed and arranged as and for the purpose specified.

145,486.—Lath-Machine.—THEODORE BRUNO, Saginaw, Mich. Application filed November 17, 1873.

The saw-table is provided with a catch which prevents the lath-bolt from being drawn back by the carriage after it is sawed from the slab.

Claim.—1. The construction and arrangement, with relation to the frame A, mandrel B, and saws C C′, of the feed-roll shafts *c c¹ c²*, the pulley *g* and their belt *t*, the friction-pinion *k*, double-flanged friction-wheel E, shaft F, pinion G, and rack H on the carriage I, the lever K, rod L, arm M, rock-shaft N, and reverse lever O, the lever P provided with the latch *n*, and the cam Q on the carriage I, all arranged and operating substantially as and for the purposes herein set forth.

2. In a lath-bolting machine, the stop-latch *r* pivoted in the table, in the manner and for the purpose set forth.

145,487.—Photographic Background.—JOSEPH BUCHTEL, Portland, Oreg. Application filed February 28, 1873.

By the employment of a vibrating screen of gauze or net-work interposed between the sitter and the background a peculiar atmospheric effect is produced, and a toning down of the reflected light from said background essentially secured.

Claim.—1. The background for photographic use, composed of the parts A, B, C, D, and E, constructed and combined for operation substantially as described and shown.

2. The gauze or netted screen A, interposed between the object to be photographed and the part B of the background, when arranged to be oscillated, substantially as and for the purpose set forth.

145,488.—Grinding-Machine.—PERLEY D. CUMMINGS, Portland, Me. Application filed August 25, 1873.

Claim.—1. The annular wheel or grinder D, having the supports C, band K, and rotated upon the vertical shaft A, in the manner herein described, so as to be capable of use both upon the top edge and inner periphery thereof.

2. In combination with the annular wheel D, supports C, and band K, as described, the suspended table E and brackets F, rising from the fixed flooring G, as herein set forth.

145,489.—Hot-Air Furnace.—GEORGE W. DAY, Haverhill, Mass. Application filed July 7, 1873.

The products of combustion pass from the combustion to the smoke chamber through a series of pipes. These pipes pass through a deflecting plate, which diverts the air, heated by radiation, to the outside casing, up the inside surface of which it passes to the hot-air-exit flues.

Claim.—In a hot-air stove or furnace provided with a combustion and a smoke chamber, and a series of pipes connecting the two, and with an air-chamber surrounding the entire heat-radiating surface, the combination with the same of the horizontal partition or deflector K, constructed and arranged as shown and described, to divert the entire ascending currents of air and cause them to pass over the top surface of the fire-chamber, for the purpose stated.

145,490.—Meter.—LYMAN H. DEAN, Tecumseh, Mich. Application filed August 11, 1873.

The windmill-shaft is dropped into mesh with the pinion of the horizontal shaft, by means of which the spring upon the latter is wound up. The storing of power can be increased by connecting the shaft of the auxiliary spring-power, or it can be utilized in driving another machine during a lull of wind.

Claim.—The combination of the shaft B of a windmill with the shafts B′ and C, the spring D, the wheel E, and shaft G, connected and operating together, as described, and the frame J and its train of gears and springs, substantially as and for the purpose set forth.

145,491.—Portable Stove.—SARAH J. DIBBLE, Lockport, N. Y. Application filed September 10, 1873.

The fire-chamber is in the lower end of the main pipe. The supplemental pipe has on its upper surface a disk on which to warm dishes, &c., and a kettle may be heated in its upper end.

Claim.—1. The combined pipe and fire-chamber, arranged within the center of the casing A, for heating the baking-chamber, in combination with the supplemental pipe E, for heating kettles, dishes, and other articles, substantially as and for the purpose specified.

2. A portable summer stove, consisting of the sheet-metal body A, having the central grate *b*, central combined pipe and fire-chamber B, perforated plates *d*, supplemental pipe E, and elbow E′, all constructed and arranged substantially as and for the purpose specified.

145,492.—Buffing-Wheel.—EDWARD DIXON and WILLIAM DIXON, Newark, N. J. Application filed September 10, 1873.

Claim.—The process described of manufacturing buffing-wheels of felt, with the centers made hard by cement, substantially as and for the purposes set forth.

145,493.—Flood-Fence.—GEORGE W. DUNCAN, Columbia, Mo. Application filed June 27, 1873.

Two inclined timbers are secured to opposite ends of a sill-piece, to which sill are secured correspondingly inclined bottom-hinged gates provided with springs. The space between the two inclined gates is provided with a hinged gate which is also kept up in position by a spring.

Claim.—1. The string-piece A, provided with the inclined pieces B B, framed or otherwise secured thereto, in combination with the inclined hinged spring-gates E E, forming a continuation of the bank-fences, substantially as described, and for the purpose specified.

2. The timbers A B and hinged gates D E E, with springs *i*, arranged as described, and for the purpose specified.

145,494.—Breech-Loading Fire-Arm.—JOSEPH DUVAL, Parish of St. Joseph, assignor to LINUS ORTON THAYER, Montreal, Canada. Application filed December 5, 1873.

Claim.—1. The combination, in a fire-arm, of the breech-block, having the recess A, of the frame *r*, carrying the tumbler, the needle and operating parts, whereby the action, as a whole, as constructed, may be readily adjusted and removed, as specified.

2. The combination, as shown and described, of the tumbler *v*, needle *o*, spring *d*′, lever *m*, and breech-block *s*, for the purpose set forth and described.

3. The combination, with the trigger *y*, having a forward projection, as shown, of a stop or lock, arranged to slide on and project through the trigger-plate in front of the trigger-guard, as shown and described.

4. The mainspring *d*′, detachable, connected with the frame *r*, and combined therewith, and with a breech-loading fire-arm, substantially as shown, so as to be readily attached, or to be detached to render the arm unserviceable, as set forth.

145,495.—Recording Steam-Gage.—JARVIS B. EDSON, Brooklyn, N. Y. Application filed June 27, 1871.

A diaphragm steam-gage is connected with an apparatus which records all pressure in excess of a given degree.

Claim.—1. The adaptation and application, in circular dial-gages for recording or indicating pressure by hand and dial-plate, of two corrugated diaphragm steel disks or springs, connected together by iron compression-rings, screws, and packing on their outer edges, and receiving the pressure between them through an opening in the center of the back spring, where it is attached to the case, substantially as shown and described.

2. The combination and arrangement of the recording-pencil M, chart U, and reels J and K, with the arm or lever L, operated by contact with the pin or shoulder of the rocking lever G G, whereby an intermittent motion is given to the apparatus, and records of excessive pressure only are obtained.

3. The combination of apparatus, as shown and described, by which a record is given of all pressure in excess of a fixed limit, simultaneously with the indication of such pressure on the dial-plate by a hand, which also indicates all pressures below that limit.

145,496.—Preventing the Corrosion of Iron and Steel.—ROBERT A. FISHER, San Francisco, Cal. Application filed July 28, 1873.

Claim.—The method herein described for protecting iron against corrosion, consisting in the use of a mercurial solution or amalgam of aluminum, cadmium, magnesium, or zinc, the oxide of which is insoluble in water, substantially as above set forth.

145,497.—Bill and Paper File.—WILLIAM H. FOYE, Portland, Me. Application filed October 22, 1873.

The top or cover is hinged to a spring-clip attached to one side of the box, and is held down by an overlapping flap hinged to the opposite side.

Claim.—1. The combination of the base *b*, end piece *a*, hinged strip *f*, spring *j* having the edge *i*, flap *a*, flap *c*, and end piece *g*, as herein set forth.

2. The combination of the base *b*, end piece *c*, strip *f*, spring *j* having the edge *i*, flap *a*, flap *c*, catch *l*, end piece *g*, and side pieces *d*, as herein set forth, to operate as described.

145,498.—Medical Compound or Liver Lozenge.—SYLVESTER GILBERT, Portsmouth, N. H. Application filed April 28, 1873.

Claim.—A compound medicine consisting of leptandra Virginica, in combination with chelone glabra, sugar, and mucilage, substantially as and for the purpose specified.

145,499.—Gearing.—JOHN JAMES GREENOUGH, Syracuse, N. Y. Application filed July 15, 1872.

Semi-spherical gearing, connected by pivoted links, to transmit motion from one shaft to the other at varying angles.

Claim.—1. The teeth of the gear formed on the surface of the segment of a sphere, so as to radiate from the axis of revolution to the base, and the curve of the teeth made to conform at their pitch-line to the segment of a circle concentric with a point on the axis, substantially as shown and set forth.

2. The segmental gear having the number of its teeth diminished, and their thickness increased as they approach the apex of the gear, substantially as shown and described.

3. The segmental gears coupled by links, which are pivoted on a radial line in the plane of their axes coincident with the center of the pitch-line of the teeth, enabling the gears thereby to sweep through an arc, substantially as shown and described.

4. The segment-joint piece, constructed with a swivel, to enable the gears to sweep around the entire circle on the axis of the gear, substantially as shown and described.

5. The semi-spherical gears, in combination with the swivel-link, substantially as and for the purpose described.

145,500.—Stock and Die.—JASON W. HARDIE, New York, N. Y. Application filed May 2, 1873.

Claim.—The improved instrument herein described, composed of a stock and dies, a tap-wrench, a scale, a wire or drill gage, and a screw-thread gage, all substantially as herein specified.

145,501.—Machine for Buffing Boots and Shoes.—GARDNER C. HAWKINS, Boston, Mass., assignor to THE SHOE MACHINERY MANUFACTURING COMPANY, New Haven, Conn. Application filed July 22, 1873.

The machine is provided with a shallow draft-flue for collecting and carrying off the dust from the buffing roll or shaft. A reciprocating beam, provided with dies for stamping the different sizes, is attached to the front of the machine.

Claim.—1. In a buffing-machine for boots and shoes, the combination, with the buffing cylinder or wheel and buffing-chamber, of a top-draft flue independent of said chamber, and having its induction-mouth arranged and located, with respect to the buffing cylinder or wheel, substantially as herein shown and set forth.

2. In combination with the buffing-chamber and independent top-draft flue, the opening leading from the lower part of the buffing-chamber into said flue, and the gate or cover for closing the same, substantially as and for the purposes shown and set forth.

3. The stamping-beam and vertically-reciprocating frame for carrying the same, and lever or treadle for operating said frame, combined together and arranged on the front of the buffing-machine, as shown and described.

145,502.—Candlestick.—WILLIAM H. H. HINDS, Ayer, Mass. Application filed August 26, 1872.

The snuffing-blades are operated by independent shafts projecting below the chimney-support. The upper portion is adjustable upon the lower through means of a notched ridge and engaging spring.

Claim.—1. The two blades *a a*, operated by the movable rods *b b*, closing about the wick, substantially as and for the purpose specified.

2. The notched projection *i*, groove *k*, and spring *l*, constructed and operated substantially as and for the purpose described.

145,503.—Apparatus for Charging Soda-Fountains.—JOHN C. KENNEDY, Toledo, Ohio, assignor to JAMES W. TUPTS, Medford, Mass. Application filed November 20, 1873.

To make the apparatus compact, the purifier surrounds the acid-chamber, the gas being conducted from the generating-chamber to the bottom of the purifier through a bent pipe. To make an unobstructed outlet for the discharge of the contents of the alkali-chamber, the end of the discharge-pipe is beveled off on one side, and is closed by a correspondingly-inclined plug operated by a screw-rod.

Claim.—1. The chamber *p*, between the acid-vessel and the casing of the generator, for containing water for purifying the gas, in combination with the bent tube *q*, through which the gas is admitted, substantially as described.

2. The discharge-pipe *s*′, with its inclined face, in combination with the sliding plug *o*′, correspondingly inclined, and operated by a screw, *o*″, when applied to a carbonic-acid-gas generator, substantially as and for the purpose set forth.

145,504.—Cut-Nail Machine.—EBEN A. KIMBALL, Abington, Mass., assignor to himself, JOSEPH E. KIMBALL, and EDWD. MERRITT, same place. Application filed July 31, 1873.

The improvements are in details of construction, and consist of a supplemental support at the end of the main shaft; a spherical eccentric for operating the header; revolving the barrel K, through which the plate is fed, by means of straps passing partly around and fastened to adjustable collars; in the use of straight knives held in place by screws passing through lugs projecting in front; and in the hollow jaws M N, having openings in the rear through which the bearing-springs pass.

Claim.—1. The supplemental bifurcated support 16, constructed and arranged, as described, for supporting the shaft A, in combination with the shaft A, the support 15, rod X, and eccentric for operating the lever Y of the heading-tool Z, substantially as set forth.

2. The ball-joint 50, formed in one and the same piece as the shaft A, in combination with the connecting-rod X for operating the lever Y of the heading-tool Z, substantially as and for the purpose set forth.

3. The shafts G 21, with their rocker arms *c d f g*, in combination with the disk D, rods E H, crank *c*, and straps A A, with or without the adjustable collars *i*, for rotating the barrel K, through which the plate is fed, substantially as described.

4. The post L, made in two pieces, *n* and *o*, hinged at 36 37, and having a recess, 38, in combination with the spring 40, having a projection, 39, whereby I am enabled to throw back the barrel K without removing the straps, as described.

5. The adjustable hollow or channeled jaws M N, cast, as described, so as to form ways, in combination with the springs *s s* and bifurcated holder Q.

6. The adjustable hollow or channeled jaws M N, provided with lugs *r r* extending in front of, but not bridging over, the knives *p q*, substantially as and for the purpose set forth.

145,506.—Rotary Engine.—CHARLES C. KLEIN, Philadelphia, Pa. Application filed October 30, 1873.

Claim.—1. The pistons *a*, constructed of cylindrical or parti-cylindrical form, and having flat-arc bearing-surfaces *f* formed thereon, in combination with piston-slides *d*, having shoulders concentric therewith, and piston-links *h* arranged between these shoulders and a pivotal support, *b*, concentric with the cylinder, substantially as herein specified.

2. The combination of the opposite radial piston-slides *d*, having the arms 9 and the interposed expanding-springs *g*, as described.

3. In combination with the cylindrical or parti-cylindrical pistons, shouldered piston-slides, and central pivotal support, the piston-links *h*, attached to the pistons by stems 10, as herein set forth.

4. In combination with the cylindrical or parti-cylindrical pistons, shouldered piston-slides, and central pivotal support, the piston-links *h*, adjustable in length to take up wear, as described.

5. The combination, with the piston-links, of the automatic positive adjustment device, consisting of an adjusting screw or nut, 7, a spring, 8, attached thereto, to turn it forward, and a ratchet device, 9, for winding the spring, substantially as herein specified.

6. The steam-passages 12 in the pistons and piston-slides, for balancing the pistons and piston-slides, in the manner herein set forth.

7. The inner cylinder *m*, attached to one of the pistons and revolving therewith within the outer cylinder or case, substantially as herein described, for the purposes set forth.

8. The combination, with the inner revolving cylinder *m*, of the grooves 15, oil or tallow cups 16 17, and passages 18, arranged and operating substantially as specified.

9. The combination of the screws *q*, the springs *s*, and the non-circular traversing nuts *r*, working in corresponding recesses in the case, for adjusting and supporting the packing-plates *o p*, in the manner set forth.

10. The combination of the eccentric piston-wheel *c*, piston-slides *d*, pistons *e*, and a revolving cylinder, *m*, of one and the same length or width, and revolving between two parallel plain surfaces, as herein described.

11. In a rotary engine, the rearwardly-expanding cylinder-ports *u*, arranged and operating as herein set forth, for the purpose specified.

12. The reversible steam-chest *v* and the exhaust-nozzle plug or plugs u^3, in combination with the steam-nozzle u^2 and exhaust-nozzles u^4, formed and arranged substantially as shown and described, for the purposes set forth.

145,506.—Screw-Driver.—SYLVANUS R. KNEELAND, Charlestown, Mass. Application filed November 11, 1873.

A screw-driver is provided with a loose thimble encircling its shank, which is adjustable, and may be locked on the shank of the driver at such point that the blade will be exposed, when desired.

Claim.—The screw-driver described, consisting the various instrumentalities shown, constructed, arranged, and used substantially as and for the purpose set forth and specified.

145,507.—Fly-Trap.—TARLTON LANE, Whitesburg, Tenn. Application filed November 17, 1873.

A hinged door on the front is connected by rods with the rear of a slide-door, which is on the top of the box, so that when the end door is closed the top door or slide is open. A wire cage is also arranged on the top, having a sliding door on its lower side, so that the flies or insects can pass from the lower box into the cage, and be shut therein.

Claim.—1. The box A, provided with the aperture L, door B, and rods E, in combination with the slide H and cage M, substantially as shown and described.

2. The box A, provided with the aperture L, door B, and rods E, operated by the bar F, in combination with the cage M, provided with the slide H, substantially as shown and described.

145,508.—Sofa-Bedstead.—PETER J. LARSON, Chicago, Ill. Application filed May 31, 1873.

To the under side of the vertically-adjustable bottom frame are pivoted two cross-pieces, which are longer than the width of the frame, so that, when the bottom is elevated, the ends of the cross-pieces will enter mortises in the side of the sofa-frame. To one of these cross-pieces is attached a spring, to throw it out of the mortise when a connecting-cord is loosened. The main head or bolster is hinged to the folding frame, and provided with a hinged head-board, which is thrown back to form the pillow for the stationary frame, and is also provided with a spring or yielding board that comes up flush with the hinged pillow of the main frame.

Claim.—1. In a folding lounge, the combination and arrangement of the vertically-sliding bottom F, the pivoted cross-pieces F', the spring *f*, the mortises K K, and the cord G', substantially as and for the purposes specified.

2. In a folding lounge, the bolster C, linked or hinged to a folding bottom, and provided with the head-board L hinged or linked thereto, and with the yielding board L', all arranged and operating together, substantially as and for the purposes specified.

145,509.—Register for Tubular-Knitting-Machines.—DANIEL A. LEHMAN, Wakarusa, Ind., assignor to himself and JOHN D. GENEMO, Constantine, Mich. Application filed July 14, 1873.

By the action of the tension-weight a graduated bar is carried down through a slot in the top of a table of a tubular-knitting machine, and shows at the slot the number of inches knitted.

Claim.—The guides C, block D, arm E, pedestal F, scale-rod G, cord H, weight H', and guide-pulleys I I', in connection with any suitable stand and a circular-knitting machine, substantially as and for the purpose set forth.

145,510.—Manufacture of Carriage-Axles.—JOSEPH C. LONES, JABEZ LONES, CHARLES VERNON, and EDWARD HOLDEN, Smethwick, England. Application filed October 2, 1873.

The upsetting device contains a die, in two parts, fitted into a die-box that is adjustable by set-screws, for griping and holding the bar, and a reciprocating die in a solid block, into which the arm of the axle is thrust, the orifices of the dies having forms the counterparts of those to be given to the shoulders on each side of the collar proper. The rolls for finishing the collar revolve at right angles to the axis of the bar, the latter lying and rotating, during the operation, on two anti-friction rolls.

Claim.—1. The improvements in the manufacture of axles for carriages, such as hereinbefore described, and illustrated in Figs 1 and 2 of the accompanying drawings—that is to say, making the collars of said axles by taking a fagoted bar of iron and reducing the diameter of either end thereof, so as to leave near the arm end of the bar a part or round of larger diameter, then increasing the diameter and reducing the longitudinal extent of the said round by upsetting it to partially form the collars, and then finishing the same by rolling, substantially as described and illustrated.

2. The improvements in machinery for compressing or upsetting a round or enlarged part on the axle to form the collars of the axle, hereinbefore described, and illustrated in the accompanying drawings—that is to say, the combination of the holding-die *g h* and die-box *m* with the cylindrical or compressing die *i*, the said dies *g h* and *i* and die-box *m* being constructed, arranged, and worked substantially as described and illustrated.

145,511.—Machine for Bending Chain-Links.—CHARLES B. LONG, Worcester, Mass. Application filed May 23, 1873.

The wire, passing over the support T, is bent around the former S, the jaws G G' griping the wire and holding it against the former while the shaft is revolved. The jaws are alternately drawn back by the friction-rolls at their rear ends traversing a groove, in order to pass the support, after which they are again thrown out and gripe the wire.

Claim.—1. The combination of the revolving, adjustable, alternately griping and sliding jaws G G', adjustable gripers H H', former S, and support or rest T, constructed substantially in the manner described, as and for the purposes set forth.

2. The combination of the jaws G G', gripers H H', friction-rolls K K' and L L' with groove J, rim-piece C, face-plate B, former S, and support or rest T, when constructed and arranged to operate substantially in the manner described, as and for the purposes set forth.

3. The combination of the wing-pieces F F' F F', cam P, sliding box V, jaws G G', gripers H H', friction-rolls K K' and L L', spring M, rest T, groove J, shaft E, and cylinder B, mounted in frame A, when all are constructed and arranged to operate substantially in the manner described, as and for the purposes set forth.

145,512.—Hot-Air Furnace.—JOHN MAGEE, Chelsea, Mass., assignor to THE MAGEE FURNACE COMPANY. Application filed June 30, 1873.

The panels D and G are of soap-stone, the frame-work and the partition C of metal.

Claim.—The combination of the outer casing, formed of the grooved posts B and removable panels D, of soap-stone or other suitable non-conducting material, with the fire-pot A and the intervening metallic casing C, which divides the air-space between the fire-pot and the outer casing, thus forming two separate and distinct air-chambers, substantially as and for the purpose set forth.

145,513.—Hot-Air Furnace.—JOHN MAGEE, Chelsea, Mass., assignor to THE MAGEE FURNACE COMPANY. Application filed June 30, 1873.

The opening of the damper permits the escape of the gases, through the branch-pipe G, to the exit-flue.

Claim.—A trunk placed above the door of a hot-air furnace, and provided with a damper which is opened and closed by the opening and closing of such door, substantially as and for the purpose described.

145,514.—Till-Alarm.—WESLEY MALICK, Erie, Pa. Application filed January 24, 1873.

A series of levers within the drawer, operated by finger-rods in the usual way, is provided with a removable cap or tumbler for each, so that it may be made active or passive, according to its position of adjustment.

Claim.—The removable and reversible tumblers K, constructed to fit upon the upper ends of the levers J, and in combination with the same, for the purpose of changing the effect of the action of the finger-pieces H, substantially as shown and described.

145,515.—Sewing-Machine.—IRA MANNING, Philadelphia, Pa., assignor to MELANETHON S. FRINK, same place. Application filed September 23, 1873.

The operator, by pressing the knee against the pad under the table of the sewing-machine, can raise the presser-foot as desired.

Claim.—1. In combination with a presser-foot or its bar, occupying the ordinary position on a sewing-machine, the pad or pad-plate placed underneath the table thereof, and connected to said presser-foot or its bar by mechanism *h f d* B, as herein described, so that said presser foot or bar may be raised, held up, or let down by lateral pressure upon said pad or pad-plate, substantially as and for the purpose described.

2. The combination of the mechanism *b f d* B, pad or pad-plate *k*, hinged arm *j*, and bent arm or lever *h*, whereby said pad or pad-plate may be adjusted, not only vertically, but toward or from the position usually occupied by the attendant upon the machine, as described.

145,516.—Thill-Coupling.—HEZEKIAH MANWARING, Danville, Ky. Application filed September 3, 1873.

Claim.—The improved shaft-coupling consisting of the elastic bearing-block D and the holding-pin E, in combination with the furcated connection C having joint-pin *a*, and the clip or yoke A having the hook B and the projection *c*, essentially in the manner and for the purpose specified.

145,517.—Agricultural Boiler.—HORACE A. MEARS, Rockford, Ill. Application filed November 6, 1873.

The cylinder is placed in the vat or tub, whose contents are to be heated. An air-supplying flue terminates above the lower inclined end of the grate, and the draft-flue reaches below the elevated end.

Claim.—1. The inclined plate E, provided with the perforated flange *d*, and arranged, in relation to the outlet draft-flue G and the inlet draft-flue D, substantially as and for the purposes herein set forth.

2. The combination of the cylinder A, with bottom B and removable cover C, the draft-flues D G, and inclined plate E, all constructed and arranged substantially as and for the purposes herein set forth.

145,518.—Railway-Switch.—EDWARD MERCIER, Springfield, Mass. Application filed July 22, 1873.

In a switch which is operated by the approaching train, swinging inclined levers are arranged between the rails, said levers being operated upon by a vertical pendent bar which hangs in a slide. When the switch is properly set the vertical bar rides upon the incline, and is thereby raised, and does not act to move the levers; otherwise the bar, in moving along against the side of the lever, moves it to one side and sets the switch. The crank-ends of the shifting-bars are provided at one end with double inclines, which slide upon the rotating shaft *u*, said end having a slot in which works a pin, said slot allowing the pin to be raised from a center, and permits the rotation of the shaft. The eccentric W locks the switch so that it is impossible to shift it except through the inclines, or the crank *a*.

Claim.—1. In combination with the switch D, and with the shaft U, with crank T and eccentric W, or equivalent device, for diverting motion to the switch D, the hinged piece C, arranged and constructed to be operated substantially in the manner and for the purpose as set forth.

2. In combination with the switch D, and with shaft U, with crank O and eccentric W, the double incline V, operated in the manner and for the purpose set forth.

3. In combination with the switch D, the hinged pieces C and V, cranks T and O, shaft U, and eccentric W and handle *a*, the parts being relatively arranged to operate substantially in the manner and for the purpose set forth.

4. The crank O or T upon rod U, constructed so that the inclined surfaces 3 4 bear against the crank-shaft U, to start the crank from off a center and permit the pin *j* to play within slot *k* until the center is overcome.

5. In combination with the swinging beveled inclines between the rails, the slide *b*, to be raised by the inclines themselves when they are not in a position to be swung by said slide *b*, as shown and described.

145,519.—Die for Forming Rock-Drills and other Tools.—DANIEL MINTHORN, Gouverneur, N. Y., assignor of three-fourths his right to D. P. SMOCK, of New York city. Application filed March 20, 1873.

The die-stock has a mortise with flaring walls, and on the bottom of this mortise is a die, which, in shape, is the counterpart of that required to be produced on the end of a rod; and two tapered blocks inclose the extremity of the rod, and fill the space between it and the walls of the mortise. A rod with a heated end, so placed, is driven in from the opposite end, and made to take the shape of the die. The die and blocks are interchangeable with others of different shapes and dimensions.

Claim.—The combination of the die-stock A with the adjustable clamping-blocks D and die-plate B, for the purposes described, and made and operating substantially as hereinbefore set forth.

145,520.—Seed-Sower.—BEN MORSE, Ithaca, N. Y.—Case B. Application filed April 21, 1873.

The convertible wheel, with the cam-wheel attached, when upon one end of the axle-tree, operates the seed-slide by the inclined faces of the cams; but, when placed upon the other end, and turning in an opposite direction, presents the perpendicular faces of the cams to an adjustable catch-bar upon the rake-frame, whereby the rake is raised, at the desired moment, to discharge the hay.

Claim.—1. The slides X', X''', and W'', and plate Z', in combination with the bar *u*, lever W', and frame-piece X, combined and operated substantially as set forth.

2. In combination with the reversible wheel N, the wheel *n*, attached thereto, having cams formed with catches and undulations, as described, to operate a horse-rake wholly or in part when on one end of the axle-tree, and a sowing device when on the other end, substantially as set forth.

145,521.—Machine for Boring Hubs.—JOHN A. NEWELL, Kalamazoo, Mich. Application filed March 6, 1873.

The wheel is clamped to a hinged frame capable of being placed in either a vertical or horizontal position, and a boring-tool having a rotary as well as a longitudinal movement is passed through the center of the hub.

Claim.—1. The frame I, nut J, feed-screw K, guide-plate L, and guide-bars M, arranged and operating with relation to the frame B, substantially as and for the purpose set forth.

2. In a hub-boring machine, the semicircular end of the boring-bar having a circumferential slot, *i'*, and the internal stud *i* in the socket of the feed-screw, arranged and operating as and for the purpose set forth.

145,522.—Step-Ladder.—ANTHONY W. O'BLENIS, New York, N. Y. Application filed April 7, 1873.

The ladder is formed in two sections of equal height, one inclosed in the other, and so formed that it can be elevated, and sustained by hooks or by spring-braces, which latter expand and clutch the side-braces at the top of the lower section.

Claim.—The construction and combination, as described, of the sectional divisions in the above form and proportions, and the said supporting transverse brace, as above specified.

145,523.—Combined Latch and Door-Check.—ROBERT L. OMENSETTER, Philadelphia, Pa. Application filed October 28, 1873.

A latch for the doors of locomotive-cabs carries a bolt pivoted to it, which has a vertical movement in suitable guides attached to the door. There is also a stationary segmental rack, perforated with a series of holes, into which the lower end of the bolt enters, when actuated by movement of the latch, thus holding the door at any desired angle.

Claim.—The combination and arrangement of the combined latch C, bolt E, and segmental rack G with the door B, for holding the latter in an open position, substantially as described.

145,524.—Bit-Brace.—WILLIAM E. PERRAU, Oakland, Cal. Application filed June 5, 1873.

By an endless chain, operated by bevel-gearing and double pawls and ratchets, the reciprocating movement of the slide D causes the rotation of the boring-tool.

Claim.—1. The combination of the slide D having spring-pawl *e e*, with the chain B, the parts being arranged as described, for the purpose set forth.

2. The mechanism for changing the reciprocating motion of the slide D into a continuous rotary one, of the boring-tool held in the spindle *g*, consisting of the endless chain B, the pawls *e e*, pivoted in a reverse direction to each other, and in opposite sides of the slide D, and the springs *f f* for holding them in contact with the chain B, the pulleys *b c*, and the bevel-gears F F, constructed, arranged, and operating substantially as set forth and specified.

145,525.—Locomotive, Portable, and other Steam-Engines.—LOFTUS PERKINS, Seaford street, Gray's Inn Road, England. Application filed January 21, 1873.

An air-surface condenser, a water-tube boiler, and a compound engine are arranged upon a frame supported by wheels. Also combines a tubular air-surface condenser with the exhaust-pipe and a loaded relief-valve to prevent excess of internal pressure.

Claim.—1. The arrangement of the water-tube boiler, the air-surface condenser, and the compound engine all upon the same frame, supported by wheels, the whole constituting one locomotive implement, substantially as before set forth.

2. The combination, substantially as before set forth, of the tubular air-surface condenser, (having the surfaces of its condensing-tubes exposed to the atmosphere,) the exhaust-pipe connecting the said condenser with the steam-engine, and the loaded relief-valve for preventing any excess of internal pressure upon the tubes of the condenser.

3. The combination, substantially as before set forth, of the air-surface condenser, the exhaust-pipe connecting the engine and condenser, and the self-acting relief-valve to permit the excess of exhaust steam to escape from the condenser.

145,526.—Machine for Rolling Carriage-Axles.—JULIUS C. RICHARDSON, Philadelphia, Pa. Application filed May 29, 1873.

Motion is communicated to the driving-shaft through eccentric gear-wheels, which give to the shaft G' a variable intermittent motion, allowing the shaft to be automatically clutched and released during its slowest movement. A shaft lying parallel with the driving-shaft, to which it is connected by gears, has on it a cam-hub, and a pin projecting into its groove operates a shifting-bar, to which is attached a forked arm that shifts the clutch.

Claim.—1. The combination, with the rolls C C, of the eccentric spur-wheels G^2 J, shaft G, and the clutch, substantially as and for the purpose set forth.

2. The clutching-hubs D D', applied on the shafts C' G^1, in combination with the shifting-fork *e'* and its cam-hub *g*, and with grooved rolls C C, for the purpose of stopping and starting said rolls, substantially as described.

3. The notched stripper *b*, combined with the grooves 2 2 in the rolls C C, and with a supporting-roller, *b'*, substantially as described.

145,527.—Way-Meter for Wheel-Vehicles.—JONATHAN A. ROBINSON, Fremont, N. H. Application filed October 31, 1873.

A rotary cap, actuated by a spring-lever, has upon its inner circumference a pawl which acts upon a ratchet-wheel, whose shaft is connected with a registering-train. By means of an adjustable screw, against which a pin upon the cap strikes every time that the lever is tripped, the motion of the cap may be limited for vehicle-wheels of different sizes. There is also a peculiar pawl-connection between the primary and secondary wheels of the registering apparatus.

Claim.—1. The arm *l*, lever *n*, the impelling-pawl *k*, the spring *o*, the studs *m s*, and the two gears *b i*, all constructed, combined, and arranged within their case A, substantially as described.

2. The lever-spring *o*, the retaining-pawl *h*, the impelling-pawl *k*, the arm *l*, the lever *n*, the studs *m s*, and the two gears *b i*, all combined and arranged together and in and with their case A, as explained.

3. The adjustable stop-screw *z*, the stud *y*, and the elastic lever F, in combination and arranged as described with the rest of the mechanism, (viz., the rotary cap *u*, the impelling-pawl *x*, and ratchet-wheel C,) for revolving the main arbor D of the train.

145,528.—Fence-Post.—HERVY S. ROSS, Millville, Ohio. Application filed October 10, 1873.

A post is erected. A brace-piece of greater length is placed diagonally at two sides, stretching in different directions. The three are pivoted together at the top. A flat doubled piece of iron is pivoted to the post near the top and bottom, its loops extending outward. A key-piece passing down through these serves to hold the stretchers or rails.

Claim.—1. The combination of the bars *a b c* with the removable bolt *e* as a fencing-post, constructed and used substantially as described.

2. The fencing-post formed of the three bars *a b c* and bolt *e*, in combination with the adjusting-key *d*, or its equivalent, constructed and arranged substantially as described, for the purpose specified.

145,529.—Attaching Slates to Roofs.—DANIEL RYAN, Boston, Mass. Application filed November 10, 1873.

A mode of attaching slates directly to the metallic rafters by means of thin strips of flexible metal inserted into kerfs made in each side of the slate, an offset being formed for folding over the slate, while the other end is wrapped around or otherwise suitably secured to the rafters.

Claim.—1. The herein-described improvement in methods of attaching slates, the same consisting of a thin strip of ductile metal, one end of which enters a slot in the slate and is bent about the edge of the latter, while the other end of the strip is bent about or otherwise suitably secured to the stringers, or laid between corners of brick, substantially as and for the purposes stated.

2. The fastening-strip herein shown, consisting of a straight flat plate provided with the lip or offset E, or its equivalent, substantially as and for the purposes stated.

3. The slate provided with saw kerfs or incisions on its opposite edges, in combination with the fastening-strips, substantially as shown and set forth.

145,530.—Steam-Generator.—JOSEPH RYAN, St. Louis, Mo. Application filed September 22, 1873.

The boiler, with the usual mud-drums, is combined with one or more circulating-pipes, inclined in reversed directions and connected with the upper and lower opposite ends of the boiler by bonnets, so that the water circulates in reversed directions.

Claim.—1. The combination, with relation to boiler A or drums B B', of one or more circulating-pipes, C C', bonnets *c c'*, arranged as herein shown and described.

2. The arrangement of the pipes C C' with relation to boiler A or drums B B', so that, as circulation of water takes place through pipe C, from front of boiler to discharge at rear thereof, there is, at same time, an opposite action of circulation taking place through pipe C' from the rear of boiler, and discharging at front thereof.

145,531.—Lamp-Stove.—EDWARD SAVORAL, New York, N. Y., assignor to ELIAS SCHNAUTZ and EDWARD SAVORAL, same place. Application filed September 4, 1873.

An annular cylinder has the oil-fonts at and around its base. Within this hollow ring half-tubes containing cotton wicks extend from the oil-fonts upward to the wick-tube—a large annular vessel, shaped as the frustum of a hollow cone. In this wick-tube rests the wick-trough containing cotton, and adjustable perpendicularly by wires passing downward through the half-tubes to the wick-raiser, and carrying a wick (consisting preferably of asbestus) confined between two parallel sheets of wire-gauze. Air from without (within the flame) is turned onto its base by a deflector and a button, respectively. When the center of the button is removed its rim may support a culinary vessel. When the lamp is used for illumination the uppermost flaring portion is displaced by a mica chimney.

Claim.—1. In a lamp-stove substantially of the character herein described, the rigid wick-support C and wire-gauze *p p*, arranged as shown relatively to the system of wicks *m m¹ m²*, and a suitable annular wick-tube, oil-reservoir, and provisions for raising and lowering the wick-support and its connections, as herein specified.

2. In combination with the wick *m* and its supporting means C *p p*, with provisions for supplying oil thereto, the adjusting-ring E, having oblique slots receiving the internal projections *d* on the ring D, to allow of adjusting with great delicacy and uniformity all parts of the wick without obstructing the interior air-space, as specified.

3. The button having a permanently-supported rim, B, and a removable center, B¹, in a lamp-stove having an adjacent circular wick, *m*, and an inclosing deflector, H, all combined substantially as and for the purpose herein set forth.

145,532.—Electro-Pneumatic Action for Musical Instruments.—WILLIAM F. SCHMOELE and HENRY SCHMOELE, Jr., Philadelphia, Pa., assignors of one-third their right to CHARLES SCHMOELE. Application filed March 7, 1873.

A small wind-pocket, operated by an electro-magnet, is used as a trip to operate the valve of a wind-instrument.

Claim.—1. The use or application of an electro-magnet to operate a wind pocket or pockets employed to work the valve, substantially as set forth.

2. The form of pocket and valves employed, admitting the wind by a groove with double aperture, controlled by two valves or nuts opposed to each other on a screw-threaded wire, substantially as set forth.

3. The small or primary pocket with diminutive valve to control the large or secondary pocket, which operates the pallet or other resistance, substantially as described and set forth.

145,533.—Billiard-Table.—CHARLES SCHULENBURG, Detroit, Mich. Application filed October 27, 1873.

Four legs, disposed under the middle of the sides and ends, are combined at the sides with long braces, and within the frame with a cross-girt and strengtheners.

Claim.—1. In a billiard-table supported by four legs, the arrangement of said legs at the middle of the sides and ends of the frame, as shown and set forth.

2. In a billiard-table constructed as herein described, the combination with the legs B, of the braces C for supporting the frame A, as shown and set forth.

3. In combination with the legs B, arranged with relation to the frame A as described, the girt D and joists D¹ or D², constructed and arranged in the manner and for the purpose set forth.

145,534.—Safety-Valve for Steam-Boilers.—HENRY W. SHEPARD, Madison, Ind., assignor of one-third his right to GEORGE W. CABLE, St. Louis, Mo. Application filed November 10, 1873.

An auxiliary valve is provided to assist the main safety-valve in lifting the lever and weight. When the pressure in the boiler is sufficient to raise the main valve from its seat it will also operate on the weight, and the exposed surface of the piston in the small chamber, allowing steam to enter the large chamber and force the piston upward, thus assisting in lifting the lever and weight.

Claim.—The device, consisting of the piston-valve J, chamber G, weight K, and casing H, the cylinder L, piston M, and pipe *d*, in combination with the lever, weight, valve, and chamber, which constitute the elements of the common safety-valve, when arranged to operate substantially as shown and for the purposes specified.

145,535.—Cultivator.—JAMES E. SISSON, Bastrop, La. Application filed October 3, 1873.

The axle is bent upward in the middle, the sides of the bent portion forming guides for the forked ends of a sliding bar, which supports the front end of the cultivator-frame, and is adjusted vertically by a screw-bolt and nut-lever. The frame has subsoil-plows upon its front portion.

Claim.—In combination with the bent axle B and frame E, the forked slide G, screw-bolt D, lever and nut F, adjustable standards and shovels G K, and subsoilers L, as and for the purpose described.

145,536.—Cotton-Bale Tie.—DARIUS S. SKINNER, Providence, R. I. Application filed June 4, 1873.

Claim.—The bridge E, in connection with the ribs or abutments D D, and in combination with the bars F G, plane A, and abutment B, with its projection C, constructed substantially as herein set forth, and for the purpose specified.

145,537.—Mallet for Driving Tubes, &c.—CHARLES STEWART, Worcester, Mass., assignor of one-half his right to WILLIAM ALLEN, same place. Application filed October 1, 1873.

The body A is of cast-iron and the heads B of babbitt-metal run into them.

Claim.—A mallet, constructed as herein shown and described.

145,538.—Condenser for Steam-Pumps.—DAVID STODDART, San Francisco, Cal. Application filed July 21, 1873.

The suction-pipe is provided with an annular chamber, in which is arranged a lining having inclined perforations, as nearly as possible coincident with the current of water in the suction-pipe. The exhaust steam passes into the chamber and through the perforations into the column of water, and assists it in its onward course.

Claim.—The combination of the perforated lining D, the suction-pipe A, the chamber C, and the exhaust-pipe B, arranged substantially as described.

145,539.—Machine for Splitting Whalebone or Rattan.—JOHN TAGGART, Boston, Mass., assignor to JAMES A. SEVEY, same place. Application filed October 31, 1873.

The shaving or splitting knives are adjusted laterally by a double incline plane or wedge.

Claim.—The movable jaws B C, provided with a plane, as described, to either or each, and arranged in and with respect to the bed A, as set forth, in combination with the wedge-guide cam H, arranged with and applied to the bed A and the said jaws, by means substantially as explained.

145,540.—Device for Converting Motion.—HOMER WHEELER, Racine, Wis. Application filed November 20, 1873.

A cog-wheel is secured to the driving-shaft, which is journaled in the stationary frame. Sliding in guides within this frame is a reciprocating frame which is moved by a piston. Within the reciprocating frame is arranged a frame capable of lateral movement. This smaller frame carries two racks and idle-wheels, journaled at opposite ends of the same. As the piston is moved in one direction, one of the racks engages with the cog-wheel on the driving-shaft and revolves the same. As the piston reaches the end of its stroke the idle-wheel throws the opposite rack into gear, thereby imparting a continuous motion to the main shaft.

Claim.—1. The combination, substantially as described, of a fixed frame, in which the main gear-wheel is mounted, a frame reciprocating longitudinally in said frame, and a frame carrying the driving-gearing and racks, and reciprocating laterally in the longitudinally-moving frame, for the purposes specified.

2. The combination, substantially as set forth, of a gear-wheel, revolving in a fixed position, duplex racks reciprocating both longitudinally and laterally, relatively to said gear-wheel, and duplex idle-wheels at each end of said racks, for the purposes specified.

3. The combination, substantially as set forth, of a fixed gear-wheel, duplex, longitudinally, and laterally reciprocating racks, an idle-wheel at each end of said racks, and backing ratchets to prevent movement of said idle-wheels in the reverse direction.

4. The combination, with the racks, of the idle-wheels, arranged above the plane of the racks, on opposite sides and at opposite ends of the reciprocating frame, whereby the racks are automatically and alternately thrown into and out of gear at the end of each stroke, as specified.

145,541.—Windmill.—JOHN A. WHEELER, Chippewa Falls, Minn. Application filed September 3, 1873.

Two or more stationary annular sections, provided with radial floats or sails, and arranged to turn on their axes into and out of the wind by means of segment connecting-rods when the inner section of sails are thrown more into the wind than the outer section.

Claim.—A wind-wheel composed of two or more stationary annular sections, C', W, and X, which are provided with radial floats or sails F E, arranged to turn on their axes into and out of the wind by means of segment connecting-rods J J', when the inner section of sails is thrown more into the wind than the outer section, and combined with connecting-rods, cranks O P *c*, arms D, rod *a*, and sliding head L *b*, operated by a suitable governor, as set forth.

145,542.—Paper-Feeding Machine.—CHARLES M. WIELINGS, San Francisco, Cal. Application filed September 25, 1873.

The feed-board is hinged at one end and raised automatically by means of a worm-gear, screw, and pawl and ratchet, operated by means of a cam on the shaft. An adjusting-screw limits the movement of the pawl. The feed-roller consists of strips of flexible material arranged longitudinally on the roller, and it is intermittently rotated by a pawl and ratchet operated by a cam on main shaft. A bar provided with parallel slats is raised intermittently by another cam to support the paper after it is seized by the gripers, so that it will receive no further motion from the tapes.

Claim.—1. The carrying-tapes R and the intermediate bar U with its cross-slats V, which rise and fall alternately, for the purpose of supporting the paper and preventing its further movement by the tapes while it is being seized by the nippers, substantially as described.

2. The combination of the pawl H and bell-crank G with the adjusting-screw L, adapted to limit the movement of the pawl, as described.

145,543.—Leather-Perforating Machinery for Harness-Makers.—LORENZO D. WOODMANSEE, Hamilton, Ohio. Application filed June 30, 1873.

Claim.—In a leather-perforating machine, the arrangement of the reciprocating stock B, provided with a series of awls, and a guide, P, within the frame A, the bottom of said frame being provided with holes *b b*, substantially as shown, for the purpose described.

145,544.—Blacking-Box Holder.—SAMUEL T. WYMAN, Lynn, Mass. Application filed November 15, 1873.

The holder is formed in two semicircular sections adjusted to and from each other by screws operating in screw-ears formed on each side of said sections. The interior of the holder is also rabbeted to form bearings for boxes of different sizes. The holder is also provided with an adjustable cover having a slotted hinged plate held to the rear section by a screw to accommodate boxes of different depths in the holder.

Claim.—1. A blacking-box holder formed in two sections, A A', having ears B B', and held together and adjusted to and from each other by screws C C', to receive and hold boxes of different sizes, substantially as specified.

2. A blacking-box holder formed in two sections, A A', held and adjusted as above described, and rabbeted on the interior to form seats and bearings *a* of diminishing diameters, substantially as and for the purposes described.

3. In combination with a blacking-box holder, arranged as herein described, an adjustable hinged cover, H, having a slotted hinged plate, F, held or released from the rear section A' by a screw, I, substantially as and for the purpose herein set forth.

145,545.—Bridge-Column.—JOHN ZELLWEGER, Louisville, Ky. Application filed October 20, 1873.

A bridge post or column in which the main bars or members are connected by one or two flat wrought-iron bars, wound in spiral lines on the inside or outside of the column from one end to the other, and bolted or riveted thereto.

Claim.—The rigid connection of the main-bars A of a built post, brace, or column by means of curved or angular winding truss-bars B, substantially as described.

145,546.—Machine for Shaping Brush-Woods.—JOHN AMES, Jr., Lansingburg, N. Y. Application filed July 5, 1873.

The stock of the brush, being held in a clamp having the proper form, is fed to a rotary spiral cutter, by which the edge is dressed evenly to conform to the "setting" of the bristles.

Claim.—1. The spiral rotary cutter B and clamp, having upper and lower patterns H J, combined in a brush-shaping machine to allow an upward cut, in the manner described.

2. A guard, N, placed over the clamp, as described, to re-enforce it against the upward pressure of the cutter.

145,547.—Window-Screen.—WILLIAM G. ANDERSON, Worcester, Mass. Application filed June 17, 1873.

Claim.—1. The bracket 7, having the flange 8 for fitting in the groove 9, so that it can be moved forward for changing the size of the frame, substantially as shown and described.

2. The adjustable end piece 4, rods 3, springs 2, and slotted guides 6, in combination with the frame 1, substantially as set forth.

145,548.—Combined Lamp-Shade and Drip-Cup.—JAMES S. ATTERBURY and THOMAS B. ATTERBURY, Pittsburg, Pa. Application filed November 14, 1873.

Claim.—A combined drip-cup and lamp-shade, applied around the collar of a lamp, substantially as and for the purpose described.

145,549.—Machine for Preparing Printers' Rules.—JOSEPH B. BANCROFT, Hopedale, Mass. Application filed August 9, 1873.

The straight edge of a semicircular bed-plate and a lever attached thereto form a cutting-shears. Cutting-lever is operated by either of two auxiliary levers. A V-shaped gage—angle, forty-five degrees—is adjustable upon the bed-plate, its point always at the center of the same, and upon each leg of it an adjustable stop. A double clamping-lever operates with the gage upon a pivot well into the angle of it, a handle of said lever extending along the inner side of each leg of the gage, and a clamping-jaw outside of each and near the point. A movable stop adjusted to the under edge of the cutting-lever gages the amount of chip to be cut off in beveling, and, to avoid contact with this in squaring, a parallel is interposed between the rule and the gage.

Claim.—1. The auxiliary lever I and its coupling-hook K, spanner *c'*, and pin *b'*, in combination with the movable cutter-lever D, and the bed A supporting the adjustable miter-gage I', all being substantially as specified.

2. The duplex griper-lever P, provided with two jaws, *f f*, as set forth, in combination with the adjustable miter-gage I', as explained.

3. The adjustable chip-gage M, in combination with the movable cutter-lever D, and the miter-gage I' applied to the table A, as set forth.

4. The movable guard O, combined with the table A, the miter-gage I', and the movable cutter-lever D, all being essentially as specified.

145,550.—Culinary Vessel.—WILLIAM A. BARLOW, Chicago, Ill. Application filed May 19, 1873.

Claim.—A culinary vessel provided with a steam-flue, terminating vertically in the bottom of the vessel, when the said vessel is provided with the disk C arranged horizontally beneath the lower mouth of the said flue, substantially as shown and described, for the purpose of spreading the steam in all directions across the bottom of the vessel and preventing the fire from being deadened by a downward jet, and for the purposes specified.

145,551.—Skate-Fastening.—GEORGE W. BARLOW, New York, N. Y. Application filed November 11, 1873.

The screw for setting the sole-clamps accomplishes the main adjustment by using the lever pivoted thereto either crank or screw-driver fashion, the particular and final clamping being effected by the cam on said lever.

Claim.—The lever *l'* and cam *l*, connected by the fulcrum *e* to the adjusting-screw *i*, in combination with the clamps of the skate-fastening, in the manner and substantially as set forth.

145,552.—Corn-Dropper.—ROBERT M. BOWMAN and WILLIAM H. BOWMAN, London, Ohio. Application filed July 26, 1873.

A sliding valve upon the under side of the seed-slide serves as a bottom to the seed-pocket, and moves with the slide until,

coming in contact with a stop, it is arrested just after the surplus seed has been removed by the cut-off above the pocket now discharging the seed. Upon the return of the seed-slide a spiral spring retracts the valve to its place.

Claim.—The slide-bottom A, having the drop-hole C, combined in a corn-dropper with the auxiliary spring-slide F, the two arranged to operate together in the manner and for the purpose described.

145,553.—Wire-Mattress Frame.—GEORGE V. BUNKER and WILLIAM I. BUNKER, Yankton, Dakota Ter. Application filed April 28, 1873.

At one end of the frame is a movable cross-piece. Bent bolts are inserted in the side rails, and the threaded end of the bolt enters the cross-piece. A nut butts against the cross-piece, and by moving it the tension of the fabric is regulated.

Claim.—A frame composed of two side rails, *a a*, two end rails, *b b*, one cross-piece, *m*, and two set-screws, *c c*, for the purpose of stretching woven-wire mattresses, substantially as described, and for the purposes set forth.

145,554.—Cotton-Seed Planter.—ZERET CARTER, Line Creek, S. C. Application filed August 9, 1873.

In rear of the opener, and rotating within the frame, is a hopper made in the form of two hollow cones, secured to each other at their bases. Around the center of the hopper or reservoir is formed a rim which is notched transversely opposite orifices in the reservoir, the rim preventing the earth from entering the orifices. In rear of the reservoir, and secured in an adjustable frame, are three teeth, the center tooth being a little in advance, for scattering, while the two outside teeth are for covering the seed.

Claim.—The plows L and M, attached to the hinged or rising-and-falling bar K, the former arranged in rear of and laterally from the latter, in combination with the centrally-discharging hopper and the furrow-opener I, all as shown and described, whereby the seed is distributed in the furrow and then covered, as specified.

145,555.—Ruler.—FRANK A. COMBES, Cleveland, Ohio. Application filed February 3, 1873.

Claim.—As a new article of manufacture, the concave ruler A, having its edge *b* bent under and folded to form a groove for the reception of an ink-absorbent, B, and provided with one or more strengthening-ribs, *c*, as shown and described.

145,556.—Button-Holder.—MINOR J. COOPER, New York, N. Y. Application filed July 26, 1873.

The button is held upon the cloth while being sewed onto it.

Claim.—A button-holder consisting of the clasp-plates B C, the plate B being forked and grooved at one end to receive and hold buttons of different sizes, substantially as described.

145,557.—Photographic Background.—ALFRED B. COSTELLO, Jersey City, N. J. Application filed November 11, 1873.

Claim.—The pliable conical background A, in combination with the frames B, D, and F, substantially as and for the purpose hereinbefore set forth.

145,558.—Wash-Boiler.—OSCAR E. CULVER and LEANDER E. MOSELEY, Eagle Bridge, N. Y. Application filed November 1, 1873.

Claim.—In combination with the water circulating and distributing attachment A B F G of a wash-boiler, the valves D hinged at their lower ends to inclined partition-plates C, having passages or openings *c'*, and combined with suitable stops E for limiting the opening movement of the valves, as and for the purpose set forth.

145,559.—Rein-Holder.—LEMUEL FAWCETT, Salem, Ohio. Application filed November 19, 1873.

Claim.—1. The pivoted wing C, in combination with standard A, having concave surface, as shown and described, for the purpose specified.

2. The stud A, on the cone *c'*, for limiting the backward motion of the wing, substantially as shown and described.

3. The combination of the slot b^3, set-screw *d*, and arms a^2 b^2, for regulating the distance between the wing and the concave surface, substantially as shown and described.

145,560.—Medical Compound.—SOLOMON FIELD, Galva, Ill. Application filed November 15, 1873.

Butternut-root bark, sarsaparilla root, sassafras-root bark, wahoo-root bark, dandelion root, mandrake root, wild-cherry bark, white-popple bark, water, alcohol.

Claim.—A medical compound composed of the above-named ingredients, in the proportion given, substantially as and for the purpose specified.

145,561.—Machine for Making Ox-Shoes.—RAYMOND FRENCH, Seymour, Conn. Application filed November 28, 1873.

Two die-wheels, A and B, geared together and rotating horizontally, the former, A, having two dies, the one *c c* for making rights and the other *c' c'* for making lefts, and the latter, B, having a supporting-surface, *g*, upon which the blank rests while being acted on by the creasing and punching die *f*. The position of the die *f* on its shaft is slightly changed, and the dies A and B rotated in the opposite direction, when it is desired to change from rights to lefts, or vice versa.

Claim.—1. In combination with the wheels A B, the shoulder 2, projecting dog *a*, and dies *c c* on former, and the recesses *d* in the latter, for the purpose of holding and bending a blank into shape or form while in a projected position, and allowing the dog to pass, substantially as described.

2. In combination with the shoulder, dog, and dies, for holding the blank in a position projecting beyond the perimeter of the wheel A and with the creasing and punching dies, the table *g* on the wheel B, over and upon which the projecting portion of said blank rests when the creasing and punching die is in contact with it, as described.

3. In combination with the creasing and punching die *f* and its shaft F, the recesses 4 3 in the die, and the stud 5 in the shaft, so that said die may be slightly turned on its shaft and then be firmly held when the rotation of the die-wheels is changed to make rights or lefts, substantially as described.

145,562.—Feed or Sauce.—FRANCIS A. FRISCIA, Brooklyn, N. Y. Application filed December 1, 1873.

Beef, pork, concentrated essence of tomatoes, onions, lard, sherry-wine, tomato-juice, Spanish pimenton, flour, powdered chocolate, spices, pepper, and salt.

Claim.—The sauce or gravy, composed of the ingredients and prepared in the manner substantially as set forth.

145,563.—Traversing Mechanism for Machine-Guns.—RICHARD J. GATLING, Hartford, Conn. Application filed October 25, 1873.

Claim.—1. The grooved cylinder K I^1 I^2, in combination with a guide-pin, H, for controlling the line of fire and the sweep of the gun, substantially as herein shown and described.

2. The combination of an adjustable socket, G, guide-pin H, and grooved cylinder K I^1 I^2, for changing the sweep and line of fire of the gun, substantially as herein shown and described.

3. The flanged, grooved, perforated, and slotted cylinder or bar A, and the adjustable socket G, provided with a nut, F, in combination with the screw D, guide-pin H, and grooved cylinder K I^1 I^2, substantially as herein shown and described, and for the purpose set forth.

145,564.—Culinary Tongs.—ALFRED GREENLEAF, Brooklyn, N. Y. Application filed September 20, 1873.

To a suitable handle two wires are attached by their ends, both being doubled and bent, the upper one with a coil and thumb-piece passing down so as to form a clamp with the one below.

Claim.—A pair of wire tongs, B C, the prong C being the lower, upwardly bent above the other, and provided with thumb-piece D, as described, to enable the end of prong C to be moved to and from that of prong B, in the manner set forth.

145,565.—Bearing for Shafting.—PIERRE J. HARDY, New York, N. Y. Application filed November 14, 1873.

The bearing or box is in two parts, made with complete rings connected to the ends of the lower part, between which rings the upper part of the box is placed, and attached to the lower part by bolts. These rings present a smooth surface for the collars upon the shaft, so that noise and unequal wear are avoided.

Claim.—The bearing for shafts made with the ring-shaped end portions *l* upon the box *a*, between which the box *b* is secured, in the manner and for the purposes set forth.

145,566.—Machine for Removing Snow from Roadways.—GEORGE HART, Tarrytown, N. Y. Application filed November 22, 1873.

The snow is swept upon an endless chain of buckets, which deliver it to slides, conducting it to a tank, where it is melted by steam and furnace heat.

Claim.—1. The machine for removing and melting snow, consisting of engine A' with side casings A, brushes B, endless belts C with buckets C', double-bottomed chutes E', and snow receiving and melting tanks F^1 F^2 F^3, all combined and constructed to operate substantially as and for the purposes described.

2. The casings A, having plow-shaped front connection and inclined curved parts *B'* for taking up the snow from the brushes, as described.

145,567.—Telegraph Transmitter.—DAVIS HERMANN, New York, assignor to CHARLES H. SMITH, Brooklyn, N. Y. Application filed September 24, 1872.

Claim.—The springs *i*, pressed back by the inclined ends of the keys *f*, but allowed to move when the key is depressed, in combination with the revolving metal cylinder *a*, having a non-conducting surface, with openings through the same, as and for the purposes set forth.

145,568.—Heating Air and Supplying Boilers therewith.—GEORGE E. HIBBARD, Fond du Lac, Wis. Application filed May 17, 1873.

Air is pumped into a reservoir, conveyed thence into a coiled heater in the up-take, and passes through the steam-space of the boiler, emptying above the mouth of the pipe leading to the engine.

Claim.—In connection with a locomotive-engine, the heating-coil pipe J and pipe E, having check-valve E', the throttle-pipe J', air-holder A, and air-pump C, all combined, constructed, and operating, as shown and described, for heating and injecting air into the boiler, as specified.

145,569.—Spinning-Mule.—THOMAS HOULDING, Ipswich, Mass. Application filed May 31, 1873.

For keeping the carriage parallel with the roller-beam, the chains being adjustable endwise, so as to move either end of the carriage should it be out of parallelism. The guards prevent the chains rising out of gear with the pinions. The gages indicate when the carriage is "square."

Claim.—1. The combination of the toothed chains D, pinions C, and shaft B with a spinning mule or jack carriage, substantially as specified.

2. The said chains D, arranged adjustably endwise in their supports, substantially as specified.

3. The guards H, combined with the carriage, chains, and pinions, substantially as specified.

4. The gages I, in combination with the carriage, chains, and pinions, substantially as specified.

145,570.—Sewing-Machine.—JAMES A. HOUSE, Bridgeport, Conn., assignor to THE WHEELER AND WILSON MANUFACTURING COMPANY, same place. Application filed November 3, 1873.

A pad formed on the rotating hook clasps the bobbin-thread between itself and an adjustable spring-tension finger just after the loop of needle-thread has passed around and from the bobbin, and holds the bobbin-thread while the stitch is tightened.

Claim.—1. The combination, substantially as set forth, of a presser-bar, a presser-foot pivoted therein, and a locking ring on the presser-bar, whereby the presser-foot, when at work, is locked by the ring, and yet can be turned up out of the way when desired.

2. The combination, substantially as set forth, of a spring tension-finger and a rotating pad on the hook, to lock the bobbin-thread while the stitch is being tightened.

3. The combination, substantially as set forth, of the rotating pad, the tension-finger, and the adjustable spring-lever for varying the tension of the lower thread.

145,571.—Cotton-Worm Destroyer.—JEHU W. JOHNSON, Columbus, Tex. Application filed August 21, 1873.

A force-pump, mounted upon a wheeled vehicle, for throwing poison liquid upon cotton or other worms. To the pump is attached a lead pipe, which extends back in rear of the frame, and to which is attached a series of branch pipes, each consisting of a short conical tube with a lateral connection with the main pipe, the lower end being crimped or corrugated, and provided with an elastic plug, which is adjusted by a screw-rod passing through it, for graduating the flow of liquid.

Claim.—1. The tube H, having its lower end crimped, corrugated, or grooved, and provided with an elastic plug adjusted by means of a screw-rod and nut, substantially as and for the purpose shown and described.

2. The combination, in an apparatus for destroying cotton-worms, of the tank, force-pump, and pipes with the tubes H hereinbefore described, substantially as set forth, all arranged and operating to shower a spray evenly and thoroughly over the rows of cotton-plants.

145,572.—Cotton-Worm Destroyer.—JEHU W. JOHNSON, Columbus, Tex. Application filed October 13, 1873.

A tank is provided with a double-acting force-pump communicating with a discharge-pipe and branches, the pump being connected by a pitman with one of the wheels upon which the tank is supported. The wheels are made unusually small, for giving a rapid action to the pump without the intervention of gears, the frame being supported at the proper height by standards attached to the short axles.

Claim.—1. An apparatus for exterminating cotton-worms, consisting of a tank provided with a double-acting force-pump communicating with a pipe and branches, having the pump connected by a pitman with one of the wheels upon which the tank is supported, combined as shown and described, for the purpose specified.

2. The combination of the cart-bed B, elevating-bars D, wheels C, pitman E, and pump-lever G, as shown and described, for the purpose specified.

145,573.—Grain-Basket.—HORACE C. JONES, Dowagiac, Mich. Application filed December 16, 1872.

An outer series of long staves extends down one side, across the bottom, and up the opposite side. Two series of short staves are used. One of these series forms part of the outer series near the top of the basket. The short staves are tapered at their lower ends, the said tapered ends of one series being under the tapered ends of the other, and the spaces left between the upper portions of the innermost series being closed by the other short series.

Claim.—A stave basket, as herein specified, having an outer series of long staves and two series of short staves, which latter are tapered at their lower termini, the said tapered termini of one series being under the tapered termini of the other, and the spaces left between the upper portions of the innermost series being closed by the other short series, and the whole bound together, substantially as described.

145,574.—Printer's Side-Stick and Quoin.—FRANCIS KEHIN, Milwaukee, Wis. Application filed November 8, 1873.

The side-stick is in wedge-shaped sections, wider in the lower part, which projects about the middle in the form of a step. The quoins have a corresponding projecting top step, and are of the same height as the side-stick.

Claim.—1. A printer's side-stick, produced with alternating wedge-shaped sections and projecting base step, substantially as described.

2. A quoin for locking the side-stick to the forms, being of equal height with the side stick, and of wedge shape, with a projecting top step, as specified.

145,575.—Dropper for Seed-Planter.—HERMANN H. KOELLER, Camp Point, Ill. Application filed September 13, 1873.

Upon a reciprocating bar are cam-shaped projections, which engage with and rotate a star-wheel upon a bolt passing through a slot in the said slide. Upon four arms of the star-wheel are raised projections, fitting into notches in the dropping-wheel, the periphery of which is provided with orifices, through one of which the seed passes at each movement of the disk, a guard-plate above serving to remove the surplus seed. To the bottom is pivoted an arm, which works in a slot in the cam-slide, and to which is attached a pivoted cut-off in the conductor-spout, for detaining each successive charge of seed.

Claim.—1. The combination of the sliding bar C, beveled or wedge blocks F, the star-wheel E *e'*, and the perforated ring dropping-wheel G, having notches *g'*, as shown and described, for the purposes specified.

2. The combination of the pivoted bar or plate N, connecting-bar M, and projections L with the bar, arranged to reciprocate and operate the seed-delivery mechanism.

145,576.—Coffee-Roaster.—WILLIAM J. LANE, Millbrook, New York, assignor to himself and JOHN G. LANE, same place. Application filed October 18, 1873.

The revolving cylinder is journaled in side pieces or brackets attached at right angles to a pivoted side of the main inclosing-drum. This side can be swung outward, and carries with it the cylinder. When it is swung back to position the crank-end of the cylinder-axis is received in a suitable slot in the end of the main drum.

Claim.—1. A coffee-roaster, A B, and cylinder G, having a hinged side, D, constructed and limited in its movement by joint-straps F F as described, whereby the cylinder and side of case are withdrawn by a single movement, for discharging and refilling.

2. The cylinder G, journaled in a pivoted case-side, D, as and for the purpose described.

145,577.—Device for Cleaning Steam-Generators.—DAVID L. LATOURETTE, New York, N. Y. Application filed June 21, 1873.

Steam or other fluid is forced through the boiler by a forcing apparatus, connected by suitable pipes to the boiler, and forces the mud and sediment out. The pipes are provided with suitable cocks or valves.

Claim.—A steam-boiler, A, provided with inlet and discharge pipe connections B and C applied thereto, and having cocks G H, as shown and described, so that said boiler may be connected with a forcing apparatus, and a current of steam or other fluid forced through it from one end to the other, thus removing and washing out the mud or sediment, as set forth.

145,578.—Hand-Punch for Metal.—SAMUEL FREDERICK LEACH, Chelsea, Mass. Application filed December 2, 1873.

Claim.—The combination and arrangement of the standard B and platform A, the cam-lever C E, and the second lever J, with the connecting-loops H and L, and the plunger M, all when constructed and arranged substantially as described.

145,579.—Stove-Pipe Thimble.—NICHOLAS LINDEN, Chicago, Ill. Application filed November 13, 1873.

The part A and its tongues are of but a single piece of metal.

Claim.—The annular sheet-metal disk A, having a central opening cut therein to receive the pipe, in combination with the cylindrical piece B, arranged between the outer and inner rims of the said disk, and attached to the inner face of the latter by means of the radial tongues *a a* cut from the central part of said disk, and bent to receive the pipe and clasp the inner edge of the part B, substantially as shown and described, and for the purposes set forth.

145,580.—Flux for Treating Ores and Metals.—PATRICK N. MACKAY, San Francisco, Cal. Application filed November 18, 1873.

Claim.—A flux or refining-compound, composed of borax, or any of the borates, or crude borax, with silica in the form of infusorial earth or silicious diatoms, and chloride of sodium, substantially as herein set forth.

145,581.—Preserving Green Corn and other Vegetables.—G. LEWIS MERRILL and OSCAR F. SOULE, Syracuse, N. Y. Application filed September 26, 1873.

Claim.—1. The above-described method of cooking and preserving green corn and other vegetables by steam applied directly into the cooking-chamber and outside thereof, substantially in the manner described.

2. The cooking-chamber A, when arranged and operated substantially as described, for the purpose of cooking green corn and other vegetables.

3. The cooking-chamber A, arranged and operated as aforesaid, when combined with the shaft S, provided with a spiral and teeth, or their equivalent, substantially in the manner described.

4. The combination of the cooking-chamber A, cylinder B, and shaft S, with its spiral and teeth, as above described.

5. The combination of the cooking-chamber A, cylinder B, and shaft S, with its spiral and teeth aforesaid, with the canning apparatus *x o* E, substantially as above set forth.

145,582.—Book-Clamp.—WILLIAM A. MILLER, Paterson, N. J. Application filed September 27, 1873.

Claim.—A book-clamp, consisting of a base-plate, B, a fastening-strap, C, buckle D, and a hinged tightening-lever, E, combined as described.

145,583.—Station-Indicator.—JOHN W. NEWLIN and JACOB S. SHERMERMAN, Millville, N. J. Application filed October 4, 1873.

In the upper part of the case, inclining toward a glazed slot in the front, are affixed supports C *c'*, upon which are hung rabbeted and slotted strips bearing the names of stations. The strips are, through levers G H and cord K, pressed aside so that the slots b^2 allow them to fall upon supports D, inclined toward the back in the bottom of the case.

Claim.—1. The combination of the strips B, having slots b^2 and notches b^1, with the upper strips C *c'* and the lower inclined strips D, all as shown and described, to operate as specified.

2. The combination of the shaft E, arms G H, and spring O with the strips B b^1 b^2 and box A *c'*, substantially as herein shown and described.

145,584.—Car-Coupling.—WALTER B. MITCHELL, Chicago, Ill. Application filed June 21, 1873.

Claim.—1. The coupling-hook A, having a link projecting from its rear, and capable of attachment to the draw-head B, as set forth.

2. The combination of the coupling-hook A, chain *e*, shaft C, and pawl D, as and for the purpose set forth.

145,585.—Tree-Protector.—JONATHAN NEFF, Dallastown, Pa. Application filed December 5, 1873.

A tree-box constructed of three fixed sides, with the fourth removably attached. To the bottom of the box are secured adjustable props for holding the box at a proper distance from the earth.

Claim.—A tree-protector constructed with fixed sides A A A, a removable side, B, and adjusting-props C C C, combined and operating together substantially as and for the purposes herein specified.

145,586.—Water-Closet.—JOHN F. NEILSON, New York, N. Y. Application filed August 4, 1873.

On the rod of the lift-valve is a disk, which serves both as a guide and as a means to lift the valve when pressed by the water, thus preventing overflow.

Claim.—The combination, with a lift-valve and water-chamber, B, pipe E, and basin F, of the disk G', placed on the same rod as the valve, and not only serving as a guide, but lifting the latter when itself pressed by the water, thus providing an outlet for any surplus of water and entirely precluding the possibility of an overflow.

145,587.—Machine for Making Clothes-Pins.—BENJAMIN B. OCKINGTON and ANDREW J. OCKINGTON, Stratford Hollow, N. H. Application filed November 1, 1873.

All the operations of turning, cutting off, and slotting are performed consecutively by this machine.

Claim.—1. The combination of the feeding-rollers A, turning-mandrel C, pressure-rollers E, cut-off saw T, carrying-wheel V, and slotting-saw W, substantially as specified.

2. The cam P and elbow-lever O, combined with the wedge-moving slide M and the intermittingly-revolving feed-rollers, and arranged to cause the finishing-cutter to act while the feed-rollers rest, substantially as specified.

3. The arrangement of the cam P and elbow-lever O relatively to the feed-rollers, to allow the spring N to raise the finishing-cutter off from the work previous to the starting of the feed-rollers, substantially as specified.

4. The combination of the guides *j* with the slotting-saw, substantially as specified.

145,588.—Car-Mat.—JOHN O'NEILL, Brooklyn, N. Y. Application filed August 23, 1873.

Slats of wood are arranged in groups at right angles to each other.

Claim.—A sectional car-mat formed of slats or bars, arranged in groups at right angles with each other, as herein shown and described, and for the purpose set forth.

145,589.—Boot.—GEORGE C. PARKER, Worcester, Mass. Application filed June 17, 1873.

The strap is first stitched by its upper end to the inside of the boot-leg, then turned over the top, passed a proper distance down the outside, and its lower end returned through a slit in the leg to the interior, and there sewed.

Claim.—The combination, with the upper part of a boot-leg of a boot, of a strap, C, the ends *a b* of the strap being applied to the boot-leg and stitched separately to distinct and independent parts of the inside of said leg, as and for the purposes shown and set forth.

145,590.—Boot and Shoe Tip.—FREDERIC W. RHINELANDER, New York, N. Y. Application filed November 26, 1873.

A coating of composition consisting of sand, oxide of lead, carbonate soda, and borax, mixed in alcohol, is spread upon the surface of the top, and when dry is subjected to a dull red heat.

Claim.—The enameled-metal shoe-tip, as a new article of manufacture.

145,591.—Feed-Water Heater.—GEORGE W. RICHARDSON, Troy, N. Y., assignor to BENJAMIN STARBUCK and GEO. H. STARBUCK, same place. Application filed September 29, 1873.

Claim.—1. In a feed-water heater, the series of annular hollow rings B, between each two of which are the solid bossed support E and the hollow or tubular bossed support D, arranged to alternate from top to bottom of the series of rings, by which the water is made to circulate around through the annular rings, as specified.

2. In a feed-water heater composed of case A and hollow rings B, the depressions X in the rings, to allow of the insertion of the pipe G between the rings and casings, as and for the purpose set forth.

3. As an article of manufacture, the herein-described feed-water heater, consisting of casing A, inlet-ports A' A'', and hollow rings B, having cup-joints and bosses packed, as shown, and secured by rods and nuts C, and having inlet and outlet pipes F G, all constructed, arranged, and operating substantially as described.

145,592.—Churn-Dasher.—HERNDON B. ROBINSON, Birmingham, Ala. Application filed August 16, 1873.

Four perforated disks are arranged upon a vertical shaft, with concavities of the upper and lower ones in opposite directions, and the middle ones facing each other.

Claim.—The four perforated disks A, the upper and lower having their concavities in opposite directions, while the concavities of the middle ones face each other, and all attached to a rod, B, to serve in the manner described as a churn-dasher.

145,593.—Machine for Planing the Edges of Sheet Metal.—GREENLEAF B. RUNDLETT, South New Market, N. H., assignor to SWAMSCOT MACHINE COMPANY, same place. Application filed November 13, 1873.

The carriage E is situated upon ways, and traversed from one end of the frame to the other by a screw, I. An adjustable slide, C, on the top of the carriage bears a holder, B, pivoted near the center, in the end of which the double-edged cutter is placed. The sheets of metal to be planed are held firmly by clamps, and the carriage caused to traverse across the ends, carrying with it the cutter, which is vibrated from one side to the other, the holder bearing against abutments on the slide C.

Claim.—The double-edged cutter A, the stops or abutments *f g*, and the vibratory cutter-carrier B, arranged and combined, essentially as set forth, with the carriages C and E, applied together and to the frame H in manner and to operate substantially as specified.

145,594.—Wagon-Standard.—CYRUS W. SALADEE, Pittsburg, Pa. Application filed November 28, 1873.

Claim.—In combination with the body A, standards C, and ends of the bolster B, the spring E, substantially as and for the purpose set forth.

145,595.—Adjustable Reclining-Chair.—GEORGE A. SCHAEFER, New York, N. Y. Application filed July 10, 1873.

The arms of the chair slide on the upright supports, and are connected to the hinged back by links. The arm-rests are held in position by spring-bolts. A spring is inclosed between each rear support and a portion of the arm to return the back to the upright position. The foot-rest is also connected by rods with the hinged back, and a spring on each rod also aids in returning the back to the upright position.

Claim.—1. The combination of the movable arms B, supporting-posts A^1 A^2, springs C, links D, and hinged back E *e*, as and for the purposes specified.

2. The sliding rod H and spring *h*, in combination with the hinged back E *e* and foot G, and arranged to serve therewith, as herein specified.

145,596.—Spark-Arrester.—JOHN W. SEIGH, Johnstown, Pa. Application filed December 5, 1873.

An inverted cone within the smoke-stack is made adjustable by means of slotted braces. Said cone is perforated for the passage of fine dust and smoke, and is provided with a tapering curved ring, also perforated, against which the sparks are deflected to a perforated ring secured to the inside of the top of said smoke-stack. By these means the draft is regulated and the sparks retained until sufficiently pulverized to pass through the perforations.

Claim.—1. The combination of the cone *c*, ring A, and slotted braces *e*, substantially as specified.

2. The combination of the stack *a*, cone *c*, rings A *l n*, and standards *e*, substantially as shown and described.

145,597.—Spring-Mattress.—DAVID N. SELLIG, Newburg, N. Y. Application filed October 17, 1873.

Spiral springs of the form of a double cone, connected at their vertexes, support at such connection a central and horizontal frame inside the mattress. Longitudinal projections of sacking, of the full depth, divide the series of springs.

Claim.—A mattress having the sacking a divided into compartments by the strips *e*, which are fastened to the wooden frame *d d* in the center, to prevent the sagging of the springs *g* down between the slats, substantially as shown and described.

145,598.—Numbering-Machine.—JAMES D. SMITH, Washington, D. C. Application filed October 2, 1873.

The pull-down disk is partially cut away, and is provided with a cap, E, and a spring-catch which takes hold of the type-disk and draws it around. The locking-pin is held in an adjustable bearing, by means of which the distance the pin reaches toward the center is regulated.

Claim.—1. In a numbering-machine having a yoke with rotating disks mounted therein, the cap E, with its spring-latch b, adapted to take hold of the type of the actuating-disk, and operating in the manner and for the purpose set forth.

2. The locking-pin F, constructed substantially as described, and adapted to lock any one or more of the numbering-disks in a given position, for the purpose set forth.

145,599.—Device for Converting Motion.—JOSEPH P. TAYLOR, Hudson City, N. J. Application filed October 25, 1873.

A ratchet-wheel, secured to a shaft, is arranged within an open oval frame of a pendulum-lever. This frame is slotted, and two weighted ratchet-pawls are pivoted to the same, one above and the other below the ratchet-wheel. When the lever is moved to its limit the pawls are disengaged from the ratchet-wheel by means of a weighted lever bearing upon the points of the ratchet-pawls.

Claim.—An apparatus, composed of the pendulum-lever A with the frame C, ratchet G, and rotating wheel H, pawls I and J, weights L and M, and cords P P, all combined to operate substantially as and for the purposes described.

145,600.—Car-Starter.—JUSTIN G. THOMPSON, Stockton, N. Y., assignor of one-half his right to FREDERICK M. BRIGGS, same place. Application filed May 20, 1873.

Clutch-boxes upon the axle are thrown in and out by a slotted block operated, by a windlass, from the car-platform. The spiral spring is used to start the car in either direction, being wound up, in the one case, by revolving the drum to which its inner end is fastened, and, in the other, by the revolution of the cylinder to which its outer end is attached.

Claim.—1. The combination of the coil-spring A, barrel B, hollow cylinder C, hollow cylinders D and D', and the axle H, substantially as and for the purpose set forth.

2. The combination of the coil-spring A, the hollow cylinder C with its ratchet *d*, the hollow cylinder D', and the dog *e*, substantially as and for the purpose set forth.

3. The combination of the double-slotted wedge I, collars *a* and *a'*, pins *b* and *b'*, and friction-rollers *c* and *c'*, substantially as and for the purpose set forth.

4. The combination, with the coil-spring A, barrel B, hollow cylinder C, and the hollow cylinders D and D', of the clutches *m* and *m'* and E and E', substantially as and for the purpose set forth.

5. The combination of the slotted wedges G and G'', pawls F and F', ratchets *r* and *r'*, and the flanges h h and h' h', substantially as and for the purposes set forth.

6. The combination, with the double-slotted wedge I, of the chain *i*, pulley L, crown-wheel M, dog P, spiral spring *s*, button *v*, and shaft Q, substantially as and for the purpose set forth.

7. The combination of the lever X, step W, spring *x*, and the slotted wedge G, substantially as and for the purpose set forth.

145,601.—Drop-Hammer.—JEREMIAH TOBIN, Newark, N. J. Application filed July 15, 1873.

A screw-rod attached to the hammer passes through two springs and a stationary cross-piece, X, between them, and is provided with two screw-nuts, one above and the other below the springs. The upper spring limits the descent of the hammer, and the lower spring increases the force of the blow, the nuts on the screw-rod furnishing the means for adjustment.

Claim.—1. The combination of the hammer C, screw-rod Y, spring 2, and nut 3, substantially as shown and described.

2. The hammer C, screw-rod Y, springs 1 2, stationary cross-piece X, and regulating-nuts 3 4, combined for operation substantially as set forth.

3. The combination of the tappet-wheel B, hammer C, screw-rod Y, springs 1 2, nuts 3 4, bar X, and an anvil, substantially as shown.

145,602.—Washing-Machine.—JOHN W. TULL and JAMES W. WESTON, Windsor, Ill. Application filed August 16, 1873.

Attached to the bed-piece of the roller-frame is a sliding extension-piece, both being provided with pins to enter the sides of a tub. A cam and lever adjust the sliding piece.

Claim.—The slotted and sliding extension-piece B and cam-lever D, in combination with the bed-piece A and pins C, as and for the purpose specified.

145,603.—Process of Amalgamating Gold and Silver. JOHN TUNBRIDGE, Newark, N. J. Application filed November 10, 1873.

Claim.—1. The vessels B B', filled with submerged amalgamated pieces of metal, substantially as set forth.

2. Two or more vessels, having perforated bottoms, and filled with amalgamated strips or pieces of metal, which are submerged in the water of the reservoir, the vessels being arranged so that the washings or lama may be passed alternately through them, substantially as shown and described.

3. The reservoir A, in combination with the vessels B B' and tap E, substantially as described, for the purpose set forth.

145,604.—Carpet Stretcher and Tacker.—ZADOCK A. WARD, Pittsfield, Mass. Application filed August 16, 1873.

The handle has a recess to receive the U-shaped tacks, which are fed forward by a spring-follower into a T-shaped recess in the lower end of the toothed guide-piece. Said guide-piece carries a spring-bolt, which is forced down upon the tack by a hammer attached to the handle of the device.

Claim.—The handle A, provided with the recess to receive the U-shaped tack, the spring-conductor F, the guide-piece B, armed with teeth *a*, and having a T-shaped recess in its lower end, the spring-bolt E of corresponding form, the hammer D, with curved pivoted arm or lever *e*, and operating device *e f*, all operating as shown and described.

145,605.—Brake-Beam for Cars.—DANIEL WELLINGTON, Virginia City, Nev. Application filed March 16, 1872.

The brake-beam is formed of wrought-iron bars, which are so combined that when secured to the cast-iron brake-heads they will be securely braced against the strain.

Claim.—1. In combination with the brake-head B, and detachably secured thereto, the straight rods A A and arch-rod C, substantially as and for the purpose set forth.

2. The straight wrought-iron rods A, and wrought-iron bracing-rod C, in combination with the barrel E, with its lugs h, substantially as and for the purpose described.

145,606.—Lithographic Transferred Print.—OTTO P. WOLFF, Cincinnati, Ohio, assignor to STROWBRIDGE & CO., same place. Application filed October 29, 1873.

A transparent solution or coating of white lac is interposed between the gummed surface of the transfer-paper and the imprint.

Claim.—As a new and improved article of manufacture, lithographic pictures or prints of any design or pattern transferred onto glass, canvas, or other suitable material having a transparent solution of white lac, employed substantially as described.

145,607.—Manufacture of Bitartrate of Potassa.—LOUIS ADLER, Baltimore, Md. Application filed November 18, 1873.

Take the refuse matter of grapes; add a quantity of water sufficient to form a paste; boil until somewhat thickened, when the liquid is drawn off into any suitable vessel; then introduce a quantity of switches, rods, or withes in such position that they will extend to every part of the liquid. These rods are left in the liquid until the bitartrate of potassa contained in solution therein is precipitated or deposited upon them, when they may be withdrawn, and the bitartrate of potassa may be removed.

Claim.—The process of procuring bitartrate of potassa, substantially as herein described.

145,608.—Furnace-Door.—DAVID AULD, Jr., Glasgow, North Britain. Application filed May 6, 1873.

The air-regulator B, which is inverted by the opening of the door, is, on the closing of the door, gradually brought again into its original position as the sand falls slowly back into the lower part of the box C.

Claim.—1. A door for furnaces provided with a damper and with a sand-box connected to the damper, and closing the same as the sand descends in the box, for the purpose specified.

2. The combination of an inclined bar and rod with the door, damper, and sand-box, as and for the purpose described.

145,609.—Wash-Stand Faucet.—WILLIAM S. BATE, Philadelphia, Pa. Application filed October 18, 1873.

A swivel-spout is provided with recesses, which, by turning said swivel in certain positions, are made to correspond with the exit-port of either the hot or cold water pipes within the stem of the faucet, or of both. In certain other positions of the swivel one of the said exit-orifices in the stem is brought opposite a tube connected with a shampooing apparatus. By a slight variation of said swivel, a mixture of hot and cold water can be conducted to the shampooing apparatus by bringing the exit-orifice opposite both the pipes.

Claim.—1. The combination, in a wash stand faucet, of a stem, A, having two supply-passages, h and *i*, and a swivel-spout, B, which may be brought into communication with either or both of said passages, substantially as set forth.

2. The combination of the swivel-spout B, and its recess *f*, with the fixed stem A, having one or more supply-passages, and an outlet-passage, *k*, all substantially as and for the purpose specified.

145,610.—Copper-Plate Printing-Press.—THOMAS S. BATES, Boston, Mass. Application filed August 4, 1873.

On one end of the cylinder-shaft is a collar, O, provided with a slotted plate, P, one end of which is turned up to form a stop, *p*, the position of which is adjusted relative to the flattened surface of the D-shaped cylinder, that the revolution of the cylinder may correspond to the length of the plate. The back of a projection, *b*, on an adjustable collar at the other end of the cylinder, engages with an adjustable wedge on the bed. Immediately after, the rounded surface of the cylinder leaves the plate and the flattened portion is brought directly over it, when a pawl, *q*, kept in constant contact with the collar O by a spiral spring, *r*, drops into a notch, *s*, in the collar, and holds the cylinder out of contact with the plate, when the table with the plate is thrown back to its original position by a spiral spring, *t*, on guide-rod *k*, placed under the bed, and the movement of the table brings a projection, *t*, against the pawl and throws it out of the notch. The cylinder is thus turned a partial revolution by the recoil of a spiral spring, *u*, connected by a cord with the end of the cylinder, till the stop *p* strikes the pawl *q* and prevents further turning, the extent of the partial revolution being just that sufficient to return the cylinder to the exact position it had before, and ready to set on the plate again.

Claim.—In a plate-printing press, the combination of the D-shaped cylinder C, adjustable collar I, adjustable stop *p*, projection *b*, and wedge L, constructed and operating substantially as and for the purpose set forth.

145,611.—Elevating and Transferring Apparatus of Railroad-Cars.—WILLIAM T. BEKEMAN, Petersburg, Ill. Application filed November 1, 1873.

The cars are elevated by hoisting devices till their wheels clear the track, and, thus suspended, are moved laterally by a traveling carriage to the other track.

Claim.—1. The combination, with a wheeled frame for spanning two or more railway-tracks, of a carriage provided with lifting-rods and gearing and windlass-shafts for hoisting cars, car-bodies, or sections thereof, and a track or ways, L L, for the carriage, arranged on said wheeled frame obliquely, or at right angles to the tracks, substantially as shown and described, to operate as specified.

2. The combination of the chains and chain wheels or pulleys with the wheels J, truss A, and gearing connected therewith, for moving the truck on the track B, as shown and described.

3. The combination of the swing-beam *x*, crabs C, chains *y*, clevises *w*, screw-shafts *v*, radial shafts Q, master-wheel M, and carriage K, arranged as shown and described, to operate as specified.

4. The combination, with the swing-beams, of the shaft Z, chains or cords A, having crabs or hooks attached and passing over pulleys, as shown and described.

5. The combination, with the wheeled truck-frame A, of the rack *m*, wheel *n*, carriage K, and ways L, arranged at right angles to the rails B, as and for the purpose specified.

6. The swing-beams *x x*, provided with adjustable or notched bearing at their ends, to adapt the pulleys or chains for suspending cars or car-sections, to be shifted toward or from each other, corresponding to the size of car or car-section, as specified.

145,612.—Sewing-Machine Table.—JOSEPH BENNOR, Philadelphia, Pa., assignor to HERBIT D. STOOPS and JOHN B. MYERS, same place. Application filed October 18, 1873.

When the cover is used as an extension it is held securely to the table by an eccentric lever, having a knife-edge and an upright rim or flange. The lever is pivoted to the under side of the table-top.

Claim.—The lever G, having an eccentric or inclined surface, *e*, and knife-edge *g*, in combination with the table-top A and cover B, substantially in the manner and for the purpose above described.

145,613.—Fiber-Disintegrator.—ANTOINE BERTHET and PIERRE LAMBEIN, New Orleans, La., assignors of one-fourth their right to DENIS P. WHITE, same place. Application filed June 4, 1873.

At each end of a platform two horizontal rollers are arranged, one obliquely above the other, and each carrying upon its surface oblique sectional blades. A double-grooved wheel, of perpendicular axis, presents its periphery close to the point of contact of these wheels at each end. A belt, passing around both wheels, has intermediate regulating-pulleys. The plant is fed into the grooves and held by the band, is then drawn by the roller-blades, and, finally, dropped on the side of the wheel opposite the feeder.

Claim.—The obliquely-bladed rolls B, the double-grooved wheels O O', and the rope J, combined in a ramie-machine, to operate in the manner and for the purpose specified.

145,614.—Ironing-Table.—CORNELIUS BLOM, JR., Grand Haven, Mich., assignor of one-half his right to THOMAS J. TUBBS, same place. Application filed October 18, 1873.

The ironing-board is intended to be attached to a wall by hooks at one end. Braces are pivoted at each end. The lower end of one, by means of a cross-bar, moves in slots in the other, so that the table can be folded.

Claim.—The ironing-board A having the hinged obliquely-slotted legs B, the pivoted prop D having the horizontal cross-bar *d* with rounded ends sliding in the slots *c* of said legs, said slots being of proper length to allow the legs and prop to be folded closely up against the board, and, when down, to take a bracing position nearly rectangular with each other, substantially as specified.

145,615.—Machine for Making Batting.—FRANCIS W. BLODGOOD, New York, N. Y. Application filed October 30, 1873.

For making batting composed of two sheets or laps of picked and scutched cotton placed one above the other and united by size.

Claim.—The lappers and pickers A and B, with their delivery ends adjacent and opposite, in combination with the sizing and uniting rolls, located and arranged as described.

145,616.—Weather-Strip.—OLIVER W. BOOTH, Providence, R. I. Application filed July 3, 1873.

A weather-strip of the class in which a vertically sliding strip is depressed by a laterally-moving cam operated by the jamb when the door is closed. The operating-piece is made reversible, in this case, so that the strip can be applied equally well to right or left hand doors.

Claim.—The combination of a vertically-operating weather-strip and its supporting-spring with the reversible actuating-bolt, provided with an inclined face at its inner end, substantially as described, and arranged to engage with and depress the strip, as and for the purposes specified.

145,617.—Rotary Pump or Blower.—ABEL BREAR, Saugatuck, Conn., assignor to himself and WILLIAM W. W. WOOD, Washington, D. C. Application filed November 15, 1873.

To the arms of a shaft, placed eccentrically within the case, are pivoted peculiarly-constructed vanes, which are held against the case by springs. The inlet and outlet openings communicate with the spaces between the vanes by ports grooved in the opposite ends of the case.

Claim.—1. A rotary pump or blower in which are combined a cylinder, D, having ports *p* and *q*, communicating with inlet and outlet openings, and a series of valve-like vanes, A, hinged to the arms *a* of a shaft, B, which is arranged eccentrically in respect to the said cylinder, all substantially as specified.

2. The valve-like vane A, constructed substantially as described, with center and cheek pieces *t* and *v*, in combination with the recessed arm *a*, to which the said vane is hinged, all as and for the purpose set forth.

145,618.—Tumbler for Permutation-Locks.—EDWARD W. BRETTELL, New Haven, Conn. Application filed May 3, 1873.

Claim.—A lock-tumbler consisting of a central part, A, provided with a serrated periphery and orifice, *d*, and an elastic stopping, B, having serrated bearings *a a'* and smooth bearing *b*, all combined and arranged as and for the purpose specified.

145,619.—Tool for Molding Inkstands.—ALEXANDER W. BRINKERHOFF, Upper Sandusky, Ohio. Application filed November 15, 1873.

Claim.—The former or molding-tool consisting of the concave cone C, a circular shoulder, *g*, and a point, *h*, formed on a handle or stock, B, for the purposes described.

145,620.—Manufacture of Paper-Pulp.—CHARLES D. BROWN and ELIAS B. DENISON, Portland, Me. Application filed December 9, 1873.

Claim.—1. The process of making paper-stock by grinding together and combining resinous wood and white non-resinous wood, the resinous wood to yield the necessary sizing, and the white wood to give the stock tone or color, substantially as described.

2. Box-board made of pulp or stock from resinous woods combined with pulp or stock from white non-resinous woods, substantially as specified.

145,621.—Chimney-Top.—JAMES C. H. BROWN, Jersey City, N. J. Application filed September 2, 1873.

In whatever direction the wind may be, the currents entering at one side are immediately discharged at the opposite side.

Claim.—A chimney-cap of star-shape in section, having its points radiating from the chimney-flue and contracted toward their outer ends, substantially as and for the purpose shown and described.

145,622.—Music-Blackboard.—OBADIAH B. BROWN and HENRY G. CAREY, Malden, Mass. Application filed June 5, 1873.

The board inclines slightly backward, and the characters used—notes, bars, rests, &c.—are adjusted in or removed from grooves representing the lines and spaces, at pleasure.

Claim.—1. The board A, provided with horizontal grooves *b c* for holding in place musical characters, the grooves *b* being of the same color as the board, and the grooves *c* of a different color to represent the staff, substantially as shown and described.

2. Musical characters formed of wood in two or more thicknesses, with the grain crossed to prevent warping, and provided with pins or projections for engagement with the grooves in the board, substantially as shown and described.

3. The box L, serving as a receptacle for the characters, and hinged to the lower portion of the board A, so as to be turned up and fastened when not in use, substantially as shown and described.

4. A music-blackboard provided with tapering cleats H for effecting the backward inclination of the board, substantially as shown and described.

5. A clef made of thin wood and secured to the board by gluing, substantially as shown and described.

145,623.—Device for Removing Snow from Railways.—JANE ANN BRYANT, Pottsville, Pa. Application filed November 12, 1873.

The wheel is attached to the front of a locomotive, and rotated by gearing connected with the axle.

Claim.—The snow-wheel consisting of the base *b*, rim *c*, paddles *e*, spokes *e*, and socket *d*, constructed as described, for the purpose set forth.

145,624.—Butter-Worker.—SIMEON H. BUSH, Bolstfort, Wash. Ter. Application filed August 30, 1873.

A deep trough is closed by a block, concave inside. A lever, fulcrumed behind this block, and extending to the other end of the trough for the right hand of the operator, carries a loosely-pivoted block, convex toward the fixed concave. A similar unattached convex block, for the left hand, having an extended handle, remains in position at the open end of the trough.

Claim.—The improved butter-worker described, consisting of the inclined concave B, cheeks A A, pressing-head C on the pivoted lever D, and the pressing-head J, all operating in the manner described.

145,625.—Machine for Breasting the Heels of Boots and Shoes.—WILLIAM C. BUTLER, Baltimore, Md. Application filed August 26, 1873.

Claim.—1. The sliding cross-head C and knife D, and the self-adjusting stop E, as relatively arranged, the stop being adapted to control the movement of the knife, and to be raised at the termination of the stroke of the knife with the said knife, substantially as herein set forth.

2. In combination with the cross-head C and self-adjusting stop E, the spring-latch *b*, substantially as and for the purpose specified.

145,626.—Self-Closing Hatchway.—WILLIAM P. CHERRINGTON, Boston, assignor to himself, WILLIAM B. FOSTER, Medford, and WILLIAM A. MORRISON, Cambridge, Mass. Application filed March 27, 1873.

The elevator-car, in its descent, encounters the rounded portion of the link, the upper end of which is girded in the slot K. The motion is transmitted through the link and right-angles arm E to the trap-door, thereby opening it for the passage of the car. The device claimed in the second clause is a pair of slides arranged to close together when the trap-door falls into place, thus closing the slot through which the rope passes and cutting off the draft.

Claim.—1. The combination of the lever L and its wheel W, cam K, and the elbow or brace E upon the door or hatch, the combination being and operating substantially as and for the purpose set forth.

2. The combination, with the door, of the slides S S, arms T T, diagonally jointed to the slides and door, and the springs U U, substantially as and for the purpose set forth.

3. The door or hatch provided with the slides and diagonal arms T, for the purpose set forth, and also connected, by its brace E, to the lever L and cam K, substantially as and for the purpose set forth.

145,627.—Plow.—CORNELIUS M. CLARK, Seward, Neb. Application filed September 27, 1873.

To a widened portion of the beam-standards, rising from a horizontal portion, are attached a cutting-share—being fixed to the front by rivets, clamps, and keys—and a sod-turner extending to the rear from the base-plate. The side-cutting portions are inclined or flaring.

Claim.—The standard portion C, having attached thereto the share C', with inclined sides, and the mold-board turner G, extending slightly over the rear edge of share C', combined substantially as shown, and for the purpose specified.

145,628.—Saw-Handle.—WILLIAM CLEMSON, Middletown, N. Y. Application filed November 26, 1873.

The handle is provided with a central opening and two projecting ends, which enable the operator to use both hands in working with the saw.

Claim.—As a new article of manufacture, the handle formed in one solid piece, having bulge B, with slit for the saw, the central opening A, and the handles C C at each end, all constructed in the peculiar form shown, and for the purpose specified.

145,629.—Cotton and Hay Press.—EDWIN S. COLLINS, Trenton, Tenn. Application filed May 31, 1873.

The slotted packing-box has two doors hinged to the sides of the box for the removal of the bale, and a series of sliding doors transversely arranged, which, as the lever descends, are successively drawn out to permit the lever to pass.

Claim.—1. The horizontally-slotted bale or packing-box E, provided with hinged doors D and draw or sliding doors G, substantially as and for the purposes herein set forth.

2. The combination of the slotted box E with doors D G, screw I, double nut K, lever L with fulcrum M, collar N, and fulcrums O *b d*, all constructed and arranged substantially as and for the purposes herein set forth.

145,630.—Rail for Sliding Doors.—JOHN COLLINS, Hoboken township, Bergen county, N. J., assignor to HOPKINS AND DICKINSON MANUFACTURING COMPANY. Application filed October 11, 1873.

Claim.—A sectional rail the sections of which are formed with correspondingly-shaped legs and cavities, the former serving the double function of dowel or interlocking pins between the sections, and a means of secret or hidden attachment of the sections to the floor, as hereinbefore set forth.

145,631.—Plug or Ferrule for Stopping Leaks in the Tubes of Steam-Boilers.—ROBERT A. COPELAND, Brooklyn, assignor to BENJAMIN COLLINS, New York, N. Y. Application filed October 24, 1873.

Within the recesses arranged in the sides of the plug or ferrule screw-threaded dies are placed; said dies cutting their own way upon the entrance of the plug or ferrule into the tube.

Claim.—A plug or ferrule provided with recesses A A in its exterior surface, in combination with the screw-threaded dies B B, placed in said recesses, substantially as and for the purposes herein set forth.

145,632.—Center Drop-Light.—CHARLES DRAVA, New York, N. Y., assignor to THE ARCHER AND PANCOAST MANUFACTURING COMPANY, same place. Application filed February 6, 1872.

The spring-drum is placed horizontally and axled on the main pipe of the gasalier. It is also placed below the main gas-distributer.

Claim.—The combination in a gasalier of the following elements: A horizontal spring-drum, G, guide-rollers *a a*, inclosing-case E, cords S S, main stem A, distributer B, stationary branch-light ducts D D, and drop-light duct L, substantially as herein specified.

145,633.—Die for Forming Ox-Shoes.—JOHN DENBLE, Plantsville, Conn., assignor of three-fourths his right to THE ATWATER MANUFACTURING COMPANY, same place. Application filed November 22, 1873.

A blanking-die for cutting a plain L-shaped blank; another for bending this blank edgewise; a third for forming the heel and toe calks; and, lastly, one for finishing by creasing and punching.

Claim.—The series of dies A C E L, as herein described, for the manufacture of ox-shoes.

145,634.—Bee-Hive.—LEANDER J. DENZ, Butler, Ind. Application filed May 17, 1873.

The frames are hinged at their upper and lower corners to one side of the hive and on the opposite side rest on a horizontal ledge. Set-screws, in their free ends and lateral thereto, keep space between them and the hive. The door presses them toward the far end, a right-angle flange on the latch-end of the door passing between the hive and the ends of the first frames.

Claim.—The frames D, hinged at their corners to the hive and provided with screws G J, in combination with the flange I of the door B, and of ledge K, to prevent sagging of the comb-frames, all constructed, arranged, and operated as set forth.

145,635.—Thill-Coupling.—GEORGE M. DUNLAP, Springfield, Ohio. Application filed August 23, 1873.

Claim.—The combination of the axle-clip A with projection A, plate B, forked hook C with beveled end *c y*, thill-iron D with flanged head E, adjustable block G, and screw *f*, all constructed substantially as and for the purposes set forth.

145,636.—Cultivator.—DAVID B. EBERLY, Pine Village, Ind. Application filed May 31, 1873.

The axle-tree, formed of slotted sections or links, can be expanded or contracted by means of the slots and clamping-bolts, or by removing entirely some of the links. An arched section in the middle serves to "straddle" tall corn by removing the middle link.

Claim.—1. The expansible axle-tree B, consisting of the slotted links *b*, substantially as specified.

2. The combination, with a drag-beam, D, of the shovel-plow and the adjustable weed-cutting knife-blade attached to the sides of said drag-beam, and extending rearwardly of the share, as shown, and for the purpose mentioned.

3. In a cultivator, the detachable middle slotted link *b*, in combination with the arch J, substantially as specified.

4. The fulcrum *p'*, with its connection-pin Z, in combination with the slotted extension-axle B, substantially as specified.

145,637.—Slide-Pendant for Hanging Lamps.—JOHN A. EVARTS, West Meriden, Conn., assignor to BRADLEY AND HUBBARD, same place. Application filed October 26, 1872.

Claim.—In a pendent burner, the two weights W W, united by a bar, R, the said bar formed with an opening in the center to allow it to pass down over the chimney, substantially as described.

145,638.—Elevated Way.—HENRY W. FARLEY, Oswego, Ill. Application filed November 18, 1873.

An endless traveling elevated way, in which a series of metal plates are secured between two wire-cables, said plates traveling upon friction-rollers, and at required intervals passing between frictional driving-wheels, by means of which the cable or carrier is propelled. The carrier supports numerous cars or boxes, which are intended to be filled with grain or other freight without stoppage as they pass bins, which are erected along the line of the way.

Claim.—1. The hereinbefore-described carrier, consisting of the cables A and A', placed upon opposite sides of the horizontal bearing-plates B and B, having interlocking or plane edges, and connected together and with said plates by means of wires or rods C and C, substantially as and for the purpose specified.

2. In combination with the carrier A, B, and C, the freight boxes or receptacles M, placed above and supported by the same, substantially as and for the purpose shown.

3. In combination with the carrier A, B, and C, and with the freight-boxes M and M, the standards L and L, attached to and extending upward from said carrier, and furnishing supports for said boxes, substantially as and for the purpose set forth.

4. In combination with the carrier A, B, and C, resting upon and supported by suitable rollers D, the friction driving-wheels H', moving in a horizontal plane and engaging with the ends of said bearing-plates, substantially as for the purpose shown.

5. The bearing and driving wheels D and H', respectively, for sustaining and moving the carrier, arranged as shown and combined by means of the belts K, substantially as and for the purpose set forth.

6. In combination with a continuous carrier having a constant movement in one direction and provided with elevated freight boxes or receptacles, a grain-bin provided with a chute or spout arranged to discharge grain in the direction in which said carrier is moved, substantially as and for the purpose shown and described.

145,639.—Saddle-Tree.—ORLANDO V. FLORA, Madison, Ind., assignor to himself, JNO. G. MOORE, and JNO. B. ROSS, same place. Application filed September 6, 1873.

Claim.—1. A saddle-tree, the body and cantle A of which are made of one piece of wood, steamed, bent, and set in proper shape, and provided with a wooden cleat, C, substantially as and for the purpose herein specified.

2. In combination with the belt body and cantle A, the bent-wood pommel-piece B secured thereto by letting partially into the same, so as to dispense with iron straps, substantially as herein specified.

145,640.—Harvester-Dropper.—JAMES S. FOWLER, Davenport, Iowa. Application filed October 11, 1873.

A clutch on the shaft that operates the endless belts, forming the main platform, is connected by rods and levers with the dropping-platform, so that when the latter is discharging a gavel the cutter will be disconnected and the movement of the endless belts be stopped.

Claim.—The hinged dropper F F', connected to clutch-pulley on the shaft e of belt-drums D D', by means of rods *h g c*, as and for the purposes described.

145,641.—Coupling for Tubular Lightning-Rods.—JOSEPH W. FESTOCH, Cincinnati, Ohio. Application filed November 6, 1873.

Claim.—A lightning-rod composed of tubular sheet-metal sections, having one end flared and slotted, as at I, and the other end reduced in diameter, as at C, with a sloping shoulder, D, and a tongue, H, formed by the slits F F' extending from the end of each section inwardly, the sections being joined by the insertion of the reduced end of one into the flared end of another, the tongue H passing through slot I, and being bent back for securing the two sections together.

145,642.—Watch-Chain.—PIERRE FRONTIER and AUGUSTUS BELLEMERE, San Francisco, Cal. Application filed August 23, 1873.

Claim.—As a new article of manufacture, a watch-chain consisting of the loops with their points or projections *a a*, and the quartz or other suitable blocks *d*, constructed, combined, and arranged substantially as described.

145,643.—Saw-Gummer.—LUTHER GIBBS, Fremont, Ohio, assignor to himself and HASKEL HUDSON, same place. Application filed July 2, 1873.

The yoke C is fastened to the upright standard B by a bolt passing through a curved slot, the nut being loosened to adjust the emery-wheel, which is fastened to a shaft near the end of a movable frame sleeved on a countershaft, D, journaled in the yoke.

Claim.—The combination of the upright standard B, bifurcated standard C with the curved slot *x*, countershaft D, movable frame E with emery-wheel G, and the counterpoise M M', all constructed substantially as set forth.

145,644.—Automatic Catch for Sliding Doors.—AZEL W. GIBBS, Norwich, Conn. Application filed December 12, 1873.

A pivoted vertical bar and a horizontal bar are connected together, and the horizontal one furnished with a retracting-spring and a broken catch, which latter is entirely within the lock-case when the door is open, and when shut takes into a mortise-catch. The sliding door in shutting strikes a projection at the upper end of the vibrating bar, and thus throws the catch. While the door is open there are no projections against which objects could catch in being carried through.

Claim.—1. The traversing catch-bar F, furnished with a suitable spring, and pivoted to the vibrating bar D, the latter furnished at some proper point with a projection against which the door shall strike in closing, all arranged as and for the purpose set forth.

2. The combination of vibrating bar D and catch-bar F with projecting arm *m*, provided with an opening, *n*, as shown.

3. In combination with the vibrating bar D, the catch-bar F, and the trigger H for operating the same, all as described.

4. In combination with the bars D F and a suitable spring, the trigger H and mortise catch-plate, all as and for the purposes described.

145,645.—Machine for Heeling Boots and Gaiters.—LEOPOLD GRAF, Newark, N. J. Application filed November 13, 1873.

The tubular receiver serves to prevent the edge of the leg of a boot or gaiter from catching between the last and anvil.

Claim.—A tubular receiver arranged on the last of a heeling-machine, substantially as shown and described.

145,646.—Carriage-Wheel.—HENRY GWYNN, Baltimore, Md. Application filed September 3, 1873.

Claim.—1. The wooden sections *b*, forming the journal-box, in combination with the metal shell A, having the inner projections B, as shown and described, for the purpose specified.

2. The combination, with the metal shell A, having flange *a* with inner projections *a'*, and the flange *d* with polygonal perimeter, of the movable ring E, fitted on flange *d*, and the adjusting screw-nut *e*, for the purpose of forming a socket for the spokes, securing them in position, and permitting their removal, as specified.

3. In combination with the spokes and flanges *a* and B of shell A, the wedges *g*, arranged as shown and described, for the purpose specified.

145,647.—Machine for Cutting Leather for Boot and Shoe Heels.—MERRITT H. HALL, Philadelphia, Pa. Application filed October 6, 1873.

The reciprocating as well as rotary movement is effected by the combined action of the toggle-lever, crank-shaft, and stationary pawl.

Claim.—1. The combination of the reciprocating block E and toggle-levers B and B', operated by the cranks D' and B', as set forth and described.

2. The reciprocating block E, operated as described, in combination with the stationary pawl E', as set forth.

145,648.—Hinged Mast for Vessels.—JOS E. HAMMOND, New Bedford, Mass. Application filed December 4, 1873.

Claim.—A boat's mast divided just above the deck into two parts, when arranged with hinged ferrules C' C', and pins and chain-braces *f' f' f'*, all combined and operating substantially as and for the purpose set forth.

145,649.—Railway Rail-Joint Stiffener.—HORACE HARDING, Tuscaloosa, Ala. Application filed July 21, 1873.

The cross-tie under the rail-joint is supported by a wooden bar bolted thereto, and sustained upon the upper surface of two adjacent ties.

Claim.—The combination, with two rails jointed on a cross-tie, B, of the simple parallel wooden bar E, independent of and at some distance from the rails, and rigidly fastened to the tie B, but resting loosely on the ties adjacent and on each side thereof, as and for the purpose described.

145,650.—Dry Gas-Meter.—ANDREW HARRIS, Philadelphia, Pa., assignor to himself and JOHN J. GRIFFIN, same place. Application filed November 26, 1873.

An opening is formed in each bearing directly opposite the end of the spindle, through which is discharged the gummy matter which would otherwise prevent the necessary delicate operation of the parts.

Claim.—The combination of a bearing having a lateral opening, *a*, with the vertical spindle of a dry gas-meter, for the purpose specified.

145,651.—Adjustable Reclining-Chair.—JOHN J. HARTMAN, St. Louis, Mo. Application filed September 13, 1873.

The arms are provided with studs which engage with locks in the side rails. Said arms are pivoted to the back, which is thereby rendered adjustable, and the back is connected by rods with the pivoted foot-rest, and adjusts that also.

Claim.—The adjustable back D, the arms E, pivoted to the back at *c*, and provided with studs *f*, which engage in locks in the rails C, in combination with the foot-rest P and connecting-rod L, as set forth.

145,652.—Car-Coupling.—J. WILSON HESS, Montandon, Pa., assignor to himself and JOHN B. GREEN, same place. Application filed November 5, 1873.

When the bar D is depressed the pin C is free to swing outwardly and release the link.

Claim.—1. The combination, with the draw-head A and swinging coupling-arm C, of the rocking bar D, lever G, spring *a*, railing *b*, and notched plate *d*, all substantially as and for the purposes set forth.

2. The draw-head A, bar D cut out in the center, and the swinging arm C, all constructed and combined for operation, as and for the purpose set forth.

145,653.—Coffee-Urn.—CORNELIA HITCHCOCK, Milldale, Conn., assignor to herself and WILLIAM J. CLARK, same place. Application filed October 17, 1873.

Claim.—1. In combination with a vessel, A, provided with a faucet, E, the case F, with its cover H, the said case F having a vertical opening to permit the passage of the faucet, so that the vessel may be removed from or set into the said case, and means for closing said opening, substantially as described.

2. In combination with an urn having a faucet, *e*, leading therefrom, the drip-cup L, hung to the urn so as to be turned to and from the faucet, substantially as set forth.

145,654.—Boiler for Warming Buildings.—CHARLES F. HITCHCOCK, New York, N. Y. Application filed November 1, 1873.

The water-foot F, being placed at the point where the heat is greatest, insures the rapid heating of the water.

Claim.—1. A boiler for heating purposes composed of the shell A, inner case D, and ash-pan B, forming between them the water-space *f*, and of the fuel-reservoir E and grate C, all arranged in relation to each other substantially in the manner herein shown and described.

2. The combination of the shells A D and ash-pan B, which form between them the water-space *f*, with the pipe or conduit *s* and annular water-foot *f*, all arranged substantially as specified.

145,655.—Manufacture of Illuminating-Gas.—EDWARD R. HOPKINS, Newark, N. J., assignor of three-fourths his right to NATHAN P. TREADWELL, New York, N. Y. Application filed November 11, 1873.

Claim.—1. Three or more retorts, R, arranged one above another, and connecting by means of vertical connecting pipes or tubes, the highest of the series alone being provided with a standpipe, as and for the purposes set forth.

2. The process, as herein described, of charging a set of connecting retorts with unequal charges of coal, so that the gas shall pass from a lighter-charged retort into a heavier-charged retort placed above it.

145,656.—Ice-Creeper.—CHARLES H. JOHNSON and WILLIAM AXFORD, White Hall, Ill. Application filed July 12, 1873.

Claim.—The combination of the adjustable sole and heel ice-creeper D with arms B and G G, respectively, and the straps C C and J, substantially as and for the purposes herein set forth.

145,657.—Hoisting-Machine.—JENKINS JONES, Providence, R. I., assignor of one-half his right to JASON F. HOLMES, same place. Application filed November 11, 1873.

Claim.—1. A windlass-drum loosely mounted on a shaft, which is provided with a ratchet-wheel and a pawl for preventing its movement in one direction, in combination with a toothed clutch loosely mounted on the shaft, a shipper for controlling it, and the clutch-teeth respectively connected with the drum and the shaft, substantially as and for the purposes specified.

2. The combination of the shipper-brake H, the drum, the friction-plate and shaft, substantially as described.

3. The combination of the drum, shaft, and toothed plate with a clutch having teeth with inclined contact-faces, whereby the movable portion of the clutch will be pressed toward the teeth on the plate and kept in operative contact therewith, substantially as described.

145,658.—Metal Fastening Material for Leather-Work.—CHARLES KENISTON, Somerville, Mass. Application filed November 12, 1873.

The blank from which the staples are cut is a continuous length of wire, bent at regular intervals, and formed with semi-circular and alternately-reversed bends. The staples are made by cutting off or through the bend on one side or the other. The shanks are approximately abutting, and united by a head equal in length to the thickness of the two shanks.

Claim.—1. The staple-forming blank, formed substantially as described.

2. The staple having the abutting, or approximately-abutting, shanks, united by a head equal in length to the thickness of the two shanks, as shown at B.

145,659.—Apparatus for Cooling Air and Making Ice.—THOMAS D. KINGAN, Indianapolis, Ind. Application filed December 2, 1873.

The waste brine from the refrigerating-chambers containing ice and salt is used to freeze fresh water contained in vessels set into an intermediate chamber.

Claim.—1. The arrangement of the refrigerator A, the tube *d*, the pump D, the tube E, the refrigerator A', and the tube F, whereby the brine from the said refrigerator A is compelled to pass through the refrigerator A' before entering the box B, and whereby the temperature of the brine is greatly reduced before entering the box or trough B.

2. The combination and arrangement of the refrigerator A and the tube *d*, the pump D, the tube E, the refrigerator A', the tube F, the box or trough B, with its racks or frames F' and *s* and water-vessels C, constructed and arranged substantially as set forth, and the stop-cock G, all for the purpose, and in the way, substantially as set forth.

145,660.—Machine for Forming Pans.—EDWARD KUEBNER, Cincinnati, Ohio. Application filed October 13, 1873.

The forming-plates are attached to hinged levers made adjustable to different-sized forms, and operated by means of a foot-treadle and intermediate levers. Adjustable gages are also attached to the forming-plates, against which the edges of the blanks are placed for clamping. The clamping-plates are also adjustable.

Claim.—In a machine for forming sheet-metal pans, the bed-plate B, removable formers G, gages L, adjustable supporting-plates H, hinged leaves h K, fulcrums M, bent levers N *n*, adjustable compensating suspenders O, and lever Q, all combined and operating substantially as herein set forth.

145,661.—Shoulder-Pad.—LOUIS KYSER, Philadelphia, Pa. Application filed November 26, 1873.

A wire frame for giving shape to the shoulders of garments.

Claim.—As a new article of manufacture, the frame A, in combination with the transverse bands C, constructed and arranged substantially as and for the purpose set forth.

145,662.—Device for Detaching Horses.—ISRAEL L. LANDIS, Lancaster, Pa. Application filed July 14, 1873.

The traces can be pushed off the pins by the outward movement of the plates, which are to be operated by pulling the cords.

Claim.—The combination of the whiffletree A, having a ferrule, *b*, and pin *a* at each end, the plates B, with slots *c*, outward-projecting bars *d*, and arms *f*, formed of one piece and connected to the springs C, which are attached to the whiffletree, all constructed substantially as set forth.

145,663.—Box.—JOHN S. LASH, Philadelphia, Pa. Application filed May 26, 1873.

The body is formed of a continuous piece of wood, scored at the corners, except the one where the ends are locked by a dovetailed joint. The bottom is let into a groove in the sides, so that no nails, screws, glue, or other fastenings are used in constructing the box.

Claim.—The box constructed of the body A, formed of a continuous piece of material, scored at intervals, and having its ends locked by the double dovetail joint F, in connection with the "let-in" bottom E, so as to dispense with nails, screws, glue, or other fastenings for the body, as set forth.

145,664.—Sleeping-Car.—JAMES T. LEIGHTON and DOMINICUS R. LEIGHTON, New Haven, Conn. Application filed November 15, 1873.

Both the berths in each section are supported upon rails, which span the space between the seats. In the lower berth the outside rail is pivoted to the outer angle of the seat, and supported at the other end by a staple. The upper-berth supports are attached in a similar manner to the lower edges of the hinged backs, which are turned up into a vertical position. The rails are hinged at the center, and fold in spaces at the angle of the seat.

Claim.—1. The single hinged extensible rail I, in combination with the separate slat sections F G and the chairs, constructed for adjustment to form the lowest couch, substantially as described.

2. The single extensible rail I, hinged at one end, J, to one chair-frame, and supported and held at its free end by an angle-iron or staple, K, at the other chair-frame, and spanning the space between the chairs, substantially as described.

3. The section slat bottom G and the single hinged folding rail I, arranged to fold one beside the other, as and for the purpose described.

4. The combination, in a sleeping-car, of the hinged connecting-rails N N' with the hinged seat-backs B, to form a frame upon which to support the upper couch, as described.

5. The rail-support N N' for the upper couch, connected to and carried by the seat-backs B, whether in the extended or folded positions of these parts, as described.

6. The rail-supports N N', hinged to the corners of the lower edges of the hinged backs B, and folded parallel with and beneath the lower edges of said backs, turned down to the seat, as described.

7. The rail-supports N N', hinged at their opposite ends *i*, in combination with the end projections *f*, with which the rails lap and are braced, as described.

8. The bottom M, composed of slats A A A A, in combination with the ledges *g* of the hinged rails N N', as and for the purpose described.

145,665.—Corset.—LYMAN H. LOOMER, ANDREW F. LOOMER, and LOWELL M. SMITH, Birmingham, Conn., assignors to L. L. LOOMER & SONS, same place. Application filed September 24, 1873.

Each half of the corsets is of six pieces, joined without short gores.

Claim.—The herein-described corset, made from pieces having the configuration herein described, and shown in accompanying illustration.

145,666.—Fan.—CORBOYS C. LUSBY, Philadelphia, Pa., assignor of one-half his right to WILLIAM J. CHAMBERS, same place. Application filed October 28, 1873.

A fan in the handle of a parasol or cane.

Claim.—1. The combination, with a stick having a slide-recess elongated in the direction of its length, of a fan folding and expanding laterally into and from said recess, substantially as described and shown.

2. In combination with the handle or stick of a parasol, or other equivalent device, a folding fan opening laterally from the side of said handle or stick.

3. The stick or handle A, having the side recess *a* for the reception of the fan B.

4. In combination with the stick A, having the recessed side *a*, the fan B, fitting in said recess, as shown and described.

5. In combination with the recessed stick A and fan B, the slat or shield *b'* for concealing said recess, as described.

6. The elastic joint D, arranged as shown, for the purpose set forth.

7. The ring E, having the flange *e* cut away at *e'* for holding the fan closed, as specified.

145,667.—Lamp-Wick.—PEARL MARTIN, Medford, assignor to himself and EDWARD S. GILMAN, Somerville, Mass. Application filed September 10, 1873.

A glass tube is nearly filled with cotton, or other wicking, upon which is a stratum of clay, and above the clay a layer of asbestus.

Claim.—In a lamp or apparatus for generating and burning the vapor of a hydrocarbon fluid, the combination of the cotton, argillaceous, and asbestus mediums, arranged within a glass tube, *c*, in manner and for the purpose set forth.

145,668.—Seed-Separator.—FREDERICK W. MASH, Oshkosh, Wis. Application filed August 16, 1873.

A smooth cylinder is made to rotate by frictional contact with the outer surface of the hollow perforated screening-cylinder, for the purpose of keeping the perforations free from obstructions.

Claim.—The cylinder O, made to rotate by frictional contact with the hollow perforated cylinder I, constructed and operating as and for the purpose herein before set forth.

145,669.—Curtain-Fixture.—WILLIAM W. MASSEY, Baltimore, Md. Application filed November 12, 1873.

The cord-spool is tapered, and has on its inner end a flange and an annular groove, and is connected to the roller by a ferrule, and also by a screw, said screw forming the journal of the roller. A cord is attached to the spool, next to the flange, and bears at its other end a balancing weight.

Claim.—1. The tapered spool *a*, provided with the flange 1 and annular groove *a'*, in combination with the roller C, ferrule *c*,

and screw *b*, joining the spool and roller, and also forming the journal for the latter, substantially as described, and for the purpose set forth.

2. The combination of the tapered spool *e*, roller C, curtain A, cord *f*, and weight *g*, as and for the purpose set forth.

145,670.—Can for Paint, &c.—JOHN W. MASURY, Brooklyn, N. Y. Application filed November 13, 1873.

When the contents of the can are to be used the small soft-metal disk is cut, and the opening afterward closed by the valve.

Claim.—1. A soft-metal top or cover, B, capable of being cut with a knife, combined with the body of a can, A, by forming a flange, C, as described, on the can, and bending the edge of the cover over and under the flange, and securing it under the flange, substantially as described.

2. The valve-seat G, adapted to be secured to the side of a can or package, and provided with a removable disk or part, H, of soft metal, at or over the valve-opening in the seat, substantially as described.

3. The valve-seat G, adapted to be secured to the side of a can or package, in combination with the valve J, substantially as described.

145,671.—Rotary Engine.—WILLIAM P. MAXSON, Independence, Iowa. Application filed August 27, 1873.

The rollers are placed in slots in the periphery of the piston. Two plates are placed in recesses in each cylinder-head, and form annular recesses, in which the ends of the rollers turn.

Claim.—The wheel B, rollers C C, and wheels D and O, in combination with the case A, the several parts being constructed as and for the purpose set forth.

145,672.—Gas-Retort.—GEORGE A. MCILHENNY, Washington, D. C. Application filed October 10, 1873.

The door is hinged at one side, and provided at the opposite edge with a projecting lip, which engages with a cam having two inclines, one incline engaging over the lip to force the door down and hold it in place, the other to engage under the lip and force it out of contact with the mouth-piece.

Claim.—1. The neck-piece B, provided with the circular mouth H at its front end, and a flange for attaching it to the retort at its rear end, said part B being made D-shaped transversely, and having its floor or lower side flush with the floor of the retort, substantially as described.

2. The neck piece B, having its rear end of a form and size to fit the body E of the retort, and made to converge toward its front end, whereby a circular mouth and door of less diameter can be used, as set forth.

3. The locking-cam I, constructed and arranged to operate substantially as described, whereby it can be made to fasten and unfasten the door of a retort, as set forth.

145,673.—Automatic Attachment for Car-Couplings.—GEORGE H. MERRIAM, Portland, Me. Application filed January 9, 1873.

The box is rigidly secured in an ordinary draw-head. The pin-supporting block is thrust forward when the pin is raised by a spiral spring, which works on a rod attached to or forming part of the said supporting-block, and, when the link enters, the block is driven from beneath the pin, which falls through the link and effects the coupling.

Claim.—The combination of a box, A, cross-bar *a*, rod B, block C, having an overhang, C′, and spring *b*′, substantially as and for the purposes specified.

145,674.—Range.—LOUIS MEYER, St. Louis, Mo. Application filed November 1, 1873.

All the fire-places on each side of the two-flued chimney are connected by short flues with a common one in the rear of the range that connects with one of the chimney-flues. The canopy has an inner rim to prevent the escape into the room of fumes from the cooking utensils.

Claim.—1. A range consisting of the casing A, having one or more grates, B, wall C, flues *a* C¹ C², dampers *c*², and flue-plates *c*¹, as and for the purpose set forth.

2. The canopy D, having outer and inner rims *d* *d*′, as and for the purpose set forth.

3. The improved range, consisting of the casing A, wall C, canopy D, flues *a* C¹ C², flue-plates *c*¹, and dampers *c*², all constructed to operate as as and for the purpose set forth.

145,675.—Mason's Hod.—BARCLAY C. MONROE, Newburg, N. Y. Application filed October 6, 1873.

Claim.—As a new article of manufacture, a hod made from a single sheet of thin steel, and stamped into the required form, substantially as shown and described.

145,676.—Sad and Plating Iron.—LAWRENCE MOONEY, Allegheny, Pa., assignor to RAPHAEL MOONEY, same place. Application filed August 20, 1873.

The face of the iron is curved from the toe to the heel, and from side to side, and the rear end has a fluting-iron curved in the same form.

Claim.—1. A polishing-iron, A, the face of which is curved from its toe *a* to its heel *a*′, and in the opposite direction from its lateral face *c* to its face *c*′, said curves crossing at the center of the iron, substantially as described, and for the purpose specified.

2. A corrugated fluting-iron, B, the face of which is curved from its upper edge *b* to its lowest edge *b*′, and in the opposite direction from its lateral face *d* to its face *d*′, said curves crossing at the center of the iron, substantially as described, as and for the purpose specified.

3. A combined sad and polishing iron, having a double-reversed curved face, A, and double-reversed curved face B, the latter corrugated longitudinally, substantially as described, as and for the purpose specified.

145,677.—Ingot-Mold.—MATHEW T. MOONEY, Johnstown, Pa. Application filed August 19, 1873.

Claim.—A mold corrugated internally and externally in which to cast steel ingots, substantially as described.

145,678.—Railway-Switch.—THOMAS NEWMAN, New Orleans, La. Application filed September 18, 1873.

Certain cars which are to leave the main track are provided with a projection upon their forward and rear brake-shoe, said projection or lug acting against a projection on a slide, to which the movable-point rail is secured, thereby shifting the point to allow said car to leave the main track.

Claim.—The operation of railway-switches by means of the weight *d* to keep them open or closed, as may be desired, when the same are opened or closed in opposition to the said weight, by means of lugs or projections upon the brake-shoes of railway-cars, as described, and for the purposes set forth.

145,679.—Medical Inhaler.—JAMES CASPAR PARKINSON, Vineland, N. J. Application filed November 3, 1873.

A glass bulb has two contracted openings, and into one a tube is inserted by means of an elastic washer. This tube can be drawn out to different lengths required, and is used for insertion into the larynx for carrying the vapor of medicaments to be blown in by the mouth of the operator, placed at the opposite end of the large bulb, which is furnished with a sponge to hold the liquid used.

Claim.—The inhaler composed of the glass bulb A with its two openings, C and B, and the tube D, secured in the openings B by the elastic ring E, or its equivalent device.

145,680.—Refining Iron and Steel.—IRA M. PHELPS, Philadelphia, Pa. Application filed November 29, 1873.

Claim.—1. In an iron-refiner, a series of perforated tablets, C, the perforations through which gradually diminish in size, but increase in number from the highest to the lowest tablet of the series, in combination with an air-blast, substantially as described.

2. The combination, in a refiner, of an air-chamber, E, valves or dampers G, and a series of perforated tablets, substantially as described.

145,681.—Nail-Plate Feeder.—JOHN POULSON, Frenchtown, N. J., assignor of one-half his right to MUNSON BALDWIN, same place. Application filed November 22, 1873.

Two pins attached to the frame of the machine to work into opposite spiral grooves *d* in the periphery of the tube or nose-piece D, and turn it as it is reciprocated with the cross-head G. A spring, *k*, on a rod reciprocated with the cross-head G, to pass under one of the jaws that gripe the nipper-rod during each movement backward of the cross-head, lifts said jaw, causing it to press against and hold the nipper-rod, and thus feed it and the plate forward.

Claim.—1. The cylinder D, rotated by means described, and applied to a reciprocating cross-head, G, in combination with the jaws F, holding-spring *c*′, and head D′, as and for the purposes described.

2. The griping-jaws L L′, constructed as described, in combination with the spring-lifter *k* on a rod which is secured to the cross-head G, and with the centrally-perforated drum D and jaws F, substantially as described.

3. The cross-heads G G′, bed H, and guideways J J, pivoted to the brackets A¹ at *c*, in combination with the forked supports A², as and for the purposes set forth.

145,682.—Steam-Generator.—HENRY M. QUACKENBUSH, Herkimer, N. Y. Application filed November 1, 1873.

The annular steam and water chamber is provided with pendent pipes arranged around the fuel-reservoir and fire-place, through which a constant circulation is kept up. A metal guard is placed around the fire-place between the inner and outer arms of the pendent pipes, for the purpose of regulating the draft and increasing the circulation by confining the heat to said inner arms.

Claim.—1. The annular steam-and-water chamber A, combined with pendent pipes B B, which embrace the fire-place, and with the central fuel-reservoir D, which is embraced by the chamber A and pipes B B, substantially as herein shown and described.

2. The combination of the metal guard E with the pendent pipes *a* *b*, annular chamber A, and central grate C, all arranged as and for the purpose specified.

145,683.—Portfolio.—LOUIS F. RAYMOND, Bordeaux, France. Application filed October 24, 1873.

Claim.—A box or case within which are combined, as a part of the case, a roller or rollers with a sheet wound thereon through a slit in the case, and a folded sheet or sheets, the latter exposed by opening the cover, all substantially as shown and described.

145,684.—Tool-Holder for Lathes.—LEWIS REDER, Wilmington, Del. Application filed December 1, 1873.

A washer, D, fitted loosely around the tool-post, with its sides inclined in opposite directions, one higher or thicker than the other, and a shoe, E, upon which the tool rests, fitted through the slot in the post bearing upon the face of the washer, having the ends of its under side inclined, and one thicker than the other. With the thick end of the shoe on the thin side of the washer the tool will be level; but with the thin end on the thin side, the tool will be inclined.

Claim.—The combination, with the tool-holder A, of washer D and shoe E, the two having corresponding inclines *d* *d*′ and *e* *e*′, as and for the purpose described.

145,685.—Bridge.—ARNOLD REILING, Bellevue, Iowa. Application filed September 24, 1873.

The shoes and washer-plates are provided with grooves to drain the water from the joints, and thereby prevent rust and decay. The cap-pieces have downward projections for the same purpose.

Claim.—1. The metallic shoe D D′, constructed as described, with flanges *a* *b*, abutment *d*, and groove or gutter *e*, all substantially as and for the purposes herein set forth.

2. The washer *h*, provided with the groove *i* in its under side, for the purposes herein set forth.

3. The cap G, provided with projections *m* *m*, for the purposes herein set forth.

145,686.—Welding Copper.—EDWARD RENAUD, Washington, D. C. Application filed June 27, 1872.

Claim.—The process herein described for welding copper, consisting in bringing together the heated and cleaned surfaces to be united, covered with cryolite, or other similar anhydrous flux, and uniting by hammering, rolling, or pressing, substantially as set forth.

145,687.—Sewing-Machine.—ELTON F. RICHARDSON, Reading, Mass., assignor to GEORGE A. RICHARDSON, same place. Application filed August 16, 1873.

Improvement on Patent No. 128,173, and adapted to sew turned shoes. The vertically-moving guide serves as a guide for the edge of the sole and the guide-roll for the edge of the upper.

Claim.—1. In combination with the rotative thread-guide tube, the vertically-moving guide *r* at the foot of a tube or bar, *q*, working between the tube *s* and the needle-bar, substantially as shown and described.

2. In combination with the edge-guide *r*, the edge-guide or roll *w*, attached to the spring *v* beneath the work-plate, and extending up through said plate, substantially as described.

3. In combination with the edge-guide or roll *w*, the slide *z*, for depressing the guide *w*, substantially as described.

145,688.—Shutter-Worker.—THOMAS ROWE AND CHARLES T. ROWE, New York, N. Y. Application filed November 13, 1873.

A shutter-worker is constructed with a two-part case, the lower part of which is cast with lugs to hold it more firmly on the window-sill, and has likewise a journal-seat formed upon the inside wall, into which the end of a collared worm-shaft is loosely journaled.

Claim.—The combination of the collared worm-shaft C, for operating the pinion of a shutter-worker, with the two-part case A B, of which the lower portion A is cast with lugs or auxiliary feet *d*, and a journal-seat, *f*, formed upon the inside wall for loosely supporting the journal of the worm-shaft, while the upper part B has a depending flange for fitting within the case and resting upon the journals to retain them in position, all substantially as described and shown, for the purpose set forth.

145,689.—Furnace.—CHARLES SCHACHER and LOUIS FERET, Paris, France. Application filed October 24, 1873.

In place of fire-bars two hollow truncated cones are placed one above the other, an interval for the passage of air being left between them, a third cone acting as a cap. The air for the support of combustion is conducted from the fan or other device for creating draft through a pipe into the interior of said cones and through the perforations. The fine fuel is fed through a conduit directly upon the cones, a portion of it being carried by the force of the blast over a bridge into a combustion-chamber, where the premature exit of the fuel and combustible gases is prevented by a second hanging bridge.

Claim.—The combination of the furnace A, air-supply pipe B, hollow truncated cones C D, cone E, and feed-conductor G, the said pipe B opening below the said cones, and the conductor G opening above and upon the cone E, all substantially as specified.

145,690.—Cultivator.—GEORGE SLUSSER, Hillsborough, Ohio, assignor of one-half his right to C. S. BELL and JAMES H. ANDERSON, same place. Application filed August 20, 1873.

The beams of a parallel cultivator are only connected by an arched yoke, the horizontal ends of which are loosely pivoted in slots at the front end of beams. The whole is rendered steady by fixed bows or runners.

Claim.—The combination, in a double-shovel walking cultivator, of the beams B B, slotted at their front ends, the adjustable arched yoke D, adjusting-pins E, and curved fixed runners F, constructed, arranged, and operating as described.

145,691.—Cultivator.—ARTHUR C. SMITH, Fayetteville, N. C. Application filed September 15, 1873.

Diagonal braces, having swiveled screw-joints, connect each beam with the others, and also with the upper part of the handles.

Claim.—1. In an implement consisting of two or more plows, the combination of the diagonal braces D D, connecting the front parts of the beams with the upper parts of opposite handles, and the diagonal braces G G, connecting the upper and lower parts of opposite handles, substantially as herein set forth.

2. In an implement consisting of two or more plows, the combination of the diagonal braces D D, connecting the front parts of the beams with the upper parts of opposite handles, and the diagonal braces J J, connecting the front and rear ends of opposite plow-beams, substantially as herein set forth.

3. In an implement consisting of two or more plows, the combination of the diagonal braces D D, connecting the front parts of the beams with the upper parts of opposite handles, the diagonal braces G G, connecting the upper and lower parts of opposite handles, and the diagonal braces J J, connecting the front and rear ends of opposite beams, all substantially as herein set forth.

145,692.—Child's Carriage.—LEONARD SNOW and JOHN HASELTINE, Boston, Mass. Application filed January 20, 1873.

Claim.—The springs K, K′, and H, and axle L, combined as described, and for the purpose set forth.

145,693.—Machine for Hulling Rice.—HENRY B. STEVENS, Buffalo, N. Y., assignor to GEORGE L. SQUIER, same place. Application filed July 2, 1873.

Hulling-surfaces composed of wood. Strips of rubber arranged in hulling-surfaces for changing the position of the kernels. Devices for facilitating the removal of runner-stone.

Claim.—1. A hulling-mill in which the hulling or rubbing surfaces are composed of wood, arranged so that the end of the grain thereby will form the rubbing or hulling surfaces, substantially as hereinbefore set forth.

2. A hulling-mill in which one or both of the rubbing-surfaces are composed of wood, with strips or blocks of rubber arranged therein to facilitate the rolling or changing of the position of the kernel, as and for the purposes set forth.

3. In a hulling-mill, the combination of the metallic frame *b*′, formed with a series of radial pockets for the reception of removable wooden or rubber blocks, substantially as shown and described.

4. A hulling-mill in which the rubbing-surfaces of the runner are dressed with radial grooves, both sides of which are equally inclined, for the purpose of permitting a reciprocating rotary motion being given to the runner, substantially as hereinbefore set forth.

5. The combination, with the stationary hulling-block H, of the runner B, having a reciprocating rotary motion, whereby a reversed and twisting movement is imparted to the grain, thus changing the presentment of the grain to the hulling-surfaces, substantially as described.

6. The bottom L′ of the case, provided with opening *l* and removable discharge-spout *o*, to permit of the removal of the runner without detaching the bevel-wheel, substantially as hereinbefore set forth.

145,694.—Combined Punching and Shearing Machine.—CHARLY SWANSON, Newton, Iowa. Application filed November 4, 1873.

Claim.—The base A A, frame B B C C, the lever D having pendent branch E with flange *a*, and carrying a punch and a shear-blade, the lever F, link-coupling G, stay-plate *d*, die *f*, and holder H, when combined to form a punch and shears, substantially as described.

145,695.—Barrel-Tap and Faucet.—GEORGE B. TAYLOR, Oakland, Cal. Application filed April 12, 1873.

The passage leading to the faucet is controlled by a supplemental valve, which permits the insertion of the faucet into the tap without the escape of liquid or gas.

Claim.—1. In combination with a permanent barrel-tap and faucet, C, the valve *i* and screw *k* for operating said valve, by which the liquid is admitted to the faucet C, when said screw is entirely independent of the faucet, substantially as set forth.

2. The plug A, with its limited bore *b*, hole *d*, screw-rod A, valve *i*, and angular passage *e*, in combination with the faucet C, substantially as and for the purpose described.

145,696.—Machine for Cutting Nails.—MAGLOIRE THIBAULT, Hull, Canada. Application filed November 17, 1873.

A series of dies, arranged horizontally in a circle, for cutting nails from plates fed vertically from above, operated by a single eccentric revolving in the center, within a grooved ring, which groove receives the lugs upon the radiating arms on the inner movable dies. The feeding devices (one over each die) are raised and turned a quarter-turn after each cut, by means of collars and star-wheels on their shafts, operated upon by a cam and pin on a wheel below the dies and revolving with the central shaft.

Claim.—1. The combination, in a machine for cutting or punching nails and other articles from sheet metal, of a series of stationary die-holders, H, with a corresponding series of reciprocating die-holders, J, arranged radially from a common center, substantially as described, whereby the entire series may be operated by a single eccentric, *n*, as set forth.

2. The combination of the rotating eccentric *n*, laterally-moving ring *o*, and the slides or arms *s* provided with the lugs or projections *x*, all constructed and arranged to operate substantially as described.

3. The plate holder or feeder F, provided with apertures *f*, *r* the nail-plates, arranged at right angles, and the pivoted plates *f*, or their equivalents, in combination with the case G for feeding the plates to the dies, substantially as described.

4. The wheel B, provided with the cam *t* and arm I, in combination with the shaft P, provided with the collar *s* and star-wheel *f* for operating the feeders or plate-holders, as set forth.

5. The combination of the rotating plate holder or feeder F, the plate R provided with the slot Y, the stop *w*, and a pair of die-holders, all constructed and arranged to operate as set forth.

145,697.—Mechanism for Operating Screw-Propellers.—FRANCIS H. TOMAS, New York, N. Y. Application filed October 22, 1873.

Claim.—The combination of the propelling mechanism, consisting of propeller, shaft, and pinions, and the operating parts I J *e* K, the reversing and steering mechanism, the combination and arrangement being adapted for operation as herein shown and described, whereby a boat may be propelled, steered, and reversed by a single person, or steered and reversed by a single person, when propelled by other power, as and for the purpose specified.

145,698.—Hand Corn-Planter.—JOHN D. TRACY and JAMES F. PLATT, Sterling, Ill. Application filed July 19, 1873.

The bottom of the seed-box is made converging, and provided with a brush pressing against the seed-slide, which has an adjustable seed-cell, and slides vertically. The seed falls upon a scattering-board, and is caught upon the spring-valve, which forms one side of the opener. After the machine is thrust into the ground the plunger forces the seed into the soil.

Claim.—1. The scatterer D′, arranged as described, in combination with the pivoted dropper E D and a plunger, G, having a seed-cell in it, as set forth.

2. The double-inclined channel *b b b* at the bottom of the seed-box A, combined with the brush *c* and the seed-cell *e*, formed as described.

145,699.—Tobacco-Stripping Machine.—JOHN R. TUNNICLIFF, Van Hornesville, and JUDSON L. THOMSON, Syracuse, N. Y. Application filed January 2, 1873.

The tobacco-leaf is fed between two rollers having cutting-disks to remove the stems; then passes along, carried by two pairs of endless belts between four other pairs of rollers, when revolving brushes or scrapers loosen the leaf, and it passes on to a fan which automatically deposits the two portions of the stripped leaf in piles.

Claim.—1. In combination with the stripping-rollers A and B, the double belts *a a* and *b b*, and the cylinders C C and E E, arranged and operating substantially as described.

2. In combination with the continuous belts *a a* and *b b* and the fan V, the cylindrical brushes H H′, or the equivalent scrapers, placed and operating substantially as set forth.

3. In combination with the stripping and pressing devices, substantially as described, a booking-fan, V, as and for the purposes set forth.

4. The combination of double aprons *a a b b*, pressing-cylinders C C and E E, brushes or scrapers H H′, booking-fan V, and table T, all constructed, arranged, and operating substantially as described, and for the purposes set forth.

145,700.—Fire-Proof Building.—ERNEST VACHER, New York, N. Y. Application filed August 28, 1873.

Flues made of card-board or other similar material are placed in position where the partition-wall or ceiling is to be, and a two-part mold is placed around them. Cement, or any of the compositions of which artificial stone is made, is then filled in, and left to set, after which the mold is removed, and a hollow wall is obtained. The wall may also be cast in sections.

Claim.—A partition-wall or ceiling cast in one or more pieces around a series of ventilating-flues, set into their proper places before the material composing the partition-wall or ceiling is applied, substantially as set forth.

145,701.—Screw-Plate.—THEODORE L. VON DORN, Omaha, Neb., assignor to himself and ALBERT J. POTTER, same place. Application filed November 22, 1873.

Plate C is rotated within the ring B, and has an oblong slot, which, by turning the plate to one position, will coincide with the dies underneath it and admit of their removal, or if turned to another position will not coincide, and will thus prevent the dies from falling out.

Claim.—1. The combination of screw-plate A, ring B, and rotating plate C, substantially as and for the purpose described.

2. The rotating plate C, provided with spring-handle D, in combination with ring B, with stop *i*, all arranged in connection with a screw-plate, substantially as and for the purpose set forth.

145,702.—Process of Making Lamp-Shade Supports.—WILLIAM M. WHEDEN, Waterbury, Conn., assignor to THE BENEDICT & BURNHAM MANUFACTURING COMPANY, same place. Application filed November 11, 1873.

The plate is inserted between the dies R S T, when the annular die S is brought down, cutting out the blank, and molding the outer ring, and holding it firmly until the interior die R is brought down to corrugate, and thereby stretch the radial arms. The blank is then placed between a second pair of dies, which shape it up by cutting out and molding the inner ring, and distending, carving, and longitudinally corrugating the arms.

Claim.—The process herein described for the manufacture of shade-rings.

145,703.—Combined Secretary, Wardrobe, and Bedstead.—ALONZO WEEKS, Washington, D. C. Application filed October 3, 1873.

The lower portion of an upright wardrobe is adapted to extend forward into a bedstead, the sides of which unfold on vertical edges. There are receptacles for clothing, as also compactly-arranged necessaries for an invalid.

Claim.—1. The combined secretary, wardrobe, book-case, and writing-desk, provided with the chambers G H, chair I, and the detachable folding bedstead, substantially as and for the purpose described.

2. In combination with a secretary having a folding bedstead constructed as described, the auxiliary jointed sections, substantially as and for the purpose specified.

3. The folding bedstead, provided with a head-board having a hinged top section, which is adapted to be elevated into a vertical position to form a prolongation of the base of the head-board, and of being turned down against the side of the same when not in use, and of being retained in a horizontal position to serve as a work-table, as herein shown and described.

4. The combined seats and handles, pivoted to the head-board of the bedstead, or lower panel of the secretary, as and for the purpose set forth.

145,704.—Still for Alcoholic Spirits.—CARL ERNST WERNER, Brookfield, Mo. Application filed October 17, 1873.

Claim.—The combination and arrangement of the still A, condenser B, vapor-pipe *r* leading from top of still to bottom of condenser, pump *k*, descending coil *d*′, and conducting-pipes *d d*², all as herein described, for the purpose set forth.

2. The combination of the pump *n* and pipe *n*′ with the condenser B and still A, for taking low wines from one to the other, as explained.

145,705.—Cement for Slate Roofing.—HORACE WHEELER, Burlington, Vt. Application filed September 8, 1873.

Roofing-slates are attached, without overlapping, by a cement compound of ground clay, ground plaster-of-paris, ground slate, coal-tar, and linseed-oil placed between the foundation and the slates. The joints between the edges of the slates are also filled with the same composition.

Claim.—The roofing-cement composed of ground clay, ground plaster-paris, ground slate, coal-tar, and linseed-oil, and used with a paper or other foundation, and blocks or slabs of slate, substantially as herein set forth.

145,706.—Game Apparatus.—JOHN C. WILHELM, Shaver's Creek, Pa. Application filed November 8, 1873.

A game played with pieces upon a board of a hundred squares, in the nature of chess, but having the pieces (instead of the monarchic titles of chess) named after the officers, arms, and war material of a republic.

Claim.—The game apparatus herein described, consisting of the board and pieces, substantially as and for the purpose specified.

145,707.—Distilling Petroleum.—ASA W. WILKINSON, New York, N. Y. Application filed July 23, 1873.

Claim.—The within-described process of distilling petroleum, by injecting into and through the liquid mass contained in the still a gas or vapor which will not produce combustion, and will not enter into a deleterious combination with the product of distillation, substantially as set forth.

145,708.—Harness-Trace.—ROBERTS WILLIAMS, Philadelphia, Pa. Application filed December 8, 1873.

Claim.—1. The combination of the leather trace A, metal plate B, and the staples C C, said staples passing over the plate and their pointed ends *a a* forced through the leather and clinched on the opposite side, all substantially as herein set forth.

2. The combination of the leather trace A, metal plate B, staples C C, and strap D, all constructed substantially as and for the purposes herein set forth.

145,709.—Device for Suspending and Exhibiting Placards, &c.—EDWIN WORRELL and BARTON C. MOORE, Philadelphia, Pa. Application filed June 21, 1873.

A rod hooked at bottom and curved at top to form a jaw. Another jaw is pivoted to it, and kept closed by a descending arm held open by a spring. Round this a loop of a rod is passed, which, when drawn down, contracts the spring and opens the jaw. There is a projection on the end of each jaw to form a clasp for attachment to moldings, &c.

Claim.—1. In a suspension-hook, the combination, with the jaw B, extension A, jaw C, extension D, and spring E, of the sliding rod F, having a stirrup, G, moving on the extension D, for opening the jaws B C, substantially as and for the purpose described.

2. The jaws H, projecting from the jaws B C, and spring E, in combination with said jaws B C, extensions A D, rod F, and stirrup G, substantially as and for the purpose set forth.

145,710.—Wrench.—SYLVESTER J. WRIGHT, Ellsworth, N. Y. Application filed October 15, 1873.

A brace is provided with a transversely-slotted bar, through which the curved arms that embrace the nut are arranged to slide, and thereby made adjustable.

Claim.—The brace A, having firmly attached thereto the flanged and slotted plate B, and plate D, adapted to slide freely thereon, in combination with curved jaw C hinged to plate D, and sliding in the slotted plate B, substantially as herein described.

145,711.—Guide for Cutting Photographic Pictures.—LEWIS T. YOUNG, Philadelphia, Pa. Application filed October 16, 1873.

Recesses are formed at the corners to allow the cutter employed to pass the right-angle line, and thus leave the corners of the picture, mat, &c., square.

Claim.—A cutter form or guide for cutting photographic pictures, mats, &c., having its angular corners recessed, slotted, or notched, as shown at *b b*, substantially as and for the purpose described.

145,712.—Head-Block for Saw-Mills.—GUSTAVUS ZSCHECH, Indianapolis, Ind. Application filed November 8, 1873.

The setting-shaft is operated through a system of bevel-gears moved by a hand-lever, to which is attached two segmental gears.

Claim.—1. The wheels *d d g g*, applied on the shaft D by means of double-headed keys *j j*, the wheels *d d* being acted on by springs *s s*, and the wheels *g g* engaging with segments F F on lever F′, in combination with saw-mill head-blocks, substantially as described.

2. The pins G G and their finger-keys G′ G′, in combination with the wheels *d d g g* and the springs *s s*, substantially as and for the purposes described.

3. The combination and arrangement of the wheels *a b*, yoked levers *c*, wheels *d d g g*, and segments F F on lever F′, and crank J on shaft D, as described.

REISSUE PATENTS.

5,683.—Cradle.—FRANKLIN CHICHESTER, Milwaukee, Wis., assignor to himself and LEMUEL A. CHICHESTER, Phœnicia, N. Y.—Patent No. 141,033, dated July 22, 1873. Application filed October 27, 1873.

The body of the cradle rests on a vertical pivot affixed at each end to the upper part of the stand. By means of a lateral band-spring at each pivot, the cradle oscillates on receiving an impulse.

Claim.—A child's cradle with pivots and springs placed between the cross rails and base-pieces, to support and allow the cradle to swing thereon, substantially as shown and described.

5,684.—Illuminating Vault-Cover.—WILLIAM DALE, New York, N. Y., assignor of two-thirds interest to WILLIAM S. O'BRIEN.—Patent No. 112,428, dated March 7, 1871. Application filed November 12, 1873.

A perforated vault-cover containing illuminating-lenses, which are secured in position by a filling material flush with the upper edge of the plate and the top of the lenses. Small ventilating-openings are made in the outer edge of the plate.

Claim.—1. A cover for openings in pavements, constructed of a metallic dish, A, having holes in the bottom plate A^2, and bull's-eyes B, which are surrounded by a material which, with the bull's eyes, forms the entire upper surface within the rim A^1, substantially as described.

2. A cover for openings in pavements, constructed of a metallic dish, A, having holes in the bottom plate A^2, and bull's-eyes B, which are surrounded by a material which, with the bull's-eyes, forms the entire upper surface within the rim A^1, and also having openings for ventilation through the vertical portion of the metallic dish, substantially as described.

5,685.—Spring.—FRITZ K. JOHN, Moscow, Russia.—Patent No. 134,673, dated January 7, 1873. Application filed November 24, 1873.

Claim.—A spring composed of two or more annular disk-shaped plates, with radially-arranged corrugations *b b* between outside and inside flanges *c d*, and bent to assume a conical shape, and alternately connected around their inner and outer peripheries, substantially as shown and described.

5,686.—Magic Lantern.—LORENZO J. MARCY, Philadelphia, Pa.—Patent No. 77,300, dated April 28, 1868. Application filed May 31, 1873.

Claim.—1. A magic-lantern box constructed, substantially as hereinbefore described, with a flame-chamber of metal surrounded, or partially surrounded, by an outer casing of non-conducting material.

2. A magic-lantern box constructed, substantially as described, with a cylindrical shell, of a diameter only slightly exceeding that of the reflector and lenses which close its ends, for the purposes specified.

3. The combination, substantially as described, in a magic lantern, of the base, the supporting-standards, the lantern-box supported above the base, and the removable caps containing the reflector and slide, and closing the ends of the box.

4. The combination, substantially as set forth, in a magic lantern, of a tubular body, having a reflector at one end and lenses at the other, with a lamp-chamber and chimney interposed between the reflector and lenses, for the purposes specified.

5. The combination of the tubular double-walled lamp-body, the reflector-cap, and the glass interposed between the reflector and lamp, these members being constructed and operating in combination substantially as set forth.

6. The connection of the objective tube with the base by detachable fastenings, substantially in the manner described, to admit of its easy removal and replacement.

7. The combination, substantially as set forth, of a lantern-box, a base, and an objective tube, whereby the base alone forms the connection between the tube and box, and an unobstructed space is left between them for the slides.

8. The combination of the lamp-body, the detached tube-plate, and the slide-frame moving in guides in said plate, these members being constructed and operating in combination substantially as set forth.

9. The combination, substantially as set forth, in a magic lantern, of a supporting-base, an elevated lantern-body overhanging its supports, and a slide-frame mounted on said base independently of the lantern-body.

10. The combination, substantially as set forth, of the base, the lantern-body, the objective tube, the slide-frame, and the stop which limits the movement of the slide-frame.

11. The combination, substantially as set forth, of the slide-frame and its shifting-lever.

12. The combination, substantially as before set forth, of the base, the elevated lantern-body, the slide-frame, the shifting-lever, and the stop, for the purposes described.

5,687.—Spark-Arrester for Locomotive-Engines.—WILLIAM MCKELVY THORNTON and THOMAS ALFRED BUCKLAND, St. Louis, Mo.—Patent No. 132,877, dated November 5, 1872. Application filed December 1, 1873.

The smoke and sparks, after they leave the smoke-stack, are conducted through a closed cap on top of said stack, in which are arranged deflecting-plates and draft-regulating valve, and deflected by a curved plate downward and backward into a reservoir covered with wire netting, the shield and deflectors therein directing them downward and preventing the rapid destruction of the cone and reservoir.

Claim.—1. The imperforated cap B, having curved deflectors *g g* applied within it, in combination with the stack A and reservoir E, the latter having a perforated top, all arranged substantially in the manner described.

2. The combination of the deflector *c*, curved deflectors *g g*, and the imperforated cap B, substantially in the manner and for the purpose described.

3. The combination of the deflector *c*, imperforated cap B, stack A, and reservoir E, the latter having a perforated top, and all arranged, constructed, and operating substantially as and for the purpose shown and specified.

4. The adjustable valve *b*, in combination with the cap B, smoke-stack A, and reservoir E, substantially as described.

5. The combination of the deflecting and receiving reservoir E, having a perforated top, the conical connecting-chamber C, formed and located as described, imperforated deflecting cap B, and smoke-stack A, substantially as described.

6. The combination of the imperforated cap B, smoke-stack A, and reservoir E, the latter having a perforated top, all constructed, arranged, and operating as and for the purpose shown and specified.

7. The shield A, arranged in the reservoir, in combination with the close cap B, substantially as described.

8. The deflector *c*, combined with the shield A, and arranged substantially as described.

9. The deflector *f*, arranged as described, in combination with the close cap B and shield A, substantially as described.

5,688.—Constructing Wire Fence.—JOSHUA W. RAFFLETY, Farmer Village, N. Y.—Patent No. 116,755, dated July 4, 1871. Application filed May 22, 1872.

A sled laden with rocks serves as an anchor in advance of the work, that the belaying operation may be rendered facile. As the work proceeds the sled is removed with its load or emptied, to be refilled at the next place of anchorage.

Claim.—1. The combination of a movable weight, D, the windlass E, and double-tree or evener G, or its equivalent, to operate upon the wires *c c c′ c′*, for maintaining equal tension and adjustment to the taking up of the wires while weaving in the pickets or palings *b*, substantially in the manner herein shown and described.

2. The combination of a movable weight, D, and double tree or evener G with the hand-levers H, to operate upon the wires *c c c′ c′*, for maintaining tension upon the wires, and twisting or crossing the same while weaving in the pickets, substantially as described.

3. The double-tree or evener G, in combination with the windlass E for maintaining uniform tension on the wires *c c c′ c′* while weaving in the pickets or palings, substantially as described.

4. The sheath or holder *i*, in combination with the open-headed spike or hook J, to receive, support, and protect the wires *c c c′ c′*, substantially as described.

5,689.—Gage for Sewing-Machines.—CHARLES C. ROBERTS, Perrysburg, Ohio.—Patent No. 124,086, dated February 27, 1872. Application filed June 25, 1873.

This device is adapted to guide the overlapped ends of pieces of wood or other suitable material to be united by stitches in the formation of boxes for fruit, &c.

Claim.—1. The gage herein described, consisting of the shouldered finger B and the finger C, adapted to be secured to an arm, A, as and for the purpose set forth.

2. In sewing-machine gages for sewing boxes, two fingers, B C, or plates so arranged in relation to each other that the material whereof the boxes are made is lapped and gaged between said fingers for sewing, substantially as and for the purpose set forth.

5,690.—Extension Foot-Rest for Chairs.—JOSEPH H. TRAVIS, Charlestown, Mass.—Patent No. 132,503, dated October 22, 1872. Application filed July 22, 1873.

The rest-frame is suspended beneath the chair-frame by pendent levers or rods, so that it can be inclosed within the legs of the chair or drawn out therefrom in front of the chair, and the foot-rest is pivoted between the side rails of the rest-frame, so that it can be folded back between said rails or advanced thereon as an extension of the device.

Claim.—1. The rest-frame D, suspended beneath the chair by the levers I I for the movement described, in combination with the foot-rest E, pivoted between the side rails of the rest-frame, and adapted to lay within the same, and when unfolded to be retained in a firm position, substantially as described, and for the purpose set forth.

2. The frame D, composed of the side rails F F, rounds G G', and reversible foot-rest E, in combination with the suspended levers I I and cross-rod a, substantially as shown and described, for the purpose specified.

5,691.—Revolving Fire-Arm.—ROLLIN WHITE, Lowell, Mass.—Patent No. 143,394, dated September 30, 1873. Application filed November 10, 1873.

Claim.—1. In a revolving fire-arm, the combination of a piston, having and operated by a pawl, and a cartridge-extractor disconnected from the mechanism for operating it, substantially as and for the purposes set forth.

2. In a revolving fire-arm, the combination of a piston having a pawl connected therewith, a cartridge-extractor, and a cam stationary on the lock-frame, substantially as and for the purposes set forth.

3. In a revolving fire-arm, the combination of a piston having a pawl, a cartridge-extractor disconnected from the mechanism for operating it, and a cam or stop stationary on the lock-frame, substantially as and for the purposes set forth.

4. In a revolving fire-arm having a removable extractor, an operating-piston made separate and independent from the extractor, and operating in a line therewith, substantially as and for the purposes set forth.

5. The adjustable stop S for automatically releasing or unshipping the pawl 1 at any desired or predetermined point in the act of tilting the barrel, as described.

6. The cam *l*, in combination with the pawl 1, stop S, and piston for operating the cartridge-extractor, substantially as specified.

7. The combination, with a hinged barrel of a fire-arm, of the pivoted spring locking-bolt *i*, having a projection, *k*, the slotted spring locking-plate A, and the projections *j* on the breech, all substantially as and for the purposes set forth.

8. The lever-cam *i*, in combination with the spring-catch which locks the cylinder, substantially as herein set forth.

9. The combination, in a revolving fire-arm, of the hammer a and spring-bolt *b*, having the double bearing shown, whereby a rebounding lock or hammer is obtained, as set forth.

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The statement gives the approximate number of drawings of these classes.

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WEARING APPAREL; including clothes-making, patterns, and work-table appliances, (excepting head and foot coverings, hoop-skirts, corsets, and paper garments)	1,600
STATIONERY; including desk and office supplies, stamps, tickets, advertising, and signs	1,400
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Copy of classification in full for the use of subscribers furnished on application.

Aërated liquor apparatus	1	Leather	92
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COMMISSIONER'S DECISIONS.

R. A. STEWART.—*Extension.*

[*In the matter of the application of R. A. Stewart, for extension of patent No.* 22,590, *dated January* 11, 1859, *for* IMPROVEMENT IN CLARIFYING CANE-JUICE.—*Decided December* 12, 1873.]

An extension refused for want of novelty in the alleged invention. When a complete application for patent, in due form, has been accepted and acted upon by the Office, it is to be presumed that it sets forth a completed invention, and mere delay in prosecuting an application erroneously rejected, where it had not been withdrawn or expressly abandoned, would not, previous to the act of 1870, work abandonment.

LEGGETT, *Commissioner:*

This application for extension is made under authority of an act of Congress approved March 3, 1873, which authorizes the Commissioner of Patents to consider the case as if the patent had not expired.

The invention, as described in the patent, "consists in passing or disseminating, in any convenient manner, throughout the saccharine matter, sulphurous acid or gas produced by a slow combustion in a nearly closed retort of sulphur or common roll brimstone."

The inventor says—

There are obviously various modes of producing this gas and of disseminating it through the saccharine liquid, all of which are useful, and will involve the principle or character of my invention; and I leave to all the adoption of such of the obvious modes of effecting the object as may be preferred.

He then proceeds to describe the means or apparatus he prefers.

What he claims "as new in the defecation and clarification of cane-juice and other liquid or semi-liquid forms of saccharine matter, is disseminating throughout the same sulphurous gas or sulphurous-acid gas, for the purposes herein set forth."

It does not appear in evidence that the particular apparatus described has ever gone into use, although the mode of clarifying cane-juice by the dissemination through it of sulphurous gas has been extensively practiced, and that is the subject of the claim. The Examiner reports against the novelty of this mode of defecation, and refers to the patent of Brashear, granted December 6, 1859. It appears the application for this patent was filed in the Office February 27, 1851, and in May following, rejected for want of novelty.

The patent of Stewart, at present under consideration, was granted—inadvertently, as would seem from subsequent events—without an interference with Brashear's pending application. Soon afterward the widow of Brashear duly renewed this application, and while it was under consideration in 1859 it was mislaid and could not then be found, although it was afterward discovered. In the mean time a sworn copy of the original application was produced by Mrs. Brashear and admitted by the Office, and, upon it, after amendment, the patent was granted. It is necessary to examine and compare the original specification and the patent, as it is intimated in argument in behalf of Stewart that the amendments made in 1859 were suggested by Stewart's invention. The original statement of Brashear's invention was as follows:

The nature of my invention is the applying directly the fumes of sulphur to the cane-juice, or other liquids containing the saccharine principle, by means of which a cheap, perfect, and expeditious manner, the defecation and clarification, by precipitation, filtration, or skimming of the cane-juice or other substance containing the saccharine principle, may be effected.

In connection with this statement he described no apparatus, but suggested that appropriate mechanical means would be apparent, and that the juice or other liquid could be sufficiently impregnated by being made to fall in minute particles through a space of a few feet filled with the fumes, or that the fumes might be driven into the liquid by a force-pump. This clearly comprehends the idea of *disseminating* the sulphurous gas in the saccharine matter, which is all of the alleged invention of Stewart.

His original claim is "the direct application of the fumes of sulphur to the cane-juice or other liquid containing the saccharine principle," &c.

The statement of his invention in his patent is as follows:

The nature of my invention consists in subjecting sugar-cane juice or other saccharine liquid to the direct action of the fumes of burning sulphur, such liquid being employed in a diffused state, so that every portion of the whole body of liquid being operated upon is brought in contact with the same almost simultaneously, and thus a cheap and expeditious defecation and clarification, by either precipitation, filtration, or skimming of the juices, is effected.

The claim of his patent is—

Subjecting sugar-cane juice or other saccharine liquid to the direct action of the fumes of burning sulphur, such liquid being employed in a diffused state, as set forth, so that every or nearly every portion of the whole body of liquid is brought in contact with the same almost simultaneously, substantially as and for the purposes set forth.

No apparatus was definitely described in his patent by means of which his invention could be carried out, and this omission was afterward supplied by reissue. The original patent set forth that—

No description of the mechanical means of apulying it is deemed necessary, since it must be apparent they may be indefinitely diversified; suffice it to say that the juice or other liquid may be impregnated to the desired extent with the fumes by being made to fall, through a space (filled with the fumes) of a few feet, in minute particles.

It is obvious that the original statement of the invention, as above quoted, justified the claim originally granted, and it is equally obvious that that claim is a complete anticipation of the claim and alleged invention of Stewart. This application, therefore, must fail, as the Examiner has reported, for want of novelty in the invention, and it becomes unnecessary to consider any other question in the case. The Examiner suggests that the only way to avoid the conclusion that Stewart was anticipated is to regard Brashear's invention as "an abandoned experiment." This could not well be done, as the question was passed upon by the Office in granting the patent and reissue, and besides, when a complete application, in due form, for patent has been accepted and acted upon by the Office, it is to be presumed that it sets forth a completed invention, and mere delay in prosecuting an application erroneously rejected, when it had not been withdrawn or expressly abandoned, would not, previous to the act of 1870, work abandonment. But notwithstanding the want of novelty in Stewart's invention, it appears he has netted over $45,000 from it, which, perhaps, ought to be considered an adequate compensation, even if he were the first inventor.

The extension is refused.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, DISTRICT OF CONNECTICUT.

SARVEN *vs.* HALL & CO.

[*In equity.—Before Woodruff, Judge.*]

A patent for a carriage-wheel in which the spokes have tenons inserted in the hubs, and are sustained against pressure endwise by the shoulders of the tenons, and laterally by collars on each side bolted together, is infringed by a similar wheel in which the spokes are made tapering without shoulders, and enter into corresponding mortises in a solid collar and in the hub, and are sustained endwise on the inclined sides of the mortises.

The defendants were led into adopting this form in consequence of their employment of the shoulders having been urged by the patentee's counsel in a former suit as constituting the breach of the patent, and though an injunction was ordered against them, it was without costs.

[*John S. Beach, Samuel S. Fisher, Charles Keller,* and *Charles F. Blake,* for the complainant.

Charles R. Ingersoll, Benjamin F. Thurston, for the defendant.

WOODRUFF, *Circuit J.*

This suit is brought to restrain an alleged infringement of a patent for an "Improvement in Carriage-Wheels," reissued to the plaintiff, September 6, 1870, and on the 8th of June, 1871, extended for the term of seven years from the 9th day of June, 1871, on which day his original patent, granted June 9, 1857, expired. In a former suit between the same parties in this court, heard in December, 1871, and decided at the April term next following, it was held that the plaintiff's patent was infringed by a carriage-wheel which the defendant was then and theretofore manufacturing, and a decree was entered in favor of the complainant against the defendant for an injunction and account of profits, &c.

A change was thereupon made in the construction of the carriage-wheels manufactured by the defendant, which, on its behalf, is claimed to avoid the decree in the former case and the patent itself, and to relieve the defendant from the charge of infringement. The plaintiff, on the other hand, insists that notwithstanding such change the wheel which the defendant is now manufacturing infringes his patent, and upon that ground he has filed the present bill, and moves for an injunction to restrain the manufacture of such wheel.

In the former suit the defendant's wheel was held to infringe the second claim in the plaintiff's reissued patent, which is in these words—

Also a carriage-wheel constructed with a mortised wooden hub with tenoned spokes, and with flanges which embrace the faces of the spokes in the immediate vicinity of the hub, and are connected together so as to form a metallic band through which the spokes extend into the mortises in the wooden hub, substantially as before set forth.

The plaintiff was not held to have an exclusive right to the use of either of the distinct devices mentioned in this claim. Each was held upon the evidence to be old—that is to say, a carriage-wheel with a wooden hub, a carriage-wheel with a wooden hub and tenoned spokes, a carriage-wheel with flanges on each side of the spokes bolted together to assist in resisting lateral strain, and connected together by bolts so as to form a metallic ring through which the spokes passed, were neither of them new. But it was found and held upon the evidence that a carriage-wheel combining all these was the invention of the complainant, and was embraced within the above-recited second claim of his patent.

In respect to this combination, the wheel of the defendant differed from the plaintiff's only in this, that instead of flanges placed separately upon each side of the spokes and bolted together through or between the spokes, the flanges used by the defendant were cast in one piece, the annular sides being connected by cross-pieces which passed between each two spokes, thus forming what was appropriately termed a mortised annulus, through the mortises of which the spokes were driven and into the mortises of the hub. And it was insisted that, thus constructed, the double flange or

mortised annulus, by means of the tapering sides of the mortises therein which firmly grasped the spokes, served to bear the pressure or thrust, endwise upon the spokes, relieved the shoulder, bearing on or adapted to bear on the hub, and so constituted a distinct device from the mere flanges bolted together for resisting lateral pressure.

In relation to this point, expert witnesses were examined on the behalf of the complainant, and their testimony went very far to show that if the defendant's wheel had been constructed without shoulders on the spokes, bearing, or which in use might be brought to bear, upon the wooden hub, the wheel would not infringe the complainant's patent—as, for example, if the end of the spoke entering the hub were uniformly tapering. And on the argument of the cause much stress was laid by the complainant's counsel on the fact that the spokes in the defendant's wheel had, like those of the plaintiff, shouldered tenons, the shoulders passing through the metallic mortises and bearing on the wooden hub.

The court were of opinion that the circumstance that the sides of the openings in the mortised annulus were tapering so as to furnish an endwise bearing to the spokes, did not render it a distinct device in such sense as to relieve the defendant from the charge of using the patented combination; that in their use, and for the purpose for which the plaintiff's flanged collars are useful, the sides of the mortised annulus are identical in the office they perform—viz, to sustain the spokes against lateral strain; and that in the mechanical construction of the parts that perform that office, they are substantially the same. That the crosswise partitions and form of tapering mortises may be improvements upon the plaintiff's flanged collars bolted together, but the mortised collars do nevertheless operate, for all the purposes for which flanged collars are used, in precisely the same way. Conceding, for the purposes of the case, that the tapering sides of the mortises formed by the cross-pieces enabled the mortised collar to perform a function of which the plaintiff's collars were incapable—viz., to grasp firmly the end of the spoke and sustain it against the endwise pressure, it was none the less an equivalent of the plaintiff's flanged collar in all the functions, mode of operation, and construction of the latter, although by an additional feature it had also a further useful function; and as an equivalent in the combination it did not relieve the defendant from the charge of infringement.

Possibly this holding may be deemed in conflict with some observations in the opinion delivered in the Supreme Court of the United States in *Rees vs. Gould,* (15 Wallace, 187; 2 PATENT OFFICE GAZETTE, 624;) but it is certainly in no conflict with the actual decision made in that case, which involved no such question, and the opinion of this court in the former suit will govern the decision of the present motion.

On such former trial, however, the claim in behalf of the defendant was urged that the tapering sides of the mortises in the mortised collars were not merely auxiliary to the shoulders near the end of the spokes in resisting the endwise bearing, but that in fact such shoulders were unnecessary, that the mortises in the metallic ring, in fact, sustained all of that pressure, and examples, in which some of the spokes were not driven in so far that these shoulders reached the wooden hub, were exhibited in proof thereof. This was strenuously denied by the complainant and his witnesses, who claimed and testified that shrinkage of the spokes would render the support derived from the bearing of the shoulder upon the wooden hub indispensable, and that the instances in which the shoulder did not, in the examples produced, reach so far, were exceptional, and, in fact, merely occasional imperfections in the manufacture; otherwise why did the defendant make all his spokes with shouldered tenons?

It will be thus seen that on such former trial the question whether the defendant's wheel had tenoned spokes with shoulders thereon bearing upon the wooden hub to give greater strength to the spoke and sustain or assist in sustaining the endwise thrust or bearing when in actual use, was made to assume great apparent importance, and in view of the testimony of the complainant's experts above mentioned, and the apparent concessions of his counsel, it is not at all strange that the defendant was led to the belief that if he should construct spokes so that their shoulders should not bear on the wooden hub, and practically illustrate and verify in his new manufacture his claim that his mortised collar, by the tapering sides of the mortise, so grasped and held the spokes as in fact to sustain all of the endwise bearing or thrust, he should avoid any infringement of the complainant's patent. I cannot resist the impression that for this belief of the defendant the complainant and his witnesses and counsel are largely responsible. The defendant, therefore, after the decree, cut away, in part, the shoulders of the spokes thereafter used, by rounding off the corners, so that, as is now claimed, there is no shoulder at the head of the tenon which rests on the wooden hub.

The complainant, however, still insists that what remains constitutes a shoulder which, though it may be less effective, does nevertheless perform the office of a shoulder at the head of the tenon, whenever and so soon as by very slight shrinkage or for any other reason the spoke, by force acting endwise thereon, is driven, in the slightest degree, inward toward the center of the wheel. And the defendant, on the other hand, with his witnesses, denies that the spoke can be driven in so as to produce such bearing, the tapering sides of the mortises in the metallic collar being absolutely and invariably sufficient, as his wheels are constructed, to sustain the spoke against such force or pressure.

I shall not on this motion attempt to settle this disputed question. I thought, when considering the former case, and I now think, that undue prominence was given to the subject of the bearing of the shoulders of the spokes on the wooden hub, as compared with their bearing, whether more or less completely, upon the tapering sides of the mortises in the metallic ring.

That prominence arises chiefly out of the fact that the patented combination as described in the second claim of the complainant's patent is "a mortised hub with tenoned spokes, with flanges which embrace the faces of the spokes * * * so as to form a metallic band through which the spokes extend into the hub, substantially as before set forth," and out of the suggestion thereupon that there are no tenoned spokes in any proper sense, unless there be a shoulder at the head of the tenon bearing upon the substance or

object in which the mortise is made to receive the tenon. That this suggestion gives the ordinary meaning of the term "tenoned," is unquestionable, although the word "tenon" has not derivatively any such necessary inherent signification. But let it be assumed that in mechanics the word "tenoned" imports not merely a tenon to be inserted in a mortise, but, as a correlative or adjunct, a shoulder to sustain the thing tenoned against endwise pressure, as illustrated in tenoned posts inserted in the sill of a building, tenoned braces to strengthen an angle in a frame, and the like. There is no necessary or prescribed form either to the tenon or to the shoulder. The tenon may be straight, curved, or dovetailed. The shoulder may be rounded or square; it may be at a right angle with the tenon, or at an acute or oblique angle.

Let it then be further assumed that the defendant has done that which the complainant denies—viz., so constructed the spokes in the new manufacture that their shoulders do not now bear on the exterior surface of the wooden hub.

What has the defendant done? The defendant's spokes have still both shoulders and tenons in the literal sense of the word. The shoulders are made not at right angles to the tenon; they do not bear directly on the wooden hub, but they do bear and do sustain the spoke against endwise pressure—the very office claimed for the shoulder of a tenon. They bear upon the superimposed metallic collar, and yet are within that collar and receive the same support against lateral strain which the flanged sides of that collar give, and are intended to give, and as the flanged collars do in the complainant's wheel.

True, the defendant, if it has in fact made the whole bearing-shoulder of its spokes bear on the tapering sides of the metallic mortises, has created a difference between its wheel and that of the complainant, but not a difference in office or in mode of operation. It has still tenoned spokes within the literal reading of the complainant's specification and claim, and tenoned spokes within the substance of the complainant's invention. True, they are not specifically like the spoke shown in the complainant's drawing, nor are they specifically like the tenoned spokes in an ordinary wheel; but, in considering the validity of the reissued patent, the court did not, on the former trial, deem the plaintiff, in the use of flanges in the combination in question, confined to spokes tenoned *as in the ordinary wheel*, as seemed on this argument to be assumed by the defendant's counsel. The language of the opinion may have tended to mislead, but the ordinary wheel was only mentioned for illustration. The original patent declared that the patentee claimed the use of the flanged collars, when used in connection with a wooden hub, if the spokes are arranged as therein set forth, or in any other manner—a claim doubtless too broad, but corrected in that respect in the reissue. I cannot, therefore, resist the conclusion that, within the substance of the plaintiff's second claim, the defendant's spokes are tenoned spokes, and therefore as truly within this second claim of the complainant's patent, whether the endwise pressure upon the spokes is received and borne upon the tapering sides of the metallic mortises or on the exterior surface of the wooden hub.

There is another view of the subject, which involves the doctrine of equivalents in a combination which tends to the same conclusion, unless the observations made in the case of *Rees* vs. *Gould*, above cited, be deemed to impair its force. The complainant is entitled to the exclusive use of the combination described in his second claim. The several devices combined by him were, as heretofore held, none of them new. Among those devices are tenoned spokes; and let it be conceded that by tenoned spokes he must be deemed to mean spokes having a shoulder at the head of the tenon resting on the wooden hub, and that the defendant places the shoulder of its spokes on the inclined or tapering sides of the metallic mortises, it might place the shoulder on a distinct projection within those mortises. Is it not obvious that, having regard to the purpose of a shoulder on the spoke, the function it performs, the mode of its operation to receive and sustain the endwise pressure, which are claimed to be the sole purpose, function, and operation of the shoulder, the defendant's construction is a precise equivalent of that described and claimed in the patent. If a spoke tenoned into a wooden hub, and having a shoulder resting on the surface of the hub, were new and were patented, it is not possible that one who should place a metallic band around a wooden hub, and make a mortise therein, and a mortise in the wooden hub beneath, and insert the tenon in the mortise so that the shoulder should bear either squarely or obliquely on the metal, could escape the charge of infringing such patent.

On the argument of the motion I was much impressed by still another view of the subject. Looking at the whole specification and construing the claims of the patentee by aid thereof, it will be seen that the invention had reference to improving the carriage-wheel in two important particulars — viz., strengthening the wheel so as to resist lateral strain, and strengthening it against force or strain in the direction of its plane. The patentee did not profess to have improved its capacity to resist the bearing or thrust endwise of the spokes; this was no part or purpose of his invention. By means of the circular flanges bolted together, the increased strength to resist lateral strains was to be effected, and by these metallic circular bands made fast to the hub and bolted to the spokes, and by making the spokes to form a solid or continuous belt of wood around the exterior of the wooden hub, the greater power to resist a strain in the direction of the plane of the wheel was to be secured, and in reference to either result, tenons inserted in mortises in the wooden hub were of essential importance. By his arrangement no strain either laterally or in the direction of the plane of the wheel could be made to act on the tenon of one spoke only, but by the joint power or efficiency of the metallic bands and tenons, several tenons acted together to resist any force, jar, or shock from any direction. When, therefore, the patentee had described his invention, and made his second claim, including tenoned spokes, the claim should be construed with reference to the office or function which entered into his improvement, and with reference to the services done by the tenon in its relation to the parts which constituted an improvement, and enabled the wheel better to resist force applied laterally or in the direction of the plane of the wheel. This was all he professed to have improved. For that purpose it was the tenons entering the hub and made fast therein that entered into his

combination as rendering service toward effecting his improvement. The endwise thrust was not in his contemplation, or the shoulders at the head of the tenon, as pertaining to any improvement made by him. True, there must be capacity to resist such end thrust. One mode of constructing a wheel which would give it greater power in that respect he had very prominently, and, as suggested in the former opinion, I think, chiefly in view—viz., increasing the number of spokes. But as to the matter of tenoning the spokes the point was to so unite the spokes that any strain upon one instead of acting on one alone should, through the tenons inserted in the hub and the circular flanges, bolted to all, be resisted by the joint power of several or all of the tenons. Hence his improvement was applicable to any wheel having spokes tenoned into the hub, entirely irrespective of the question whether the shoulders at the head of the tenon rested on the surface of the wooden hub, or whether any other provision was made to sustain the endwise pressure. The hold of the spokes in the hub was the efficient means of making his improvement practically useful, and constituted the marked distinction between his wheel and the wheel described in the Smith and Parfrey patent, in which there were no spokes inserted in mortises in the hub. In this view of the proper meaning of "tenoned spokes" in the claim of the patentee, there remains no question that the defendant's present manufacture is an infringement. The tenons at the end of the defendant's spokes are identical in form with the tenons in the wheel of the complainant's; they are secured in the mortises in the wooden hub in the same manner, and in their action, conjointly with the circular metallic band, they perform precisely the same office or function in resisting strains either laterally or in the direction of the plane of the wheel.

The particular mode in which the shoulder above is formed or how it is sustained, is, with reference to that which constitutes the substance and gist of the complainant's invention, immaterial, so long as the rings or flanges are made to bear upon or against the body of the spoke and bind it so as to effect the objects the patentee disclosed and secured. These reasons all concur in the result that the complainant's motion should be granted. The question of costs is not very important, but in view of the manner in which I think the defendant has been misled into the situation in which I deem him now placed, which in my judgment falls but little short of estopping the complainant to allege that a wheel without tenons, having shoulders bearing on the surface of the wooden hub infringes his patent, I cannot charge the defendant with costs.

U. S. CIRCUIT COURT—DISTRICT OF MASSACHUSETTS.

ELIZA WELLS, ADMINISTRATRIX, *vs.* IRA GILL *et al.*

[*In equity.—Before Shepley, Judge.—Decided November 6, 1873.*]

Edward N. Dickerson, for complainant.
H. F. French and *A. L. Soule*, for defendants.]

SHEPLEY, *J.:*

Upon a full hearing of this case and of the arguments of counsel, it is considered and adjudged by the court that the reissued patent introduced in evidence in this cause does not upon the face of the patent embrace anything not substantially described or suggested in the original patent to Henry A. Wells, and upon a careful revision of the evidence the court is of opinion and accordingly decides that Henry A. Wells was the original and first inventor of the several combinations claimed in the reissued patent, and that the same is a good and valid patent. And the court is of opinion that the differences between the machine of the defendants and that of the complainant are formal merely and not substantial, excepting that the defendants have introduced into their machine certain modifications of the exhaust current and of the combined action of the exhaust current with the current produced by the revolution of the brush or picker, which modifications are to be viewed only as additions to, or improvements upon, the devices embraced in the reissued Wells patent.

The judgment of the court is that the defendants did infringe as charged in the complainant's bill in this case, and for an injunction and account according to the prayer of the bill.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

26,891.—Catches for Spectacle-Cases.—Granted to GEORGE N. CUMMINGS, January 24, 1860. Application filed September 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,902.—Planing-Machines.—Granted to SOLOMON S. GRAY, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,906.—Stitches.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,914.—Clothes-Wringers.—Granted to ROBERT O. MELDRUM and AMOS B. PAXSON, January 24, 1860. Application filed October 22, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,919.—Repeating Fire-Arms.—Granted to WILLIAM H. MORRIS and CHARLES L. BROWN, January 24, 1860, and reissued August 1, 1871. Application filed October 23, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,942.—Seats and Couches for Railroad-Cars.—Granted to THEODORE T. WOODRUFF, January 24, 1860. Application filed October 25, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,948.—Sewing-Machines.—Granted to ALBERT F. JOHNSON, January 24, 1860. Application filed October 24, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

26,952.—Lamps, granted to GEORGE NEILSON, January 24, 1860. Application filed October 18, 1873. Testimony closes December 23, 1873. Hearing January 7, 1874.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOSHINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KINZLER and WILHELM ROSENBOCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ABNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SEMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,297.—Couches for Railroad-Cars.—Granted to EDWARD C. KNIGHT, February 28, 1860. Application filed November 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,303.—Fastening Saw-Handles.—Granted to JACOB NEIMEYER, February 28, 1860. Application filed November 28, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,337.—Table-Cutlery.—Granted to JOSEPH W. GARDNER, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,392.—Machine for Folding and Pasting Paper.—Granted to GEORGE K. SNOW, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,403.—Steam and Fire Regulators.—Granted to JOSEPH WOODRUFF, March 6, 1860. Application filed December 5, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,438.—Blackwashing-Molds for Casting.—Granted to WILLIAM FERGUSON and DAVID FERGUSON, March 13, 1860. Application filed December 10, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,447.—Chain for Timber-Bending Machines.—Granted to LEVI HEYWOOD, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,478.—Turning-Lathes.—Granted to WILLIAM SELLERS, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,485.—Lanterns.—Granted to AUGUSTUS TUPTS, March 13, 1860. Application filed December 12, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,545.—Pitting Sinks.—Granted to JAMES INGRAM, March 20, 1860. Application filed December 15, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,594.—Sewing-Machines.—Granted to L. W. LANGDON, March 20, 1860. Application filed December 13, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,609.—Wringing-Machines.—Granted to SELDEN A. BAILEY, March 27, 1860. Application filed December 24, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,626.—Sewing-Machine Stitch.—Granted to JAMES DAVIS, March 27, 1860. Application filed December 27, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,627.—Cultivators.—Granted to CYRUS M. HALL and DAVID E. HALL, March 27, 1860, and reissued October 14, 1873. Application filed December 20, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,631.—Tobacco-Screws.—Granted to NATHAN HOAG and WILLIAM H. TAFFEY, March 27, 1860. Application filed December 26, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,634.—Plows.—Granted to GEORGE W. HUNT, March 27, 1860. Application filed December 26, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,641.—Harvesters.—Granted to FRANK T. LOMONT and JOHN GROJEAN, March 27, 1860, and reissued June 11, 1872. Application filed December 20, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,656.—Horseshoe-Nail Machines.—Granted to WILLIAM TALLMAN, March 27, 1860. Application filed December 15, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,735.—Grinding-Mills.—Granted to EDMUND MUNSON, April 3, 1860. Application filed December 29, 1873. Testimony closes March 3, 1874. Hearing March 18, 1874.

27,743.—Feed-Water Arrangement for Steam-Boilers.—Granted to THOMAS SNOWDON, April 3, 1860. Application filed December 16, 1873. Testimony closes March 3, 1874. Hearing March 18, 1874.

28,004.—Railroad-Car Axles.—Granted to JAMES MONTGOMERY, April 24, 1860. Application filed December 17, 1873. Testimony closes March 24, 1874. Hearing March 8, 1874.

28,269.—Bayonet-Scabbards.—Granted to EMERSON GAYLORD, May 15, 1860. Application filed December 19, 1873. Testimony closes April 14, 1874. Hearing April 29, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,262.—Fare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,564.—Improvement in Top-Props for Carriages, granted to GEORGE COOK and HANNIBAL L. KIMBALL, December 27, 1859.

Claim.—The combination of the thimble or pipe *e* or *g* with the screw-bolt or standard *a* or *b* and the joint-bars B B or C, when the whole is constructed and used substantially as herein described.

26,582.—Improvement in Harvesters, granted to JOHN GORE, December 27, 1859; reissued January 15, 1861, numbered 24. (Whole No. 1,129.)

Claim.—1. The use of the lever M', constructed as described, in combination with the tapering draw-bar D, for elevating the cutting apparatus of harvesters, in the manner described.

2. The adjustable box J, constructed as described, in combination with the connecting-rod *a* and cutting apparatus, and operating as set forth.

Disclaimer filed December 15, 1873.

Disclaims second clause of claim, as above set forth.

26,584.—Improved Machine for Planing Curved Surfaces, granted to J. B. GROSVENOR, December 27, 1859.

Claim.—1. The employment or use of the adjustable or yielding feed-rollers L L, when combined with a bearing-roller, M, or a proper bearing-surface, and arranged, relatively with each other, as herein shown and described, to admit of the feeding of circular, oval, and serpentine forms to the cutters.

2. Placing the rollers L L in an adjustable frame or box, G, fitted in an adjustable box, E, and used in connection with the elastic bars N N, or their equivalent, and the bearing-roller M, whereby the frame or pattern may be properly adjusted and retained in proper position between the rollers while being acted upon by the cutters.

26,599.—Improvement in Horse Hay-Rake, granted to SAMUEL LESSIG, December 27, 1859.

Claim.—The single-tree *g*, sliding bar 3, spring *n*, braces 6, axles *z*, bar 9, sleeves *r*, beam 8, braces *j*, slotted teeth-guides 4, rollers *c*, arms *f*, and connecting-bars *l l*, the whole being constructed and arranged for operation conjointly, as and for the purpose herein set forth.

26,614.—Improvement in the Manufacture of Porous Ware, granted to BRADFORD S. PIERCE and MASON R. PIERCE, December 27, 1859.

Claim.—The manufacture of porous drain-pipes and other vessels which require to possess the property of porosity, when formed from the ingredients set forth, and made to cohere by the process of tamping or other equivalent mode of pressure, as described, and receiving its porosity from the small proportion of water used in mixing the ingredients, as set forth and described.

26,627.—Improved Lathe Attachment for Cutting Veneers, granted to B. F. STUBTEVANT, December 27, 1859.

Claim.—1. Compressing the wood in the immediate vicinity of the edge of the knife by means of the presser-bar C, or its equivalent, arranged and operating substantially as set forth.

2. The cutters E E' E², or their substantial equivalents, for the purpose specified.

Disclaimer filed December 26, 1873.

Disclaims second clause of claim, as above set forth.

DISCLAIMERS FILED.

26,582.—JOHN GORE, Brattleborough, Vt.—Improvement in Harvesters.—Patent dated December 27, 1859; reissue No. 1,129, dated January 15, 1861. Disclaimer filed December 15, 1873. Disclaims:

"That part of the claim in said specification which is in the following words, to wit:

"'2. The adjustable box J, constructed as described, in combination with the connecting-rod *a* and cutting apparatus, and operating as set forth.'".

26,627.—BENJAMIN F. STURTEVANT, West Roxbury, Mass.—Improved Lathe Attachment for Cutting Veneers.—Patent dated December 27, 1859. Disclaimer filed December 26, 1873. Disclaims:

"The second claim in said above-named patent."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 23, 1873.]

7,068.—Knob-Rose and Escutcheon.—WILLIAM GORMAN, New Britain, Conn., assignor to THE RUSSELL AND ERWIN MANUFACTURING COMPANY, same place. Application filed November 15, 1873. Term of patent 14 years.

7,069.—Canister for Teas, Coffees, &c.—SILAS A. ILSLEY, Brooklyn, N. Y.—A. Application filed November 18, 1873. Term of patent 7 years.

7,070.—Canister for Teas, Coffees, &c.—SILAS A. ILSLEY, Brooklyn, N. Y.—B. Application filed November 18, 1873. Term of patent 7 years.

7,071.—Harness-Trimmings.—RUDOLPH HOYER, New York, N. Y. Application filed November 1, 1873. Term of patent 7 years.

7,072.—Printing-Type.—WILLIAM H. PAGE, Norwich, Conn., assignor to WILLIAM H. PAGE & Co., same place.—Case B. Application filed October 27, 1873. Term of patent 7 years.

7,073.—Printing-Type.—WILLIAM H. PAGE, Norwich, Conn., assignor to WILLIAM H. PAGE & Co., same place.—A. Application filed October 27, 1873. Term of patent 7 years.

7,074.—Printing-Type.—WILLIAM H. PAGE, Norwich, Conn., assignor to WILLIAM H. PAGE & Co., same place.—C. Application filed October 27, 1873. Term of patent 7 years.

7,075.—Drawer-Pull.—AMOS SHEPARD, Southington, Conn. Application filed December 15, 1873. Term of patent 7 years.

7,076.—Lock-Cases.—LOUIS WIDMAYER, New Britain, Conn., assignor to P. and F. CORBIN, same place. Application filed December 3, 1873. Term of patent 7 years.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date December 23, 1873.]

1,578.—Hats.—ORRIN BENEDICT & Co., Bethel, Conn. Application filed December 12, 1873.

"'Snow-Flake.'"

1,579.—Hats.—ORRIN BENEDICT & Co., Bethel, Conn. Application filed December 12, 1873.

"'Cuba Libre.'"

1,580.—Hats.—ORRIN BENEDICT & Co., Bethel, Conn. Application filed December 12, 1873.

"'Clementine.'"

1,581.—Fertilizer.—LORENTZ & RITTLER, Baltimore, Md. Application filed December 12, 1873.

"a star-shaped figure with the firm-name."

1,582.—Dynamite Explosive Compound.—THE GIANT-POWDER COMPANY and THE ATLANTIC GIANT-POWDER COMPANY, San Francisco, Cal. Application filed November 15, 1873.

"'Dynamite.'"

1,583.—Giant-Powder Explosive Compound.—THE GIANT-POWDER COMPANY and THE ATLANTIC GIANT-POWDER COMPANY, San Francisco, Cal. Application filed November 15, 1873.

"'Giant Powder.'"

1,584.—Motto-Papers.—THEODORE VAN SKELLINE, Brooklyn, N. Y. Application filed December 13, 1873.

"figure of a butterfly with the letters 'T. V. S.' on its wings and body."

1,585.—Aniline Dyes.—WELLS, RICHARDSON & Co., Burlington, Vt. Application filed December 15, 1873.

"'Leamon's Genuine Aniline Dyes,' the figure of a woman, and the fac-simile of Thomas Leamon's signature."

1,586.—Soap.—JONES EAVENSON & SONS, Philadelphia, Pa. Application filed September 10, 1873.

"'Quaker City Soap, Eavenson & Sons,' and the figure of a man in Quaker costume."

1,587.—Liniment.—WILLIAM KIDDER, Goffstown, N. H. Application filed December, 17, 1873.

"'Mohawk' and the figure of an Indian chief."

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date December 23, 1873.]

ORIGINAL PATENTS.

145,713.—Drier for Lead.—ANDREW D. ARMSTRONG, Allegheny City, assignor to ARMSTRONG, FAWCETT & MCKELVY, Pittsburg, Pa. Application filed July 11, 1873.

The lower chamber is heated by steam, and the upper, in which is the substance to be dried, by hot air from a broad-mouthed blast-pipe.

Claim.—A stationary drying-tank, *a*, divided horizontally into two chambers, a^1 and a^2, the first being fitted with steam supply and discharge pipes *c* and *d*, and the latter with a broad-

mouthed blast-pipe, *g*, an exit, *f*, and a lid, *e*, substantially as described.

145,714.—Peg-Cutter.—CHARLES H. BACON, Boston, Mass., assignor to himself and J. H. SAWYER & CO., same place. Application filed November 20, 1873.

Claim.—The bent arm or casing A, inclined so as to accommodate the crimp and leg of the boot, and pass to the toe, in combination with the reciprocating cutter L with its operating mechanism, substantially as and for the purpose set forth.

145,715.—Try-Square.—LEONARD BAILEY, New Britain, Conn. Application filed July 9, 1873.

A screw with a conical swell passes through the stock and through a slot in the blade. When the screw is driven in, the conical swell bears against the edge of the slot and holds the blade firmly in position.

Claim.—The combination of the handle having a slot for the blade, the bottom of which is at a true right angle to the face side of the handle, the blade pierced with a hole for the screw with a conical swell, and the screw having a conical swell, all substantially as described.

145,716.—Combined Step-Ladder, Bench, and Clothes-Frame.—HAVILAH H. BARKER, Hartford, Conn. Application filed November 3, 1873.

Two frames are connected together by clamps and hinged and jointed legs, so as to assume several different forms.

Claim.—The combination of the frame *a a*^{1} *a*^{2}, provided with the pivoted legs *c c*^{1} *d d'*, with the frame *b b*^{1} *b*^{2}, having the legs *e e*^{1} *f f'* pivoted thereto, the corresponding sets of legs upon the two frames being hinged together, the whole constructed, arranged, and designed for operation and use, substantially as hereinbefore set forth.

145,717.—Method of Forming Receivers for Breech-Blocks of Fire-Arms.—ELBRIDGE G. W. BARTLETT, Providence, R. I., assignor to PROVIDENCE TOOL COMPANY, same place. Application filed August 11, 1873.

Claim.—The improvement in the art of manufacturing blanks for breech-block receivers, which consists in perforating, mainly by lateral displacement, a block of metal of lesser longitudinal dimensions than the finished receiver, and in extending said block longitudinally, and reducing it laterally and vertically, by means of a series of internal stretching or drawing tools applied consecutively, and compressing-tools applied exteriorly, in connection with interior resisting-tools, substantially as described.

145,718.—Quicksilver-Pump.—MARTIN P. BOSS, Bullionville, Nev. Application filed November 15, 1873.

The valves both open downward in chambers communicating with the barrel in which the solid piston works. The tray in which the pump stands is fastened to its support through hollow bolt-standards to prevent leakage.

Claim.—1. The pump A, with its induction and eduction pipes D L, in combination with the chambers E I, with their downwardly-opening valves F J, when the whole is constructed to operate substantially as and for the purpose herein described.

2. In combination with the pump constructed as described, the tray M with its hollow bolt-standards O, substantially as and for the purpose herein described.

145,719.—Triple-Cylinder Engine.—PETER BROTHERHOOD, Notting-Hill, England. Application filed October 20, 1873.

The triple-cylinder engine is provided with a central steam-chamber, into which steam is admitted by a central rotating valve to equalize the pressure on one side of the pistons. The steam is admitted alternately by the valve and suitable ports to the outer ends of the pistons, and operates them. The valve is operated by projecting cars, against which a projecting end of the crank-pin strikes.

Claim.—1. The combination of the cylinders A, central chamber B, pistons C, crank E, and valve G, controlling the passages *a*, substantially as described.

2. The several pistons C and their connecting-rods D, having each an independent connection with the crank-shaft, in combination with the chamber B, a steam-supply pipe for keeping the inner sides of the pistons under pressure, substantially as and for the purposes set forth.

3. The rotary slide G, having the projecting cars h^1 h^2 and spindle *m*, in combination with the crank-pin *e*, arranged between the two, and having a bearing against either at pleasure, substantially as described.

145,720.—Nail-Separating Device.—HARVEY B. CHESS, Pittsburg, Pa. Application filed December 9, 1873.

The screw *c* serves to adjust the dam *b* toward or from the spout A to make the opening between them any distance required.

Claim.—A device for sifting nails and tacks, consisting of the flat-bottom spout A, with its sides *a a*, in combination with the angular dam or breast *b*, adjusting-screw C, sliding hooks *e e*, and rods *d d*, all constructed and arranged substantially as and for the purpose set forth.

145,721.—Apparatus for Transferring Power.—ELIJAH B. CLARK, Cohoes, N. Y., assignor of one-half his right to MICHAEL ANDRAE, same place. Application filed April 20, 1872.

Power is transferred from the continuous revolving driving-shaft to the other shaft intended to be intermittently driven by means of the lever and cord, the former operating the movable bearing and its pulleys in one direction, while the spring will operate the same in the opposite direction.

Claim.—The combination of the fixed pulley F and band or cord *c c c* with the pulley G, rendered capable of being moved toward or from the fixed pulley, and the spring J or its equivalent, substantially as and for the purpose set forth.

145,722.—Preparing Cocoa-Nut for Use in Pies, Cakes, &c.—NELSON A. CLASSON, Windham, Conn. Application filed December 5, 1873.

Cocoa-nut, water, powdered sugar, and bicarbonate of soda. Take fresh-ground cocoa-nut and water and place together in a retort which is immersed in a vat of water which has been densified to highest boiling-point. Then heat the two ingredients to boiling-point. The whole is then taken out and pressed, which extracts all the oil, milk, and water. Keep the pulp at a gentle heat, and take the oil, &c., extracted and heat. When at or near the boiling-point, add bicarbonate of soda, which produces coagulation. Then separate the coagulum from the oil, &c., by pressing through flannel, and add the sugar to the residue, and continue to boil until the water is all evaporated and the sugar united, and then add to the cocoa-nut and continue boiling from four to six hours.

Claim.—The preserving of cocoa-nut in a moist and natural state by the process hereinbefore set forth, and for the purpose specified.

145,723.—Dredging-Machine.—WILLIAM A. COLLINS, Bloomfield, N. J. Application filed June 3, 1873.

The scoops are hung from a bar by loops or saddles, and, when first opened, move away from each other. When nearly at the end of their movement, they are caused to assume a position nearly at right angles to their former one. This mechanism gives them a wider opening than the ordinary mode of hinging at a single center. The movements are controlled by chains and a double set of wheel and axle pulleys.

Claim.—1. The scoops *a c'*, suspended by the saddles from the bar *b*, in combination with the chains and wheels, arranged substantially as set forth, for moving the scoops upon such bars and actuating them, as specified.

2. The arrangement of the two shafts *f*, chain-wheels, chains, and buckets, in the manner specified, for sliding the buckets *a c'* upon the bars *b*, and swinging the same, substantially as specified.

3. The scoops, drawn apart horizontally, and then swung into an inclined position, and receiving the reverse movement in closing, substantially as and for the purposes set forth.

145,724.—Saw-Set.—ROSWELL F. COOK, West Potsdam, N. Y. Application filed October 9, 1873.

The hooked extremities of the two branches of the U-shaped spring enter the one a notch in the short arm of the hammer-lever, and the other in any one of a series of notches in the frame, and by this series of notches the spring, which is compelled to vibrate with every movement of the hammer, may be adjusted to vary the force of the blow. The hammer is successively elevated and given the initial movement in the opposite direction by a hand-lever, which carries a pin that alternately strikes opposite shoulders of a recess in the surface of the hammer-lever.

Claim.—The combination, substantially as described, in a saw-set, of a notched frame and lever with a hammer having an oscillating spring for operating the same.

145,725.—Combined Tank and Liquid-Measure.—JOSEPH H. CORLISS, Reno, Nev. Application filed August 23, 1873.

A tank having an interior measuring-vessel, so arranged that when, by means of a single lever, the inlet-cock of the measure is opened and the outlet closed, or vice versa, corresponding air-tubes of said measure may be opened and closed by a three-way cock.

Claim.—In combination with the measure B and tank A, the cock G, with its passages H and I, stem D, operating-lever F, pipes K and L, and cock *m*, all constructed, arranged, and operating as described.

145,726.—Pressure-Gage.—GEORGE H. CROSBY, East Somerville, Mass. Application filed August 6, 1873.

Two links joined or pivoted together at one end, at which point they are connected with the ordinary transmitting mechanism, have their other ends spread apart and pivoted to the ends of Bourdon pressure-tubes, or, in case but one tube is used, the end of one of the links is pivoted to the case, by which means both the vertical and horizontal movement of the tubes is better utilized.

Claim.—In a pressure or vacuum gage, the means herein described for operating the index-shaft by both the upward or vertical as well as the horizontal movement of the Bourdon tube or tubes, the same consisting of two links joined or connected together at one end, with their other ends spread apart and pivoted separately, as specified, in combination with intermediate mech

anism transmitting the movement of said links to the index-shaft, the whole constructed and operating substantially in the manner shown and set forth.

145,727.—Hoisting-Machine.—JEREMIAH DARLING, Cincinnati, Ohio. Application filed October 13, 1873.

Claim.—The combination of the double and adjustable clutch, drums H H, hod-racks E E, platforms C C, and guides B B, constructed and operated as herein described.

145,728.—Corn-Planter.—JEROME S. DAVIS, Ithaca, N. Y. Application filed September 12, 1873.

A metallic bridle or link surrounds the two handles at their upper ends, limiting their spread, preventing strain upon the hinge and the side-inclosing material, and also serving to jar the seed out of the seed-slide.

Claim.—In a corn-planter, the combination, with the arms or handles *a a'*, seed-slide *g*, and recessed points *e' e''*, of a guide or bridle, *k*, for limiting the spread of the handles, substantially as shown and described.

145,729.—Hand-Mirror.—JAMES F. DOHAN, Binghamton, N. Y. Application filed September 24, 1873.

The metal front or rim is provided with teeth or brads on its under surface, so that such teeth may be forced into the back, and thereby hold the glass, front and back, firmly together.

Claim.—The metal frame D, provided with brads or teeth on its edge or under surface, in combination with the back A, pad C, and glass B, substantially as and for the purpose herein described.

145,730.—Carriage-Top.—DENNIS B. DORSEY, Chillicothe, Mo., assignor of one-half his right to ELI J. MARSH, same place. Application filed October 21, 1873.

Claim.—1. The combination of the pivot-hooks C C with the frame A A B B, covering G, and the top bow E, substantially as and for the purposes specified.

2. The attachment together of the wire bows A A and B B by means of the loops *a a* and *b b*, which constitute the frame for the covering G, substantially as and for the purposes specified.

3. The combination of the cord *d* with the frame A A B B, the pivot-hooks C C, and the screw-eye *f*, substantially as and for the purposes specified.

145,731.—Hose-Coupling.—JACOB EDSON, Boston, Mass., assignor of one-half his right to JOHN CLARK, same place. Application filed November 26, 1873.

The hose is attached to the coupling by slipping it over the shank, and placing the grooved sleeve over the hose so far that the projections engage in the recesses on the sleeve, and compress the sleeve in its open end by screwing the tapered nut around it.

Claim.—The combination of the tapering nut *a*, compressible sleeve *b*, and annular projection *c*, or its equivalent, for the purpose specified.

145,732.—Milk-Cooler.—CECIL GRAVES, GEORGE C. POWERS, and CHARLES O. GRAVES, Waterbury, Vt. Application filed August 7, 1873.

The siphon-pipes are to draw water from the bottom of the water-pan, and the surface-pipes to draw it from the surface, for the purpose of facilitating the rapid withdrawal of water.

Claim.—The combination of the supply-pipes *g g g* with the discharge-pipes *h* and *s s*, and the milk-pan A, as and for the purpose specified.

145,733.—Umbrella.—GOUVION G. GEISWOLD, New York, N. Y. Application filed October 8, 1873.

The neck of top notch has a groove or channel in which the head of a nail in the stick lies, holding the notch in place, but permitting it to rotate, so that the notches may be brought opposite a hole in the stick, by which each rib-head may be inserted.

Claim.—1. The top notch A, with its neck *a*, constructed as herein described, and adjusted upon and secured to the umbrella-stick B, in the manner and for the purpose herein described.

2. The double ribs C, constructed as described, and strengthened and secured together at or near their center by the lap E, the upper and lower ends of said ribs being twisted so as to form, at the lower end *b'*, a loop, to which the cover may be sewed or attached, and T-shaped projections, as at *b*, upon the upper ends of said ribs to connect with and be secured to the top notch A, in the manner and for the purpose herein set forth.

3. The indentations or depressions D formed upon the umbrella-stick, combined with the top and runner notches, to admit of the adjustment of the ribs and stretchers, in the manner and for the purpose herein described.

4. The combination of the lap E with the ribs C, in the manner and for the purpose herein described.

5. The combination of the top notch A, ribs C, and stick or handle B, constructed substantially as described, with the india-rubber spring or protector *c*, in the manner and for the purpose herein described.

6. The combination of the runner-notch G with the runner-pipe H, when secured together, in the manner and for the purpose herein described.

7. The disk K, provided with the raised projections *m*, substantially as described, so that when bent inward they may be driven into the stick B and secured thereto, in the manner and for the purpose herein described.

8. The disk J, forming either the top or running notch, constructed as herein described, so that the circular hole at its center has cut within it the dovetail opening *c*, and with the ends of each of the projections *z z z* scalloped or cut away, so that when bent inward they may form spaces into which the ribs and stretchers are inserted, in the manner and for the purpose herein described.

9. The disks forming the top and runner notches, to receive the ribs and stretchers of an umbrella with circular, spiral, or radial corrugations, as shown in Fig. 5 of drawing, in the manner and for the purpose herein described.

10. The within-described method of securing the notches G upon the stick and runner by means of the forked nail *h* and metal plate *i*, in the manner and for the purpose herein described.

11. The top and running notches, when constructed as described, in combination with depression D and nail *a'* in the stick, so that they may be rotated, and the spaces cut in said notches for the reception of the ribs and stretchers, can, at will, be brought opposite said hole or depression D, in the manner and for the purpose herein set forth.

145,734.—Toy Money-Box.—JOHN HALL, Watertown, Mass. Application filed April 24, 1873.

A coin being placed in the hand of the toy figure is automatically transferred to the side pocket and receptacle inside, with accompanying bows of the figure to imitate thankful gestures.

Claim.—1. The combination of the spring *n*, the weight *k*, and spindle *i* with the arm B, when said parts are constructed and arranged substantially as described.

2. The hollow figure of a man provided with the arm B, the pocket-hole *d*, the head and spindle *e*, arm *f*, and trigger-wire *m*, when arranged to operate substantially as described.

145,735.—Manufacture of Cigar-Boxes from Redwood.—CHARLES A. HOOPER, San Francisco, Cal. Application filed November 15, 1873.

Claim.—Cigar-boxes made of California redwood, (*Sequoia*,) steamed or boiled, substantially as described, as a new manufacture.

145,736.—Ditching-Machine.—JAMES W. HUMPHREYS, Oxford, Ind. Application filed May 23, 1873.

The cutter is adjustable vertically, and is connected to an inclined chute provided with an endless carrying-belt which receives motion, through intermediate gearing, from a driving-wheel on one of the axles of the machine. The journal-bearing of the upper roller of the belt is in a movable seat, which allows the chute and belt to accommodate themselves to the adjustment of the cutter. Knives are secured to the rear edge of the cutter, and are adjusted on notched bars at the side of the machine so as to cut the sides of the ditch obliquely, aprons being provided to throw the earth out onto the chute.

Claim.—1. In combination, the chute G, adjustable cutter F, counter-shaft P, connected with the driving-wheel B by gearing M N O, and the movable seat L provided with suitable gearing, as I J Q R S, substantially as and for the purpose hereinbefore set forth.

2. The knife T, provided with the apron V, in combination with the adjustable cutter F, chute G, and rack W, substantially as and for the purpose hereinbefore set forth.

145,737.—Spading-Machine.—JOHN G. JONES, Falmouth, Mass. Application filed April 7, 1873.

A spade and handle of the same general form as a hand-spade is attached at the blade to a crank geared from the traction-wheels. A thimble at the top of converging standards serves to keep it in an upright position. A gear-plate on the crank has catches which engage with a pin. By removing the pin the spading device is thrown out of gear.

Claim.—1. In a spading-machine, the combination of the vertically-arranged spade *a*, pivoted to the crank C, having balance-wheel *b*, and operated by the pinion-wheels *p p* gearing in the driving or traction wheels B B, with the braces *d* and thimble *c*, all arranged and operating as hereinbefore set forth.

2. The combination of catches upon the inside of the pinion-wheels *p p*, and of the spring-head linch-pins *s s*, by the insertion or removal of which the machine is put into or out of gear, as hereinbefore set forth.

145,738.—Combined Step-Ladder and Ironing-Board.—HILAND H. KENDRICK, Fulton, assignor of one-half his right to JOHN W. THROOP, Syracuse, N. Y. Application filed November 6, 1873.

Two pairs of legs are pivoted together near the middle of their length, one having steps and the other a shelf or landing-step. A notched brace and an ironing-board are connected with them. Elastic loops and hooks hold the latter in place.

Claim.—1. The step-ladder composed of two frames, A B, one bearing the landing-step and the other bearing the flight of steps, the two being pivoted together near the center of each, arranged and operating substantially as and for the purpose herein specified.

2. The combination of the step-ladder, constructed with the two swinging frames A B, and provided with the notched brace D and the ironing-board E, constructed as described, together forming an ironing-table, substantially as and for the purpose herein specified.

3. The combination of the elastic loops *l l* on the ironing-board E and the hooks or pins *m m* on the step-ladder, substantially as and for the purpose herein specified.

145,739.—Apparatus for Binding Stalks.—SOL KUH, Jefferson, Iowa. Application filed April 8, 1873.

Stalks to be bound are clamped between two corrugated plates. Said plates are drawn together by screw-bolts passing from one through the other and held by nuts. One of the plates has a

flanged base and rings for holding the plates upright to detachable legs.

Claim.—The corrugated plate A, provided with a base, a, rings c, bolts d, plate B, nuts i, and detachable legs E, provided with slits, all combined together as and for the purposes described.

145,740.—Water-Wheel.—JOHN KUNKLE, Newton Falls, Ohio. Application filed November 4, 1872.

The buckets are constructed with closed sides and a deep open mouth with curving corners, so that no water can escape from the sides, and therefore act directly upon the wheel in the line of rotation. A conical hub prevents the water from lodging upon it, but flows down to the buckets and escapes.

Claim.—1. The wheel A, having its buckets constructed with closed sides E and deep open mouth D, curved corners D', and conical hub C, in the manner as described, and for the purpose set forth.

2. The wheel A, scroll or flume G, curb F, and wooden boxes J, all constructed, arranged, and combined in the manner as described, and for the purposes specified.

145,741.—Sofa-Bedstead.—ENOCH LORD, Portland, Me. Application filed September 11, 1873.

One bottom and head-rest lie on others, the arm-rest of the upper one folding downwardly outward to secure a bearing. The whole adapted to unfold on a longitudinal line of hinges in front to form a bedstead.

Claim.—The combination of the movable frame B, with its head E, hinges m, latch h, and face-piece n, with the fixed frame A and the back of the sofa, which has the ledge r and cleat k, as herein set forth.

145,742.—Razor-Strop.—JOHN B. LUCAS, Portland, Me. Application filed April 19, 1873.

The strop is composed of two thin strips of wood united to form the handle and wound with leather. The leather passes over the outer ends of the wood strips, which hold them together at that point.

Claim.—The razor-strop composed of the two thin sheets of wood D E, united to form the handle A, as set forth, said strips being wound with leather, as herein described.

145,743.—Sectional Steam-Generator.—JOHN D. LYNDE, Philadelphia, Pa. Application filed September 4, 1873.

A system of pipes connected to manifolds form the sides of the furnace, and are combined with a series of pipes on sides and connecting to a cylinder arranged over the top of the whole, the object being to utilize the heat that usually impinges on the sides of the walls, and also to create a better circulation. A receiver is provided for the ready removal of the sediment, &c.

Claim.—1. The combination of the pipes C C C and manifolds B and B', with cylinder K and pipes D E, constructed and arranged substantially as and for the purpose described.

2. The combination of the pipes C C F F and cylinder K with receiver N, constructed substantially as herein described.

145,744.—Heating-Stove.—ISAIAH G. MACFARLANE, Pittsburg, Pa. Application filed September 23, 1873.

A fire of coke or other light fuel is made on grate c, and another of bituminous coal is made on grate b. The smoke and gases rising from the lower fire are consumed in the other.

Claim.—1. The grate c, constructed of fire-clay or other infusible material, having flues c^1 extending to the center openings c^2, substantially as and for the purposes described.

2. The grate c, having flues c^1, in combination with the fire-chamber d, having ports g, and a grate, b, substantially as described.

145,745.—Toy Gun.—WILLIAM MILLS and DANIEL J. WOLFE, Jersey City, N. J. Application filed May 29, 1873.

At the base of the barrel is an orifice to allow the escape of gunpowder and prevent its use therein. The stop-pin serves also (by projecting a little on top) the purpose of a sight.

Claim.—1. A toy gun having the safety-opening c, arranged substantially as and for the purpose specified.

2. The forward sight-pin d, passing through the barrel A, substantially as and for the purpose herein set forth.

145,746.—Car-Coupling.—GEORGE R. MOORE, Philadelphia, Pa. Application filed September 25, 1873.

The pin is raised by means of the lever B, and retained by the cross-bar b of a plunger actuated by the link. The link is guided by means of a clamp, which is operated by the lever C. This clamp holds the link firmly against the pin and at the proper degree of inclination.

Claim.—1. The plunger a, having cross-bar b and the lever B pivoted at the rear of the draw-head, in combination with the spring g and the pin e, as set forth.

2. The lever C and ratchet f, in combination with the clamp d and arm i of the lever B, as described.

145,747.—Machine for Making Cord.—EDMOND OTIS, New Haven, Conn., assignor to JOHN PECKHAM, same place. Application filed September 16, 1873.

The single stationary shaft supports all the strand-delivering, twisting, and take-up devices.

Claim.—The stationary shaft A, combined with and supporting both the strand-bobbins D and the rotating laying-frame C and take-up devices, as shown and described.

145,748.—Device for Forming Cores.—HENRY PARKER, Gananoque, Canada. Application filed November 18, 1873.

The cores are produced by closing the flask and uniting the semi-cores formed in the two-part mold.

Claim.—1. A mold for casting cores having flasks B, impressed with corresponding semi-core molds D, inserted removably in a case, A, formed of dishes a a', hinged and closing together substantially as and for the purpose described.

2. Providing the dishes a a' of the case A with openings C at the back, to facilitate removal of the flasks B by pressure, as set forth.

145,749.—Medical Compound or Eye-Wash.—FRANZ PAWLEWSKI and JOHN SCHULZ, Milwaukee, Wis. Application filed June 20, 1873.

Chloride of sodium, sulphate of zinc, oxide of zinc, carbonate of zinc, fennel-water, and chelidonium-water.

Claim.—An eye-water compounded from the ingredients above named, and in about the proportions as described.

145,750.—Weather-Guard.—JAMES PEASE, Westfield, Mass., assignor to himself, W. O. BELL, and S. TRYON. Application filed August 18, 1873.

The rubber tubing is attached to the door-frame by means of a small wire inserted through its length, which is confined in place by small staples first inserted within the tube, through slits made at intervals in the side thereof, and then driven into the door-frame, spanning the wire.

Claim.—The combination of the wire c and the rubber tubing a, both secured to the door or door-frame, substantially as described, and constituting an improved weather-guard, as set forth.

145,751.—Miter-Machine.—THOMAS POOLEY, Blackberry Station, Ill., assignor of one-half his right to NICHOLAS JOHNSON, same place. Application filed September 5, 1873.

The depth of cut is regulated by the set-screw J on the arm H, pressing upon the bar F.

Claim.—In a mitering-machine for saws, the arm H, provided with the screw J and with the slotted pendants I I, in combination with the slotted post E, arm F, and slotted pendant G, all arranged together substantially as and for the purposes specified.

145,752.—Connecting-Rod.—TREAT T. PROSSER, Chicago, Ill. Application filed July 21, 1873.

Claim.—A connecting-rod composed of the parallel independent stay-rods A A and independent boxes C C C' C', the several sections of which are separately adjustable on the rods, substantially as and for the purpose specified.

145,753.—Fan-Blower.—TREAT T. PROSSER, Chicago, Ill. Application filed July 21, 1873.

The revolving cylinder has on each end spiral blades, which meet in the center, forming a chamber, into which the oppositely-moving currents of air are forced, and from which the air passes to the delivery-pipe. The case is open at the ends, and is enlarged at the middle. It is held in position by rings, which screw onto the ends of the case, and which are provided with arms, meeting in the hub through which the shaft passes. The lower arms also form a base, on which the blower rests.

Claim.—1. A revolving cylinder for fan-blowers, having upon its periphery and at each of its ends spiral blades or screw-threads, which meet and are joined at or near its center, thus forming chambers, into which the oppositely-moving currents of air are forced, and from which it is expelled by the joint action of the two blades or threads, substantially as set forth.

2. The case A of a fan-blower, having open ends for the admission of air, an interior diameter at its ends equal to the diameter of the cylinder, which revolves within it, and an enlargement at its center, for the purpose of forming an air-chamber, substantially as set forth.

3. The end supports, consisting of a ring, B, for the reception of the ends of the cylinder, arms B^1 B^1 B^1, and a hub for the reception of the shaft, one of said arms forming the base upon which the machine rests, substantially as set forth.

4. The combination of the double-bladed cylinder C, the open-ended case A, and the end rings B, substantially as and for the purpose set forth.

145,754.—Pegging-Machine for Boots and Shoes.—TREAT T. PROSSER, Chicago, Ill. Application filed July 21, 1873.

Claim.—1. In a machine for pegging boots or shoes, a driver, H, which first, by an oblique cut, heads and shears a nail from a length of wire, and then drives the headed nail thus cut into the boot or shoe, substantially as specified.

2. In a machine for pegging boots or shoes, a driver, H, which first cuts a nail from a length of wire, and then, simultaneously with driving such nail, delivers a blow upon the end of the wire to point it, in manner substantially as shown.

3. The driver H, having a beveled surface, A, in combination with the beveled end f of the nail-tube, substantially as and for the purpose specified.

4. The combination of the driver H, having the beveled surface A, nail-tube F having the beveled end f, and intermittently-rotating feed-wheels D and E, substantially as specified.

5. The combined nail cutter and driver H, in combination with a spring which, while in a compressed state, forces the driver through the wire, and, by its subsequent recoil, sends the driver to deliver the blow, driving the nail into the boot or shoe.

6. The combination of the combined nail cutter and driver H, rocking beam G, eccentric and rod I^2 I, and spring I^4, substantially as specified.

7. The combination of the vertically-adjustable combined nail cutter and driver H, rocking beam G, sleeve I^1, eccentric and rod I^2 I, spring I^4, and nut I^3, substantially as specified.

8. The combination of the combined nail-cutter and driver H, rocking beam G, eccentric and rod I^2 I, and shaft K, driven by a treadle through flexible pitman N, and carring fly-wheels M, substantially as and for the purpose specified.

9. The pitman N, composed of a flexible strap and metallic yokes n n, in combination with the crank-pin m and treadle O, substantially as specified.

10. The combination of the wabbling rotatory disk R and counter-weight S, substantially as and for the purpose specified.

11. A boot or shoe carrier, composed of the parts P P^1 P^2 P^3, substantially as specified.

12. The combination of the toothed wabbling rotatory disk R r, and the toothed carrier P p P^1 P^2 P^3, substantially as and for the purpose specified.

145,755.—Nail-Delivering Machine.—SILAS S. PUTNAM, Boston, Mass. Application filed October 29, 1873.

The intermittently-revolving carrier-wheel D is provided with two or more radial openings or compartments to receive the nails fed in through the conveyer E, an encircling ring or guard, B, preventing the nails falling out until they reach the opening 6 in the ring, where they drop down through the conductor G. The nails are turned completely over.

Claim.—The combination of the carrier-wheel D, having one or more compartments for the reception of the nails, with the ring B, having the apertures 6 and 8, the conductors E and G, and suitable mechanism for operating the said wheel, substantially as and for the purpose set forth.

145,756.—Earth-Closet.—ISAAC S. RUSSELL, New Market, Md., and HENRY R. RUSSELL, Woodbury, N. J. Application filed October 28, 1873.

The receptacle may be inverted for the discharge of its contents by a pull connected to a rack and pinion, and, by a lever detachably secured to the seat-lid, may be brought under the earth-reservoir for deodorizing its contents, either by the action of the lid or while the seat is occupied. The slides have agitators and scatterers, the upper slide being supported above the dispenser to avoid clogging.

Claim.—1. In combination with receptacle W, arm M, table T, and connecting mechanism, substantially as described, the lever S, arranged to be detached from the seat-lid L, as and for the purpose set forth.

2. The slide t, constructed as described, in combination with the dispenser g and slide s, for the purpose set forth.

3. The projections or agitators on upper slide s, and bars or scatterers on lower slide t, for the purposes set forth.

4. The combination of the arm M, pinion 5, rack 4, levers 3 and 2, and pull-up 1, for inverting the receptacle.

5. The projections 12 and 13 on the dispenser G, or their equivalents, for supporting the slide s above the dispenser, in order that small hard particles will not be caught between the edge of the slide s and dispenser g, as described.

145,757.—Game Apparatus.—JAMES N. SAWKINS, Langport, England. Application filed December 13, 1873.

Upon differently-colored stripes drawn lengthwise of a game-counter resembling a cribbage-board counts of dice-throwing are reckoned. The players count upon any stripe, and are confined to a particular stripe for only single counts, each being ignorant of the others' color, which is not discovered until the 120 points upon two stripes have been scored.

Claim.—1. The game apparatus herein described, consisting of the ball-box A B and balls, the table D and dice, all combined and arranged to operate substantially as specified.

2 The ball-box A B and balls a b, adapted for each other, substantially as and for the purpose described.

145,758.—Inhaling Apparatus.—EDWIN SCHOFIELD, Worcester, Mass. Application filed October 27, 1873.

The inlet-tube has a dome-shaped acid-chamber outside of the main receptacle. The mouth-piece has a valve placed in its interior during the process of blowing the glass. A flanged stopper furnishes a soft resting-place for the lower edge of the acid-chamber.

Claim.—1. The inlet-tube B for inhalers, when constructed with the pear-shaped expansion or domed chamber B^1, and annular acid-basin B^2, located above the stopper D, substantially as shown and described.

2. The combination with the draft-tube C in an inhaler, of the mouth-piece E, consisting of a bulbed glass tube, having valve-puppet E^1 confined within the bulb, as shown and described.

3. The combination, with the main receptacle A, of the inlet-tube B, having a pear-shaped expansion, B^1, and annular acid-basin, B^2, the flanged stopper D d, draft-tube C c, said parts being constructed of the peculiar forms shown, and arranged in relation to each other as set forth, for the purpose stated.

145,759.—Feather-Renovator.—JOHN E. SCHOOLER, Chillicothe, Mo., assignor of one-half his right to JAMES S. WEAVER, same place. Application filed November 6, 1873.

The feathers are washed by water, which enters through the conduit placed near the steam-chest and flows out through the condenser. They are afterward dried by heat from the steam-chest, being stirred by the revolving mixer during both operations.

Claim.—The drum A, provided with the steam-chest E, condenser or pipe L, and conduit F, the latter placed near to and warmed by the steam-chest, and connected with the drum by apertures, the water flowing through which passes over and is warmed by the surface of the drum heated by the steam-chest, whereby a constant stream of clean water is fed to the drum, substantially as shown, and for the purpose described.

145,760.—Ventilator for Railroad-Cars.—JASON D. SIMMONS, Quincy, Ill. Application filed December 12, 1873.

The deflecting-wings are provided with outwardly-turned flanges for diverting the direction of the dust-currents, and with inwardly-turned lugs for preventing the wings from closing against the window, and to which the connecting-rod is attached.

Claim.—1. The wings B, having the flanges E' turned on their outer edges, substantially as and for the purpose specified.

2. The wings B, having the inwardly-turned lugs E and outwardly-turned flanges E', and connected by means of the rod C substantially as shown and described.

145,761.—Fire-Proof Safe.—FRITZ A. R. SONTAG and WILLIAM H. LOTZ, Chicago, Ill. Application filed August 1, 1873.

A follower or sliding plate is placed within the compartment of a safe, where books and papers are placed, and is crowded by means of a screw against the papers, forcing them compactly together so as to lessen the possibility of combustion.

Claim.—1. A follower or sliding plate, B, within the book-space of a safe for crowding the papers together, in combination with any suitable device for actuating the follower, substantially as described.

2. In combination with a safe, A, and follower B, the hand-wheel C and screw D, substantially as and for the purposes set forth.

145,762.—Manufacturing Rubber Diaphragms for Water-Meters.—D. BRAINERD SPOONER, Syracuse, N. Y. Application filed January 18, 1873.

Treating vulcanized sheet rubber, &c., which has been temporarily held in a desired shape or position by any suitable means with heat of such temperature as will cause it to permanently assume the shape which has been given to it.

Claim.—1. The described method of treating vulcanized sheet rubber or vulcanized gum, consisting in holding the sheet in a desired position to give it the requisite form by means of a mold or formers, as described, and subjecting the same to proper heat, as and for the purpose set forth.

2. The diaphragm formed of vulcanized sheet rubber, substantially as described, as a new article of manufacture.

145,763.—Loom-Shuttle Guard.—EDGAR M. STEVENS, Boston, Mass. Application filed August 5, 1873.

The guard-rod is hung from supporting-arms on the top bar of the lay, and stops on the ends of the arms hold the rod against any lateral movement of the shuttle in its passage over the race. To move the guard-rod out of the way, when it is necessary to have access to the shuttle-race or the warp-threads, it is arranged to swing inward against the top bar, and is held in that position by a catch-arm hinged to a bracket or arm on the top bar and actuated by a spring-bolt. The back movement of the lay throws the guard-rod from its inner to its outer and working position.

Claim.—1. In shuttle-guards, the combination and arrangement of the lay top bar A and its projections B B with their end stops D D and the guard-rod, with one or more intermediate supports to the rod, when the guard-rod motion is at right angles to the lay-bar, all when constructed and arranged substantially as described.

2. The combination and arrangement of the swinging guard-rod C, the arms B B, the catch-arm H, and the arm E, placed on the lay top bar, and provided with the spring-bolt F, all arranged and fitted to operate substantially as set forth.

3. In shuttle-guards, the combination and arrangement of the lay top bar A, the arms B B, and the automatically-swinging guard-rod C, when the latter swings below the arms, with the catch-arm H and its immediate attachments, all substantially as shown and described.

145,764.—Balanced Valve for Steam-Engines.—NATHAN P. STEVENS, Hopkinton, N. H. Application filed November 26, 1873.

By means of the ports running through and across the valve it is balanced by exhaust and live steam.

Claim.—The cylindrical valve made in two semi-cylinders, a b, jointed and packed, and having passages h p p' through and across them, as described, in combination with the valve-case, having the arcal overlaps g g and the steam-passages d e d' arranged within it, in manner substantially as specified, all being essentially as represented.

145,765.—Windmill-Regulator.—DANIEL C. STOVER, Freeport, Ill. Application filed August 13, 1873.

At the side of the pump-stock, and communicating with it, is a surplus-water cylinder, fitted with a piston, the rod of which is connected to the weighted arm of the pivoted tail-vane. When the speed of the wheel becomes so great that more water is raised than the pump-nozzle can discharge the pressure of the water in the surplus-chamber depresses the piston therein and causes the wheel to be thrown out of the wind.

Claim.—A surplus-water cylinder, N, communicating with the interior of a pump, and having a piston working in it which is connected to a vane-working mechanism, substantially as described.

145,766.—Machine for Shaping Pickets.—ANDREW J. SUTHERLAND, Ann Arbor, Mich. Application filed August 8, 1873.

Pickets can be pointed in various forms by an adjustment of the cutters upon the moving parts.

Claim.—1. A picket-shaping machine provided with adjusting devices I I', holes 1, 2, &c., arms 1, 2, &c., cutters N N', bolts V V', and holes 1, 2, &c., in the block G, whereby the shaving-knives may be made to vary their style of approach while the picket is steadily moved between them, substantially as and for the purpose set forth.

2. In a picket-shaper, the knives W, provided with the protecters *u u'*, substantially as and for the purpose set forth.

3. The pivoted cutters N N', in combination with the cross-pieces G F, connecting-bars 2, moving cross-piece O, head-block bar C, head-block H, and lever L, substantially as and for the purposes shown and described.

4. In a picket-shaper, the combination of the head-block H, lever L, and the spring-fulcrum M M', substantially as shown and described.

5. The combination of the lever L, spring-fulcrum M M', head-block H, bar C, cross-piece O, connections 2, and pivoted cutters N N' with a suitable frame or bed, substantially as and for the purpose set forth.

145,767.—Wash-Boiler.—JOSEPH C. TILTON, Pittsburg, Pa. Application filed October 24, 1873.

Claim.—The false bottom B, having the tubes F F', secured to the boiler by the angle-bolts G G', as and for the purpose described.

145,768.—Hydrant.—THEOPHILUS VAN KANNEL and GEORGE ELZENHOEFER, Cincinnati, Ohio; said VAN KANNEL assignor to said ELZENHOEFER. Application filed September 17, 1873.

An elastic collar is placed between a collar on the valve-rod and the lower section of the hydrant. When the valve is closed the collar springs out, owing to its peculiar shape, and leaves a space for the escape of the waste water.

Claim.—1. In combination, the fixed member A, moving member C, and elastic collar E, to constitute a frictionless valve, substantially in the manner set forth.

2. The valve and its seat, and the elastic collar E, combined with the moving member C, provided with the waste-hole c^6, substantially as set forth.

145,769.—Caster.—GEORGE W. WAITT, Philadelphia, Pa. Application filed April 28, 1873.

The grooved head of a caster is provided with a cone and conical cap. Within this cone is fitted a slotted web, in which are conical friction-rollers, held at an inclined angle and having an orbital, and at the same time a motion of revolution on their axes.

Claim.—The grooved head A, provided with the cone D and conical cap I, in combination with the slotted web G and inclined conical rollers H, as and for the purpose set forth.

145,770.—Whalebone-Splitting Machine.—DANIEL WARNER, Boston, Mass., assignor to JAMES A. SEVEY, same place. Application filed November 26, 1873.

Irregular pieces of whalebone are split into three slips, one being of parallel sides, the others tapering.

Claim.—The two plane-stocks E E', cutters C C', springs or throat-pieces M M', and the guide-tongue R, arranged in manner and fixed upon a base or bed, B, so as to operate as and for the purpose substantially as described.

145,771.—Ore-Washer.—SETH WHEELER, Albany, N. Y. Application filed November 4, 1873.

The semi-cylindrical segment of one plate fits within that of the next plate, the segments being concentric with the hinge-pin or shaft uniting the plates. This form of joint prevents the loss of fine ore or the wedging of stones between the slats.

Claim.—An endless chain or carrier made of metal plates *a*, provided with segments *b c*, flanges *f*, and lugs *d d*, and connected by the hinge pins or shafts *e e*, substantially as and for the purposes set forth.

145,772.—Guard for Doors and Windows.—JOSEPH W. WHITE, Weymouth, Mass. Application filed November 28, 1873.

A guard for doors, formed of lattice-bars pivoted together so as to be extensible, and expanded into place and held there by means of a screw-threaded rod, a collar, and a nut.

Claim.—The lattice guard for doors, made as described, of the crossing and jointed bars *a b*, and arranged to be expanded and held to the door-frame by means of the screw-threaded rod *k l*, collar *i*, and nut *h*, as shown and described.

145,773.—Window-Guard.—JOSEPH W. WHITE, Weymouth, Mass. Application filed June 18, 1873.

In window-guards formed by a series of lattice bars pivoted to each other in the form of a "lazy-tongs," the guard is expanded against the sides of the frame, and held in position by the weight of the window resting upon the upper ends of the bars.

Claim.—The lattice guard for windows, made as described, of the crossing and jointed bars *a b*, and arranged to be applied to the window-frame and expanded and held by the weight of the sash, as shown and described.

145,774.—Carbonic-Acid-Gas Generator.—OTTO ZWIETUSCH, Milwaukee, Wis. Application filed August 19, 1873.

The machine is self-regulating, so that when the pressure of gas is too great the basket containing the marble chips is raised out of the dilute acid and the generation of gas stopped, to be resumed again when the pressure sufficiently ceases.

Claim.—1. Generator B, in combination with basket *f*, piston *c*, packing *o o*, packing *z z*, cover E, clevis *h*, cross-bar *u* and levers *s s*, weights *t t*, and connections *v v*, substantially as described.

2. Cross-bar *e*, cover *d*, and generator B, all in combination with latch *g*, substantially as described.

3. The combination of safety-valve *m*, washer D, and generator B, substantially as set forth.

145,775.—Hydraulic Feed for Revolving Rock-Drills.—ROBERT ALLISON, Port Carbon, Pa. Application filed December 10, 1873.

It consists in the combination of hydraulic cylinders, supply and discharge pipes, with a revolving drill-spindle carrying the drill-rod, and arranged externally to said cylinders, and so connected with their piston-rods as to be moved forward or back by pressure on the pistons.

Claim.—1. The combination, substantially as described, of the cylinders, pistons, and piston-rods with a spindle located outside of said cylinders, which carries the drill-rod, and is connected to said piston-rods, so as to be advanced or withdrawn by hydraulic pressure on the pistons.

2. The combination, with the cylinders A A and pipes O, N, J, and Q, of the four-way cock K, by which the feed of the drill is regulated or reversed, substantially as above described.

145,776.—Shoe-Fastening.—SAMUEL BABBITT, Brazil, Ind., assignor to himself and WILLIAM E. SIBLEY, Boston, Mass. Application filed November 1, 1873.

Claim.—A shoe-lacing consisting of the metal loops C, flat strap D, and buckle E, all combined and arranged substantially as described, and represented in the drawing.

145,777.—Till-Alarm.—JOHN F. BALDWIN, Nashua, N. H., assignor to himself and MILES ALARM-TILL MANUFACTURING COMPANY, Providence, R. I. Application filed November 1, 1873.

An alarm-till lock has vertically-moving bolts inclined on their lower sides, and resting upon similarly-inclined tops of peculiarly-shaped keys, which pivot upon a flange projecting from the base-plate.

Claim.—The combination, in a till-alarm clock, of the straight bolt E, extended bar, trip J on top of drawer, and one-armed lever F, substantially as and for the purpose described.

145,778.—Pen-Wiper.—HUGH S. BALL, Spartanburg, S. C. Application filed June 21, 1873.

To a vertical shaft are pivoted two curved levers, having sponge-cups at one end and weights at the other, to separate the cups to receive the pen, by pressure of which upon the lower sponge the upper one is caused to descend.

Claim.—In combination with a stand or support, B, the levers C D, provided at one end with sponge-holding cups F F', and respectively curved and weighted at their opposite ends, as shown and described, to operate as specified.

145,779.—Apparatus for Unloading Corn from Wagons.—THOMAS BARRON, Black Oak, Mo. Application filed September 13, 1873.

The bottom of the wagon is hinged to the side, which is arranged to be elevated and dump the load into a hinged conveyer.

Claim.—1. The buttons E, having toes at the outer ends, combined with a series of forked levers, G, connected by pivoted bars H, as and for the purpose specified.

2. The board T, provided with end plates U, pivoted to the frame, and combined with bottom c^1, as and for the purpose described.

145,780.—Grain-Car Unloader.—MASON W. BOSWORTH, Binghamton, N. Y. Application filed November 8, 1873.

A slotted plate moving on guides is reciprocated by an endless chain, a gudgeon, secured to the edge of the same, entering a vertical slot in the movable plate. To this plate one end of a rod is secured, the other end of which is held firmly between guide-pulleys. To either end of the rod scrapers are attached by cords. As the rod is reciprocated the scrapers will be alternately drawn to the door of the car.

Claim.—1. In a grain-car unloader, the combination of the drums B D, endless chain C, and gudgeon F, with the slotted sliding plate G and guide-rods H, substantially as and for the purpose described.

2. The slotted sliding plate G and guide-rods H in combination with the rod J and pulleys K, substantially as shown and described.

3. The rod J, arranged to be reciprocated, as shown, in combination with the ropes M, scrapers L, and guide-rollers N, substantially as shown and described.

145,781.—Railway-Crossing.—JAMES BRAHN, Jersey City, N. J. Application filed June 7, 1873.

Claim.—The slotted or hollow metallic blocks C, filled with wood D, provided with a wooden facing-block, E, and with a metallic guard-bar, F, in combination with the intersecting rails of a railroad-crossing, substantially as herein shown and described.

145,782.—Wind-Wheel.—PHILIPP BRAND, JOSIAH BARROWS, and ALEXANDER ARMSTRONG, Jacksonville, Ill. Application filed September 27, 1873.

The wheel is mounted on a tubular support so as to turn on a hollow shaft, and having a horizontal arm, with a friction-roller on it, working in a spiral slot formed in an arm of the vane-support, so that the wheel may swing around parallel with the vane out of the wind, when it is too strong.

Claim.—1. In combination with the vane and its casting or ring-socket F, provided with the spiral bar J having slot K, the wheel P, having an arm, M, working in said slot, and supported on a hub, O, revolving independently of the vane, substantially as shown and described, whereby the wheel may vary its position relatively to the vane.

2. In combination with the pump-rod, the lever T, having a swivel-connection therewith, and pivoted, at U, to an arm of the revolving hub O, carrying the wheel P, as shown and described.

145,783.—Wheel for Vehicles.—DAVID BROWN, Clinton, Tex. Application filed September 6, 1873.

Claim.—The cylinder C and flanges D, having polygonal bearing-surfaces, and the grooved and flanged ring E, in combination with the polygonal axle-arm, as shown and described.

145,784.—Furnace for Heating Soldering-Irons.—JOSIAH BURGESS, Zanesville, Ohio. Application filed June 19, 1873.

Claim.—1. The combination in a furnace for heating soldering-irons, substantially as described, of the chamber *a*, having compartments or chambers *c f*, tubes *i* and *o*, with chamber 2 and tube 3.

2. The combination in a furnace for heating soldering-irons, substantially as set forth, of the air-chamber *l*, provided with inlet-pipe 6 for attaching a hose, and the tube *o*, with the chamber 2 and tube 3, all arranged and operating for the purpose of using a blast.

145,785.—Curtain-Fixture.—HARVEY H. BURRITT, Belleville, N. J. Application filed October 25, 1873.

Claim.—The curtain-fixture made with a roller end, and a frictional clamp interposed between the inner surface of the roller end and the cylindrical or smooth spindle, substantially as set forth.

145,786.—Grinding-Mill.—DAVID A. CALDWELL, Jacksonville, Ill. Application filed February 15, 1873.

Devices as arranged for adjusting the runner-spindle vertically, and simultaneously indicating the degree of adjustment. Toothless driving-wheel and its connection, with a supplementary driving-gear, the former having springs arranged in suitable sockets to prevent back-lash, &c.

Claim.—1. The crank-arm and pointer moving over a dial, *x*, the screw *g* having collar *x'* for preventing endwise motion, the frame *u v* and movable bar *r*, and the lever *n* having a forked end and supporting the runner-spindle, all combined and arranged as shown and described, to operate as specified.

2. The combination, with the gear-wheel C, loose on the shaft B, of the fast wheel A having a slotted peripheral flange with sockets D, the springs F G, and cap-plates, all as shown and described, whereby the wheel A fits within and under wheel C, and is attached thereto, as specified.

145,787.—Billiard-Table.—HUGH W. COLLENDER, New York, N. Y. Application filed January 16, 1872.

An improvement over the French ogee tables, the underslanting side and end rails being in planes instead of curves, and cut under far enough to always clear the player.

Claim.—A billiard-table formed with beveled side rails *f*, or with the sides of its body beveled under, substantially in the manner and for the purposes hereinbefore specified.

145,788.—Bracelet-Fastening.—SHUBAEL COTTLE, New York, N. Y. Application filed November 1, 1873.

Claim.—The combination of the catch B, having the knob, the hinged cap C, fitting over said knob, and the spring-pin that locks the cap to the knob, all constructed substantially as described, and for the purpose set forth.

145,789.—Valve.—GEORGE R. CRANE, Painesville, Ohio. Application filed October 4, 1873.

Claim.—The bars composing the cage, having a stud to keep the valve in place, and being detachably connected to the plate A to allow of removing the valve by removing one of said bars, substantially as specified.

145,790.—Locomotive-Window.—JOHN H. DINSMORE, Boston, Mass. Application filed November 22, 1873.

Claim.—The improvement in locomotive windows and doors, consisting of an outer and inner sash, which form an inclosed space, with a system of steam-pipes running in the same along its sides, and hinged to the steam entrance and exit pipes, in the manner and for the purposes substantially as described.

145,791.—Fly-Trap.—GEORGE W. EICHHOLTZ, New Berlin, Ill. Application filed August 4, 1873.

Claim.—The vertical sheet-metal body B, removably connected with the slotted base plate A by pivoted hooks *a*, and having the wire gauze entrance-cones D, inner wire-gauze cone C F, and removable wire-gauze cover G connected therewith, all combined as shown and described, for the purpose specified.

145,792.—Dust-Pan.—ORLANDO C. FORSYTH, Jr., Newburg, N. Y. Application filed July 5, 1873.

A front stiffening-strip and a handle of wire bent to form a loop at top, twisted in the middle, its ends bent laterally in opposite directions and then downward, terminating in pads, the rear of the pan being thus slightly elevated.

Claim.—A dust-pan provided with a handle, C, made of wire bent at the middle to form an oblong end loop, next twisted together, then bent laterally and downwardly to support the rear of the pan, in the manner described.

145,793.—Piano and Organ Attachment.—LÉON J. FRÉMAUX, New Orleans, La. Application filed July 26, 1873.

The attachment being securely fastened above the key-board, a sliding tune-board having projecting pins is placed upon the attachment, and, turning the crank-handle, then slides the tune-board along, which operates a set of levers terminating in downthrusting pins, thus rendering the tune by simply turning the crank. Every tune requires a different slider.

Claim.—1. The combination of the adjustable bearers Y, adjusting-bar Z, elbow-levers Z^1, and the adjusting-screw Z^2 with the box of the playing attachment, substantially as specified.

2. The combination of said adjustable bearers Y, adjusting-bars V, and the clamps *a b* with the box of the said playing attachment, substantially as specified.

3. The combination of the socket-knobs *d* with the hammers and the box-bottom, substantially as specified.

4. The combination of a movable music-board, containing pins and bridges, as described, with levers I, for communicating motion to the key-hammers of an attachment for playing pianos, substantially as specified.

5. The arrangement of rods J^1, arms J^2, rock-levers K', arms L', and springs P with the key-hammers and the transmitting-levers I, substantially as specified.

6. A mechanical attachment for playing pianos and organs, comprising the detachable box, movable music-board, mechanism for moving said board, the hammers or plungers, and the levers, rods, rock-shafts, arms, and springs, combined and arranged substantially as specified in the foregoing clauses of claim, and for the purpose set forth.

145,794.—Nipper for Twisting Wire.—JOHN W. FAY, Panama, United States of Colombia. Application filed May 24, 1873.

The rivet or fulcrum is provided with an enlarged grooved extension.

Claim.—The boss B, formed on the extension of the rivet that connects the jaws together, in combination with the jaws *b b*, having the hole A, substantially as and for the purpose specified.

145,795.—Grain-Drill.—JESSE P. FULGHUM, Dublin, Ind., assignor to himself and WAYNE AGRICULTURAL COMPANY, same place. Application filed August 22, 1873.

The capacity of the feed-chamber, as well as that of the feed-wheel, is governed by the adjustment of one end of the chamber and a revolving disk, which is fitted to and slides upon the feed-wheel. The shaft and disk, and the adjustable section, are moved by a forked lever, which engages with a collar upon the shaft, the lever being adjustable at any point by a lateral slot and thumb-screw.

Claim.—1. The box composed of the castings B C, having the shoulder V formed therein, the loose feed-wheel F, supported within the box, the non-circular driving-shaft H, adapted to slide axially, and the cut-off disk J and guard-plate M, attached to the driving-shaft and sliding therewith, all constructed and combined substantially as herein described, for the purpose specified.

2. In combination with the shiftable and rotating driving-shaft H, with its attached cut-off disk J, the lever R *r*, bracket S *s*, stud and thumb-nut T *t*, and pivot Q, for the object designated.

145,796.—Scrubbing-Machine.—WILLIAM J. GARD, Winona, Minn. Application filed October 17, 1873.

A cylinder containing water or suds is supported by posts on casters; descending through it, with brushes at the bottom and a pinion at the top, is a shaft revolving in alternate directions by a segmental rack and hand-lever. An elastic apron in vertical guides prevents splashing. Water is supplied to the brushes by a tube and piston in the cistern, having a spout descending below it.

Claim.—1. In a scrubbing-machine, the water-conducting pipe E, having an opening, *i*, stop *h*, the handle *g*, in combination with the water-tank D, brushes B, shaft *a*, pinion *b*, and segmental rack *c*, all operating substantially as described.

2. The curved scraper G, having on its lower edge the rubber strip *m*, in combination with the grooves *k k* and the lever *n*, for elevating and depressing the scraper, substantially as described, for the purpose set forth.

145,797.—Blind-Hinge.—OLIVER S. GARRETSON, Buffalo, N. Y. Application filed February 7, 1873.

A small spur is cast upon one leaf and a slight indentation in the other, and these are for the purpose of assisting the builder in properly setting the hinge.

Claim.—A blind-hinge having the spur or marker *f* on one half, in combination with the indent *h*, or other equivalent mark, on the other half, substantially as and for the purpose herein set forth.

145,798.—Toy Pistol or Gun.—GLOVER S. HASTINGS, Plainville, Conn., assignor of two-thirds his right to CHARLES R. STEPHENS and EDWARD N. PIERCE, same place. Application filed September 25, 1873.

Claim.—1. A toy pistol, for firing off parlor or other detonating matches, provided with a hammer and trigger, constructed in one piece, and operated by simple lever-pressure, substantially as set forth.

2. The combination of the barrel and stock, constructed in one piece, with a hammer and trigger, similarly constructed, substantially as described.

3. The hammer and trigger B D, made in one piece, and weighted below the pivot so as to be self-cocking, substantially as shown and described.

4. The mode herein described of impelling the stock of a match or arrow, to one end of which detonating-powder is secured, by subjecting the powder to pressure or concussion within the barrel of a fire-arm, adapted to hold the match at any angle, as it is subjected to pressure, and guide the stock as it is impelled from the barrel, substantially as shown and described.

5. The barrel A, provided with the projection A and inclined recesses *i*, in combination with the hammer D, substantially as set forth.

145,799.—Washing-Machine.—MOSES L. HAWKS, Kinderhook, Mich. Application filed September 20, 1873.

In a washing-machine having upper and lower corrugated rollers journaled in a suitable frame are connecting wires or rods, bent twice at right angles, connecting the standards and cross-bars. Rubber bands, whole in their upper section and split in their lower part, act as springs on the bearings of the upper roller.

Claim.—1. The connecting wires or rods P, bent twice at right angles at the inner sides of the standards D, combined with said standards, and with the cross-bars M M, substantially as herein shown and described, and for the purpose set forth.

2. The rubber bands L, whole in their upper part, and split in their lower part, and the stationary supports N, in combination with the half-bearings K of the upper roller A, and the supports O, attached to the cross-bars M, that form the bearings for the two outer lower rollers C, substantially as herein shown and described.

145,800.—Printer's Furniture.—HENRY A. HEMPEL, St. Joseph, Mo. Application filed August 27, 1873.

The key being inserted between the rack-bars, the quoins are moved up or down the incline, and thus lock or unlock the type. The peculiarity of this device with double incline is that when the pressure on one quoin is greater than on the other the movement of the one which encounters the less pressure will be accelerated, while that of the other will be retarded until the pressure is equalized—*i. e.*, until both quoins bear equally against the type.

Claim.—The combination of the quoins *m* and *m*, provided with rack-bars *a a*, the pinion *g*, and double-inclined frame or bar *e f*, substantially as shown and described, to operate as specified.

145,801.—Gaiter-Boot.—CALVIN HERSOME, Boston, Mass. Application filed November 19, 1873.

Claim.—The loop E, in combination with the fastening-strap C of a gaiter-boot, all substantially as and for the purpose described.

145,802.—Construction of Cisterns.—LUTHER HOWE, Oshtemo, Mich. Application filed November 29, 1872.

Claim.—The herein-described method of constructing a cistern, namely, by forming a mold of earth, coating the same with water-cement, which is allowed to harden, excavating the mold, and completing the cistern by lining the lower portion of the excavation with water-cement joined to the edges of the upper portion, substantially as specified.

145,803.—Carpet.—GREGORY ISKIYAN, New York, N. Y. Application filed November 1, 1873.

The weft consists of stripe of felt, on which a long nap is raised and then pressed down upon the surface to hide the cotton or linen warp-threads.

Claim.—A fabric of which the weft is of woolen felt only, or the same and woolen yarn, and the warp of cotton twine or thread, or other cheap material, having a nap raised on the surface, and either pressed and matted down to hide the warp or not, substantially as specified.

145,804.—Molding-Machine.—NICHOLAS JENKINS, Madison, assignor to himself and FRANCIS O. MANCHESTER, New Haven, Conn. Application filed April 26, 1873.

A series of guide-plates are secured upon one side of the material to be operated upon, which is carried forward by suitable feed and guide rolls and presented in the desired position to the action of the forming-cutters.

Claim.—1. The wheels B^1 B^2 C' D', in combination with suitable cutters *t*, and arranged to operate, relatively thereto and to the material M, as herein set forth.

2. The feeding and guiding shafts B C D, with their respective wheels, in combination with suitable cutters *t*, and with the castings N, fixed upon the material M, all as and for the purposes herein specified.

145,805.—Ventilating Car-Window.—CHARLES B. KNEVALS, New York, N. Y. Application filed December 1, 1873.

A horseshoe-shaped plate provided with stop-flanges upon the ends of its arms, which are perforated, and in combination with the casing and sash of a car-window and the bolts attached to said sash, all adjusted to admit air to ventilate the car and exclude the cinders and dust.

Claim.—The horseshoe-shaped plate C, provided with stop-flanges upon the ends of its arms, in combination with the case and sash of a car-window, and with the bolts D, substantially as herein shown and set forth.

145,806.—Steam-Pump.—BENJAMIN S. LAWSON, New York, N. Y. Application filed October 27, 1873.

Claim.—1. The crank-shaft C, carried on the piston-rod, in combination with the crank *c* and connecting-rod *d*, the latter connecting to a pivot or shaft, D, mounted in fixed bearings, as herein specified.

2. The cross-piece D^1 D^2 on the rocking shaft D, which by a suitable connection, operates the valve *s*, in combination with the spring G carried on or by the piston-rod, as herein specified.

3. The valve-rod E and valve *e*, operated by the arm *d'* on the rocking lever D, in combination with the long arm or connecting-rod *d*, and cranked shaft C *c* carried on the piston-rod, and with spring G, also carried thereon, arranged to serve in throwing the crank past the center, as herein specified.

145,807.—Bung-Bush Inserter.—LOMAX LITTLEJOHN, New York, N. Y. Application filed September 27, 1873.

After the sleeve has been expanded sufficiently by the elliptical journal, a tongue formed thereon strikes the shoulder of the split sleeve, and thus prevents the bursting of the bush by further expansion.

Claim.—The combination, with an ellipsoidal shank, A, used to spread the two parts of a cut ring, of the tongue H, arranged as and for the purpose set forth.

145,808.—Pie-Marker.—THOMAS S. MACOMBER, Hamilton, N. Y. Application filed October 18, 1873.

A rotary concave trimmer is attached to a rotary marker, which has on its face a stamping design and air-hole cutters.

Claim.—In an implement for marking and trimming pies, possessing a cutter, A, and marking-wheel B, the combination therewith of the stamping-die *b* and vent-hole cutters *d*, as and for the purpose specified.

145,809.—Letter-Clip and Paper-Binder Combined.—GEORGE W. MCGILL, New York, N. Y. Application filed August 22, 1873.

A mortise in the lower jaw of the clip admits the thumb to raise the retaining-pin and release the paper-fasteners.

Claim.—A clip for holding or binding papers, one plate or leaf of which is provided with an opening through which to operate a paper fastener retaining-spring, D, substantially as and for the purpose specified.

145,810.—Apparatus for Manufacturing Illuminating-Gas.—JOHN G. MÜLLER and WILLIAM MÜLLER, Dayton, Ohio. Application filed October 4, 1873.

The valve and its inclosing gasometer, arranged over the retort and between it and the purifiers, performs the function of the hydraulic main usually employed. The retort is placed in a brick furnace provided with cast-iron front and rear plates bolted to the brick-work.

Claim.—1. The arrangement, between the gas generator and receiver, of the valve E, formed of an outer vessel having an annular portion containing liquid for sealing the movable top or cover, the valve *g g'*, and tar-escape pipe A, and gas inlet and exit pipes *f' f*, projecting up into the chamber of the valve, all as shown and described, to operate in the manner specified.

2. The improved gas apparatus, formed of reservoir D, retort A with funnel attachment *s s'*, and pipe *f*, valves E E', purifiers F, and receiver G, all constructed and arranged to operate as specified.

145,811.—Sofa, Chair, &c.—ADAM S. NEWHOUSE, Hamburg, S. C. Application filed July 10, 1873.

The seat and back of the chair or sofa are made of wood and provided with perforations, in which pegs are inserted that hold the strings attached to the tufts in place.

Claim.—A sofa or chair having a solid back or seat of woodwork, perforated as shown, and tufted by means of the pins or pegs C and strings *c*, substantially as described.

145,812.—Lubricating Compound.—JOHN B. NORRIS, Richmond, Va. Application filed August 14, 1873.

Claim.—A lubricating compound composed of the several ingredients herein specified, viz: Lubricating-oil, residuum, Spanish whiting, sal-soda, reduced cannel-coal, concentrated lye, tallow, and water, compounded in the proportions, and in the manner, and for the purposes substantially as herein set forth and described.

145,813.—Mechanism for Towing Boats.—GILES S. OLIN, Deer Lodge, Mont. Ter. Application filed September 27, 1873.

The main driving-shaft is detachably connected by gearing with the propeller shaft, and is also detachably connected with an additional shaft carrying a rope or chain drum. By this arrangement the propeller-shaft may be thrown into gear with the driving-shaft, to send the boat ahead, at the same time that the drum is allowed to unwind the rope or chain. The boat is then anchored by setting-poles, the propeller-shaft thrown out of gear, the drum-shaft thrown into gear, and the boats in tow are drawn to the tug, when the operation is repeated.

Claim.—The combination, in a canal-tug, of the detachably-coupled drive-shaft I and propeller-shaft J, with a shaft, D, and drum C, also detachably connected, as described, to allow the same power mechanism to wind up the rope, and thus tow the boat along at one time, while at another it pays out the rope by propelling forward the tug.

145,814.—Sewing-Machine.—CHARLES H. PALMER, New York, N. Y. Application filed October 14, 1873.

To sew straw-braid. The circular eye-pointed needle, the point of which enters and emerges from the same side of the material, is secured at the end of a horizontal rock-shaft operated through the walking-beam and flexible or cord connections. The finger and spreader catch, open, and retain each loop to be entered by the needle, to form a chain-stitch.

Claim.—1. The combination, substantially as set forth, of the circular needle described, the table, the feed, and the mechanism described for operating said needle.

2. The combination of the needle described, the loop-finger, the spreader, and the pendulum face-plate, arranged to operate substantially in the manner and for the purposes set forth.

145,815.—Rubber Mat for Pitchers, &c.—CORNELIUS A. PRICE, Jersey City, N. J. Application filed September 27, 1873.

Reticulated to a portion of its depth, its shape, in part, conforming to the bottom of the pitch, in front of which, in part of a larger concentric circle, stand the tumblers. A raised portion between the pitcher and tumblers prevents the forward sliding of the former.

Claim.—As an article of manufacture, a rubber mat for pitchers, &c., formed of the parts A and B, separated by a semicircular raised rib, C, as shown and described.

145,816.—Bleaching Damaged Cotton.—JAMES B. RICKARDS, "The Green," Kilburn, assignor to GEORGE FIPOOT LYDE, Manchester, England. Application filed November 12, 1873.

Claim.—1. The compound for permanganate of potassa, chloride of lime, and glycerine, substantially as and for the purpose set forth.

2. The compound of carbonate of potassa, chloride of lime, and glycerine, substantially as and for the purpose set forth.

3. The process of cleansing and bleaching vegetable fibers by means of the combination of permanganate of potassa, and chloride of lime, and of carbonate of potassa and chloride of lime, with or without the use of glycerine, as set forth.

145,817.—Lock or Catch for Trunks.—ANTONY V. ROMADKA, Milwaukee, Wis., assignor to ROMADKA BROTHERS, same place. Application filed August 29, 1873.

Claim.—In a trunk-fastening device, the lever or handle F, having the catch D, in combination with the catch C and spring E, constructed and operating substantially as and for the purpose set forth.

145,818.—Machine for Driving Nails.—ADDISON SMITH, Perrysburg, Ohio. Application filed March 3, 1873.

Claim.—The combination of the plate C, provided with its finger *b* and notched shoulder *a*, with the feeding device B, whereby they support alternately the column of tacks, and supply them singly to the opening below, substantially as and for the purpose described.

145,819.—Locomotive-Furnace.—ANDREW J. STEVENS, Sacramento, Cal. Application filed October 4, 1873.

Claim.—A boiler-door provided with a damper, F, on the outside, and an air-deflector, H, on the inside, as described, so that when the former is opened the latter deflects the whole current of air, and directs it into the fuel.

145,820.—Weather-Strip.—OLIVER A. VORCE, Kentland, Ind. Application filed November 8, 1873.

The strip is raised by means of a rod, which connects it to a crank near the center of the door, and the bell-crank is connected to a spindle-lever on the shaft of the door-knob. The turning of the door-knob operates the bell-crank and raises the strip from the door-sill. A strip-spring on the top of the door is connected to the bell-crank by a rod, and when the door is opened the spring is released, and holds the strip in an elevated position.

Claim.—1. The automatic weather-strip C, which is raised and lowered in the door A, in connection with the bell-crank lever D, double spindle-lever E, and top-spring F, in combination with the door-sill B, having projecting cap-piece *a*, substantially as and for the purpose described.

2. The combination, with the door and door-casing, of the spring F, cords or rods *f d*, and strip C, as shown and described.

145,821.—Curtain-Fixture.—HENRY K. WARNER and CHARLES E. SMITH, Rochester, Minn. Application filed March, 15, 1873.

The curtain-roller is suspended in a frame composed of a top and a back bar, a stationary and a pivoted bracket, and to the front of the top bar is pivoted or hinged a cornice to protect the curtain.

Claim.—1. The combination of the bars D E, stationary bracket H, and pivoted bracket I with each other, to adapt them to receive the shade-roller C, substantially as herein shown and described.

2. The combination of the hinged cornice L with the bars D E, stationary bracket H, and pivoted bracket I, substantially as herein shown and described, and for the purpose set forth.

145,822.—Machine for Removing Snow and Ice from Roadways.—CHARLES G. WATERBURY, New York, N. Y. Application filed March 22, 1873.

A blast of air entering near the top of the furnace drives the flames down through the bars against the surface of the roadway. The heat is confined by the sides of the furnace, which extend downward on three sides nearly to the ground.

Claim.—1. The combination, with sides D E, of cover M, having the depressions P, as and for the purpose set forth.

2. The inner and outer shells, A and K, of the furnace, forming the water-space J, extending down the sides D E, and closing the heat-channel in the rear of box Q, as and for the purpose specified.

3. The combination, with the sides D and E, forming the channel for confining the heat, of the hood G, substantially as and for the purpose specified.

145,823.—Sewing-Machine.—THEODORE A. WEBER, Philadelphia, Pa., assignor to ALBERT LATHROP RUNYON. Application filed August 30, 1873.

Improvement on patent No. 139,067. By arranging the parts to operate so that the looper first enters the loop of needle-thread, a very short rigid needle may be used, which is not the case when the hook first operates. The hook spreads the loop for the passage of the spool. The bulged plate of the looper holds the slack given up by the hook, and it with the take-up draws the stitches taut.

Claim.—1. The arrangement of the rotating looper, needle, and the vibrating spreader, substantially as described, so that the rotating looper takes the loop first and near the plate K, and then the spreader takes said loop from the looper, substantially as specified.

2. The upper take-up *b*, arranged in connection with the needle-arm W, and in combination with the lower bulged rotating take-up E F, substantially as specified.

145,824.—Till-Alarm.—EGBERT O. WOOD, Nashua, N. H. Application filed November 1, 1873.

The tumblers and keys of an alarm-till lock are strung in pairs, separated by the partitions of a slotted frame, upon a single bolt or wire. The contiguous parts of each pair are fitted to one another by shoulders and recesses, so as to admit of their proper working.

Claim.—The tumblers J and keys I, constructed substantially as herein shown and described, in combination with the bed F, bolt G, and lock-plate K, as and for the purposes set forth.

145,825.—Adjustable Hanger for Mirrors, &c.—JAMES WRIGHT, New York, N. Y. Application filed November 15, 1873.

Two tongued and grooved strips are combined together, the upper or front one having a hole in its upper end to receive the nail, and the lower one is provided with a shelf, on which the lower part of the mirror-frame rests. The two strips are held together by a screw-clamp, and are provided with a hand-hook to receive the suspending-cord.

Claim.—The combination of grooved and tongued strips A B, the former sliding upon the latter, and the latter having a shelf, G, with the clamp C D and hand-hook E F, as and for the purpose specified.

145,826.—Whiffletree.—HENRY AGAR, Batavia, N. Y. Application filed August 19, 1873.

Claim.—The hooks C, passed through the bar B, and secured to the springs D, so that their hooked ends will be held against the bar B and prevent the disengagement of the traces when the draft is slackened, as set forth.

145,827.—Apparatus for Bending Coffin-Sides.—JOSEPH P. ALBIN, Cincinnati, Ohio. Application filed November 6, 1873.

Inclined grooves *c* are provided on the inner face of the side lugs E, in which the locking-bar F is made to clamp the board.

Claim.—In a machine for bending coffin-sides, the lugs E, having inclined grooves *c*, in combination with the bar F, cleat C, groove *c*, and frame A A^1 A'', B and B', all constructed and arranged substantially as set forth.

145,828.—Molding Apparatus.—WILLIAM C. AMISH, Hainesport, N. J. Application filed November 24, 1873.

A reciprocating frame arranged in a box carries at either side a half-pattern, which projects through an aperture in the box. A flask is placed upon the box and rammed up. The pattern is then withdrawn and the flask removed. The box being reversed, the other part of the mold is formed in the same manner.

Claim.—1. A reversible molding apparatus in which the two halves of the pattern are arranged at opposite sides of a box, D, and admit of being advanced and retracted thereon, for the purpose specified.

2. The combination of the box D, the sections A and A^1 of the pattern, and the sliding frame B, whereby one of the said sections may be advanced through an opening in the box simultaneously with the retracting of the other section, for the purpose specified.

3. The combination of the bolt *i* and notched disk *j* with the cam-shaft G, for the purpose set forth.

145,829.—Child's Chair.—ROBERT ARDREY, Philadelphia, Pa. Application filed September 22, 1873.

The stool is provided with a pivoted foot-rest having a curved arm, which rests against the lower side of the seat when the rest is lowered for use. A padded ring is used in connection with the leaf having the circular opening therein.

Claim.—1. The combination, with the stool A, of the swiveled foot-rest E, provided with the curved arm or rest *e*, the end of which rests against the seat when the rest is lowered to retain the latter in a horizontal position, substantially as shown and described.

2. In combination with the leaf D, having the opening d^1, the padded ring d^2, for the purpose set forth.

145,830.—Tool.—JAMES H. BAKER, ASA DONEY, and FREDERICK N. OWEN, Saratoga Springs, N. Y. Application filed September 25, 1873.

A hammer, tack-puller, and spike-extractor are combined in one tool.

Claim.—As a new article of manufacture, the within-described tool or instrument, consisting of the handles A E, jaws B B, head C, lever D, claw F, and spring G, all of said parts being constructed and arranged to operate substantially as and for the purposes herein set forth.

145,831.—Loom-Shuttle.—EDWIN P. BALL, Chicopee, Mass. Application filed May 16, 1873.

The invention is intended to avoid the injurious effects of threading the eye of the shuttle by suction, the parts being so constructed that the thread can be driven through the eye by blowing through the tube arranged for this purpose.

Claim.—The combination and arrangement of the blowing-tube C with the shuttle-eye B, when the latter is made of larger diameter than the blowing-tube C, substantially as and for the purpose described.

145,832.—Ship's Hull.—EUGENE C. BÉLÉGUIC, Paris, France. Application filed August 4, 1873.

Claim.—A ship's hull, constructed with an extension-bow forward of the deck, and provided with narrow upward projections *s* on such extension, substantially as described.

145,833.—Rigging-Stopper.—THOMAS G. BELL, Brooklyn, N. Y., assignor to JOSEPH J. WALTON, New York city. Application filed April 22, 1873.

Short chains are provided at one end with a small bent ring-link, and at the other end with shackles. The ring is just large enough to allow the chain to pass freely through it, thus securing a bight on the shroud. The shackles are then attached and the tackle applied to obtain the requisite tension, when the chains are secured by a lanyard or other suitable lashing.

Claim.—The chains A, provided with the small ring-links B, bent to conform to the shape of the rope, the shackles affording means for attaching the ordinary tackle, and for securing the parts by the use of lanyard D, all constructed and arranged as and for the purpose specified.

145,834.—Car-Axle Lubricator.—JAMES E. BERING, Newburg, N. Y. Application filed August 13, 1873.

Claim.—1. The curved tube C, attached to the end of journal *a*, combined as and for the purpose described.

2. The bearing E, having one or more slopes, $e\ e^1\ e^2$, in combination with the disk D, in the manner and for the purpose described.

145,835.—Berth-Lock for Sleeping-Cars.—THOMAS A. BISSELL, Detroit, Mich. Application filed October 4, 1873.

Claim.—1. In a sleeping-car, a spring-latch attached to the partition to engage with the end of a hinged berth, in combination with releasing mechanism secured upon or within said berth, substantially as and for the purpose specified.

2. The means employed for releasing the spring-latch E from engagement with the end of the berth, consisting of the pivoted lever H, pin I, handle L *l*, and the wires A, constructed and combined to operate substantially as and for the purpose set forth.

3. The locking and releasing devices, consisting of the spring-latch E, attached to the partition, the pivoted lever H, bolt I, handle L *l*, and connecting-wires A and A, secured upon the berth, all constructed substantially as and for the purpose specified.

145,836.—Burglar-Alarm.—FRANCIS W. BLAKEMORE, Philadelphia, Pa. Application filed October 18, 1873.

A right-angled lever, pivoted to a door near its top, engages, when the door is opened, with an oblique flange projecting from a disk pivoted to the wall above and carrying the hammer of a bell. When the door is opened an alarm is sounded; when it is closed the parts resume their normal position, ready for another alarm.

Claim.—The drum D, provided with the gravity-hammer C and oblique plate E, in combination with the plate B, secured to the door-jamb, and holding the gong A and stud *b'*, and the bell-crank G, having the weighted arm *g* resting upon the stud g^1, said crank being attached to the door, all constructed and arranged as shown, and for the purpose specified.

145,837.—Tack-Puller.—CHARLES W. BLAKESLEE, Plantsville, Conn. Application filed September 16, 1873.

The fulcrum-bar is curved toward the handle. The handle is placed outside of the plane of the puller.

Claim.—As an article of manufacture, the herein-described tack-puller, consisting of the lever or handle A provided with a jaw, *a*, combined with a second jaw, *d*, pivoted to the first, and extended to form the fulcrum *c* and handle B, substantially as specified.

145,838.—Ice-Machine.—WILSON BRAY, Lambertville, N. J. Application filed October 22, 1873.

At one end of the apparatus is an ice-box, through which the air-pump can draw the supply of air to be condensed, and the drip-water from the ice-box is conducted into the outer box surrounding the expansion-coil to be utilized.

Claim.—1. An ice-producing apparatus in which are combined an air-pump, V, and two series of submerged pipes, K and E, each communicating directly with the said pump and with each other through a casing or passage in which is arranged a loaded valve, R, all substantially as and for the purpose specified.

2. The combination of the air-pump V and two connected series of submerged pipes, E and K, the former communicating with the pump, and the latter terminating in an outlet provided with a loaded valve, X, all substantially as and for the purposes specified.

3. The arrangement, substantially as described, within the outer tank or freezing-chamber A, and in respect to the central tank B, of the vessels F and G, and the coils E.

4. The combination, substantially as described, within the tank B, of the water-pans H, I, and J, and their connected coils K, K^1, and K^2.

5. The combination of the vessels L, M, N, and P with the coils K, K^1, and K^2, substantially as and for the purpose specified.

6. The combination, with the coils K^2 and E, of the vessels P and F, the valve R and its casing, and the pipe S, all substantially as specified.

7. The combination of the air-pump V, ice-box T, vessel G, and the pipes *s* and *q*, with their cocks, whereby communication may be established between the said pumps and either the ice box or vessel, all substantially as and for the purpose specified.

145,839.—Operating Car-Doors.—JOHN G. BRILL and GEORGE M. BRILL, Philadelphia, Pa. Application filed June 21, 1873.

Claim.—1. The series of crossed bars B B constituting lazy-tongs, in combination with the car-door A, to operate together in right-lined movements, the bars being jointed at one end to the door and connected at the other end to mechanism operated by the driver, as and for the purpose set forth.

2. The bar C, jointed to the door A and to the crossed bars B, substantially as and for the purpose set forth.

3. The foot-levers L L' and rods F H, in combination with the series of crossed bars B B and the door A, substantially as and for the purpose set forth.

145,840.—Process for Purifying and Bleaching Tallow, Lard, &c.—JOSEPH R. BROWN, New Haven, Conn., assignor of one-half his right to HENRY A. STEARNS, Lincoln, R. I. Application filed December 18, 1873.

Claim.—1. Purifying and bleaching tallow, lard, and other fatty matter, by subjecting the same in succession to the action of sulphuric acid, alum, and atmospheric air, substantially as and for the purpose herein set forth.

2. Bleaching and purifying tallow or lard by forcing atmospheric air through the same when heated, above 200°, but not above 230° Fahrenheit, as specified.

3. Bleaching and purifying tallow or lard by forcing through the same, when heated, air charged with the vapor of salt, as described.

145,841.—Quilting-Guide for Sewing-Machines.—FRANK G. BUSCHMEIER, Philadelphia, Pa. Application filed September 16, 1873.

The weighted lever-arm keeps the guiding-arm against the material being quilted, and when the presser is lifted the cam-piece strikes against the lower portion of the head or face plate and turns the guide arm up from the material.

Claim.—1. The arm C, rod D, and weighted lever F, combined and operating substantially as and for the purpose set forth.

2. The cam G, attached to the arm C, and operating to raise the latter when the presser-foot bar is elevated, substantially as set forth.

145,842.—Window-Blind-Slat Operator.—EBER C. BYAM, Fort Dodge, Iowa. Application filed September 30, 1873.

A link connects the rod at the sides of the slats with a pitman-crank which is operated by a pinion-wheel, and serves to hold the slats open at any required angle.

Claim.—The crank-pin *b* on the toothed wheel *a*, when combined and operated with the movable rod D by means of a link or pitman connection, *f*, and the adjustable fastening *g*, substantially as described, and for the purposes specified.

145,843.—Manufacture of Iron and Steel.—CALVIN CARPENTER, Jr., Seekonk, Mass. Application filed July 2, 1873.

The blast passes down through the molten metal in the smaller chamber, and thence up through the mass in the larger chamber, whereby the refining and converting processes are both carried on at the same time and by the same blast.

Claim.—1. A furnace having the chamber A for melting the metal, and the chamber B, connected thereto, as shown, with the blast-inlets arranged at the top of the latter, the whole being constructed substantially as described, whereby the metal can be both melted and treated in the molten condition by the compound blast, in the manner set forth.

2. The chemical hot-blast, consisting of the vapor of hydrocarbon oil, in which potash has been dissolved, combined with steam, and then superheated, for the purpose of acting as a fuel, and also acting chemically on the metal, as herein set forth.

3. The compound blast, consisting of the combined vapors of steam and hydrocarbon oil, and a blast of air reduced below the ordinary temperature, applied to molten metal, as described, for the purpose of rendering the product more magnetic, as set forth.

4. The flux consisting of lime, silica, clay, and potash, when prepared for use in a furnace, substantially as herein described.

145,844.—Fire-Escape.—LUCIEN M. CHIPLEY, St. Louis, Mo. Application filed November 25, 1873.

A fire-proof window-shutter jointed and folded so as to form, when extended, a fire-escape ladder. Each shutter when unfolded connects with the shutter below, so as to form a continuous ladder reaching to the ground. The lower folds are held in place by steps attached to the walls and catches upon the shutter. A fire-proof cord is connected with the catches, which hold the folds in place, so that they may be released from below and the ladder unfolded.

Claim.—1. The combination of a series of folding or sliding ladders attached to window-shutters placed one above the other, substantially as shown.

2. The combination of the fold D, staple G, and catch *g*, substantially as shown and described.

3. The combination of the folds D and D' and steps I, substantially as shown and described.

4. The combination of the cord H, rod E, and *c* of catch F, and fold D, substantially as shown and described.

5. The combination of the cord H, rod E, catch F with the staple G and fold D', substantially as shown and described.

6. The combination of the cord H, rod E, point *g* of the catch F, and staple G, substantially as shown and described.

7. The steps I, for the uses and purposes substantially as shown and described.

8. The steps L, for the uses and purposes substantially as shown and described.

145,845.—Hoop-Skirt.—WARD COE, New Haven, Conn. Application filed November 22, 1873.

The wires or hoops are run through the openings where the warp-threads of the tape are left unfilled.

Claim.—As a new article of manufacture, the herein-described hoop-skirt tape consisting of a single fabric having several of the warp-threads at certain points upon each edge unfilled, substantially as specified.

145,846.—Process of Preparing Grain for Manufacture into Flour.—OREN F. COOK, Grand Island, Cal. Application filed September 18, 1873.

The grain, after being softened by water or steam, passes into a hulling-machine so constructed that the bran will form as intervening substance between the metallic surfaces and the grain, the hulling process being the result of attrition of the grain itself between the partially-elastic surfaces formed from the bran, and, aided by the detached bran, incorporated with the grain.

Claim.—The process of removing from grain its outer husk or bran, as herein described, to wit, first subjecting the grain, after the ordinary cleaning, to the action of water or steam, to soften the husk, then passing it between two vertical bran-covered metallic surfaces, one revolving within the other, substantially as set forth.

145,847.—Bale-Tie.—FREDERIC COOK, New Orleans, La. Application filed October 25, 1873.

Claim.—A bale tie or fastening, composed of a hook or band piece, H, having a long solid riveting-strip, G, rolled upon it, by which it is riveted to a single or double thickness of the band, and a recess, K, to receive and retain the bent end of the band, which is slipped laterally over it, as described and represented.

145,848.—Cultivator.—ANDREW COOPER, Macomb, Ill., assignor of one-half his right to MARTHA E. UPDEGRAFF, same place. Application filed October 6, 1873.

Claim.—1. In a parallel cultivator, the frames A A carrying the wheel-spindles *n*, the draft attachment J, and the plow-beams C, all constructed and combined as shown, for the purpose set forth.

2. The combination of the frames A A; draft attachment J, and center-bar D, having arched arms, and connecting the frames by means of hinged joints *i*, substantially as shown and described, and for the purpose specified.

145,849.—Cotton-Chopper.—JOHN COSTON, Bowdon, Ga. Application filed July 17, 1873.

The pinion-wheel carries a crank-shaft to which is attached the hinged frame of the choppers, and by which their movement after each stroke is made to describe an ellipse, passing over the top of the plants.

Claim.—1. The combination of the wheel C, cog-wheel D, pinion *d*, crank-shaft E, slotted bar A, and set-screw *i* with the main frame A, all substantially as set forth.

2. The combination of the hoe H, or its equivalent, springs L L', jointed handles G G', crank-shaft E, and bar I, all substantially as and for the purposes herein set forth.

145,850.—Medical Compound.—GILBERT DÉCLAT, Paris, France. Application filed December 2, 1873.

Claim.—The preparations and the applications before described of the phenic acid incorporated with the ammonia and with the sulphydric acid in order to constitute, first, a previous compound, which I name "ammoniacal phenic acid," and, secondly, a completed compound, which I name "ammoniacal sulpho-phenic acid," substantially as before described, and for the purposes set forth.

145,851.—Lightning-Rod.—JOSEPH DREW, Wenona, Ill. Application filed July 23, 1873.

Claim.—The tubular lightning-rod, as herein described, that is composed of connected tubular sections, each having a side seam fastened at one end, and open and compressible at the other end, said sections having, respectively, the corrugations *s* and shoulders *s'*, arranged as and for the purpose specified.

145,852.—Horse-Rake.—CHARLES EDGAR, Dayton, Ohio. Application filed November 3, 1873.

Claim.—1. The combination of the retaining-catch *u*, arranged as described, the slide *t*, and the treadle-lever *q*, for projecting the latter to release the axle-tree.

2. The treadle-lever *q*, slide *t*, link *s*, and connecting rod or wire *r*, in combination with the retaining-catch *u* and clutch-belt *w* for simultaneously operating the same, the clutch-belt being constructed of L shape to engage with a fixed retracting-cam, *v*.

3. The combination of the elastic plates *j* and bolts *k* with the rake-teeth E and the axle-tree C, provided with grooves *n* and vertical sockets *m l*.

145,853.—Padlock.—FREDRICK EGGE, Bridgeport, Conn., assignor of one-half his right to FRIEND W. SMITH, same place. Application filed November 13, 1873.

Claim.—The padlock-case A, having a key-hole opening in its bottom, in combination with the slotted pivoted tumblers D, with shoulders on their outer ends, the spring *f*, and the hasp B, with L-shaped arm C, and projection E, all constructed and arranged substantially as and for the purposes herein set forth.

145,854.—Pessary.—CHARLES E. FLACK, Jacksonville, Ill. Application filed July 2, 1873.

The cup and its supporting-branches are of soft rubber, and the stem of hard rubber covered with soft.

Claim.—1. As a new article of manufacture, a uterine supporter having the annular cushion and supporting-branches made of flexible india-rubber, the annular cushion and branches being solid, and the latter made tapering from their bases to their upper ends, as shown and described.

2. A stem of hard rubber or other equivalent material capable of being bent and caused to remain of any required form, in combination with a soft-rubber casing and supporter, substantially as described and shown.

145,855.—Refrigerator.—ANDREW J. FINK and JOHN FINK, Reading, Pa. Application filed November 3, 1873.

The wood lining is to prevent equalization of temperature at upper and lower sides of drip-catcher.

Claim.—1. The double-inclined drip-catcher A, entirely closed at its central and highest portion or peak, having gutters *a* at its opposite lower edges, and arranged within a refrigerator directly beneath the ice-box, all substantially as and for the purpose specified.

2. The drip-catcher A, lined with wood or other non conducting material on its under side, and having an outlet-opening, *b*, for heated or foul air directly beneath its highest portion or peak, as set forth.

145,856.—Car-Wheel.—ADDISON C. FLETCHER, New York, N. Y. Application filed December 18, 1873.

Claim.—1. In a sectional car-wheel, the combined disk and screw-hub E D, in combination with the disk F, screw-nut G, and web A, substantially as and for the purpose specified.

2. A series of ball-cushions, I, interposed and seated between the clamping disks or flanges E F of a car-wheel, for relieving jars or concussions, substantially as set forth.

3. The disks or flanges E F, provided with a series of recesses or seats, H, in combination with the web B, having a series of openings, K, to receive and hold in position ball-cushions I, substantially as set forth.

4. The spheroidal-shaped rollers I, provided with a yielding or elastic integument, and combined with recesses or seats H and K, formed in the flanges E F and web B of a car-wheel, for imparting elasticity to the wheel, substantially as set forth.

5. The binding-disks E F, provided with seats or recesses H, having cavities or depressions *b* to receive the gudgeons or projections *a* of the ball-cushions I, substantially as set forth.

145,857.—Paddle-Wheel.—ADDISON C. FLETCHER, New York, N. Y. Application filed July 12, 1873.

Concave or curved paddles arranged at such an angle with the radial arms as to press downward and prevent the free escape or flow of the water over the upper edges, while readily shedding the water upon emerging therefrom.

Claim.—The paddle-bucket herein described, of parabolic or angular form, when connected to the arms or spokes of the wheel, with its upper edge arranged in advance of its lower edge, substantially as shown and described.

145,858.—Sewing-Stand.—LEANDER J. FLING, Hudson, and ABEL LAND, Hillsdale, Mich.; said FLING assignor to HORACE BLACKMAR, Hillsdale, Mich. Application filed November 29, 1873.

The legs are hinged, so as to be capable of folding underneath the table, and are held in their upright position by braces in connection with stop-springs underneath the table-top.

Claim.—1. The combination, with a table-top, A, of the cross-bars E, having offsets *a* and pins *b*, the legs D, with shoulders *c*, and the strap-hinges *d*, all substantially as and for the purposes herein set forth.

2. The combination of the hinged legs D D, connected by the stretcher G, the brace H, strap-hinge d^1, pin *i*, and grooved guides *f f*, all constructed substantially as and for the purposes herein set forth.

3. The combination of the spring-stops *h*, guides *f f*, and brace H, substantially as and for the purpose herein specified.

4. The combination of the table-top A with cushion C, the cross-bars E, with pins *b*, legs D, stretcher G, strap-hinges *d* d^1, brace H, pins *i*, guides *f*, and spring-stops *h*, all constructed and arranged substantially as and for the purposes herein set forth.

145,859.—Coloring and Preserving Wood to Imitate Slate.—JOHN O. FROSHAUG, Albert Lea, Minn. Application filed October 27, 1873.

Claim.—The herein-described process of treating shingles, or other things made of wood, to impart to them a slate color and to preserve them, by boiling them in a solution prepared by dissolving in water sulphate of iron, alum, chloride of sodium, and extract of logwood, in substantially the proportions specified.

145,860.—Fermentation-Guard for Barrels, &c.—ANTHONY P. GARDNER, Moscow, Pa. Application filed June 6, 1873.

An eccentrically-hung roller-clasp, under which a rubber strap, fastened at one end to the bung, passes, admits of said strap being adjusted to resist the pressure from the interior of the barrel.

Claim.—The rubber strap *b*, fastened at one end to the bung or barrel, and passing over an opening through said bung, and its free end held by a clasp, *d*, by which said strap may be strained to any desired tension, and so held by said clasp, as and for the purpose described and represented.

145,861.—Refuse-Burner.—WILLIAM GLUE, Muskegon, Mich. Application filed October 14, 1873.

The counterbalanced door is hinged at its lower end. It has rails continuous with the rails of the main track, upon which the car runs into the furnace, the door being opened and depressed by it. The rails are curved upward to form a stop for the car, and the door is provided with a stop to prevent its falling too far. When the load is dumped the counterbalancing weight closes the door. The drip-receiver is designed to protect the main body of the furnace from rain and snow.

Claim.—1. In combination with the furnace herein described, the conical part C, provided with projecting drip-receiver *b*, placed over the cylinder B', substantially as and for the purpose set forth.

2. The balanced door H, provided with the rail-tracks, having one end curved, as and for the purpose set forth.

145,862.—Plow.—JOHN LINDSEY GRAHAM, Carthage, Ill. Application filed January 27, 1873.

Claim.—1. The teeth R R^1 R^2, constructed in the form shown, and attached to the frame by bolts S S', arranged as and for the purpose specified.

2. The beam E, provided with the teeth L L', and the frame O, provided with the teeth R R^1 R^2, all constructed and arranged for operation as and for the purpose set forth.

145,863.—Sash-Cord Guide.—WILLIAM M. GRISCOM, Reading, Pa., assignor to READING HARDWARE MANUFACTURING COMPANY, same place. Application filed August 23, 1873.

The end pieces through which the securing-screws pass are cast separately from the rest of the case, and retained in position by the pin which secures the two cheeks together.

Claim.—A window-pulley in which are combined two cheek-pieces, A A, and two end pieces, B B, the latter being adapted to and held in place partly by the said cheek-pieces and partly by the connecting-rods *a a*, as set forth.

145,864.—Combination-Padlock.—WILLIAM N. HALL, Mexia, Tex. Application filed May 23, 1873.

Claim.—In a padlock, the separate permutation device, constructed with sockets to slide upon the ends of the separate hasp, and to be secured thereto by a notched locking-bolt, which, passing through the locking-rings, crosses both ends of the hasp and secures the lock, essentially as described.

145,865.—Key-Hole Guard.—WILLIAM N. HALL, Mexia, Tex. Application filed June 2, 1873.

The guard is secured within the key-hole of a lock by a projection upon its inner end, which engages with the lock-plate, and is prevented from being turned by a notched pin or key, which passes through notches in the revolving disks and enters the key-hole. The notched pin is held in place by the disks, and can only be withdrawn when the disks are properly adjusted.

Claim.—1. A separate portable permutation key-hole guard, consisting of a stem, A, with locking projections F, a series of permutation-disks, *c*, on the outer end thereof, a fixed head, C, removable nut D, and a removable notched pin, E, arranged for use with the disks *c* and the key-hole B, essentially as described.

2. The key-hole guard, having the permutation-disks *c*, for use with the removable notched pin E and the locking projection F, arranged and fixed upon the same stem A, as described, so that by removing the notched pin E the permutation-disk and fixed head may also serve as a handle to operate the stem-projection F to lock and unlock the bolt H, as described.

145,866.—Windlass.—WILLIAM HORATIO HARFIELD, London, England. Application filed October 23, 1873.

A self-acting clutch is interposed between the crank-shaft of the engine and the windlass-barrel, to communicate motion to the latter when worked by the engine, but allow of the barrel being rotated when worked by manual power, without imparting motion to the engine or intermediate gearing.

Claim.—1. In combination with a windlass driven by the steam-engine A B, geared with the purchase-wheels *i i*, the nipping-levers *k l m*, so applied as to pawl the purchase-wheels, and also to serve to rotate the windlass by manual power, either alone or as auxiliary to the steam-power, substantially as set forth.

2. In a combined steam and manual power windlass, a wheel, *d*, provided with a self-acting clutch, arranged between the crank-shaft of the engine and the windlass-barrel, substantially as and for the purpose set forth.

3. In combination with the windlass-barrel and the pinions *g g*, the pinions *o o*, mounted upon the lever *n*, operating substantially as shown and described, for the purpose set forth.

4. The lever *n*, pivoted directly upon the counter-shaft *b*, substantially as shown and described, for the purposes set forth.

145,867.—Fireman's Extension-Ladder.—GEORGE W. HARRIS, Lancaster, N. Y. Application filed September 10, 1873.

The extensible ladder is carried on a wheeled truck, and the base portion is elevated by swinging props hinged above and running below on hinged trackways attached to the machine, and capable of being adjusted to a proper angle of inclination. The props are drawn outward along the trackway by a rope and windlass driven by worm-gearing. The extensible portion is operated in the ordinary manner. The winding-drum is supported in a supplementary frame attached to the under side of the main frame of the truck.

Claim.—1. In combination with the swinging props *c c*, pivoted to the ladders C, and the hinged trackways D D, the gear-wheel E, longitudinal worm-rod *j*, and cords *e e*, all constructed and operating substantially as described.

2. The trackways D D, hinged on the bolster B', and in combination with the props *c c*, as and for the purpose specified.

3. The construction of the fire-escape truck, consisting of the horizontal pieces A' A'' A''', the bolsters B B, and the supplementary frames *h h'*, substantially as hereinbefore specified.

145,868.—Curtain-Fixture.—SAMUEL HENRY and MARGARETTA HENRY, Chenoa, Ill. Application filed October 20, 1873.

The head-piece is provided with end brackets having projecting hooks on their rear edges. To one of the end brackets is attached a block carrying a spring, which bears on the curtain-roller. An ornamental strip, to which lace curtains may be attached, is attached by hooks to the head-piece of the rolling curtain-fixture.

Claim.—The detachable head-piece A, provided with brackets *a a'*, block D, spring E, and roller B, in combination with the ornamental strip H, provided with hooks I I, adapted to be attached to or detached from the head-piece, the whole being arranged, constructed, and operated in the manner and for the purpose set forth.

145,869.—Stirrup.—ANDREW J. HERRING, Mauch Chunk, Pa. Application filed September 15, 1873.

Claim.—1. The wooden stirrup A, provided with the re-enforcement *a* at its center, and having its ends bent so that the half-blocks B formed thereon shall have parallel outer sides, substantially as and for the purpose specified.

2. The blocks B, having grooves G, adapted to hold the edges of the stirrup-strap S, substantially as described.

145,870.—Lamp-Extinguisher.—FERDINAND HILLE, Lyons, Iowa. Application filed November 8, 1873.

In a lamp-extinguisher actuated by a pendent weight, the hoods are operated by a serrated bar engaging cogs on the peripheries of the pivoted ends of the hoods, or by a bar and the cross-action of a spring at the pivoted end of each hood, with a wedge on each shorter side of the wick-tube.

Claim.—The combination of the pivoted flanged dampers or hoods A A, slide-bar B acting upon the hoods through cogs, spring E, lever or handle D, loop F, and pendent weighted rod G H, all constructed and arranged substantially as and for the purpose specified.

145,871.—Car-Ventilator.—MARCUS T. HITCHCOCK, Springfield, Mass. Application filed June 4, 1873.

The frame A is cast in one piece, orifices being left at the top, and cavities at the bottom, for the reception of the journals of the slats.

Claim.—The combination of the frame A, with tapering sockets *a a* in its top bar, recesses *b b* in its bottom bar, the dampers D' D D', with journals on each end, and the plates B B, riveted to the frame A, all substantially as herein set forth.

145,872.—Mowing-Machine.—EUGENE C. HOPPING, Madison, N. J. Application filed November 26, 1873.

The heel of the finger-bar is pivoted in the shoe, and the finger-bar is pivoted in the heel, allowing a two-way movement of the finger-bar.

Claim.—1. The plate or casting D, provided with ears *a a'* and hollow sleeve C with collar *c*, in combination with the shoe A, provided with a box, B, and set-screw *b*, all substantially as and for the purposes herein set forth.

2. The head H, provided with a hinged lip, A, having lug *i*, in combination with swiveled fork *m*, slotted cutter-bar G, and the button *k*, all substantially as and for the purposes herein set forth.

145,873.—Means for Checking and Securing Boats.—FRANCIS M. HOWES, Somerville, Mass. Application filed October 30, 1873.

Claim.—The lever F provided with pivoted clamp F^1 and hook-chain F^2, in combination with single chucks C, as and for the purpose described.

145,874.—Respirator.—BUSHROD W. JAMES, Philadelphia, Pa. Application filed March 8, 1873.

A valve is inserted in the central portion of a respirator, which is arranged to be held between the lips and the teeth. The perforated plates which go to make up the respirator are detachable, and inclose between themselves a strainer, preferably of fibrous material.

Claim.—1. A respirator, consisting of two detachable perforated plates, A B, and intervening strainer D, the whole being constructed as described, so as to be retained between the lips and the teeth.

2. A respirator, constructed as described, so as to be retained between the teeth and the lips, and provided with a strainer, D, and with a valve opening outward and covering an opening in the strainer, as set forth.

145,875.—Portable Fence.—RUFUS JOHNSON, Griffin, Ga. Application filed November 13, 1873.

The fence-rails are held in an inclined position, and in a continuous line, between double-front braces of triangular supports, and secured in position at top and bottom by blocks binding against the braces.

Claim.—The combination of the sills A, supporting bars B, braces C, rails D E, bars G, and blocks *a b*, all constructed and arranged substantially as and for the purposes herein set forth.

145,876.—Safety-Valve.—JOHN JORDAN and ALFRED PAUL, Liverpool, England. Application filed November 12, 1873.

In connection with the valve, a piston is arranged to be raised on access of the steam to the piston-chambers, when said steam is too abundant to pass through perforations in said chamber and piston, thereby largely increasing the exit area for the steam by increasing the lift of the valve.

Claim.—The loaded valve *a* and its piston *b*, in combination with the fixed perforated chamber *d*, adapted to the said piston and containing the seat of the valve, all as set forth.

145,877.—Windmill.—JOSIAH KEELER and CHARLES C. HARRIS, Kewanee, Ill. Application filed August 7, 1873.

The wheel is strengthened by a novel system of bands and braces. The hollow vertical cylinder is in three parts, the smallest and highest of which carries a pivotal cylinder, to which are attached the braces which form the bearings for the shaft. From one of these braces extends an arm perforated with holes to receive a catch on one of the chains carrying the compensating-weight. The other chain is attached to a casting on the tail. A shifting-rod is connected to the vane and the other of the above-mentioned braces by chain and pulleys. The rod connecting the eccentric-wheel of the shaft to the pitman of the pump is in two parts, one-half encircling the vertical cylinder.

Claim.—1. In the wheel of a windmill, the combination, with the fans or vanes a^5 and the hoops or bands a^{12}, the braces C and hoops or bands a^{10} a^{11}, arranged and constructed substantially as and for the purposes described.

2. In the connecting or driving rod *m* of a windmill, the parts m^1 m^3, composed of semicircular portions m^2 m^4, forming the strap to hold the flanges of the eccentric-wheel *r*, lugs or ears m^5 m^6, extension m^8, bearing m^7, curved extension m^9, provided at m^9 with a vertical arm having a bearing, m^{10}, at its lower end, in combination with the main vertical standard *c*, ring or band *n*, slots or grooves c^4 c^4, and the working or pumping rod *q* all arranged, constructed, and operating substantially as shown and set forth.

3. In a windmill, the wheel A, horizontal shaft *d*, in combination with the connecting-rod *m*, main vertical standard *c*, ring *n*, formed of parts n^1 n^2, axles or projections n^3 n^4, ears or flanges n^5, and the arms q^1 q^1, lugs or ears q^2 q^2 of the working or pumping rod *q*, all arranged and constructed and operating substantially as shown and described.

4. In the automatic shifting devices of a windmill, the main hollow standard *c*, cylindrical portion or pivot *g*, arms or extensions g^1 g^2, forming the bearings for the horizontal shaft *d*, arm or extension g^3, provided with holes g^4, in combination with the arms f^1 f^2, tail f^3, chains or ropes h^1 h^2, weight h, loop or ear f^4, inclined transverse bar *i*, stud or projection i^2, forming a stop to the wheel A, horizontal shaft *d*, and wheel A, all arranged, constructed, and operating substantially as set forth.

5. In the shifting mechanism of a windmill, the shifting-rod *l*, in combination with the main hollow standard *c*, chain or rope g^4, pulleys f^5 i^3, inclined transverse bar *i*, and stub or projection i^2, loop or ear g^5, horizontal shaft *d*, and wheel A, all arranged, constructed and operating substantially as shown and described.

145,878.—Bung for Beer-Barrels.—EDWARD KRAFF, Tyrone, Pa. Application filed October 6, 1873.

The bung has at the top a circular recess, terminating at the bottom in a countersunk seat for the valve, the stem of which passes through a longitudinal hole in the bung, and has on its lower end an adjustable disk to limit the distance to which the valve shall rise to permit the superfluous gas to escape.

Claim.—The bung *a*, having the recess *c*, seat *d*, and opening *b*, in combination with the stem *e*, valve *g*, and disk *i*, substantially as shown and described.

145,879.—Piano-Action.—RUDOLPH KRETER, New York, N. Y. Application filed November 22, 1873.

Instead of the jack reaching the hammer-butt through a slot in the repeating-lever, the jack and repeat-lever are both cut away upon adjacent sides to pass each other.

Claim.—1. The jack J, cut away on one side, as at *c*, in combination with the repeating-lever I, having a lateral recess, *d*, substantially as and for the purpose or purposes herein set forth.

2. The repeating tongue or check K' on the lever I, applied to check the descent of the hammer, essentially as and for the purposes specified.

3. The post or wire L, in combination with the levers K I, the spring *g*, and button k, substantially as herein described.

4. The let-off lever E and its adjusting-screw *h*, in combination with the rail D and jack J, essentially as specified.

145,880.—Coffee-Roaster.—HENRY C. LOCKWOOD, Baltimore, Md. Application filed September 13, 1873.

The outer case is lined with soap-stone. As the coffee on being discharged falls through the hopper R, it is carried by the buckets and endless belt to the chute at the upper end of the conveyer, where it falls into bags. From one side of the case of the elevator air is conducted to the rear of the roaster, and is there discharged into the space beneath the fire-grate.

Claim.—1. The roasting-drum C, provided with an endwise movable discharging-head, C^2, which is held in place against a collar, *p*, on shaft D, by springs *s* on supporting-rods *s'*, substantially as described.

2. The hinged sectional hopper R, arranged below the discharging end of the roasting-drum C, and in front of the furnace and ash-pit doors, as and for the purpose described.

3. The inclined perforated trunk E, with its endless belt of buckets i^3 and diverging tubes *k*, combined with the receiving-hopper R, substantially as specified.

4. The perforated elevator-trunk E communicating with a fan-case, F, by means of a pipe, P, and constructed with an air-box, *z*, on one side, substantially as and for the purpose described.

5. The open fan-spout k^3, communicating with the space beneath the fire-chamber, in combination with a pipe, P, leading from an elevator-trunk, E, substantially as and for the purposes described.

6. In a coffee-roasting machine, the chute *j* attached to the case A, adapted to receive the removable adjustable hopper J, and opening into the charging-spout *j'* upon the movable head C^2, substantially as and for the purpose specified.

7. The ball *f*, combined with the endwise movable discharging-head C^2 and closing springs *e*, as described.

145,881.—Draw-Head for Railroad-Cars.—HARVEY C. LOWRIE, Fort Wayne, Ind., assignor of one-half his right to W. A. ROBERTS and DANIEL GIBSON, same place. Application filed November 18, 1873.

Claim.—The lateral-jawed draw-head composed of the longitudinal bars and the jaw-brace B, substantially as described.

145,882.—Loom-Shuttle Relief Mechanism.—WILLIAM C. MACOMBER, Mystic River, Conn. Application filed December 8, 1873.

The shuttle is held firmly in the box, and also relieved before being picked, by means of a double cam on the tappet-shaft. A vertical rod, loosely pivoted to an arm projecting back from the protector-rod, connects the latter with the actuating cam-lever, which is provided with an adjustable shackle having a pin working in a slot in the lower end of the vertical rod. The weight of this rod is sufficient to hold the fingers of the protector-rod in contact with the shuttle-binders.

Claim.—1. In combination with a shuttle-binder for looms and the mechanism for operating the same, the shackle J, slotted connecting-rod K, and pin *b*, constructed and arranged substantially as and for the purposes herein set forth.

2. The combination of the cam G, lever H, with roller *a*, shackle J, connecting-rod K, and shaft L with arm *d*, and fingers *f f*, all constructed substantially as and for the purposes herein set forth.

145,883.—Combined Paper-Weight and Sponge-Holder.—DAVID R. MANNING, Brooklyn, assignor to JOSEPH J. WALTON and WILLIAM M. WALTON, New York, N. Y. Application filed December 2, 1873.

Claim.—As a new article of manufacture, a combined paper-weight and sponge-holder, consisting of a base, A, a post or standard, B, and a ring or holder, C, substantially as and for the purpose herein specified.

145,884.—Nutmeg-Grater.—THOMAS MARRIOTT, Detroit, Mich. Application filed September 27, 1873.

A grating-disk, turned by a crank, is arranged in a box in which there is a spring, with a plate attached to bear upon the nutmeg, the handle of the spring extending through a slot in the lid of the box.

Claim.—The rotary rasping-disk D, arranged inside of a box, A, which is divided by a diaphragm, C, in combination with a pressure-plate, *e*, applied to a spring-arm, E, which is extended through a cover, B, substantially in the manner and for the purpose described.

145,885.—Carriage-Pole Tip.—SAMUEL MASON, Hamden, Conn. Application filed April 16, 1873.

Claim.—As an article of manufacture, the herein-described carriage pole or tip, consisting of the tubular portion A, with the straps B C projecting therefrom, and the eye D formed on its forward end, and the downward-projecting holdback E, all formed in one and the same piece, from cast metal, substantially as set forth.

145,886.—Bird-Cage.—JOHN MAXHEIMER, New York, N. Y. Application filed September 2, 1873.

The soft-metal bead that connects the wires at their intersection is provided with a perforated metal plate, through which perforation a portion of the bead passes, the parts being secured to each other in the process of casting.

Claim.—The combination of the cage-wires A and B with the cast-metal bead C and perforated sheet-metal plate D, the plate being connected with the bead by a projecting stud, which passes from the bead through the plate, substantially as herein shown and described.

145,887.—Piano-Truck.—FRAZEE B. MCGREGOR, Pontiac, Mich. Application filed July 25, 1873.

So constructed that it can be easily handled by one man.

Claim.—The main frame A, with rollers B B, hinged or pivoted frames C C, board E, padded bars D D, cord or rope *a*, and windlass G H, all constructed, arranged, and combined substantially as and for the purposes herein set forth.

145,888.—Shutter-Fastening.—HERBERT H. MINER, Boston, Mass. Application filed November 17, 1873.

A double-armed latch-lever, having the usual form of draw-rod, is pivoted in vertical position to the lower part of the shutter or blind, the latch projecting downward through a slot or guide. There are also elbow-shaped catches inserted in the window-sill and upon the wall of the building, with which the vertical latch engages to hold the shutter open.

Claim.—The double-armed latch-lever C, pivoted to the shutter or blind, as set forth, in combination with a draw-rod, D, connected to its upper end, and extending therefrom to or near the hinge-stile, a spring, *c*, for controlling the action of said latch, and suitable catches secured to the window-sill and the wall of the building, all substantially as described.

145,889.—Seed-Drill.—DAVID N. MINOR, Charlton, Iowa. Application filed June 14, 1873.

An outer frame is supported upon a grooved covering-roller, which also supports the seed-box. The furrow-openers are hinged in a gang to the forward end of the frame, and can be raised from the ground simultaneously.

Claim.—1. The frame B, C, C′, and C″, and supporting-frame I, when mounted upon the grooved roller A, in the manner and for the purposes set forth.

2. The frame and the seeding mechanism, when the several parts are combined with each other and are mounted upon the grooved roller A, in the manner and for the purposes set forth.

145,890.—Feed-Gage for Printing-Presses.—CHARLES N. MORRIS, Cincinnati, Ohio. Application filed April 10, 1873.

The rigid gage-arm is pivoted to the vertical short arm of the rock-shaft in such a manner that the rotation of the shaft will move the gage in a horizontal direction until the long arm comes in contact with the adjustable screw, when the gage will be raised.

Claim.—The rigid gage-arm A, pivoted to a vertical arm, B, of the rock-shaft D, in combination with a horizontal arm, C, thereof, substantially as and for the purpose specified.

145,891.—Curry-Comb.—SIDNEY A. MORTON, Wadesborough, N. C. Application filed June 10, 1873.

Claim.—The curry-comb herein described, consisting of the series of plates B of gradually-decreasing width, the rods *a a*, and bar D, the rods extending through the handle, plates, and blocks, binding the parts securely together, all constructed and arranged as and for the purpose specified.

145,892.—Bridle for Horses.—JOHN MULLER, Philadelphia, Pa. Application filed September 25, 1873.

Claim.—The combination, with the driving-bit E, of the auxiliary bit F, carrying rollers G and suspended from the relief-rein H, passing from the top of the head gear, and the elevated loops H′ carrying the rollers J and directing the rein to the terret or saddle, as herein set forth, and for the purpose described.

145,893.—Machine for Forming Screw-Threads on Sheet Metal.—CHARLES F. NEUBER, New Brunswick, and FRANK W. PERRY, Camden, assignors to JOHN L. MASON, New Brunswick, N. J. Application filed November 6, 1873.

The threaded chucks are brought together by means of an eccentric constructed to cause a "dwell" while the cap is being operated upon, and also when the chucks are separated, to allow time for removing and replacing the cap. A removable pinion is arranged between the gears of the threaded chucks, for the purpose of adjusting and causing the threads to correctly mesh. A disk journaled on the rear of one chuck rotates freely and holds the shell or cap on the other chuck.

Claim.—1. The oscillating saddle G, in combination with the shaft K, forming the axis thereof, and communicating motion from the shaft which rotates the chuck T to the shaft on the saddle which rotates the chuck U, substantially as and for the purpose set forth.

2. The combination, with the rotating chucks T U, of the eccentric A, formed with the arc *a b*, and the yoke E, formed with the projecting bearings H H′ H″ H‴, constructed to impart an oscillatory motion to the chuck-carrying saddle G and a two-part dwell thereto—one when the threading is being accomplished, and the other when the threaded cap is to be removed.

3. The adjusting-pinion P, arranged intermediate of the gearing of the two threading-chucks T U, substantially as and for the purpose set forth.

4. The holding-disk V, arranged at the rear of the chuck, on a shaft common to both, substantially as and for the purpose set forth.

145,894.—Hub-Boring Machine.—WILLIAM S. OWEN, Oskaloosa, Iowa. Application filed December 3, 1873.

By an adjustable and centering frame which is clamped in position, the reamer is properly centered for boring.

Claim.—In a hub-boring machine, the center plate D, having the fixed centering and holding points H, hinged dogs G, and extensible clasp I, in combination with the cutter screw-stem B, as and for use as described.

145,895.—Lining for Pump-Cylinders.—WILLIAM S. OWEN, Oskaloosa, Iowa. Application filed December 3, 1873.

The metallic lining has a separate cast-iron section which supports the lining and forms at the upper end a seat for the fixed valve, and at the lower end a socket for connecting the induction-pipe to the pump-barrel.

Claim.—The pump-lining A having a separate section, D, for the fixed valve G and pump-pipe F, constructed and arranged for use as described.

145,896.—Device for Holding and Carrying Pipe-Fittings Chucks.—ANDREW J. PEAVEY and FRANK B. COTTON, Boston, Mass.; said PEAVEY assignor to said COTTON. Application filed April 22, 1873.

The chucks M are clamped by screws on a table, K, adjustable vertically by screw-supports *t*, rising from a rotatable table, J, that rests on a table, E, the latter located—and adjustable transversely by means of screw F—on table C, and table C is in turn adjustable longitudinally by means of a lever along the lower table B, that is located on the shears of the lathe.

Claim.—1. The bed-plate B, platen C, operated by lever D, platen E, operated by screw F, and bed-piece J having stop-pin O, each and all relatively constructed, combined, and arranged together for separate movement, substantially as and for the purpose described.

2. The bed-piece J, having the shouldered vertical screw-studs *t*, arranged as described, in combination with the disk K on said screw-studs, all constructed and arranged to operate substantially as herein described, for the purpose specified.

3. The vertical standards N N, attached to the bed-plate J, and carrying the set-screw S S, in combination with each other and with the cross-piece O and screw Q, all constructed and arranged to operate substantially as described.

145,897.—Making Bungs for Casks, &c.—RAFAEL PENTLARGE, Williamsburg, Brooklyn, N. Y. Application filed November 22, 1873.

Claim.—The process of making compressed wooden bungs by first cutting them taper, and subsequently compressing them uniformly all round throughout their whole depth or thickness, substantially as specified.

145,898.—Oil-Can Nozzle.—GEORGE H. PERKINS, Philadelphia, Pa., assignor to himself and ATLANTIC REFINING COMPANY, same place. Application filed October 28, 1873.

Claim.—A screw-nozzle composed of the threaded ring H, having the internal flange A, and the thin plate or disk B, united to the said flange, all substantially as set forth.

145,899.—Derrick.—ALMON K. RICHMOND, Boston, Mass. Application filed December 10, 1873.

Claim.—In a derrick, two sheaves, B B′, arranged and supported on opposite sides of the mast A, in combination with the crab-pintle D, extended down between and below such sheaves, and into the neck or body of the mast, all substantially as described and represented.

145,900.—Pegging-Machine.—GEORGE L. ROBERTS, Boston, Mass. Application filed December 11, 1873.

Claim.—1. In combination with a pegging mechanism, a jack suspended and counterpoised, substantially as described.

2. A jack-standard, the foot of which swings in any direction horizontally, substantially as described, to give the required inclination to the jack mounted upon it.

3. In combination with a pegging mechanism, a jack-standard having means for constantly resisting inclination upon its supports, and for returning it to its normal position, substantially as described.

4. The flanged prop encompassing the standard, and sliding thereon against the tension of a spring, in combination with the disk to which the standard is jointed.

5. The pendent arm, which forms the support of the swinging jack-standard, in combination with the counterpoised lever, from which it is suspended by a universal joint.

6. The combination of the jack and its sleeve, by which it may be swiveled and inclined, substantially as described.

145,901.—Cultivator.—ALFRED ROLEN, Mumford, Ala. Application filed November 19, 1873.

An improvement on former patent in the use of two beams pivoted to three slotted cross-bars, and held at any distance apart by a diagonal brace.

Claim.—The combination of the beams A¹ A², slotted cross-bars B C D, slotted and perforated brace E, and their bolts, all as and for the purpose set forth.

145,902.—Iron Fence.—TIMOTHY ROGERS, Kenton, Ohio, assignor to WILLIAM L. WALKER and BENJAMIN G. DEVOR, same place. Application filed October 3, 1873.

The clamp that secures the post to the horizontal rail is made in two parts, one of which rests on the upper surface of the rail, and the other on the under surface. These parts are bolted to the rail. From this clamp extend two pivoted bolts, between which the post is held so that it can be adjusted vertically.

Claim.—The combination, with a fence-post, of the plates G G, bolts *m m*, bolts I I, plate J, and nuts A A, with horizontal rails of a fence, substantially as set forth.

145,903.—Iron Fence.—TIMOTHY ROGERS and BENJAMIN G. DEVOR, Kenton, Ohio; said DEVOR assignor to TIMOTHY ROGERS and WILLIAM L. WALKER. Application filed August 13, 1873.

The pickets are held upon the T-shaped horizontal rails by means of clamps having lugs that embrace the two vertical flanges of the rails.

Claim.—The combination of metallic pickets A A, horizontal T-shaped rails B B, and clamps C C with grasping-lugs *b b* and *d d*, substantially as set forth.

145,904.—Umbrella.—LANGDON SAWYER, Springfield, Vt. Application filed May 2, 1873.

The ribs are in sections, having sliding joints. When the runner is pushed up the ribs are spread and lengthened. When the umbrella is closed the ribs are lengthened by lowering the sliding tube on the stick.

Claim.—1. The collar F, braces *k k*, sliding collar E, the braces *i i*, and the jointed arms *a a′*, when combined substantially as and for the purposes herein set forth.

2. The sliding tube H, collar F, braces *k k*, sliding collar E, and the braces *i i*, in combination with the stick A, the fixed collar G, and the jointed arms *a a′*, substantially as and for the purposes herein set forth.

145,905.—Loom-Picker.—OBREN A. SAWYER, Lowell, Mass. Application filed October 3, 1873.

The picker is held in position upon the staff by means of a metal collar, provided at its rear end with a clamping-screw. A metal strip or shield is secured to the rear face of the staff, on that portion exposed to the wearing action of the clamping-screw, and this strip is bent at the top to prevent the collar from working off the staff.

Claim.—The combination, with the picker-stick B and picker A, of the adjustable metallic collar C, having the screw *d* in one end, and the L-shaped metallic strip *a*, said strip being permanently secured to the stick, and the collar C applied to the picker, substantially as shown and described.

145,906.—Middlings-Purifier.—ISSACHAR SCHOLFIELD, Dunlap, assignor of one-half his right to BENJAMIN F. FREDRICK, Marshall county, Iowa. Application filed August 16, 1873.

Meshes of the cloth kept clear by means of hammers striking upon the devices that connect the series of sieves together. The arrangement of devices, as shown and described, for removing the bolted material and returning some of the material termed "returns" to the hopper, to be again bolted.

Claim.—1. The combination, with the sieves G and hammers K, operated as described, of the fan T, receptacle M, passage N, and chimney P, with their respective conductors O O¹ O², the elevator R, and spout P, arranged in a relative position to each other, substantially as shown and described.

2. In a middlings-purifier, sieves G, having pieces of leather *e* glued to each side of each sieve-cloth, and blocks *f* placed between said leather and sieves and firmly secured by means of bolts *d* passing through said parts, in combination with hammers K, as and for the purpose mentioned.

145,907.—Driving-Belt.—ALEXANDER SCHPAKOWSKY, St. Petersburg, Russia, assignor to BRUNO HOFFMARK, same place. Application filed November 13, 1873.

The driving-belt consists of a series of oval or flattened helices connected by intermeshing the adjacent elongated extremities and inserting a transverse rod or bolt between the intermeshed parts. Each helix is composed of a single piece of wire and extends the width of the belt.

Claim.—A driving-belt composed of a series of flattened helices, *a a′ a″*, connected by intermeshing with each other the coils of each helix, and securing them by means of the rod *c*, substantially as herein set forth.

145,908.—Belt-Tightener.—WILLIAM SELLERS, Haverhill, Mass. Application filed October 15, 1873.

The journals of the driven pulley are supported in sliding boxes, whereby the driving-pulley is moved away from the former, so as to produce the required amount of tension of the belt. The shaft of the driven pulley is adjustable vertically, so as to maintain the drum in a true running position.

Claim.—The combination, with the main or driving-drum A and the endless belt C, of the drum D, supported in sliding boxes, and provided with means, as described—viz., the cammed levers H H and their operating mechanism—whereby the latter drum may be forced outward, so as to produce any desired tension of the belt, as set forth.

145,909.—Knife-Cleaner.—CEVEDRA B. SHELDON, New York, N. Y. Application filed August 20, 1873.

Claim.—A spring-pressed holder, E, provided with the horizontally-slotted piece F on the top thereof, combined with a lever, G, fulcrumed on frame, and having the side pivot *g* working in said slot, as and for the purpose set forth.

145,910.—Clothes-Mangle.—SEMELE SHORT, Cincinnati, Ohio. Application filed December 10, 1873.

Two hollow metal rollers, which contain heaters, are placed in a frame. Below these are two rolls or rollers, with clamps for holding the articles mangled, over which two rollers fitted in arms operate to keep the goods close to the heated rollers.

Claim.—The mangle constructed, as herein described, with clamp-rolls B B′, metallic cylinders E E′, heaters N N′, springs F F′, caps H H′, idlers I J J′, and springs P, the whole mounted in a suitable frame and driven by suitable gearing, in manner substantially as and for the purpose set forth.

145,911.—Washing-Machine.—SEMELE SHORT, Cincinnati, Ohio. Application filed December 10, 1873.

Within a suitable vessel are two rollers, with slots and bars for holding the ends of the articles to be washed as they pass between two corrugated rollers, and two rollers actuated by springs. A suitable clutch throws the rollers in and out of gear with the driving-gearing.

Claim.—1. The combination of the rolls B B′, having clamps C, and the presser-rolls S T, substantially as and for the purposes set forth.

2. The combination of the reeling devices B B′ C and fluted rolls E F, as and for the purposes described.

145,912.—Drying-Frame for Lace Curtains, &c.—SEMELE SHORT, Cincinnati, Ohio. Application filed August 15, 1873.

A rectangular adjustable frame, with a valance, attached by hooks to a larger adjustable frame, with means of support in an upright position.

Claim.—The drying-frame composed of the vertical bars C D, the adjustable mortised bar *A a b*, provided with the pins E and suspension-eyes G, weighted sinking bar B *a b*, and valances F, in combination with the trestle-frame, composed of uprights J J′, horizontal cross-bars I K, coupling-hooks L, and suspension-hooks H, all as herein set forth, for the purpose specified.

145,913.—Process of Preparing Felt for Weather-Strips, Packings, &c.—FERDINAND SIEBING, New York, N. Y. Application filed July 1, 1873.

The body of the felt retains its elasticity, while the packing-surface is protected against friction.

Claim.—The within-described process of treating felt by first cutting it in strips or pieces of the required shape, then coating these pieces on one or more surfaces with starch, then grinding off these surfaces, and applying a coat of metallic paint, substantially as set forth.

145,914.—Game Apparatus.—FRIEND W. SMITH, Bridgeport, Conn. Application filed May 21, 1873.

A base set with a number of pins for use indoors with ring-quoits, the base being cushioned to avoid noise and injury by the quoits.

Claim.—1. In a pitch or toss game apparatus for parlor use, a perforated and cushioned base, for the purposes herein set forth.

2. The combination of the cushioned and perforated base A, the numbered or lettered pins C C, and the numbered or lettered rings D D, all constructed substantially as and for the purposes herein set forth.

145,915.—Fog-Signal.—WILLIAM A. STEWART, Bethel, assignor of one-half his right to TILSON H. DINSMORE, Skowhegan, Me. Application filed July 21, 1873.

A float, raised by the tide, lifts one end of a pivoted arm, which engages with and drags down a grapple, thereby winding up a weight which actuates a train of wheels, sounding an alarm.

Claim.—In combination with the float and the sounding-signals, the float-arms, the main float-lever, the auxiliary lever, the grappling-hook, drum, weight, and intermediate gearing, connected for operating the signals, substantially as described.

145,916.—Spring-Brace for Vehicles.—CORNELIUS V. N. SUYDAM, Millstone, N. J. Application filed November 22, 1873.

Claim.—In a spring-brace, the combination of the bent rod E, fixed eye *b* on reach A, cushion *d*, and adjusting-nut *c*, substantially as specified.

145,917.—Connecting-Rod.—WILLIAM L. SWITZER, Zanesville, Ohio. Application filed May 31, 1873.

Claim.—The pitman for sewing-machines having the adjustable wrist attachment, consisting of the plate B with nut *b*, the

wrist-bolt with the head and side bearing *c*, and adjustable side bearing *c'*, and nut D, as shown and described.

145,918.—Pump.—JOSEPH J. WALTON, New York, N. Y. Application filed December 4, 1873.

Two pump-cylinders placed on an iron stand have each an inlet and a discharge pipe, and two valves connecting each pipe with its cylinder. An air-chamber is placed between the two cylinders, and is cast in one piece with the discharge-pipes. The two inlet-pipes are continued through the iron stand and meet in the suction-opening.

Claim.—1. The combination of the two cylinders A A with an inlet-pipe, F, and outlet-pipe E for each cylinder, and two valves connecting each pipe with its cylinder, substantially as and for the purposes herein set forth.

2. The combination of the discharge pipes E E and the air-chamber E', all cast in one piece, for the purposes herein set forth.

3. The combination of the two cylinders A A, the side pipes E E and F F, air-chamber E', stand G, brake H, pistons B B, and connections K K, as and for the purposes herein set forth.

145,919.—Fair-Leader for Ships' Rigging.—JOSEPH J. WALTON, New York, N. Y. Application filed December 4, 1873.

Claim.—As a new article of manufacture, the within-described halyard-block, consisting of the plate A, with flanges *a a* and ears B B, and the pulley C, all constructed substantially as and for the purposes herein set forth.

145,920.—Extinguishing Fires in High Buildings.—AUGUSTUS WATSON, Washington, D. C. Application filed April 8, 1873.

A sectional metal pipe is supported on a suitable stand, and has hose-connections at its lower end. The upper end is bent to give direction to the water.

Claim.—The sectional tube A, having water-ingress openings and hose-connections B and delivery end *a'*, constructed substantially as and for the purpose described.

145,921.—Pump.—EDWARD CARLILE WHARTON, Philadelphia, Pa. Application filed November 26, 1873.

Above the check-valve is a branch pipe located at a point where freezing is not likely to occur. The interior valve in this pipe is connected to the lower valve of the working cylinder, which in turn is connected to the seat-plate above. The seat-plate and lower valve on the other side of the working cylinder have arms which act on each other. By one unusually long stroke of the lever the whole upper part of the pump may be cleared of water.

Claim.—1. The arm H', secured to the lower valve D, in combination with the arm H, projecting from the seat-plate C, and the upper valve B, when constructed and operating as set forth.

2. The auxiliary valve M of the branch L, connected to the lower valve of the cylinder A, and operating in combination with the oscillating seat-plate, as set forth.

3. The inner valve M and outer valve N of the branch L, in combination with the pipe K, valve D or D', seat-plate C, and cylinder A, as set forth.

4. The combination, with the seat-plate C, upper and lower valves, and division-plate of cylinder A, of the arms H H', connections J P, auxiliary valve M, and branch L, substantially as set forth.

145,922.—Carriage-Jack.—DANIEL R. WIGHT, Southbridge, Mass. Application filed November 20, 1873.

Claim.—The carriage-jack described, consisting of the standard A, stop J, toothed bar G, handle B, and lever D, provided with the pawl I and gravitating-guard L, all combined substantially as specified.

145,923.—Metal-Drilling Machine.—ALFRED WOODWORTH, Cambridge Village, N. Y. Application filed November 22, 1873.

On the tabular pillar E is mounted two plates or tables, F D, the former provided with a number of bearings, *f*, through which the drill-spindles *f'* pass, and the latter with bearings D^2 for the reception of the spindles of the work-tables. These spindles have rollers on the end that ride on a cam below to effect the feed of the work to the drills, both the carrying-tables being turned together for this purpose by a worm-wheel, pinion, and gear-ring on the table D. The drills are rotated by a belt passing around drums on their upper end and a driving-pulley on the shaft G.

Claim.—1. The spindle-carrying plate F and work-bed table D, applied to revolve around a hollow fixed post, E, in combination with the shaft G, wheel I, and a belt, *p*, which is applied around the spindle-pulleys h and idler-pulleys h', substantially as and for the purposes explained.

2. The worm-screw H, receiving motion from the same shaft which gives motion to the center shaft G, in combination with the wheels M M', gear-ring P, table D, and drill-carrying plate F, substantially as and for the purposes described.

145,924.—Sleeve.—GEORGE WRIGHT, St. Joseph, Mo. Application filed October 4, 1873.

A deep narrow groove is formed in the hoop from the inside, into which the edge of the wire-gauze is inserted. The ridge upon the outside is then lapped closely down against the side of the hoop and solder run into the joint on the inside.

Claim.—The grooved and lapped fold *a*, formed in the hoop A, and holding the edge of the sieve-cloth B above the lower edge of the hoop, and leaving the bread base-support C, as and for the purposes described.

REISSUE PATENTS.

5,692.—Windmill.—MONTGOMERY CROSSMAN and PRATT A. SPICER, Marshall, Mich.—Patent No. 119,971, dated October 17, 1871. Application filed June 23, 1873.

A winged and weighted governor or lever is attached to the shaft, so as to oscillate from nearly an upright to a horizontal position, and swing the wheel around from the back to the side of the mast, so as to present its edges to the wind.

Claim.—1. In a windmill, the winged and weighted governor-lever E, attached to the shaft so as to oscillate from nearly an upright to a horizontal or intermediate position, substantially as set forth.

2. In combination with the wind-wheel, the governing devices, substantially as described, arranged upon the shaft in such relation that, when acted upon by the wind, the governing devices will swing the wheel around from the back to the side of the mast, so as to present its edges to the wind.

3. The rope or stop *r*, attached to the governing-lever E and arm-stop *s*, substantially as described, all arranged and operating to control the action of the lever E in its passage from a horizontal to a vertical position.

4. The arrangement of the arm-stop *s*, attached to the turn-table or pivot to arrest the further motion of the lever E from a horizontal or inclined position, or throwing the side wing *m'* below a horizontal position with reference to the governing-lever, substantially as shown.

5. The wing *m'* to the back of the wind-wings *m* on the end of the governing-lever E, so that the downward pressure of the wind will act on the lever to prevent it from too suddenly assuming an upright position, substantially as described.

6. The winged and weighted governor-lever E, in combination with the shaft *a*, turn-table *s*, partially-revolving vane D, bent rod F, stop-rope *r*, arm-stop *s*, and wind-wings *m m'*, arranged to operate with the wind-wheel, substantially as set forth.

5,693.—Skylight.—GEORGE HAYES, New York, N. Y.—Patent No. 100,143, dated February 22, 1870. Application filed November 1, 1873.

The hollow rafters are composed of sheet metal, bent to form rabbets for the support of the glass and gutters to conduct off the water. To give the rafter a solid appearance a V-shaped sheet-metal molding is attached to the under side, and bent up over the edges of the gutters. The cross-beams are also hollow, and are provided with gutters, which connect at their ends with the gutters of the main rafters. The panes abut against each other, with a metal clip between them which laps under and over the adjacent edges of the glass, so that the water that finds its way between the ends of the glass is conducted to the gutters. A foot-strip projects upward from the plate of the roof, against which the lowermost glasses rest.

Claim.—1. The metallic bar or rafter A, formed of a hollow sheet-metal body, *a*, constructed and arranged to form rabbets *b b* for the glasses and gutters *c c*, substantially as specified.

2. The stay-plate *f*, in combination with the hollow sheet-metal bar or rafter A, composed of a main body, *a*, rabbets *b b* for the glasses, and gutters *c c*, essentially as described.

3. The hollow molding *d*, in combination with the hollow sheet-metal bar or rafter A, having a main body, *a*, rabbets *b b* for the glasses, and gutters *c c*, substantially as specified.

4. The metallic bar or rafter A, formed of a hollow sheet-metal body, *a*, stay-plate *f*, and hollow molding *d*, fitted together and arranged to form rabbets *b b* for the glasses, and gutters *c c*, essentially as specified.

5. The combination of the cap-plates D with the hollow metal bars or rafters A, essentially as shown and described.

6. The combination of the cross-gutters *h* with the glasses C, arranged to form a butted joint, substantially as described.

7. The clips *I*, in combination with the cross-gutters *h* and main gutters *c c*, essentially as specified.

8. The foot-strip F, arranged to project upward from the frame G for the lowermost glasses to rest against, in combination with the main gutter *c*, cross gutters *h*, and outlets *i*, substantially as specified.

5,694.—Process of Preparing Wood for the Manufacture of Buttons.—ROBERT H. ISSELL, New Milford, Conn.—Patent No. 134,296, dated December 24, 1872. Application filed November 5, 1873.

Claim.—1. The method of preparing wood for the manufacture of buttons by first removing the albuminous matter by means of a solvent, and subsequently causing the material to absorb gum-lac or japan, substantially as and for the purpose set forth.

2. The blanks for the manufacture of buttons, prepared as described, and treated with steam in a steam-box, substantially as and for the purpose set forth.

3. As a finishing process in the manufacture of buttons from wood, vegetable ivory, &c., the facing of such buttons by means of a rotating punch or mandrel acting under pressure, substantially as set forth.

5,695.—Paint.—D. R. AVERILL, New Centreville, N. Y., assignor to THE AVERILL CHEMICAL PAINT COMPANY, New York city.—Patent No. 66,773, dated July 16, 1867; reissue No. 3,051, dated duly 28, 1868; reissue Nos. 3,597, 3,598, 3,599, 3,600, and 3,601, dated August 17, 1869. Application filed December 16, 1873.

Solution of acetate of lead, zinc, silicate of soda, lime, and linseed-oil, combined and compounded with zinc and oil.

Claim.—An oleaginous metallic paint, mixed ready for use, put up in suitable packages for storage or transportation, as a new article of manufacture and commerce.

5,696.—Nailing-Machine for Boots and Shoes.—LYMAN R. BLAKE, Boston, and ASA S. LIBBY, Lawrence, assignors to GORDON MCKAY, trustee of THE MCKAY SEWING-MACHINE ASSOCIATION, Boston, Mass.—Patent No. 76,150, dated March 31, 1868. Application filed December 15, 1873.

Claim.—1. A work-supporting horn, substantially as described, in combination with a mechanism which operates to drive nails or pins by pressures or percussion.

2. In combination with a nailing mechanism, a rotating work-supporting horn.

3. In combination with a nailing mechanism, a horn that yields and moves in a vertical direction, substantially as described.

4. The combination, with the presser foot, of mechanism which operates, by reason of any change in height at which the presser-foot rests on the stock, to automatically cut nails or pins from material supplied for that purpose, to a length proportioned to the thickness of the work at the place where the presser-foot operates.

5. In combination with mechanism by which nails are supplied to the action of a nail or pin driving mechanism, means for automatically driving the nails in a direction which is inclined in the general direction of the row of driven nails.

6. Means for automatically driving each nail in an inclined direction opposite to the inclination of the driven nail preceding, substantially as described.

7. In combination with the presser-foot or other device resting on the surface of the stock, and with the nail-driver, means for automatically changing the position of the operative end of the driver, so that the point to which said end will descend at each stroke will depend upon the thickness of the stock at the point where operated upon, and will have a definite relation to the surface of the stock at each descent of the driver.

8. The process or method of uniting the soles and uppers of boots and shoes by successively cutting nails from a continuous wire, the lengths of which are varied as the thickness of the material to be united changes, and driving each in succession into the solid or imperforate leather held against the nail-tube foot.

9. For uniting the soles to the uppers of boots and shoes by means of nails cut from continuous wire, the combination of the following instrumentalities: First, a wire-feeding mechanism, so constructed that the lengths of the nails cut from the wire can be altered without arresting the action of the nailing-machine; second, a wire-nail-driving mechanism; and third, nails cut from a continuous piece of wire of sufficient stiffness to penetrate the soles and uppers of boots and shoes without the previous action of an awl or piercing-instrument.

10. For uniting the soles of boots and shoes to their uppers by metallic nails or fastenings cut from continuous wire, the combination of a wire-feeding mechanism, so arranged that the length of the nails may be altered to suit the varying thickness of the stock without arresting the action of the machine, with nails or metallic fastenings, so formed that their points or ends which first enter the stock shall clinch on the inner sole or inside of the shoe against a horn or similar resisting surface, causing the fastening to clinch.

5,697.—Machine for Removing Snow and Ice from Roadways.—MATTHEW C. BOGIA, Philadelphia, Pa.—Patent No. 37,897, dated March 17, 1863. Application filed November 15, 1873.

Claim.—1. The method of clearing roadways from snow and ice by a portable furnace adapted to move along the roadway and to discharge the heat upon the snow and ice, thereby melting them and causing them to flow away as water, substantially as set forth.

2. The combination of a truck, a heat-generator, and a blower, as and for the purpose specified.

5,698.—Device for Clamping Whip-Sockets to Vehicles.—EDWIN CHAMBERLIN, Lansingburg, assignor, by mesne assignments, to himself and JOHN O. MERRIAM, Troy, N. Y.—Patent No. 43,896, dated August 23, 1864; reissue No. 2,387, dated November 6, 1866; reissue No. 4,787, dated March 5, 1872.—Division A. Application filed May 22, 1873.

The clamping-jaws are forced together by a bolt and nut.

Claim.—A fastening device, formed in two parts, and constructed to embrace both the socket and the dash-rail, or other part of the vehicle, and secured by a bolt and nut or screw, as and for the purpose set forth.

5,699.—Device for Clamping Whip-Sockets to Vehicles.—EDWIN CHAMBERLIN, Lansingburg, assignor, by mesne assignments, to himself and JOHN O. MERRIAM, Troy, N. Y.—Patent No. 43,896, dated August 23, 1864; reissue No. 2,387, dated November 6, 1866; reissue No. 4,787, dated March 5, 1872.—Division B. Application filed October 15, 1873.

The clamping-jaws are operated by inserting the barrel of the socket between them and pressing it into its proper position.

Claim.—In combination with a whip-socket, a clamp for securing the socket to the vehicle, said clamp being constructed to grasp the dash-rail and socket, in the manner and for the purpose specified.

5,700.—Device for Coupling Whip-Sockets to Vehicles.—EDWIN CHAMBERLIN, Lansingburg, assignor, by mesne assignments, to himself and JOHN O. MERRIAM, Troy, N. Y.—Patent No. 43,896, dated August 23, 1864; reissue No. 2,387, dated November 6, 1866; reissue No. 4,787, dated March 5, 1872.—Division C. Application filed October 15, 1873.

The clamping device is formed in a single piece of elastic metal and secured to the socket and the dash-rail by a bolt and thumb-screw.

Claim.—The fastening device consisting of the elastic band C, having jaws *a a*, bolt and nut *b c*, in combination with the socket A, as and for the purpose specified.

5,701.—Device for Shearing Sheep.—ADONIRAM J. FULLAM, Springfield, Vt., assignor to WILLIAM EARL, Jr., JOHN G. BLUNT, ROSWELL T. SMITH, and JOSEPH K. FRISBY.—Patent No. 42,572, dated May 3, 1864. Application filed June 24, 1873.

Claim.—The shearing implement consisting of the handle and comb-plate extending from its end, the engine supported by said handle, and a moving shearing-cutter, arranged to operate with the comb-plate, and operated by said engine through power supplied from a reservoir situated at any desired point, substantially as described.

5,702.—Spinning-Ring.—WELCOME JENCKES, Manchester, N. H., assignor to GEORGE DRAPER & SON, Hopedale, Mass.—Patent No. 39,657, dated August 25, 1863. Application filed September 6, 1873.

Claim.—1. The combination of a ring-rail, provided with a passage through it for the spindle, with a ring projecting partially within such passage, and with means or mechanism, substantially as described, by which such ring, on becoming eccentric to the spindle, may be moved or adjusted in such passage, and fixed into concentricity with the spindle.

2. A ring-rail having each of the sockets for the rings made larger in diameter than the neck or portion of the ring to enter it, and provided with adjusting-screws, arranged substantially in the manner specified.

5,703.—Process and Apparatus for Deodorizing and Destroying the Gases from Offal-Treating Establishments.—JACOB J. STORER, Boston, Mass.—Patent No. 131,131, dated September 3, 1872. Application filed December 11, 1873.

Claim.—1. The modification or improvement of the Whelpley and Storer furnace and apparatus for the application of pulverized fuel, by addition of an auxiliary fire-place, in the manner and for the purpose substantially as described.

2. A furnace with two fire-places, with a connecting-flue or conductor, one fire-place serving for the burning, drying, or distillation of the material, and the other for the deodorizing of the gases arising therefrom.

3. Deodorizing the offensive gases generated in heating refuse animal matter by passing them through an independently-heated furnace, fire-place, flue, or other heat-radiating chamber, wherein they may be sufficiently deodorized before escaping into the air, substantially in the manner and for the purpose described.

4. The process of deodorizing the gases from offal rendering and drying establishments, by bringing them in contact or mixture with coke, charcoal, or coal, as herein described.

5. In combination with the receptacle in which refuse animal matter is heated, evolving offensive gases or steam, an auxiliary independently-heated radiating-chamber, the whole operating substantially in the manner described, for the purpose described.

5,704.—Horse Hay-Rake.—BURTON J. DOWNING, Mitchell, Iowa.—Patent No. 142,276, dated September 30, 1873. Application filed November 22, 1873.

A spring-clutch on the inner end of a stub axle, by means of a chain, locks therewith the rake-head, and automatically dumps the accumulated hay by the advance of the propelling power.

Claim.—1. The short axle D, on which wheel C is keyed, applied in bearings in front of the main axle B, in combination with clutch U, treadle-lever V, chain S, and lever O for lifting the rake-teeth, substantially as described.

2. The arm T and gravitating-weight Z, applied to one of the collars of clutch U, in combination with the connecting-chain S, the pawl P on elevating-lever, and the rack Q, substantially as and for the purposes described.

3. The beveled lug or tooth Y on one of the clutch-collars on axle D, in combination with the chain S and elevating-lever O, as and for the purposes described.

4. The gravitating-pawl P, pivoted to the lifting-lever O, in combination with the fixed rack Q and elevating and tripping devices, substantially as and for the purposes described.

5. In a horse hay-rake, the rigid T-shaped holder M, attached to the bar J, and having extended arms, as shown, to support the coils of the continuous coiled spring N, constructed and arranged substantially as specified.

5,705.—Skate.—JOHN FORBES, Halifax, Nova Scotia.—Patent No. 40,743, dated December 1, 1863. Application filed June 23, 1873.

Claim.—1. A central lever, J, substantially as described, connecting the sole and heel clamps, and through which both are operated simultaneously.

2. A central lever, arranged to operate substantially as above described, when combined with a lever which actuates it in connecting and disconnecting the skate.

3. A plate arranged to operate said lugs, when made adjustable to the central lever, substantially as described, so that the lugs may be adjusted to receive a movement in accordance with the width of the sole they are required to grasp.

4. The foot-plate, pivoted or hinged at one end to the runner, and secured and released at the other end by a catch, K, or other suitable fastening mechanism, substantially as described.

5,706.—Take-Up for Looms.—CHARLES GARNER, New York, N. Y., assignor to MORITZ COHN, same place.—Patent No. 133,845, dated December 10, 1872. Application filed October 21, 1873.

In a loom for weaving corsets and other irregular fabrics the cloth is held by clamps or jaws to prevent any back movement, these jaws being placed on the breast-beam between the lay and take-up, and released from their hold before the lay begins to move back, and in turn to allow of any slack that may be caused by the beat of the lay to be taken up by the rolls. The jaws are covered with a yielding substance in order to retain the fabric more securely.

Claim.—1. In combination with the batten, the clamping-jaws and a take-up mechanism, the whole arranged to operate together in substantially the manner described, for the purpose set forth.

2. The jaws of the clamp for holding the woven fabric, when provided with an impressible or yielding facing or facings, substantially as and for the purposes described.

5,707.—Roller-Skate.—WASHINGTON PARKER GREGG, Boston, Mass.—Patent No. 45,929, dated July 25, 1865. Application filed November 12, 1873.

Claim.—1. A skate-stock or foot-rest having a driving-wheel, constructed as described, disposed on an outer axle, at either side of the stock, as or near the middle, the upper parts of the peripheries of said driving-wheels extending above the level of the stock, as described and shown.

2. A roller-skate, constructed with a stock or foot-rest, having a small supporting-roller under each end, and a larger driving-wheel disposed on an outer axle at each side of the stock, the upper portions of the peripheries of the driving-wheels extending above the level of the stock or foot-rest, as described.

3. In a roller-skate provided with a stock, having a supporting-roller under each end and a larger driving-roller on each side thereof, the arrangement of the driving-rollers, so that their peripheries or bearing-surfaces shall be in a plane lower than the heel and the toe-rollers, as specified.

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COMMISSIONER'S DECISIONS.

CHARLES A. SEAMAN.—*Appeal.*

[*Appeal from the decision of the Primary Examiner in the matter of the application of Charles A. Seaman for patent for a design for* LAMP-CHIMNEY CLEANER.—*Decided January* 5, 1874.]

The form of the body or swab of a lamp-chimney cleaner held not to be subject-matter for a design-patent, because the form was adopted for practical use and not for ornament, and, in the body of a lamp-chimney cleaner, was without utility as an ornament.

The words "useful" shape in the statute relating to designs refer to the utility of ornamental form and appearance rather than to that of operative mechanical function.

By design for "an article of manufacture" as the subject of patent is to be understood ornamental forms of articles employed merely for decoration.

When "an article of manufacture" is presented for patent in order to determine to which statutory class of patents it should be referred for protection, it should be asked, Is its form, without reference to the function of the article, intended to be ornamental? and is the article itself a thing which may, for any practical purpose, have a merely ornamental configuration, and, therefore, have, in that sense, sufficient utility to warrant the grant of a patent?

The law is based upon the universal truth that the influence of the beautiful is beneficial to mankind, and there is no reason for excluding "the decorative arts" from recognition under the statute wherever there is room for real decoration.

LEGGETT, *Commissioner:*

The applicant makes a lamp-chimney cleaner with a "pear-shaped" body, and seeks a design-patent covering this form of the article. The Examiner holds that this is not proper subject-matter for a design-patent.

Under the old law, which provided that he who invented "any new and original shape or configuration of any article of manufacture" should have a design-patent therefor, Commissioner Foote held—

It (the statute) does not say "*ornamental*" design, or "artistic" shape, or configuration, and I am unable to perceive any good reasons why designs for utility are not fairly and properly embraced within the statute, as well as those relating to ornamentation merely. The line of distinction between what is useful and what is merely ornamental is, in some cases, very indefinite. (Commissioner's Decisions for 1869, p. 7.)

Commissioner Fisher expressly concurred in this opinion, and added—

I am of opinion that the class of cases named in the act as arising from "new shape or configuration" includes within it all those new changes of form which involve increase of utility." (Ib., p. 105.)

The act of July 8, 1870, adds the word "useful," and provides that "any new, *useful*, and original shape or configuration of any article of manufacture" may be patented as a design. Under this act Acting Commissioner Duncan held (Commissioner's Decisions for 1871, p. 53)—

There is here no limitation as to the use to which the article, wrought into the particular shape designed for it, is to be subjected; and no suggestion that mere beauty of form or ornamental configuration are the ends sought. In fact, the language quoted expressly implies that utility may be the sole object had in view in the invention or selection of the particular form to be impressed upon the manufacture; and I am of the opinion that, under the present statute, if a new and, at the same time, useful shape be devised for a particular article of the manufacture, even though no ornamental effect be produced thereby, the inventor of the same is entitled to protection for it under the design section of the patent law.

Upon mature deliberation, and in view of the different statutes and the decisions under them, I came to a different conclusion as to the purpose and scope of the law authorizing the grant of patents for designs, and as to the meaning of the language of the statute, construed with reference to what I conceived to be the object of the law and the ground it covered as a supplement to the statutes authorizing the grant of patents for mechanical inventions. This conclusion I announced in the case of P. C. Parkinson, (Commissioner's Decisions for 1871, p. 251.) It was to the effect that the law authorizing design-patents was intended to provide for a distinct class of inventions, "inventions in the field of æsthetics—taste, beauty, ornament;" that the words "useful" shape, in the statute relating to designs, refer to the utility of ornamental form and appearance rather than to that of operative mechanical function; and that by a design for an "article of manu-

facture" as the subject of a patent is to be understood ornamental forms of articles employed merely for decoration, the articles themselves, irrespective of mere ornamental form, frequently having mechanical utility. At last, in 1872, a case reached the Supreme Court of the United States, under the present statute, and the object of the law, at least, was definitely and authoritatively settled. The subject before the court was a certain ornamentation on the handles of table forks and spoons. The court said—

> The acts of Congress, which authorize the grant of patents for designs were plainly intended to give encouragement to the *decorative arts*. They contemplate not so much *utility as appearance*, and that not an abstract impression or picture, but an aspect given to those objects mentioned in the acts.
>
> * * * * The thing invented or produced for which a patent is given is that which gives a peculiar or distinctive *appearance* to the manufacture or article to which it may be applied or to which it gives form. The law manifestly contemplates that giving certain new and original appearances to a manufactured article may enhance its salable value, may enlarge the demand for it, and may be a meritorious service to the public. It therefore proposes to secure, for a limited time, to the ingenious producer of those appearances the advantages flowing from them. Manifestly, the mode in which those appearances are produced has very little, if anything, to do with giving increased salableness to the article. It is the appearance itself which attracts the attention and calls out favor or dislike. It is the appearance itself, therefore, no matter by what agency caused, that constitutes mainly, if not entirely, the contribution to the public which the law deems worthy of recompense. The appearance may be the result of peculiarity of configuration, or of ornament alone, or of both conjointly; but, in whatever way produced, it is the new thing or product which the patent law regards. To speak of the invention as a combination or process, or to treat it as such, is to overlook its peculiarities. * * * *
>
> Identity of appearance, or, as expressed in *McCrea* vs. *Holdsworth*, sameness of effect upon the eye is the main test of substantial identity of design. *(The Gorham Manufacturing Company vs. White*, OFFICIAL GAZETTE, vol. 2, p. 592.)

If the object of the law is to encourage "the *decorative arts*," and if "the appearance" is the new thing or product which the patent law regards," then it must of necessity be exclusively *ornamental* appearance or conformation that is the subject-matter of design patents. The active *useful* mechanical features or functions of devices, whether due to form or combination, are amply secured to inventors by the law authorizing what, for want of a better designation, have been termed mechanical patents. The only questions, then, when an "article of manufacture" is presented for patent, and there is a doubt as to which statutory class of patents it should be referred for protection, are: Is its form, without reference to the function of the article, intended to be ornamental, and is the article itself a thing which may, for any practical purpose, have a merely ornamental configuration, and therefore have, in that sense, sufficient utility to warrant the grant of a patent?

The body of a lamp-chimney cleaner is a mere swab, not intended for display, but for a very dirty use; and when not in use, it is usually kept as far out of sight as possible. It is bought by the public, not for its beauty of contour, but because its form is adapted to fit and clean the interior of lamp-chimneys. This appears to have been the view of the applicant originally, when, as the Examiner reports, he applied for a mechanical patent for this identical device. His application having been rejected upon references, he apparently sought his remedy in an application for a design. The law is based upon the universal truth that the influence of the beautiful is beneficial to mankind, and there is no reason for excluding "the decorative arts" from recognition under the statute wherever there is room for real decoration. But the province of ornamentation is a high one, and the law should not be so applied as to degrade it. "The beauty of an ornament is one great test of its utility." (Magic Ruffle Co. *vs.* Douglas, 2 Fish., p. 336.) There can hardly be sufficient utility in the way of ornamentation in the form of a swab for cleaning lamp-chimneys to justify the grant of a design-patent.

I concur with the examiner that the merit of the form of this device relates wholly to its mechanical function, and not to ornamentation, and that the application does not embody proper subject-matter for a design-patent.

DECISIONS OF THE COURTS.

U. S. CIRCUIT COURT, SOUTHERN DISTRICT OF NEW YORK.

CYRENUS WHEELER, JR. *vs.* CYRUS H. McCORMICK.

[In equity.—Before Woodruff, Judge.]

A patentee may maintain a suit at law upon his patent in his own name, although he is under a contract to assign it to others if it has not been executed.

But equity regards that as already done which the patentee has agreed to do, and requires that the proposed assignees be made parties to a bill in chancery brought against infringers.

If the other parties to such a contract release to the patentee all their interest in the patent, he may maintain a bill in his own name for all subsequent infringements, but not for those committed previous to the release.

Neither can he recover damages for any infringements committed after he has sold and assigned the patent.

The pendency of a suit upon a patent in one district is no bar to the prosecution of a suit upon it in another, whatever may be the effect of a recovery in such foreign suit.

A patent covers only the devices which are claimed, although others are described by way of explaining them or illustrating the way in which they operate.

When a patent is reissued in several divisions, no one of them is void, because they every one describe all the mechanism shown in the original, provided the claim in each is for a different device, which is clearly described, and there is no conflict between them.

An inventor may claim in one patent a combination of devices when they are so connected as to operate in a certain way; and in another he may claim in combination with some of those devices another one especially by means of which the operation so described is produced.

An inventor may have distinct patents for several distinct devices, although he might have included them all in one, making a separate claim for each device.

Although a patent has expired and the device covered by it can be used only in connection with other devices embraced in a patent still in life, the latter devices cannot be used without the consent of the patentee, though in connection with the first.

[*George Harding*, of counsel for the complainant.
Henry Baldwin, Jr., and *Charles F. Blake*, of counsel for the defendant.]

WOODRUFF, *Circuit J:*

On the 5th of December, 1854, the complainant, Cyrenus Wheeler, jr., received from the United States a patent for an improvement in grass and grain harvesters, for which he had made application March 16, 1854. On the 7th of November, 1859, he surrendered his patent for the purpose of obtaining reissues thereof in divisions, and on the 3d of January, 1860, the patent was reissued in seven divisions, numbered 875, 876, 877, 878, 879, 880, and 881. Of these the reissue numbered 876 was surrendered on the 6th of April, 1867, and on the 14th of May thereafter was again reissued, numbered 2,610.

On the 6th of February, 1855, another patent was granted to the complainant for an improvement in grain and grass harvesters, which was also afterward surrendered and reissued June 5, 1860, and again surrendered, and on the 28th of May, 1867, was again reissued, numbered 2,632.

For the alleged infringement of the reissued patents numbered 875, 877, 878, 879, 2,610, and 2,632, this suit is brought.

The answer sets up probably as many grounds of defense as the ingenuity of counsel could suggest. It denies that the complainant invented the devices originally patented, and denies that a machine constructed in accordance with his patents is a practicable machine, or has any useful or patentable quality. It denies the validity of the several reissues on various grounds; avers that other parties were at the time interested in the patents, and that the complainant surrendered them, and obtained reissues without their authority, consent, or concurrence; and alleges that the reissues were obtained without any legal or justifiable grounds therefor; that they embrace devices not shown in the original patent, specifications, drawings, or models, and which were not of the complainant's invention; that some of the reissues are for the same devices patented in others; that one of the reissues has expired, without extension, which included all the distinctive peculiarities shown in the original patent. It objects that other persons are jointly interested with the complainant in the patents, and that the suit is defective for want of the presence of such persons as parties. It denies the validity of the extension of the patents beyond the term for which they were originally granted. It avers the commencement of a suit in Illinois by the complainant against the defendant and another, for infringing the same patents on the 8th of May, 1869, which is still pending. It denies infringement by the defendant at any time since January 2, 1860, or that he has made or sold within the southern district of New York any infringing machines.

The defendant has moreover interposed a supplemental answer setting up, as a partial defense, that since this suit was commenced—to wit, on the third day of July, 1872—the complainant, Wheeler, sold, assigned, transferred, and set over to Cornelius Aultman, all the right, title, and interest, he, the said Wheeler, then had in the several Letters Patent and patent interests in the bill of complaint herein mentioned and therein set forth as the property of the said Wheeler. This assignment and transfer the defendant relies upon as a partial defense—that is to say, as a bar to any decree for an accounting to or with the complainant for any profits arising from infringements committed after the date of the said assignment, and as a bar to the granting of any injunction herein upon the prayer of this complainant.

Possibly in the defendant's anwer some other grounds of defense were suggested, but not all of the supposed defenses were insisted upon on the hearing.

1. The objection founded upon want of necessary parties rests upon two agreements, one of which goes, as is claimed, to the right of the complainant to maintain this suit without joining other parties. That agreement was entered into by the complainant Wheeler and others of the first part, and Cornelius Aultman and others of the second part, on the 27th of December, 1860, to continue in force for ten years. It is the same agreement that was urged as a defense as against Aultman in the suit of *Aultman* vs. *Holley et al.* It is called in that suit and in this the "consolidation contract." In deciding the case of *Aultman* vs. *Holley*, at this present term, I have considered the same objection which is now urged here, and held that that agreement did not disable Aultman to maintain a suit in his own name, upon his patents included within the scope of that agreement. The same reasons apply to the present complainant, and my opinion in that case on this point must be taken as my opinion in this, and may, if either party so desires, be inserted in this place, *mutatis mutandis*, as part of this opinion.

The other agreement was entered into by and between Wheeler, the complainant, and Henry Morgan, Allen, Mosher, and others, on the 25th of October, 1859. It recites that he had theretofore entered into certain agreements with the others, relating to his patents for harvesters, and in it he agrees to obtain a reissue of his patents, and that upon obtaining such reissue he will execute to such several other parties assignments to convey to them undivided shares or interests in all said patents now held by him, and all reissues and renewals and extensions of the same: to the said Morgan, one-fourth; to other of the persons named, one-fifth; to others, eighteen one-hundredths; and to another, seventeen one-hundredths; so that the said several parties shall become joint owners thereof, (certain specified States excepted;) that the income derived from the excepted States shall be divided in like proportions. Among other numerous detailed provisions showing the considerations moving between the parties, is one that Wheeler and Morgan, when the reissues have been obtained and the deeds of assignment are executed, are authorized to make sales of territorial rights, give licenses, to prosecute for infringements, compromise and settle claims for infringements, &c., they to render accounts, &c., to the others, and pay to the several others their proportionate share.

By a supplement another firm was admitted to share, with one of the firms who were included in the agreement, certain of the advantages secured thereby.

The defendant, in his allegation of defect of parties, names a part only of the persons with whom his agreement was made, and on recurring to the consolidation contract it appears that he has only named those who were parties to that contract also. This makes it quite apparent that the objection in the answer refers only to the consolidation contract, and has no reference to the agreement of October, 1859; nevertheless, I cannot say that an objection in the answer that Morgan and Mosher and some others specified are necessary parties does not warrant the production of this agreement of October, 1859, and any claim in respect to the specified persons which that agreement will sustain. It cannot be denied that that agreement made them equitable joint owners of the patents now in question with the complainant Wheeler. When the reissues were obtained it was the plain duty of Wheeler to make and deliver to the others such assignments as the agreement provided for, and such as would have invested them with the legal title jointly with himself; until then Wheeler might have sued at law upon his legal title for the joint benefit. In equity, their title was (in the absence of any proof of a release, reassignment, or of a rescission of the agree-

ment) as clear as his was at law. To this extent equity would regard that as done which ought to be done, and in equity their equitable title and immediate right to share the proceeds of a recovery made them necessary parties to a suit to recover for and to restrain infringements, if that objection is raised.

True, the complainant testifies that this agreement, "as far as the transfer of interest in the patents, as called for in that writing, was never acted upon." This is not sufficient to avoid the effect of the agreement; it does not show that any change was made in the relations of the parties to the reissued patents.

Their equitable titles in the shares, severally stipulated to each, became vested upon the procurement of the reissues, subject only to an accounting with certain of the parties mentioned. To vest the legal title it was necessary that the agreement should be "acted upon," but the parties, without action, could suffer Wheeler to retain the legal title and rest on their equitable rights. Proof that the agreement, in so far as it called for a transfer of the legal title, was not acted upon, does not show that it was in any manner defeated, or that it was rescinded, or that anything occurred to interfere with or interrupt its full force and effect in equity; while, on the other hand, the express admission by the complainant, in his testimony, that other writings were executed, not followed by showing what those writings were, leaves the defendant at liberty to insist upon the full force of his objection, and to presume that, had the complainant produced those writings, the equitable title of those absent parties would not be less clear.

It is, however, proved that on the 8th and 9th of July, 1868, releases were executed to the complainant by Morgan, Mosher, and certain other persons, who, by express stipulation herein, are admitted to have then been the owners of all the interest of the parties to the said agreement in question, excepting, of course, Wheeler himself. By these so-called releases the parties sell and relinquish to the complainant, his heirs and assigns, any and all the right, title, and interest, which the parties thereto can or may have, or claim either in law or in equity, in or to said patents, and any reissue or extension of the same by reason of any agreement, contract, or understanding previously had with them or those whom they represent; to be had and held by the said Wheeler and his legal representatives to the full end of the term for which said Letters Patent are or may be granted.

This operated to vest in Wheeler the equitable as well as the legal title. In respect to subsequent infringements, his right to sue in equity as well as at law was unembarrassed.

This, however, leaves to the defendant a partial defence to this suit, which was commenced on or about the 30th of June, 1870. As to infringements and profits from infringements accrued prior to those last-named releases, the objection remains, and on that ground the defendant now insists that if the defendant be decreed herein to account, such accounting shall not go back to an earlier date than July 8, 1868.

The complainant urges that this release of the equitable interest in the Letters Patent carries with it their interest in then existing claims for infringement. I think not; no such intention is expressed; the words used have no such import nor implication.

These releases, in that respect, are not unlike the instrument which, pending this suit, the complainant has executed to Cornelius Aultman, and which the defendant has set up in his supplemental answer. The only difference is that the former transfer the equitable title, and the latter both the legal and equitable title. If the latter were construed to embrace all claims to antecedent profits arising from infringements, it might be claimed to defeat the suit altogether. I must, therefore, hold the objection, for want of parties, valid to this extent—viz., that the complainant, if entitled to a decree, notwithstanding other alleged defences, cannot require the defendant to account in this suit for profits arising and accruing from infringements prior to July 8, 1868.

2. Upon the merits I shall not attempt to go into all the details of the arguments most minutely and very ably addressed to this case by the respective counsel. In one form or another they have, nearly all of them, on a like question, been under consideration in other cases heard and decided in this court between other parties. (See *Wheeler* vs. *The Clipper Company*, 10 Blatch. R., 181; *Aultman* vs. *Holley et al.*, at this present term.)

The patentable nature of the invention described in and secured by the original patents granted to Wheeler, December 5, 1854, and February 6, 1855, and the practicability of the devices patented and their utility I deem unquestionable. The contrary, though set up in the defendant's answer, is not insisted upon by his counsel.

That the reissues here in question are not invalid on the ground that they include devices not shown, described, or indicated in the original patents, their specifications, drawings, or models, has also been heretofore held, and I find no reason to change my opinion on that point.

Though alleged in the answer no ground is shown for holding the extension of the patents invalid or void.

The pendency of a suit in Illinois against the defendant and Leander J. McCormick, set up in the answer, is no bar to this suit, whatever operation, if any, a recovery here may have upon a final recovery there.

3. The invalidity of the reissues in question is most strenuously urged by the counsel for the defendant on the ground that they are several patents for the same alleged invention, and not several patents for distinct and severable parts of the invention described and shown in the original patent.

This is most elaborately and ably argued. I do not understand that the counsel for the complainant contests the legal principles urged in support of this branch of the defense. The contest is rather whether there is any foundation of fact upon which it rests; whether, according to a just construction of the several reissues, they are not in fact for severable parts of the aggregate invention included in the original patent.

I think the arguments of the defendant's counsel have not sufficiently kept in view this idea; where a patentee, having patented an aggregate of several devices, is permitted to surrender his patent and receive new Letters Patent for the several devices included in it, it does not follow that his new specifications may not be identical in their description of each and all of the devices included in the original aggregate patent. It is the patentee's selecting out of these devices some or one, being separable and capable of use as a distinct device or devices, and making that or those the subject of his specific claim that determines what is covered by each reissue. The description of an entire machine may be convenient and sometimes necessary in order to show the adaptation of the separated device to a useful purpose, and illustrate, not its construction alone, but its application, in one practicable mode, to the purpose for which it was designed. Such a description may be given, but that does not make the patent cover all that is included in the description.

In this case, then, it was competent for the patentee to amend his original specification, so as fully and minutely to describe all that was shown in the original or in its drawings or model, and receive patents for each separate device shown therein, or separate and severable combinations of devices, capable of distinct use, and, while such specification might be annexed *in totidem verbis* to each reissued patent, define and claim in each such separable and distinct part of his original aggregate invention; the specification in each case showing, as it should, the construction of each separate patented device or combination of devices, so as to give the required information to the public, and illustrating the application of each device or combination to actual use in the construction of an aggregate machine.

This does not make one reissue include all that is described in the specification. All that is included in a specification is not necessarily included in the patent. What is claimed in and secured by the patent is secured not only when used in the mode illustrated by the description of other devices with which it may be used in the specification, but it is secured against its use in connection with other devices of an entirely distinct character.

For example, in reissue numbered 2,610, the patentee claims, in combination with a harvester-frame that is free to vibrate about a gear center, a laterally-projecting finger-bar, so hinged to one end or corner of said frame as to permit the finger-bar at each end to follow the undulations of the ground over which it is drawn. This claim, read in connection with the specification, refers to and is confined to a special class of harvesting and mowing machines—viz., those in which the rise and fall of the finger-bar are effected by a vibration of the frame of the machine around the gear center, and the hinging of the finger-bar to one end or corner of that frame, so that it may rise and fall with it. It is the use of a laterally-projecting finger-bar in connection with such a frame, and hinged thereto, and also hinged so as to permit the rise and fall of either end, which is the subject of this patent. In comparison with this take either of the claims, say the first in reissue numbered 875—

> In combination with the hinged bar H and the finger-bar, the intermediate shoe M hinged to said bar H, substantially in the manner and for the purpose set forth.

Here is a limited claim to the shoe confined to its connection with the oscillating bar H and the finger-bar, in the manner pointed out in the specification. It is clear that the claim in number 2,610 might be infringed without the employment of this specific combination, and it is equally clear that the claim last above recited would not be infringed by the use of the shoe M in any other manner or combination than with the oscillating bar H mentioned therein.

It is true that the devices specified in each claim may be so used as to infringe both, but one may be used, and may infringe one of the claims and not infringe the other. As already suggested, the fact that the specification in each patent described the whole is not material. That is illustrated where there is but one patent, and of course but one specification; and yet the patentee, by his several claims, separates the devices, and, as may lawfully be done, claims the whole as an aggregate, and each separately.

A like comparison, instituted in reference to the other several claims in these reissues, leads to the same conclusion. In some the several and separate character of the devices is more plainly apparent than in others; but I think they are none of them liable to the objection that the complainant has taken more than one patent for the same device or combination.

In a certain sense, it may be said that a patent for a combination of several new devices includes them all; but this does not forbid the patentee from claiming the combination, and also claiming the several devices which enter into it, if he be the inventor of each, and they are useful by themselves or in other combinations.

It is not to my mind very clear that the complainant might not have secured all to which he was entitled by reissuing his original patents and claiming separately therein each device or combination of devices which he has claimed under several reissues. But the law permits him to divide his patent, and I find no sufficient ground for pronouncing the reissues invalid.

A ground of defense depending substantially upon the point last considered arises out of the fact alleged in the answer, that reissue numbered 880, which was founded upon the original patent of December 5, 1854, has not been extended. The term of the original patent, and of course the term of this reissue, expired December 5, 1868; whereupon it is claimed that inasmuch as the invention patented by that reissue became, on the expiration of the term, public property, and the defendant therefore became entitled to use it, first, that the defendant is not liable for any infringement since that time by the use of any thing included in that patent; and, secondly, that that reissue does in fact embrace within it the devices included in the other reissues, and so the defendant is not liable at all, or, if at all, he is not liable unless it be for infringements prior to that date. In the first place, the defendant is not sued for violating any rights secured to the complainant by the reissued patent 880. In the next place, the whole proposition fails if reissue numbered 880 embraces only a distinct and separate device not included in the other reissues, so as to be free from the objection already considered. I will not inquire whether that reissue was invalid, either as not embracing a patentable invention, or because the device which was the special subject of that patent was not new, or not the invention of the patentee. Nor will it be necessary to inquire whether the complainant is at liberty to allege the invalidity of that patent on any ground in order to avoid the conclusion sought to be drawn from the expiration of its term.

I am of opinion that nothing fell into the public domain, on the expiration of that patent, except the spe-

cial device claimed in it, and that that patent did not include the devices embraced in the other reissues upon which this suit is brought.

Bearing in mind that a patent includes no more than the patentee claims therein, it will be seen that although, as in other reissues, the specification gives a full description of the device, and of other devices which illustrate its application to use, the claim thereupon is—

The use of two hinges substantially as described, whereby the finger-beam may be folded to the main frame, in the manner substantially as set forth.

Waiving, as before, the question of the validity of this patent, it is manifest that the devices claimed in the other reissues do not necessarily permit such folding of the finger-beam to the frame. They, or some of them, provide for the rise and fall of the finger-beam at either or both ends, and for its oscillation, so as to elevate or depress the points of the fingers, but neither of them describe a construction or use adapted to this folding of the finger-bar sidewise against the frame. That is only described and provided for in the specification of this reissue 880, and it is doubtful, at least, whether the machine, as described and shown in the original patent, had any such capacity. Be that as it may, the special feature, not included in the other reissues, and in nowise essential to the operation of the devices which are therein patented, is pointed out in the specification of reissue 880, and it is the special location of the hinge by which the shoe or socket piece is hinged to the oscillating bar. The device consists in so extending the place of that hinge sidewise toward the inner or grain side of the machine as that it may clear the frame when turned or folded. All the other functions of the oscillating bar mentioned in other reissues might be effective and the finger-bar might rise and fall at either or both ends in actual use for mowing, and, so far as desired, in reaping, without this capacity of folding to the side of the main frame. This special location sidewise of the frame admitting of such folding is the specific device covered or sought to be covered by this reissue, and, whether such mere location involved any patentable quality or not it does not in itself so include the other devices that the termination of the exclusive right to employ the specific location involves also the right to use the other devices. Such location, if patentable, might be suggested by a third person, not the inventor of the other devices. If he had the right to use such other devices he might employ them in his new location. If not, his patent would be of no value, it being merely an added improvement to what was patented to another. In short, the devices included in the other reissues do not necessarily include this capacity to fold the finger-bar against the side of the frame, and the special right to extend the location of the hinge inward, so as to clear the frame, and so permit or enable the finger-bar to be thus folded, may, as an improvement, be vested in another inventor, who, nevertheless, cannot use it on a machine constructed within the other patented devices without infringing the patents therefor. Such a location of the hinges, whereby the hinged finger-bar may be folded to the side of the frame, may be applied to machines not involving the use of the other patented devices, and the right to use such a location may have become free to the public, and yet without involving the right to use such other devices. For general illustration, suppose separate patents for several devices, all of which are useful in constructing an aggregate machine—the expiration of one of the patents makes the specific device therein patented public property. But while that will warrant the use of that device in any other connection, it will not warrant a use thereof in connection with the other patented devices, unless any use thereof necessarily involved the use of such devices; nor even then, except upon the ground that there is one patentee of both or all, who, in giving the use of one to the public, necessarily gives all that is essentially necessary to make that use available. Not only so, a device may be patentable and may become public property, either by expiration of a patent or by abandonment to the public, which is useful and valuable, which, nevertheless, cannot be used except in connection or combination with other patented devices. In such cases it cannot be used save by permission of the patentee of such other devices, whether he be the former patentee of such first-named device or a third person. This exhibits the condition of the device patented in the reissue 880, even if it were conceded that it could not be used otherwise than in connection or combination with devices included in the other reissues, while, if it is susceptible of use in connection with other modes of hinging the cutter-bar, which would not include the devices claimed in such reissues, the result more conclusively follows that the expiration of that patent forms no justification for infringing the other reissued and extended patents.

5. The question of the novelty of the invention claimed by the complainant, and whether he was the first inventor, was very elaborately discussed in this court by the counsel defending the case of *Wheeler* vs. *The Clipper Company*, (10 Blatch., 181,) upon the same proofs which are presented in this hearing on those questions. The influence of the same prior patents, applications for patents, inventions, attempted inventions, experiments, and failures, upon the inventions of others, was discussed in that case, and also in the case of *Aultman* vs. *Holley*, decided at this present term, and to some extent also in *Kirby & Osborne* vs. *The Dodge and Stevenson Company*, in the northern district of New York. Those questions have again been most elaborately reviewed on some alleged new aspects of the questions considered, and I have endeavored to give to the views of counsel not only a patient but careful attention, and I am constrained to the same conclusion in this case as is stated in the former cases, and what is stated on the subject, without a discussion of each patent, invention, and experiment in detail in *Wheeler* vs. *The Clipper Company*, and *Aultman* vs. *Holley*, must be taken as my opinion in this case.

6. As to infringement by the defendant, the resistance of the charge depends very largely upon an impeachment of the complainant's title as inventor of the several devices employed by the defendant. So far as the denial of any infringement of the complainant's exclusive rights depends upon that impeachment, what has already above been said sufficiently overrules it. In relation to the specific claims infringed much that was said in the Clipper case is applicable to the defendant's machine. The infringement seems to me very clear. It includes and, in substance, uses the devices embraced in the third and fourth claims of reissue 875, and probably at least one other, but only the infringement of the third and fourth was urged by the counsel for the complainant; also, what is embraced in the claims in reissue 877, the claims in reissues 878 and 879, and 2,610, the first, fourth, fifth, sixth, and eighth claims in reissue patent numbered 2,632. The testimony of the expert, Mr. Renwick, is full and explicit, that the defendant's machine contains all these devices or combinations. My conclusion upon all the proofs is in conformity with his testimony to that effect. The witness also testifies that the defendant's machine contains also substantially the same combination described in reissue 2,632, and referred to in the third claim thereof; but as the counsel for the complainant, in his printed argument submitted, expressly states that the claims in this patent alleged to be infringed are the first, fourth, fifth, sixth, and eighth, I confine the decision to those claims.

Without further detailed discussion of the numerous points and arguments most ably presented by the counsel in this case, I must content myself with saying that, after a laborious examination of the case, I am of opinion that the complainant is entitled to a decree in conformity with the foregoing opinion, declaring the infringement and directing an account of profits; but for reasons above stated that account must begin with the date of the releases from Morgan and others, July 8, 1868, and inasmuch as the complainant has, since the filing of the bill in this case, and on the 3d of July, 1872, assigned and transferred all his right, title, and interest in these patents to Cornelius Aultman, as alleged in the defendant's supplemental answer, the account must terminate with the last-named date, after which the complainant has no interest in the profits of the defendant's infringement, and no interest to be protected by injunction. The usual reference will be made to take such account, and the amount reported must be decreed to the complainant with costs.

APPLICATIONS FOR EXTENSION.

Applications have been duly filed and are now pending for the extension of the following Letters Patent. Hearings upon the respective applications are appointed for the days hereinafter named.

27,008.—Machines for Attaching and Finishing Boot-Heels.—Granted to HERMAN SALOSHINSKY, January 31, 1860, and reissued March 26, 1867. Application filed October 28, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,020.—Variable Exhaust-Pipe for Steam-Engines.—Granted to GEORGE EDWARDS, January 31, 1860. Application filed November 1, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,023.—Calendar-Clocks.—Granted to EUGENE M. MIX and JAMES E. MIX, January 31, 1860. Application filed October 31, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

27,034.—Harvesters.—Granted to JOHN BUTTER, February 7, 1860; and reissued June 13, 1871. Application filed November 4, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,043.—Lock for Umbrella-Stands.—Granted to ALFRED M. FOOTE, February 7, 1860. Application filed November 8, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,065.—Coffee-Mills.—Granted to JOHN and EDMUND PARKER, February 7, 1860. Application filed October 9, 1873. Testimony closes January 6, 1874. Hearing January 21, 1874.

27,094.—Machine for Making Cartridge-Cases.—Granted to ETHAN ALLEN, February 14, 1860, and reissued May 9, 1865, in two divisions, numbered, respectively, 1,948 and 1,949. Application filed November 11, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,135.—Sugar-Cutters.—Granted to CHARLES KIESLER and WILHELM ROSEBROCK, February 14, 1860. Application filed November 13, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,139.—Hanging Rudders.—Granted to JOSEPH P. MANTON and HENRY A. BILLINGS, February 14, 1860. Application filed November 10, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,179.—Marking-Gages for Sewing-Machines.—Granted to CALVIN D. WHEELER, February 14, 1860. Application filed November 14, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,185.—Soldering-Irons.—Granted to ABNER BURBANK, February 4, 1860. Application filed November 8, 1873. Testimony closes January 13, 1874. Hearing January 28, 1874.

27,241.—Photographic Cameras.—Granted to AUGUST SEMMENDINGER, February 21, 1860. Application filed November 20, 1873. Testimony closes January 20, 1874. Hearing February 4, 1874.

27,291.—Seed-Planters.—Granted to JOHN S. HUGGINS, February 28, 1860. Application filed November 24, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,297.—Couches for Railroad-Cars.—Granted to EDWARD C. KNIGHT, February 28, 1860. Application filed November 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,303.—Fastening Saw-Handles.—Granted to JACOB NEIMEYER, February 28, 1860. Application filed November 28, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,319.—Machine for Bending Sheet Metal.—Granted to ORSON W. STOW, February 28, 1860; and reissued August 4, 1868. Application filed October 29, 1873. Testimony closes January 27, 1874. Hearing February 11, 1874.

27,357.—Table-Cutlery.—Granted to JOSEPH W. GARDNER, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,392.—Machine for Folding and Pasting Paper.—Granted to GEORGE K. SNOW, March 6, 1860. Application filed December 3, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,403.—Steam and Fire Regulators.—Granted to JOSEPH WOODRUFF, March 6, 1860. Application filed December 5, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,406.—Cultivators.—Granted to ROBERT CRAIG, March 6, 1860. Application filed November 22, 1873. Testimony closes February 3, 1874. Hearing February 18, 1874.

27,438.—Blackwashing-Molds for Casting.—Granted to WILLIAM FERGUSON and DAVID FERGUSON, March 13, 1860. Application filed December 10, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,447.—Chain for Timber-Bending Machines.—Granted to LEVI HEYWOOD, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,456.—Machines for Covering the Springs of Skeleton Skirts.—Granted to JOHN T. LOFT, March 13, 1860. Application filed October 6, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,478.—Turning-Lathes.—Granted to WILLIAM SELLERS, March 13, 1860. Application filed December 13, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,485.—Lanterns.—Granted to AUGUSTUS TUPPS, March 13, 1860. Application filed December 12, 1873. Testimony closes February 10, 1874. Hearing February 25, 1874.

27,545.—Fitting Sinks.—Granted to JAMES INGRAM, March 20, 1860. Application filed December 15, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,594.—Sewing-Machines.—Granted to L. W. LANGDON, March 20, 1860. Application filed December 13, 1873. Testimony closes February 17, 1874. Hearing March 4, 1874.

27,609.—Wringing-Machines.—Granted to SELDEN A. BAILEY, March 27, 1860. Application filed December 24, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,626.—Sewing-Machine Stitch.—Granted to JAMES DAVIS, March 27, 1860. Application filed December 27, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,627.—Cultivators.—Granted to CYRUS M. HALL and DAVID E. HALL, March 27, 1860, and reissued October 14, 1873. Application filed December 20, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,631.—Tobacco-Screws.—Granted to NATHAN HOAG and WILLIAM H. TAPPEY, March 27, 1860. Application filed December 26, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,634.—Plows.—Granted to GEORGE W. HUNT, March 27, 1860. Application filed December 26, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,641.—Harvesters.—Granted to FRANK T. LOMONT and JOHN GROJEAN, March 27, 1860, and reissued June 11, 1872. Application filed December 20, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,656.—Horseshoe-Nail Machines.—Granted to WILLIAM TALLMAN, March 27, 1860. Application filed December 15, 1873. Testimony closes February 24, 1874. Hearing March 11, 1874.

27,678.—Method of Fastening Artificial Teeth.—Granted to A. MERRITT ASAY and J. LAMBERT ASAY, April 3, 1860. Application filed January 3, 1874. Testimony closes March 3, 1874. Hearing March 18, 1874.

27,735.—Grinding-Mills.—Granted to EDMUND MUNSON, April 3, 1860. Application filed December 29, 1873. Testimony closes March 3, 1874. Hearing March 18, 1874.

27,736.—Ventilators for Hats.—Granted to JULIUS POLLOCK, April 3, 1860. Application filed January 3, 1874. Testimony closes March 3, 1874. Hearing March 18, 1874.

27,743.—Feed-Water Arrangement for Steam-Boilers.—Granted to THOMAS SNOWDON, April 3, 1860. Application filed December 16, 1873. Testimony closes March 3, 1874. Hearing March 18, 1874.

27,809.—Washing-Machines.—Granted to JOSEE JOHNSON, April 10, 1860. Application filed January 3, 1874. Testimony closes March 10, 1874. Hearing March 25, 1874.

28,004.—Railroad-Car Axles.—Granted to JAMES MONTGOMERY, April 24, 1860. Application filed December 17, 1873. Testimony closes March 24, 1874. Hearing March 8, 1874.

28,027.—Machines for Cutting Sheet Metal.—Granted to JOHN WAUGH, April 24, 1860. Application filed December 31, 1873. Testimony closes March 24, 1874. Hearing April 8, 1874.

28,269.—Bayonet-Scabbards.—Granted to EMERSON GAYLORD, May 15, 1860. Application filed December 19, 1873. Testimony closes April 14, 1874. Hearing April 29, 1874.

30,467.—Apparatus for Singeing Pigs.—Granted to ABRAHAM and EDWARD M. DENNY, October 23, 1860. Patented in England February 2, 1860. Application filed October 17, 1873. Testimony closes December 30, 1873. Hearing January 14, 1874.

31,962.—Fare-Boxes.—Granted to JOHN B. SLAWSON, January 29, 1861. Patented in England January 16, 1860. Application filed October 7, 1873. Testimony closes December 16, 1873. Hearing December 31, 1873.

EXTENSIONS GRANTED.

26,674.—Improved Clothes-Drier, granted to B. B. HAWES, January 3, 1860.

Claim.—Two perforated hubs, H H', movable upon the shaft, in combination with the swivel-pulley P upon the shaft-head, cord C, performing the double function of expanding and elevating the frame, and the self-acting ratchet eccentric R, as applied to clothes-driers.

26,679.—Improved Double-Seaming Machines, granted to L. T. HULBERT, January 3, 1860.

Claim.—1. The rotating head, operated in the manner and by the means described, so as to produce a lateral pressure on the seam, in combination with the mode of adjusting the "direct-line" arrangement herein referred to, by means of the shank, socket, and set-screw, as described, together with the adjustable standard R, substantially as specified, and for the purposes set forth.

2. The former A', with its raised or convex border C' and tapering edge B', in combination with the rotary head D', having its edge constructed as shown, to be used in conjunction with the arrangement in first claim, for the purpose of double-seaming raised or convex work, as described and shown.

26,689.—Improvement in Pivot-Bearings, granted to FRANCIS C. LOWTHORP, January 3, 1860.

Claim.—Interposing between the plate C of a turn-table, swing bridge, or other like object, and the step or foundation plate A, a pivot, B, constructed and arranged in respect to the plates, substantially as hereinbefore described, so as to form a center on which the object connected to the plate C may roll and balance itself, and so as to present, in contact with the plate A, a self-lubricating surface.

TRADE-MARKS REGISTERED DURING THE WEEK.

[Each Trade-Mark bearing date December 30, 1873.]

1,588.—Cigars.—GILMOR & GIBSON, Baltimore, Md. Application filed December 22, 1873.

"the figure of an owl."

1,589.—Saddle-Trees.—SAMUEL E. TOMPKINS, Sing Sing, N. Y. Application filed December 20, 1873.

"'Tompkins' New Departure Tree.'"

1,590.—Ground Coffee.—HAWLEY, BOWEN & CO., San Francisco, Cal. Application filed December 22, 1873.

"an engine and apparatus for grinding coffee, and the words 'Fresh Ground Coffee' placed thereon."

DESIGNS PATENTED DURING THE WEEK.

[Each Design bearing date December 30, 1873.]

7,077.—Ruffling.—SAMUEL E. BARNEY, New Haven, Conn. Application filed December 2, 1873. Term of patent 7 years.

7,078.—Handle for Table-Cutlery.—JAMES D. FEARY, New Britain, Conn.—B. Application filed December 17, 1873. Term of patent 7 years.

7,079.—Figures.—JAMES D. SMITH, Washington, D. C. Application filed December 15, 1873. Term of patent 14 years.

7,080.—Printing-Types.—JAMES M. CONNER, Greenville, N. J. Application filed November 18, 1873. Term of patent 7 years.

7,081.—Pincushions.—ASAPH MERRIAM and CHARLES L. LITTLE, West Meriden, Conn. Application filed December 15, 1873. Term of patent 7 years.

7,082.—Label.—ALEXANDER M. THOMSON and JAMES E. TAYLOR, Chicago, Ill. Application filed November 26, 1873. Term of patent 14 years.

INVENTIONS FOR WHICH PATENTS WERE GRANTED DURING THE WEEK.

[Each Patent bearing date December 30, 1873.]

ORIGINAL PATENTS.

145,925.—Shuttle-Guide for Looms.—JOSEPH B. BANCROFT, Hopedale, Mass., assignor to himself, GEORGE DRAPER, and WILLIAM F. DRAPER, same place. Application filed December 3, 1873.

The deflectors forming part of the columns that support the guide-rod prevent the shuttle from rising as it is about to pass the guide.

Claim.—1. The combination of the deflectors *f f* and shuttle-guard A.

2. Each of the tubular columns B B', provided with the lip *e* and deflector *f*, for application to the guard A, made substantially as shown and described.

3. The guard or guide A, constructed or bent as set forth, in combination with the columns B B', provided with the lips *e e* and deflectors *f f*, all being applied and fastened together and to the cap-bar C by means and in manner substantially as specified.

145,926.—Air-Pump.—GEORGE E. BARKER and STEPHEN F. MACK, Waverly, N. Y. Application filed May 26, 1873.

The piston is formed at the upper end with a conical chamber, to the top of which the piston-rod is connected. This chamber is perforated to admit air to the hollow center of the piston, which is closed at the bottom by a spring-valve opening downward. A cap on the bottom of the piston forms a bearing for the spring.

Claim.—In combination with the chamber E, the hollow piston F, constructed with a chamber, J, passages *j*, passage *i'*, valve I', shank I, valve-chamber *h'*, spring *i*, and cap H, all arranged, constructed, and operating substantially as shown and described.

145,927.—Hand-Rubber.—WILLIAM H. BLYE, Syracuse, N. Y. Application filed October 6, 1873.

Two rubber boards have arms at each end that are crossed and pivoted together, within one of the joints; around the pivot is a spring to throw the rubbers and arms open.

Claim.—In combination with the rubbing-pieces A and B, and arms G and H, hinged together at their centers and provided with handles E and F, the spring I, as and for the purpose specified.

145,928.—Manufacture of Imitation Medicated Wines.—VINCENT BROSSEAU, St. Sebastian, Canada. Application filed June 5, 1873.

Claim.—A compound of elderberry juice, water, ginger, and sugar, substantially as and for the purpose specified.

145,929.—Pipe-Tongs.—JAMES R. BROWN, Cambridgeport, Mass., assignor to himself and HAZEN P. HUNTOON, same place. Application filed October 31, 1873.

Claim.—In the pipe-tongs having the two crossed levers A B, and the arm C, and its adjusting-screws D E, arranged as described, the said arm C, supported by the fulcrum-pin *d*, the pin *g*, and the cross-slots *e* and *f*, arranged in the arm and the lever A, substantially in manner as shown and explained.

145,930.—Seat for School-Desks.—JAMES COOLEY, Albany, N. Y. Application filed September 23, 1871.

The seat-arm is constructed in two longitudinal sections, each provided with an ear, a recess, and a perforated flange, that together produce an arm having a recess between the ears of the hinge for the reception of a central ear cast upon the end piece of the desk-frame, and also a socket for the reception and detention of a rubber block.

Claim.—The arm B, constructed in two longitudinal sections, *d d'*, provided with ears *b' b'*, recesses *c' c'*, and perforated flanges *f f*, in combination with the end piece A, provided with ear *b* and projection *e*, substantially as and for the purposes hereinbefore set forth.

145,931.—Device for Converting Motion.—WILLIAM M. COX, Blanket Hill, Pa. Application filed August 15, 1873.

The toothed rack, to which is secured the churn-dasher, is reciprocated by means of a segmental rack; the latter is attached to a crank-shaft. A wrist-pin in the end of the crank engages with inclines on a drum revolving at right angles to the crank-shaft.

Claim.—The drum *l*, provided with inclines *m*, in combination with the pin *k*, crank *i*, section of a wheel, A, and slide *f*, furnished with arm *g*, connected to the churn-dasher D, all constructed to operate with relation to each other substantially as herein described, and for the purpose set forth.

145,932.—Stove-Leg.—WILLIAM DOYLE, Albany, N. Y. Application filed August 11, 1873.

The stove-leg shank is bifurcated, and the two forks embrace a lug near their extremity, which lug has sides inclined inwardly from top to bottom to fit the similarly inclined inner sides of the forks. This lug tends to spread the forks and bear them downwardly against external lugs near the base of the shank.

Claim.—1. In combination with a bifurcated shank of a stove-leg, receiving a key-lug between its forks to spread the same toward the side holding-lugs, the surface edges *c c*, inclining toward each other from the top surfaces of the shank to the lower surfaces of the same, substantially as and for the purpose set forth.

2. The bifurcated shank having the outer edges of its forks inclined to correspond with the inclines of the said lugs, and their inner edges inclined parallel with said outer inclines, substantially as and for the purpose set forth.

3. The key-lug made solid with the bottom plate of the stove, in combination with the side lugs or dovetails receiving the shank of the stove-leg, substantially as and for the purpose set forth.

4. The bifurcated shank made solid with the leg, and the side lugs made solid with the bottom plate and receiving the shank, in combination with the key-lug, also made solid with the bottom plate, and capable of entering the space between the said bifurcated shank, substantially as and for the purpose set forth.

145,933.—Grain-Cradle.—DANIEL DUMBLER, Coldwater, Mich. Application filed September 24, 1873.

The fingers are supported in clasps on the ends of the braces, and by means of a screw-rod and binding-nuts they may be adjusted laterally and held securely, or may be separately removed, as occasion requires.

Claim.—The combination of the clasps *b* with the adjusting-nuts *d* and screw-rod *a a*, fastened to the blade, and extending across all of the fingers of the cradle, substantially as and for the purpose described.

145,934.—Machine for Ironing Hats.—RUDOLF ECKEMEYER, Yonkers, N. Y. Application filed April 4, 1873.

Block mounted on a revolving spindle. The brim is ironed by a revolving horizontal disk-iron for the under brim, and a swinging gravitating iron resting on the upper brim. The tip and side crown are finished by irons pivoted in separate frames, (adjustable to and from each other,) swiveled in a swinging frame, moved to duty by the hand. The square is finished by the tip-iron, which is caused to traverse the square by means of segment-gear cam, moved to partially rotate the swiveled frame.

Claim.—1. The combination, substantially as before set forth, of the revolving block-holder with a revolving brim-iron having its ironing-surface arranged to revolve in the plane of the hat-brim when supported by the block-holder.

2. The combination of the revolving block-holder, the revolving disk-formed brim-iron, and the stationary brim-iron, the said two irons being arranged to operate simultaneously upon the opposite sides of the brim of the hat carried by the revolving block-holder, substantially as before set forth.

3. The combination of the stationary brim-iron and the revolving brim-iron, having their faces arranged opposite to each other, substantially as before set forth.

4. The combination, substantially as before set forth, of the revolving block-holder with a traversing iron, by mechanism, in such manner that the said iron is caused to move crosswise over the square of the hat, when the said hat is caused to revolve with the block-holder.

5. The combination of the traversing iron, the turning iron-holder, the rocking hub of said holder, and the swinging arm, substantially as before set forth.

6. The combination of the traversing iron, the turning iron-holder, the rocking hub, and the counter-weight, substantially as before set forth.

7. The combination of the traversing iron, the turning iron-holder, the swinging arm, the pressure-weight, and the counter-weight, substantially as before set forth.

8. The combination of the two traversing irons, the yokes for said irons, and the screw by means of which the said yokes are connected, substantially as before set forth.

9. The combination of the two traversing irons, the pivoted yokes thereof, the iron-holder, and the adjusting-screws which control the sway of said yokes and irons, substantially as before set forth.

10. The combination of the revolving block-holder with two traversing irons, arranged so as to operate upon the tip and side crown, and to traverse the square of the hat, substantially as before set forth.

11. The combination of the revolving block-holder with a traversing iron, the turning iron-holder, and the swinging bar, by means of which the said traversing iron can be moved from or toward the block-holder, substantially as before set forth.

12. The combination of the revolving block-holder, the traversing iron, the pivoted yoke of said iron, and the turning iron-holder, substantially as before set forth.

13. The combination of the revolving block-holder, the traversing iron, the turning iron-holder, the swinging bar, and the weight by means of which the traversing iron is pressed toward the block-holder, substantially as before set forth.

14. The combination of the revolving block-holder with the traversing iron and the turning iron-holder through the intervention of a clutch, which permits the traversing iron to be operated simultaneously with the block-holder, or not, as required, substantially as before set forth.

15. The combination of the revolving block-holder with two driving-pulleys and the clutch, so that the block-holder may be made to revolve at either of two different speeds, substantially as before set forth.

145,935.—Top-Prop for Carriages.—WILLOUGHBY P. ELAM, Petersburg, Ill., assignor of one-half his right to J. H. WILCOX, same place. Application filed November 1, 1873.

The prop is turned, by the motion of the brace in lowering the top, into a position to receive the bows.

Claim.—1. A revolving support for the bows of buggy-tops, in combination with the brace, substantially as set forth.

2. The combination of the band *a*, arm 3, sleeve 5, and support 6 with the brace 4 and bow 9, substantially as shown and described.

145,936.—Railway-Rail Chair.—SMITH FERRIS, New York, N. Y. Application filed July 13, 1872.

The rail ends are first slipped into the chair; a flat wedge, *b*, is then inserted underneath the rail ends, forcing them up against the jaws of the chair, and a locking-wedge, *c*, is lastly driven transversely through the chair, across the head of the wedge *b*, and clinched over the edge of the chair.

Claim.—The combination, with the jaws of a railway-chair, of a wedge, *b*, to be driven longitudinally under the rail, and a cross-wedge, *c*, to be driven, through an aperture in the chair, against the rear or butt end of the first-named wedge, as and for the purposes specified.

145,937.—Device for Trimming Leather.—WILLIAM F. FOLEY, Albany, N. Y., assignor to PETER R. CLUTE, same place. Application filed August 11, 1873.

Claim.—1. In a device for trimming leather while being stitched, the vibrating cutting-tool C, pivoted to the throat-piece, in combination with the slot or recess *x*, receiving the edge of said tool, substantially as set forth.

2. The slotted arm B, attached to the needle-bar, in combination with the vibrating cutting-tool C, pivoted to the throat-piece, substantially as and for the purpose set forth.

3. In combination with the arm B, the elastic foot E, substantially as shown and described, for the purpose set forth.

145,938.—Manufacture of Catches for Jewelers' Uses. GEORGE H. FULLER, Pawtucket, R. I. Application filed December 8, 1873.

Claim.—The manufacture of catches, for jewelers' and other uses, of or from a single strip of wire, by flattening and enlarging the end of said wire, and stamping or punching out the center and interior of said flattened end, and cutting the opening in the side thereof, substantially as described and shown.

145,939.—Watch-Barrel.—FREDERICK A. GILES, Jersey City, N. J. Application filed December 1, 1873.

A watch-barrel, having in one side a slot, from one end of which a tongue is bent outward to form a safety-spring, engaging with a reversible main wheel, while from the other end of said slot a short tongue is bent inward to form a hook for holding the outer end of the mainspring.

Claim.—The barrel D, having in one side the slot *a*, from which the tongue-spring B is bent outward to form the safety-spring engaging with the main wheel, while the short tongue *a* at the other end of the said slot is bent inwardly to form the fastening for the outer end of the mainspring, substantially as and for the purposes set forth.

145,940.—Machinery for Crimping the Uppers for Boots and Shoes.—CHRISTIAN GLANTZ, Baltimore, Md. Application filed July 16, 1873.

Claim.—1. In combination with the jaws C C', the toggle D and shaft *d''*, the latter provided with a right-and-left screw, *d d'*, and a wedge-nut, E, substantially as and for the purposes set forth.

2. In combination with the right-and-left screws *d d'* and wedge-nut E, the nut *f* for carrying the middle clamp J from the jaws C, as and for the purposes described.

3. In combination with the foot and leg sections A B, the hinged swivel-headed help-screw K, substantially as and for the purposes described.

4. In combination with the shaft *d''*, the collar *m*, hinged straps F F', and lateral clamps H I, substantially as and for the purposes set forth and described.

5. The crimping-tree, composed of hinged sections A B, right and-left screws *d'' d'*, wedge-nut E, lateral clamps H I, connected with hinged straps F F', center clamp J, and with or without the help-screw K, all substantially as and for the purposes set forth and shown.

145,941.—Collar and Tag Cutting Machine.—SOLOMON S. GRAY, Boston, Mass. Application filed May 28, 1872.

A series of blunt-edged knives, grouped into collar and tag forms, are arranged in adjustable segments upon the periphery of a cylinder, and cut upon the surface of a hardened-metal cylinder.

Claim.—1. The method of cutting collars, tags, cards, and other like articles from paper, paper and cloth combined, or other suitable material, by means of a series of blunt-edged knives of the proper form, arranged upon the surface of a cylinder, and to revolve, under pressure, in contact with a chilled or hardened cylindrical surface, substantially as described.

2. The die-cylinder, made up of the core C, of any suitable shape, and the segments D, D^1, D^2, D^3, D^4, and D^5, secured thereto, as they may be adjusted thereon, and having formed thereon cutting and embossing dies for shaping collars, embossing the stitching and line of fold thereon, and tag or card cutting dies, constructed and arranged to cut onto a cylinder having a hardened surface, substantially as described.

145,942.—Machine for Forcing Hoops on Barrels.—JOHN GREENWOOD, Rochester, N. Y. Application filed April 21, 1873.

The barrel is placed upon a vertically-reciprocating table which, upon rising, brings the hoop in contact with a series of adjustable stops, which force it into position.

Claim.—1. In a machine for hooping barrels, the combination of the revolving eccentrics or cams E and table or carriage F with the hook-nuts *b* on screw-rods B and B', in the manner substantially as and for the purposes described.

2. In a machine for hooping barrels, the combination of the vibrating driving-gear wheel C'', wheel D on shaft *d*, cams E, vertically-reciprocating carriage F, and hook-nuts *b* on rods B and B', constructed and operating substantially as and for the purposes described.

145,943.—Machine for Burnishing Heels, &c.—GARDNER C. HAWKINS, Boston, Mass., assignor to MORRIS & IRELAND, same place. Application filed March 3, 1873.

The cross-head to which the burnishing-tools are attached is arranged to reciprocate upon guides, in a line tangent to the curve of the heel or sole, by means of an adjustable crank, which may be adjusted for any desired length of stroke, also to conform to the rise and fall in the curved edge of the shoe-sole.

Claim.—1. The combination, in a burnishing-machine, of the cross-head H, arranged to move in a guide or guides, and carrying one or more burnishing-tools, the connecting-rod K, and movable crank-pin L', when said crank-pin is so arranged and operated that it may be adjusted to vary the stroke of the burnishing-tool without stopping the machine, substantially as described.

2. In combination with the cross-head H, carrying one or more burnishing-tools, the connecting-rod K, and the adjustable crank-pin L', the vibrating slides E, arranged and operating substantially as described.

3. In combination with the cross-head H, arranged to reciprocate upon a guide or guides, the tool-holder R, consisting of two or more arms radiating from a common center, by which it is secured to the cross-head and adjusted thereon to bring either of said arms into working position, substantially as described.

4. The burnishing-tool H^3, pivoted to its carrier, substantially as set forth, so that it may be vibrated in a direction at right angles to the reciprocating motion, and provided with a spring for controlling the free end thereof, substantially as described.

5. The lever T, controlled by the spring U, or its equivalent, in combination with the cross-head H and a burnishing-tool, substantially as described.

145,944.—Breech-Loading Fire-Arm.—ALEXANDER HENRY, Edinburgh, Scotland. Application filed July 5, 1873.

Claim.—1. The combination of the hammer and the vertically-sliding breech-piece, arranged so that its bottom will, during the descent of said piece, act on the breast of the hammer, or on curved feathers or projections on the hammer, to effect the cocking of the same, substantially as shown and described.

2. The combination, with the sliding breech-piece and the extractor, provided with an inclined plane, as described, of the hammer or tumbler, arranged so that the breech-piece, during its descent, will operate said hammer to cause its outer end to act on the said inclined plane, and so actuate the extractor, substantially as shown and described.

145,945.—Tool for Holding Glass Bottles.—THOMAS B. HEWITT, Williamstown, N. J., assignor of one-half his right to JOHN F. BODINE. Application filed September 4, 1873.

The base of the bottle is placed on the clasping-plate, and held by jaws while the mouth is being formed.

Claim.—The rod F, having on its upper end a plate, E, for seating the bottle, and on its lower end an adjustable nut, I, and bulb H, in combination with the tube D, provided at its lower end with the spring G, and having clasping jaws B B permanently connected with its upper end, substantially in the manner and for the purpose set forth.

145,946.—Washing-Machine.—LEVI HOLDERMAN, New Paris, Ind. Application filed July 11, 1873.

The tub with a curved bottom and rollers, in which a rubber with rollers operates, being pivoted to a rock-shaft and hinged arms, and having a gage-lever.

Claim.—In a washing-machine having a circular bottom and radial dasher, the combination of the hinged arms *b b* with rock-shaft *c* and gage-lever *k*, for the purpose specified.

145,947.—Pitman.—JAMES H. HOLLY and JOHN F. ROBERTSON, Warwick, N. Y. Application filed November 12, 1873.

Claim.—The combination, in a sewing-machine treadle-bar of the bar A, having elongated opening *h*, slot *f*, and recess *d*, with follower *c*, and rod *e*, having nut *g*, all constructed and operating to effect the ready adjustment of the follower *c*, substantially as shown and described.

145,948.—Shirt Button or Stud.—THOMAS J. HOLMES, Malden, Mass. Application filed September 8, 1873.

Claim.—A clamping shirt stud or button, consisting of the screw-shank *a*, the heads *b* and *c* fixed on either end of the shank, and the clamping-disk *e*, constructed, combined, and operating in the manner and for the purpose set forth.

145,949.—Insect-Destroying Attachment for Cultivators.—CHARLES T. HURD, Victoria, Tex. Application filed October 15, 1873.

Attached to the axle of a wheeled vehicle, and extending to the rear, are supports for holding a fan or blower, conjoined with a box for holding poison-powder, operated by a pulley and band running from the axle of the blower to a belt-wheel on the supporting-axle, which forces a current of air charged with powder upon the plants through a lower opening adjoining and parallel to the opening in the blower. Too great a discharge of powder is prevented by an oscillating screen.

Claim.—1. The poison-powder box A, constructed with a lower opening or exit adjoining and parallel to the like opening *r* of the blower B B', in combination with band-pulley A and band-wheel concentric with the supporting-wheels C C of a cultivator or seeder, substantially as described.

2. The combination of the blower B B', having a pulley, *h*, and orifice *r*, with the poison-box A, having an oscillating screen, *b*, and lever *d*, and supported on the braces or arms *k k*, centered upon the supporting-axles of a cultivator or similar machine, substantially as described.

3. In combination with a cultivator, seeder, or similar machine, the poison-blower A B B' *h*, connected to the axles of the machine by means of the adjusting-levers *k k*, substantially as described.

145,950.—Ferrule.—SILAS E. JERALDS, Cheshire, Conn., assignor of one-half his right to EDWIN R. LAWTON. Application filed October 9, 1873.

Claim.—1. A ferrule, in which the edges of the blank are united partly by a lap and partly by a butt weld.

2. A ferrule in which the ends of the joint are formed by lap-welding, while intermediate parts are formed by butt-welding, substantially as and for the purpose set forth.

145,951.—Shutter-Fastener.—PETER KEIFER, Reading, Pa. Application filed October 23, 1873.

A radial arm attached to one of the shutters is pivoted at the bottom, carries at its upper end a flat segmental-shaped bar which is notched or hooked for bowing purposes, and thus forms a turning shutter-bolt.

Claim.—The shutter-fastener, consisting of the radial pivoted arm *a'*, the segmental notched plate A, and the overhanging guide *b'*, operating in combination with the staple C, as herein described.

145,952.—Corn-Planter.—JOSEPH KLAR, Shelbyville, Ill. Application filed October 25, 1873.

The "check-row cord" for operating the seed-valves is prevented, by a guard, pivoted supports, and guides, from being thrown out of gear, and from being choked by corn-stalks or any obstructions in its passage round the pulleys.

Claim.—1. In corn-planters of the description referred to, the guard *a* a^1 a^2, in combination with the pulleys F, pivoted bearings G, and rope V, as specified.

2. The pivoted support G, horn G', and pulley F, in combination with the stationary guide *b*, horns *c d*, and channel b^2, as specified.

145,953.—Wrench.—JOHN LEE, St. Louis, Mo., assignor of two-thirds his right to JOHN J. RICH and JOHN GALLAGHER, same place. Application filed June 7, 1873.

Ratchet-teeth are formed upon the main bar carrying the stationary jaw, and also on an arm rigidly attached to the movable jaw. A forked lever is pivoted to the arm of the movable jaw, and provided with cog-teeth that mesh into corresponding teeth of a sliding wedge passing through and between the movable jaw and main bar, said wedge retaining the movable jaw in position.

Claim.—1. The combination of the parts C and H, having corrugations or ratchet-teeth *c* and *h*, wedge A, having guide-racks *a* on opposite sides of the stem, and forked lever B, all arranged substantially as set forth.

2. The combination of the wedge A, having racks *a* embracing the stem H, and slot E, moving jaw I, projection G carrying the guide and stop pin F, all substantially as and for the purpose set forth.

145,954.—Portable Furnace.—HENRY J. LINGENFELTER, Glen, N. Y. Application filed August 26, 1872.

Claim.—The portable furnace constructed with double walls, with an annular air-space, B, between, ports *a*, for the admission of air to the said air-space, and ports *c*, located in the exit flue D, permitting the heated air to escape in the said exit-flue without coming in contact with the fire in the fire-chamber, substantially as and for the purpose set forth.

145,955.—Cooler for Preserving Beer and Wine.—FRANK LOESCH, Buffalo, N. Y., assignor of one-half his right to GEORGE FISHER, same place. Application filed September 10, 1873.

The beer-receptacles are made with double walls, between which the beer stands. Both walls are in contact with ice.

Claim.—The refrigerator D, having the beer-chambers *f g*, in combination with the beer-barrel C, air-tank A, and force-pump B, all arranged to operate substantially as and for the purpose described.

145,956.—Hoop-Lock Cutter.—JUNIUS G. LOGGINS and PARKHURST P. WILKINS, Williston, Vt. Application filed February 20, 1873.

The hoops are clamped upon an oscillating carrier, which presents them alternately to the cutters, which cut and chamfer the lock.

Claim.—1. The cutter-heads H I, in combination with the swinging hoop, clamp, and carrier, as and for the purpose herein set forth.

2. The swinging frame R, provided with the clamping-jaws T T, plate U, and adjustable gage W, as specified.

3. The combination and arrangement of the supporting-frame with the tapering devices, the devices for chamfering and cutting the lock, and the saw for removing the superfluous material from the ends of the hoops, the different parts being constructed as and for the purposes described.

145,957.—Cuff.—ED. ELISHA MACK, Albany, N. Y. Application filed August 1, 1873.

Claim.—1. A detachable cuff or wristband in which the flap *a* is combined with the central portion A, so as to permit the cuff to be worn in three different positions, substantially as and for the purposes set forth.

2. A detachable cuff or wristband in which the flaps *a* and *a'* are combined with the central portion A, so as to permit the cuff to be worn in four different positions, substantially as and for the purposes set forth.

145,958.—Mop-Head.—DAVID W. MARSTON and JOHN S. SKINNER, Lebanon, N. H. Application filed October 31, 1873.

One jaw for the clamping of a mop is a cross-piece firmly attached to the end of the handle. Parallel to and beyond this is a portion of a wire frame, extending back in a longitudinal loop along the handle, where it is clamped by a screw-bolt passed through the handle.

Claim.—In combination with the handle A and head B, the stirrup C and clamping device E F, all constructed and operating substantially in the manner described.

145,959.—Fifth-Wheel for Vehicles.—JOSEPH R. MCGUIRK, Ansonia, Conn. Application filed June 9, 1873.

Claim.—1. The perch-plate G, having thereon clip F and lugs G, in combination with the circle consisting of sections A and B, in the manner as and for the purpose set forth.

2. The section A of the circle, having thereon a clip, F', in combination with the lower section B, as and for the purpose set forth.

3. The cross-bar J, having studs or fingers *a*, block D, and rub-iron A', provided with a steel face, B', in combination with the clip F and circle consisting of the parts A B, in the manner as and for the purpose specified.

145,960.—Apparatus for Tempering Sickle-Sections. FRANCIS MEYER, Auburn, N. Y., assignor to D. M. OSBORNE & CO., same place. Application filed November 24, 1873.

Claim.—The brick of fire-clay, or other equivalent fire-resisting material, with conical openings *a* in or through it for the direct contact of fire heat to such portions of the blank only as are needed to be tempered, and guides *s* for properly placing the blank over the fire.

145,961.—Indirect Steam-Radiator.—JOHN H. MILLS, Boston, Mass. Application filed October 1, 1873.

Each radiator may be detached from its receiving and discharging connections, and removed from the casing.

Claim.—The combination of a series of independent radiators, each receiving its own supply of steam and discharging its water of condensation independently of the others, with an inclosing air-chamber, and water and steam drums arranged outside of said chamber, and communicating through separate and distinct connections with each independent radiator, substantially as herein shown and described.

145,962.—System of Steam and Water Piping for Buildings.—JOHN H. MILLS, Boston, Mass. Application filed April 19, 1873.

Steam passes through pipe D directly to the highest part of the building, and thence is distributed through the branch pipes I to the radiators, the water of condensation being conducted through the pipes K I to the boiler. Either water or steam may be thrown from the branches *c* or from the upper end of the pipe D.

Claim.—1. The herein-described mode of steam-heating, by conducting the steam from the boiler directly and without distribution to or above the highest point of the building, and thence supplying it downward to the heating devices in the different stories of the building to be heated, substantially in the manner shown and set forth.

2. A system of steam-heating, comprising the combination of supply-piping conveying the whole of the steam without distribution to the highest point of the building to be heated with branch piping conveying downward from such highest point to the steam-supply to the different radiators or coils, said branch piping serving at one and at the same time to supply steam to and conduct the water of condensation from the radiators or coils, substantially as herein shown and described.

3. The combination, with the main supply-piping and return branch piping of a steam-heating system, organized and operating as herein described, of a water-service pipe and system of valves, whereby said main piping can, when occasion demands, be isolated completely from the boiler and branch piping and thrown into communication with the water-service pipe, substantially as and for the purposes shown and set forth.

4. The combination, with the main supply-piping and return branch piping, and radiators connected therewith, operating together, as described, of an air vent or valve, located on the return branch piping at a point between the first or lowest radiator and the water-line of the boiler, and constituting the vent for the air driven forward through the piping, and from the several radiators, by the advancing steam, as shown and set forth.

145,963.—Spring-Shank for Boots and Shoes.—WILSON J. NEILL, Lawrence, Kans., assignor of one-half his right to ROBERT D. MASON, same place. Application filed April 21, 1873.

Claim.—A spring-shank for boots and shoes, when made wide at the front point and slotted, for the purposes set forth.

145,964.—Valve.—JOHN A. NICHOLS, Pittsburg, Pa. Application filed October 25, 1873.

The body of the valve-seat is grooved to receive an elastic valve, and perforated within said groove by openings for the passage of the fluid. The rubber strip is held in position by clamps, and operates by its own elasticity.

Claim.—1. The shell *a*, having a series of openings, *d*, in the groove *b*, covered by an elastic strip, *e*, which operates to open and close them, as described.

2. The within-described valve, in combination with the cylinder *i* and receiving and discharging openings of a pump or engine.

3. The shell *a*, having longitudinal ribs, so that in grooving, as at *b*, to form the seat for the strip *c*, the shell may be cut through between them, thereby forming the openings *d*.

145,965.—Vehicle.—BENJAMIN PARMITER and WILLIAM BRADLEY, Morgan county, Ohio. Application filed April 25, 1872.

Claim.—The frame B, side springs C C, and cross-spring D, in combination with the slotted rigid bars I I and cross-bar K, as set forth.

145,966.—Stump-Extractor.—FREDERIC PLANT, Bricksburg, N. J. Application filed April 11, 1871.

To the frame is attached a hoisting apparatus, consisting of shafts, bevel-wheels, worm and worm-wheel, and pulleys, operated by a crank and windlass. Transportation is facilitated by wheel resting on the ground, attached to frame by bent lever or

arm, to which is pivoted another lever, which raises one foot of the frame from the ground and supplies its place with said wheel.

Claim.—1. The combination of the frame *a a b*, barrel *f*, chain *g*, screw *k*, wheel *m*, bevel-wheels *n o*, and shafts *p l c*, substantially as and for the purpose herein specified.

2. In combination with the stump-extractor herein described, the wheel *x*, controlled by means of the bent lever or arm *v* and lever *y*, substantially as herein specified.

145,967.—Truck.—HIRAM PRATT and THOMAS T. MUNHALL, Fairbury, Ill. Application filed July 21, 1873.

Claim.—In a double-clutch hand-truck, the two longitudinal bars *d d*, the sliding staple *g*, pivot-pin *i*, with its catch *k*, the S-shaped double-pointed hook *b c*, with its spring arm *l* hooked to the sliding ring *f* on the bars *d d*, pivoted by pin *p* to and between the double hook *a a*, all combined to operate in connection with the truck-head *m*, as described.

145,968.—Refrigerator for Slaughter-Houses.—HENRY A. ROBERTS, Boston, Mass. Application filed May 10, 1873.

The ice-chamber has a non-contact condensing-plate on one side, and cleats for preventing the ice pressing against the wall on the other side. Vanes are placed along an opening at the foot of the inclined floor to direct the current of air, part of which enters a chamber with an inclined ceiling provided with a flue, and the other part into a higher chamber also provided with a flue. Air also circulates around an auxiliary chamber for salting purposes.

Claim.—1. The ice-chamber *f*, having the floor or other support for the ice inclined downward toward a partition-wall, at the upper and lower portions of which wall are placed, respectively, an induction and eduction air-passage.

2. The arrangement, with the ice-chamber *f* of the non-contact condensing-plate *h*, said plate being constructed and arranged substantially as above described, for the purpose of allowing free circulation above, below, and on each side of the same, so that the condensed moisture may adhere to both surfaces of the said plate.

3. The arrangement, with my ice-chamber *f* and floor *g*, of the ribs or cleats *j j*, or their equivalent, for the purpose of exposing more ice-surface to the descending current of air, as above specified.

4. The arrangement of the auxiliary chamber *c* with the flue *d*, said flue being of any desired length, and leading from the apex of the inclined roof *c''* to the ice-chamber *f*, for the purposes described.

5. The arrangement of the ice-chamber *f* and flue *d*, of any desired length, with the tank or chamber *n*, having air-spaces *n' o* around and below it, as and for the purposes above set forth, and particularly for the purpose of preventing any stagnation of air in the portion of the chamber *c* which is nearest the tank *n*.

6. The drip-vanes *m' m*, the lower edge of the former projecting beyond the lower edge of the latter, and arranged so as not only to discharge the drippings into a receptacle below, but also to facilitate the passage of the descending current of cool air, as herein before specified.

7. The arrangement, with the chamber *a*, of the plate or wall *b*, as and for the purpose above described.

8. The arrangement, with the high conditioning-chamber *a*, of the lower auxiliary chamber *c*, said chamber *c* being constructed either with or without the inclined roof *c''*, to facilitate the passage of air into the flue *d*, as and for the purposes hereinbefore described.

9. The arrangement, with the chambers *a c*, or with either, of the chamber or tank *n*, said tank *n* having air-spaces *n' o* around and below it, constructed and arranged substantially as and for the purposes hereinbefore set forth.

145,969.—Injector.—SAMUEL RUE, Philadelphia, Pa. Application filed December 9, 1873.

Claim.—1. In an injector, the delivery-tube and the combining-tube, having a telescopic connection, substantially as and for the purpose set forth.

2. The combining-tube H, with the delivery-tube D' projecting therein to, and the space k between the tubes, in combination with the overflow and the water and steam supply, substantially as and for the purpose set forth.

145,970.—Windmill.—EMILIUS SANDERSON, Paris, France. Application filed March 29, 1873.

Two semicircular flat surfaces arranged at nearly right angles to each other are attached to a shaft, so as to form with said shaft angles of about forty-five degrees.

Claim.—The peculiar construction of the said apparatus, as and for the purposes hereinbefore described, it being a windmill consisting of two semicircular or semi-oval flat surfaces fastened on a horizontal shaft, so as to be about at right angles between themselves, being fastened to said shaft by the middle of the lines that are to be considered as the chords of the arcs of the semicircles, said surfaces forming angles of about forty-five degrees with said shaft, that revolves in two chairs.

145,971.—Process for Cleaning Marble, Granite, &c.—JOSHUA SAWYER, Northfield, Vt. Application filed August 8, 1873.

Claim.—The process of cleaning marble, granite, and other stones by washing the stone to be cleaned in muriatic and oxalic acids mixed in water, while the stone is wet with sal-soda, substantially as described and set forth.

145,972.—Fastening for Meeting Rails of Sashes.—JOHN D. SHEWELL, Boston, Mass. Application filed November 15, 1873.

The downwardly-projecting part of the lever is chambered and provided with a locking-bolt actuated by a spring, and having a locking-dog or projection, forming a bayonet-fastening.

Claim.—The locking-bolt G, provided with the projection or dog M, adapted to lock it in two positions, in combination with the lever C, spring H, casing I, shoulder N, and plate E, substantially as and for the purposes specified.

145,973.—Hinge for Safe-Doors, &c.—WILLIAM F. STEVENS, Melrose, Mass. Application filed July 23, 1873.

Claim.—The removable hinge-pin *g* arranged in the tubular socket *e*, projecting from the outer side of the door, and fastened in said socket by screws *h h* inserted from the inner side of the door, in combination with the pivot *a* on the door and the steps *d* and *c* in the door-frame, all arranged as shown and described.

145,974.—Shirt-Collar Fastening.—GEORGE STRASZKS, Manchester, Mo., assignor of one-half his right to HECTOR MCNEILL, same place. Application filed December 1, 1873.

Claim.—The collar-fastener, consisting of the plate A, pin B, turn stud or button D, and keeper C, having a slot, *c*, all arranged substantially as and for the purpose set forth.

145,975.—Nail-Extracter.—GEORGE C. TAFT, Worcester, Mass. Application filed April 14, 1873.

The nipper-points are socketed in the lever-arms, having shoulders to bear against.

Claim.—The shaft *a*, provided with the ram 3, in combination with the removable nippers *g g'*, provided with the shoulders *d*, substantially as and for the uses and purposes shown and described.

145,976.—Apparatus for Condensing and Collecting White Zinc.—CHARLES W. TROTTER, Brooklyn, N. Y., administrator of JONATHAN G. TROTTER, deceased. Application filed December 5, 1873.

In the front end of the building is a receiving-chamber into which the zinc vapor is discharged, through a perforated pipe, at or near the roof, and strikes a deflector. In the receiving-chamber the air-pipes discharge downward, cooling the vapor and assisting the deposit of foreign matter. In the second chamber branch pipes discharge the blast upward to assist the oxidation of the vapor.

Claim.—1. In combination with the chamber C, the atmospheric air-pipes G H I and branch pipes K, substantially as set forth.

2. In combination with the flues or passage-ways F and walls L, the series of transverse air-discharging pipe M and supply-pipe N, arranged and operating substantially as described.

145,977.—Combined Nubia and Veil.—JOHN W. TUTTLE, Watertown, Mass. Application filed October 31, 1873.

Claim.—As a new manufacture, the knit scarf or nubia A, made or provided with the veil B projecting from one edge of it, the two being lapped upon each other, and connected and gathered at their next adjacent ends, all substantially as shown and described.

145,978.—Needle-Threading Hook.—HENRY WELLS, Woburn, assignor of one-half his right to DANIEL FOBES, Cambridge, Mass. Application filed September 10, 1873.

Claim.—1. As a new article of manufacture, the needle-threading device having hook *a* at one end, with the notch *b* at the other end, substantially as described.

2. A hook for threading needles cut from a notched strip of flattened wire, for the purposes set forth, and substantially in the manner above specified.

145,979.—Cranberry-Picker.—JOSEPH WESTON, Duxbury, Mass. Application filed October 22, 1873.

A cranberry-picker having inclined curved bottom teeth, with intermediate and side guards, the sides being provided with teeth of varying length upon the under side of a cover, and to it is attached a brush which meshes with the bottom teeth in the operation of gathering berries. In rear of the box proper is attached a receptacle for holding berries, provided with a door which admits them from the picker.

Claim.—1. A device for picking cranberries, formed with a back or frame, A, hinged lid E, brush G, teeth *a*, guards C and D, and side teeth *b*, all constructed and combined substantially as specified.

2. In combination with the subject-matter of the foregoing claim, the receptacle I, having a hinged flap, B, trap J, and jointed cover L, substantially as described, for the purpose specified.

145,980.—Rotary Winnower.—JAMES H. ADAMSON, San Francisco, Cal. Application filed September 23, 1873.

A truncated cone-shaped blower-casing, with spiral wings fixed to its inner periphery, is placed concentrically within a rotating cylindrical screen, the meshes of which are increased or diminished by cams for each wire ring, placed on the frame rods or wires of the screen.

Claim.—1. The wires D, in combination with the cams *e*, for the purpose of changing the size of the meshes of the cylinder, as set forth.

2. The eccentrics or cams *e*, mounted upon the bars F, and the pinions I and gear-wheel J, for the purpose of simultaneously adjusting the rings D to make the proper mesh, substantially as herein described.

3. The cone-shaped casing I, concentrically arranged within the cylinder, in combination with the large end blades R, for the purpose of creating a diverging blast, as set forth.

4. A grain-cleaner consisting of the rotary cylinder, composed of the adjustable rings D, with their eccentrics *e*, and their operating devices, as shown, in combination with the propeller-blower, mounted within the cylinder, substantially as and for the purpose herein described.

145,981.—Steam Cooker.—JOHN BENTZ, Parkersburg, W. Va. Application filed November 15, 1873.

The steam enters through short tubes, with valves applied thereon, the valves opening to admit steam on closing the drawers, and shutting off the steam on opening the drawers.

Claim.—1. The steam cooker arranged with partitions above boiler B, and boiler-extension C along rear side, with tubes *e* and valves *f*, substantially as described.

2. Drawers D, having tubes A, and rods *g* for opening and closing valves *f*, as set forth.

145,982.—Filling for Decayed Teeth.—CHARLES E. BLAKE, San Francisco, Cal. Application filed December 6, 1873.

Claim.—The alloy of platinum and gold for the purpose of providing an improved dental gold, substantially as above specified.

145,983.—Draft-Equalizer.—ELIAS H. BLAKE, Coatsburg, Ill. Application filed October 25, 1873.

Claim.—The combination, with the tongue A and triple-tree G, of the detachable triangular frame D, having its forward side slotted, the plate F, and the clamps E E, all as shown and described.

145,984.—Stock-Feeder.—ULYSES BOREL, Sue City, Mo. Application filed September 27, 1873.

The openings in the sides of the barn have doors, which, when opened, serve as extensions to the feed-racks.

Claim.—In combination with the stock-inclosure A, provided with feed-openings, the racks B and doors E, the latter being attached by staples and links, as shown and described, whereby they are adapted to be supported upon the racks, when open, as and for the purpose specified.

145,985.—Churn-Dasher.—DAVID BOYD, Vevay, Ind. Application filed August 25, 1873.

A churn-dasher, working vertically, with reversely-beveled cross-bars and rim, with one pair of faces inclined outwardly and the other inwardly.

Claim.—The rim D, with one opposite pair of faces inclined outwardly and the other pair inwardly, combined with the cross-bars B C, each reversely beveled on its opposite ends, as and for the purpose described.

145,986.—Wagon Hay-Press.—HERMAN BROCKSMITH, St. Louis, Mo. Application filed March 25, 1873.

A coiled spring is arranged in connection with a train of gear-wheels to return the follower after the completion of the bale. A frame-work is also arranged in the bottom of the press-box, in such a manner that, when the follower is withdrawn, a hook attached thereto engages with such frame-work and raises it, thereby releasing the bale from the press-box.

Claim.—1. In combination with the follower B and toggle-joints C C' c^1 c^2 and rack-bars, the coiled spring I, arranged as shown and described, to return the follower, as and for the purpose specified.

2. The combination of the follower B, having hook *b'*, with the draw-frame L, as described, for the purpose set forth.

3. In combination with the pivoted door J, having the weight *k*, the detent-hooks *j*, springs *j'*, and lever C, as described.

145,987.—Water-Wheel.—MOSES CHANDLER, East Corinth, Me. Application filed August 20, 1873.

A supplemental bottom is secured to the under side of the bucket, converging toward the preceding one, making, when the parts are taken together, the wedge-shape reaction-bucket, thus acting either as a percussion or reaction wheel. A series of rolling gates are employed to regulate the quantity of water admitted to the wheel.

Claim.—1. A horizontal water-wheel having, in combination with percussion-buckets *a*, supplemental bottoms *b'*, forming together reaction-buckets B, as herein set forth.

2. In combination with said wheel A, as above described, the rolling gates *c c* with their links *h* and disk *i*, arranged to operate as set forth.

145,988.—Sash-Holder.—SAMUEL CHARD, Mianus, Conn. Application filed November 8, 1873.

A spring-catch having a half-circular serrated face-plate is attached to a slotted bed-plate by a movable knob-pivot, which slides back and forth in the slot therein. This catch or holder is held against the jamb by pressure of the spring, and, being free to turn on its knob-pivot, acts as an eccentric to hold the sash securely in desired position.

Claim.—The knob-pivot F, springs I, and slotted plate D, in combination with an eccentrically-acting sash-holder, arranged substantially as set forth, for the purposes described.

145,989.—Damper for Stoves.—EDWARD F. COOK, Omaha, Neb. Application filed August 30, 1873.

An elastic ring attached to the damper serves to hold it in any desired position.

Claim.—The combination, with the damper B, of an elastic band or hook having a greater radius or diameter than said damper, as shown and described, to operate as specified.

145,990.—Pin for Jewelry Ornaments.—JOHN P. COURTNEY, Brooklyn, N. Y. Application filed November 17, 1873.

Claim.—1. The screw-eye for the pin of an ornament, made of a folded piece of sheet metal, with a stop, 6, for the pin, and a screw-shank formed of the wings 5 5, as and for the purposes specified.

2. The pin *a* with a T-head and point, in combination with the screw-eye made of sheet-metal, with a mortise for the pin, and a stop, 6, substantially as set forth.

145,991.—Railway-Tie.—HENRY L. DE ZENG, Geneva, N. Y. Application filed June 3, 1873.

Claim.—The wrought-metal cross-tie, with the lips *i* for the flange of the rail, in combination with the flange-clips *o* and keys *r*, substantially as and for the purposes set forth.

145,992.—Compound Tool.—JOHN DILLON, New York, N. Y. Application filed December 1, 1873.

A hammer having a hollow handle and an extension-piece for the purpose of a wrench, and to hold a gimlet and screw-driver or brad-awl.

Claim.—An improved compound tool formed of the hammer-head A, provided with the claws B and the socket K, the handle C, provided with a square socket, D, the handle E, provided with the jaws J, the gimlet F, brad-awl G, and disk H, and the set-screw I, constructed and operating in connection with each other, substantially as herein shown and described.

145,993.—Scroll-Sawing Machine.—THOMAS W. DOWLING, Pontiac, Mich. Application filed May 14, 1873.

The tension-springs, together with the saw-guides, are secured to a peculiarly-formed metal base, which is adjustably attached to a perpendicular standard.

Claim.—The combination of the casting A, constructed as shown, the adjustable springs J J, pivoted arms I I, strap D, gage H, block E, guide G, and set-screw *a*, all constructed to operate substantially as and for the purposes set forth.

145,994.—Spring for the Seats of Vehicles.—CONRAD DUECKER, Lively Grove, Ill. Application filed October 4, 1873.

Claim.—In combination with the seat B, the circular or bow springs C, having hooks E, and applied to the ends of the seat, as and for the purposes shown and described.

145,995.—Tubular Fire-Bar and Connecting-Bearing.—ROBERT J. ELLIS, Liverpool, England. Application filed September 20, 1873.

The water enters and returns to the front, where it is led to the boiler from bearings provided for that purpose, circulation being always kept up through all the fire-bars, the temperature being the same as in the boiler, irregular contraction and expansion being obviated.

Claim.—The tubular fire-bar and connecting-bearing, constructed, respectively, as herein described, and arranged in relation to each other as set forth, for the purpose specified.

145,996.—Fence-Machine.—JOHN H. EVANS, Dallas, Ky. Application filed April 26, 1873.

Posts have the mortises cut in them, and the ends of the rails tenoned and formed to correspond with the mortises.

Claim.—1. The combination, with the vertically-moving carriage D, of the boring implements A and planing implement C, all constructed and operating substantially as specified.

2. The bifurcated tapering implement N, provided with the knives O O, hinged to the frame, and arranged and combined for operation substantially as specified.

145,997.—Telegraph-Insulator.—CHRISTIAN FOX and ELISHA G. HESTON, Gap, Pa. Application filed August 20, 1873.

An annular glass insulator, slotted in its upper face for the wire, fits over a stud and rests upon a shoulder on the supporting-bar. A shed-cap screws down upon the stud.

Claim.—The combination of the nut-like cap C with its sheltering base to cover, clamp, and protect the annular slotted insulator G B, when the latter rests upon the shoulder *a*, and the former receives the screw end D of a vertical shaft or support, A, the whole arranged in the manner shown, for the purpose set forth.

145,998.—Breech-Loading Fire-Arm.—GUNDER GUNDERSEN, Chicago, Ill. Application filed August 5, 1873.

Devices for locking the barrels in place, and for relieving the joint or hinge of sudden and undue strains.

Claim.—1. In a breech-loading gun, the catch C, pivoted to the projecting end of the upper rib, arranged between the tilting barrels, substantially as and for the purpose specified.

2. The lever O, arranged below a tilting barrel in a breech-loading gun, and provided with the spring O', in combination with the breech-piece D, provided with the spur *o*, arranged to support the said spring, substantially as and for the purpose specified.

145,999.—Oil-Can.—WILLIAM R. HALLOCK, Westfield, N. J., assignor to himself and PIERSON & MOREHOUSE, same place.

Application filed November 15, 1873.

When oil is to be drawn from the can, the flexible tube is pulled off the vent-tube and the unconnected end placed in the vessel to be filled. When the can is filled for transport, a plug is put into the opening in the movable cap of the can and a screw-plug in the vent-tube.

Claim.—The flexible tube, connected at one end to the oil-can, in combination with the vent or air-tube of the can, that is closed by the movable end of such flexible tube, substantially as set forth.

146,000.—Sewing-Machine Attachment for Making Button-Holes.—JOHN F. HASKINS, Fitchburg, Mass. Application filed September 11, 1873.

Improvement on patent No. 103,745. The looper that brings the shuttle-thread over the edge is rotated partially to place the loop of thread carried by it, so that the vibrating finger, which carries such loop under the needle, can catch but one portion of it. By jointing the frame the attachment may at all times form part of the machine, and be turned into or out of working position.

Claim.—1. The improved looper, having an eye in which it receives the needle and retains the thread, and having a motion on its axis in addition to its reciprocating motion, as specified.

2. The finger E, in combination with the pin *y* and cam, substantially as described.

3. The compound bed-plate, made in two parts, C and D, combined together substantially as described.

4. The compound thread-catcher and its actuating mechanism, the finger E and its actuating mechanism, and the compound bed-plate C D, all combined together substantially as described.

146,001.—Manufacture of Gold-Leaf for Book-Binders' Use.—ROBERT EDGAR HASTINGS, Philadelphia, Pa. Application filed November 25, 1873.

Claim.—The manufacture of gold-leaf for book-binders' use from ribbons composed of an interior metal of silver or its alloys with copper, and an exterior metal of gold or its alloys with silver or copper, the whole united together by welding or solder.

146,002.—Portable Elevator and Dumper.—WILLIAM H. HERRIOTT, Brimfield, Ill. Application filed December 3, 1873.

The platform has an inclined approach for wagons at either end, with a "trap"-covered box for shooting a load into from a wagon whose trap is on a level with the platform. The box is hoisted by pulleys and double ropes running through pulleys at the top of the frame, and thence down to a windlass or roller beneath the platform operated by a drum or capstan and rope, and having a lever to which horse or other power is attached. The side of the elevating-box opens, on attaining a sufficient height, by a spring-lever on said side, which strikes a pin in the frame and withdraws the catch of said side or door, and discharges the contents into a "two-way" spout, which dumps the grain on either side of the platform, as desired. The door is closed by the striking of segmental cleats thereon against the edge of the spout during the descent of the box.

Claim.—1. A portable elevator and dumper, composed of platform F, wagon-approaches G G, an elevating-box, J, hoisting-ropes o o passing over pulleys in the frame B C D E above, windlass K, and spout F F, substantially as and for the purposes described.

2. In combination with platform G, the hoister H, with its guides *p p*, lever *n*, and connected lever I, substantially as described.

3. The box J, constructed with side guides *u u*, pulleys *t t*, inclined bottom *f*, falling flap *w* with curved cleats or ribs *g*, spring detent *h s k*, the lever *k* for contact with the pin *l* of post D to loose the detent, as described.

4. The construction and arrangement of the frame A A B B C C D D E E, &c., platform G G, hoisting-frame H, lever *n*, and its auxiliary lever I, box J, with flap *w*, detent *h s k*, pin *l* on post C, ropes *o o*, windlass K, and spout F F, as described.

146,003.—Mole-Trap.—ROBERT I. HUGGINS, Bethel, Ohio. Application filed November 1, 1873.

To a platform, to be raised by the animal over whose path it is set, is attached an upright rod, cut off bias at the top. This bias portion bears against one side of a pivoted button whose other end holds up the weighted fall.

Claim.—1. A mole-trap constructed substantially as shown and described—that is, having sill or foundation pieces A A, uprights C C, notched falling rod and cross-head E F, cross-piece J, tripping rod K, and button-lever L, all arranged to operate substantially as shown and described.

2. The notch M, button-lever L, and rod K, in combination, as and for the purposes described.

146,004.—Combination-Plane.—ANDREW JOHNSON, San Francisco, Cal. Application filed November 15, 1873.

The guide-bars and plates are made flexible to conform to curved surfaces.

Claim.—1. The plates B, having elastic adjustable curving strip *c*, combined with the block A and adjusting-standards I, substantially as and for the purpose described.

2. The combination of the elastic gage-plate F, bar H, and slotted links V with their set-screws.

3. In combination with the elastic adjustable gage-plate F, the vertically-sliding post J with its holding-screw, and the bar L with its horizontally-adjusting screws M, and the nuts N, substantially as and for the purpose herein described.

4. The adjustable curved plates *e e'*, in combination with plate B and intermediate blocks Q, substantially as and for the purpose set forth.

146,005.—Gathering and Ruffling Attachment for Sewing-Machines.—ALLEN JOHNSTON, Ottumwa, Iowa. Application filed December 18, 1873.

The gathering-blade drops on the cloth, moves it forward, rises from it, and retreats; it is provided on its upper side with a shoulder, and an adjustable strip between, which moves a pusher-bar operated by a bell-crank lever.

Claim.—1. The gathering-bar supported in guides in the frame between an elevating-spring below, and a reciprocating pusher-bar above, said pusher-bar being constructed and operating at the times and in the manner stated, to depress and to permit the elevation of the gathering-blade, and to reciprocate it longitudinally, substantially as and for the purposes shown and described.

2. In combination with the gathering-bar, the pusher-bar resting on said gathering-bar between shoulders thereon, connected with the vibratory angle lever, so as to be reciprocated by the same, and formed with a reduced part and an incline to operate in connection with a pin on the main frame of the attachment, substantially as and for the purposes shown and set forth.

3. The combination, with the reciprocating pusher-bar, the elevating-spring, and the gathering-bar, arranged and operating together as described, of friction-springs or pads on the sides of the gathering-bar, adapted to bear against the guides between which the gathering-bar moves, as and for the purposes shown and set forth.

4. In combination, the lower holding-blade, the upper gathering-blade, the pusher-bar, and elevating-spring for giving an up-and-down and back-and-forth movement to the gathering-blade, and the cam, or its specified equivalent, for regulating the length of movement of the gathering-blade, said parts being constructed and arranged together in the attachment for operation, as shown and described.

146,006.—Burglar-Alarm.—JAMES J. KANE, Brooklyn, N. Y. Application filed August 29, 1873.

Pulling or cutting a wire moves a lever which trips a spring-barrel, actuating an alarm, and the stud by which the barrel was retained revolves against and trips a trigger which snaps a cap to ignite a fuse which lights a lamp.

Claim.—The combination of the spring-drum K, catch-stud J, lever L, the swinging pawl W Z, lever *b*, hammer R, and spring V, as shown and described, to operate as specified.

146,007.—Sausage-Cutter.—JACOB KNOPF, Columbiana, Ohio. Application filed August 2, 1873.

The cutters travel in grooves in the case, and operate with three zigzag rows of abutments, by means of which the meat is made to cross the box laterally several times, which subjects it longer to the action of the cutters.

Claim.—The cutters D traveling in grooves C, in combination with the abutments *e*, *f*, and *g*, arranged and operating, with relation to the cutters, substantially as herein described, and for the purpose set forth.

146,008.—Car-Coupling.—THOMAS REAS LAND, Grass Valley, Cal. Application filed June 3, 1871.

As the arrow-head of the link is pushed through the block B it turns it until its slot is parallel with that in the draw-head, and when its head has passed beyond the block the weighted lever C returns it to position. A plunger, having a socket corresponding in shape to that of the link-head, serves at the same time as a buffer and to prevent the link from turning when it is forced into an opposing draw-head.

Claim.—The combination of the spear-headed shackle-bar A, socket-piece F, having a rectangular stem block, G, with corresponding aperture, springs H, block B, having a spiral opening and weighted lever C, as shown and described, for the purpose specified.

146,009.—Propulsion of Vessels.—CHARLES P. MACOWITZKY, Corpus Christi, Tex. Application filed August 23, 1873.

Claim.—The combination of the sleave or socket H, made smooth upon one end and threaded upon the other, and the square rod I, with the arms B F, the sliding frame or plate G, the rack-bar C, gear-wheels or segments D, and pivoted paddles E, substantially as herein shown and described, and for the purpose set forth.

146,010.—Rotary Engine.—WILLIAM R. MANLEY, New York, N. Y. Application filed April 23, 1873.

By the eccentric arrangement of the packing-rings the wear is distributed over a broad annular space, and the lubricating material is carried laterally between the wearing-surfaces. The pistons are forced outward radially by means of fluid admitted through hollow hub and shaft. If the pressure in the cylinder is greater than that in the hollow hub, the valves open and permit the fluid to enter said hub and assist in holding the pistons.

Claim.—1. The combination, substantially as before set forth, of the revolving piston, the fixed cylinder, and the heads of the cylinder revolving with the piston, and arranged to embrace the cylinder between their adjacent faces.

2. The combination, substantially as before set forth, of the revolving piston, the fixed cylinder, the cylinder-heads revolving with the piston, and the packing-rings arranged eccentrically to the centers of the cylinder-heads.

3. The combination, substantially as before set forth, of the revolving piston, the hollow piston-hub, the revolving cylinder-heads, the fixed cylinder, and the valves for supplying the hollow piston-hub with fluid from the cylinder.

4. The combination, substantially as before set forth, of the revolving piston, the hollow piston-hub, the revolving cylinder-heads, the fixed cylinder, and the passage through the gudgeon of the piston-hub, for supplying fluid thereto from the exterior of the engine.

5. The combination, substantially as before set forth, of the revolving piston, the hollow piston-hub, the revolving cylinder-heads, the fixed cylinder, and the nipple for holding the piston to the surface of the cylinder.

146,011.—Draft-Equalizer.—WILLIAM MCCLELLAND, Sr., Fowler, Ill. Application filed August 16, 1873.

Claim.—1. The combination of a pivoted bar, D, bar C, and adjustable screw-rod C', having a fixed point of connection with the hounds, whereby the bar E may be adjusted to equalize the draft, as set forth.

2. The curved and screw-threaded rod C', in combination with the lugs *f* of rear supporting-bar C, and the cross-bar B, having holes *d*, to provide for adjustment of the angle of bar D, and form a rigid connection between it and the bar B, as specified.

146,012.—Treating Animal Fats.—HIPPOLYTE MÈGE, Paris, France. Application filed November 1, 1873.

All the tissues are removed; the fat melted at a low temperature after treatment with pepsin and cow's udder. The oleomargarine is separated from the stearine.

Claim.—1. The improved material herein described produced of treating animal fats so as to remove the tissues and other portions named, with or without the addition of substances to change the flavor, consistency, or color, as set forth.

2. The process herein described of treating animal fats in the production of oleomargarine.

146,013.—Lubricating Journal-Boxes.—JEAN MORIN, New York, N. Y. Application filed November 22, 1873.

The outer surrounding case has a detachable cap-piece and bearing for the shaft. The central and side recesses connect by base channels, with the oil-chamber at both sides of the outer case, feeding the oil by the wicks to the shaft.

Claim.—1. The self-lubricating journal-box, consisting of case A, with oil-chambers B, and wick-channels *d*, bearing C, central and side wicks F, and cap piece G, and connected substantially as and for the purpose described.

2. The surrounding case A, having flat, central, and lateral base channels *b*, for establishing the connection of oil-chambers B and wick-channels *d*, and provided with a supply-tube, *a*, in the manner and for the purpose described.

3. The axle-bearing C, having side recesses *d*, for the wicks and downwardly-extending wick-tube *e*, as set forth.

146,014.—Eaves-Trough Support.—THORNTON F. MORRISON, Findley, Ohio. Application filed July 5, 1873.

An eaves-trough support in which the cross-ties are made triangular in section, with a slot in the center for the reception of the hanger C. The hanger is composed of two pieces of metal, and when passed through the slot in the cross-tie the ends are turned in opposite directions. It is attached to the roof-bracket D in a similar manner.

Claim.—An eaves-trough hanger, C, having hooks E and clamps H H, the tie B, triangular in cross section, and the bracket D, slotted at F, combined as and for the purpose described.

146,015.—Farm-Gate.—DAVID A. NEIDIG, Paris, Ohio. Application filed August 9, 1873.

A gate which may be opened for a foot-passenger or bridle-path or for a carriage-way. It glides open by a midway inclined bar moving obliquely upward on a pulley on the right-hand post. An upper pulley on the gate at the same time lifts the right end of a bar which guides the gate as it gravitates to a closed position.

Claim.—The combination of supporting-rail B and inclined rail D, each sliding on a pulley, with main post C and auxiliary posts E E' E², as and for the purpose described.

146,016.—Carpet-Sweeper.—HARTWELL A. PALMER, Hingham, and ALBERT H. SPENCER, Boston, assignors to JOHN J. HALEY, Newton, and HENRY C. MORSE, Boston, Mass. Application filed October 23, 1873.

The spindle of the brush is received in an open bearing, and held in place by a spring which presses against said spindle. A strip of rubber is placed between the case and its cover, and projects from the top edge of the case, and serves as a buffer, and also prevents the escape of dust from the case.

Claim.—1. The combination of a carpet-sweeper brush with its bearing and a spring, substantially as described.

2. The combination of a strip of rubber packing, or other similar material, with the case and cover of a carpet-sweeper, as and for the double purpose specified.

146,017.—Saw-Filing Machine.—WALTER W. PARSONS, Stanstead, Canada. Application filed July 19, 1873.

A file-stock supported by a rocking frame, operated by a cam, so as to lift the file while the saw is moving forward to bring a new tooth under the operation of the file.

Claim.—The combination, with filer-stock sliding frame B, of the cam Z, rocking lift-plate M, and pawl and ratchet V W, operated at the times, in the manner, and for the purpose specified.

146,018.—Valvular Stopper for Bottles.—CALLENDER PATTERSON, Philadelphia, Pa. Application filed October 11, 1873.

A tube, open at the two opposite sides, is fitted to slide within the neck of a bottle, and is supported by a surrounding spiral spring, and held open by an elastic catch engaging on the lip of the bottle.

Claim.—1. The combination, with the throat and mouth of a bottle, of the tube A, with its attachments *a'*, C, 2, 3, and D, when the said tube and its attachments are constructed, arranged, and applied to operate as and for the purposes hereinbefore set forth and described.

2. The spring-catch E, in combination with the upper end of the tube A, the said spring-catch being constructed and arranged to operate substantially as and for the purposes hereinbefore set forth and described.

146,019.—Wood Pavement.—EDWIN W. PERRIN, Portland, Oreg. Application filed October 31, 1873.

A pavement formed of wood blocks channeled on the top for the reception of a filling material, and united by iron rods passing through the blocks horizontally.

Claim.—A pavement composed of the blocks A, channeled at B, and beveled, as at *d*, when united by the rods C extending through them, the whole being constructed substantially as and for the purpose herein described.

146,020.—Can for Transporting Oil, &c.—JAMES E. PIDLEY, Newark, N. J. Application filed November 15, 1873.

The cap is secured to the nozzle by cement introduced into a groove in the cap, and the can is held in the case by a metal strip across its top.

Claim.—1. The cover of the packing-case constructed to rest on two sides of the part A, and project down along and overlap the other sides, to be fastened detachably by nails or screws, in the manner described.

2. The tapered nozzle H and cap I, in combination, when arranged to be sealed by cement, in the manner described.

3. The vent surrounded with a funnel, K, for sealing it with cement, as described.

146,021.—Sewing-Machine.—DAVID R. PRATT, Greenfield, Ohio. Application filed June 17, 1873.

A vertically adjustable and oscillating saw-guide is placed between upright standards in such a position as to guide one end of the saw while the other is directed by the hand of the operator.

Claim.—The combination of the saw, sleeve, pivot-bar, and standards, substantially as shown and described.

146,022.—Wash-Roller.—HUGH ROSS, Plattsburg, N. Y. Application filed July 5, 1873.

A false bottom, consisting of two sections hinged together, and flanged and partitioned on the under side, make separate water-chambers below. Hinged to this bottom, at its ends, are vertical fountain-chambers. Valves, caged below and protected above by perforated coverings, give downward water-passage. Vertical partitions in the fountain-chambers narrow the upward water-passages and give force to the jet. A small perforated vessel to hold washing-chemicals connects with the false bottom by a short tube. Within it a ball-valve lets water in from below and forbids its return.

Claim.—1. In combination with a common boiler, the separate steam washer, consisting of hinged bottom A, with valves D, perforated coverings C, cages E, and hinged side chambers B, substantially as and for the purpose described.

2. The hinged bottom A, having central partition *d* and apertures *f m*, and slides *m'*, as set forth.

3. The side chamber B, consisting of hot-water passages F, with partitions *h*, and air-chamber G, as described.

4. The receptacle H, for acids or other chemical ingredients, having tube *n*, with ball-valve *p*, and perforated sides and bottom *q*, constructed substantially as specified.

146,023.—Wood-Screw.—ISAAC S. RUSSELL, New Market, Md., assignor of one-half his right to HENRY R. RUSSELL, Woodbury, N. J. Application filed August 7, 1873.

Claim.—A wood-screw, with a thread of varying pitch, gradually decreasing from the point throughout the whole of its length, as shown and described.

146,024.—Feed-Water Heater.—WILLIAM SAMBROOK, Liverpool, England. Application filed July 7, 1873.

The chamber is divided into two compartments by a perforated diaphragm. Into one compartment the steam is admitted from the boiler, passes through the diaphragm, and mingles with the feed-water admitted through a perforated pipe, and is heated by the steam. Suitable valves are arranged in the pipes.

Claim.—The feed-water heater herein described, consisting of the chamber a^1 a^2, combined with a perforated diaphragm-plate and a perforated pipe, and fitted with suitable cocks and valves, the whole constructed and arranged, with reference to each other, substantially as set forth, for the purpose specified.

146,025.—Malt-Drier.—JOHN G. SCHIFFER, San Francisco, Cal. Application filed May 3, 1873.

The horizontal stirrer revolves on its axis, and is at the same time carried around in a circular kiln by a revolving vertical

shaft, to which it is connected at right angles. The scoops of the revolving stirrer lift up and invert the malt, and the brushes attached to the back of the scoops brush forward the scatterings left by them. A cover over the stirrer prevents any malt from being thrown out of the kiln. Scrapers attached to the cover level the surface of the malt and prevent its accumulation at the outer circumference of the kiln. The stirrer can be lifted from working position by a lever, which may be held in a ratchet.

Claim.—1. The stationary central tube D, with its inverted crown-wheel E, and the upright revolving shaft F, with its arm J, in combination with the shaft K, with its pinion *m* and spur-wheel *n*, hangers *o*, and revolving stirrer, all combined and arranged substantially as and for the purpose above described.

2. The shaft *s*, with its scoops *r r* and brushes *t t*, in combination with the shield or cover V, substantially as and for the purpose above described.

3. The plow-shaped levelers or scrapers W W, in combination with the rotary scoops and brushes, substantially as and for the purpose described.

4. The hangers *o*, with their arms *z*, in combination with the shaft *b*, with its arms *d*, links R, pawl-lever *f*, and rack *g*, all combined and arranged substantially as and for the purpose above described.

146,026.—Blade for Agricultural Implements.—WINFIELD SCOTT, Floyd Court-House, Va. Application filed July 19, 1873.

A blade for hoes, mattocks, &c., made concave and thin at the middle, with thickened edges.

Claim.—In an agricultural implement, the blade A, having its inner surface and cutting-edge concave, and the thickened sides or points B, all as shown and described.

146,027.—Bevel-Rest.—JOHN E. SEAVEY, Kennebunkport, Me., assignor to himself, RAWSWELL P. TIBBETTS, and GEORGE F. SEAVEY, same place. Application filed October 22, 1873.

Three bars are so arranged that any angle may be obtained whereby a board can be beveled.

Claim.—As an article of manufacture, the bevel-rest, constructed substantially as and for the purpose described.

146,028.—Shutter-Fastening.—HENRY A. SKINNER, Worcester, Mass. Application filed November 1, 1873.

The rod or spindle is arranged to make a full half-turn within the barrel containing it, and the beveled face of the catch striking against a pin on the window-sill is tipped downward, admitting the pin between the catch and its corresponding lip, until the handle falls downward, bringing the catch back to its horizontal position and fastening the shutter.

Claim.—1. The rotating blind-fastener consisting of the rotating rod or spindle A, with its catches B C, handle D, and case or barrel E, with its lips F F, made and used as and for the purpose specified.

146,029.—Ladder.—ANTHONY PRESTON SMITH, Sacramento, Cal. Application filed October 28, 1873.

The ladder is strengthened by rods let into the edge and sides of the side rails. One end of each rod is riveted to a plate at the end of the ladder, while the other end is provided with a thread and nut for tightening the rods. The rods are held in the grooves by staples and by eye-rods which pass through the rounds.

Claim.—The rods *c c*, with or without the rods *i i*, screw-bolts *d*, plates *e*, and screw-nuts *f*, in combination with the rails A and rounds B of a ladder, when constructed and operating substantially as and for the purpose set forth.

146,030.—Wheel-Cultivator.—WILLIAM H. STRONG, Clinton township, Seneca county, Ohio. Application filed May 19, 1873.

Crank-levers for raising the plows are connected by a removable bar. When this cross-bar is removed the foot-levers may be operated independently of each other.

Claim.—In a wheel-cultivator, the lugs A A, cranked levers D E, bar F, chain G, and hooks I I, arranged and attached in the manner described, and for the purpose hereinbefore set forth.

146,031.—Process for the Reduction of Copper and other Ores.—HENRY STULL, Ione City, Cal. Application filed October 13, 1873.

The ores, which generally contain sulphur, are burned, in the presence of air and steam, in the lower of two chambers, whereby sulphites are formed. These sulphites are transferred to an upper chamber, sprinkled with sulphuric acid, and subjected to the sulphurous fumes from a new charge in the lower chamber, whereby sulphates are produced. The copper is then reduced by the usual iron process.

Claim.—The process herein described of reducing ore by the use of two chambers, situated one above the other successively, substantially as herein described.

146,032.—Broom-Corn-Seed Flour for the Manufacture of Paste.—JAMES W. TALLMADGE, Boston, Mass. Application filed October 22, 1873.

Claim.—The broom-corn-seed flour, composed of broom-corn seed and potatoes, prepared and made as herein described.

146,033.—Plate for Tramways.—SAMUEL D. TILLMAN, Jersey City, N. J. Application filed August 4, 1870.

A flat metal plate or rail for street tramways, adapted for ordinary vehicles only, and having a series of longitudinal strengthening-ribs on its under side.

Claim.—The wide plate C for tramways, provided with a series of webs, *c*, running longitudinally underneath, and arranged, as specified, relatively to the plate and each other, so that a uniform bearing-strength will be obtained.

146,034.—Bridge.—JAMES VALLELEY, Canton, Ohio. Application filed August 4, 1873.

A bridge-arch consisting of a hollow trunk of four or six sides, and formed of flat plates or of flat plates and lattice-bars, united by angle-bars, the cross-section of the trunk being trapezoidal in form. Also, a shoe for the arch of two metal pieces, one of which receives the end of the arch, and is supported by trunnions in bearings on the top of the other piece, which is embedded in the foundation, so that the piece supporting the end of the arch can adjust itself to the expansion and contraction of the arch.

Claim.—1. A bridge-arch consisting of a tube made trapezoidal in cross-section, and formed of four plates, *a a b c*, as and for the purpose described.

2. The shoe, composed of the two pieces *h* and *i*, and connected by the shaft *k*, and arranged with the chord and the foundation, substantially as specified.

146,035.—Lid-Lifter.—WASHINGTON VAN GAASBEEK, Hudson, N. Y. Application filed April 5, 1873.

A pivoted button is attached to one horn of the forked jaw, and adjusts itself to different forms. By reversing the implement the button forms a lifter for stove-covers.

Claim.—The self-adjusting lever A, in combination with the projection C, substantially as described, and for the purposes set forth.

146,036.—Sole-Edge Trimmer.—WILBUR WEBSTER, East Jaffrey, N. H. Application filed December 3, 1873.

Claim.—The guard B and its beveled edge-carrier C, and the knife-blade A, constructed and arranged together and within the handle D, and supported therein by a set-screw screwed into it, all as shown and described.

146,037.—Cotton-Bale Tie.—LEOPOLD WEIL, New York, N. Y. Application filed November 8, 1873.

Rectangular slots are formed in the ends of the bands, and the ends secured by a flat metallic key.

Claim.—The ends B C of the bale-band, having a series of rectangular slots, A, with their lips D, in combination with the key E, substantially as shown and described.

146,038.—Egg-Carrier.—WENDELIN WEIS, St. Paul, Minn. Application filed August 4, 1873.

Two strips are employed, one of which is slitted a short distance on each edge. The other has a slit in the center, with an extension horizontally, so that the other strip can be inserted in it and secured in the edge slits.

Claim.—The combination of the strips B, having open edge slots *a*, with the strips C, having the closed slots *b*, with extensions *b'* arranged at an angle thereto, all as shown and described.

146,039.—Steam-Boiler.—OSCAR W. ALLISON, Buffalo, N. Y., assignor of one-half his right to ROBERT DEMPSTER, same place. Application filed November 24, 1873.

The products of combustion passing out of the rear of the furnace, thence in opposite directions between sections of vertical tubes connected by means of space-blocks, for preventing the products of combustion from passing through them and around solid sections to the up take.

Claim.—1. The combination, in a steam-boiler, with the water-chamber A, steam-chamber B, and furnace E, of the series of water-tubes N and connecting space-blocks, substantially as and for the purpose hereinbefore set forth.

2. The arrangement, in a steam-boiler having a water-chamber, A, steam-chamber B, and furnace E, of the outer series of water-tubes N and two inner series, N' N', and connecting space-blocks, substantially as set forth.

3. The combination, in a vertical steam-boiler, and with the water-tubes thereof, of the connecting space-blocks *c*, made concave at the sides to fit between said tubes, substantially as and for the purpose hereinbefore set forth.

146,040.—Sugar Manufacture.—HERMAN M. ASCHENBRENNER, Havana, Cuba, assignor to himself and THEOPHILUS MASAC, same place. Application filed November 1, 1873.

Claim.—1. The combination, in the manufacture of sugar, of the following processes: First, precipitation of the juice by lime and magnesia, and steam-heat; second, evaporation of the juice in conductors by steam-heat; and, third, evaporation of the juice in conductors by steam-heat and an air-blast, substantially as specified.

2. The combination of conducting-tank 1, filters *a b*, flannel filter 3, receiver 2, and double-bottomed steam-heating kettles 4, the tank 1 being arranged to receive the juice from the sugar-mill, substantially as specified.

3. The combination of the kettles 4, siphons 5, filter 6, sulphur-chamber 8, and the evaporating conductors 10, substantially as specified.

4. The combination of the scraper 14 with the evaporating conductor 12, substantially as specified.

5. The combination of the conducting-tank 1, filters *a b*, flannel filters 3, tank 2, kettles 4, filter 6, pump 7, sulphur-chamber 8, evaporating conductors 10 12 15, fans 13 and 16, and the endless scraper 14, substantially as specified.

146,041.—Clamp for Splicing Broom-Handles, &c.—CHARLES L. W. BAKER, Camden, assignor to JOHN L. MASON, New Brunswick, N. J. Application filed December 3, 1873.

A socket, formed of a plate bent around the handle, with its longitudinal ends turned out to lie face to face. These are clamped by nuts on screw-threaded bent ends of a rod lying along the back of such faces.

Claim.—The splice for handles of brushes, &c., consisting of the flanged tube A, in combination with the longitudinally-arranged rod D, having its ends bent and passing through the flanges of the tube A, and with the nuts G, substantially as and for the purpose set forth.

146,042.—Holdback for Vehicles.—HIRAM M. BURDICK and MOSES R. FLANDERS, Ilion, N. Y. Application filed October 8, 1873.

Claim.—A holdback for carriages consisting of the plate A, provided with the recess *i* and grooved projections C, in combination with the loop B, provided with the lugs *a*, all constructed and combined to operate substantially as described.

146,043.—Machinery for Lasting Boots and Shoes.—AUGUSTUS C. CAREY, Malden, assignor of two-thirds his right to GEORGE F. BEKED and DEAN PEABODY, Lynn, Mass. Application filed December 17, 1873.

Claim.—1. An organized machine for lasting boots and shoes, or uniting the upper and soles, by sewing, comprising the combination of a hollow last or work-support, provided in or around its tread or sole with a continuous needle passage or channel, and movable under the needle for the purpose of feeding the work along during the operation of sewing, and a sewing mechanism, consisting of a reciprocating needle, exterior to the last and a thread-carrier or its equivalent within the last for presenting the thread to the needle, said parts of the sewing mechanism being adapted to operate together, through the needle slot or passage around the sole or tread of the last, to sew through the insole and upper, or the insole, upper, and outsole, as the last is fed along under the needle, substantially as set forth.

2. The movable hollow last, provided in or around its tread or sole with a needle passage or channel, and carrying within it a thread-carrier, held and adapted to move in a groove on the under side of the sole parallel with the needle-passage, in combination with a reciprocating barbed needle, entering the needle-channel in the last, and operating, in connection with the said thread-carrier, as herein shown and set forth.

3. In a machine substantially such as described, a hollow last, containing within it the thread-carrier or equivalent device, to operate, in connection with the needle, to form the stitch, and the spool or bobbin from which the supply of thread to form the stitch is drawn, substantially as shown and set forth.

4. The hollow last, provided with a removable tread or sole proportioned in size and shape to the opening in the bottom of the last, so that, when in place, it will leave between its outer edge and the surrounding edges of the body of the last a continuous channel or passage, through which the needle may penetrate to the interior of the last, substantially as shown and set forth.

5. In combination with the last, the mechanism, constructed and arranged as herein shown and described, for supporting said last, and allowing the necessary freedom of movement to permit it to be fed along, and to present properly the successive portions of the work to the needle during sewing operation.

6. The combination, with the hollow last and the sewing mechanism, operating together as described, of the last-supporting mechanism and the top and edge gages and pattern, whereby the last may be accurately guided and maintained in proper position as it is fed along, substantially as shown and set forth.

7. The combination, in a machine substantially such as described, with the hollow channeled last or work-support, of the reciprocating needle, needle-slide, and slide-supporting frame, adjustable to vary the angle of obliquity or inclination of the needle with respect to the last, substantially as shown and set forth.

8. The reciprocating crimper, supported by and moving on the top gage, in combination with the last and sewing mechanism, substantially as shown and set forth.

9. The last-holder or matrix, divided longitudinally into two parts, hinged together as described, and provided with a pattern-flange, adapted to operate, in connection with the top and edge gages on the machine, substantially as shown and described.

146,044.—Treating Oils for Paints, &c.—DONALD D. CATTANACH, Providence, R. I. Application filed August 11, 1873.

Consists in agitating together raw linseed-oil and water, and then subjects the oil to lime, or carbonate of lime, for removing acids. The oil is then treated with a solution of vinegar of lead; then is exposed to the sun, and agitated night and day until the oil assumes a whitish or pale-amber color. The oil is still subjected to further agitation, and exposed to the air and daylight. Here the oil by degrees assumes the consistency of thick dough; if carried far enough becomes more solid; as the solidity or density increases it becomes tough, stringy, and elastic.

Claim.—1. The process of treating linseed-oil, and kindred oils, for the purposes stated, by subjecting the oil to agitation in the presence of air, or light and air, or the specified equivalent oxidizing agent, in the manner described, with or without the preliminary purification of said oils, as set forth.

2. The gum or gum-like substance made from linseed-oil or kindred oils, substantially in the manner and by the process described.

146,045.—Apparatus or Cock with Safety-Plug.—PIERRE A. CHAMBREAUX, Paris, France. Application filed February 28, 1873.

To the end of the plug is permanently attached, by brazing or riveting, a chain and ring, of sufficient size to prevent the entire withdrawal of said plug, but to allow of sufficient movement to admit of cleaning and adjusting the plug to the entrance and exit pipes of the gas-meter; the object being to prevent fraud.

Claim.—The combination, with the plug D, of the ring G, chain H, and knob I, substantially as described, and for the purposes set forth.

146,046.—Wire-Stretcher.—ISAAC H. CONGDON and JACOB E. HOUSE, Omaha, Neb. Application filed November 1, 1873.

An iron frame detachably secured to posts supports two cylinders on opposite sides thereof, which are revolved by hand-crank for tightening the wires from both sides, and holding-pins inserted through the sides of the frame, and into perforated end flanges on the cylinders, prevent the cylinders from turning back.

Claim.—A wire-tightening attachment for fences, comprising the frame B B', rollers C C, perforated end disks *d*, arbors *g*, lock-pins *f*, and detachable hand-crank D, when the various parts are constructed and relatively arranged to operate in the manner set forth.

146,047.—Safe and Vault.—JOHN CRUMP, Philadelphia, Pa. Case B. Application filed April 8, 1873.

The safe or vault body or door is constructed of an outside plate having its inner face provided with transverse ribs of an irregular cross-section, and of a backing or filling of franklinite, chilled iron, or like material, applied and held by the ribs, substantially as shown and described.

Claim.—1. A vault or safe body or door consisting of an outside plate, having its inner face provided with transverse ribs of an irregular cross-section, and of a backing or filling of franklinite, chilled iron, or like material, applied and held by the ribs, substantially as shown and described.

2. The cast-iron body-plates A, having the ribs formed solidly on their inner faces, in combination with the backing of franklinite, chilled iron, or like material, held in place solely by the ribs, the latter being made of such form in cross-section as to interlock with said material.

3. In combination with the cast-iron plates or sections A, provided with the drill-proof backing, and united at their edges, as set forth, the wrought-iron facing C, screwed or riveted to the cast-iron, for the purpose of concealing and protecting the joints therein.

4. The safe or vault body consisting of the plates A, having the ribs *a*, filling or backing B, of franklinite or like material, hard-metal plate D, non-conducting material E, and inside plate F, all united and arranged as shown and set forth.

146,048.—Safe and Vault.—JOHN CRUMP, Philadelphia, Pa. Case A. Application filed April 8, 1873.

The ribbed body-plates are constructed of cast-iron, and the spaces between the ribs are filled with chilled iron, drill-proof backing, and a layer of non-conducting material, all secured in place by a cast-metal plate. Hardened steel bars and rubber strips are arranged in the joints between the body-plates.

Claim.—1. The hardened steel bars *b*, inserted between the body-plates A of an iron safe or vault, substantially as and for the purpose set forth.

2. The cast-iron body-plates or sections A, having their abutting edges provided with grooves *c*, in combination with the rubber strips G inserted therein, as shown and described.

3. The safe or vault body consisting of the ribbed body-plates A, provided with the drill-proof backing, arranged as described, and with the concrete lining or backing I of non-conducting material, applied between and held by the ribs, all combined and arranged as shown.

4. In combination with the cells having shoulders *d*, a hardened plate or layer and a layer of non-conducting material, K, arranged therein, and a plate of metal cast therein, substantially as shown and described.

5. The combination of the chilled plate B, backing H, non-conducting material K, and cast-metal plate J, when arranged in the cells of an iron vault or safe wall, substantially as described.

146,049.—Windmill.—EDWARD CRUMP, Waterloo, Wis. Application filed June 24, 1873.

A series of fans are placed beyond the ends of the blades or sails of the wheel, their edges parallel with the axis of the wheel, and so arranged that their resistance to the motion of the wheel regulates the speed, and prevents its being increased beyond a certain degree.

Claim.—A series of fans, E, in combination with the wheel A, constructed and operating substantially as described, for the purpose herein before set forth.

146,050.—Sharpening-Machine.—JAMES H. CURRAN, Rochester, assignor of one-half his right to TRUMAN B. JOHNSON, Seneca Falls, N. Y. Application filed September 19, 1873.

The table and grinder are attached to a frame capable of angular adjustment, the table having an independent vertical adjustment. The gage is connected to the table by parallel arms, and slotted on its under side to receive the cutter-bar of a harvester.

Claim.—1. In combination with the adjustable frame C, the grinding-wheel D and the independent vertically-slotted table E, when said parts are made attachments of the frame, substantially as described, for the purpose specified.

2. In combination with the vertically-adjustable table E and grinding-wheel D, the swinging guide K and parallel arms *p p*, when arranged to operate in the manner and for the purpose specified.

146,051.—Stone-Tool.—IRA CURTNER, Dayton, Ohio, assignor to CHAS. A. GUMP and EDWIN S. FORGY, same place. Application filed September 20, 1873.

A ferrule having a screw, the end of which enters a recess formed in the lower side of the pick-blade, which is inserted in the blade-socket band.

Claim.—The combination, with the T-coupling, having the blade-socket *b* and shank-socket *h*, of the screw-ferrule C, provided with the boss *k* to enter a central recess in the blade, substantially as specified.

146,052.—Photographic Monocular Glasses.—AUGUSTE J. DALLEMAGNE and LOUIS TRIBOULET, Paris, France. Application filed July 16, 1873.

A metallic case with an opening from front to back, and provided with a magnifying-lens, through which is seen a revolving transparent picture-disk.

Claim.—The case B, provided with an opening from front to back for the reception of a magnifying-lens, the revolving glass plate or picture-disk A, toothed wheel A', with its operating-shaft, spring-pawl B', and thumb-screw D, all constructed, combined, and arranged substantially as and for the purpose set forth.

146,053.—Railway-Car Window-Screen.—JOHN E. EARLE, New Haven, Conn. Application filed September 14, 1873.

A screen for car-windows formed of perforated, netted, or woven vertical slats set diagonally in the frame, and parallel to each other, so as to leave a space between the slats. The screen is so arranged that the motion will create a strong outward draft between the slats, carrying off dust and smoke.

Claim.—A window-screen formed from perforated, netted, or woven vertical slats set diagonally in the frame, and parallel, or nearly so, to each other, so as to leave a space between the slats, substantially as set forth.

146,054.—Cane.—FRANK ECKSTEIN, New York, N. Y. Application filed December 3, 1873.

The handle has a sword or dirk fixed to it, which is incased in the stick. The stick is bored throughout, and has a barrel on its end for an air or spring gun. An umbrella-frame may be detachably attached to the stick.

Claim.—The cane A, provided with the barrel B, bore D, handle E, and sword E', with or without the detachable umbrella, constructed, arranged, and combined substantially as and for the purpose described.

146,055.—Air-Compressing Apparatus.—JOHN ERICSSON, New York, N. Y., assignor to CORNELIUS H. DELAMATER and GEORGE H. ROMINSON, same place. Application filed September 12, 1873.

A constant circulation of cold water is maintained through the piston-cylinders above the pistons. The throttle-valve of the engine is connected with a governor consisting of a small piston-cylinder opening into the discharge-passage of the compressor. The motive power is so applied to the piston-rods of the pump-cylinders that the greatest power is exerted upon the pistons when they meet the greatest resistance—*i. e.*, as they approach the ends of their compressing-strokes.

Claim.—1. The combination of the water-pedestal B, the cylinders H H of the single-acting air-pump, the pistons I I, a duct for conveying cold water to the interior of the pump-cylinders on top of the pistons, and one or more upper overflows or outlets from said cylinders to the pedestal, substantially as and for the purposes specified.

2. The combination, with the engine and one or more air-pumps operated thereby, of a compressed-air governor, S, organized substantially as herein described, to control the steam-supply to the engine, and whereby the motion of the engine is regulated by the draft made upon the air as compressed by the pump or pumps, essentially as herein set forth.

3. The combination, substantially as herein described, of the air-compressing cylinders H H and their single-acting pistons I I, the engine-piston A, the beam M, the cranks D G, the engine-shaft E, and the connection Q, whereby the power of the engine throughout its stroke is approximately equalized to meet the varying resistance encountered by the pistons of the pumps, as specified.

146,056.—Bit-Stock.—LAURENCE FEELY, Rochester, N. Y. Application filed November 7, 1873.

Two shanks are pivoted to the brace, either of which can be thrown into position, central springs acting upon them.

Claim.—A brace or bit-stock having two sockets or bit-holders, C C, pivoted to the holder A, and adapted to receive different tools, in combination with the flat springs E E, arranged in the holder A, between it and the sockets C, substantially as described, for the purpose described.

146,057.—Valve.—BENAIAH FITTS, Worcester, Mass., assignor to UNION WATER-METER COMPANY, same place. Application filed November 13, 1873.

Back strain upon the supply-pipe is averted by the employment of a channel or groove in the valve-seat and in the lower edge of the valve.

Claim.—The slide-valve *b* and its operating screw-rod *d*, in combination with the outlet-opening *a* of a hydrant, provided with an opening, *c*, formed in the manner and for the purpose set forth.

146,058.—Mortising-Tool.—HARRISON K. FORBIS, Danville, Ky., assignor to himself and JOHN W. PROCTOR, same place. Application filed November 15, 1873.

The sides of the shank are recessed, forming cutting-edges, and a notch is formed in the end for cutting-bits.

Claim.—As an article of manufacture, the tool A, having opposite rabbets, notch F, boring-bits G G', and side cutters E H, the whole constructed substantially as and for the purpose described.

146,059.—Spindle-Whirl for Spinning-Machines.—MERRILL A. FURBUSH, Philadelphia, Pa., assignor to himself and CHARLES A. FURBUSH, same place. Application filed November 8, 1872.

For catching the drip from the bolster and preventing its being thrown centrifugally upon the driving-band while the spindle is in rotation, and allowing it to pass below the whirl and band when the spindle is stopped.

Claim.—The combination, with a spinning-machine spindle, of a pulley having an undercut recess and channel, as set forth.

146,060.—Corn-Planter.—E. CHAPMAN GAGE, Witoka, Minn. Application filed December 31, 1872.

Claim.—The combination of a spout, K, pivoted plow I, and a scraper, J, arranged as described.

146,061.—Cotton-Chopper.—JOSEPH M. GARRETT, Brenham, Tex. Application filed August 16, 1873.

The chopper-knives are geared by belts to the traction-wheels. A tilting frame carries the plows, which are pivoted to hangers depending from the main frame and operated by a compound lever.

Claim.—In combination with the frame A, carrying a cotton-chopper operated by belted gearing from the traction-wheel D D, the swinging frame L, plow-standard M, lever N, and connecting-bar A, substantially as specified.

146,062.—Annular Leather Washer.—PIERRE L. GIBBS, Chicago, Ill. Application filed October 17, 1873.

Claim.—1. The annular washer *B*, made from a leather strap which is rolled or bent into form and joined at the ends, substantially as described.

2. An annular washer constructed of a single piece, in one or more thicknesses of leather, by bending or rolling a strap of the requisite length, substantially as specified.

146,063.—Mill-Spindle.—JOHN A. HAFNER, Pittsburg, Pa. Application filed August 27, 1873.

A spring within a casing, which consists of two plates through which the spindle passes, connects the casing with the shaft, one end of the spring being secured to a central hub which is keyed to the spindle, the other to the bottom plate, which is secured to the upper one. A gear-wheel is secured to the upper plate. The device acts as an equaliser.

Claim.—1. The combination of the hub *c*, having the lug 9, and the plate *d*, provided with the grooves, as specified, for causing the casing to revolve with the pinion, substantially as set forth.

2. The grooved plate *d*, having the projections 5, in combination with the plate *f*, spring *e*, hub *c*, and spindle *a*, substantially as shown.

146,064.—Work-Holding Device.—FRANCIS E. HAHN, Philadelphia, Pa., assignor to OSCAR C. FERRIS and FREDERICK B. MILES, same place. Application filed August 4, 1873.

Claim.—1. The combination, in a drilling, milling, or other metal-working machine, of a vertically-adjustable bracket, E, its pin B, and the block A, which admits of being adjusted longitudinally and turned laterally on the said pin, and which has two or more supporting or retaining appliances, all substantially as and for the purpose set forth.

2. The combination of the block A, having different appliances for receiving and retaining objects, the pin B, having as many grooves as there are different appliances on the block, and the set-screw *x*, or a key adapted to the block and grooves, all as set forth, for the purpose specified.

146,065.—Chair.—HENRY S. HALE, Philadelphia, Pa. Application filed November 21, 1873.

The bottom or back is composed of wooden stripe united to a canvas backing.

Claim.—A chair with the frame of which is combined a seat or back, or both, consisting of wooden stripe united to a canvas backing, all as set forth.

146,066.—Car-Window Shield.—HENRY S. HALE, Philadelphia, Pa. Application filed August 15, 1873.

To the bar which is placed under the raised sash of the window are secured a number of slats attached to a suitable backing. When the shield is unfolded for use it is kept in position either by a cross-bar or an elastic cord.

Claim.—A window-shield for railroad-cars, consisting of the bar A, adapted to the window-slats B, and elastic backing *a*, all combined substantially in the manner described.

146,067.—Wooden Mat for Picture-Frames.—HENRY S. HALE, Philadelphia, Pa., assignor to HALE, KILBURN & Co., same place. Application filed August 15, 1873.

Claim.—The within-described wooden mat, composed of an intermediate frame made of four pieces, united as shown, and having veneers glued to the said frame in respect to the grain of its wood, as specified.

146,068.—Water-Wheel.—JOHN B. HAMILTON, Loudon, Tenn. Application filed February 8, 1873.

The disk is constructed with a beveled surface flaring upwardly and outwardly, for the purpose of having the spaces between the buckets larger at their entrance than at their delivery, thereby increasing the impact of the water on the wheel. The buckets are tapered and spurred.

Claim.—The tapered and spurred buckets B, combined with the beveled surface on the disk D, as and for the purposes described.

146,069.—Portable Cradle.—WILLIAM S. HARRIS, Trenton, N. J. Application filed November 8, 1873.

A rectangular frame, adapted to fold into small compass, is hung on the apex of a A-shaped stand at each end, the legs of which are hinged together at such point for folding purposes. When erected a fabric bottom is suspended from the frame, and an ornamental cloth hung around it.

Claim.—1. The combination, with a portable cradle, having the side rails hinged at their middle parts to fold vertically, and at their ends to fold laterally, as described and shown, of the hinges b^3, having their pintles located sufficiently forward of the corner-posts of the cradle, and of the pintles of hinges b^1, to allow the side rails to overlap parallel to each other, as specified.

2. The A-shaped legs C, hinged or jointed at their apexes, and affording pivotal bearings for the frame B, substantially as shown and described.

3. In combination with the rocking frame B and hammock A, the cords E, substantially as shown and described.

146,070.—Spoon.—JAMES HART, Philadelphia, Pa., assignor to SAMUEL H. JENKINS, NATHANIEL B. BROWN, and JOHN C. BELDEN, same place. Application filed July 21, 1873.

Claim.—A sheet-metal spoon, the handle of which is arched transversely at B and flattened at C, the latter part being bounded by a bead, *c*, the downwardly-projecting outer edge of which forms a continuation and unites the edges of part B, into which it also merges with its converging ends, all substantially as and for the purposes specified.

146,071.—Washing-Machine.—PIERRE HIRES, Knobnoster, Mo. Application filed November 22, 1873.

Claim.—1. The combination of the removable board C D and box A B, shaft E, lever G, and yielding bands *b'*, all constructed and arranged for operation as and for the purpose specified.

2. The box A, slotted at *a*, and board C D, arranged on shaft E, bands *b'*, pins *b''*, and lever G, in combination with the rubber I J and arms H, all constructed and arranged for operation as and for the purpose specified.

146,072.—Spring Bed-Bottom.—HENRY A. HIGBY, Sr., Fort Wayne, Ind. Application filed December 3, 1873.

The slat-frame is supported by a lateral bar at each end and in the middle. Beneath each slat is a pair of spring-bars, one end of each bar fixed to opposite sides of the bedstead, crossing each other diagonally upward, where a strap, rigid on one is loose on the other. Their other ends support the slat-frame at its sides with a slotted movement.

Claim.—1. The equalizing spring-bars D D, rigidly fastened at one end to a support, their other ends sliding on the part supported by them, and the bar connected by a coupling, G, which is rigidly secured to one and moving loosely upon the other bar, all arranged to operate substantially as and for the purposes herein set forth.

2. The equalizing spring-bars D D, in combination with the coupling G and bed-bottom A B, all arranged substantially as and for the purposes herein set forth.

3. A spring bed-bottom composed of the bottom A B, spiral springs C C, spring-bars D D, and links or couplings G G, all constructed substantially as and for the purposes herein set forth.

146,073.—Valve for Steam-Pipes.—JAMES W. HODGES, New York, assignor to himself and JOHN W. HARWAY, Bay Side, N. Y. Application filed June 7, 1873.

Above the valve-seat is constructed a diagonal partition upon a seat in which a second smaller valve operates, for the purpose of affording exit to water of condensation and air in the main pipe.

Claim.—The partition h and valve-seat *i*, introduced near one end of the barrel *a*, to regulate by the valve *k* the opening to the pipe *m*, in combination with the main valve *c* and connections *b* and *e* for the pipes, substantially as and for the purposes set forth.

146,074.—Illuminating Vault-Cover.—JOSHUA K. INGALLS, Starkey, N. Y. Application filed September 20, 1871.

Knobs or protuberances are located between the illuminating-lenses of a vault-light in the narrowest portion of the frame, for the purpose of strengthening it at the weakest points.

Claim.—In combination with a vault-cover, the ribs or protuberances *e e* arranged to surround, or partially surround, the lenses B B, for strengthening the iron plate and forming a better surface for walking upon, substantially as set forth.

146,075.—Joiner's Gage.—SIMEON H. JENNINGS, Deep River and WILBUR F. ARNOLD, Winthrop, Conn. Application filed October 1, 1873.

The perforation in the head is first made circular, then one side flattened by a metallic plate. The head is fastened by a cam-lever.

Claim.—As an article of manufacture, the gage constructed as described.

146,076.—Candy-Cutter.—JULIUS W. KASKEL, Paducah, Ky. Application filed December 16, 1873.

The revolution of the cylinder causes the forward movement of the piston, forcing out the candy in stick form, which falls upon the endless apron, to which it adheres, the continued revolution of the cylinder twisting the stick at the point of extension.

Claim.—1. The revolving batch-cylinder C, in combination with the reciprocating head or follower E', when operating in the manner substantially as described.

2. The revolving batch-cylinder C, having the removable head C'' and follower E, in combination with a bearing hinged at *c'*, in the manner and for the purpose described.

3. The combination of the revolving batch-cylinder C, having the follower E' and nozzle D, with an endless carrier, *b'''*, in the manner and for the purposes described.

4. The combination of the revolving batch-cylinder C, having the reciprocating follower E', with the heater I, substantially as and for the purposes described.

146,077.—Combined Tatting-Shuttle and Crochet-Needle.—EUGENE P. KELLOGG, New York, N. Y. Application filed December 2, 1873.

Claim.—The crochet-needle *b b'*, with the spring *c* integral therewith, in combination with the notched holding-slot *e* and the thumb-knob *f* of a combined tatting-shuttle and crochet-needle, substantially as described.

146,078.—Beer-Mug.—WILLIAM C. KING, Pittsburg, Pa. Application filed September 5, 1873.

Claim.—The new article of manufacture, of glass or other analogous ware, to wit, a beer-mug which is of oval or elliptical form in its horizontal section, and has its handle on one of its narrowest sides, or at right angles to its smallest diameter, as herein set forth.

146,079.—Lantern.—JOSEPH KINTZ, West Meriden, Conn., assignor to himself and P. J. CLARK, same place. Application filed November 1, 1873.

To facilitate the placement or removal of a lantern-globe, the upper ends of the guard-wires, being fixed to the lantern-cap, the lower wires are made to hook into and travel in vertical slots in the base-ring. Once so inserted, they are clamped downwardly by a rotating ring encircling the base, and having inclines on its under edge. The vertical guards are also clamped inwardly by horizontal guard-wires, connected by hoods, which slide vertically on the side guard-wires.

Claim.—1. In combination with the base C, provided with vertical slots I, the removable top B, and globe A, the vertical guard-wires D, horizontal guards F, and grooved plates G, to operate as shown and described.

2. The movable band or ring K, having inclines, in combination with the guard-wires D, base C, and top B of the lantern, as and for the purpose specified.

146,080.—Composition for Preserving Leather.—JACOB LAMPLUGH, Philadelphia, Pa. Application filed July 5, 1873.

Claim.—A leather-preserving composition consisting of burnt tallow, caoutchouc, and bees-wax, with or without other ingredients.

146,081.—Nut-Lock.—LODOWICK LEEDS, New London, Conn., assignor of one-half his right to ELISHA W. SHOLES and ALONZO W. SHOLES, same place. Application filed June 23, 1873.

Claim.—The outer nut *a*, having an eccentric circular recess or slot, *b*, to receive the eccentric inner nut *c*, in combination with the bolt, when constructed and arranged in the manner and for the purposes as herein shown and set forth.

146,082.—Carburetor.—J. BALDWIN LYMAN, Rockford, Ill. Application filed September 15, 1873.

The air-forcing reservoirs receive air through chambers having pipes provided with stop-cocks, which open externally. The stop-cocks are opened to admit the air to the reservoirs, and are then closed as the air is forced through the first chamber into the second or storing chamber, which communicates with the air-distributer in the gasoline-tank.

Claim.—1. The perforated air-chamber C, arranged within the tank A, as described, in combination with the air-chamber D, intermediate between the receiver G and chamber C, substantially as and for the purpose described.

2. The secondary or supply chamber E, provided with the supply and outlet pipes, as described, in combination with the holder G G' for the supply of the air to said holder, and for the transmission of the same to the storing-chamber D, as set forth.

3. The combination of the holders G G', supply and storing chambers D and E, tank A, and terminal chambers C, all arranged and operating substantially as and for the purpose set forth.

4. The air-chamber D in combination with the receivers G G', tank A, and connecting and supply pipes and their respective stop-cocks *c c'*, *d d'*, *e e'*, and F, arranged and operating substantially as and for the purpose described.

146,083.—Garden Implement.—JOHN M. LUNGUEAT, Atlanta, Ga. Application filed July 16, 1873.

Claim.—The combination of handle B, ferrule A, bar C, bolts *a a*, nuts *b b*, hoe D, and rake E, all arranged as described, and for the purpose set forth.

146,084.—Milk-Cooler.—ROSWELL P. MAIN, Canton, N. Y. Application filed June 24, 1873.

Water is introduced into a trough, from whence it passes through tapering tubes into flat tubes, and after traversing the length of the vat it returns and passes through a siphon into a trough, and then runs off through an elbow-pipe.

Claim.—The combination, with a milk-pan, A, of the flat tubes B B and B' B', with connections *b d*, trough C, with spouts *a a*, inlet-tubes D D, outlet-tube E, and trough G with adjustable elbow-pipe I, substantially as and for the purposes herein set forth.

146,085.—Apparatus for Delivering Sheets from Printing-Presses.—THOMAS J. MAYALL, Boston, Mass. Application filed July 21, 1873.

The sheets are delivered to the packing-cylinder and accumulated between it and endless tapes *c'*, two of whose supporting-shafts are mounted in arms of the cylinder-heads and sustained in position against the pressure of internal spring by a detent, *g*. The guard-fingers *h* direct the sheets around the cylinder. Spring-seated pulleys d^2 compensate for the increasing mass. The sheets are counted by a disk, rotated by a wiper, *w'*. This disk carries a pin, *l*, set for a given number, which, engaging with a lever, *k'*, releases the detent *g*, and allows the tape-frame to be carried down, as in Fig. 7, and a guide-frame, *r*, projected from the cylinder, when the tapes deliver the sheets.

Claim.—1. The combination, with the delivery-cylinder, of a dropping or delivery apron, formed by the tapes which run in contact with the cylinder, and automatically operated alternately to rise and embrace the cylinder and cause the sheets to accumulate thereon in layers, and to drop and permit the discharge of the said sheets, substantially as and for the purposes set forth.

2. The delivery-cylinder and independent cylinder-heads, mounted on the axis of said cylinder, in combination with the endless tapes, and the movable or dropping frame or arms carrying one or more of the pulley-shafts for the tapes, and hinged or jointed to the cylinder-heads, the whole operating as set forth.

3. The combination, with the cylinder-heads and dropping-frame, of the coiled springs for producing the rotation of the heads needed to effect the dropping of the frame, and the retaining hooks for holding the said heads in position against the pressure of the springs, as and for the purposes set forth.

4. In combination with the revolving cylinder, the cylinder-heads and their actuating springs, the lugs and dogs carried by said cylinder and cylinder-heads respectively, and adapted to engage with and disengage from one another at the time and in the manner set forth, and the retaining-hooks adapted to catch and hold the cylinder-heads upon disengagement of said lugs and dogs, the whole operating together, as and for the purposes set forth.

5. The combination, with the cylinder-heads and their retaining-hooks, of the tripping-lever and register-wheel, and pin carried by said register-wheel, substantially as shown and set forth.

6. In combination with the dropping-apron and delivery-cylinder, the hinged dropper or guide carried by said cylinder, and operating, in connection with the same and the dropping-apron, substantially as set forth.

7. The dropper, hinged to and carried by the delivery-cylinder, in combination with the lifting-pin in the cylinder-head, adapted to engage a finger on said dropper at the time and in the manner set forth, said parts being combined for joint operation, substantially as shown and described.

8. In combination with the dropping-apron or frame and the delivery-cylinder, the bent guide-fingers carried by said dropping-apron, and operating in connection with the delivery-cylinder, substantially in the manner shown and set forth.

146,086.—Water-Elevator.—DRURY J. MCMILLEN, Chillicothe, Mo. Application filed October 4, 1873.

A pair of gear-wheels of similar diameter, engaging each other and a driving-wheel, are secured upon horizontal rods carrying flanged rollers, about which pass ropes extending over sliding friction-rollers placed upon a rod below. The wheel-rods are operated by a lateral lever, whereby either wheel is raised and its operation reversed.

Claim.—The gear-wheels E E', arranged to engage each other in the manner specified, and secured to the rods D D', operating vertically by the action of the lever H, and provided with the flanged capstans I I', in combination with the sliding friction-rollers *e*, substantially as shown and described.

146,087.—Clothes-Frame.—JOHN C. MILLER, Rockport, Ind. Application filed August 2, 1873.

Two frames crossed and pivoted, and joined by rods. At the upper ends of the bars are cords extending from the upper rod on one side to a windlass having a ratchet and pawl.

Claim.—The clothes-frame described, having bars A A, connected at the knees *a* by the bar B, the top rounds E, provided with the cords G, ratchet-wheel *b*, and pawl *d*, substantially as shown and described.

146,088.—Plow.—JOHN J. MITCHELL, Hopkinsville, Ky. Application filed July 12, 1873.

The standard is formed with a narrow strip or breast upon it, which is the cutting-edge above the share. Behind this is a broad flange or seat, and to this is fastened the mold-board of wood, the outer front edge of which has a shoulder, upon which the breast-piece is fastened, making a flush surface.

Claim.—1. The foot-piece A, having along the front curved edge the breast *a* and parallel flange *d*, and at the lower end the flange *b*, substantially as shown in Fig. 3, and for the purpose specified.

2. The combination of the cast-iron foot-piece A, having breast *a* and flanges *b d*, the share B welded to the bar C, and the wooden mold-board D having its front part formed at, or nearly at, a right angle, all substantially as and for the purposes herein set forth.

146,089.—Hot-Air Furnace.—DAVID B. MORRIS, Pittsburg, Pa. Application filed April 1, 1873.

The dome E is of cast-iron; the outer dome is of sections of terra-cotta tile, connected by tongue-and-groove joints.

Claim.—1. In a heating-furnace for buildings, the sections *a* and the crown I of the outer dome G, joined and united together by tongue-and-groove joints *b*, in the manner and to obtain the advantages stated.

2. The outer dome G, the inner iron dome E, and the reservoir M, located and arranged directly upon the top of the grate-bed A, and in the relation therewith and with the hot-air chamber H, as shown and specified, and to obtain the advantages stated.

146,090.—Hoisting Apparatus.—CHARLES R. OTIS, Yonkers, N. Y. Application filed November 4, 1873.

On the side of the car are two air-tight cylinders, whose ends are closed by elastic diaphragms, and which communicate, by properly supported flexible pipes, with two fixed cylinders, whose diaphragms have weighted spindles, which pass through guides and are attached to levers, by which they operate the valves of an auxiliary cylinder, whose piston-rod in turn operates the engine-valves. The attendant is thus enabled to control the engine-valves by pressing upon the diaphragms in the car.

Claim.—1. The combination, substantially as herein described, of a stationary diaphragm, by means of a hose with a moving diaphragm, attached to and capable of moving with the car, or cage, or platform of a hoist, whereby the stationary diaphragm may be caused to lift a weight, as described.

2. The combination of two sets of diaphragms and two hose-pipes with an auxiliary cylinder, substantially in the manner and for the purposes described.

3. The combination of two sets of diaphragms and two hose-pipes with a stop and reversing valve, substantially in the manner and for the purpose described.

4. The combination of the springs with the lever of a stop and reversing valve, substantially as hereinbefore set forth.

5. Two diaphragms, one stationary and the other moving, combined by means of a hose, in combination with a lever and a stop and reversing valve, the combination being substantially such as herein set forth.

6. A stop and reversing valve, in combination with two sets of diaphragms, and two hose-pipes, and an auxiliary cylinder, substantially in the manner and for the purposes set forth.

7. A stop and reversing valve and a lever acting upon it, in combination with two sets of diaphragms and two hose-pipes, substantially as described.

8. The combination of springs with the piston of an auxiliary cylinder, and a stop and reversing valve, the combination being and acting substantially as hereinbefore set forth.

146,091.—Washing-Machine.—SAMUEL N. PAGE, Lamar Mills, Pa. Application filed October 2, 1873,

A corrugated driving-roller, in fixed bearings in suitable uprights, has three corrugated rollers hung on curved bars and hangers to a cross-bar, and adjusted by screws and springs.

Claim.—The uprights A A, having slots *d d b*, in combination with the rollers C D D, the latter being suspended from the bars E and hangers F, embraced by the adjusting-screws G G which depend from the bar H, pressed upward by the springs I I, substantially as shown and described, and for the purpose set forth.

146,092.—Working Scrap Iron or other Metals into Ingots.—DUBOIS D. PARMELEE, New York, assignor to CHARLES RUNYON, Yonkers, and FRANCIS ROBINSON, New York, N. Y. Application filed December 22, 1873.

About four pounds of scrap iron is placed over the mouth of the mold and the hammer slowly forced upon it, crowding it down a few inches into the mold. The hammer is elevated and the force of the blows gradually increased until the scrap is consolidated.

Claim.—1. The method herein described for consolidating iron or other scrap metal cuttings, by hammering the scrap into a mold in layers, substantially as described.

2. An ingot of iron or other metal cuttings, formed by hammering the scrap into a mold, substantially as specified.

3. The mold, provided with a conical bottom and flaring top, and attached to the base by means of dovetails or equivalent devices, as and for the purpose set forth.

146,093.—Carriage-Iron.—HENRY K. PORTER, Boston, Mass. Application filed February 3, 1873.

Claim.—1. The combination of the wrought-metal rod *l* and the cast-metal stud *m*, having the right-angle semicircular-grooved flange *e*, constructed and combined substantially as described and shown.

2. The combination of the cast-metal angle or arm *p*, formed with the offset lip *r* and riveting-pivots *s s*, and the straight arm *t*, constructed and combined substantially as described and shown.

146,094.—Tuck-Creaser for Sewing-Machines.—EDWARD POWELL, New York, N. Y. Application filed September 5, 1873.

The tongue, provided with the upturned edge over which the material is creased, is provided with a supporting-point to elevate the tongue from the bed-plate, to give the creasing member of the upper plate a greater movement in creasing. A finger on one spring-plate first bears on and holds the material, and then the projection on the upper plate is moved down against the cloth, resting on the creasing-edge. The pin prevents lateral deflection of the blades.

Claim.—In a tuck creasing or marking attachment for sewing-machines, the spring-plates, provided with a guide-pin, *f*, to prevent lateral movement, in combination with the prolongation or tongue *e* and supporting-point *c*.

146,095.—Steam Vacuum-Pump.—WILLIAM E. PRALL and DAVID A. BURR, Washington city, D. C.—Case A. Application filed November 21, 1873.

Disks secured to the valves controlling the admission of steam to the pumps partially obstruct or confine the current of steam, so that when a sudden reduction of pressure in the pump to which it is flowing takes place, through exhaustion or condensation, the confined steam assists the movable piece placed in a channel of communication between the two pumps in moving the valves.

Claim.—1. The within-described method of automatically moving the valve or valves controlling the admission of steam to a steam and vacuum pump, by means of vanes or disks combined with said valve or valves, to obstruct or partially confine the steam-current in its passage to either chamber of the pump.

2. In combination with a valve or movable piece controlling a steam-port, a disk or vane placed exterior to said port, yet connected with said valve, and against which the steam-current passing through the port shall impinge, substantially as and for the purpose herein set forth.

3. In combination with each other, and with the valves controlling the steam-induction ports of a double-acting steam-pump, a rod connecting said valves, a piston or diaphragm secured to said rod, and placed in a channel of communication between the working-chambers of the pump, and disks or vanes attached to each valve, all substantially as and for the purpose herein set forth.

146,096.—Baling-Press.—JOHN B. ROOT, New York, N. Y. Application filed November 1, 1873.

Claim.—In a baling-press operated through the medium of a cylinder-piston and piston-rod, connecting together at their extreme ends by a single bolt, *b*, the platen-rods F, yoke-links H, and radius-arms D, as herein shown and described.

146,097.—Sectional Steam-Boiler Connection.—JOHN B. ROOT, New York, N. Y. Application filed March 15, 1873.

Each return-bend has on its face nozzle projections which fit into the opening in the head made to receive the tube. Compressible packing is inserted in a recess made in the bend and in the head, forming a tongue-and-groove joint.

Claim.—The combination of the nozzles *f* of the bends C, the grooves *d d* in the faces of the bends and heads B B, and the soft or compressible packings *e e* forming tongues within the said grooves, for the purpose of connecting parallel pipes in clusters, substantially as shown and described.

146,098.—Sharpening-Machine.—HUGH B. ROSKE, Cazenovia, N. Y. Application filed October 28, 1873.

Claim.—1. In combination with the pivoted holder 5, the socket 1, having the forked arm 2, cast with it in a single piece, and which can be adjusted back and forth, and swung around from side to side, substantially as set forth.

2. The adjustable hooks 7, in combination with a bar, 6, for holding the knife, substantially as specified.

3. The combination of the adjustable socket 1, pivot 4, dovetailed holder 5, bar 6, and hooks 7, with the grindstone *a*, substantially as shown and described.

146,099.—Water-Cooler.—WILLIAM F. RUTTER, Philadelphia, Pa. Application filed May 26, 1873.

The studs on the rack prevent the ice shifting.

Claim.—The rack B with studs C C, and the water-cooler A with ledges or rim B, combined and operating as herein set forth.

146,100.—Vehicle-Spring.—CYRUS W. SALADEE, Pittsburg, Pa. Application filed May 1, 1873.

Claim.—A compound spiral spring composed of two or more plates, rods, or bands riveted together at or near their ends and bent into form, substantially as described.

146,101.—Loom for Weaving Filed Fabrics.—HALCYON SKINNER, Yonkers, N. Y. Application filed November 12, 1873.

The wheel for operating the loom by hand is placed on a pivoted stand and controlled by the same treadle that operates the brake, so that when the latter is released the former is put in gear with the driving-pulley. The weft-stop mechanism consists of feelers on a rock-shaft between the breast-beam and the lay, and their position controls the movement of a spring bolt or pin working vertically through a pivoted horizontal elbow-lever, one arm of which engages with the shipper-lever. When the weft fails, a finger on the lay comes in contact with the upper end of the slide-bolt and stops the loom. The picking-cams and the double wire-operating cam are placed on the same shaft, and the parts so arranged in relation to the crank-shaft that a shuttle is thrown when a wire is inserted, and when one is withdrawn, thus two shots of filling being laid and beaten up for each wire. The wire-operating mechanism consists of a withdrawing-carrier and its hook, running on a straight and fixed slide-rail, and an inserting-carrier, with jaws to receive the wire-head, running on a rail placed in front of that on which the withdrawing-carrier moves, the two carriers being connected by a link, and reciprocated by the same lever. The outer rail is so curved as to give the required forward-and-back movement to the inserter, and is also elastic, that it may yield as the reed drives up the wire. A cam-piece is so arranged on the breast-beam as to hold the inserting-carrier at its innermost position, and so prevent the wire from springing back as the lay retreats.

Claim.—1. The combination, with the treadle S and arms Z, *l*, and *e* of their respective parts, by which the brake is released from the wheel E, of the sliding piece R, the pivoted stand Q, operated by the latter, and hand-wheel P, with its shaft *p* and bevel-wheels *r s*, whereby the brake is simultaneously released with the putting of the hand-wheel into gear by the action of the treadle, substantially as specified.

2. The movable pin A^1 and arm s^1, in combination with the feelers C^1 and arm i^1, for arresting the motion of the loom when the weft breaks or is expended from the bobbins, essentially as herein described.

3. The arrangement on the same shaft, H, of the picker-operating cams D^1 D^1, carried by the disks or flanges F^1 F^1, and the double wire-operating cam E^1, for action in relation with the crank-shaft G, which operates the lay, substantially as specified.

4. The outer curved slide F^2 and inner straight slide E^2, arranged in front of the lay and below the shuttle-box, in combination with the wire-carriers C^2 D^2, all constructed to operate, in relation with each other, substantially as herein described.

5. The cam-piece G^2 on the breast-beam, in combination with the wire-carrier D^2, essentially as and for the purpose specified.

146,102.—Nut-Lock.—ALBERT C. SMITH, Fort Madison, assignor to himself, DAVID W. BLACKBURN, Keokuk, and SETH H. CRAIG, Fort Madison, Iowa. Application filed October 23, 1873.

A block of wood is interposed between two nuts and provided with projecting ends, that pass outside of the nuts and press against the threads of the bolts, which holds the device in place.

Claim.—The block or bar D, provided at each end with a shoulder or offset, *a*, to fit between the nuts C C, and the projecting parts *b b*, fitting between the bolts A A, substantially as and for the purposes herein set forth.

146,103.—Piano Pedal-Stool.—TRAUGOTT SPRINGER, Hunter's Point, N. Y., assignor to himself and GUSTAVE AUTENRIETH, same place. Application filed November 12, 1873.

Claim.—In a pedal-stool containing the treadle B, sliding rod D, and spring *d*, the guide-bar *f*, constructed and arranged substantially as shown and described.

146,104.—Drop-Light and Hanger.—WILLIAM STAEHLER, Brooklyn, E. D., N. Y., assignor to CHARLES F. A. HINRICHS, same place. Application filed October 11, 1873.

The tubular standard that slides in the fixed tube is provided externally with a notched groove, in which works the free end of a spring-coil, the other end of which is attached to the external tube. This spring-coil is so arranged that downward movement of the inner tube, which sustains the light, compresses the coil and increases the friction of its detached end in the groove, while a reverse movement allows the coil to expand, and the friction is diminished.

Claim.—1. The spring *n*, in combination with the grooved standard *d* and tube *a*, substantially as and for the purposes set forth.

2. The spring *n*, in combination with the grooved standard *d*, with depressions, the tube *a*, and packing *c*, substantially as set forth.

146,105.—Coating Oakum with Tar, &c.—JOHN F. STAIRS, Halifax, Canada. Application filed December 3, 1873.

Claim.—The means described for tarring tow or oakum, consisting of the rollers *a*, trough *b*, concentrating-tube *h*, and squeezing-rollers *k l*, in combination with the tar-kettle *c* and a pair of rollers in such tar-kettle, substantially as set forth.

146,106.—Nut-Lock.—JEROME B. SWEETLAND, Pontiac, Mich. Application filed November 26, 1873.

Claim.—The pivoted latch D, provided with the hook *i* and lugs *d d*, substantially as and for the purposes herein set forth.

146,107.—Flour-Packer.—SAMUEL TAGGART, Indianapolis, Ind. Application filed December 4, 1873.

The truncated cone-shaped mouth of the receiver incloses the spiral blades of the packing-auger, made in sections, and provided with upwardly-deflected circumferential packing-rims.

Claim.—1. In a packer for flour and other materials, the packing-blades D and E thereof, provided with upwardly-dedected circumferential packing-rims F, for the purpose described.

2. The auger-lesaes, having the inner oppositely-curved portions *g*, and the outward oblique terminations A, as and for the purpose described.

3. The spiral blades D and E and hub *d e*, made in sections, joined, interlocked, and secured, substantially as described, and to obtain the advantages stated.

4. The packing-auger, consisting of the sectional hub *d e*, overlapping and dished sectional blades D and E, and the upwardly-dedected circumferential rim F, as and for the purpose specified.

5. The truncated cone-shaped mouth B of the receiver A, in combination with a packing-auger, as and for the purpose described.

146,108.—Ticket-Box for Railroad-Cars.—GEORGE C. THOMAS, Brooklyn, N. Y. Application filed May 14, 1873.

A series of ticket-boxes, arranged along the sides of railroad-cars, have doors which are locked by a single bar or rod secured by a single lock.

Claim.—1. A series of boxes having doors with locks, in combination with a bar, H, or its equivalent, whereby all the doors can be either locked or unlocked simultaneously, as set forth.

2. In combination with the door-bolts G of a series of ticket-boxes and the notched bar H, common to all the boxes, a lock at or near each end box of the series, for retaining and releasing the bar, all substantially as described.

146,109.—Illuminating Apparatus.—JAMES A. THOMPSON, Brooklyn, N. Y. Application filed June 14, 1873.

A ring, which is adjustable upon the gas-bracket, is adapted to hold a glass lens, and has arms for supporting a shade above the lens.

Claim.—The herein-described adjustable attachment for gas-fixtures and like purposes, consisting of the metallic rest or holder F, adapted to receive and hold the illuminator or lens A, and provided with standards S to support and hold the shade, and collar and set-screw D, all substantially as described, and for the purpose set forth.

146,110.—Frame for Holding Work on Sewing-Machines.—E. MALCOLM TURNER, Allegheny City, Pa. Application filed August 27, 1873.

A frame composed of two side bars, which are connected by lazy-tongs. These side bars are provided at one end with clamping devices, and at the other end are hinged to the side bars of another frame, which is also connected by lazy-tongs. The hinged frame is arranged so that it can be held at an angle to the main frame.

Claim.—The combination of the frame composed of the bars A A′ and lazy-tongs H, with suitable clamping devices, and the frame composed of the bars B B′ and lazy-tongs G, hinged to the former frame, and standing at an angle therewith, substantially as herein set forth.

146,111.—Glove-Turning Machine.—FREDRICK VANDERPOOL, Mayfield, N. Y., assignor to himself and JAMES E. WOOD, same place. Application filed November 15, 1873.

The glove is turned inside out by stretching the fingers over the tubes; then bringing the frame down till the ends of the rods and tubes meet; then drawing the glove up with the fingers over the rods.

Claim.—The combination, with the spring sliding frame B, provided with the pendent rods *f*, of the frame A A′ A, having the tubes C corresponding in number and placed opposite to the rods *f*, to enable the glove to be turned in the manner described.

146,112.—Car-Starter.—ISAAC C. WALLACE and JOHN W. ANDREWS, Detroit, Mich. Application filed November 4, 1873.

Claim.—1. In combination with the draw-bar G and the toothed disks M of the traction-wheels D′, the pivoted arms I, arranged to work at their rear ends upon or within the curved guide-bar K, and provided with the pawls L, substantially as and for the purpose specified.

2. In combination with the pawls L, pivoted to or upon the arms I, and arranged to engage with the toothed disks M, the tripping-lugs *k*, substantially as and for the purpose shown.

3. The draw-bar G, cross-bar H, pivoted arms I, guide-bars K, pawls L, and toothed disks M, combined and applied to a car-truck in the manner and for the purpose substantially as set forth.

146,113.—Nut-Lock.—CHARLES R. WATROUS, Mystic, Conn., assignor to himself and JAMES WATROUS, Jr., same place. Application filed April 29, 1872.

Claim.—1. The sharp-edged key *m*, combined, as shown, with the nut and bearing-surface, one of which is grooved and the other not grooved, so that after tightening the nut to its ect position the sharp key will cut a score or mark in the opposite surface in a position corresponding to the groove, as herein set forth.

2. A plurality of grooves in either the nut or the adjacent surface, in combination with a sharp-edged key and with the opposite plane surface, so as to allow the key *m* to be changed from one to the other, as herein specified.

146,114.—Roof-Truss.—PETER L. WEIMER, Lebanon, Pa. Application filed November 29, 1873.

A truss-frame for roofs in which the thrust of the compressive members is received by the tie-beam at only two points, and is transmitted to the junction of the principal rafters by only two tie-bolts, while each of the principal rafters is supported by the compression-pieces at two or more points.

Claim.—The truss consisting of main rafters B B, tie-beam A, diagonal rods D D′, and supporting compression-pieces E E′ F F′, the whole so constructed that each rafter has two or more supports, while the whole thrust or weight upon the truss is conveyed and supported at two points on the tie-beam, substantially as described.

146,115.—Suction-Tube for Planing-Machines, &c.—GEORGE C. WESTOVER, Vernon, Ind., assignor of one-third his right to JAMES A. MCCLELLAND, same place. Application filed October 27, 1873.

The inlet-tube near the exhaust-fan is branched, serving as bearings for the fan-shaft. A hooded catch-box, with a hopper-bottom, is used for heavier fragments; also, a sloping grating, with catch-spout and gate, intercepts and precipitates any large fragments not otherwise arrested.

Claim.—1. The suction-tube B, constructed with branches C C′ reunited in a single central passage, B′, and serving to support fan-shaft bearings D D′ external to the dust-passage, as herein set forth.

2. In combination with the suction-fan A and tube B, the tube enlargement H, catch-spout I, and gate J, substantially as herein described, for the purpose specified.

3. In combination with the elements H I J, the oblique grating K, whether hinged or otherwise.

4. In combination with the suction-fan A and tube B, the hooded and hoppered catch-box F G, constructed and operating as described, for the purpose specified.

146,116.—Car-Axle Box.—JOSEPH WHITAKER and SIMEON S. COOK, Woonsocket, R. I.; said WHITAKER assignor to said COOK. Application filed November 21, 1873.

Claim.—1. The combination of a grooved disk or collar, E, with the journal C and car-box A, provided with the rear chamber between the flanges F F, said chamber having suitable openings, at or near its lowest point, communicating with the main body of the box, all substantially as described.

2. The combination of a journal, a bell-shaped or conical collar, and a grooved disk or collar with an oil-reservoir beneath, substantially as described.

146,117.—Apparatus for Raising, Emptying, and Filling Sacks.—SAMUEL WILKERSON, Jr., Bassingbourn, England. Application filed November 7, 1873.

By means of an elevator and a tilting-frame a full sack placed upon said elevator is discharged into an empty sack placed upon tilting-frame.

Claim.—1. an apparatus for raising, emptying, and filling sacks, in which an elevator, A, is combined with a tilting-frame, B, substantially as herein set forth.

2. The combination, substantially as described, of the shaft F, the elevator A, the tilting-frame B, the cords or chains A′ and *r*, and intermediate devices, whereby the within-described movements may be transmitted simultaneously from the shaft to the said elevator and frame.

3. The combination of the lever G at the base of the elevator with the stay-frame E, or other fixed portion of the apparatus, for the purpose specified.

4. The shears I, consisting of blades *i* and *i*¹, rod or other support *j*, and connecting-link *i*², the whole being combined with the bag-elevating device, and operating substantially as herein described.

5. The frame B, pivoted to arms K K, having a limited movement, determined by stops *l l*′ on the fixed portion of the apparatus, all substantially as specified.

6. The combination, with the frame B and its projection *s*, of the sliding bar P, operated by the shaft F through the medium of a cord or chain, *r*, all substantially as specified.

7. The combination of the rounded projection *t* of the frame B with the stay E, or other fixed portion of the apparatus, for the purpose specified.

8. The combination of the rock-shafts L L′, their hooks, the arms *m m*, link *n*, handle *m*′, and spring *w*, all substantially as and for the purpose specified.

146,118.—Scroll-Saw.—JOSEPH B. WRIGHT, Jersey City, N. J. Application filed March 27, 1873.

The sawing devices are arranged to receive their movement from the foot of the operator. A boring-tool is also so arranged as to bore the holes for the insertion of the saw in inside work.

Claim.—A sawing-machine having its various parts constructed and arranged for joint operation, in the manner and for the purpose herein set forth.

146,119.—Earth-Closet.—JOHN L. YOUNG, New York, N. Y. Application filed October 19, 1872.

A movable service-pan and shutters are connected with levers in such manner that by the action of the cover the shutters are opened at the same time the pan is brought underneath the seat.

Claim.—1. The combination of the shutters F F and service-pan D, as and for the purposes described.

2. The arrangement of the bail V and cranks Y Y, in combination with the service-pan and shutters, substantially as shown and described.

REISSUE PATENTS.

5,708.—Lamp.—CHARLES F. A. HINRICHS, Brooklyn, N. Y., assignee of KATHARINA KLEEMANN, executrix of CARL A. KLEEMANN, deceased.—Patent No. 37,867, dated March 10, 1863; reissue No. 3,068, dated August 4, 1868; reissue No. 3,900, dated March 29, 1870. Application filed December 10, 1873.

Claim.—1. An argand lamp-burner in which the following instrumentalities are combined: An argand-wick, a central air-tube, a chimney-holder, a draft-regulator to determine the quantity of air passing up outside the flame, and a chimney with a contracted neck sufficiently above the wick to direct the air upon the flame independent of any metallic deflector, substantially as set forth.

2. The argand-burner, made with a spring chimney-holder below the upper end of the wick-tube and around the base of the cone, for receiving the cylindrical base of the glass chimney, the said cone being provided with openings through the same, substantially as and for the purposes set forth.

5,709.—Stove.—ELIHU SMITH, Albany, N. Y.—Patent No. 98,986 dated April 13, 1869. Application filed November 20, 1873.

The products of combustion are conducted in an annular flue around the upper part of the fire-pot, and then down to an annular sub-base flue, which makes a circuit of the stove-base. It incloses a hot-air space underneath the stove, which opens into a flue extending vertically through the fire-pot and magazine to the top of the stove. This flue has a branch flue just above the fire-pot, opening at the side.

Claim.—1. In a base-burning coal-reservoir heating stove or furnace, a flue below the ash-chamber and bottom plate of the stove, conducting the heated and escaping gaseous products of combustion in an annular circuit from the point of entrance to the point of exit therefrom, and passing them underneath the front edge or front portion of said bottom plate, in combination with an extended descending-flue for conducting said products into said base-flue, and an exit-flue for their escape after traversing said base-flue, the said descending and exit flues being arranged in proximity to each other, whereby the gaseous products conducted into the said base-flue are made to perform the entire circuit thereof, substantially as set forth.

2. In a base-burning coal-reservoir heating stove or furnace, the combination, in communication, of an annular flue surrounding an annular section of the fire-pot, a base-flue entirely below the bottom plate of the stove, and an intermediate flue connecting the said base and annular flues, substantially as set forth.

3. In a base-burning coal-reservoir heating-stove an ascending air-flue, open at the top and bottom of the stove, extending through the fire-pot, combustion-chamber, and reservoir, in combination with a branch flue, *c*, communicating with the outer air through the combustion-chamber and outer casing of the stove, said ascending flue being provided with a damper, located at a point above the point of junction of the two flues, substantially as and for the purpose set forth.

4. In a base-burning coal-reservoir heating stove or furnace, a flue for conducting air to be heated, extending up through the fire-pot into the combustion-chamber, in which latter it is exposed directly to the heat therein, and communicating with the air without the stove, through the outer casing thereof, at a point within the circumference of said chamber, substantially as set forth.

5. In a base-burning coal-reservoir heating stove or furnace, an annular arch-top combustion-chamber, in which the inwardly-inclined side of the arch forming the top of said chamber extends without the magazine-chamber, and forms a portion of the outer casing or radiating-surface of the stove, and the opposite or outwardly-inclined side of said arch reflects its incident heat-rays to the side first described, or the outer casing of the stove, substantially as and for the purpose set forth.

5,710.—Breech-Loading and Repeating Fire-Arm.—HORACE SMITH and DANIEL B. WESSON, Springfield, Mass., assignors, by mesne assignments, to WINCHESTER REPEATING-ARMS COMPANY, New Haven, Conn.—Patent No. 10,535, dated February 14, 1854; reissue No. 279, dated October 16, 1854; extended seven years. Application filed November 21, 1873.

The breech is opened, the cartridge-shell retracted and ejected, a new cartridge brought into position to be inserted into the barrel, and the piece cocked through the medium of the guard-lever.

Claim.—1. The combination of the percussion-hammer, the sliding breech-piece, and the barrel, substantially as described, whereby the breech-piece H shall serve both as a breech to hold the cartridge in the barrel, and as a means of conveying the force of the blow of the hammer to the cartridge, substantially as set forth.

2. In combination with an extractor for drawing the shell out of the chamber, a device arranged to strike the shell or cartridge and expel the same from the arm, substantially as described.

3. The combination of the sliding breech-piece H and the carrier D, constructed substantially as described, whereby the carrier can be operated while the breech is closed, and also be made to expel the shell while being raised, as set forth.

4. The combination of the hammer and the breech-piece H with the operating-lever G, whereby the hammer may be cocked by the movement of the operating-lever, substantially as described.

5. A reciprocating breech-piece arranged to move in line with the bore of the barrel, in combination with an extractor which advances from behind the cartridge to engage therewith, for the purpose of withdrawing the shell from the barrel when the breech is opened.

6. The combination, in a breech-loading arm, of a hammer, a reciprocating breech-piece, and an extractor with an operating-lever, the said parts being arranged to operate substantially as described, whereby the movement of said lever shall open the breech, cock the hammer, and withdraw the shell, as set forth.

7. The combination, substantially as described, of a barrel open at its rear end with a reciprocating breech-piece moving in line with the bore of the barrel, and an extractor arranged to advance from behind the cartridge, to engage with and extract the shell.

8. In combination with a barrel open at the rear, a device arranged to operate on the shell as it is withdrawn from its chamber, and expel it from the arm, the combination being substantially such as described.

9. The combination, substantially as described, of an operating-lever, an extractor, and a device arranged to operate on the shell after the breech is opened and expel it from the arm, substantially as set forth.

10. The combination, substantially as described, of an operating-lever with a hammer, breech-piece, and extractor, whereby the movement of the lever once forward and back will open and close the breech, cock the gun, and withdraw the cartridge-shell.

11. The combination, substantially as described, of an operating-lever with a hammer, closing breech-piece, extractor, and a device for throwing out the shell, whereby the motion forward and back of the lever will open and close the breech, cock the gun, withdraw the shell, and expel it from the arm.

5,711.—Middlings-Purifier.—EDMUND N. LACROIX, Minneapolis, Minn.—Patent No. 139,585, dated June 3, 1873. Application filed October 31, 1873.

Moving air tube or tubes, connected by flexible tubes with a blow-fan, are arranged under a screw or screws so as to concentrate a narrow blast of air upon the cloth, which keeps the meshes clean and raises the light substances to the top of the material, where they are operated upon by a suction-blast.

Claim.—1. The combination of traveling or moving air tube or tubes E E with the separator or separators B B, the said tube or tubes situated beneath the said separators.

2. In combination with the traveling air tube or tubes E E, the pipe or pipes L L, and a blower, fan, or other device for forcing air through the pipes, as herein set forth and shown, and for the purpose specified.

3. The combination, with the screws G G and with the clutch-coupling, of the rod P provided with the stops *s s*, the elbow N and lever M provided with the stops *k p*, the whole arranged and operating as herein described.

4. The combination, with a screen that has a suction-fan over it, of mechanism, substantially as described, whereby the blast from a blower-fan is made to move or travel beneath the screen, and direct the blast successively against different portions of the under side thereof.

5,712.—Heating-Stove.—EDWARD MINOAY, Boston, Mass.—Design No. 5,930, dated June 11, 1872. Application filed August 20, 1873.

Claim.—1. The design of the urn, as shown and described.

2. The design of the cast-iron top, formed and ornamented as shown and described.

3. The design of the cast-iron base, formed and ornamented as shown and described.

4. The design of the doors B and C C, formed and ornamented as shown and described.

5. The design of the top, base, cylinder, doors B and C C, and fender D, formed and ornamented as hereinbefore shown and described, in combination, as shown and described.

5,713.—Device for Clamping Whip-Sockets to Vehicles.—CHARLES B. MOREHOUSE, Newcastle, Ind., assignor, by mesne assignments, to EDWIN CHAMBERLIN and JOHN O. MERRIAM.—Patent No. 43,858, dated August 16, 1864; reissue No. 5,235, dated January 14, 1873. Application filed October 13, 1873.

Claim.—1. In combination with a whip-socket, a fastening device, having a support or bearing, E, and a movable jaw, between which the dash-rail or other part of the vehicle is received and securely clamped, for the purpose specified.

2. In combination with a whip-socket, a clamp or fastening for securing the same to the dash-rail, the parts which form said clamp being concave upon their contiguous or facing sides, and adapted by means of a screw to receive and be secured to rails of different sizes, as set forth.

5,714.—Harvester.—JAMES PIKE, Troy, N. Y.—Patent No. 33,557, dated October 22, 1861. Application filed July 13, 1872.

The front and side pieces of the main frame are constructed in one piece with the rigid cross-bar in the rear end, to which the cutter and gear-frame are pivoted.

Claim.—1. The main frame C of a harvester, having the front and sides constructed in one piece, and projecting in front and rear of the main axle, which has its bearings in holes in the frame, substantially as specified.

2. The arrangement of attached wheel and pinion G H loosely upon a prolongation of the fixed cross-bar E of main frame C, as and for the purpose set forth.

3. The gear-frame F, pivoted to fixed cross-bar E of main frame C, having finger-bar pivoted thereto, combined with a brace, I, extending from said cross-bar E, as described.

5,715.—Steam Water-Elevator.—WILLIAM E. PRALL, Washington, D. C.—Patent No. 121,962, dated December 19, 1871; reissue No. 5,138, dated November 5, 1872. Application filed November 21, 1873.

A movable partition interposed in a way or passage communicating with the interior of each chamber actuates upon an exhaust of steam from, or its condensation in, either chamber, the valve controlling the admission of steam to the two chambers.

Claim.—1. The method, substantially as herein described, of controlling the admission of steam to a double-acting steam vacuum-pump, by combining, with the steam-induction ports of the pump, a movable partition, placed in a channel of communication between its chambers, and actuated by means of an exhaust of steam through or its condensation at or within the discharge-port of either chamber, substantially as set forth.

2. A movable partition placed in a channel of communication between the chambers or cylinders of a double-acting steam vacuum-pump, and combined with a valve or valves, to control the admission of steam to said chambers, substantially as herein set forth.

5,716.—Casting Car-Wheels.—JOHN K. SAX, Pittston, Pa. Patent No. 122,536, dated January 9, 1872. Application filed April 15, 1873.

Claim.—The process of simultaneously casting the body of a car or engine wheel of one kind or quality of metal, and the tread of another kind or quality of metal, by means of a circumferential partition-band in the mold, which keeps the two metals apart while being poured, which band is left in the mold, and becomes firmly united with the metals upon both sides of it, the whole being done substantially in the manner and for the purpose described.

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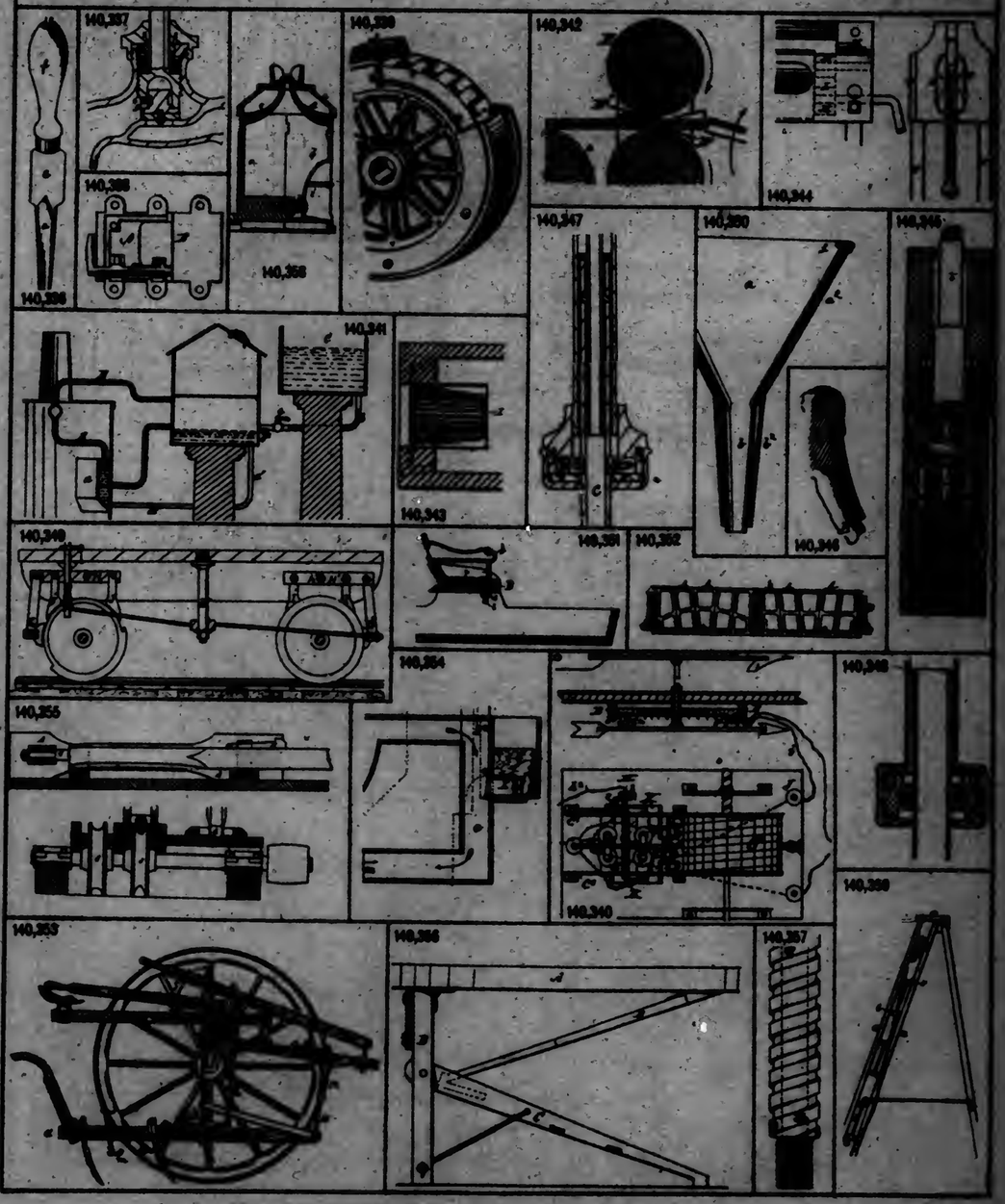
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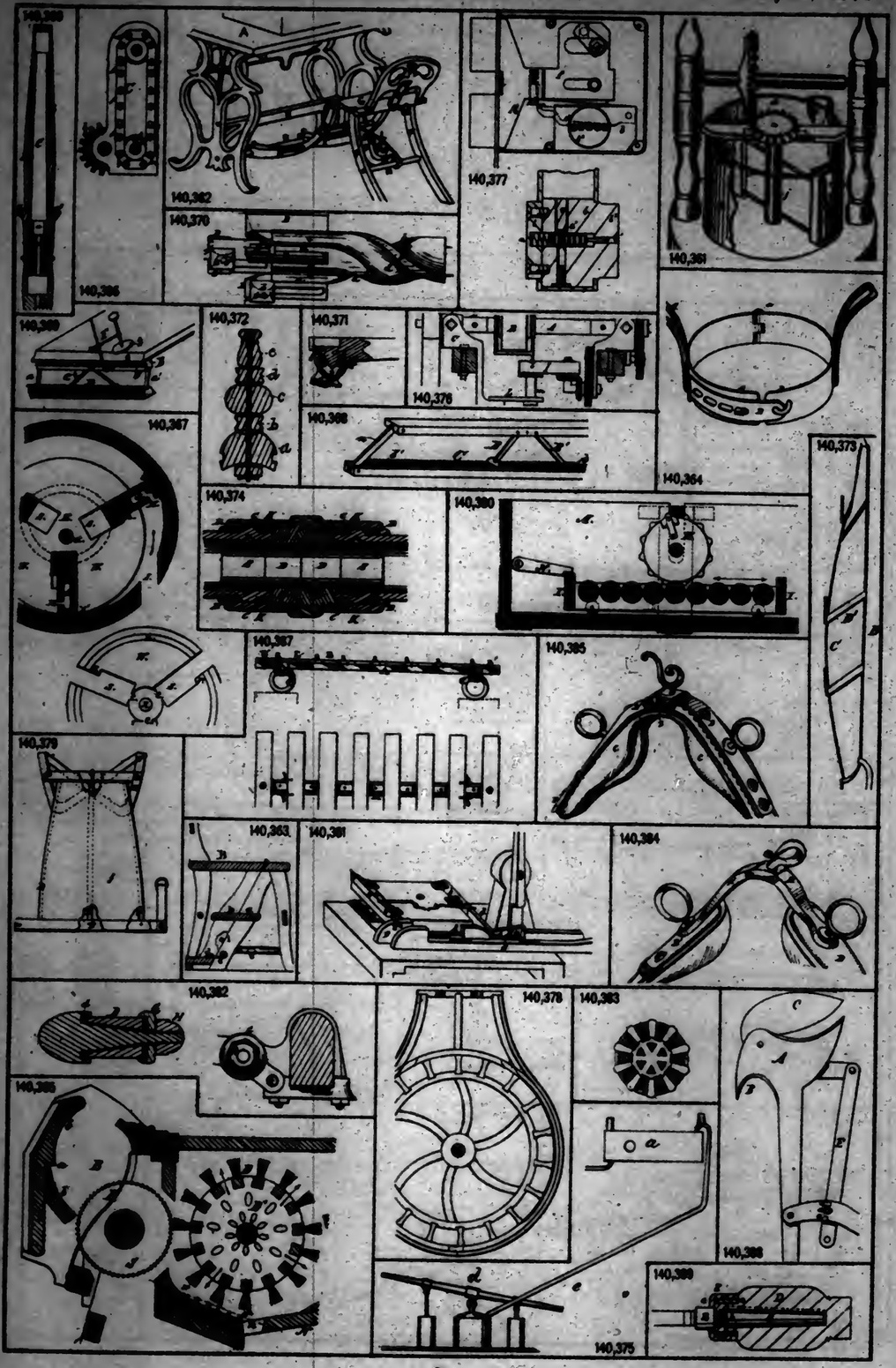
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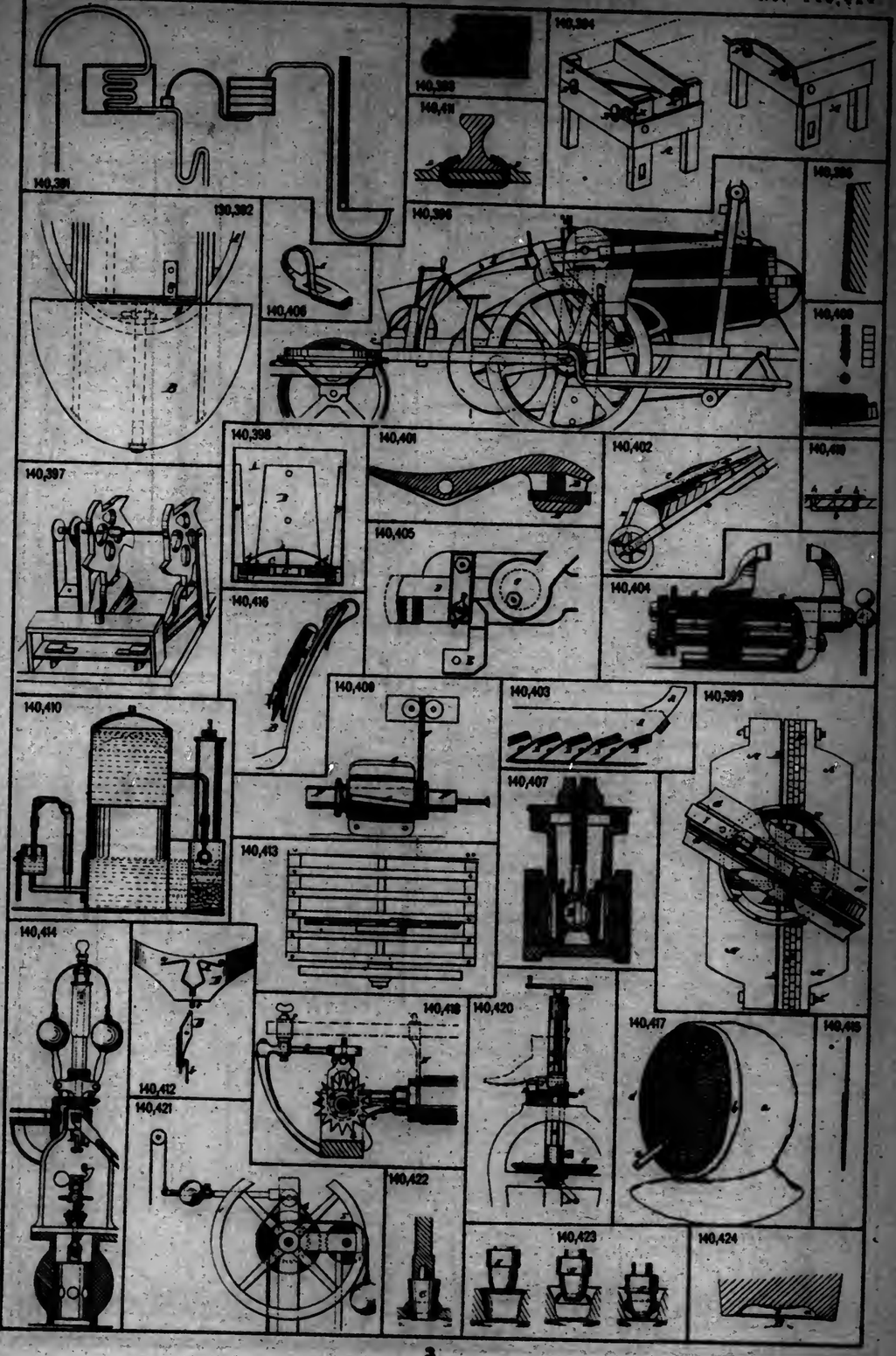


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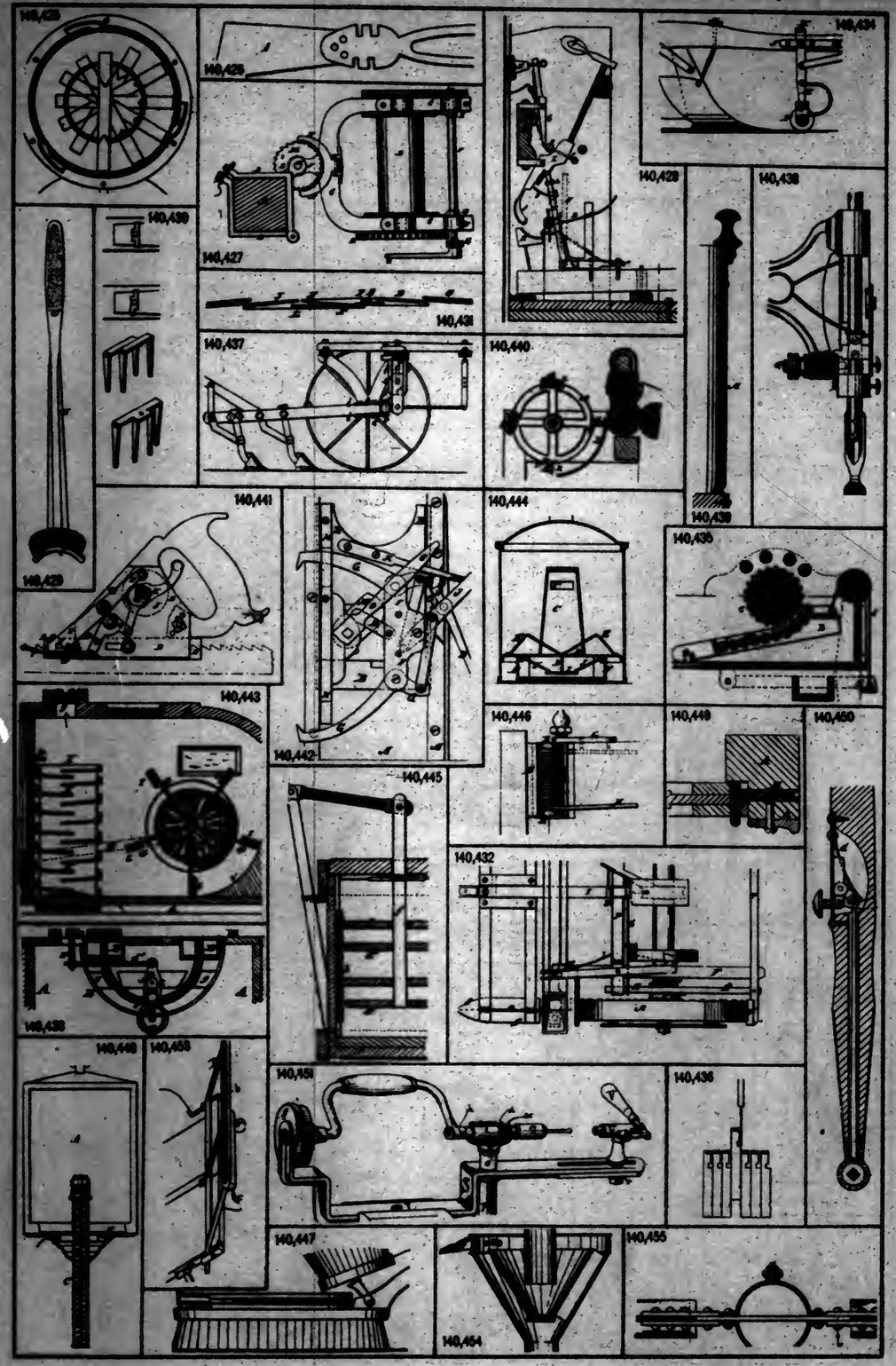
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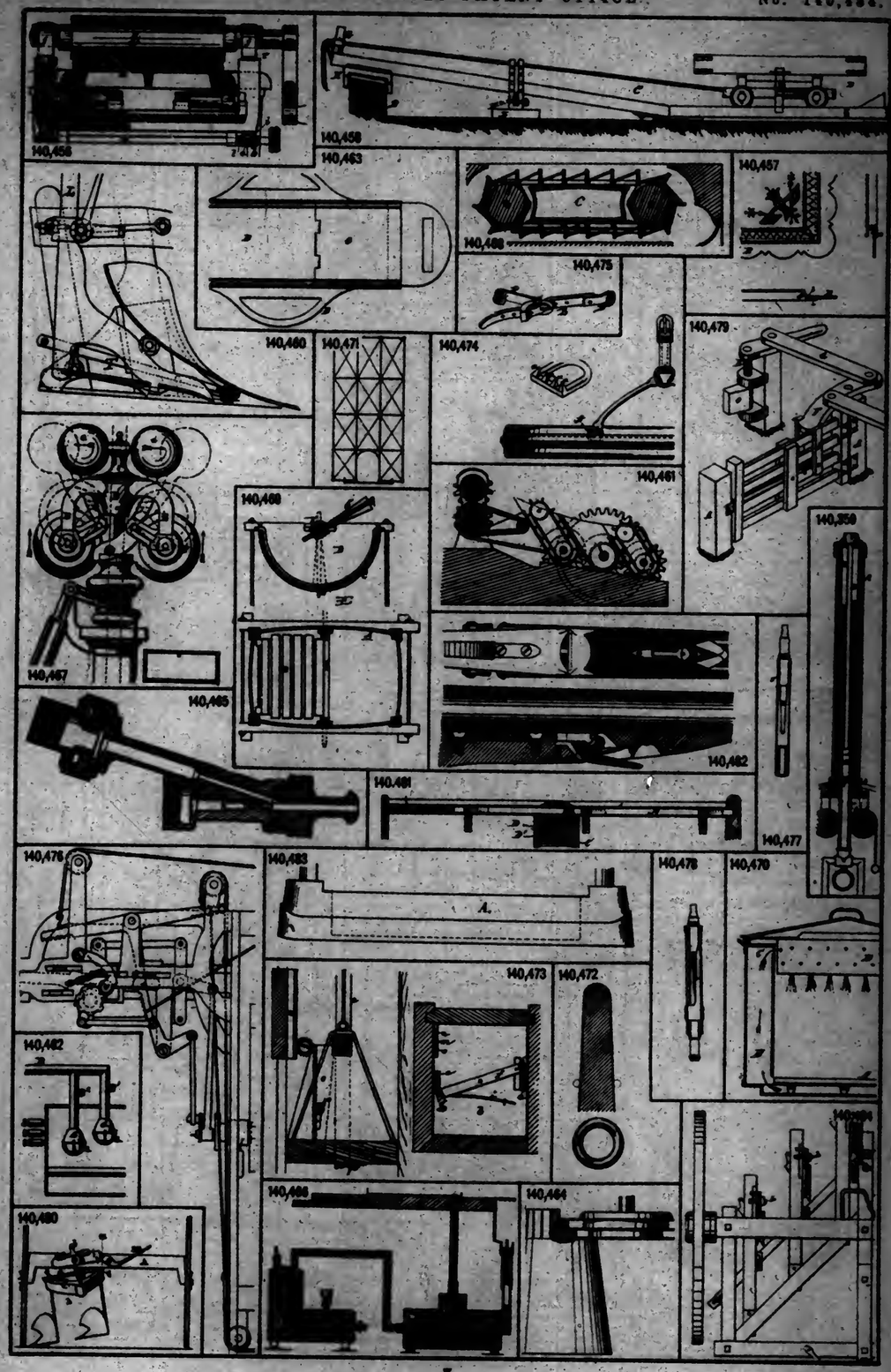


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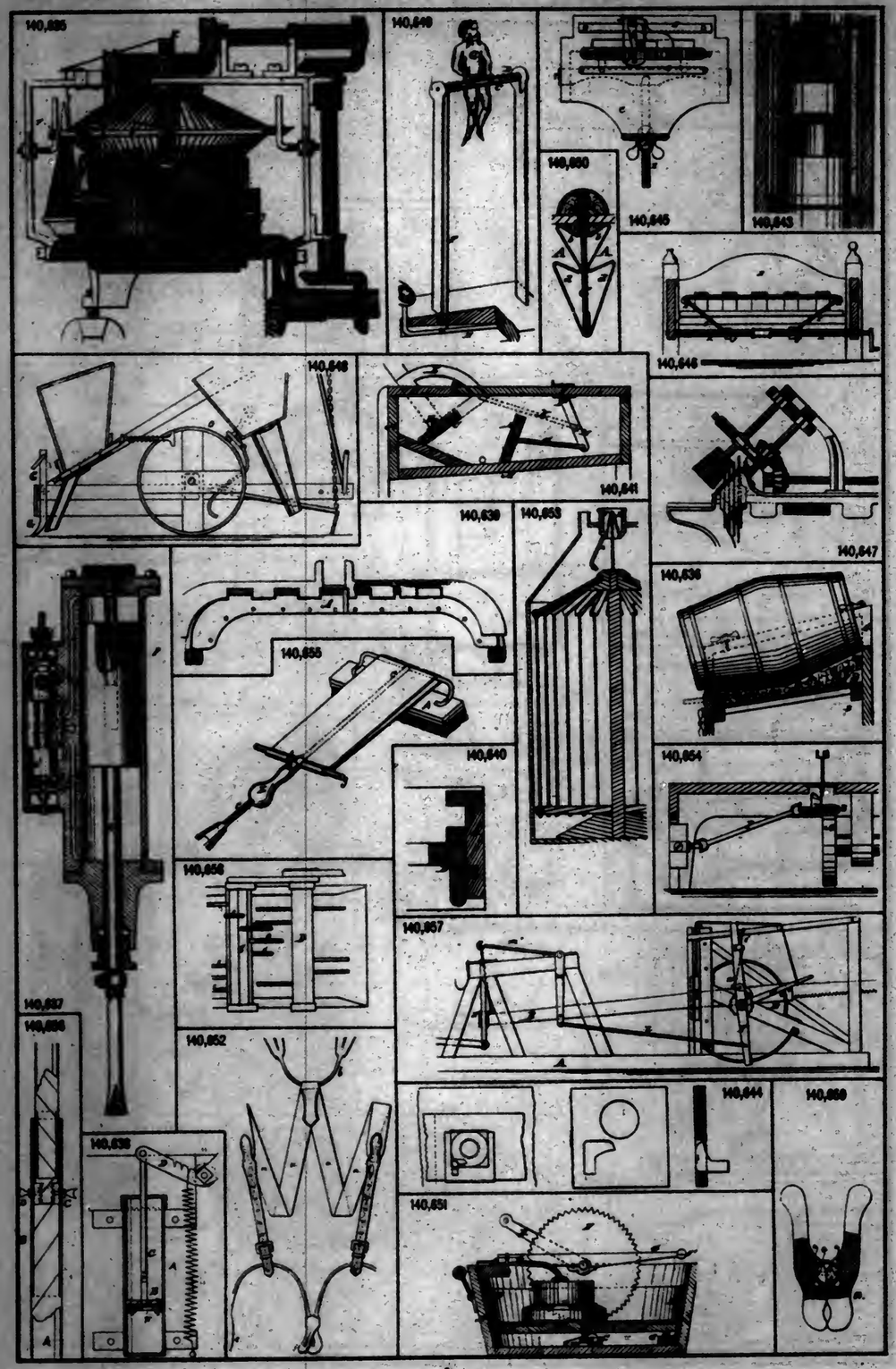
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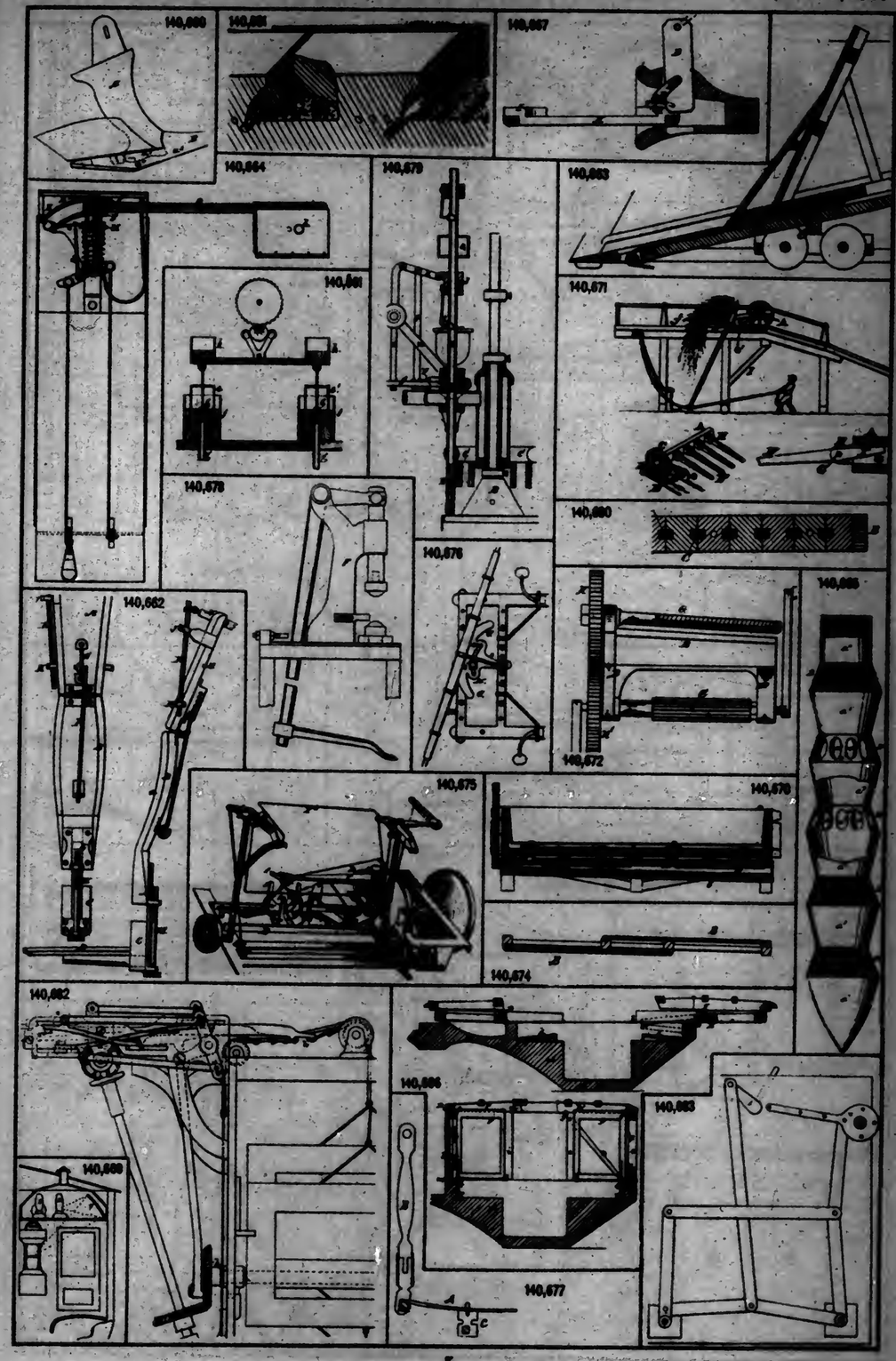
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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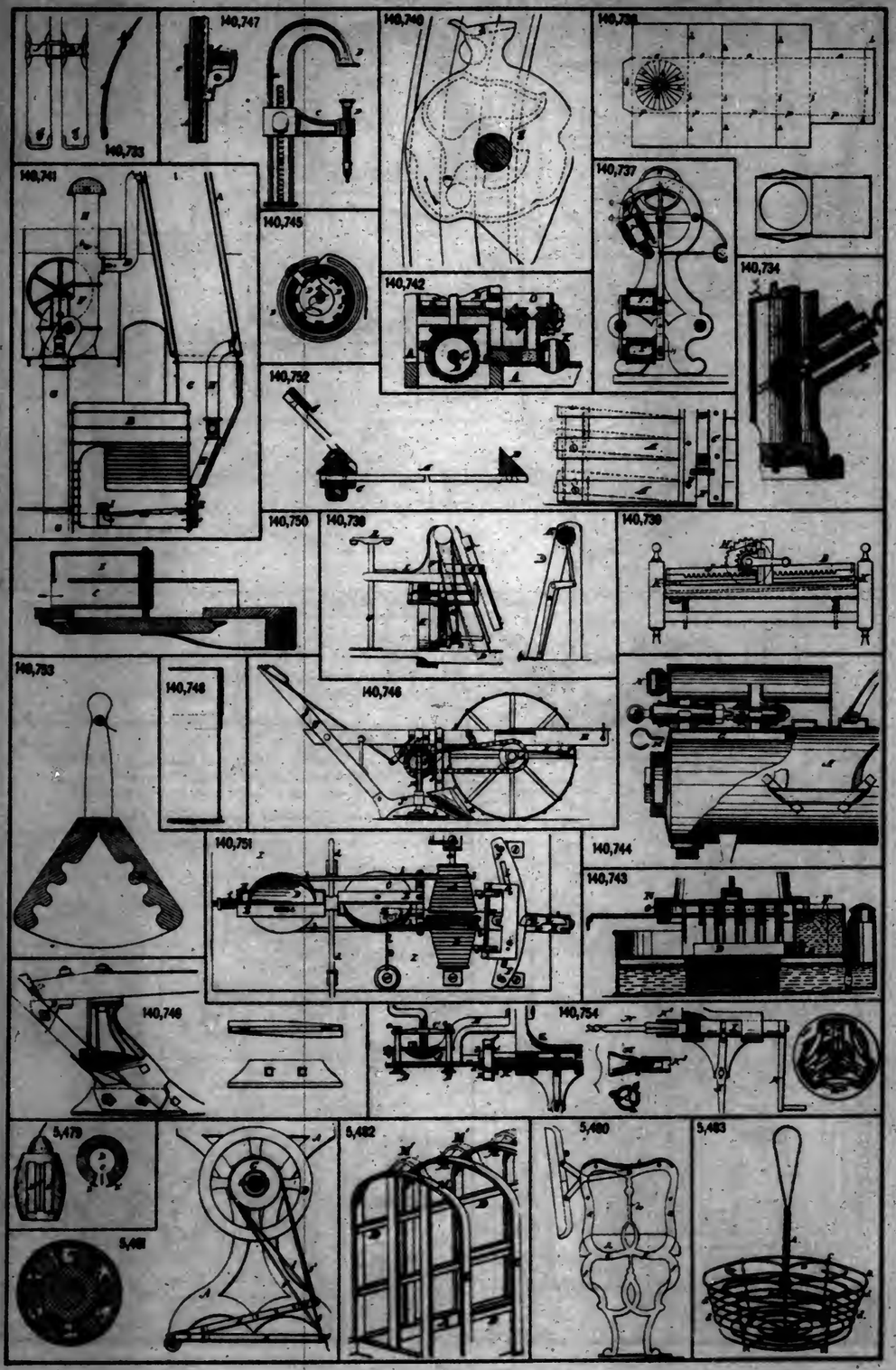
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

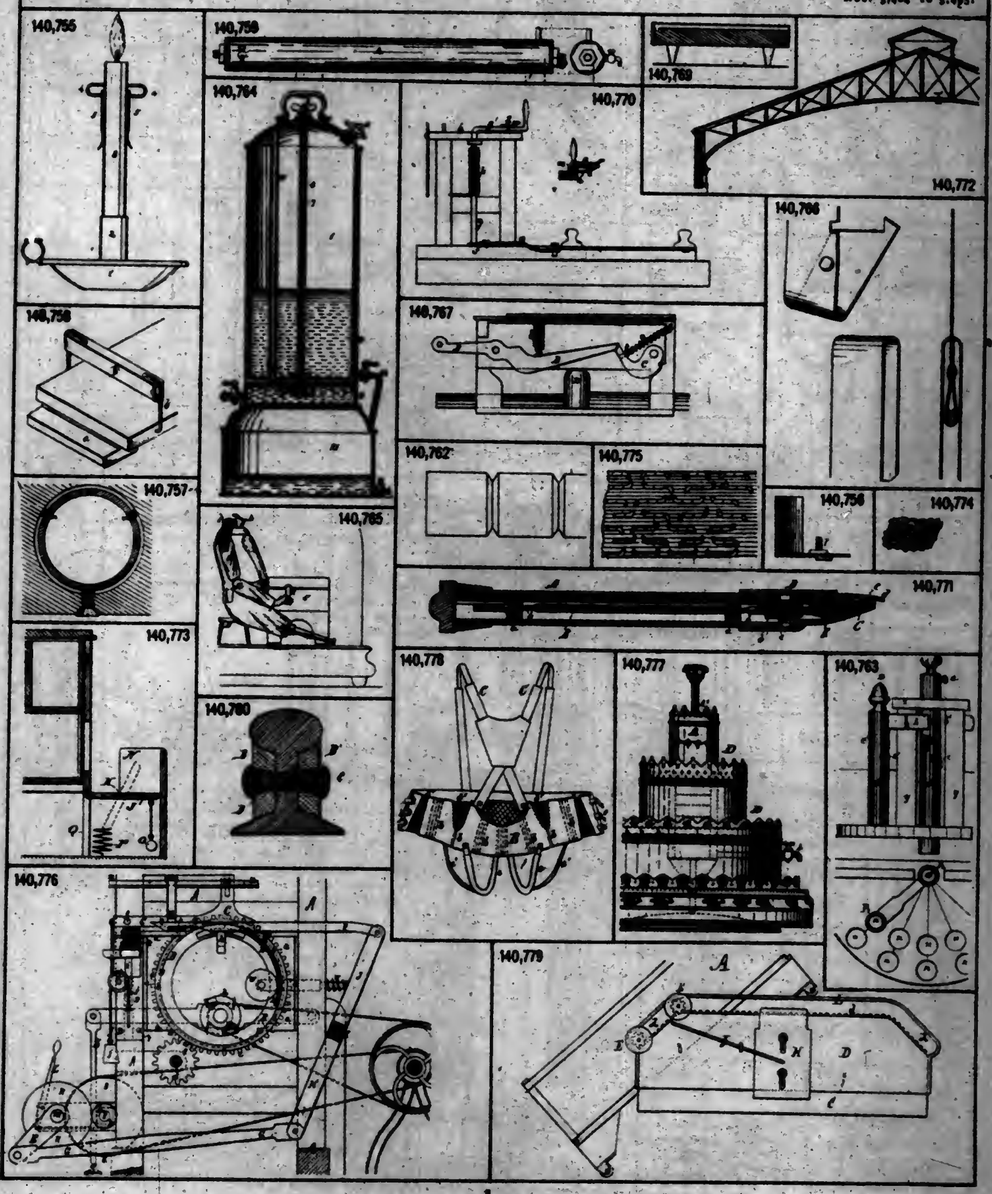
OF THE

UNITED STATES PATENT OFFICE.

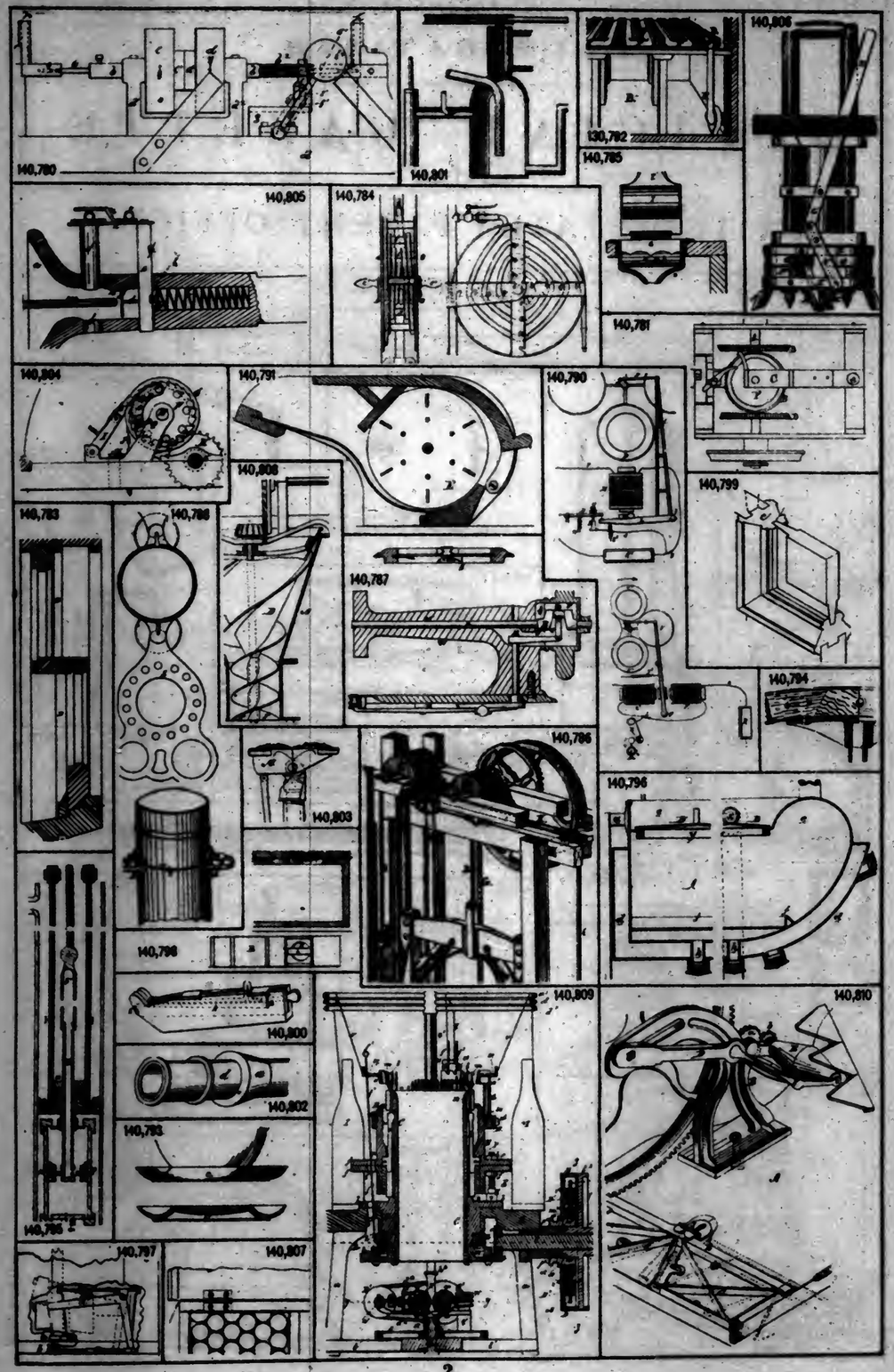
ORIGINAL PATENTS Nos. 140,733 to 140,887.

JULY 15, 1873.

REISSUED PATENTS Nos. 5,464 to 5,495.

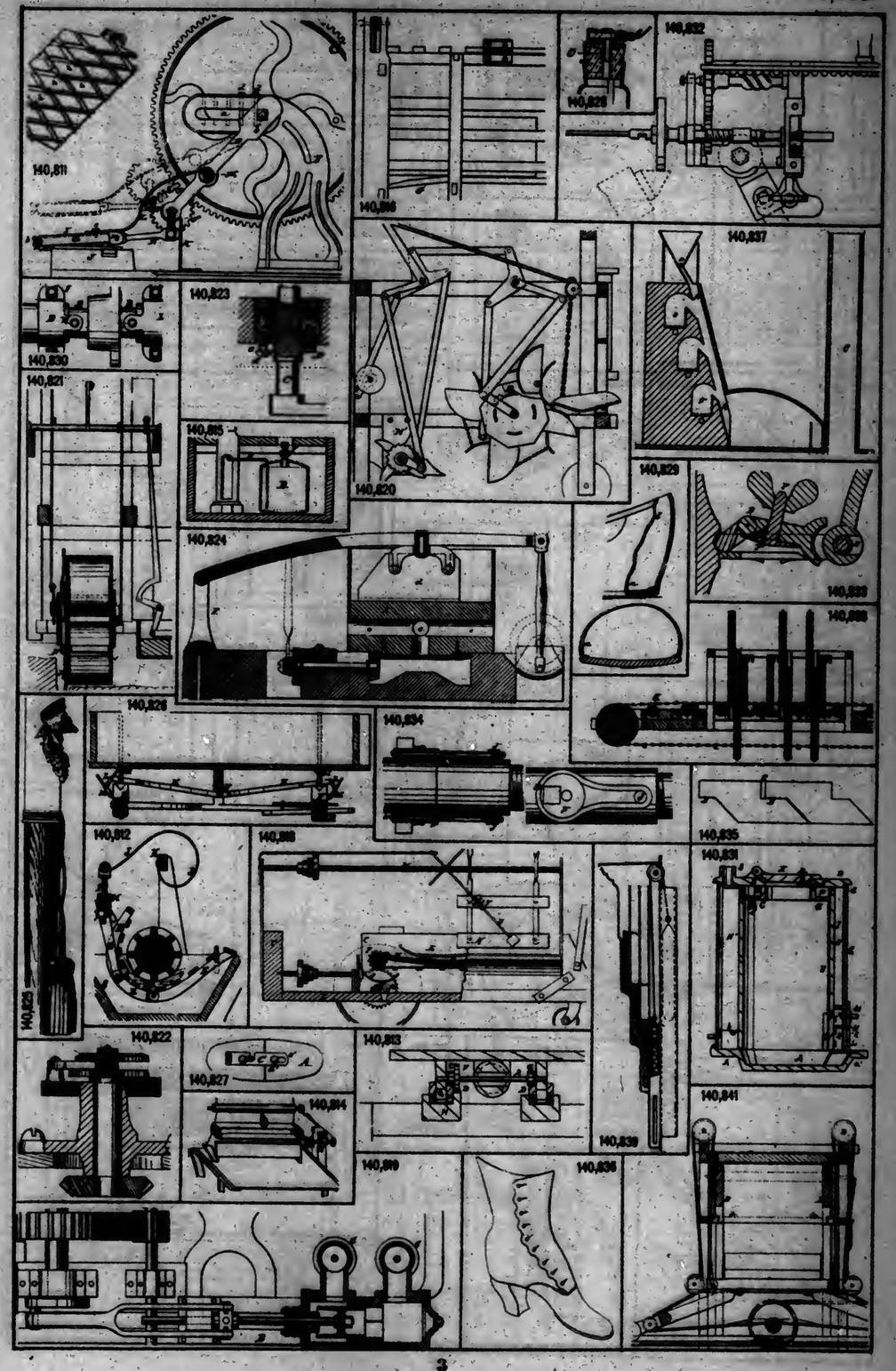


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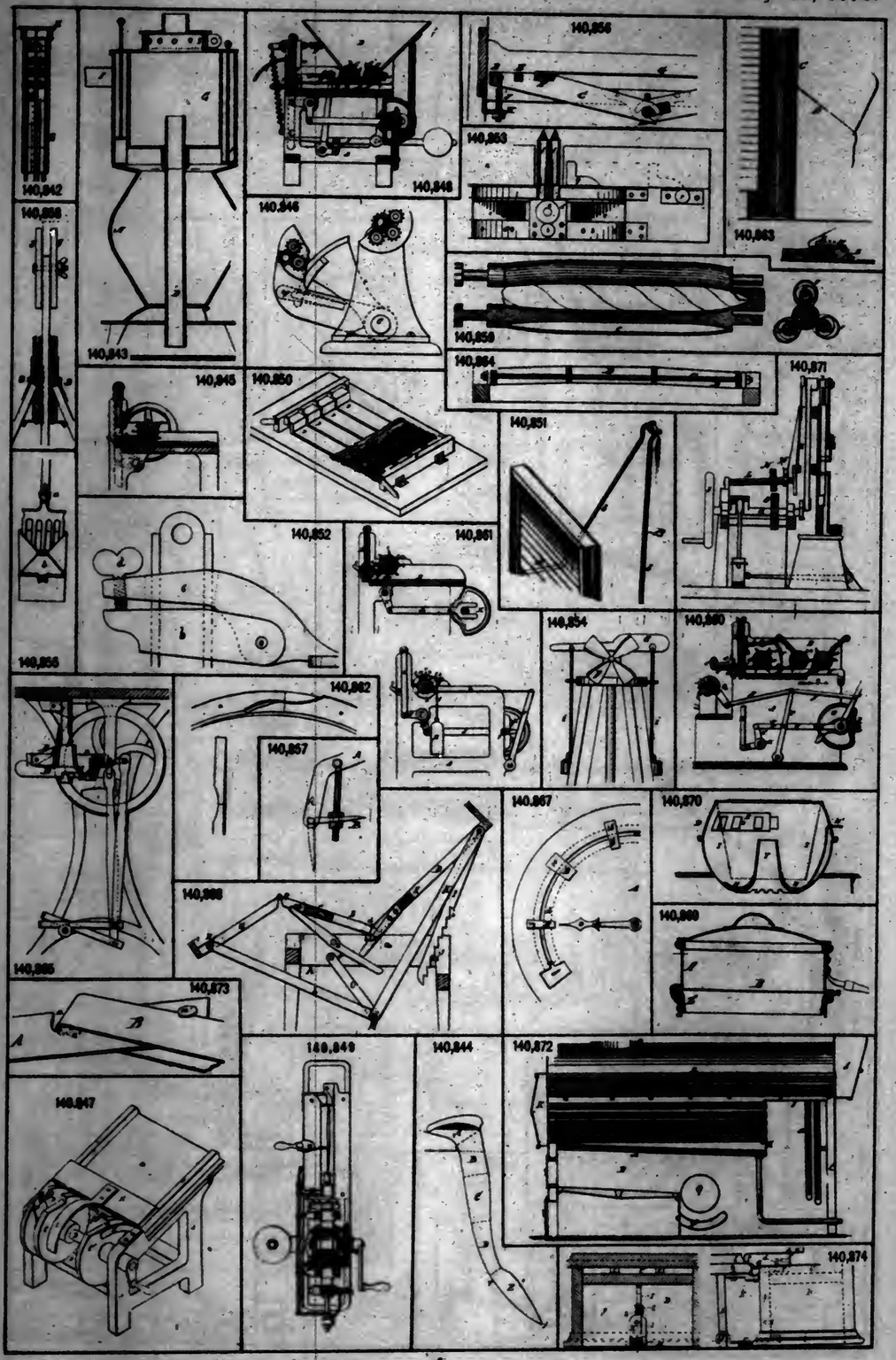
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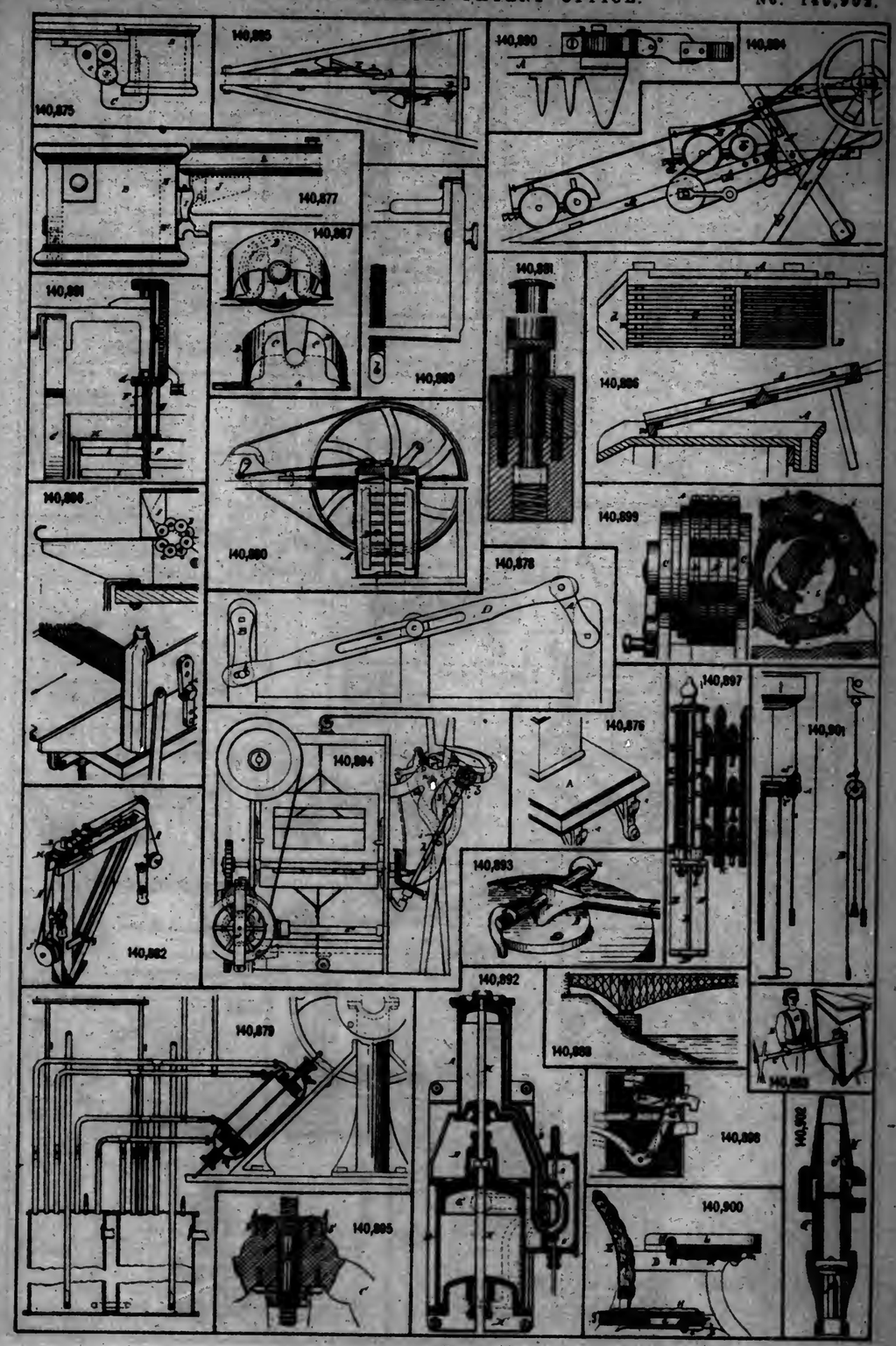


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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

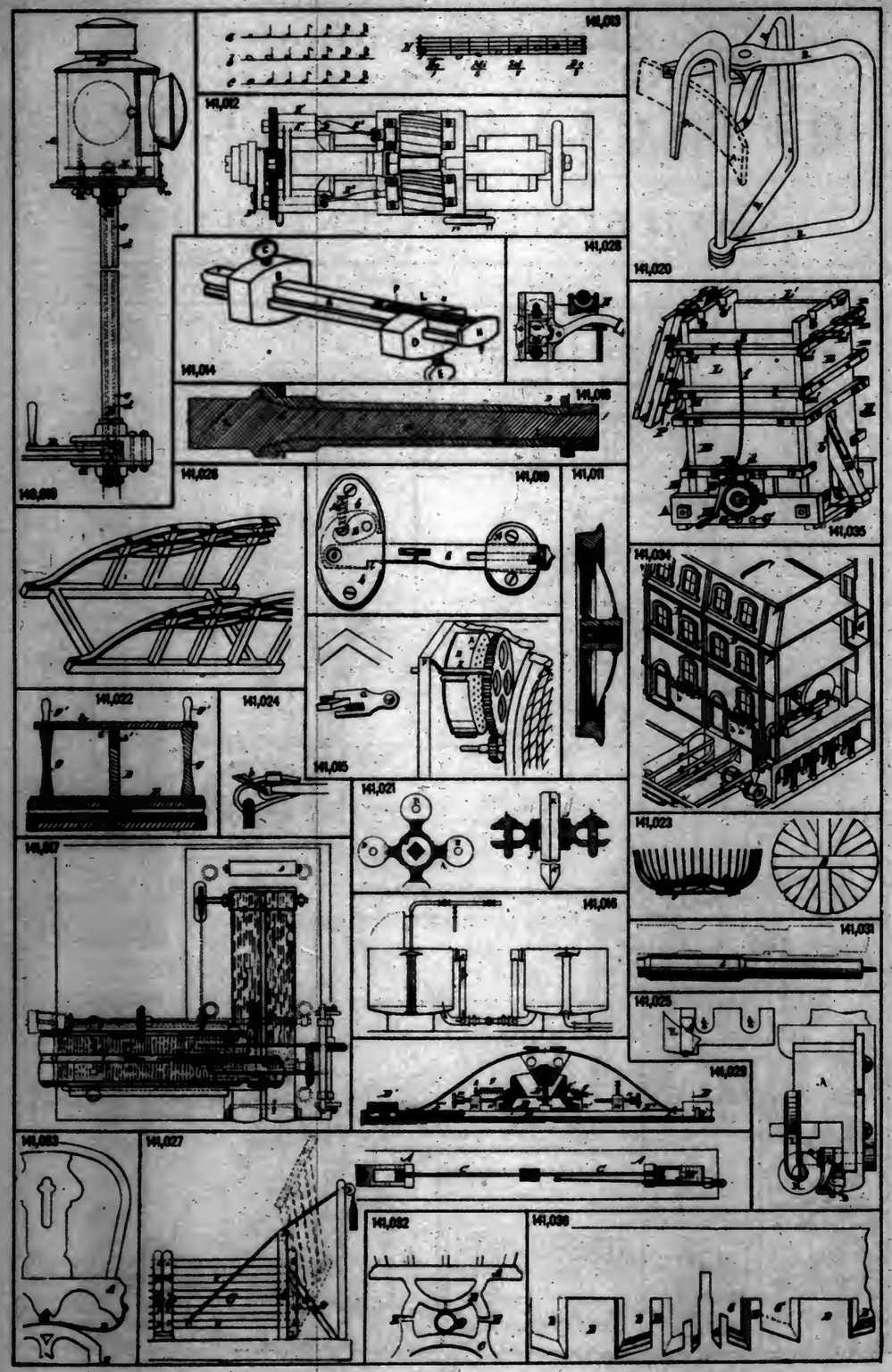
OF THE

UNITED STATES PATENT OFFICE.

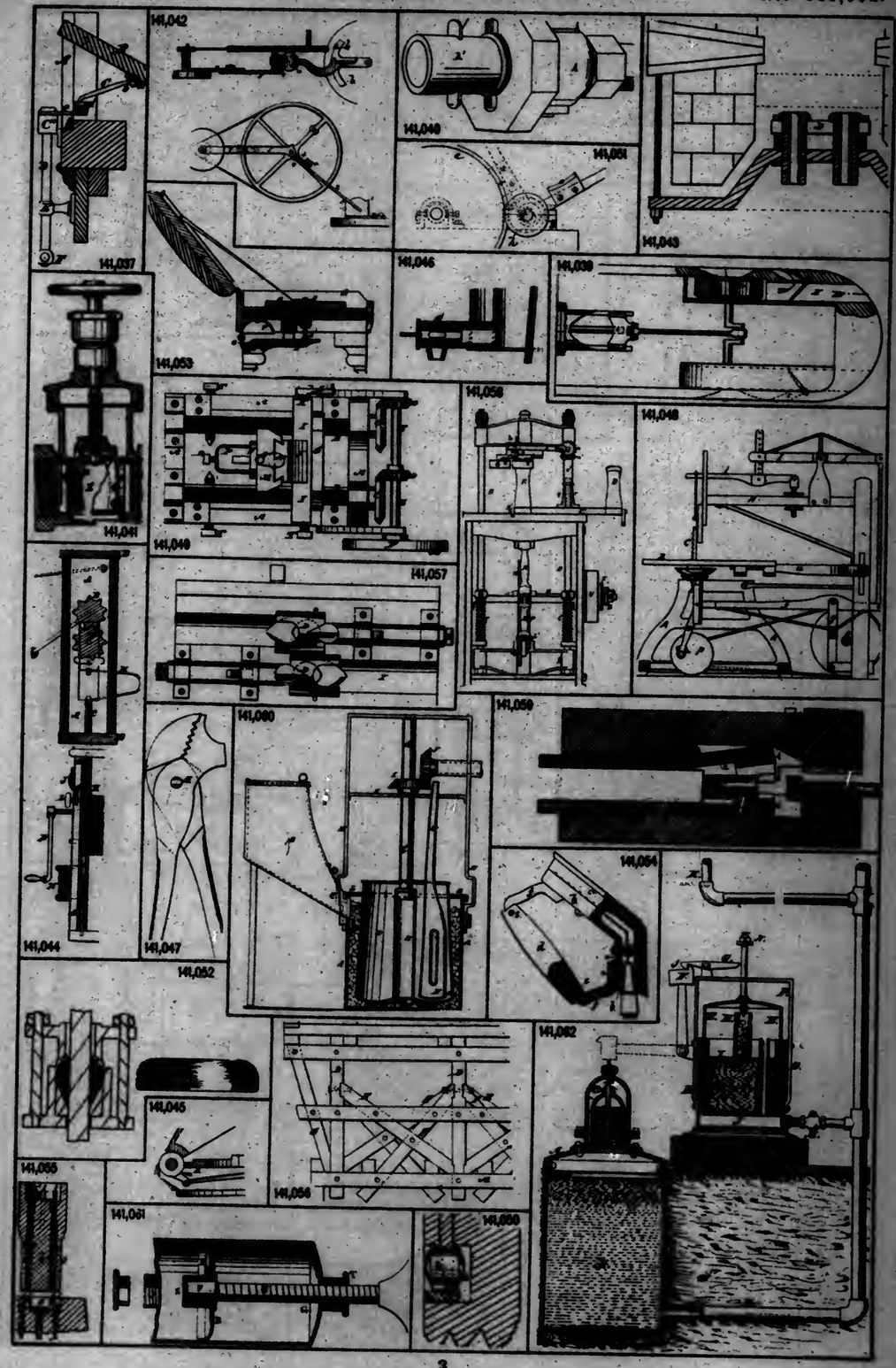
ORIGINAL PATENTS Nos. 140,968 to 141,192. JULY 22, 1873. REISSUED PATENTS Nos. 5,496 to 5,501.

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS.)

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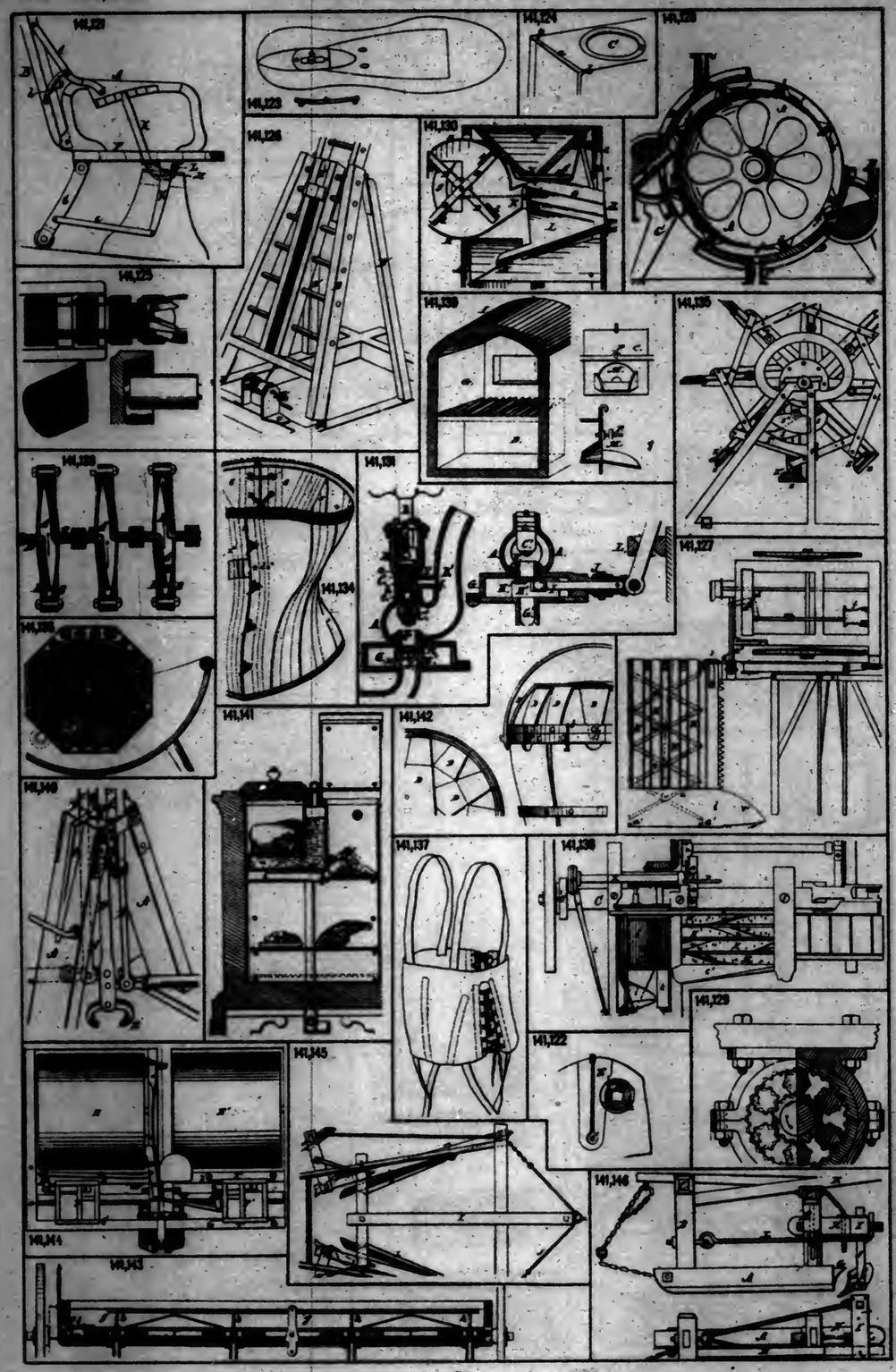
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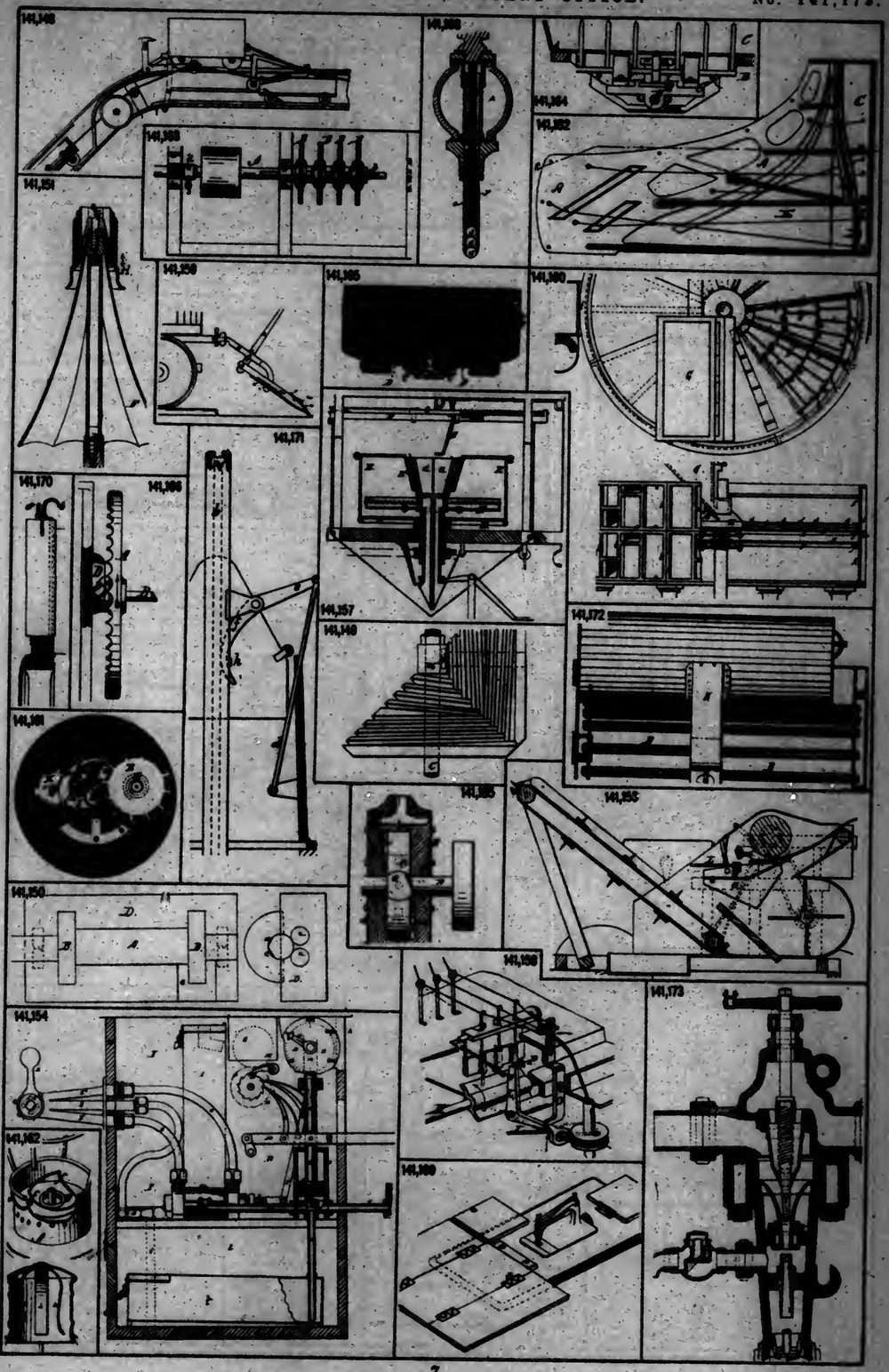
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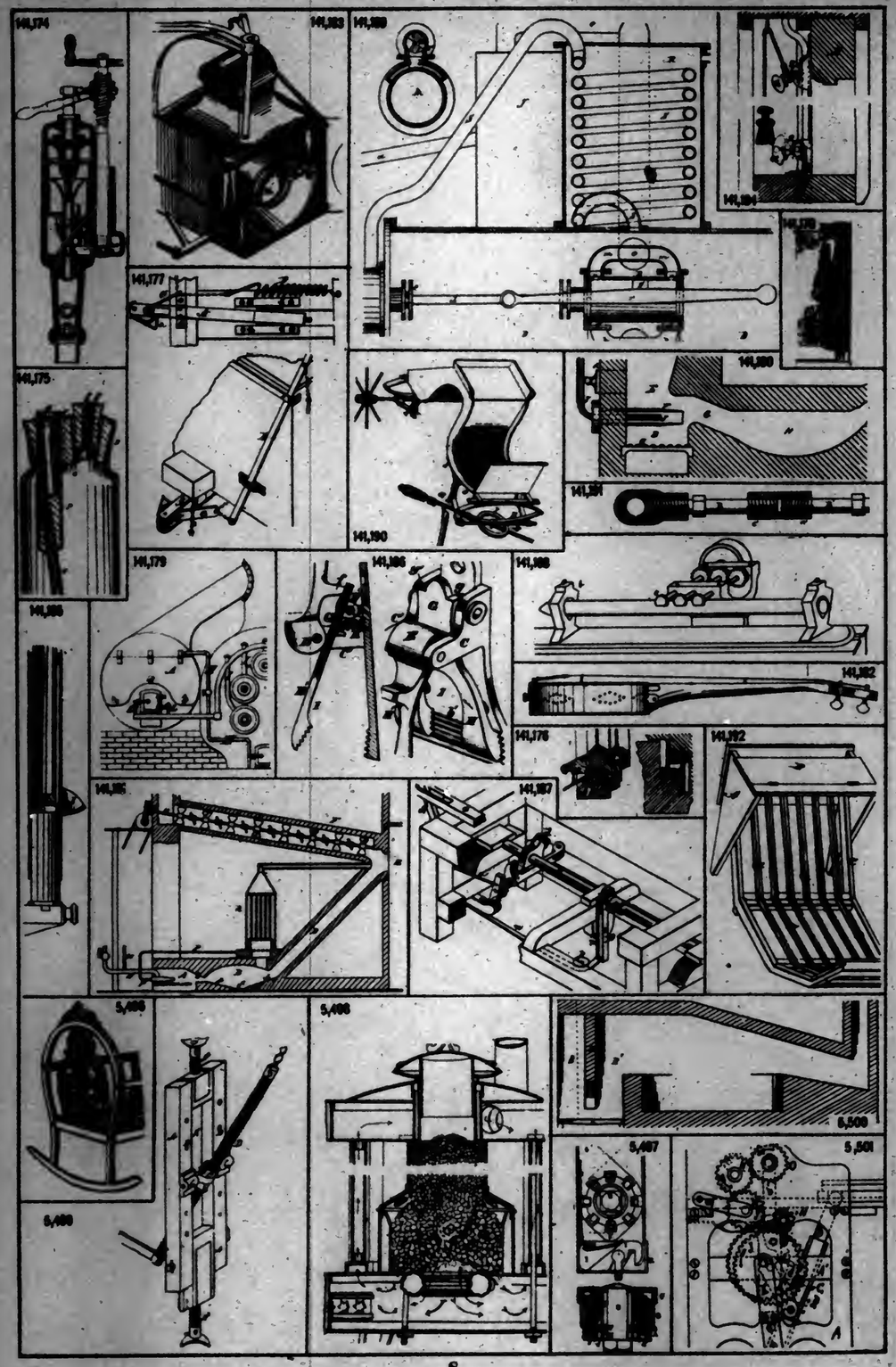
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

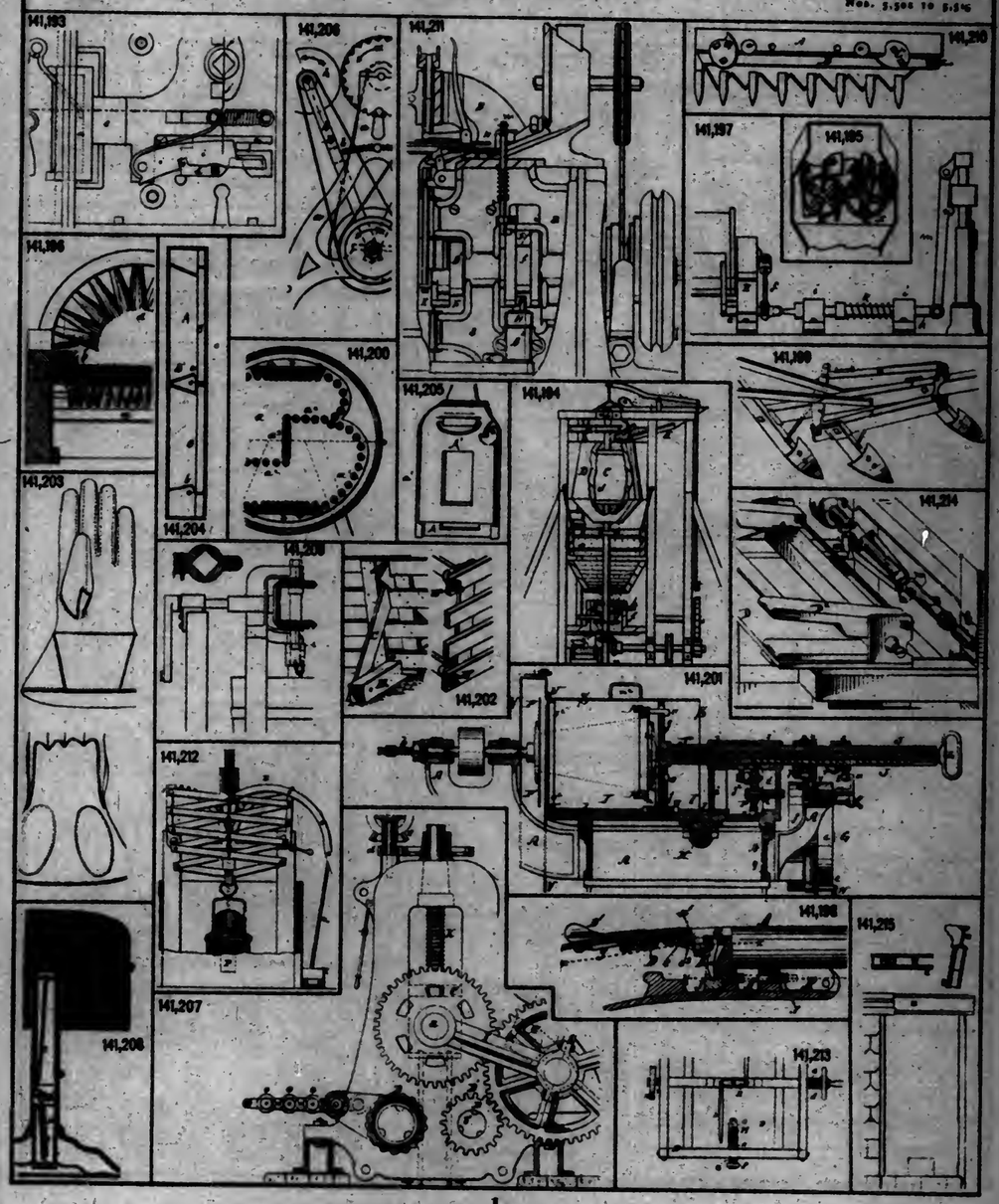
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UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS
Nos. 141,193 to 141,411.

JULY 29, 1873.

REISSUED PATENTS
Nos. 5,502 to 5,506



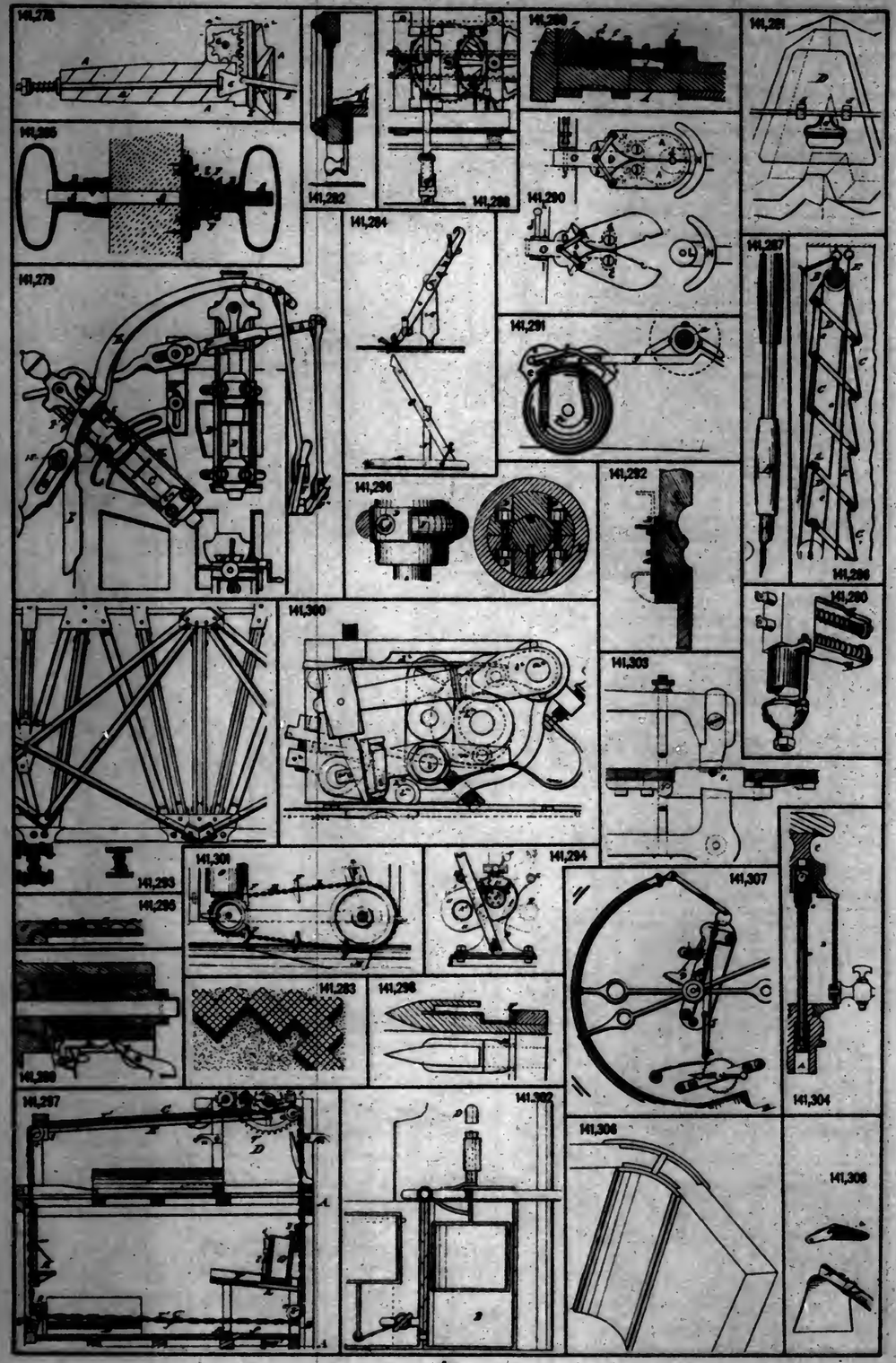
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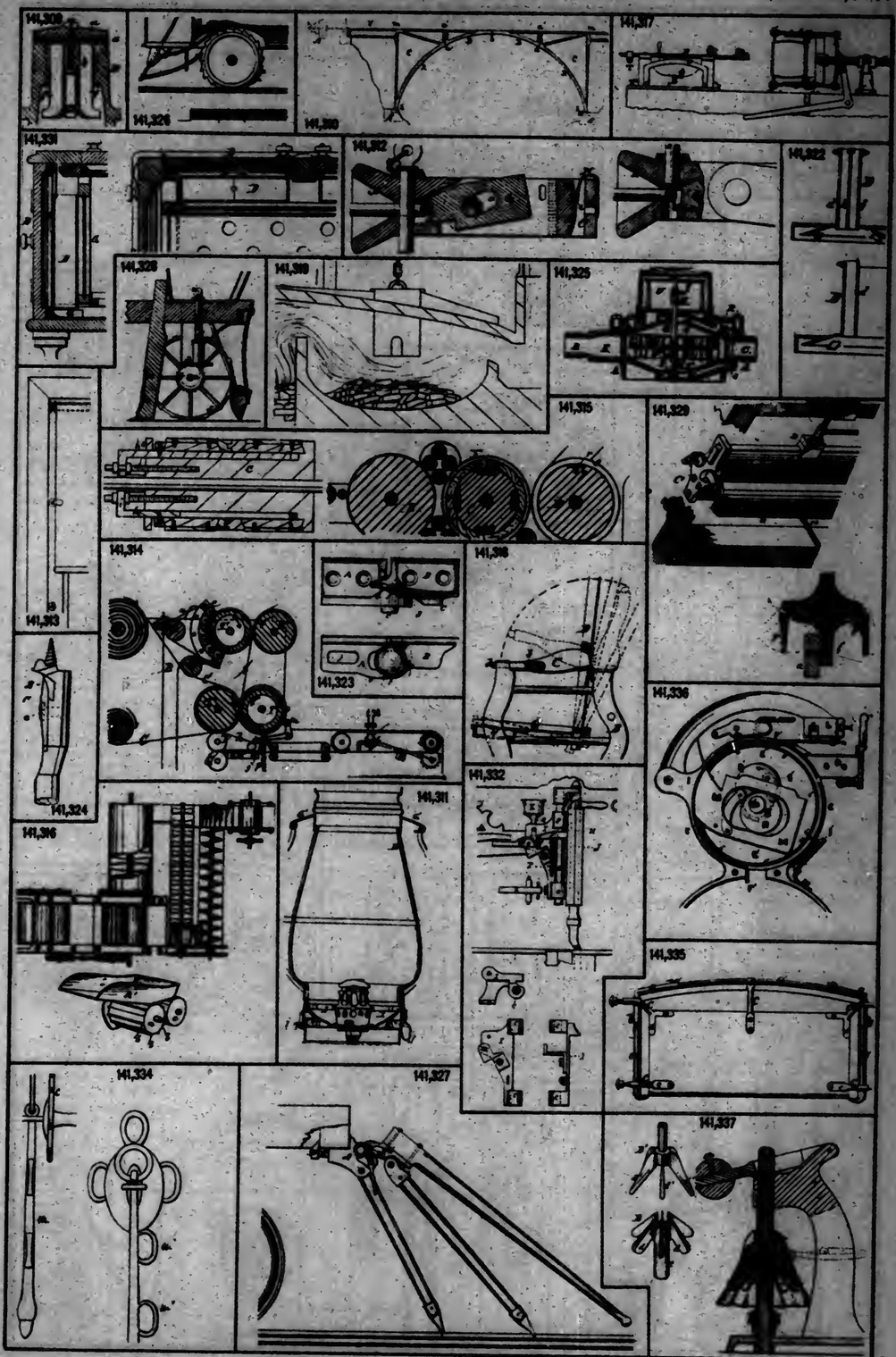
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A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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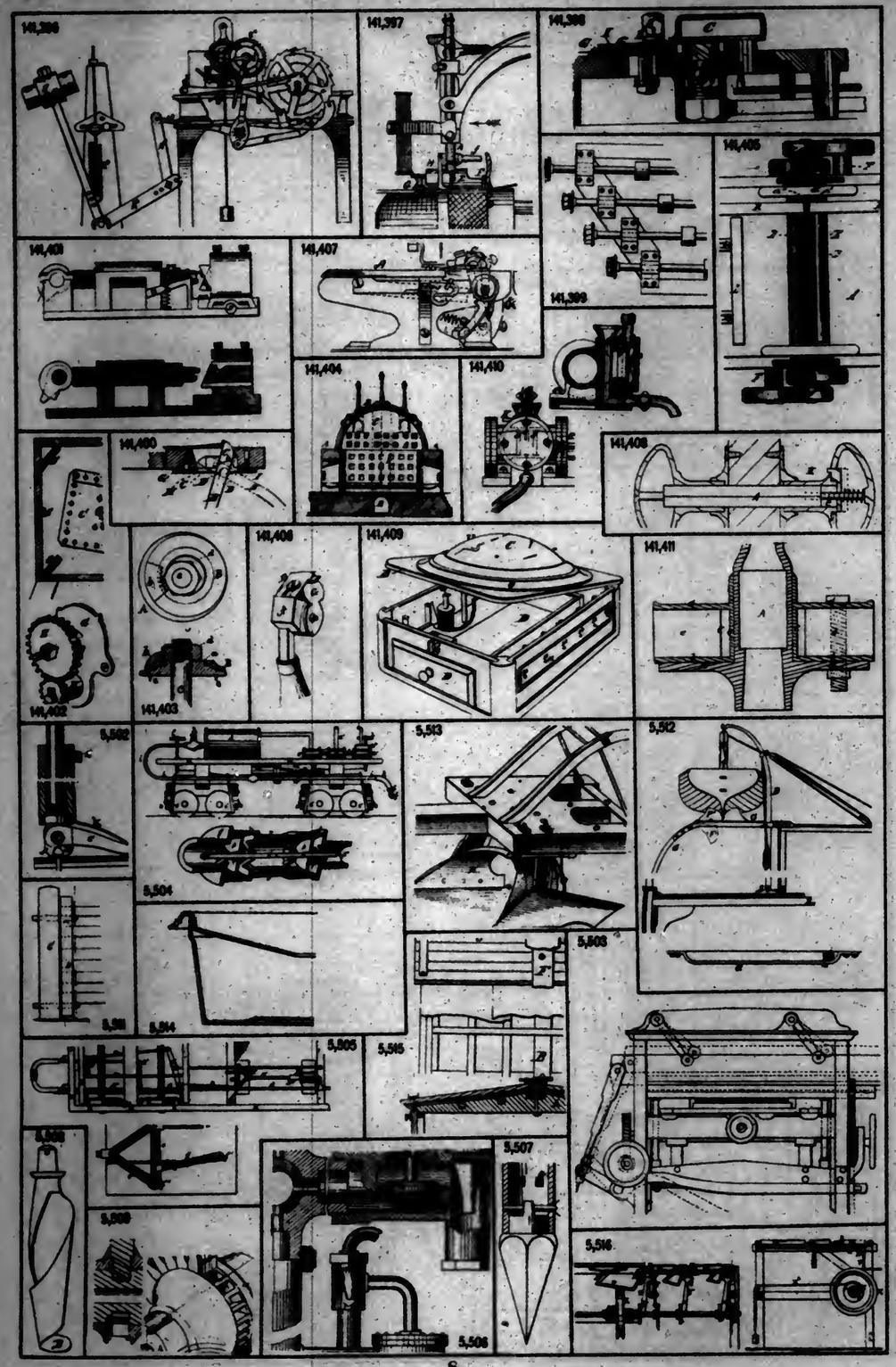
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

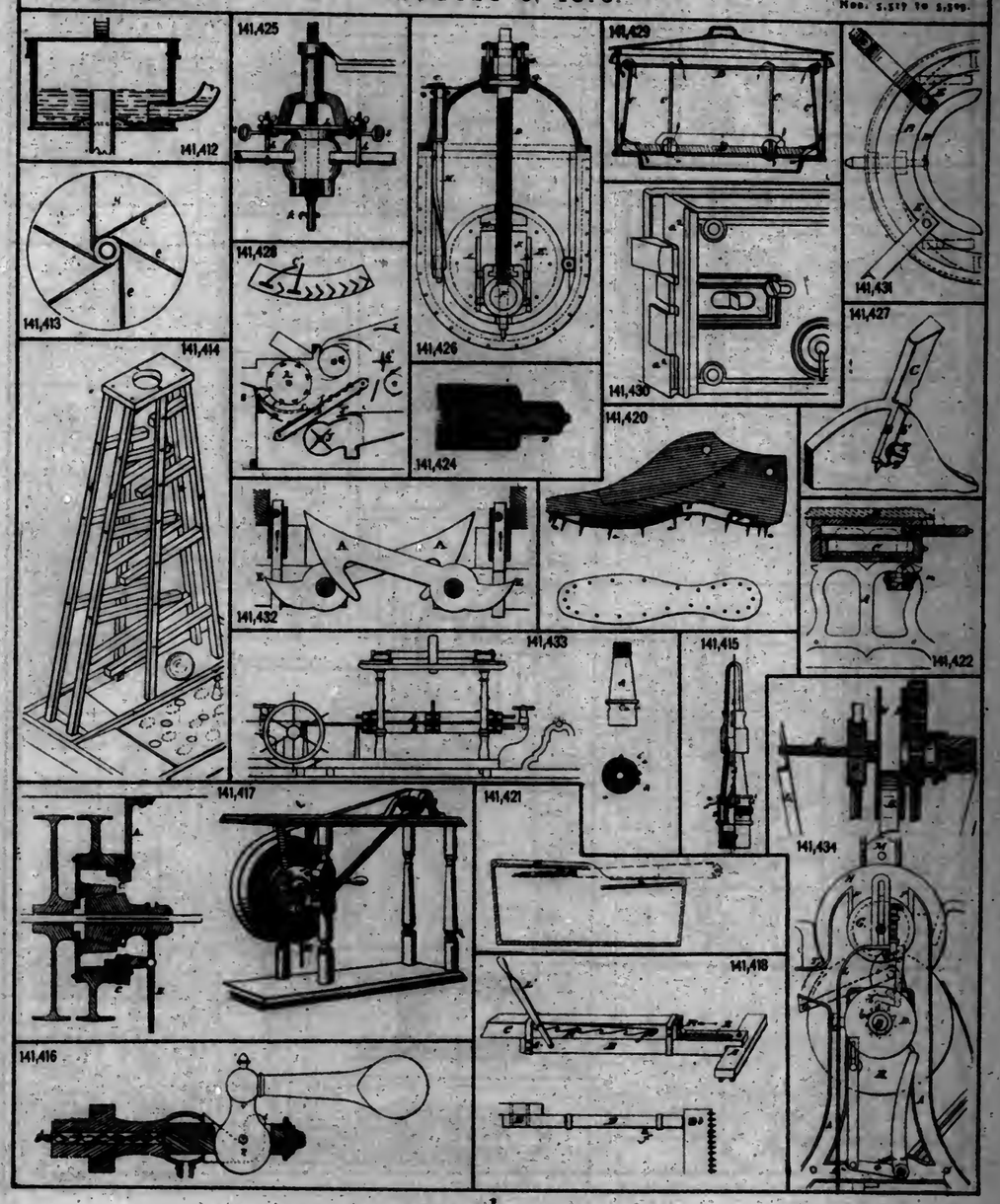
OF THE

UNITED STATES PATENT OFFICE.

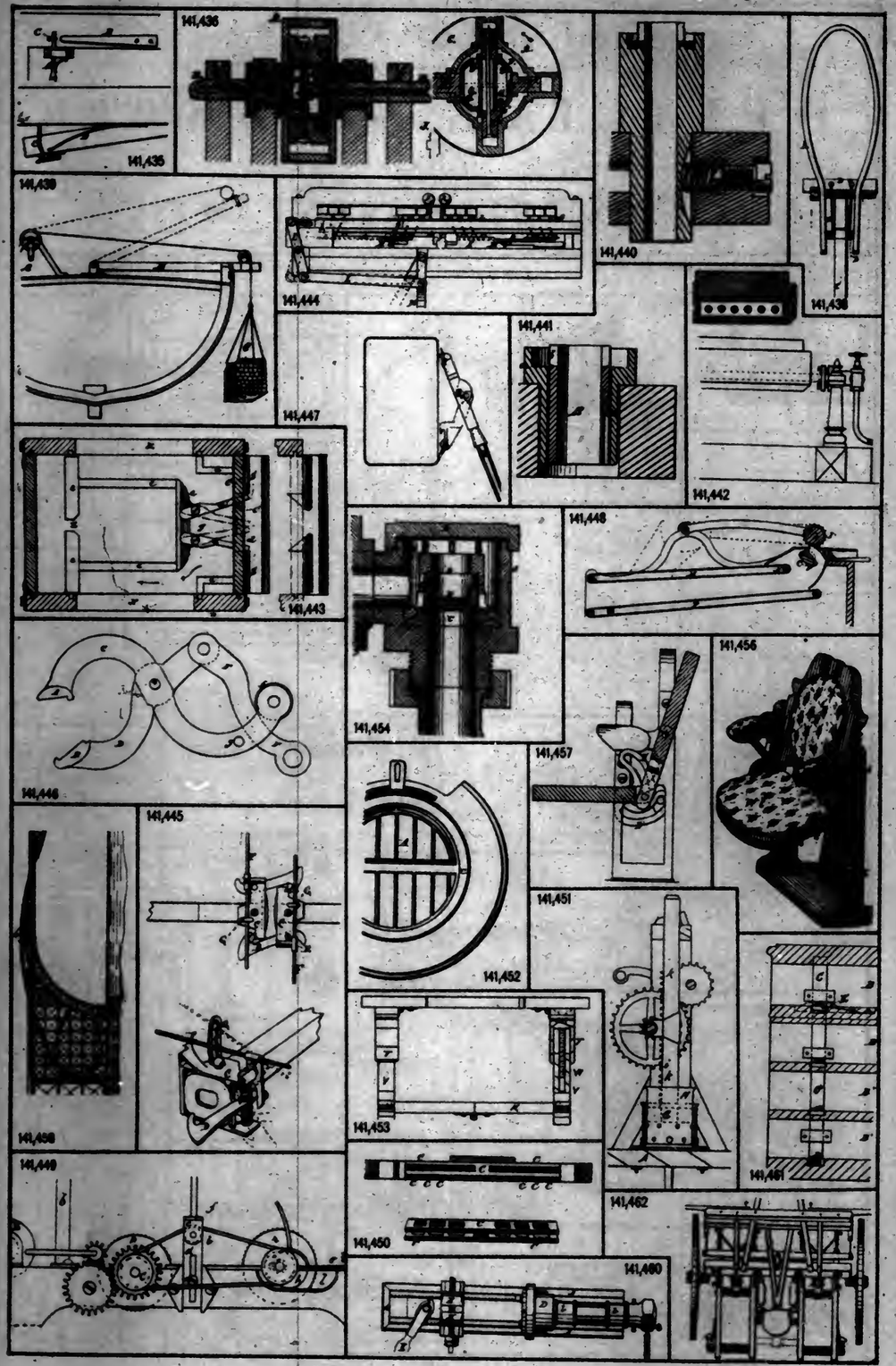
ORIGINAL PATENTS Nos. 141,396 to 141,516.

AUGUST 5, 1873.

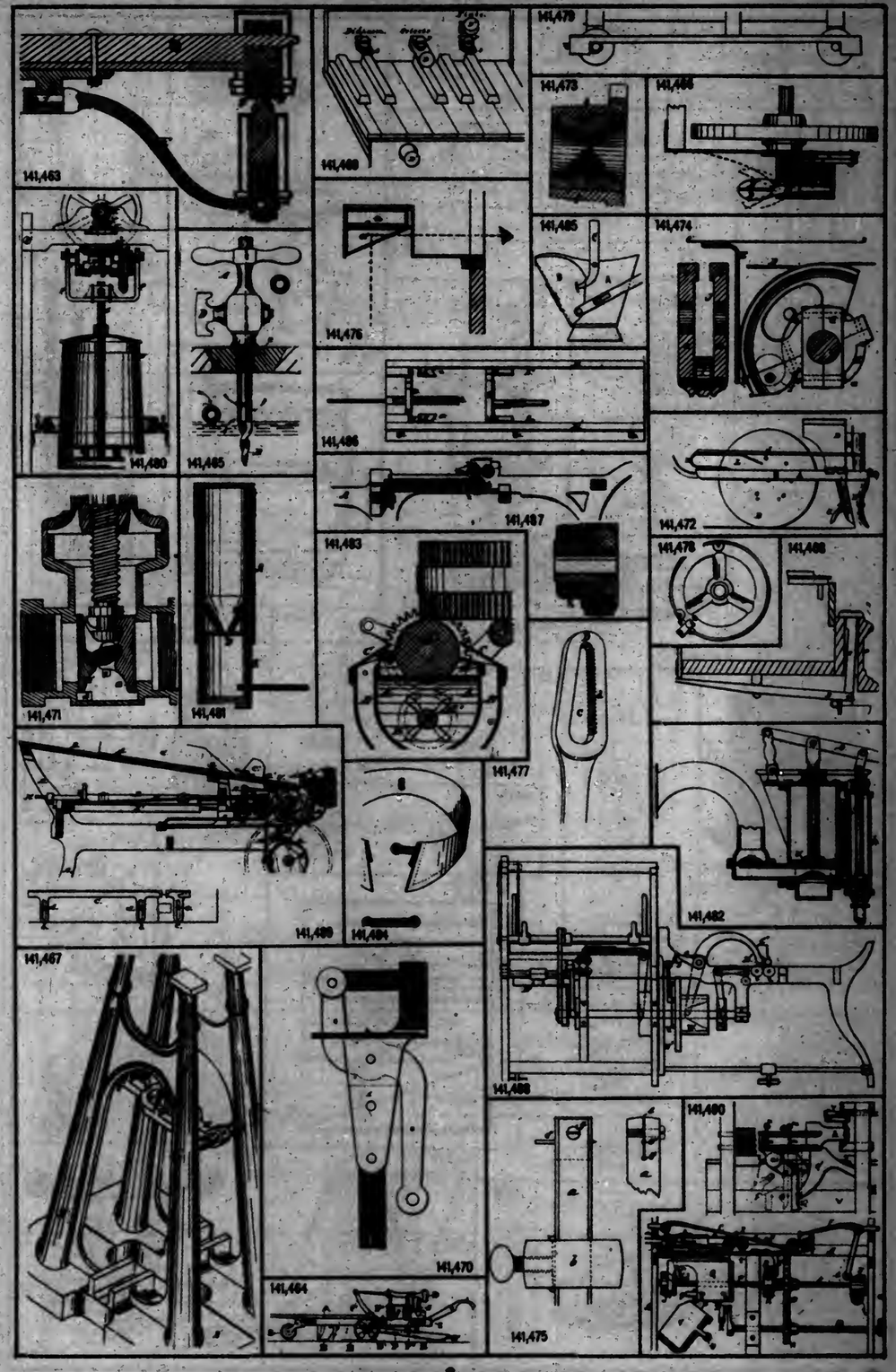
REISSUED PATENTS Nos. 5,502 to 5,516.



AM. PHOTO LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC CO. N.Y. OSBORNE'S PROCESS

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AM PHOTO-LITHOGRAPHIC CO. N.Y. OSBORNE'S PROCESS

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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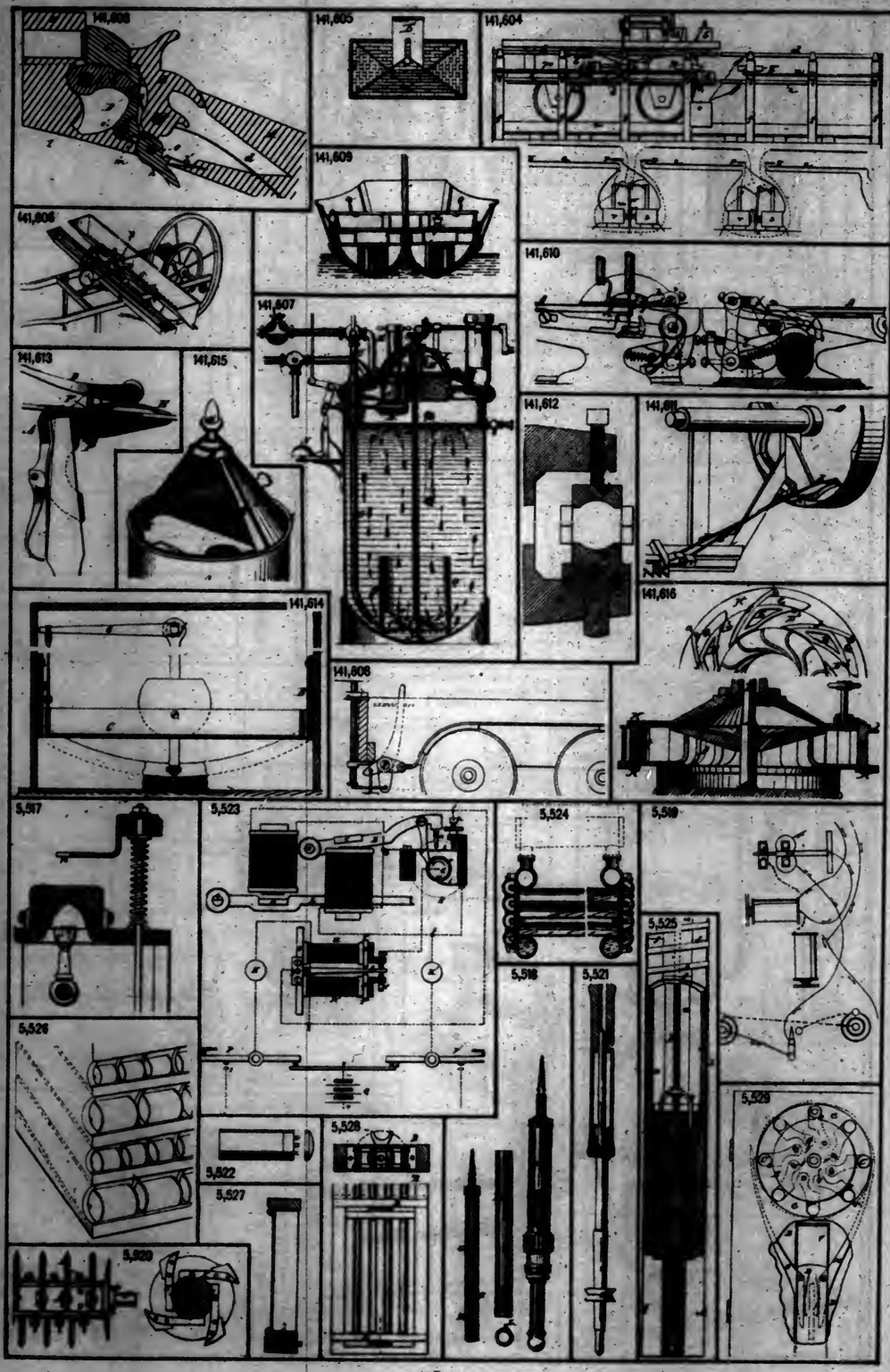
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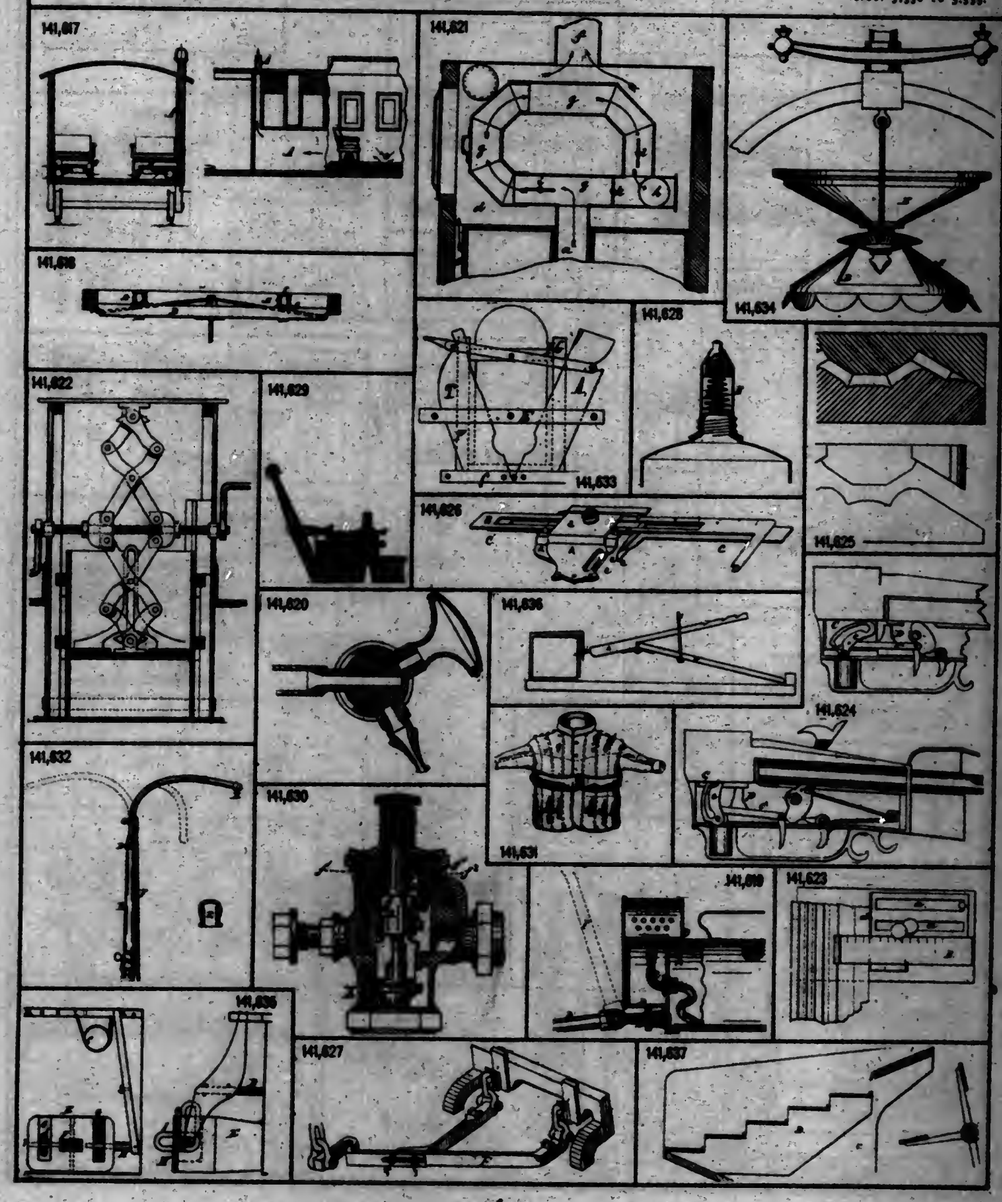
ILLUSTRATIONS.

OFFICIAL GAZETTE

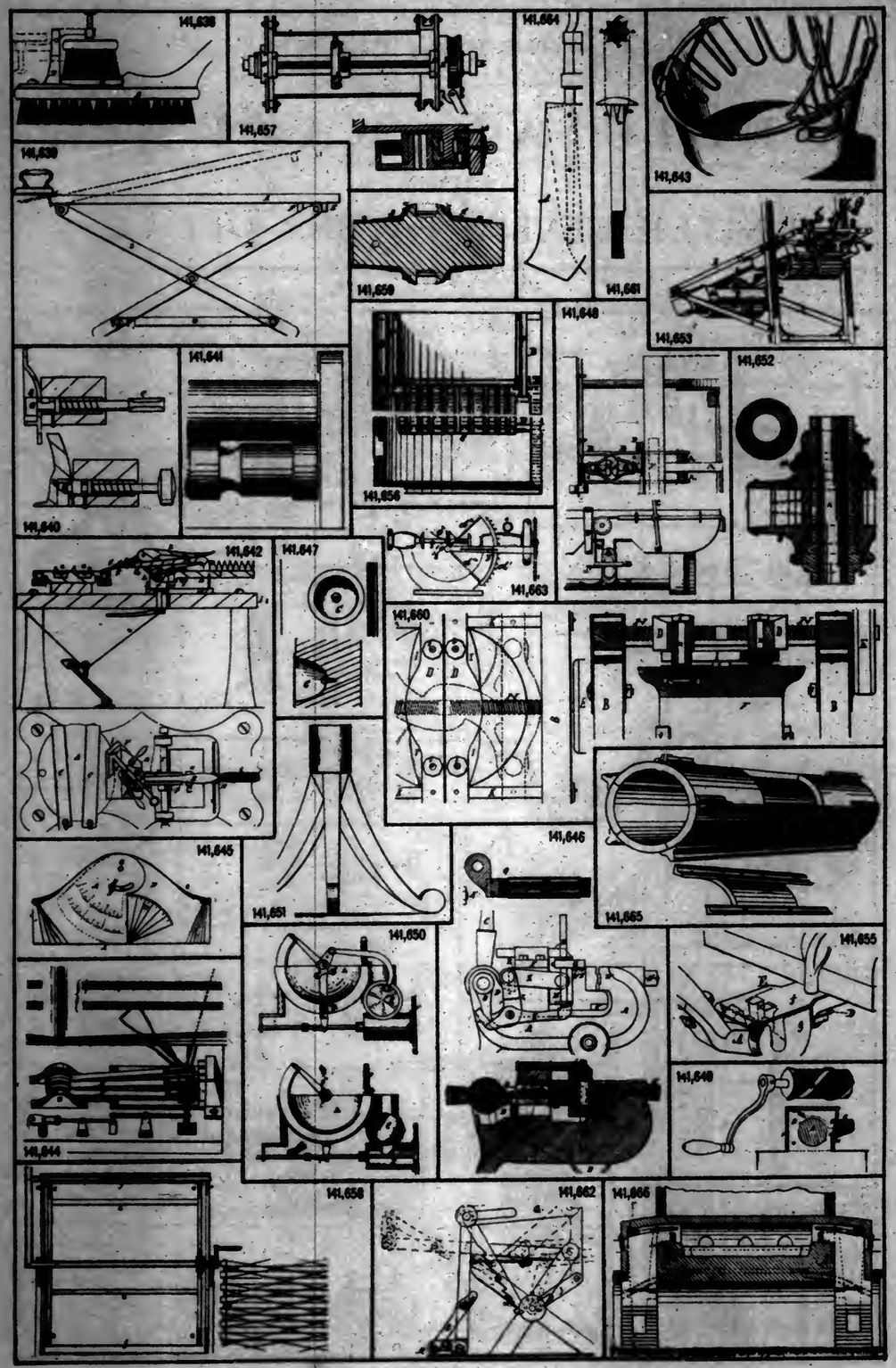
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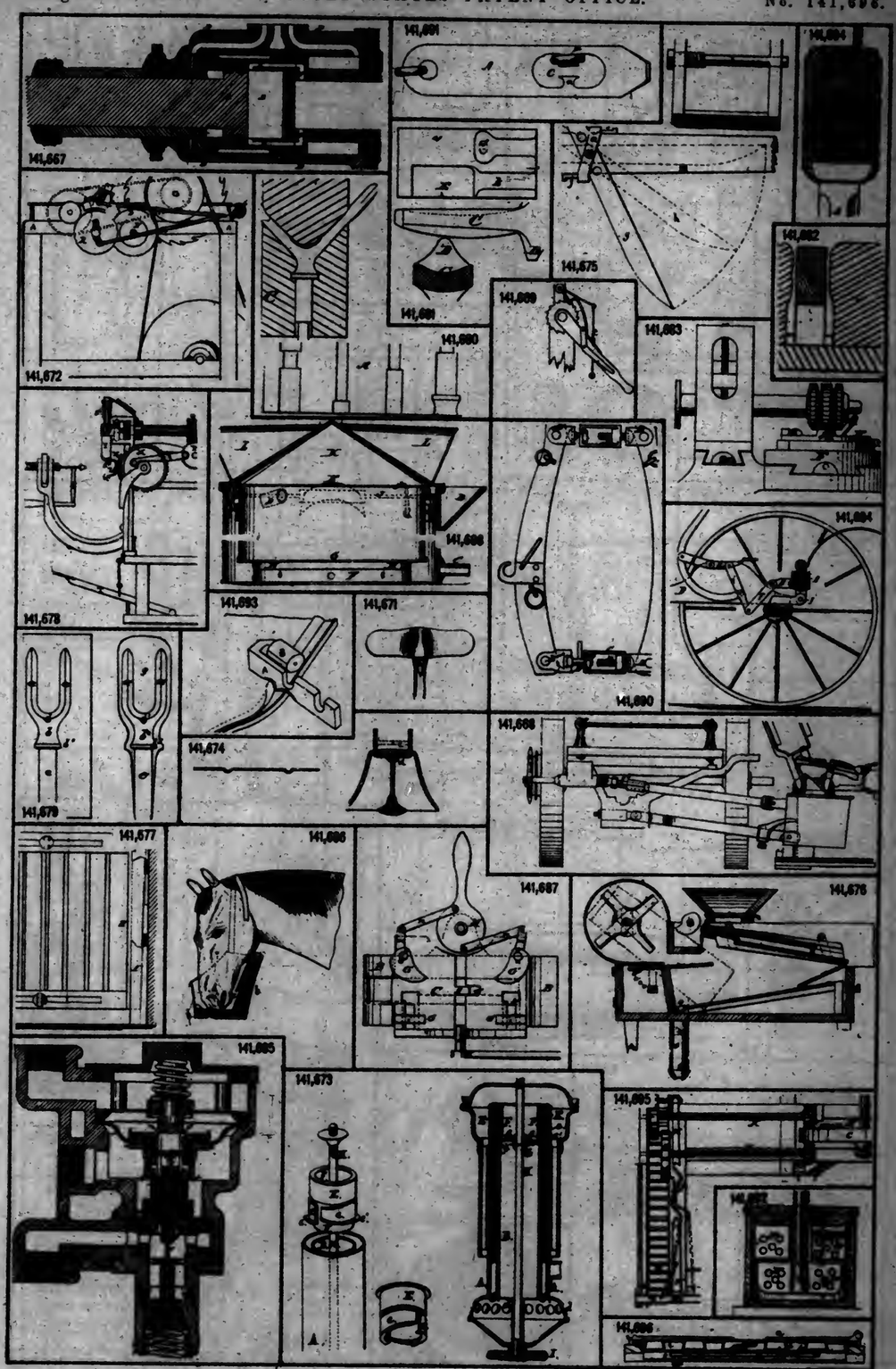
ORIGINAL PATENTS Nos. 141,617 to 141,848. AUGUST 12, 1873. REISSUED PATENTS Nos. 5,530 to 5,539.



AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



AM. PHOTO-LITHOGRAPHIC CO N.Y. (OSBORNE'S PROCESS)



AM PHOTO-LITHOGRAPHIC CO N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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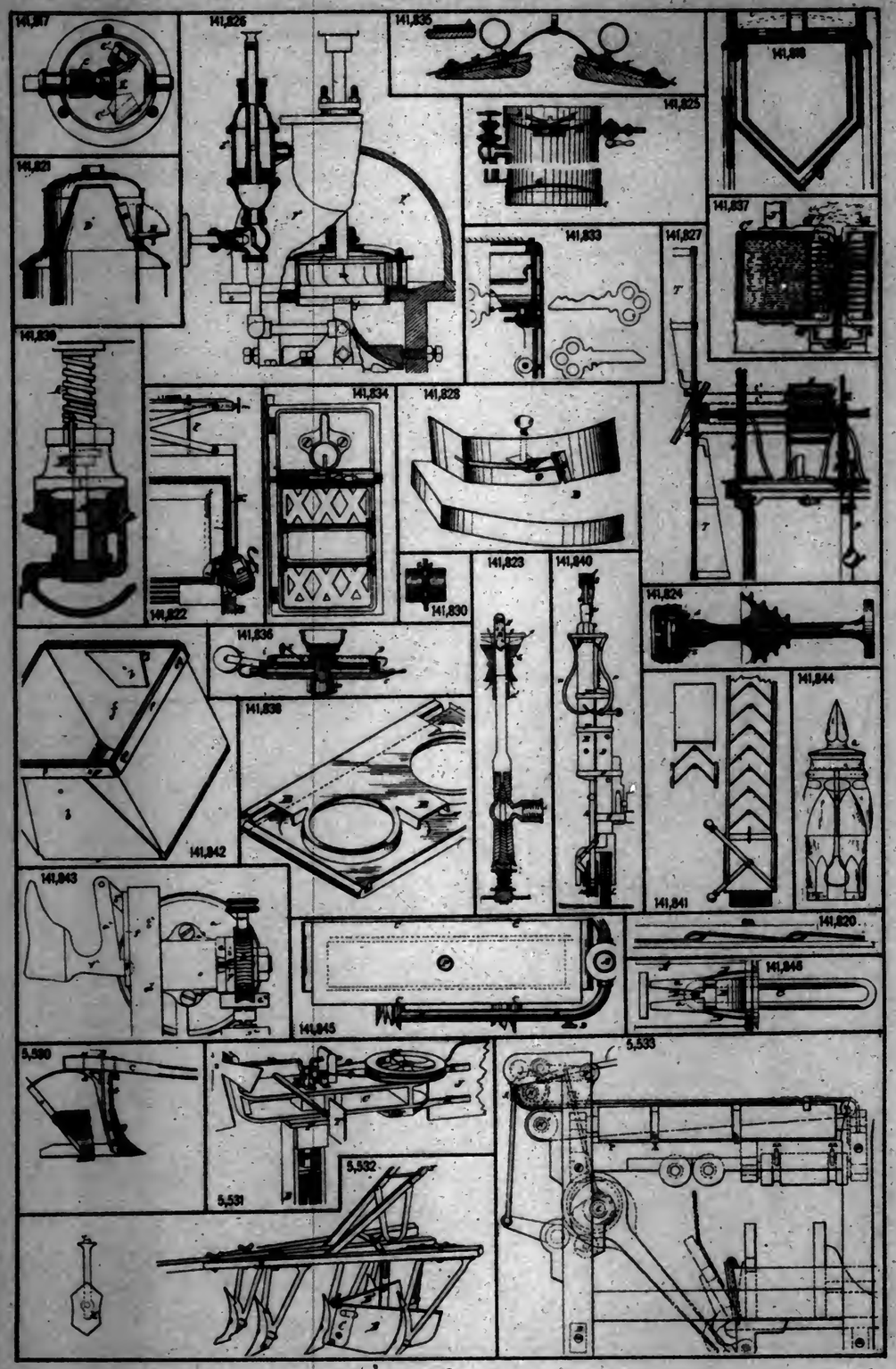
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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

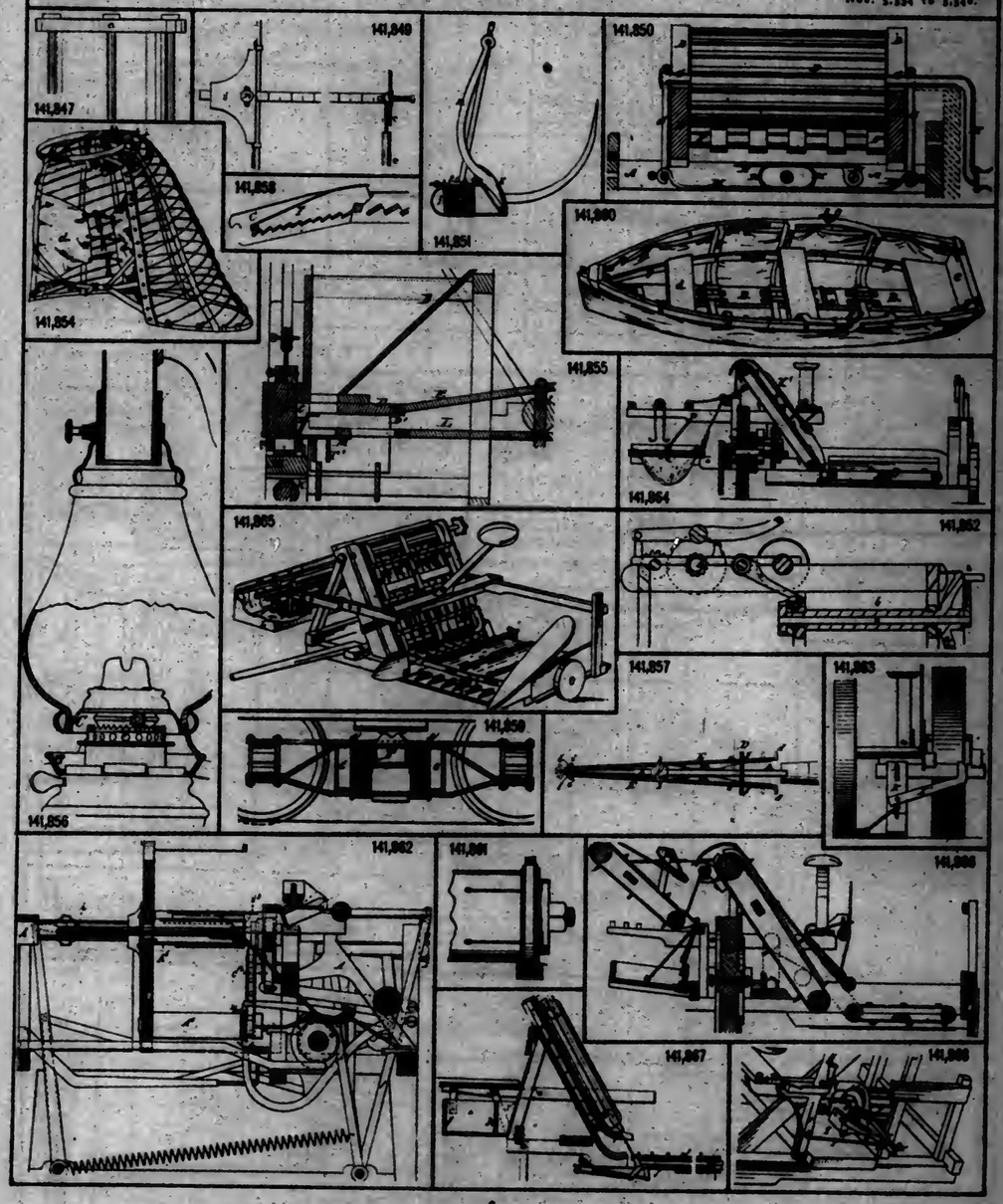
ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 141,847 to 141,870. AUGUST 19, 1873. REISSUED PATENTS Nos. 5,534 to 5,540.



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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

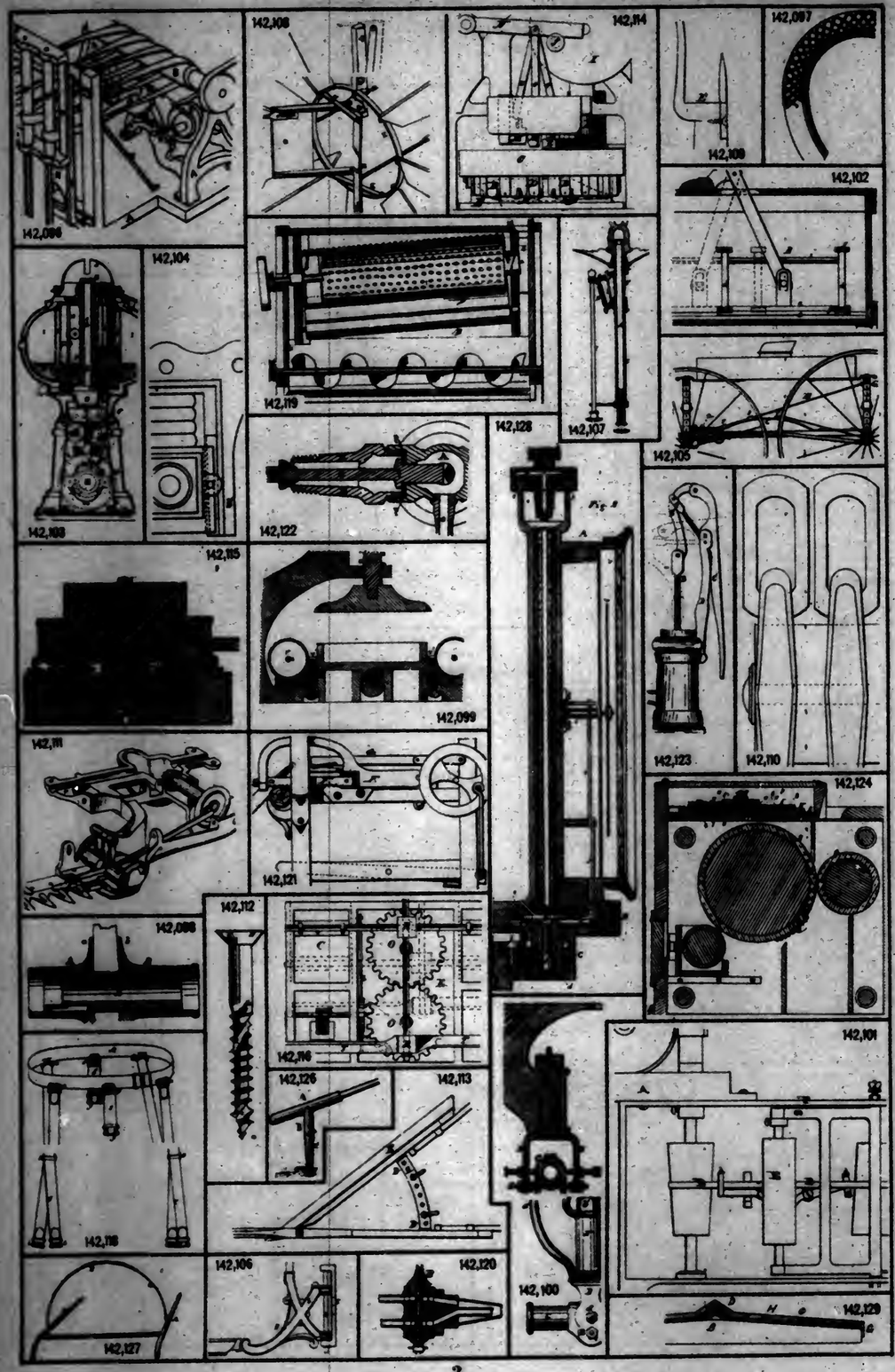
OF THE

UNITED STATES PATENT OFFICE.

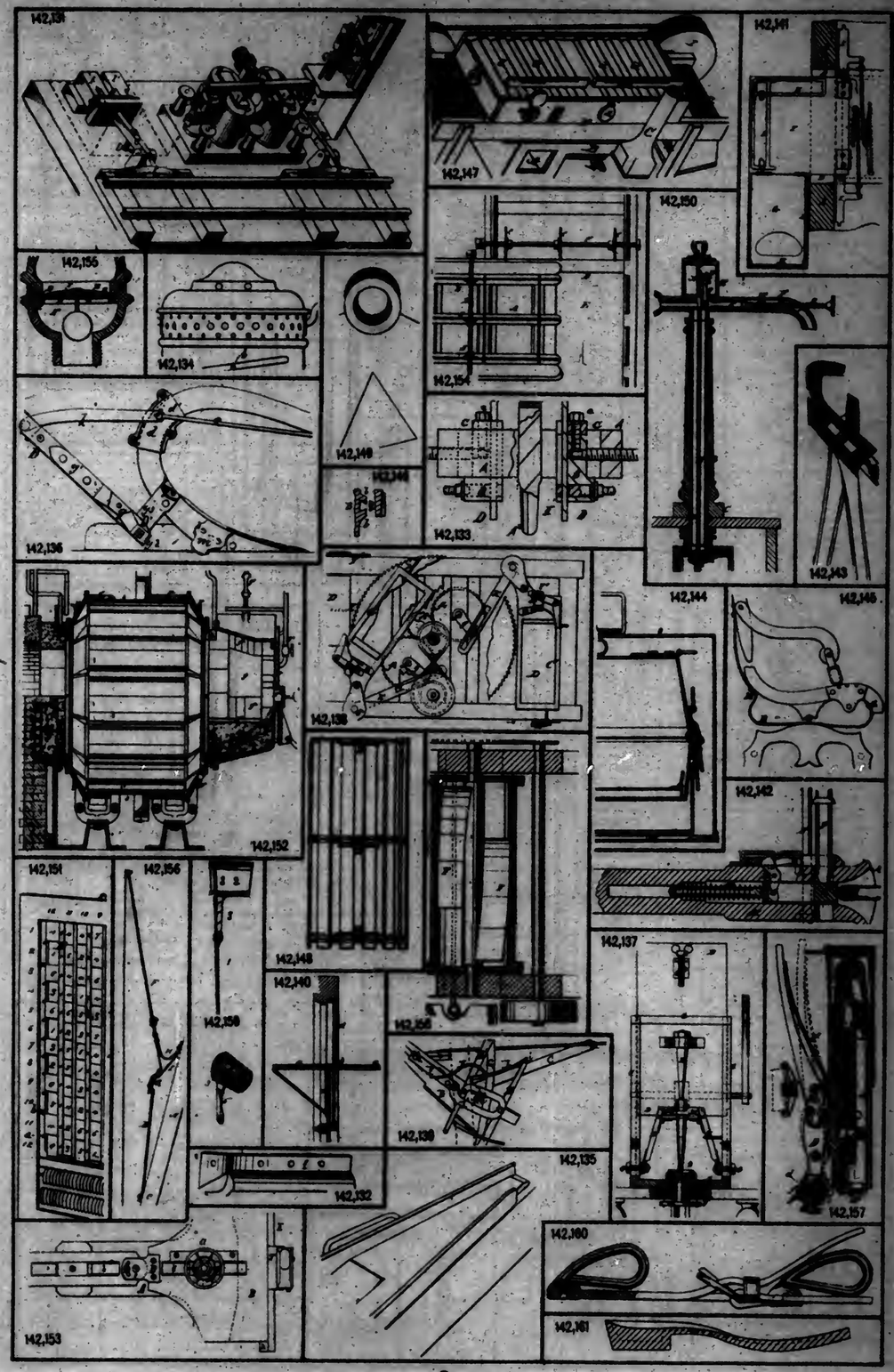
ORIGINAL PATENTS Nos. 142,071 to 142,342. AUGUST 26, 1873. REISSUED PATENTS Nos. 5,549 to 5,557.

142,072 142,079 142,075 142,074 142,073 142,084 142,076 142,085 142,083 142,089 142,080 142,094 142,088 142,086 142,082 142,092 142,081 142,091 142,090 142,078 142,093 142,077 142,095

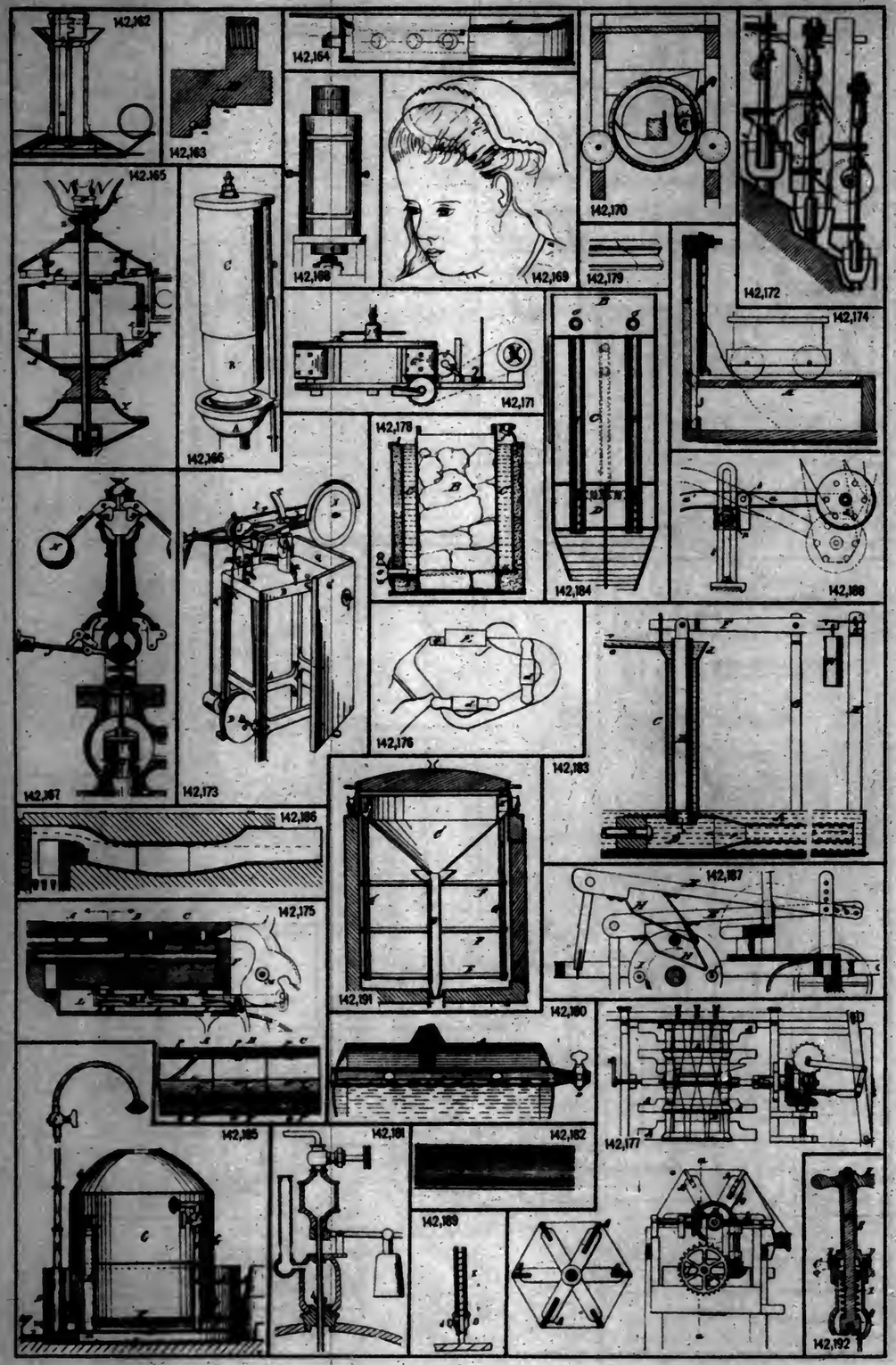
AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)



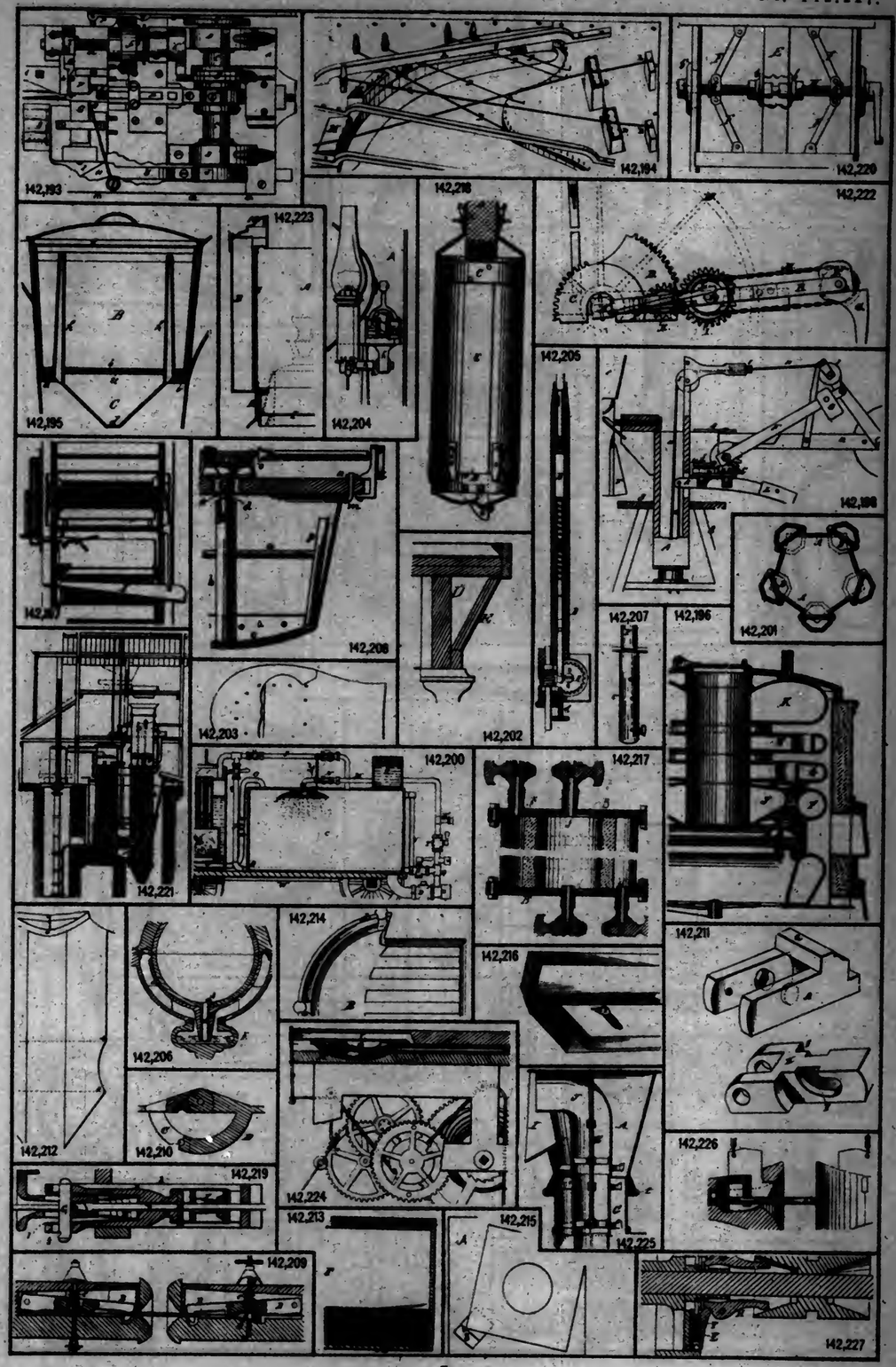
A.M. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.



A.M. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.



AM PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)



AM PHOTO LITHOGRAPH ... N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 140,300 to 140,546. SEPTEMBER 2, 1873. REISSUED PATENTS Nos. 5,558 to 5,563.

142,322 142,333 142,325 142,326 142,332 142,331 142,329 142,340 142,334 142,328 142,337 142,327 142,336 142,330 142,335 142,339 142,324 142,323 142,338 142,341

A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO LITHOGRAPHIC Co N.Y. OSBORNE'S PROCESS

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AM PHOTO LITHOGRAPHIC Co N.Y. OSBORNE'S PROCESS

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 140,542 to 140,755. SEPTEMBER 9, 1873. REISSUED PATENTS Nos. 5,564 to 5,571.

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 142,756 to 143,073. SEPTEMBER 16, 1873. REISSUED PATENTS Nos. 5,572 to 5,574.

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AM. PHOTO-LITHOGRAPHIC Co N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO LITHOGRAPHIC CO. N.Y. (ENGRAVER'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 142,976 to 143,015. SEPTEMBER 23, 1873. REISSUED PATENTS Nos. 5,575 to 5,579.

142,976

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (ENGRAVER'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.

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AM PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 143,016 to 143,396. SEPTEMBER 30, 1873. REISSUED PATENTS Nos. 5,560 to 5,585.

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS

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AM. PHOTO LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 143,367 to 143,534. OCTOBER 7, 1873. REISSUED PATENTS Nos. 5,580 to 5,594.

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS.)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 143,533 to 143,789. OCTOBER 14, 1873. REISSUED PATENTS Nos. 5,595 to 5,609.

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS.)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 143,740 to 143,949. OCTOBER 21, 1873. REISSUED PATENTS Nos. 5,610 to 5,626.

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AM. PHOTO LITHOGRAPHIC Co N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. ISBRANE'S PROCESS

143,790 143,791 143,800 143,797 143,805 143,796 143,794 143,795 143,809 143,792 143,793 143,814 143,804 143,806 143,816 143,807 143,812 143,813 143,811 143,802 143,810 143,815 143,803 143,798 143,801 143,799 143,808 143,817

AM. PHOTO-LITHOGRAPHIC Co. N.Y. ISBRANE'S PROCESS.

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 143,950 to 144,178. OCTOBER 28, 1873. REISSUED PATENTS Nos. 5,627 to 5,638.

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.V. PHOTO LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (BUREAU'S PROCESS)

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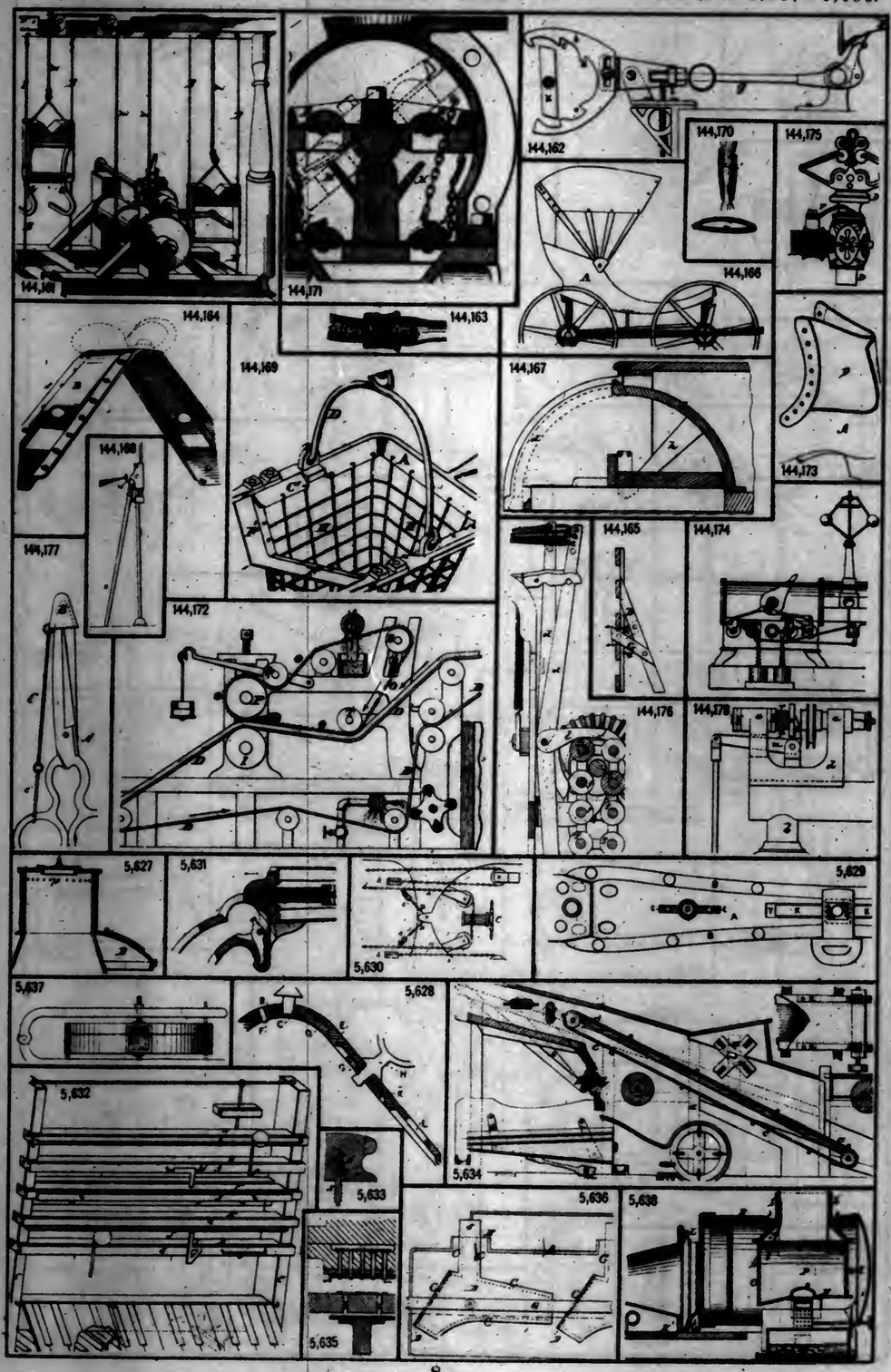
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AM PHOTO LITHOGRAPHIC CO N.Y. (ESSMORE'S PROCESS)

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AM PHOTO LITHOGRAPHIC CO N.Y. (ESSMORE'S PROCESS)



AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

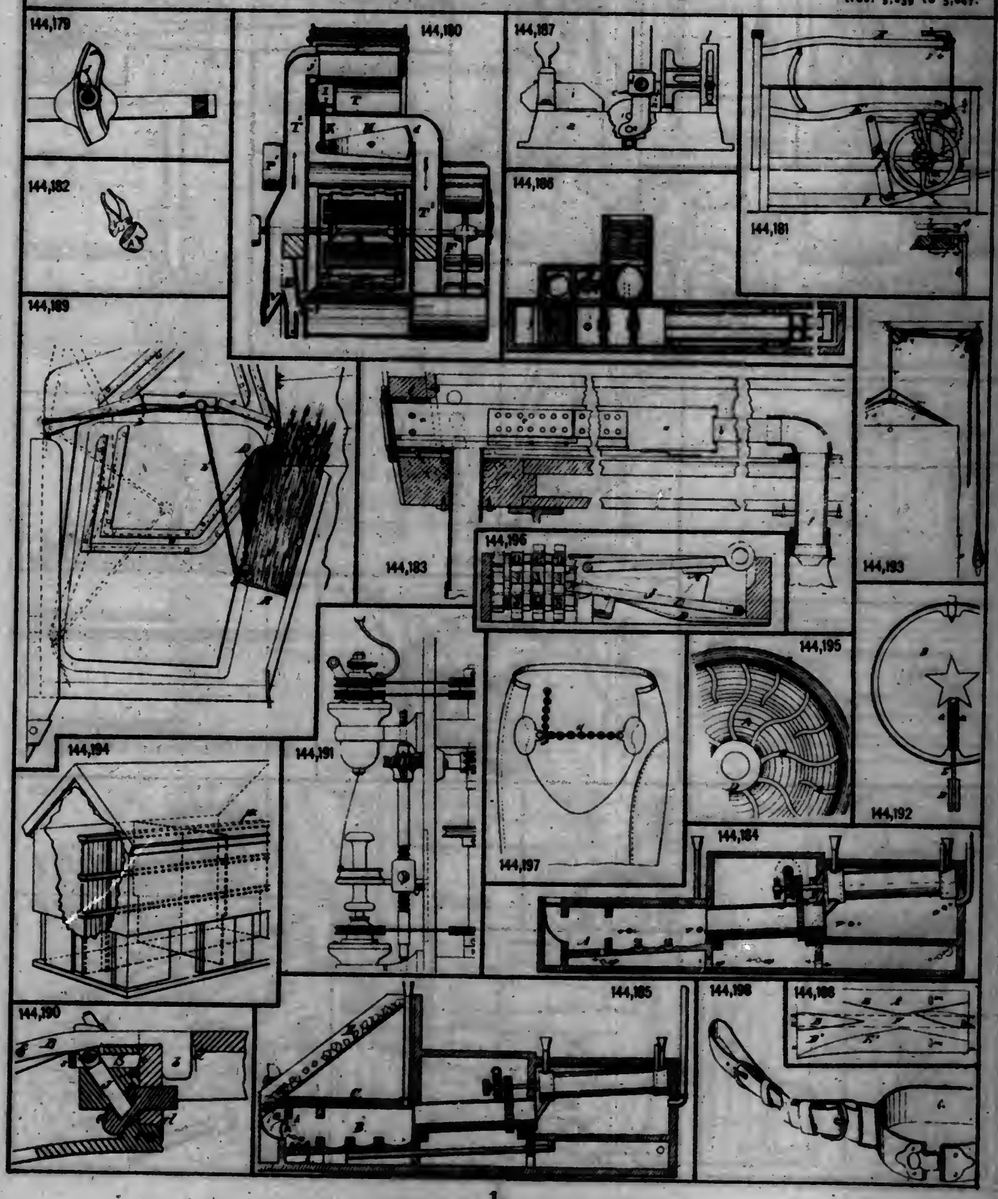
ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 144,179 to 144,378. NOVEMBER 4, 1873. REISSUED PATENTS Nos. 5,639 to 5,647.



AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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A.H. PHOTO-LITHOGRAPHIC Co. N.Y. (ESAGNE'S PROCESS)

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A.H. PHOTO-LITHOGRAPHIC Co. N.Y. (ESAGNE'S PROCESS)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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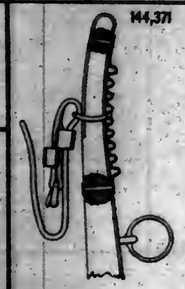
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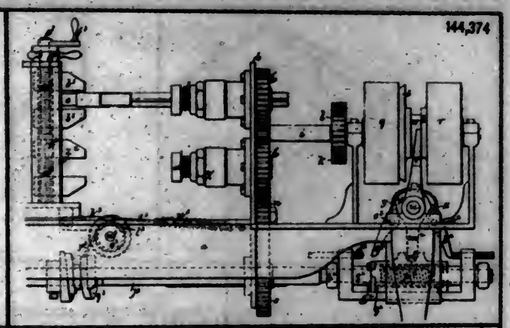
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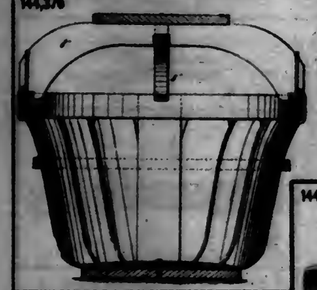
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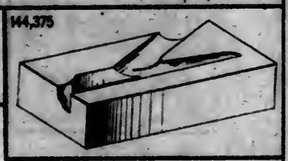
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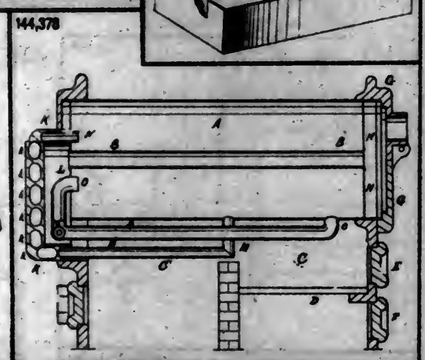
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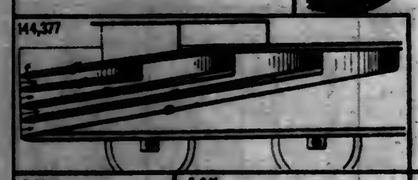
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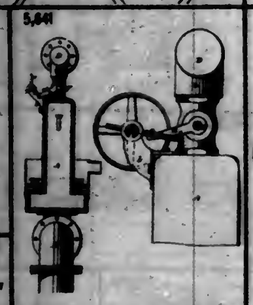




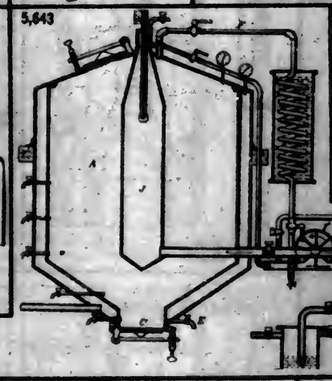
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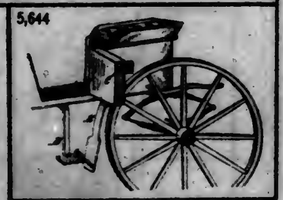
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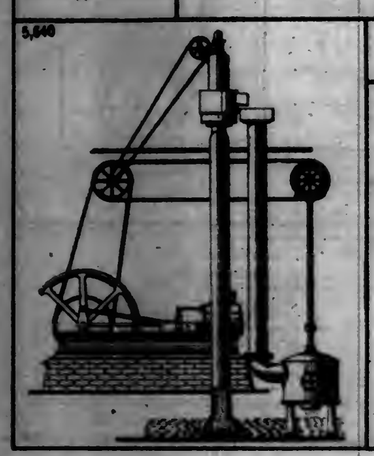


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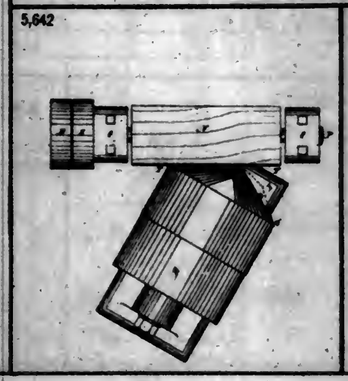


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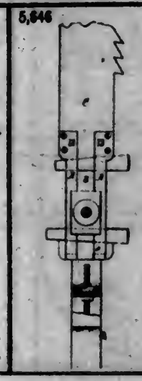
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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

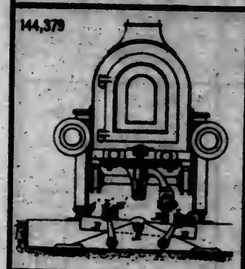
OFFICIAL GAZETTE

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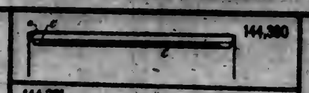
UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 144,379 to 144,549. NOVEMBER 11, 1873. REISSUED PATENTS Nos. 5,648 to 5,655.

144,379



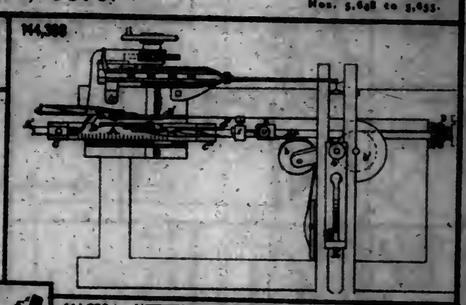
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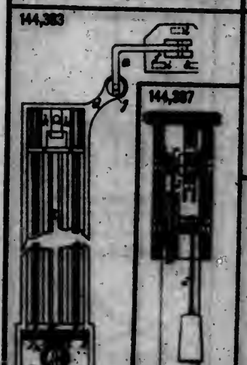
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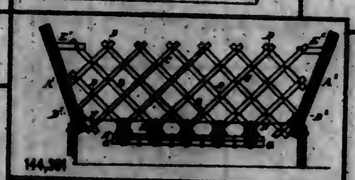


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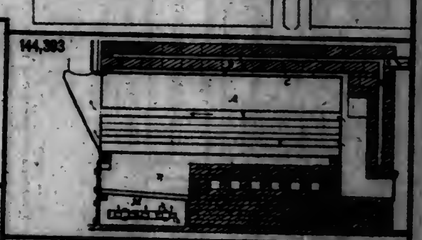


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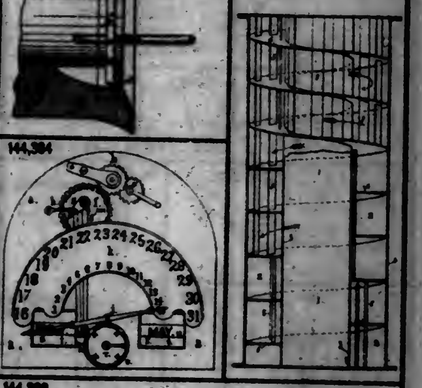
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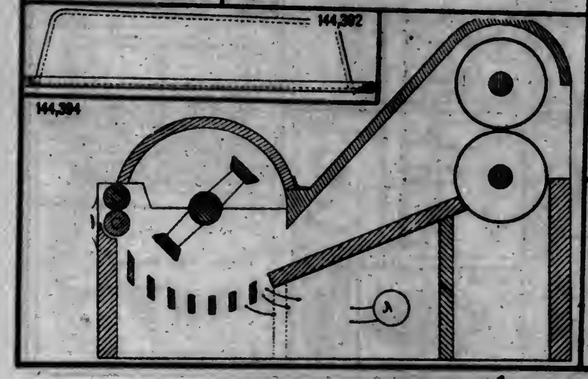


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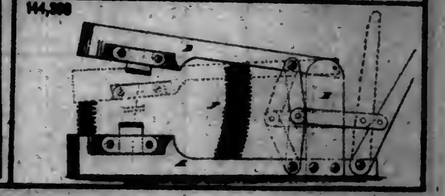


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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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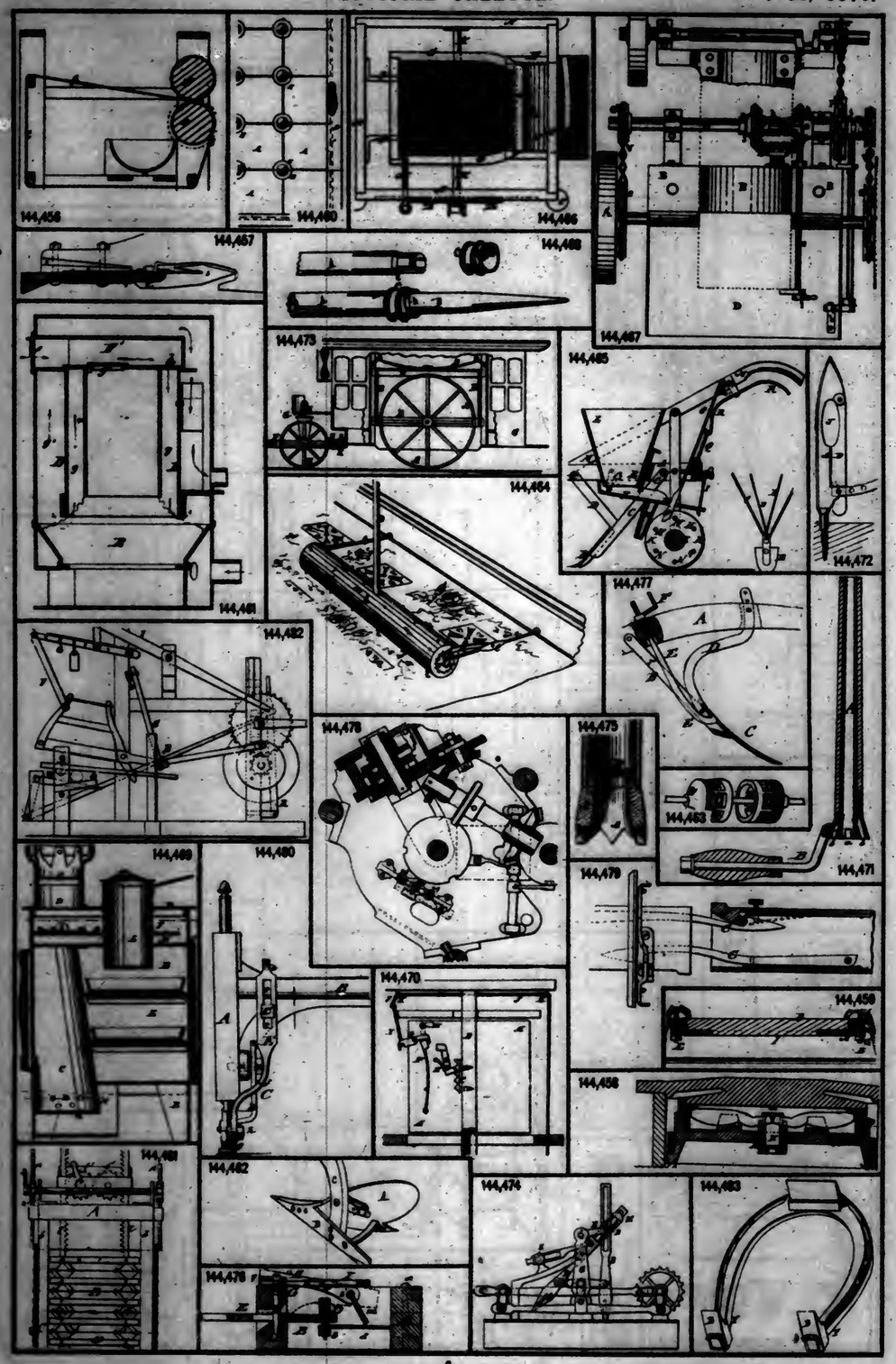
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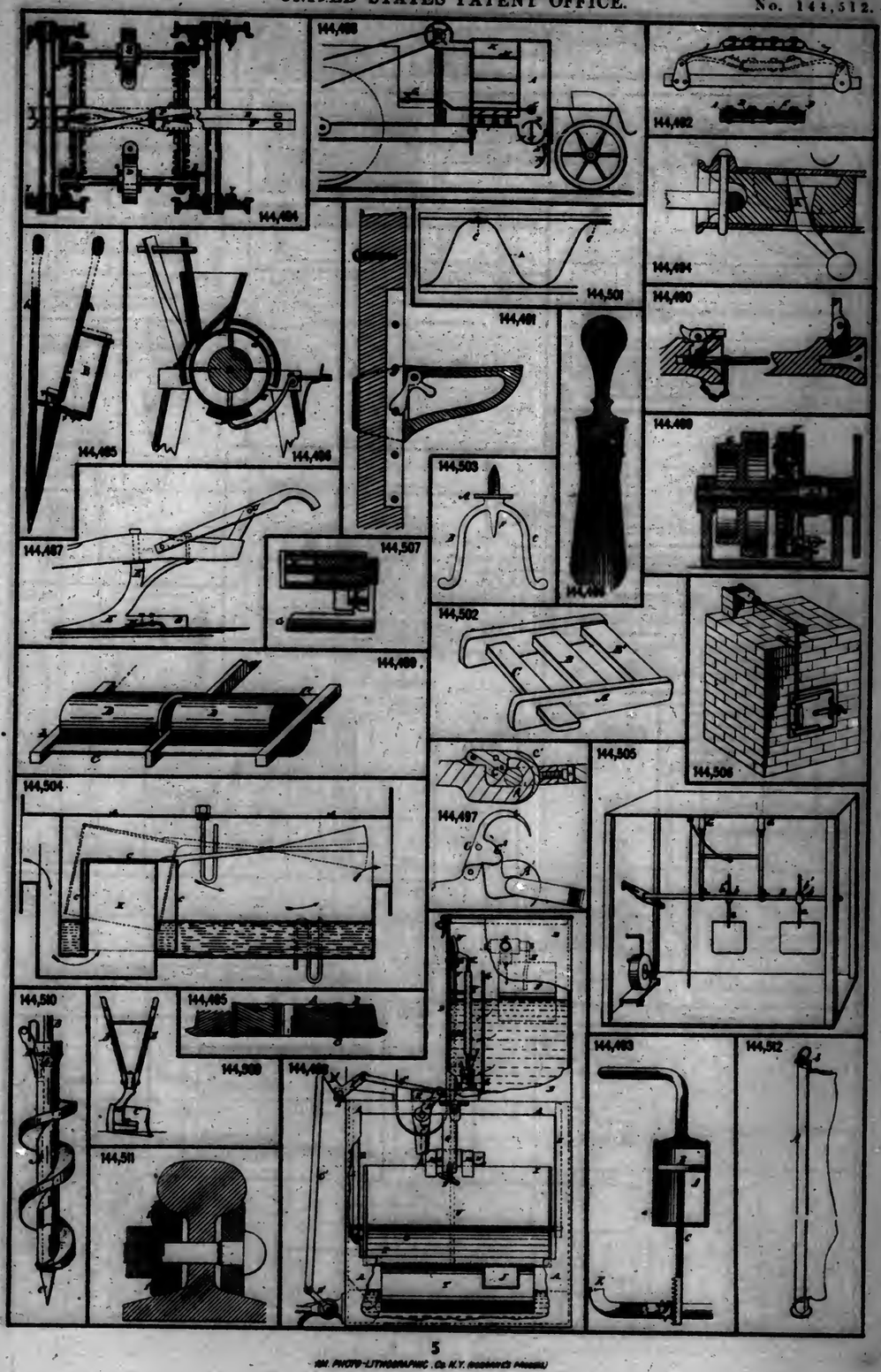
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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)



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M. PHOTO-LITHOGRAPHIC Co. N.Y. (ASSIGNEE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 144,590 to 144,619.

NOVEMBER 18, 1873.

REISSUED PATENTS Nos. 5,656 to 5,666.

144,590 144,594 144,593 144,595 144,607 144,600 144,606 144,604 144,596 144,608 144,610 144,591 144,609 144,599 144,601 144,611 144,613 144,612 144,603 144,598 144,605 144,597 144,614

AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

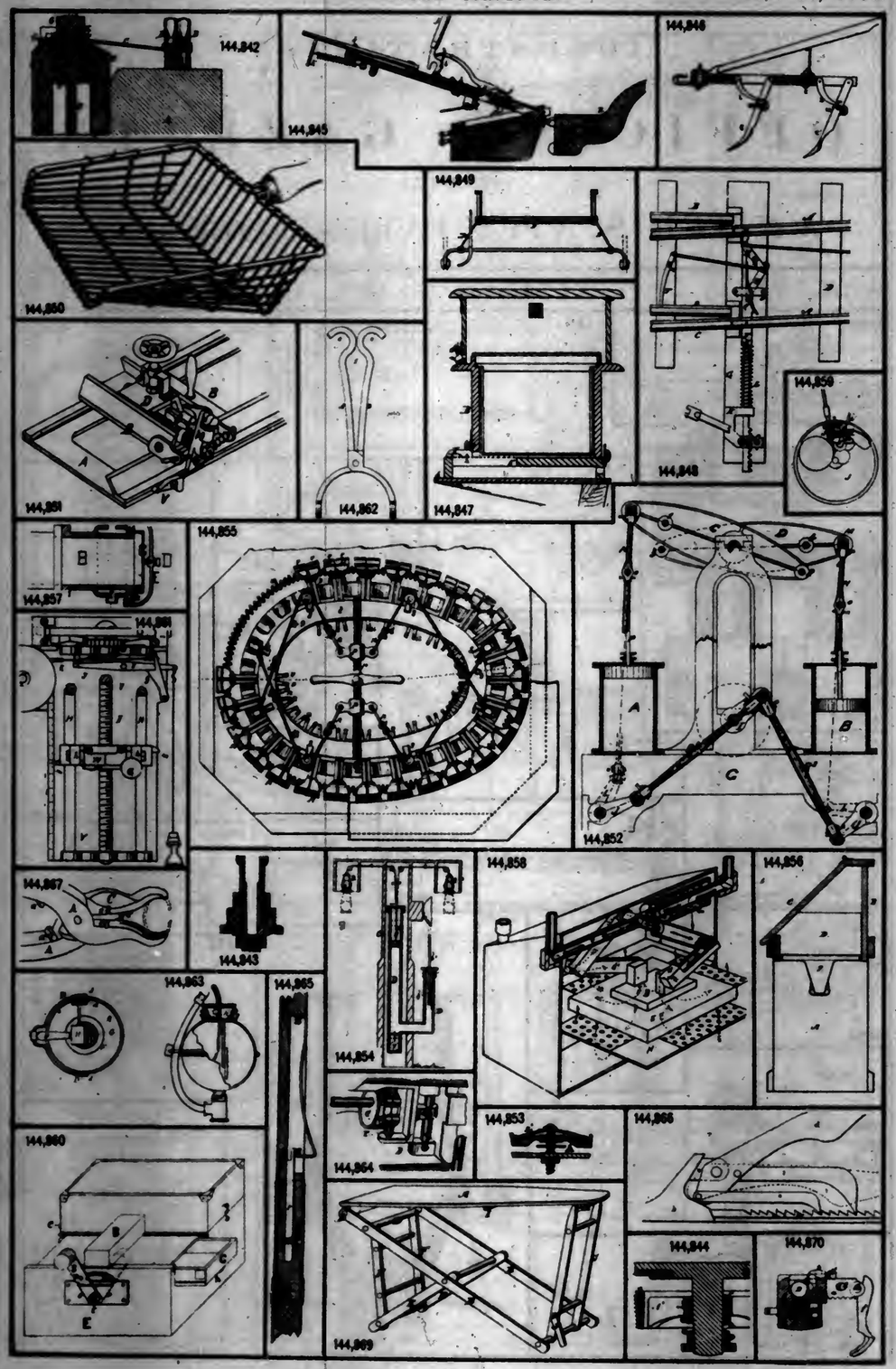
OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 144,800 to 145,041. NOVEMBER 25, 1873. REISSUED PATENTS Nos. 5,667 to 5,670.

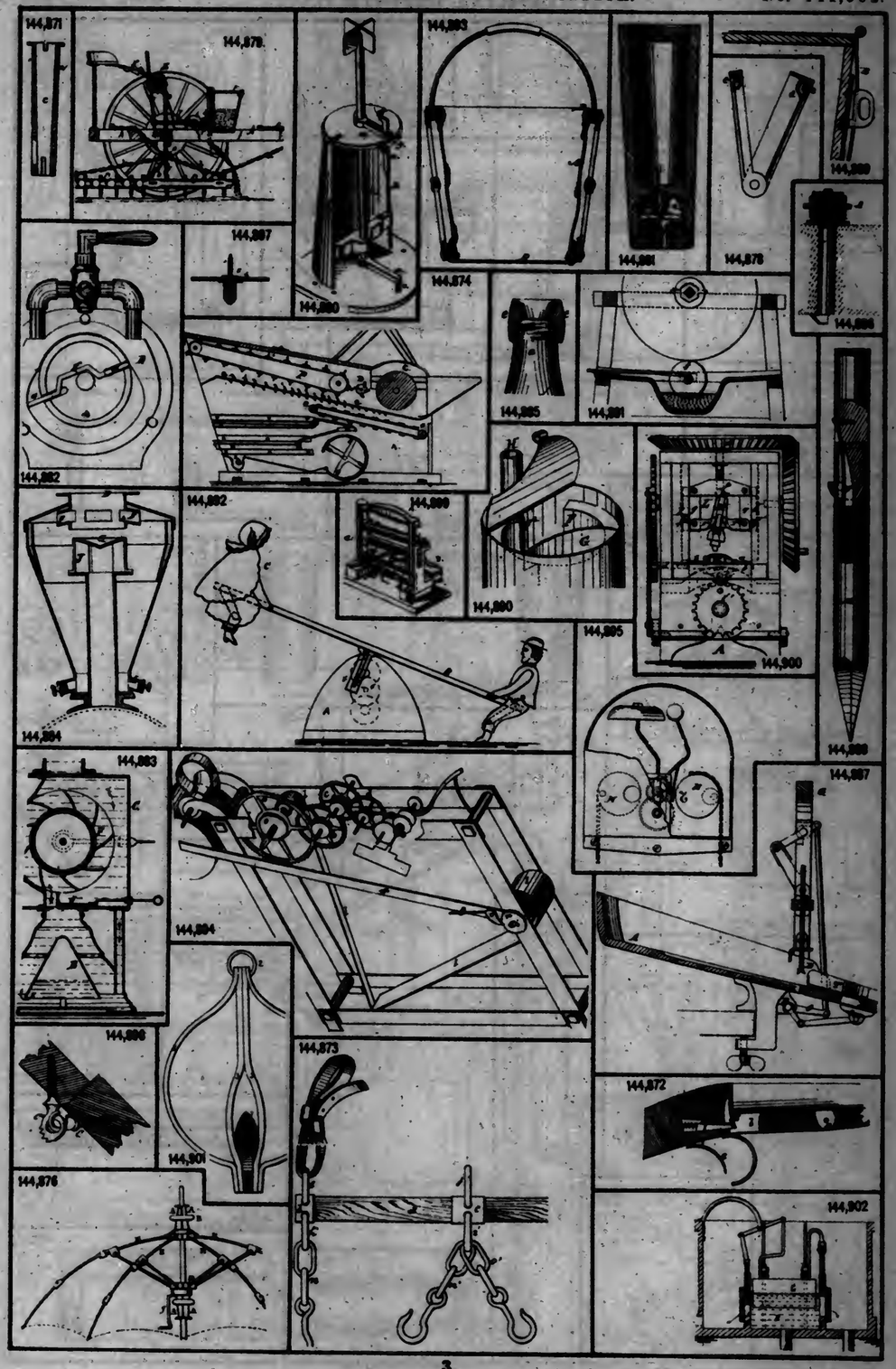
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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)



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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS.)



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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS.)

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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 145,042 to 145,067. DECEMBER 2, 1873. REISSUED PATENTS Nos. 5,671 to 5,676.

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.

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AM. PHOTO LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS.)

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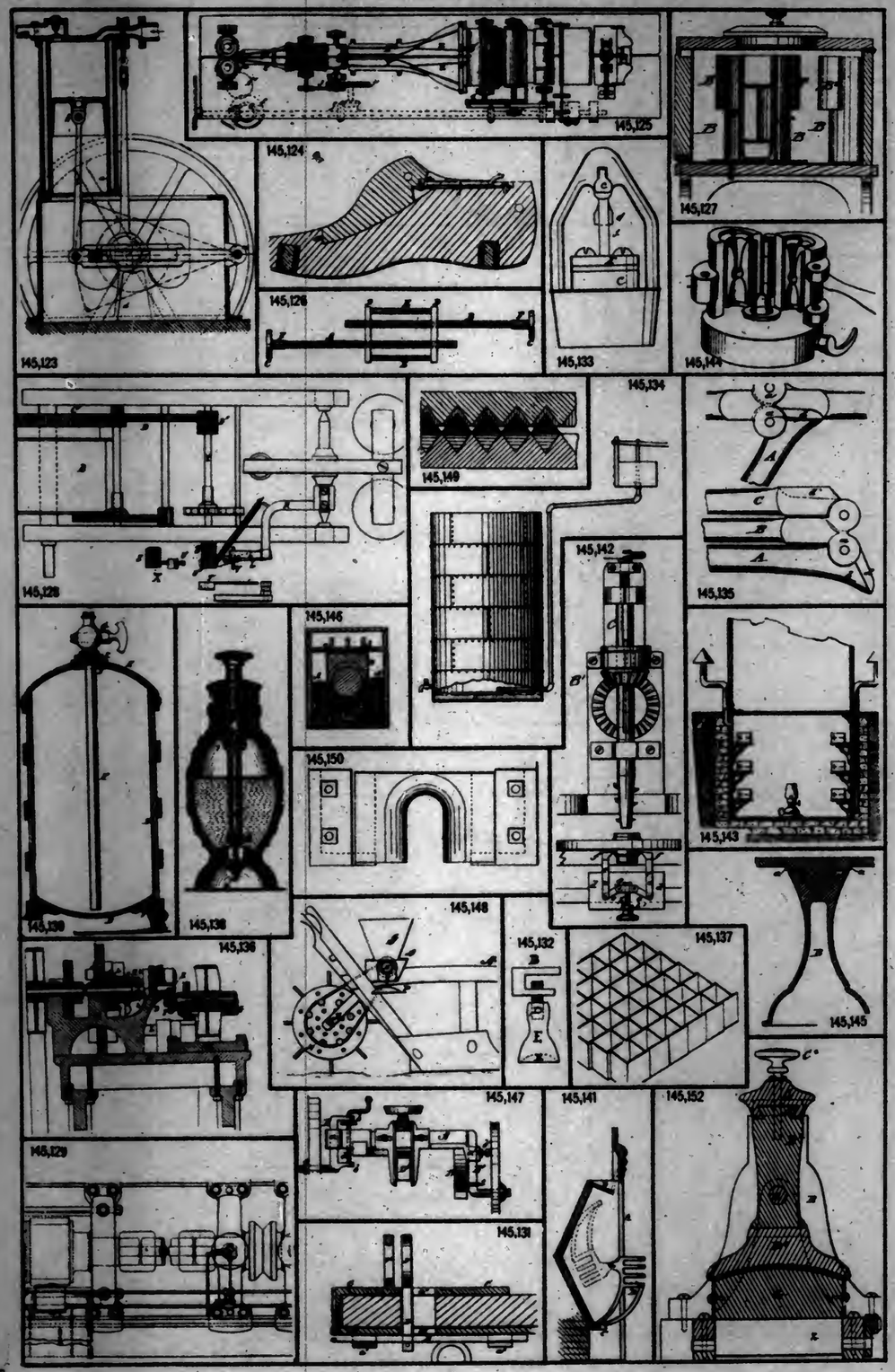
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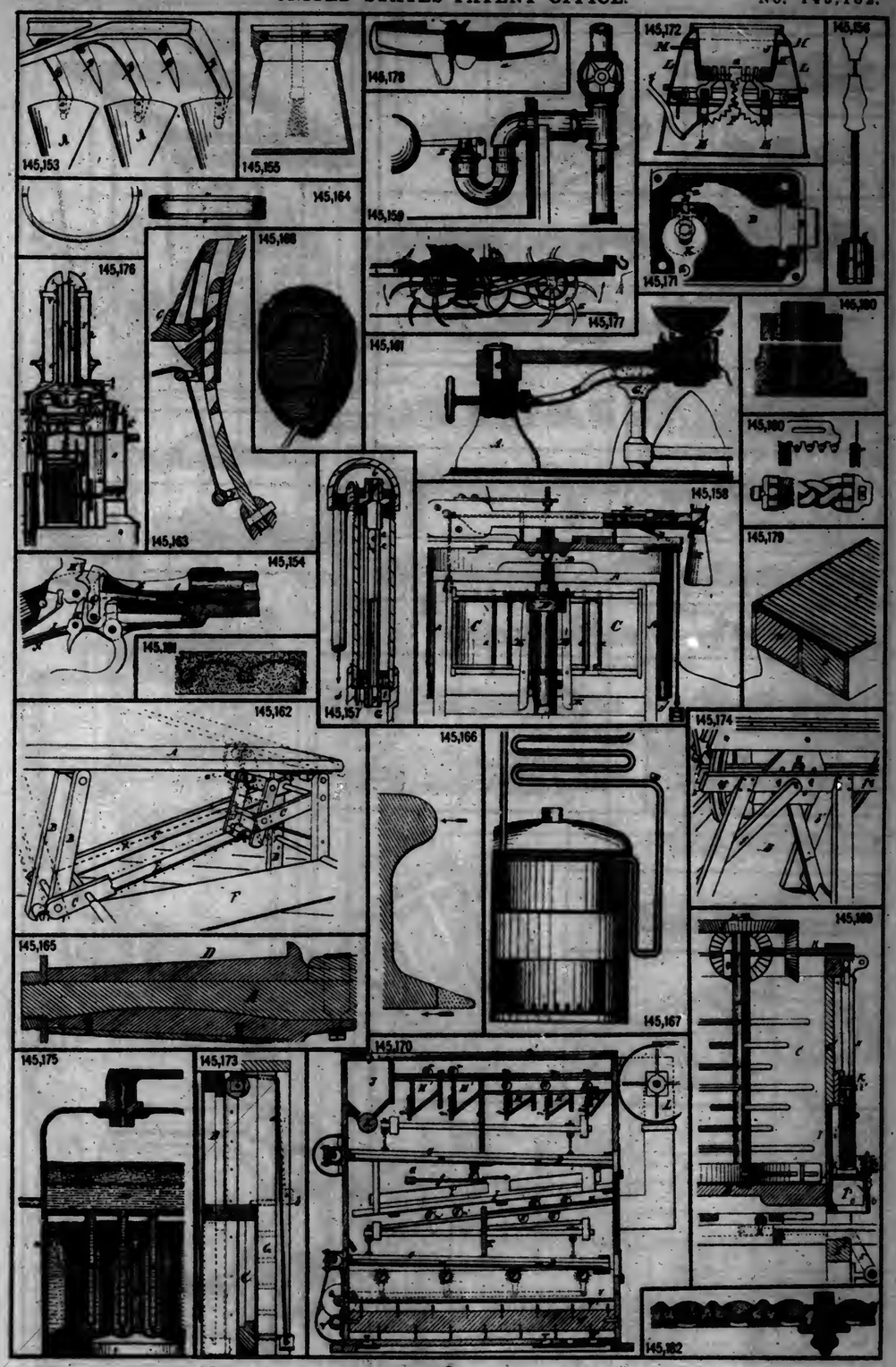
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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS.)



A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)



A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.

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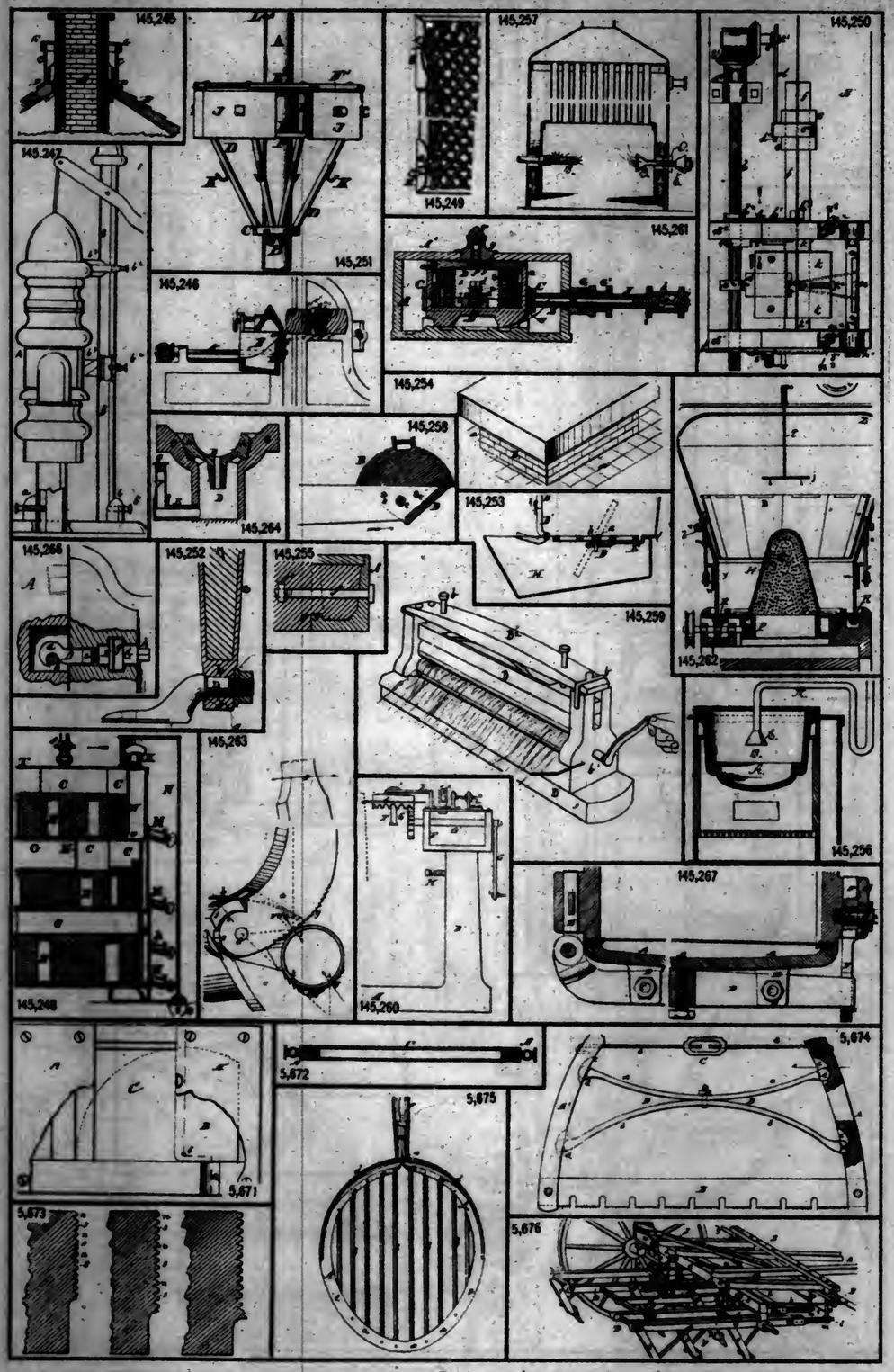
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AM PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS.



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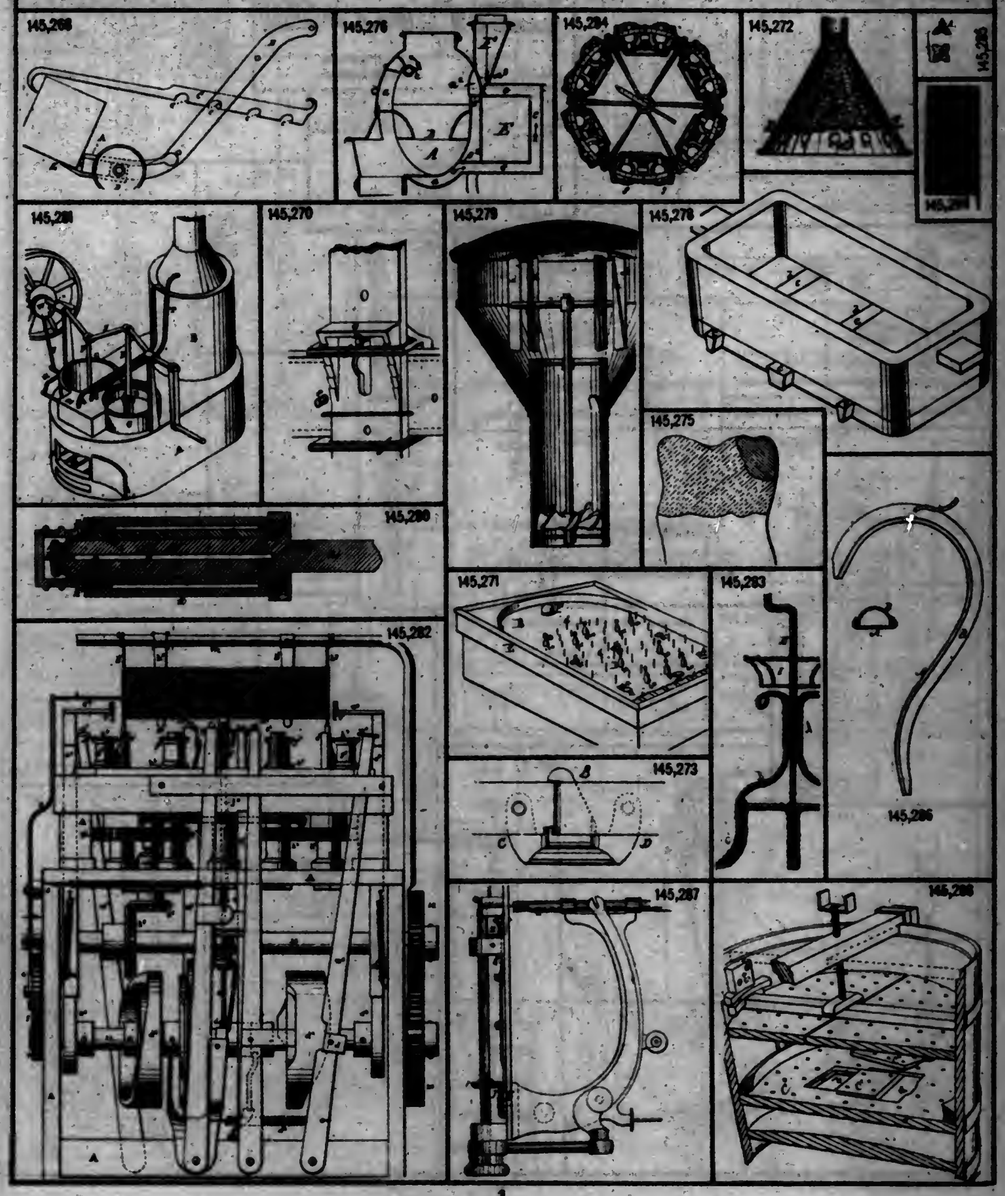
ILLUSTRATIONS.

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OF THE

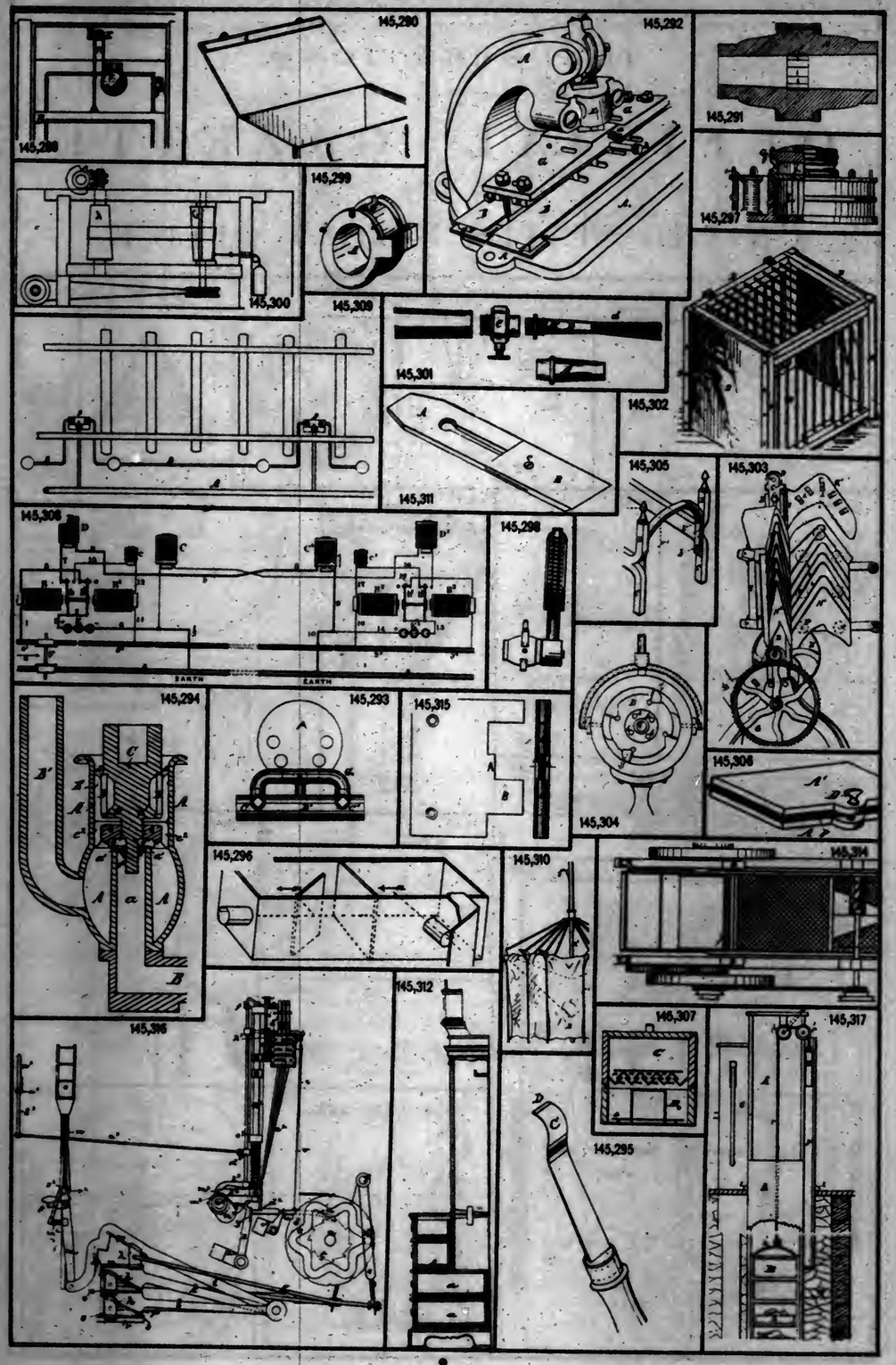
UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 145,245 to 145,676. DECEMBER 9, 1873. REISSUED PATENTS Nos. 5,671 to 5,676.



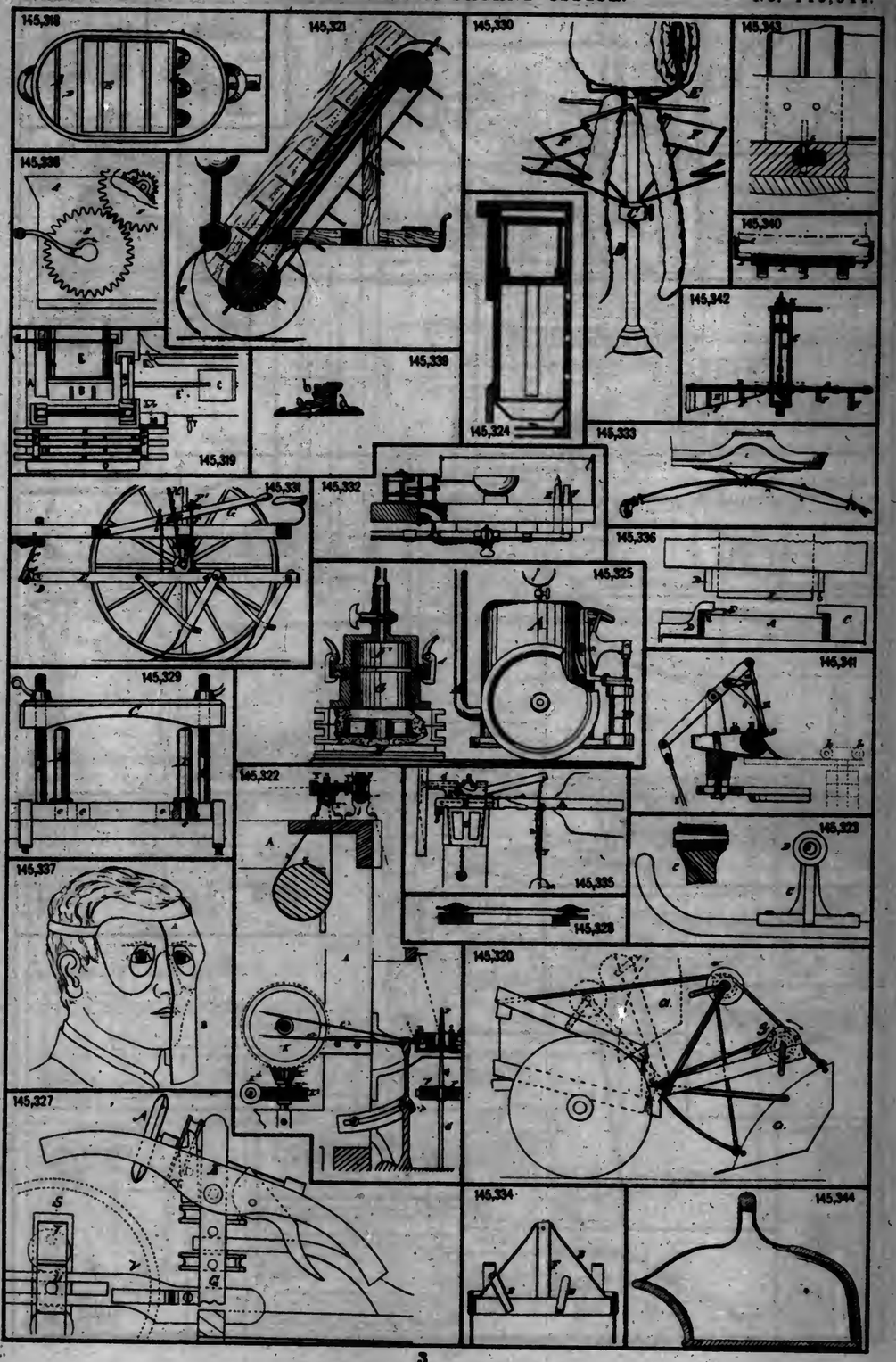
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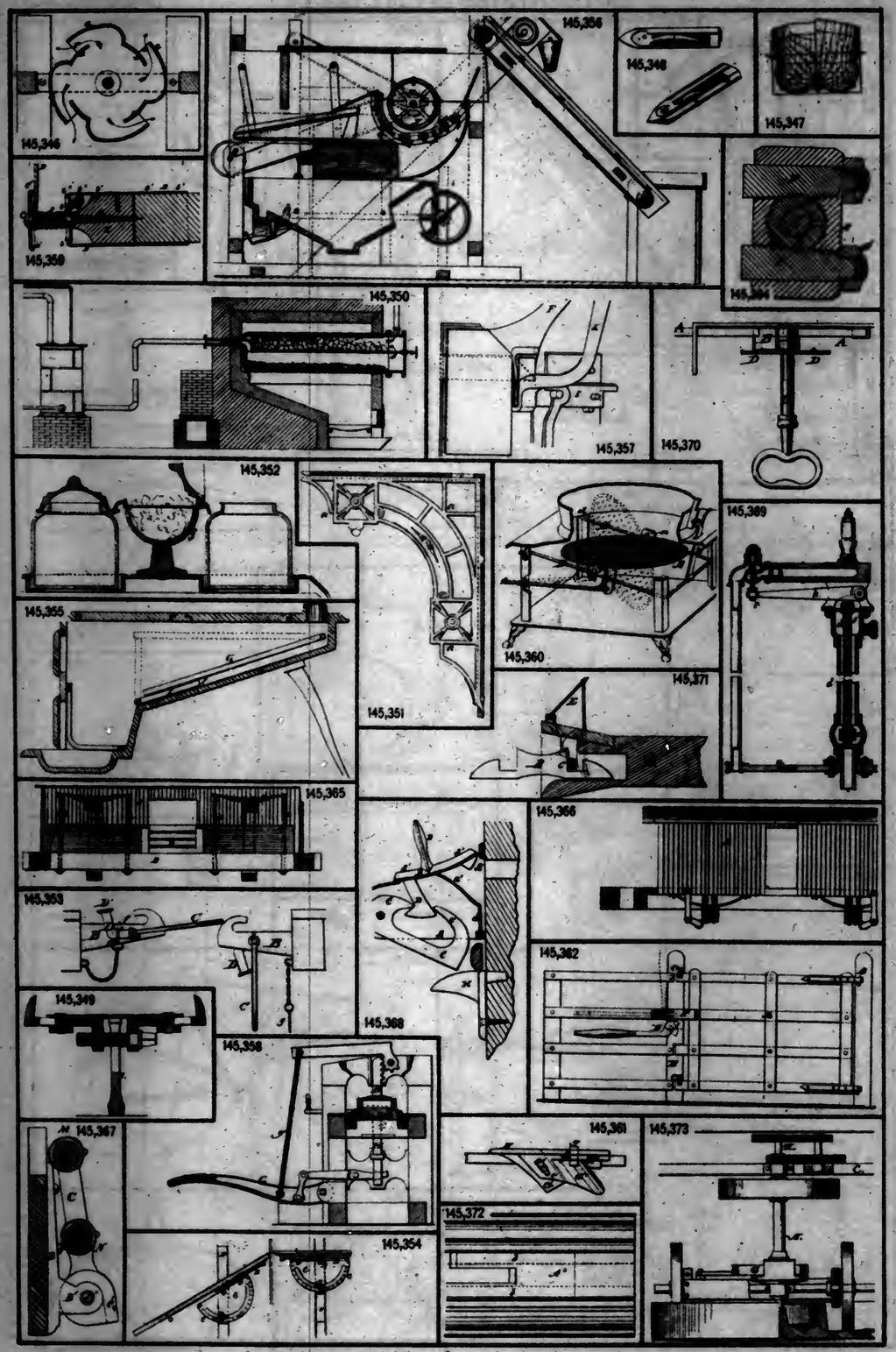
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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (ROSBRUCH'S PROCESS.)

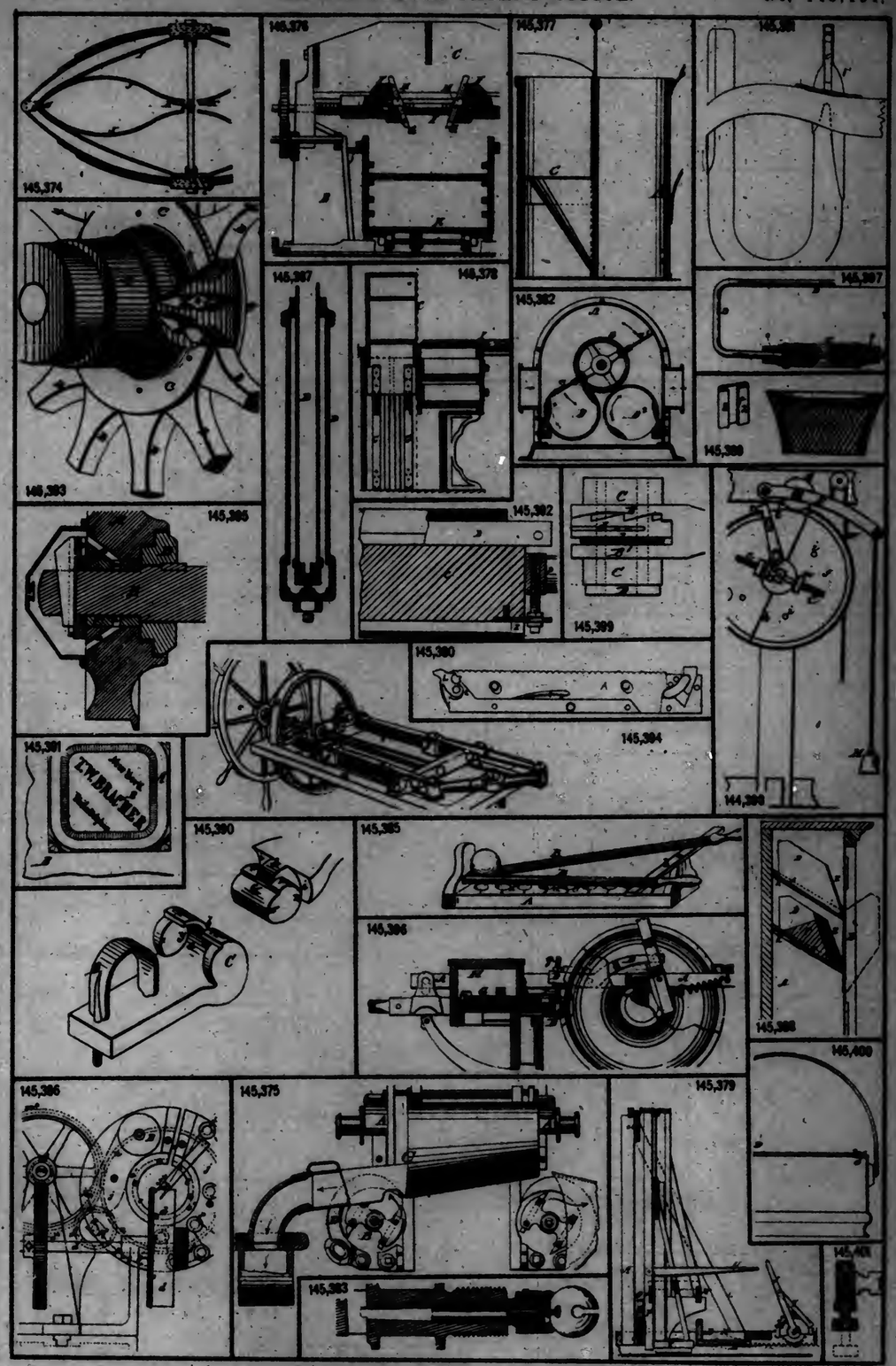


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A.M. PHOTO-LITHOGRAPHIC Co. N.Y. (ROSBRUCH'S PROCESS.)



AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS



AM. PHOTO-LITHOGRAPHIC Co. N.Y. OSBORNE'S PROCESS

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AM. PHOTO LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

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AM. PHOTO-LITHOGRAPHIC CO. N.Y. (OSBORNE'S PROCESS)

ILLUSTRATIONS.

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

ORIGINAL PATENTS Nos. 145,475 to 145,718. DECEMBER 16, 1873. REISSUED PATENTS Nos. 5,683 to 5,691.

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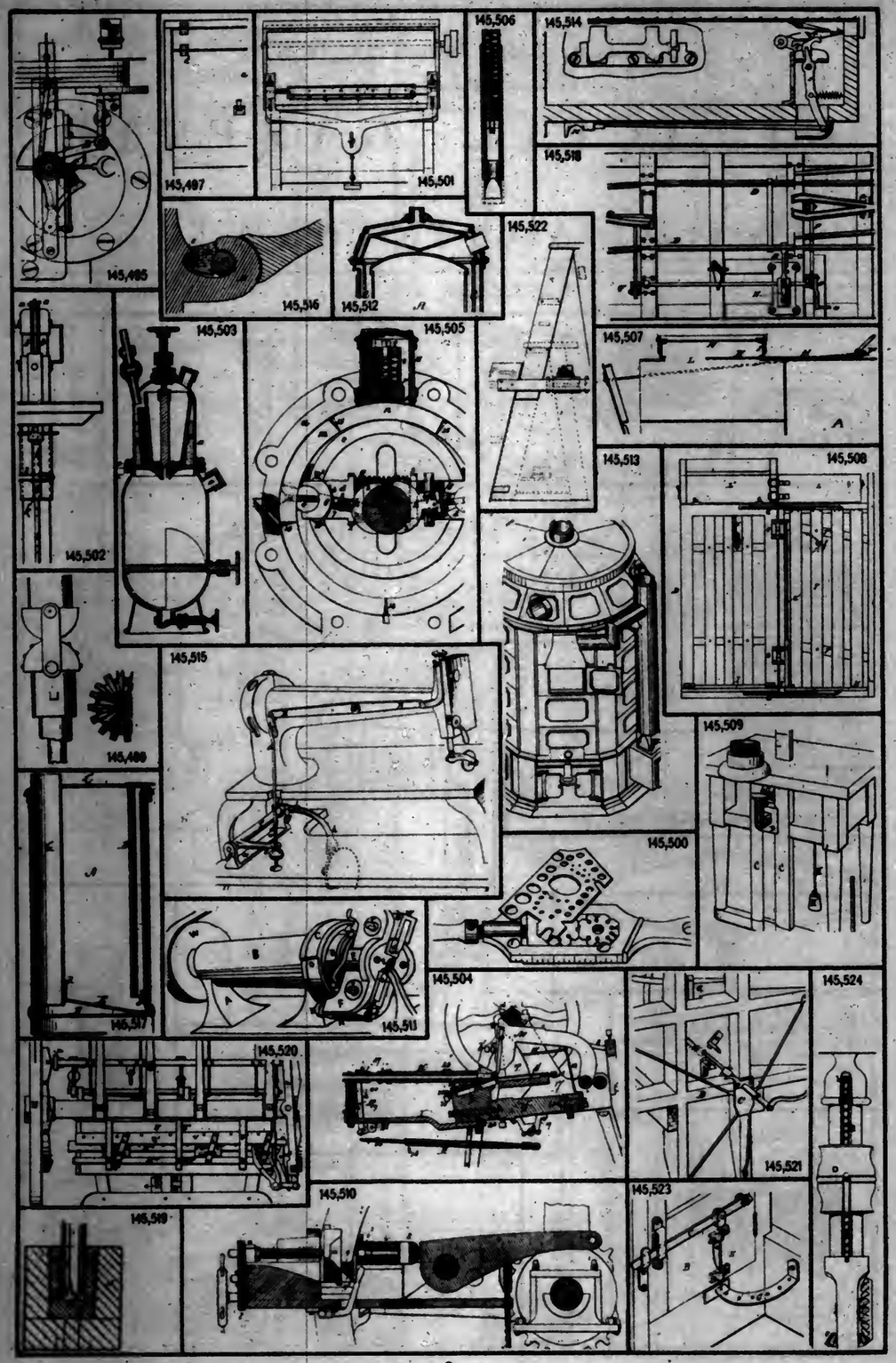
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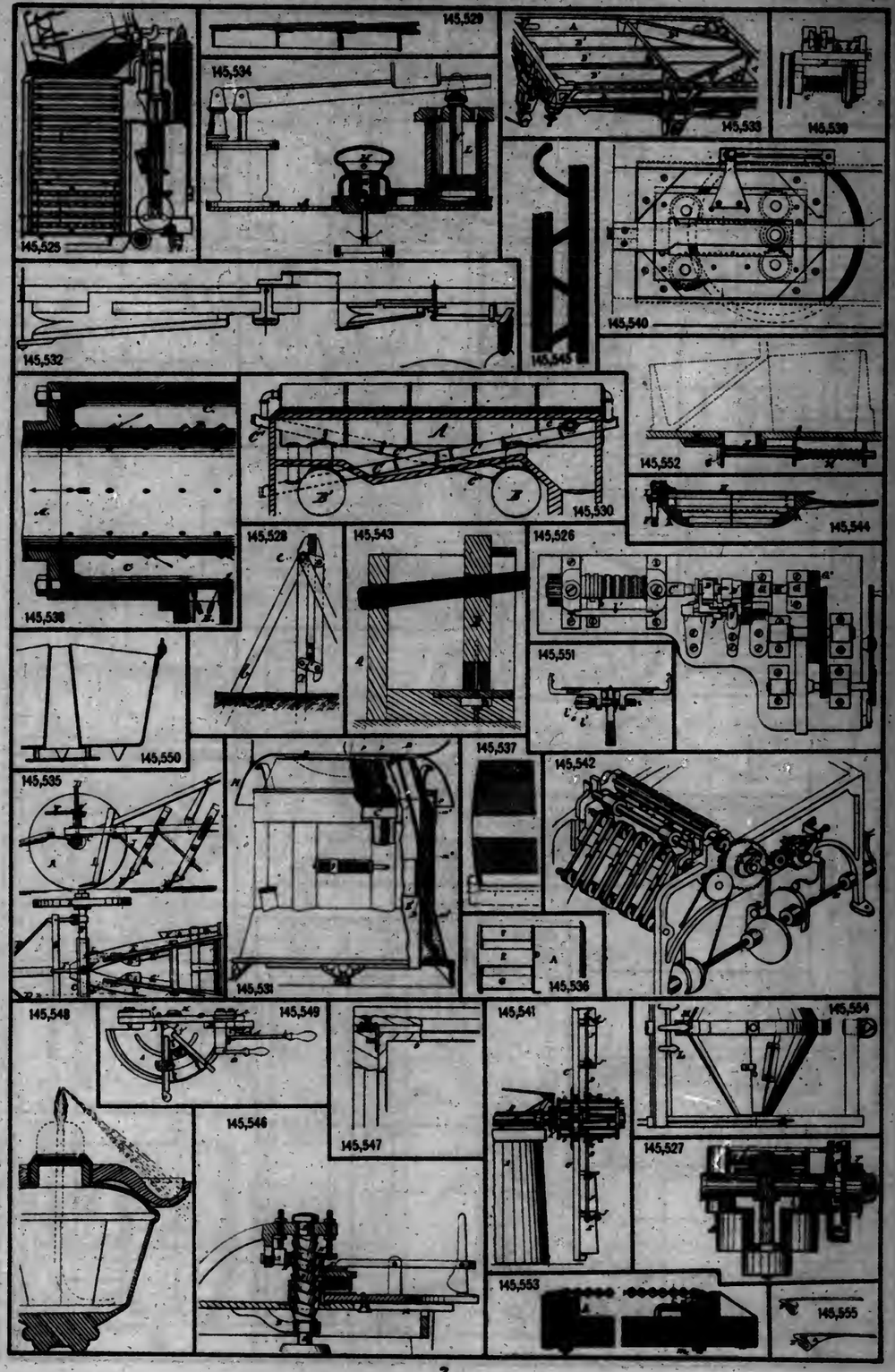
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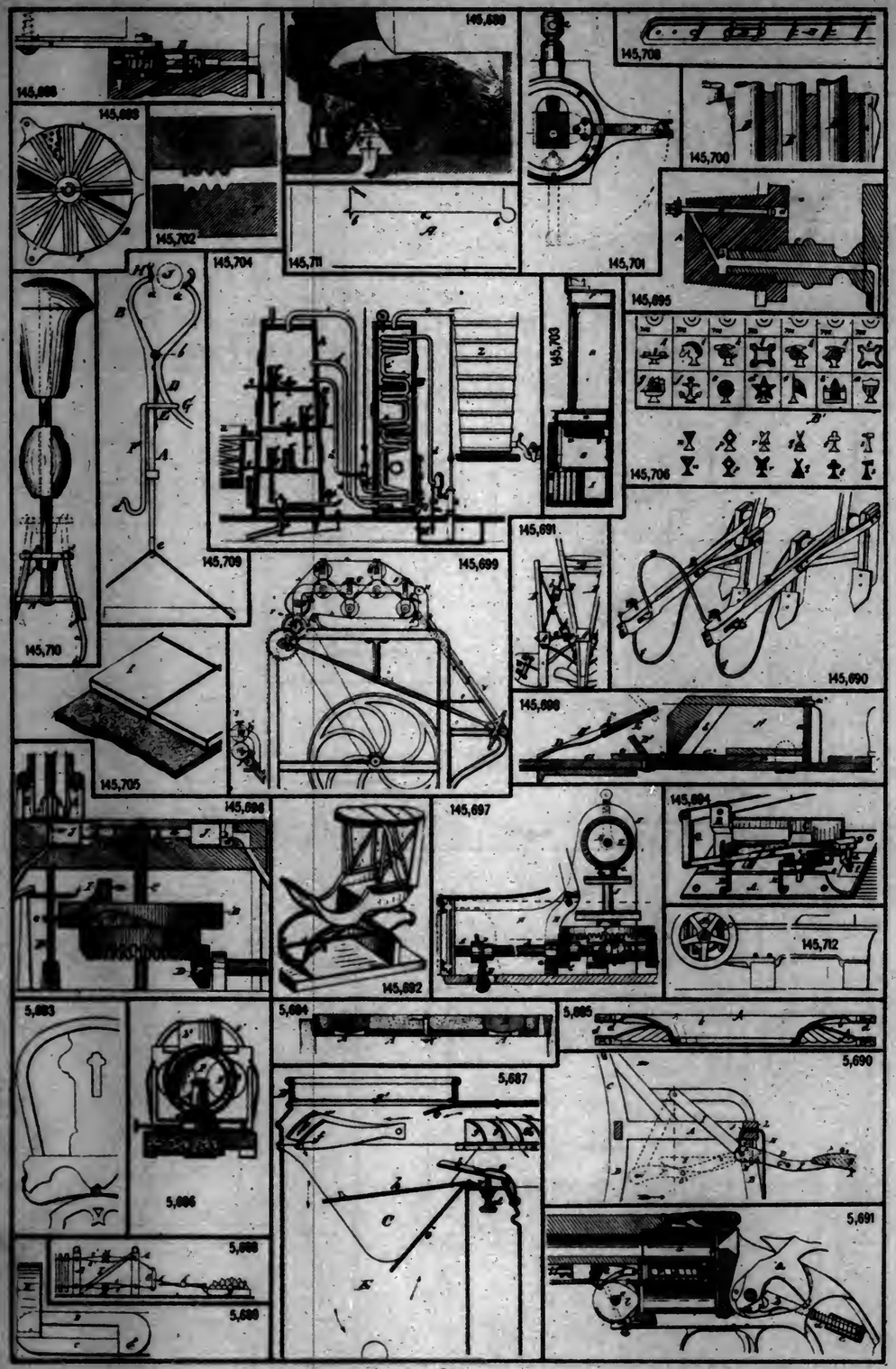
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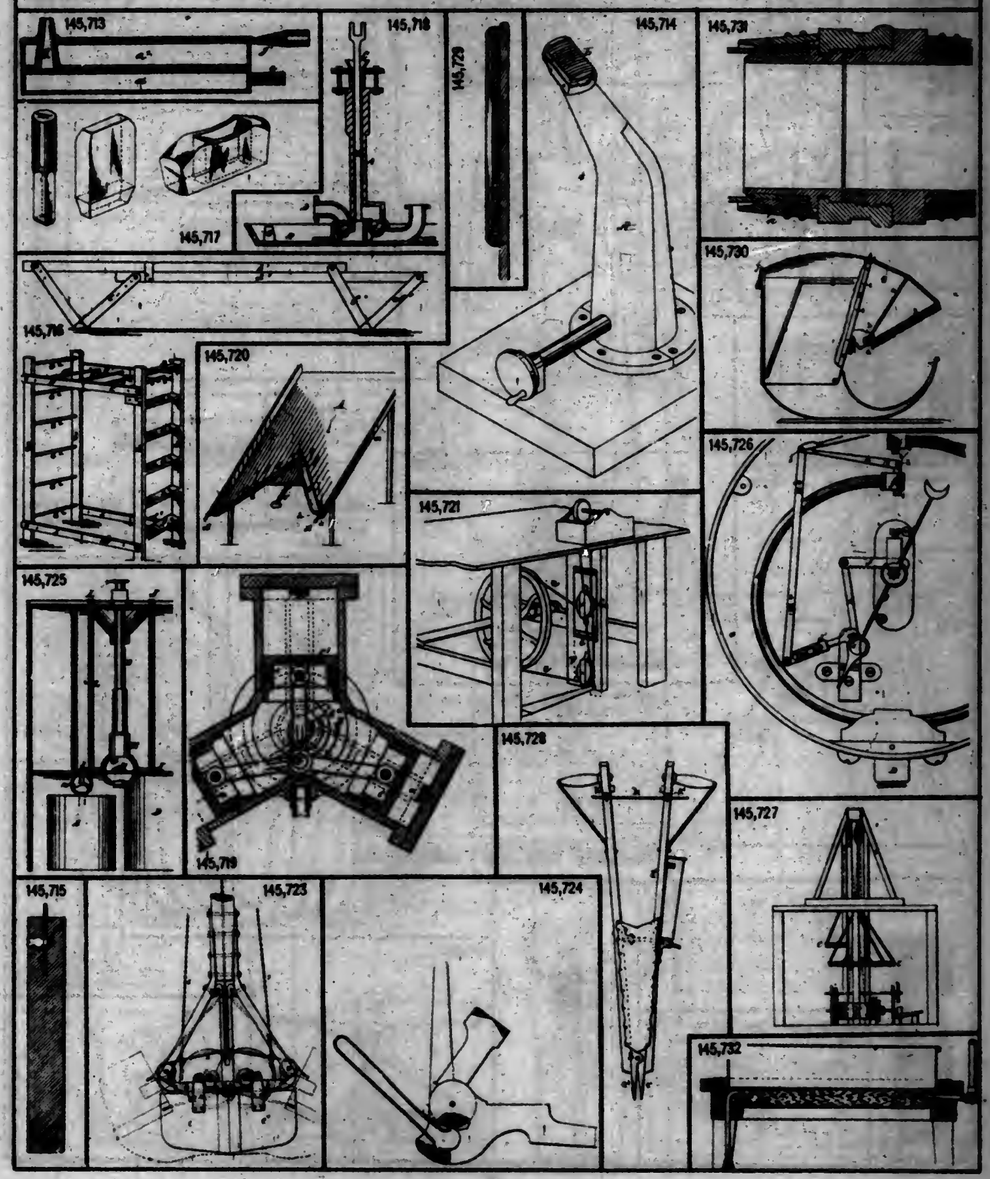
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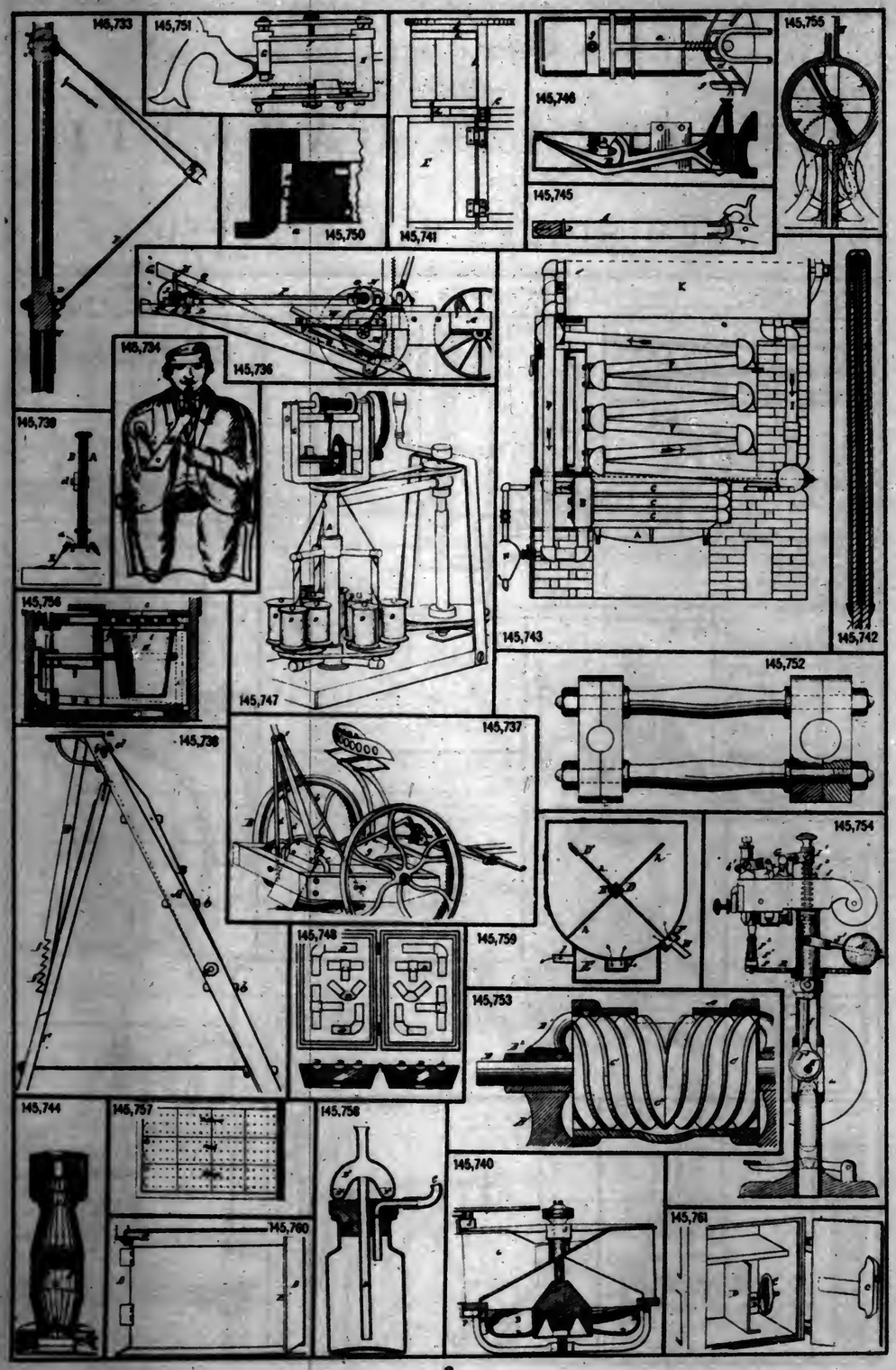
OF THE

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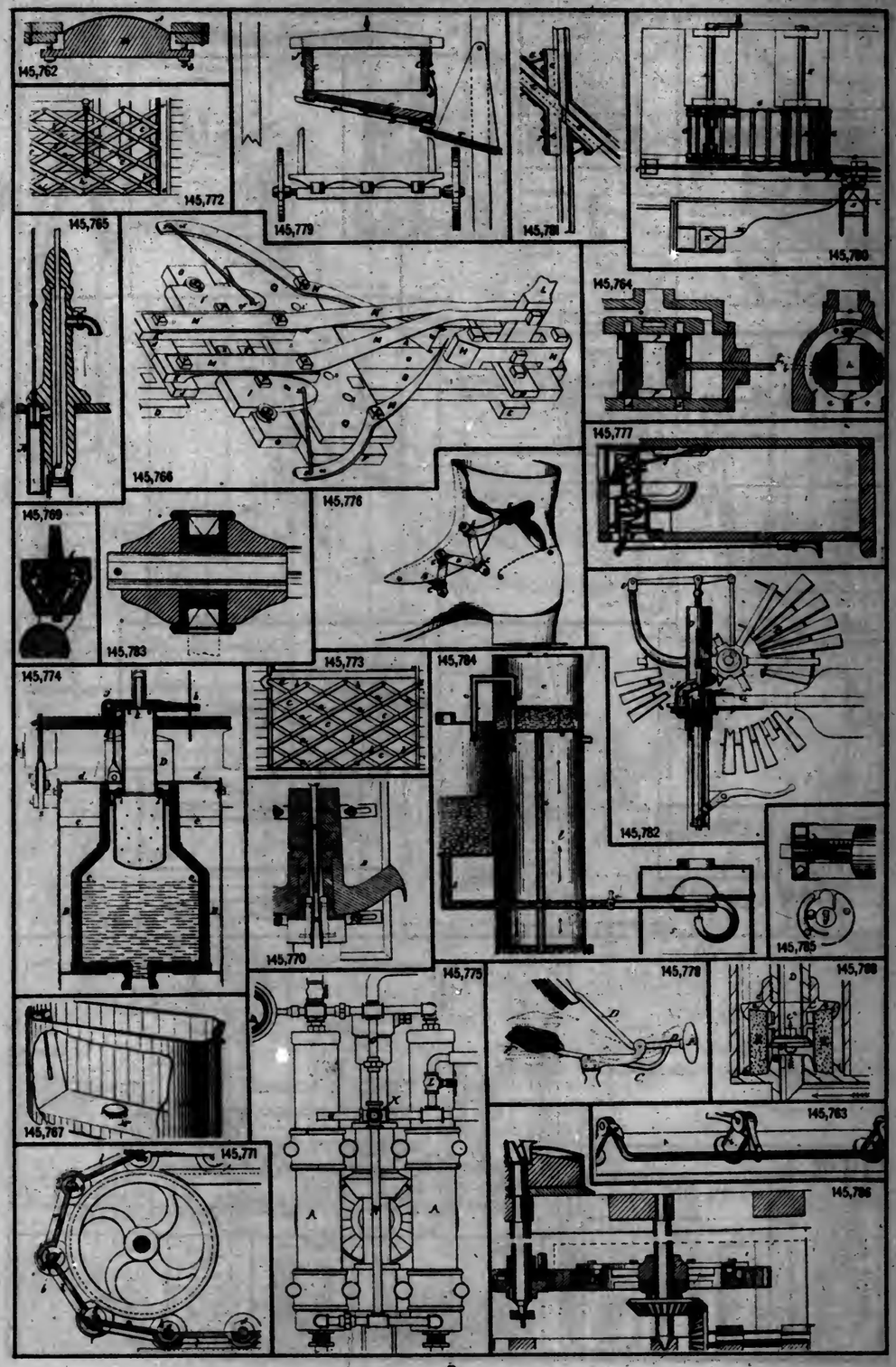
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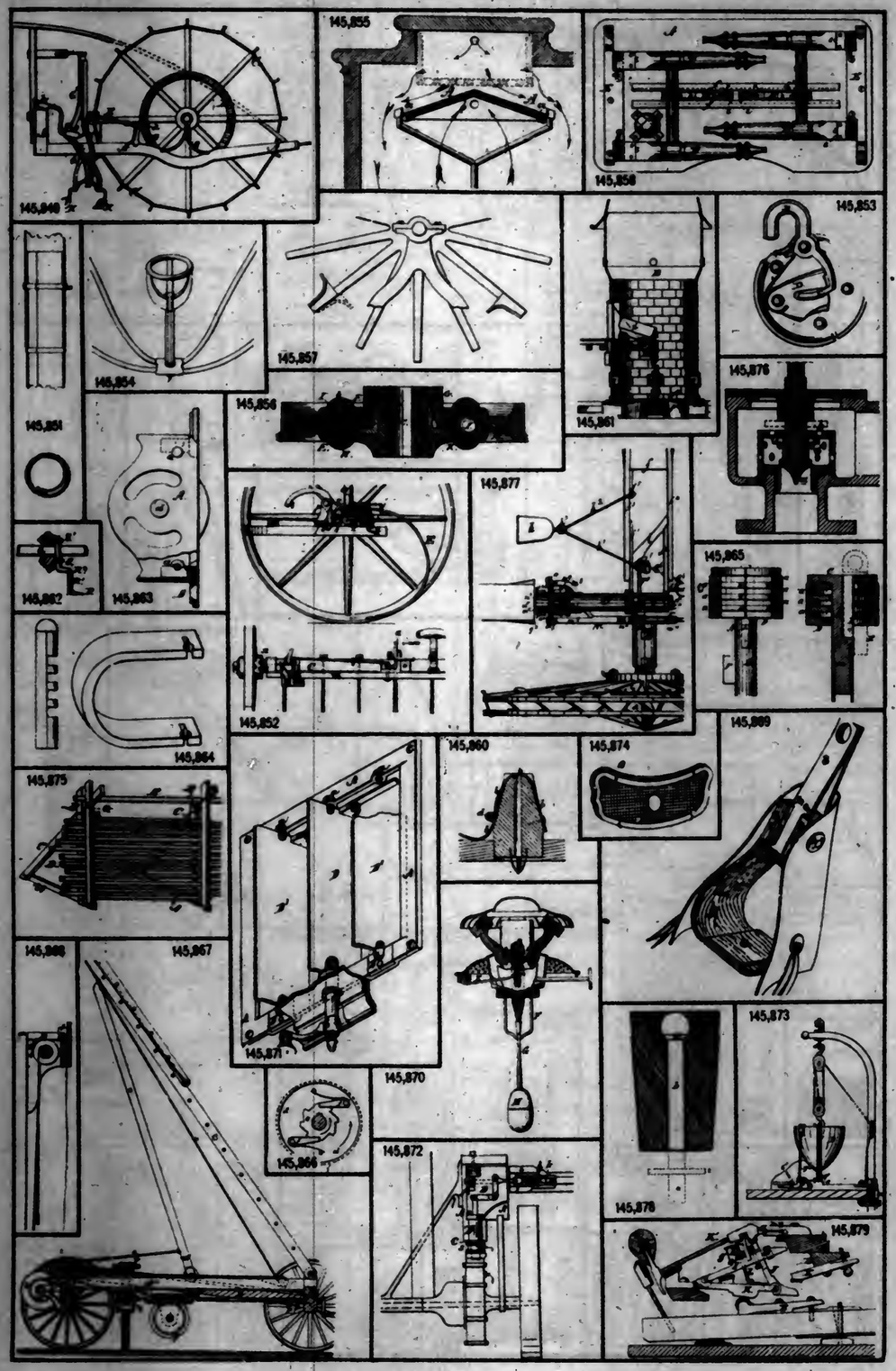
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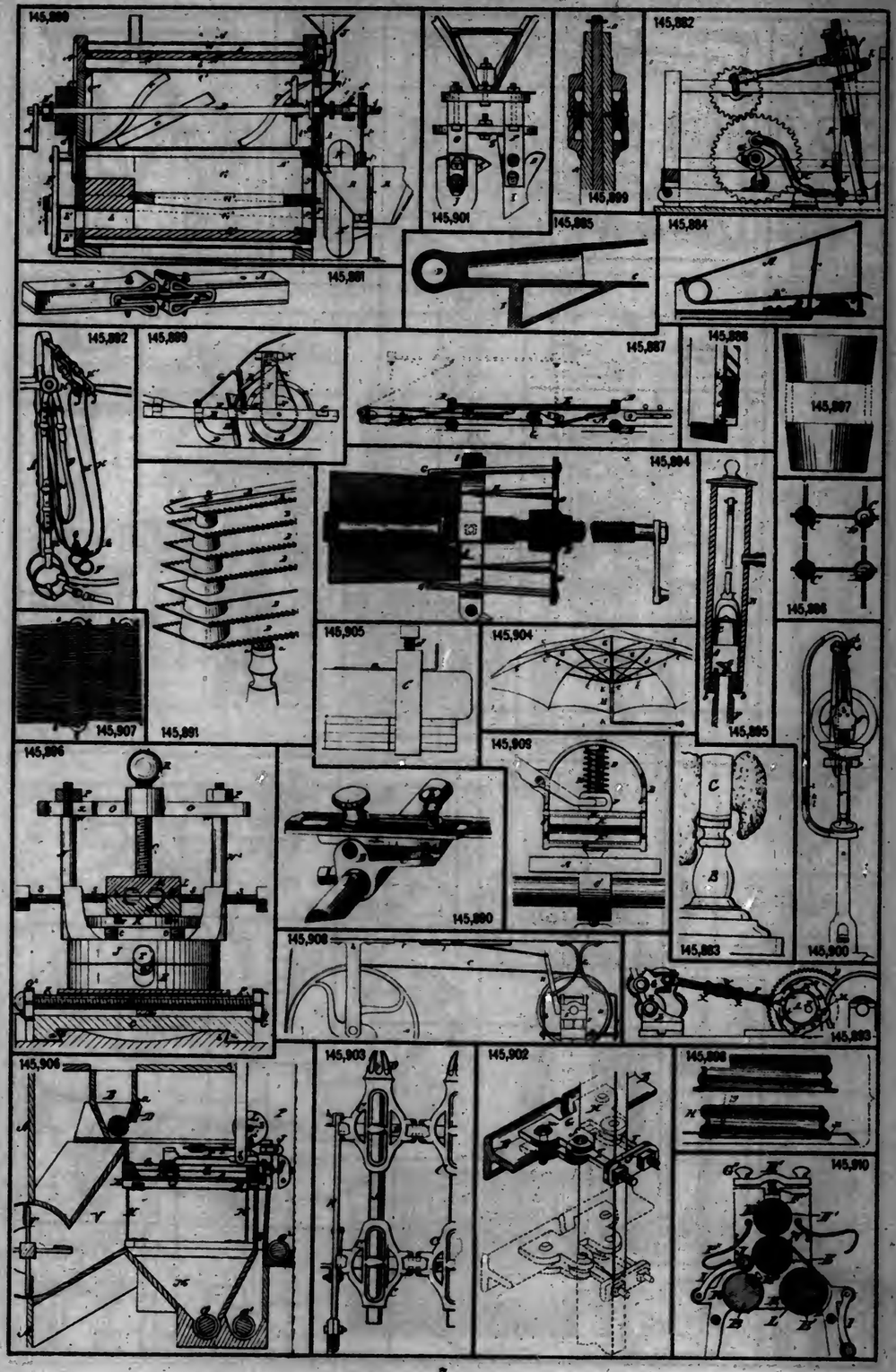
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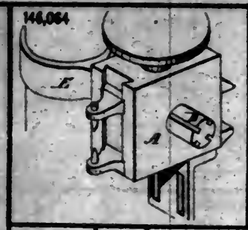
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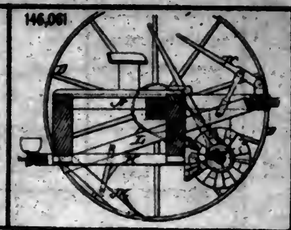
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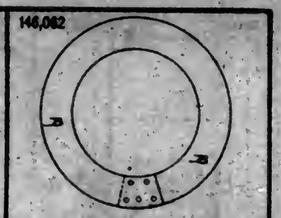
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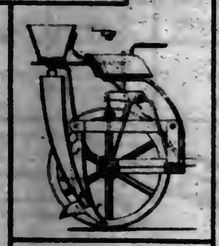
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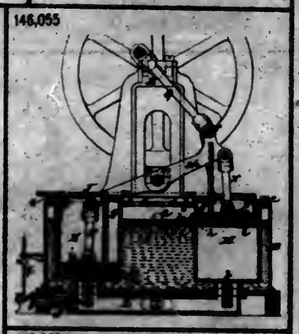
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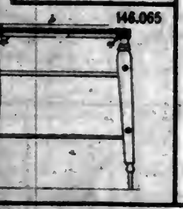
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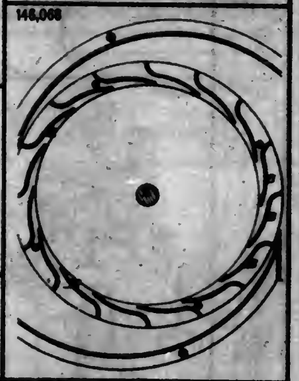
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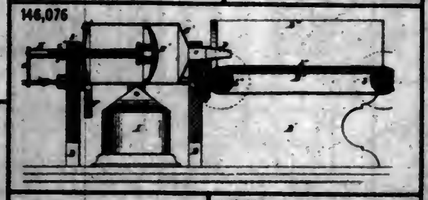
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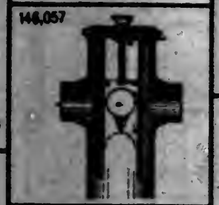
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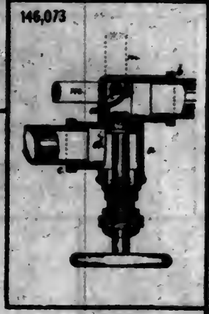
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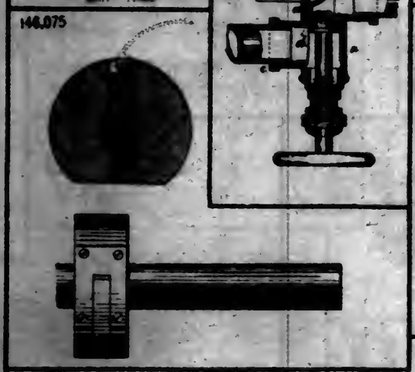
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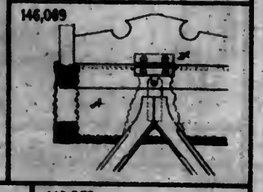
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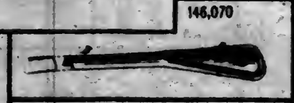
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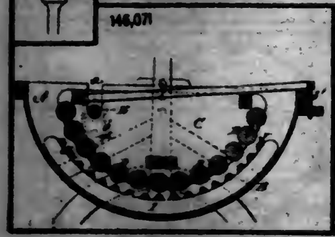
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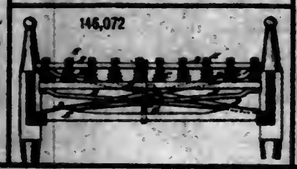
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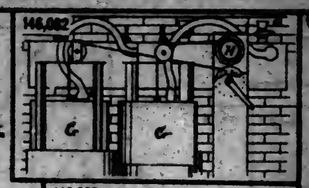
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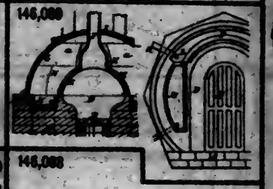
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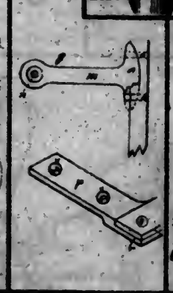
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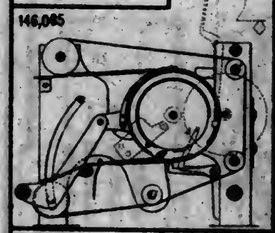
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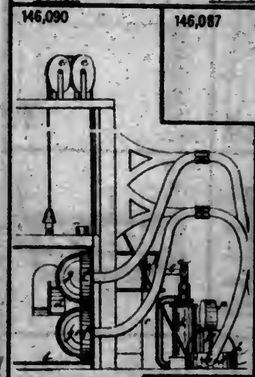
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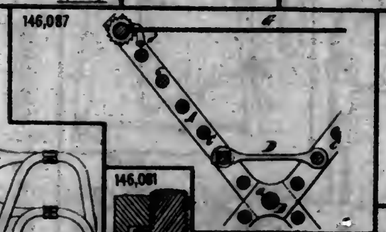
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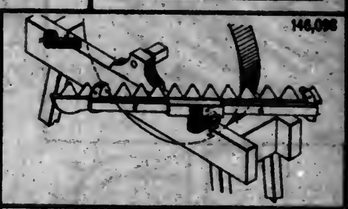
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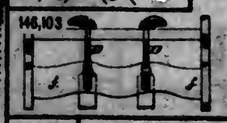
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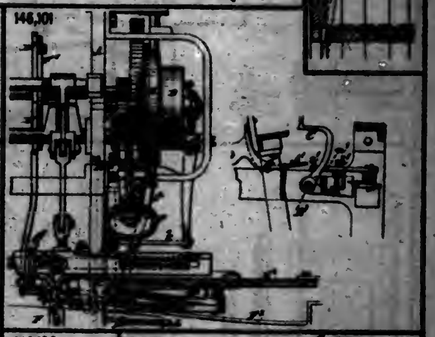
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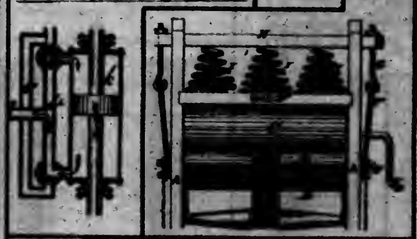
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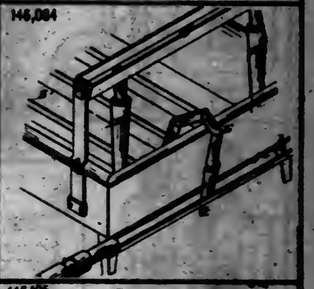
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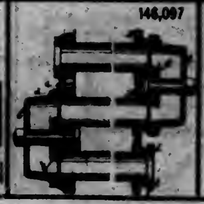
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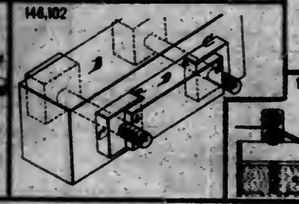
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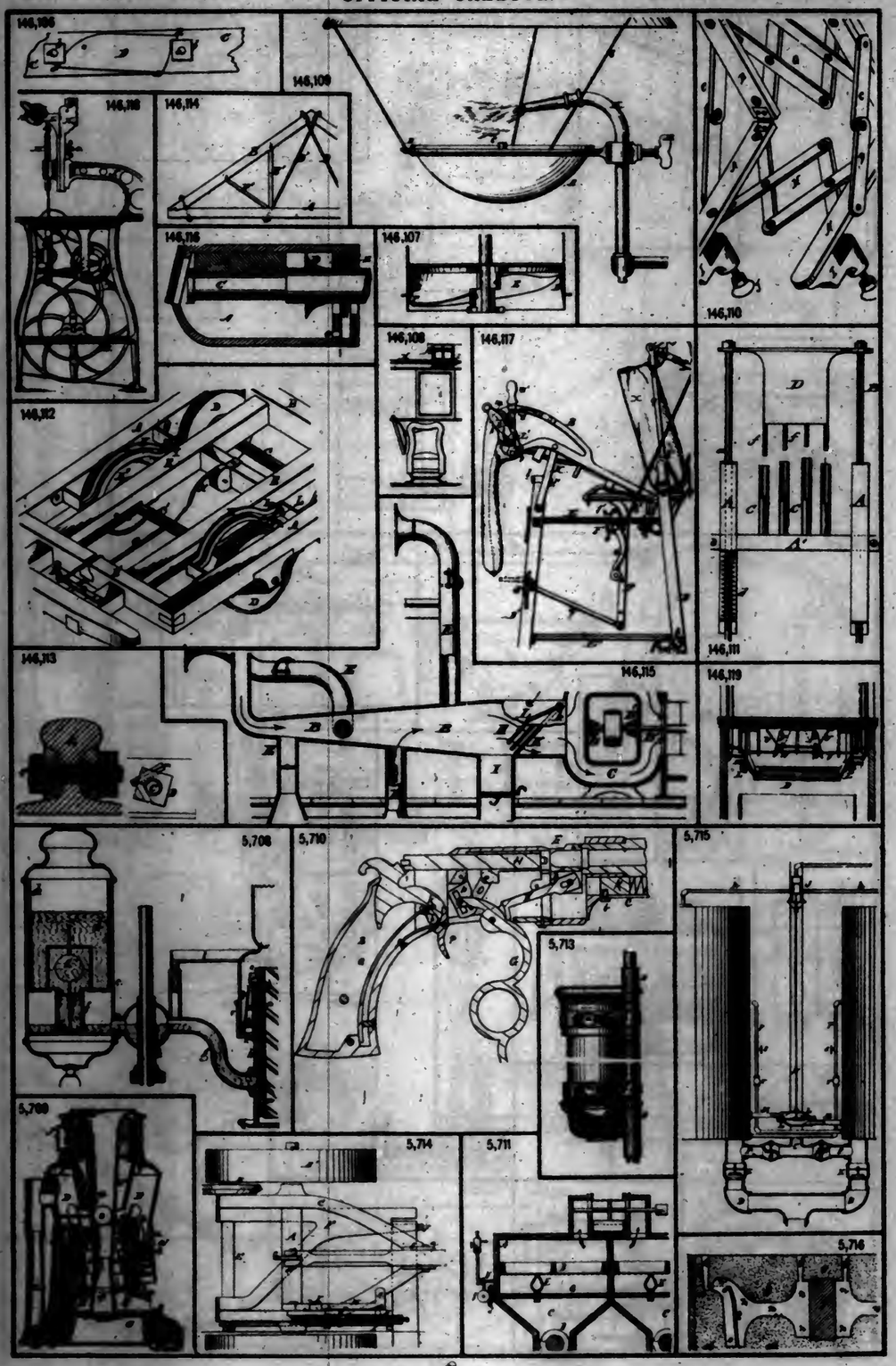
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Stanton and Perley, (interf.)	500
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DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND

DECISIONS OF UNITED STATES COURTS

IN THE MATTER OF

PATENTS AND TRADE-MARKS.

OFFICIAL GAZETTE—July—December—1873.

DIGEST OF DECISIONS.

[The names of court cases are designated by an asterisk, (*.)]

ABANDONED EXPERIMENTS.

(See Abandonment, A 2; Priority of Invention, 3.)

ABANDONMENT.

(A) In general.

(B) Under the statute.

(A) *In general.*

1. The questions of abandonment and forfeiture, in an interference, are distinct questions; for abandonment of an invention operates in favor of the public, and forfeiture in favor of another inventor. [Hyatt *vs.* French, 609.

2. The invention described in an application for a patent which has been filed and acted on by the Office must be presumed to be complete, and cannot afterward be treated as an abandoned experiment. [R. A. Stewart, 665.

3. Mere delay in prosecuting an application which had been erroneously rejected once would not work abandonment previous to the act of 1870. [R. A. Stewart, 665.

(B) *Under the Statute.*

1. A mere agreement to transfer an invention for the joint use of the inventor and of those who advance means for working it, which was entered into more than two years before the patent was applied for, but was not consummated till within that time, will not affect the validity of the patent. [*Elm City Co. *vs.* Wooster, 83.

2. Although a single actual use of an invention for two years will work an abandonment, if it cannot be considered experimental, yet to have that effect such use must be somewhat extensive, and for the purpose of gain. [C. W. Jenkins, 351.

3. The use of an invention may be found experimental, although it was continued for six years and no alteration was made in it. [C. W. Jenkins, 351.

4. It is not a bar to an application for a patent that more than two years before it was filed other parties had obtained a patent for the same invention, and had sold it publicly, if the applicant did not know of it nor assent to it. [C. W. Jenkins, 351.

5. An invention will not be held forfeited in consequence of its having been on sale more than two years before the application was filed on which the patent issued, if within the two years the inventor had filed a previous application which described the invention, and was intended to cover it, although it was not specified in the claim in express terms. The second application will be considered a continuation of the first. [*Smith *vs.* O'Connor, 633.

AMENDMENTS.

1. The oath filed with the application refers only to the specification and drawings, and the claims cannot be amended so as to embrace a feature not shown in either of them, though contained in the model, without filing a supplemental oath. [Eaton, Bledgett, and Mills, 525.

2. Whatever is embraced in the statement of the invention, or the claims, may be claimed without renewing the oath. [Eaton, Bledgett, and Mills, 525.

APPEALS.

(See Practice, A, 2.)

ARTICLE OF MANUFACTURE.

1. A grindstone severed from the quarry by sawing instead of splitting, and afterward finished, is not distinguishable from one manufactured in the usual way, nor patentable as a new article of manufacture. [G. Hibbard, 54.

2. An article of manufacture must be new in itself in order to be patentable; it is immaterial by what art or process it is produced. [Thos. J. Mayall, 210.

ASSIGNMENTS.

1. An assignment of the full and exclusive right to all the improvements made by an inventor, as set forth in the specification of a patent, does not convey his interest in the extension of the patent. [Holmes and Spaulding, 581.

2. An assignment of all the right, title, and interest in a patent does not convey the extended term. The conveyance of it must be in express terms, and the intention to transfer it must appear from the language. [Holmes and Spaulding, 581.

(See Parties to Actions, 1, 2.)

CASES COMMENTED ON.

Ex parte Bartholomew, Commissioner's D., 1871, p. 298. [Alois Kohler, 53.

Ex parte Collender, 2 Off. G., 360. [Alois Kohler, 53.

Marble Co. *vs.* Ripley, 10 Wall, 339. [*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

The Nicholson Pavement Co. *vs.* Jenkins, 1 Off. Gaz., 465. [Holmes and Spaulding, 581.

R. R. Co. *vs.* Trimble, 10 Wall, 367. [Holmes and Spaulding, 581.

Eynon's case, Commissioner's Decisions, 1871, p. 229. [Lones, Vernon, and Holden, 592.

CHANGE OF MATERIAL.

(See Novelty, C.)

CHANGE OF STRUCTURE.

(See Novelty, D.)

CLAIMS.

1. An alternative claim to only one or the other of two things, but to neither positively, is void; but a claim to each of two things, whichever is used, is valid. [*The Union Paper Bag Co, *vs.* Nixon, 31.

2. Every claim in an application must in one sense cover an independent invention, yet all the claims must pertain to one common subject. [Robert M. Franklin, 165.

3. Devices exclusively adapted to operate in a given machine may be claimed by themselves in a patent for the machine. [Robert M. Franklin, 165.

4. Mechanical movements which are applicable to general use cannot be claimed, though new, in the same patent with any particular apparatus in connection with which they may be shown in operation. [Robert M. Franklin, 165.

5. A mechanism through which any rectilinear motion may be made to give rotation to two shafts in opposite directions, cannot be claimed in the same application with other new devices in a propeller in which it is employed, though claimed in combination with the parts of the propeller with which it co-operates, and with the propeller itself.

[Robert M. Franklin, 105.

6. To recite in a claim for a product the means by which it is formed is but a circuitous way of specifying its nature. It renders the claim obscure, and should not be allowed.

[Thos. J. Mayall, 210.

7. The inventor who has first discovered the advantages of employing upon wringers a well-known roll formed of fibrous material embedded in india-rubber, in which the fibers stand out in radial directions, and has reduced it to practice in one form, is not for that reason entitled to monopolize all rolls fabricated of such materials, in which the fibers stand out radially, however they may be attached, or though constructed in a different way.

[*Forsyth *vs.* Clapp, 527.

8. The word "equivalent" is eminently ambiguous in its import, and the introduction of it in a claim will seldom be otherwise than useless or mischievous.

[D. F. Haasz, 610.

9. In a claim for "a fare-box in which a channel for the downward passage of a coin or check is bounded by converging rows of independent spring-rods, or their equivalents," &c., the words "or their equivalents" refer rather to the converging rows than the spring-rods; and the examiner was sustained in requiring them to be struck out.

[D. F. Haasz, 610.

10. A patent covers only the devices which are claimed, although others are described by way of explaining them or illustrating the way in which they operate.

[*Wheeler *vs.* McCormick, 602.

11. When a patent is reissued in several divisions no one of them is void on the ground that it describes all the mechanism shown in the original, provided the claim in each is for a different device, which is clearly described, and there is no conflict between them.

[*Wheeler *vs.* McCormick, 602.

12. An inventor may claim in one patent a combination of devices when they are so connected as to operate in a certain way; and in another he may claim in combination with some of those devices another one by means of which especially the operation so described is produced.

[*Wheeler *vs.* McCormick, 602.

(See Construction of Claims.)

COMBINATIONS.

1. Where two devices, each of which has previously been used to effect a certain purpose, are combined to effect the same purpose, the combination is patentable if it is operative and new, even though it constitutes little or no improvement.

[J. M. Stone, 54.

2. To secure together by bolts the two parts of a coupling which inclosses and unites the ends of two shafts, and to place bands over the coupling which retain the bolts in their place, and give the whole a smooth exterior, while the connection is strengthened, is patentable, although the bolts and the bands have each been used before for the purpose of uniting the shafts.

[J. M. Stone, 54.

3. A combination which includes machinery and the subject upon which it operates is not patentable.

[Robert M. Franklin, 105.

4. It is no infringement of a patent for a combination which is in itself impracticable and worthless, to add to the combination an element which renders it useful and valuable.

[*Robertson *vs.* Hill, 132.

5. There is no legitimate combination between the reservoir of a fire-extinguisher and the fluid it is intended to contain, unless they are especially adapted to each other.

[Barker and Mack, 155.

6. A claim should not be allowed for a combination of elements, no one of which is novel in itself, or produces any new effect upon the action of either of the others.

[B. S. Baker, 156.

7. To render a combination legitimate the constituent parts must produce some new operation in consequence of their being so arranged together, or some one of them must be novel in itself, and render the whole capable of producing a new result.

[B. S. Baker, 156.

8. A claim for saw-filing clamps and saw-setting tools, arranged independently upon a portable bench, held not to cover a combination of tools or machines.

[B. S. Castle, 179.

9. Such an assemblage of parts also held not to constitute a single patentable article or "kit," because the mere convenient assemblage of different and independent devices upon the same platform does not constitute invention.

[B. S. Castle, 179.

10. An assemblage of distinctive individual parts which is less than a combination of them falls short of invention.

[B. S. Castle, 179.

11. The relative functions of parts are to be kept in view in questions of this nature.

[B. S. Castle, 179.

12. The difference between a mere unpatentable assemblage of parts and a combination of them, in a legal sense, illustrated.

[B. S. Castle, 179.

13. Machinery for forming and completing a carriage-axle, and distinct machinery for polishing it after it is completed, cannot be treated as a combination nor considered under one application.

[Lones, Vernon, and Holden, 582.

14. Where two machines produce a result when they operate in conjunction, which they could not accomplish by their independent and disconnected action, they may be embraced in one patent as a combination.

[Lones, Vernon, and Holden, 582.

15. A combination may be patentable on account of the novelty of the arrangement, although all the elements are old.

[*Westlake *vs.* Carter, 636.

16. A patent for a combination is not infringed unless all the elements enumerated are used, or the equivalents of those which are omitted are substituted for them.

[*Westlake *vs.* Carter, 636.

17. To show that the parts omitted by the defendant from a patented combination are unessential will not render him liable as an infringer for the use of the rest.

[*Westlake *vs.* Carter, 636.

(See Construction of Claims, 4; Infringements, 6, 14; Novelty, B, 4.)

COMMISSIONER.

The authority of the Commissioner to require applications to be divided, so as to conform to the classification of subjects adopted by the Office, does not extend to all cases.

[Robert M. Franklin, 105.

CONSTRUCTION OF CLAIMS.

1. A claim for "a rotary blowing-case having concave arcs, in combination with end plates arranged so as to admit of the abutments being introduced or removed without requiring the case to be taken apart," held to mean so much of the case as incloses the operative parts, and that it was infringed by a case cast in two parts, of which one included only the legs and such portions as performed none of the functions of the machine, and on removing it the abutments could be introduced or removed.

[*Roots *vs.* Hyndman, 29.

2. Claims which can be construed to embrace meritorious combinations and devices will not be construed to embrace a principle, and to be therefore void, though they are capable of being so interpreted.

[*The Union Paper Bag Co. *vs.* Nixon, 31.

3. Where the bar on which the tube is supported in a paper-bag machine has the lower side extended beyond the upper, so that the lower side of the tube will be cut off with a lap to form the bottom of the bag, a claim for a combination of several of the devices employed, which enumerates among the rest "machinery for cutting the tube slantwise, as specified, while it is on the former or holder, and machinery for pasting or cementing the said tube near its front end, and bending or lapping the end of the tube on the cemented part so as to form the bottom of the bag," was held to embrace the extension of the lower side of the bar.

[*The Union Paper Bag Co. *vs.* Nixon, 31.

4. A claim for "arranging the pitch-line of the feeding-gear in, or about in, the prolongation of the axis of the shaft of its crank, whereby we obtain intermittent and variable motions of the paper, as described," held to be a combination claim, and to include the roller which works in the supporting-bar and the devices for carrying forward the paper, and giving it tension while it is severed, though they are not specified.

[*The Union Paper Bag Co. *vs.* Nixon, 31.

5. Although the claim, in a patent in which a roll formed of fibrous material embedded in india-rubber with the fibers standing out in radial directions is described, may be expressed in terms so broad as to cover all such rolls with radial fibers, the court will look into the specification and restrict the claim to what is there shown; and if the patent be a reissued one, they will also look into the original specification for the same purpose.

[*Forsyth *vs.* Clapp, 527.

6. A claim for "a receiver for pan water-closets formed and constructed so that the side A D, into which the pan C swings for emptying, will conform to the shape of the pan," &c., held, on comparing it with the specification, to be a claim not merely for a conformity, but for a conformity attained by specified means, and to be valid.

[*Smith *vs.* O'Connor, 633.

7. Held, also, on a like comparison with the specification, that the claim was not too broad.

[*Smith *vs.* O'Connor, 633.

(See Claims, 8; Combinations, 8.)

CONSTRUCTION OF SPECIFICATIONS.

(See Construction of Claims.)

CONTINUING APPLICATIONS.

(See Abandonment, B, 5.)

CORPORATIONS.

A corporation may maintain a suit in the district where its rights are infringed, although it was created under the laws of a State without the district.

[*Elm City Co. *vs.* Wooster, 83.

COSTS.

(See Infringements, 17; Pleadings and Practice, 3.)

DAMAGES.

If the patentee is engaged in manufacturing the patented article for sale, his damages will be manufacturer's profits.

[*Westlake *vs.* Carter, 636.

DESIGNS.

1. A patent will not be granted for a design which is shown in the drawings annexed to a patent already issued for a machine, although the machine or design may either of them be used without the other.

[Alois Kohler, 53.

2. Although the grantee of the machine patent is the applicant for the design patent, he should be denied in such a case.

[Alois Kohler, 53.

3. If the patentee of a machine discloses in his specification his intention of obtaining a patent for the design shown in his drawings, it seems that he might then obtain such a patent.

[Alois Kohler, 53.

4. A single design patent should not be granted for two articles which are not ordinarily used together.

[Bloomfield Brower, 450.

5. Nor where their relative positions are liable to be varied when used together.

[Bloomfield Brower, 450.

6. An inkstand and its stopper do not together form a legitimate subject for a design patent.

[Bloomfield Brower, 450.

7. The law authorizing the granting of patents for designs contemplates such articles only as are intended for ornament or decoration.

[C. A. Seaman, 691.

8. The utility of an article may constitute a claim for a design patent, but not unless its utility is that of ornamental form and appearance, and it is employed merely for decoration.

[C. A. Seaman, 691.

9. If the only merit which can be attributed to the form of an article is due to its mechanical operation it can be patented only as a mechanical invention.

[C. A. Seaman, 691.

DILIGENCE IN PROSECUTING INVENTIONS.

(See Priority of Invention, 3.)

DIVISION OF PATENTS.

(See Joinder of Inventions.)

DRAWINGS.

(See Reissues, 5.)

DOUBLE USE.

(See Novelty, B.)

EQUIVALENTS.

(See Infringements, 1, 3, 4, 15; Novelty, D, 5.)

EVIDENCE.

(See Pleadings and Practice, 4, 5, 6, 7; Priority of Invention, 6.)

EXAMINER OF INTERFERENCES.

1. The Examiner of Interferences has no authority to decide upon the novelty of the devices in controversy before him. The primary examiner and the appellate tribunals alone possess that jurisdiction.

[Neubocker *vs.* Schafhaus, 319.

2. If it appears to the Examiner of Interferences that the novelty of the devices in interference has not been sufficiently investigated, or when a new reference has been discovered, he should suspend the interference.

[Neubocker *vs.* Schafhaus, 319.

EXPERIMENTAL USE.

(See Abandonment, B, 2, 3.)

EXTENSIONS.

(A) In general.
(B) As to novelty and utility.
(C) As to value and importance.
(D) As to remuneration.
(E) As to diligence.

(A) *In general.*

(See Assignments, 1, 2; Joint Inventors, 5, 6; Practice, B.)

(B) *As to novelty and utility.*

1. An applicant for an extension will not be required to erase from his specification the description of an invention, which he uses but does not claim, at the demand of a remonstrant who has a patent for the invention, and who apprehends that the applicant may set up a title to it on a reissue. The applicant has a right to apply for a reissue, and to have the question tried on an interference.

[M. P. Norton, 156.

2. A patent granted December 6, 1859, upon an application filed February 27, 1851, is a bar to the extension of a patent for the same device granted January 11, 1859.

[R. A. Stewart, 665.

(C) *As to value and importance.*

In an application for the extension of a patent it is not sufficient, in order to establish the value or importance of the invention, to show that of a more extensive process and a larger machine in which the invention was embodied.

[F. P. E. Carré, 180.

(D) *As to remuneration.*

If an invention is an obvious one and sure to be devised in a short time, the first one to produce it does not seem to be entitled to the same remuneration for it, however great the benefits resulting from it, as the inventor of an improvement less likely to be discovered.

[M. P. Norton, 156.

(E) *As to diligence.*

If neither the patentee nor any one else has ever employed the materials designated in his patent for the purpose intended, yet

if his assignees have employed the equivalents of them he cannot be charged with want of diligence.

[T. J. Mayall, 582.

FORFEITURE.

(See Abandonment, A, B; Priority of Invention, 7, 8, 9.)

INFRINGEMENTS.

1. A patent for a rotary blower-case, of which the interior and certain specified parts are rendered true by means of plaster-of-paris "or its described equivalent," and which describes as an equivalent such materials as are capable of being made plastic when applied, and becoming hard in a suitable time, is infringed by the use of litharge and glycerine for the same purpose.

[*Root *vs.* Hyndman, 29.

2. A claim for a combination of several devices employed in a paper-bag machine, including a bar on which the paper tube was supported, having the lower side extended beyond the upper, so that the lower side of the tube will be cut off with a lap to form the bottom of the bag, and also machinery for cutting the tube slantwise, as specified, and machinery for pasting or cementing the tube, &c., is infringed by the use of such a supporting-bar, although turned upside down, and made with its rear end smaller than the rest, and without the cutting-edges or the rollers that carry forward and paste the paper.

[*The Union Paper Bag Co. *vs.* Nixon, 31.

3. A patent for making the frame of a paper-bag machine adjustable upon its bed by means of a slot and screw, is infringed by making the frame so heavy as to be held in place by its weight.

[*The Union Paper Bag Co. *vs.* Nixon, 31.

4. A claim for creasing-rollers in a paper-bag machine, in combination with other devices, is infringed by rounded bars or hooks working in a similar combination with the same effect.

[*The Union Paper Bag Co. *vs.* Nixon, 31.

5. Paint-cans with one end made wholly of tin, which can be easily cut through, held to be an infringement of a patent for a paint-can, the top of which is extended and united to the sides by a disk-ring of brass, and which can be readily opened by cutting through the brass.

[*Masury *vs.* Anderson, 55.

6. The unauthorized use of a combination which operates upon the same principle with one that is patented is an infringement of the patent, although in the place of some of the constituent devices others are substituted which were known to be the equivalents of them when the patent was issued.

[*King *vs.* The Louisville Cement Co., 481.

7. Although the patent in suit contains nothing inconsistent with the claims set up in a later patent, yet a machine constructed in accordance with the later patent may be an infringement of the former.

[*Bachelder *vs.* Moulton, 501.

8. The defendant's sewing-machine being found to contain several devices embraced in the plaintiff's patent was held to be an infringement, although the feeding is always effected by the same part of his feeding-bar, while different portions of the plaintiff's feeding-cylinder operate at different times.

[*Bachelder *vs.* Moulton, 501.

9. It was also held to be an infringement although the defendant's feeding device is always in contact with the material, and that in the patented machine is not.

[*Bachelder *vs.* Moulton, 501.

10. Neither will the substitution of a roughened surface on the feed for holding the material in lieu of impaling-pins relieve from the charge of infringement, although the change allows the material to be turned, and a curved seam to be produced.

[*Bachelder *vs.* Moulton, 501.

11. A roll for a wringer consisting of fibrous material, of which the fibers are looped about a wire wound tightly around the shaft, and the ends stand out from the shaft in a radial direction, the whole being embedded in india-rubber, which is thereby attached to the shaft, is not an infringement of a patent for a similar roll, in which the fibers also stand out radially, but in curved directions, and are attached to the shaft only by means of the rubber in which they are embedded.

[*Forsyth *vs.* Clapp, 527.

12. Where two patents have been granted for articles which resemble each other a presumption arises from the action of the Office that there is such a difference between them that the use of one constitutes no infringement of the patent for the other.

[*Smith *vs.* Woodruff, 635.

13. If one paper-file holds the paper better than another which is patented, and has driven it out of market, that is *prima-facie* evidence that the mechanism is different, and is a new invention, and that the use of it does not violate the patentee's monopoly.

[*Smith *vs.* Woodruff, 635.

14. A patented combination may be used without infringing the patent if one of the elements of the combination is omitted, although another is substituted in its place which is new, or performs a substantially different function, or if it was not known as a proper substitute when the patent was issued.

[*Smith *vs.* Woodruff, 635.

15. A device is the equivalent of one that is patented if it performs substantially the same function in the same way, and produces the same result, though it may be of a different form and bear a different name; and the use of it will be an infringement.

[*Westlake *vs.* Carter, 636.

16. A patent for a carriage-wheel in which the spokes have tenons inserted in the hubs, and are sustained against pressure endwise by the shoulders of the tenons, and laterally by collars on each side bolted together, is infringed by a similar wheel in which the spokes are made tapering without shoulders, and enter into corresponding mortises in a solid collar and in the hub, and are sustained endwise on the inclined sides of the mortises.

[*Sarven *vs.* Hall, 666.

17. The defendants were led into adopting this form in consequence of their employment of the shoulders having been urged by the patentee's counsel in a former suit as constituting the breach of the patent; and though an injunction was ordered against them, it was without costs.

[*Sarven *vs.* Hall, 666.

18. Although a patent has expired and the device covered by it can be used only in connection with other devices embraced in a patent still in life, the latter devices cannot be used without the consent of the patentee, even in connection with the first.

[*Wheeler *vs.* McCormick, 692.

(See Combinations, 4, 16, 17; Construction of claims, 1; Parties to Action, 4.)

INJUNCTIONS.

1. The Court will seldom hear any evidence, except on the question of infringement, upon a motion for a preliminary injunction, if the patent has been sustained in three previous cases, especially when the defendant was interested in the defense of one of them.

[*Robertson *vs.* Hill, 132.

2. The complainant having been long in the enjoyment of his patent, a preliminary injunction was ordered restraining the defendants from infringing it, notwithstanding affidavits were filed showing that articles embodying the alleged invention had been in use before the complainant made it, there being evidence to the contrary, and none of the articles being produced.

[*Chase *vs.* Wesson, 476.

3. Although courts of equity will not ordinarily, even where the title is clear, disturb the existing order of things by an injunction, they will interfere to preserve them in that condition until the rights of the parties are ascertained, notwithstanding some doubts may rest upon them, provided they are in the course of being judicially determined.

[*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

4. While the courts will not enjoin the specific performance of a contract when they can exercise no supervision over it, or when it would force upon an employer a servant personally objectionable to him, they will nevertheless restrain the parties from any action infringing the contract.

[*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

5. An injunction against trespassing upon an exclusive license to sell a patented article may be granted against parties who are not bound by the contract, or who have no notice of it.

[*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

6. Where one party to a contract has already received a benefit from the performance of it by the other, he will be restrained from violating it, although the other is not bound by it.

[*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

7. Where a corporate body had given the plaintiffs an exclusive license to sell machines embodying inventions of which it held the patents, and had agreed to furnish the machines at a stipulated price, it was prohibited from taking measures to dissolve its organization, and its assignee of the patents in trust for a new association was prohibited from disposing of them.

[*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

8. But the corporation was not decreed to perform the contract.

[*The Singer M. Co. *vs.* Union Button Hole, &c., Co., 553.

INTERFERENCES.

(See Practice, C.)

INVENTION.

(See Invention and Skill; Subjects of Patents.)

INVENTION AND SKILL.

1. Stone has usually been quarried by sawing or cutting, or by splitting where the texture permitted and the stone was of little value, and it is a mere matter of judgment which mode shall be adopted.

[G. Hibbard, 54.

2. It is not patentable, therefore, to sever grindstones from the quarry by sawing, and then to finish them by turning and eyeing them, instead of first splitting them out as usual.

[G. Hibbard, 54.

3. An ordinary paper bag used for sacking brooms cannot be claimed as an invention independent of the process of sacking.

[Charles H. Toll, 500.

4. Although an inventor is ignorant of the practice and operation of the ingredients by which he accomplishes his object, yet if he discovered them while endeavoring to accomplish it, his achievement is not to be reckoned an accident to the prejudice of his patent.

[T. J. Mayall, 582.

(See Combinations, 9, 10; Novelty C, 3, 4; Novelty D, 10, 11.)

JOINDER OF INVENTIONS.

1. A claim for a peculiar fluid to be used in a fire-extinguisher cannot be embraced in a patent for the instrument, but it must be covered by a separate patent.

[Barker and Mack, 155.

2. An inventor may have distinct patents for several distinct devices, although he might have included them all in one, making a separate claim for each device.

[Wheeler *vs.* McCormick, 692.

(See Combinations, 13; Commissioner; Patents, 1, 2; Reissues, 3, 4.)

JOINT INVENTORS.

1. Where two persons have taken out a patent as joint inventors each of them seems to be estopped from setting up a claim that he is the sole inventor, so long as the other denies it.

[Chase *et al.* *vs.* Chase, 4.

2. If such a claim can be entertained at all it must be established by conclusive proof.

[Chase *et al.* *vs.* Chase, 4.

3. If one originates the general idea of an improvement, and another aids him in developing it and reducing it to a practical form, they may be considered joint inventors.

[Chase *et al.* *vs.* Chase, 4.

4. Where one person invented one part of a machine and perfected another part after a second person had suggested it, and both united in elaborating the whole and reducing it to form, the second was held not to be the sole inventor.

[Chase *et al.* *vs.* Chase, 4.

5. The extension of a patent issued to two joint inventors will be denied if one of them has since deceased, and his representative not only refuses to join in the application, but protests against its being allowed.

[J. B. Wickersham, 155.

6. A patent issued to two joint inventors cannot, it seems, be extended upon the several application of one of them.

[J. B. Wickersham, 155.

JURISDICTION.

(See Commissioner; Examiner of Interferences, 1.)

MANUFACTURES.

(See Articles of Manufacture.)

MODELS.

(See Amendments, 1; Reissues, 7.)

NOTICE OF DEFENSE.

1. It is not sufficient to give notice of special matter of defence in an action upon a patent thirty days before the trial; it must be given thirty days before the first day of the term.

[*Westlake *vs.* Carter, 636.

2. Such notice need not specify the particular portion of the plaintiff's patent to which the evidence applies.

[*Westlake *vs.* Carter, 636.

3. Patents may be given in evidence to show the state of the art without such notice; but printed publications cannot be.

[*Westlake *vs.* Carter, 636.

(See Pleadings and Practice, 2.)

NOVELTY.

(A) In general.

(B) In the application.

(C) In the material.

(D) In the structure or process.

(A) *In general.*

1. The results accomplished by an invention are more to be relied upon in determining the question of its novelty than a consideration of the steps by which it was arrived at, although it is well to take them also into account.

[T. N. Foster, 377.

2. If better results are obtained through the use of different means, it is a sure test of invention when neither the results nor means are frivolous or insignificant.

[Orison Underwood, 449.

(See Designs, 1, 2, 3; Infringements, 12, 13; Novelty, D, 8; Priority of Invention, 2.)

(B) *In the application.*

1. Although a combination of an endless apron and a delivery-head composed of three rollers has been employed in preparing cotton for spinning, it is patentable to employ a like combination in preparing wool for spinning, since it required a special adaptation of the drawing-head for that purpose.

[J. and J. Dobson, 499.

2. It is common to adjust the height of parts of machinery by providing holes into which the bolts may be inserted by which they are suspended, and to adjust the height of the pressing-box in a machine for sacking brooms by these means is not patentable.

[Charles H. Toll, 500.

3. If a tube has been formerly prepared from fibrous material and india-rubber in a certain manner, and cut into rings for stuffing-boxes, to use similar tubes upon shafts for the rolls in a wringing-machine does not entitle any one to monopolize them as his invention.

[*Forsyth *vs.* Clapp, 527.

4. But he may have a patent for the combination of a tube thus constructed with the shaft, although united in the same way that tubes and shafts have been before united for the same purpose, provided new results have been thereby effected.

[*Forsyth *vs.* Clapp, 527.

(See Novelty, C, 2.)

(C) *In the material.*

1. A patent for a rotary blower-case of which the interior and certain other parts are rendered true by means of plaster-of-paris, &c., is not impeached for want of novelty because a pump lined with molten metal was before known.

[*Roots *vs.* Hyndman, 29.

2. Nor because others have, by means somewhat similar, made the abutments in such a machine true, those not being specified in the claims.

[*Roots *vs.* Hyndman, 29.

3. When material advantages have resulted from the substitution of paper for metal in the fabrication of any article, there arises a presumption, in view of the different qualities of the two materials, that invention has been exercised.

[P. M. J. Chamblant, 106.

4. But spools having been previously manufactured from paper, it is not patentable to make bobbins from that material in the same form in which bobbins have been made from metal.

[P. M. J. Chamblant, 106.

(D) *In the structure or process.*

1. An application claiming the rolling of tubes without a mandrel from a hollow fagot composed of layers of bars riveted together, is answered by a patent describing the same process, except that it does not mention how the bars are attached together, that being a requisite which every mechanic would supply without its being specified.

[E. Wheeler, 3.

2. A patent for a paint-can, the top piece of which is extended and united to the sides by a disk-ring of brass, and which can be

opened readily by cutting through the brass, is not void for want of novelty, because milk-cans have been known with their sides carried up and united to the top by a tube-ring of lead, capable of being easily severed for the same purpose.

[*Masury *vs.* Anderson, 55.

3. Nor on account of cans for holding potash made of tagger's iron, nor of such cans made with heads and bottoms of tin not intended to be opened by cutting.

[*Masury *vs.* Anderson, 55.

4. A seal-lock in which the bow and seal must be locked by separate movements has merit as an improvement, although a lock has been patented in which both were locked by one movement, but the seal might be released in locking the bow.

[Thos. Slaight, 82.

5. A screw which is rotated in a stationary nut by means of a spur-wheel upon the screw gearing with another, and which is thereby made to move longitudinally, is but the equivalent of one to which, while it is prevented from turning, a like movement is imparted by a nut made to rotate upon it by means of a pulley placed upon the nut and belted to a drum.

[*King *vs.* The Louisville Cement Co., 181.

6. A mowing-machine with "an independently-vibrating cutter-frame" which is raised by a chain that obviates the side draft, yet still allows the cutter-bar to vibrate, is not anticipated by one in which the cutter-frame is rigidly attached to the tongue-frame, and when raised by a similar chain the driving-wheel is also raised from the ground, and is no longer operative.

[T. N. Foster, 377.

7. If a syringe has been previously known having a bulb with a screw upon it, by which a flexible tube could be attached to it, it is fatal to a patent which claims "so forming the connection between the bulb and its flexible tube that the bulb can be used separately with a jet-pipe, as well as with its flexible tube, thus adapting the syringe to all the various operations for which it may be required, as described."

[*Richardson *vs.* Lockwood, 398.

8. Even if those who made the prior syringe never thought of attaching a jet-pipe to the bulb, that will not avail to save the patent.

[*Richardson *vs.* Lockwood, 398.

9. To extend the outsole of a boot into the heel, instead of having it terminate at the heel, and to place the heel-plate between it and the insole, constitutes an invention.

[Orison Underwood, 449.

10. A railway-conductor's ticket-book having been prepared with symbols which when punched out indicated certain facts, adding more symbols of the same kind to indicate, when punched out, further facts, requires no invention.

[Samuel S. McNaughton, 525.

11. Where the book had been prepared with duplicate leaves, which were to be punched together, and were so attached at one side and one end that one was detachable, to prepare such a book, with the duplicate leaves thus attached at both ends, merits no reward.

[Samuel S. McNaughton, 525.

12. A metallic button-hole for suspenders formed with a link to hold the strap, and an aperture at right angles to it through which the button is inserted, with enlargements on the sides for passing the eye, is not now or patentable, in view of a like device before known, having an aperture for inserting the button parallel to the link, with an enlargement on the under side for passing the eye.

[*B. J. Greeley, 612.

13. Such merely structural modifications which do not change the operation of a device are not patentable, though they produce a better result, if the result be of the same kind.

[*B. J. Greeley, 612.

(See Combinations, 1, 2.)

PARTIES TO ACTIONS.

1. A patentee may maintain a suit at law upon his patent in his own name, although he is under a contract to assign it to others, if the contract has not been executed.

[*Wheeler *vs.* McCormick, 692.

2. But equity regards that as already done which the patentee has agreed to do, and requires that the proposed assignees be made parties to a bill in chancery brought against infringers.

[*Wheeler *vs.* McCormick, 692.

3. If the other parties to such a contract release to the patentee all their interest in the patent, he may maintain a bill in his own name for all subsequent infringements, but not for those committed previous to the release.

[*Wheeler *vs.* McCormick, 692.

4. Neither can he recover damages for any infringements committed after he has sold and assigned the patent.

[*Wheeler *vs.* McCormick, 692.

PATENTABILITY.

(See Patents, 3.)

PATENTS.

1. The exclusive privilege of fabricating out of sheet metal nails corrugated lengthwise may be secured to the inventor by a single patent.

[Barak T. Nichols, 105.

2. He need not divide his application, and apply for a separate patent for each form of nail which he shows by way of illustration in his specification.

[Barak T. Nichols, 105.

3. Other forms of such nails, if they possess the necessary requisites, may also be protected by subsequent patents, but they will be subordinate to the one first obtained.

[Barak T. Nichols, 105.

(See Claims, 10, 11, 12; Joinder of Inventions.)

PLEADINGS AND PRACTICE.

1. Testimony as to the prior knowledge and use of the invention by persons not named in the answer will be considered on the hearing, if no motion is then made to strike it out, although it was objected to when it was taken.

[*Elm City Co. *vs.* Wooster, 83.

2. Evidence of the prior use of the patentee's invention given by a witness who was not referred to in the answer, excluded from consideration, although it might be said that it showed the state of the art.

[*Richardson *vs.* Lockwood, 398.

3 Although a bill for restraining the infringement of a patent is dismissed, the defendant will be allowed no costs if the rights of the parties are thereby settled, and a benefit consequently results to him as well as the public.

[*Smith *vs.* Woodruff, 635.

4. The proceedings in the Patent Office upon the plaintiff's application for the patent are not admissible for the purpose of giving it a different construction.

[*Westlake *vs.* Carter, 636.

5. If the defendant claims that the patent is void for uncertainty it rests with him to establish the charge.

[*Westlake *vs.* Carter, 636.

6. If the defendant has a patent it is evidence of the opinion of official experts that it does not conflict with the plaintiff's patent, and that in working under it he is guilty of no infringement.

[*Westlake *vs.* Carter, 636.

7. Such evidence will be submitted to the jury; the court will not compare the patents.

[*Westlake *vs.* Carter, 636.

8. The pendency of a suit upon a patent in one district is no bar to the prosecution of a suit upon it in another, whatever may be the effect of a recovery in such foreign suit.

[*Wheeler *vs.* McCormick, 692.

(See Damages; Injunctions; Notice of Defense; Parties to Action.)

PRACTICE.

(A) In general.

(B) In extensions.

(C) In interferences.

(A) *In general.*

1. It is incumbent on the Examiners-in-Chief and the Commissioner, as well as on the Examiner, to communicate to an applicant the grounds upon which he has been rejected.

[P. M. J. Chamblant, 106.

2. Unless the Examiner in charge has acted upon an amendment, no appeal can be taken from him to the Commissioner under the 44th rule.

[Barker and Mack, 155.

3. Before determining whether an application shall be divided, the claims should be couched in such terms as to place their meaning beyond all doubt.

[Thos. J. Mayall, 210.

(See Amendments 1, 2; Commissioner.)

(B) *In extensions.*

1. It has become an established practice to grant extensions where there are no other objections to it except defects in the patent, which may be corrected on a reissue.

[T. J. Mayall, 562.

(See Extensions B, 1, C; Joint Inventors, 5, 6.)

(C) *In interferences.*

1. Where two conflicting applications are pending in the Office at the same time, and a patent is issued upon one by mistake without declaring an interference between them, the rights of the parties will be determined on the same ground as if both were applicants; the one who has obtained a patent will derive no advantage from it in the controversy, neither will the other be prejudiced by it.

[Brookfield and Hemingray *vs.* Brooke, 81.

2. Where anything is developed on an interference which renders it doubtful whether the invention is novel, the case will be remanded to the Examiner in charge, in order that, with the further light thus obtained, he may investigate the question anew.

[Wood *vs.* Morris, 131.

3. Upon a declaration of interference between an application and a patent, the applicant amended his specification by withdrawing several claims which were not in conflict with the claims set up in the patent, but were confessedly subordinate to them, and filed another application embracing them, and obtained a patent for them: *Held*, that, although he described the disputed inventions in his patent, it was not necessary that he should ask for a reissue claiming them, nor that the interference should be dissolved to be renewed with the application for a reissue when filed.

[Lacroix *vs.* Welch, 526.

4. *Held*, that a disclaimer should be filed of the devices so described but not claimed, with the statement that they were embraced in another application.

[Lacroix *vs.* Welch.

(See Examiner of Interferences, 1, 2.)

PRIORITY OF INVENTION.

1. The party who first conceived an invention, and made drawings of it, and endeavored to induce manufacturers to adopt it and introduce it, without whose aid it could not be done, held to be the prior inventor, although his competitor, being a manufacturer himself, was enabled thereby to anticipate him in introducing it into use.

[Brookfield and Hemingray *vs.* Brooke, 81.

2. Priority awarded to an applicant who claimed a block of wood fastened between a stationary frog and the adjacent rails, and who had reduced the invention to practice, over the patentee of a special form of block to be placed between the frog and the rails, which he said incidentally in his specification might be of iron or wood, but who made no allusion to the superior qualities of wood for the purpose, and who had never used it.

[Wood *vs.* Morris, 131.

3. If an inventor, after making two secret experiments, takes no further steps with his improvement for five years, when he applies for a patent, and another has meanwhile reduced it to practice and put it in the market, what the first has done will be regarded as abandoned experiments, and the other party will be adjudged the prior inventor.

[Lippman *vs.* Marchant, 390.

4. The applicant who first produced a perfect-working specimen of the invention in dispute, adjudged the prior inventor, although another had conceived it before him and made a drawing of it, which he had explained to another person, but had shown no diligence in reducing it to practice.

[Davis *vs.* Edson, 500.

5. The patent for extinguishing fire in oil-tanks by covering the oil with carbonic-acid gas, introduced beneath and allowed to rise to the surface, awarded to the party who first effected it by mixing in the tank under water the chemical re-agents for forming the gas, although his competitor afterward anticipated him in the better method of forcing the gas from a reservoir outside into the oil.

[Stanton *vs.* Perley, 500.

6. Upon an interference between an application and patent there is a *prima facie* presumption that the patentee is the prior inventor.

[Paul *vs.* Dorland, 552.

7. An inventor, through want of diligence in the reduction of his invention to practice, may forfeit whatever right he may have thereto to another independent and more diligent inventor of the same thing.

[Hyatt *vs.* French, 609.

8. In a controversy between two independent inventors, where it appeared that one was first to conceive an invention and construct a device embodying it, but rested for twelve years before attempting to use the invention or apply for a patent for it, and in the interim the other invented, perfected, patented, and largely introduced the invention: *Held*, that the latter was, in contemplation of law, the prior inventor.

[Hyatt *vs.* French, 609.

9. Although a third party had conceived of the invention before the plaintiff, and had made some progress toward completing a model, yet, if he then suspended his labors, and, before he resumed them, the plaintiff had perfected the invention and had embodied it in a practical working machine, his patent will be sustained.

[*Smith *vs.* O'Connor, 633.

(See Joint Inventors, 4.)

REDUCING TO PRACTICE.

(See Priority of Invention, 1.)

REISSUES.

1. In the reissue of a patent for a medical inhaler, it is proper to specify in what parts of it two medicated liquids shall be placed when two are used, although it was not mentioned in the original.

[N. I. Donaldson, 4.

2. Such an explanation is in fact required by section 26 of the act of 1870.

[N. I. Donaldson, 4.

3. Such combinations of the parts shown in a patented machine as are operative in themselves, and constitute distinct and separate parts of the thing patented, may be embraced in separate divisions upon a reissue of the patent.

[Wheeler and Wheeler, 5.

4. But several parts of a patented machine which will together constitute a new invention not hinted at in the original, cannot be selected and claimed by themselves on a reissue.

[Wheeler and Wheeler, 5.

5. Drawings of bags, the forms of which were indicated in the patent of a paper-bag machine by which they are produced, may be annexed to a reissue of the patent, although they were not to the original.

[*The Union Paper Bag Company *vs.* Nixon, 31.

6. Upon an application for the reissue of a patent for a fire-extinguisher no amendment should be allowed which introduces the formulas for preparing the fluid to be used when there was no indication of the formulas in the original.

[Barker and Mack, 155.

7. A specimen of carbolised hose accompanying an application is not such a model as will, upon a reissue of a patent for a process for producing such hose, prevent inserting the description of an antiseptic which was not named in the original, but is shown to have been embraced in the invention.

[T. J. Mayall, 562.

(See Claims, 11; Practice, B.)

RENEWING OATH.

(See Amendments.)

SKILL AND INVENTION.

(See Invention and Skill.)

SPECIFIC PERFORMANCE.

(See Injunctions, 4, 8.)

SPECIFICATIONS.

1. A specification is not fatally defective because it does not mention such modifications as practical use would readily suggest in order to render the machine efficient, such as employing a weight or a spring, or changing the dimensions of the parts.

[*The Union Paper Bag Company *vs.* Nixon, 31.

2. Nor because it does not mention a cam on the main shaft, and the arms and connecting-rod, which are all necessary to give the proper reciprocating movement to the pasting-rollers on a paper-bag machine, they being devices which any mechanic would introduce of his own accord.

[*The Union Paper-Bag Co. *vs.* Nixon, 31.

3. Nor because the office of giving motion to the pasting-rollers is assigned to another cam on the shaft, which is incapable of performing it, since any mechanic would know that another cam is necessary for the purpose, as well as its form, and where it should be placed.

[*The Union Paper-Bag Co. *vs.* Nixon, 31.

4. A patent for a hand-stamp is not to be impeached on the ground that the stamp cannot be made to operate successfully

without an inking-ribbon, which is not noticed, if it mentions that the stamp may be used with any suitable inking device, and such inking-ribbons were well known at the time.

[*Robertson *vs.* Hill, 132.

5. There is no particular word or phrase of which the Office will prohibit the use in a specification; yet it will not allow the employment of one that is equivocal in such a connection as to render the meaning ambiguous.

[D. F. Haas, 610.

(See Novelty, D, 1; Pleadings and Practice, 4.)

SUBJECTS OF PATENTS.

1. The use or employment of a thing is neither an art nor a manufacture, and it cannot be made the subject of a claim or patented.

[Thos. J. Mayall, 210.

2. An invention must be either an improvement in an art or in a manufacture, and every claim should indicate clearly for which it is intended.

[Thos. J. Mayall, 210.

3. A patent will not be granted for a proposed method of pumping water to a given height through the mere power produced by the same current of water falling back through the same distance, such a result being impossible.

[Wm. L. Smith, 349.

4. Such a method should also be condemned as not sufficiently useful or important, although this objection should be interposed with great caution, and not merely because an alleged invention is considered trivial, or shows little ingenuity.

[Wm. L. Smith, 349.

5. The construction and arrangement of dwellings and other buildings may well afford occasion for the exercise of invention, and improvements in architecture may therefore be justly held to come within the provisions of the patent law.

[Wm. Ward, 350.

6. It is a common right to place an advertisement wherever it may be eligibly displayed, and the mere idea of placing one on an anchored balloon, a thing which has been largely in use for miscellaneous purposes, cannot be monopolised.

[H. W. Gould, 611.

7. If any special adaptation of the balloon to such a purpose is resorted to, that may be the subject of a patent.

[H. W. Gould, 611.

(See Designs, 7; Invention and Skill; Priority of Invention, 5.)

SUBORDINATE PATENTS.

(See Patents, 3.)

UTILITY.

1. A patent held not to be void for want of utility in the invention upon its appearing that it possessed certain advantages over others.

[*Smith *vs.* O'Connor, 633.

2. The patent is not void for want of utility if the invention possesses it in any measure, however slight.

[*Westlake *vs.* Carter, 636.

(See Designs, 8, 9; Subjects of Patents, 4.)

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